SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

BIRDVILLE ISD

NORTH RICHLAND HILLS, TEXAS

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT
JOHN F. KLEIN
18429
STATE OF TEXAS

05/08/2019

ISSUED: MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

PROJECT NO.

1887.00

SHEET TITLE

COVER

SHEET NO.

COVER

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

BIRDVILLE ISD

NORTH RICHLAND HILLS, TEXAS

ABBREVIATIONS

A

A.F.F.	ABOVE FINISH FLOOR
A.C.T.	ACOUSTICAL CEILING TILE
ADDL.	ADDITIONAL
A.B.	AIR BARRIER
A.C.M.	ALUMINUM COMPOSITE PANEL
A.D.A.	AMERICANS WITH DISABILITIES ACT
APPROX.	APPROXIMATELY
ARCH.	ARCHITECTURAL

B

BD.	BOARD
B.O.W.	BOTTOM OF WALL
B.U.R.	BUILT-UP ROOFING
BLDG.	BUILDING

C

℄	CENTER LINE
C.R.	CLASSROOM
C.F.S.	COLD-FORMED STEEL
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
C.M.	CONSTRUCTION MANAGER
CONT.	CONTINUOUS
C.I.	CONTINUOUS INSULATION
C.J.	CONTROL JOINT
COORD.	COORDINATE
CORR.	CORRIDOR

D

DIA.	DIAMETER
D.O.	DOOR OPENING
DN.	DOWN
D.S.	DOWNSPOUT

E

EA.	EACH
E.W.	EACH WAY
ELEC.	ELECTRICAL
E.W.C.	ELECTRIC WATER COOLER
ELEV.	ELEVATION
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
E.J.	EXPANSION JOINT
EXT.	EXTERIOR
EIFS	EXTERIOR INSULATION & FINISH SYSTEM

F

FT.	FEET or FOOT
F.V.	FIELD-VERIFY
FIN.	FINISH
F.F.	FINISH FLOOR
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER & CABINET
F.H.C.	FIRE HOSE CABINET
F.H.C.S.	FLAT-HEAD COUNTERSUNK
FLR.	FLOOR
F.D.	FLOOR DRAIN
FLUOR.	FLUORESCENT

G / H

GALV.	GALVANIZED
GA.	GAUGE
G.C.	GENERAL CONTRACTOR
G.O.	GLAZED OPENING
GYP	GYPSUM
HT.	HEIGHT
H.P.	HIGH POINT
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.B.	HORIZONTAL BLINDS
H.D.G.	HOT-DIP GALVANIZED
HR.	HOUR

I / J / K

I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
I.B.C.	INTERNATIONAL BUILDING CODE

L

LAV.	LAVATORY
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.P.	LOW POINT
L.V.T.	LUXURY VINYL TILE

M

MFR.	MANUFACTURER
MFG.	MANUFACTURING
M.B.	MARKER BOARD
M.O.	MASONRY OPENING
MAX.	MAXIMUM
MECH.	MECHANICAL

M. (CONT.)

MOD BIT	MODIFIED BITUMEN
MULL.	MULLION
M.E.P.	MECHANICAL-ELECTRICAL-PLUMBING
M.C.M.	METAL COMPOSITE MATERIAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS

N

NOM.	NOMINAL
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO./#	NUMBER

O

O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.H.	OPPOSITE HAND
OHD.	OVERHEAD
O.F.C.I.	OWNER-FURNISHED, CONTRACTOR-INSTALLED
O.F.O.I.	OWNER-FURNISHED, OWNER INSTALLED

P / Q

PR.	PAIR
P.LAM.	PLASTIC LAMINATE
PL.	PLATE
PLUMB.	PLUMBING
PT.	POINT
P.C.F.	POUNDS PER CUBIC FOOT
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
PREFAB.	PREFABRICATED
PROJ.	PROJECTOR or PROJECTION
Q.T.	QUARRY TILE

R

R.	RADIUS
REBAR	REINFORCING BAR
REF.	REFERENCE or REFER TO
R.C.P	REFLECTED CEILING PLAN
RE:	REGARDING
REINF.	REINFORCE or REINFORCING
REQD.	REQUIRED
R.	RISER (STAIR)
RD.	ROOF DRAIN
R.O.	ROUGH OPENING

S

SIM.	SIMILAR
S.C.	SOLID CORE
S.A.B.	SOUND ATTENUATION BLANKET
S.A.F.B.	SOUND ATTENUATION FIRE BLANKET
S.T.C.	SOUND TRANSMISSION CLASS
SPEC.	SPECIFICATION
SQ.	SQUARE
S.F.	SQUARE FOOT
S.S.	STAINLESS STEEL
STRUC.	STRUCTURAL
SUSP.	SUSPENDED

T

T.B.	TACKBOARD
T.W.	TACK WALL
T.C.	TEACHER'S CABINET
T.A.S.	TEXAS ACCESSIBILITY STANDARDS
T.	TREAD (STAIR)
T&B	TOP & BOTTOM
T.O.	TOP OF
T.C.	TOP OF CURB
T.O.D.	TOP OF DECK
T.O.J.	TOP OF JOIST
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL

U / V

U/C	UNDER COUNTER
U.L.	UNDERWRITERS LABORATORY
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F	VERIFY IN FIELD
VERT.	VERTICAL
V.C.T.	VINYL COMPOSITION TILE
V.W.C	VINYL WALL COVERING

W / X / Y / Z

W.C.	WATER CLOSET
W.R.B.	WATER-RESISTIVE BARRIER
WT.	WEIGHT
W.	WIDE
W/	WITH
W/O	WITHOUT
W.P.	WORKING POINT
W.W.F.	WELDED WIRE FABRIC

MATERIAL INDICATIONS

- EARTH
- POROUS FILL
- CONCRETE/ GROUT
- BRICK
- CMU (LARGE SCALE)
- MARBLE
- METAL (LARGE SCALE)
- METAL (SMALL SCALE)
- RESILIENT FLOORING
- ACOUSTICAL TILE
- TERRAZZO
- PLASTER, SAND, GROUT
- CERAMIC TILE
- GLASS (LARGE SCALE)
- INSULATION (RIGID BOARD)
- INSULATION (BATT/ BLANKET)
- INSULATION (SEMI-RIGID BOARD)
- WOOD, ROUGH (CONT.)
- WOOD, ROUGH (BLOCKING)
- WOOD, FINISH
- PLYWOOD (LARGE SCALE)
- METAL LATH
- GYPSUM BOARD

PROJECT INFORMATION

I. PROJECT IDENTIFICATION

PROJECT NAME - SMITHFIELD MIDDLE SCHOOL - GYM ADDITION
OWNER - BIRDVILLE I.S.D.
PROJECT LOCATION - 8400 MAIN ST, NORTH RICHLAND HILLS, TEXAS 76182

II. APPLICABLE CODES

2012	INTERNATIONAL BUILDING CODE W/ CITY OF NORTH RICHLAND HILLS AMENDMENTS
2012	INTERNATIONAL FIRE CODE W/ CITY OF NORTH RICHLAND HILLS AMENDMENTS
2012	INTERNATIONAL PLUMBING CODE W/ CITY OF NORTH RICHLAND HILLS AMENDMENTS
2012	INTERNATIONAL MECHANICAL CODE W/ CITY OF NORTH RICHLAND HILLS AMENDMENTS
2014	NATIONAL ELECTRIC CODE W/ CITY OF NORTH RICHLAND HILLS AMENDMENTS
2009	INTERNATIONAL ENERGY CONSERVATION CODE
2012	TEXAS ACCESSIBILITY STANDARDS

III. APPROXIMATE BUILDING AREAS

EXISITNG GROUND LEVEL AREA.:	12,576 S.F.
ADDITION GROUND LEVEL AREA.:	22,390 S.F.
TOTAL BLDG AREA.:	34,966 S.F.
LEGAL DESCRIPTION:	LOT X
	BLOCK X

IV. FIRE RESISTIVE REQUIREMENTS (TABLE 601 - IBC)

	TYPE II-B
1. STRUCTURAL FRAME	0 HR.
2. BEARING WALLS - EXTERIOR & INTERIOR	0 HR.
3. NON BEARING WALLS - EXTERIOR	0 HR. ≥30'
4. NON BEARING WALLS - INTERIOR	0 HR.
5. FLOORS AND FLOOR CEILINGS	0 HR.
6. ROOFS AND ROOF CEILINGS	0 HR.

NOTE: ENTIRE BUILDING WILL BE FIRE SPRINKLERED

GENERAL NOTES

1. REFER TO THE A0-SERIES SHEETS FOR CODE INFORMATION, DESIGN CRITERIA AND FIRE PROTECTION REQUIREMENTS.
2. VERIFY AND DOCUMENT EXISTING DIMENSIONS AND CONDITIONS AT THE SITE BEFORE BEGINNING CONSTRUCTION. NOTIFY THE ARCHITECT OF CONFLICTS OR VARIATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. BASED ON THE APPLICABLE DESIGN CRITERIA, SUBMIT SHOP DRAWINGS OF THE PROPOSED PATTERN OF CONTROL JOINTS IN MASONRY VENEER, CMU, GYPSUM BOARD, PLASTER AND STUCCO TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
4. IN CASE OF DISCREPANCIES IN OR BETWEEN THE CONTRACT DOCUMENTS, THE GREATER QUANTITY OR BETTER QUALITY SHALL BE BID. CLARIFICATIONS REGARDING THE DISCREPANCIES SHALL BE REQUESTED FROM THE ARCHITECT PRIOR TO CONSTRUCTION, AND THE RESULTING INTERPRETATIONS IMPLEMENTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

SYMBOLS LEGEND

- CLASSROOM / A201 — ROOM NAME & NUMBER
- A203 — DOOR NUMBER
- A — ALUMINUM-FRAMED GLAZED OPENING SYSTEM
- G.D. / 2 — HOLLOW METAL-FRAMED GLAZED OPENING SYSTEM
- P1 — PARTITION TYPE
- ABC-01 — BUILDING ASSEMBLY TYPE
- DWG. NO. / SHEET NO. — BUILDING ELEVATION
- DWG. NO. / SHEET NO. — BUILDING SECTION
- DWG. NO. / SHEET NO. — WALL SECTION
- LOUVER
- 8 — KEYED NOTE
- NORTH ARROW
- HB — HORIZONTAL BLINDS
- DWG. NO. 3/A8.01 SHEET NO. — INTERIOR ELEVATION
- DWG. NO. 6/A4.05 SHEET NO. — SECTION DETAIL
- AC — ACCESS CONTROL
- DATUM ELEVATION

TEXAS ACCESSIBILITY STANDARDS

PROVISIONS FOR ADULTS AND CHILDREN	ADULTS AGE 13 & ABOVE	CHILDREN AGES 12 & UNDER
REACH RANGES		
FRONTAL AND SIDE APPROACH	15" MIN. - 48" MAX.	16" MIN. - 44" MAX.
RAMPS AND STAIRS		
TOP OF HANDRAIL GRIPPING SURFACE	34" - 38"	34" - 38"
DRINKING FOUNTAINS AND WATER COOLERS		
FRONTAL APPROACH		
SPOUT HEIGHT (TO OUTLET)	36" MAX.	USE SIDE APPROACH
KNEE CLEARANCE	27" MIN.	
SIDE APPROACH		
SPOUT HEIGHT (TO OUTLET)	USE FRONT APPROACH	30" MAX.
KNEE CLEARANCE		NOT REQUIRED
WATER CLOSETS		
CENTERLINE TO WALL AT WHEELCHAIR ACCESS. STALL	16" - 18"	12" - 18"
CENTERLINE TO WALL AT AMBULATORY STALL	17" - 19"	17" - 19"
TOP OF SEAT	17" - 19"	11" - 17"
GRAB BARS	33" - 36"	18" - 27"
DISPENSER HEIGHT (MOUNT AT 7-9" FROM CENTERLINE OF DISPENSER IN FRONT OF W.C.)	15" - 48"	14" - 19"
FLUSH CONTROLS	44" MAX.	36" MAX.
URINALS		
RIM OF BASIN	17" MAX.	16" MAX.*
FLUSH CONTROLS	48" MAX.	44" MAX.
LAVATORIES AND SINKS		
RIM OR COUNTER SURFACE	34" MAX.	31" MAX.
KNEE CLEARANCE (LAVATORIES)	27" MIN.	24" MIN.
KNEE CLEARANCE (SINKS)	27" MIN.	24" MIN.
TO FAUCETS FROM FRONT EDGE	20" MAX.*	18" MAX.*
MIRRORS		
TO TOP OF REFLECTIVE SURFACE	74" MIN.	74" MIN.
TO BOTTOM OF REFLECTED SURFACE AT SINKS & LAVS	40" MAX.	35" MAX.*
TO BOTTOM OF REFLECTED SURFACE	35" MAX.	35" MAX.*
CONTROLS AND OPERATING MECHANISM		
HIGHEST OPERABLE PART		
FRONTAL AND SIDE APPROACH	48" MAX.	44" MAX.
TELEPHONES		
HIGHEST OPERABLE PART		
FRONTAL AND SIDE APPROACH	48" MAX.	44" MAX.
FIXED OR BUILT-IN SEATING, TABLES, & WORK STATIONS		
HEIGHT OF TABLES OR COUNTERS	28" - 34"	26" - 30"
KNEE CLEARANCES	27" MIN.	24" MIN.
DRESSING & FITTING ROOMS		
TOP OF BENCH (20"-24" D x 42" L MIN.)	17" - 19"	11" - 17" *
BACK SUPPORT 18" H MIN. OR MOUNT TO WALL		
FOOD SERVICE LINES		
TOP OF TRAY SLIDE	28" - 34"	32" *

* NOTE: DIMENSION FOR SPECIFIC AGE GROUPS ARE LISTED IN 2012 TAS, 604.9, ADVISORY 604.9.

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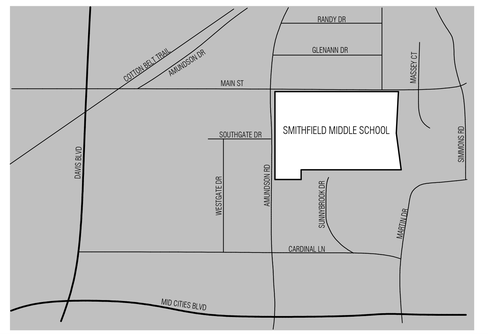
SITE LOCATION MAP



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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

JOHN F. KLEIN 76433 REGISTERED ARCHITECT STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

PROJECT NO.

1887.00

SHEET TITLE

INDEX TO DRAWINGS
GENERAL NOTES
ABBREVIATIONS

SHEET NO.

INDEX

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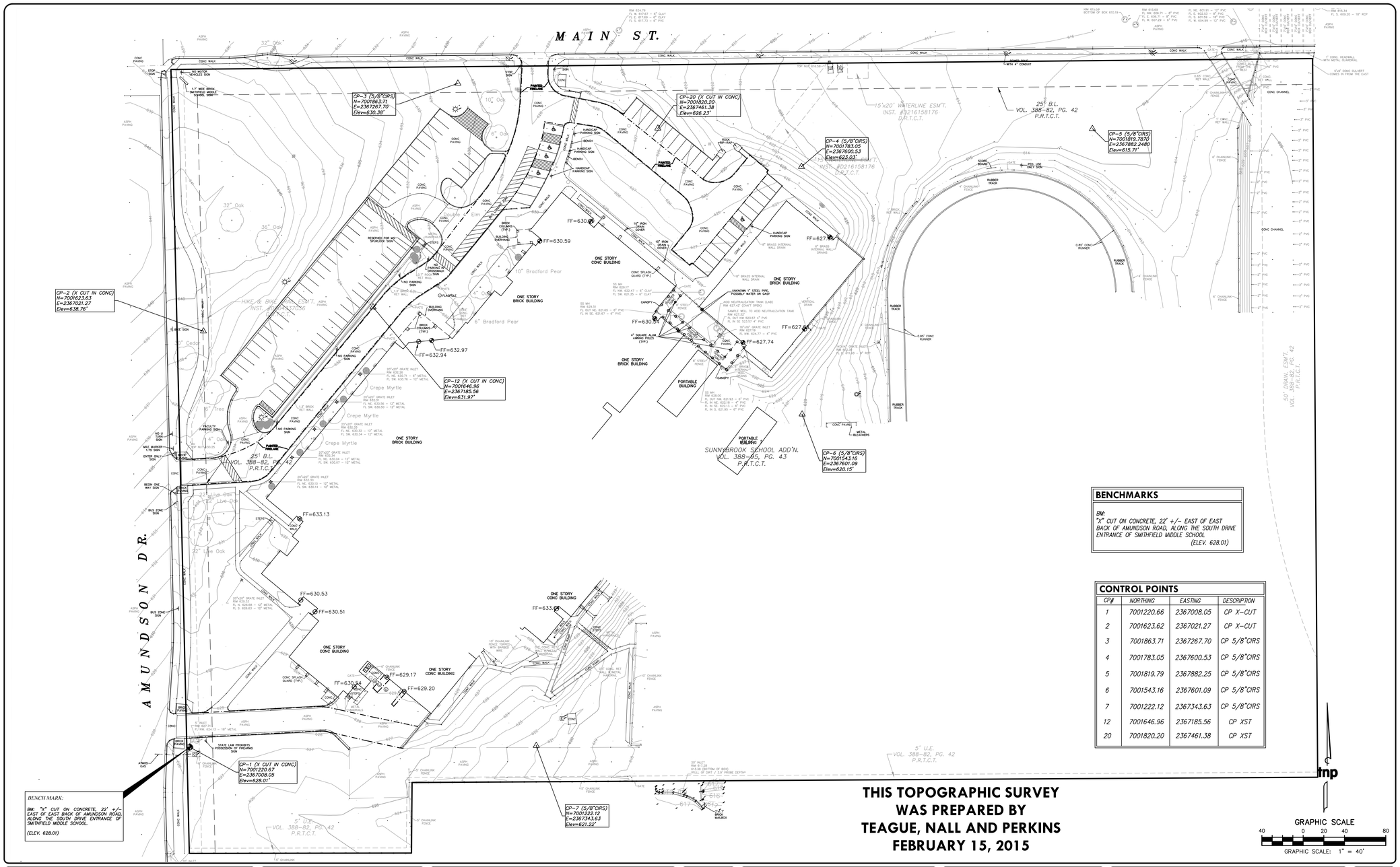

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Birdville Independent School District
excellence | integrity | service

scale	
horiz	1"=40'
vert	N/A
date	MAY 2019

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North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
EXISTING TOPOGRAPHIC PLAN

tnp project VLK 18477
sheet C1.01

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

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JFK	TNP
Designer	Quality Control
VLK	VLK
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JD	

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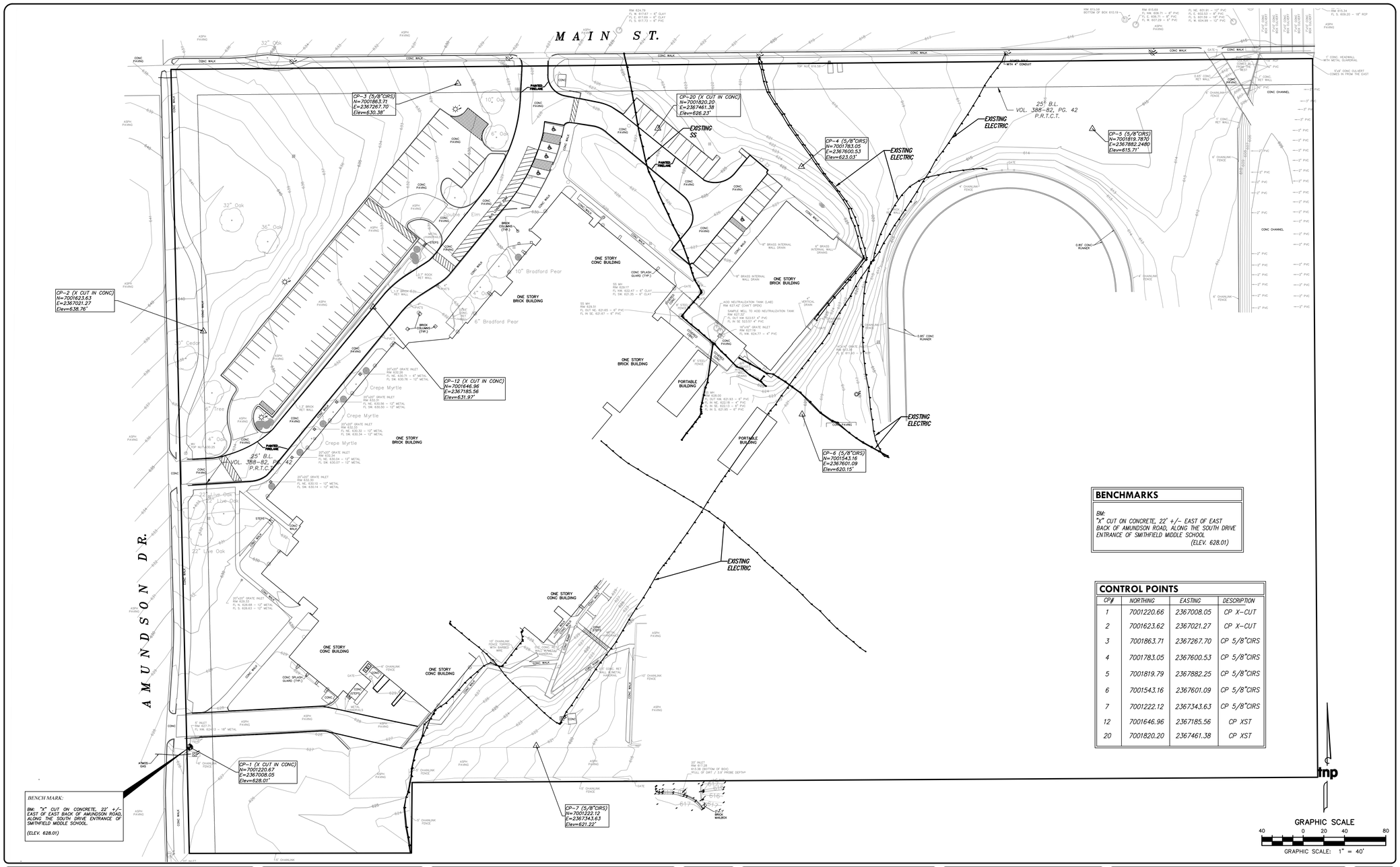

BENCHMARKS

BM:
"X" CUT ON CONCRETE, 22' +/- EAST OF EAST BACK OF AMUNDSON ROAD, ALONG THE SOUTH DRIVE ENTRANCE OF SMITHFIELD MIDDLE SCHOOL.
(ELEV. 628.01)

CONTROL POINTS

CP#	NORTHING	EASTING	DESCRIPTION
1	7001220.66	2367008.05	CP X-CUT
2	7001623.62	2367021.27	CP X-CUT
3	7001863.71	2367267.70	CP 5/8"CIRS
4	7001783.05	2367600.53	CP 5/8"CIRS
5	7001819.79	2367882.25	CP 5/8"CIRS
6	7001543.16	2367601.09	CP 5/8"CIRS
7	7001222.12	2367343.63	CP 5/8"CIRS
12	7001646.96	2367185.56	CP XST
20	7001820.20	2367461.38	CP XST

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scale
horiz
1"=40'
vert
N/A
date
MAY 2019

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Birdville Independent School District
Smithfield MS Gymnasium Addition
EXISTING UTILITY PLAN

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VLK 18477
sheet
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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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SHEET NO.
C1.02

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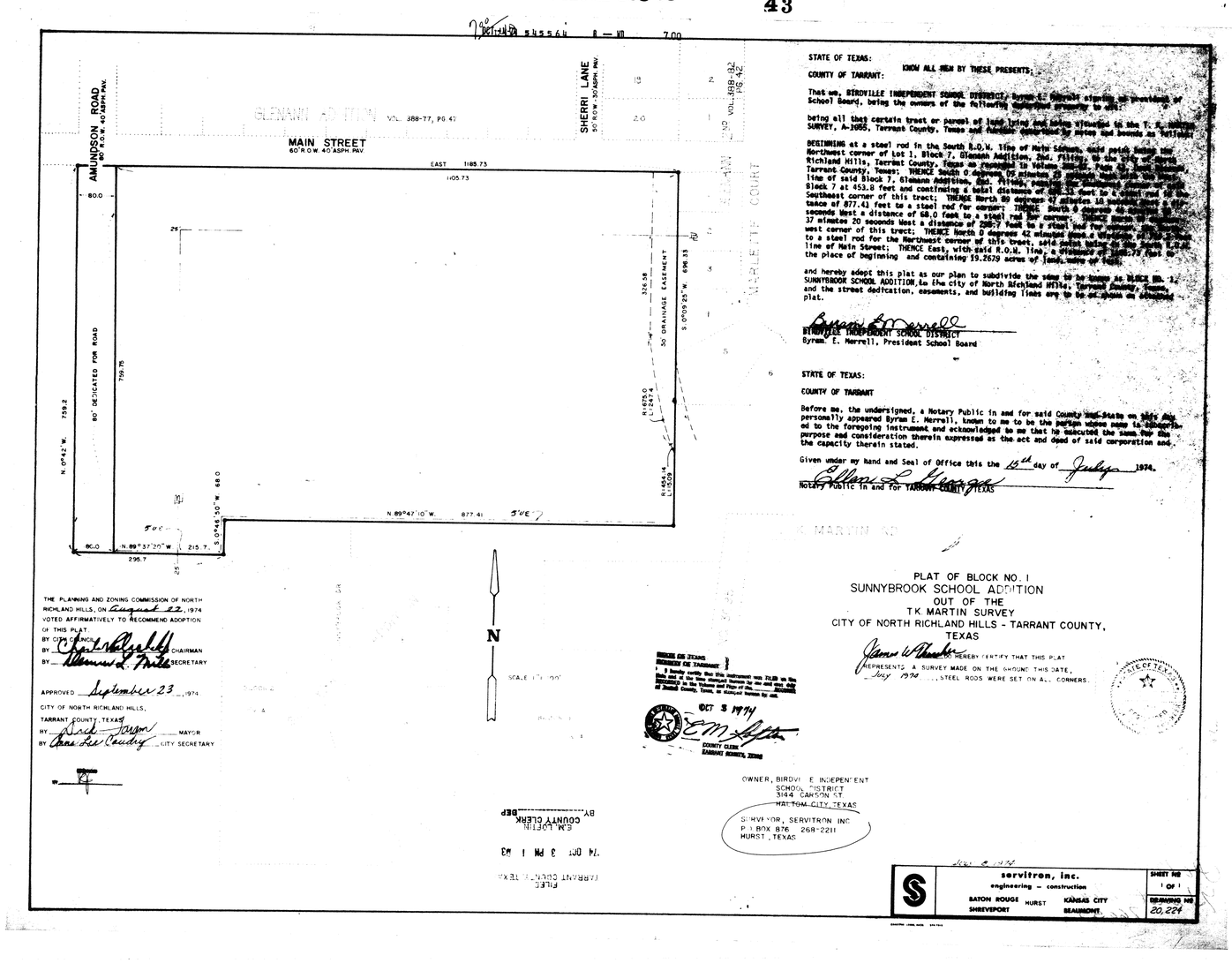
PLAT RECORD VOLUME 388 95

43



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scale	
horiz	N/A
vert	N/A
date	MAY 2019

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North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
PLAT

tnp project	VLK 18477
sheet	C1.03

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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PLAT

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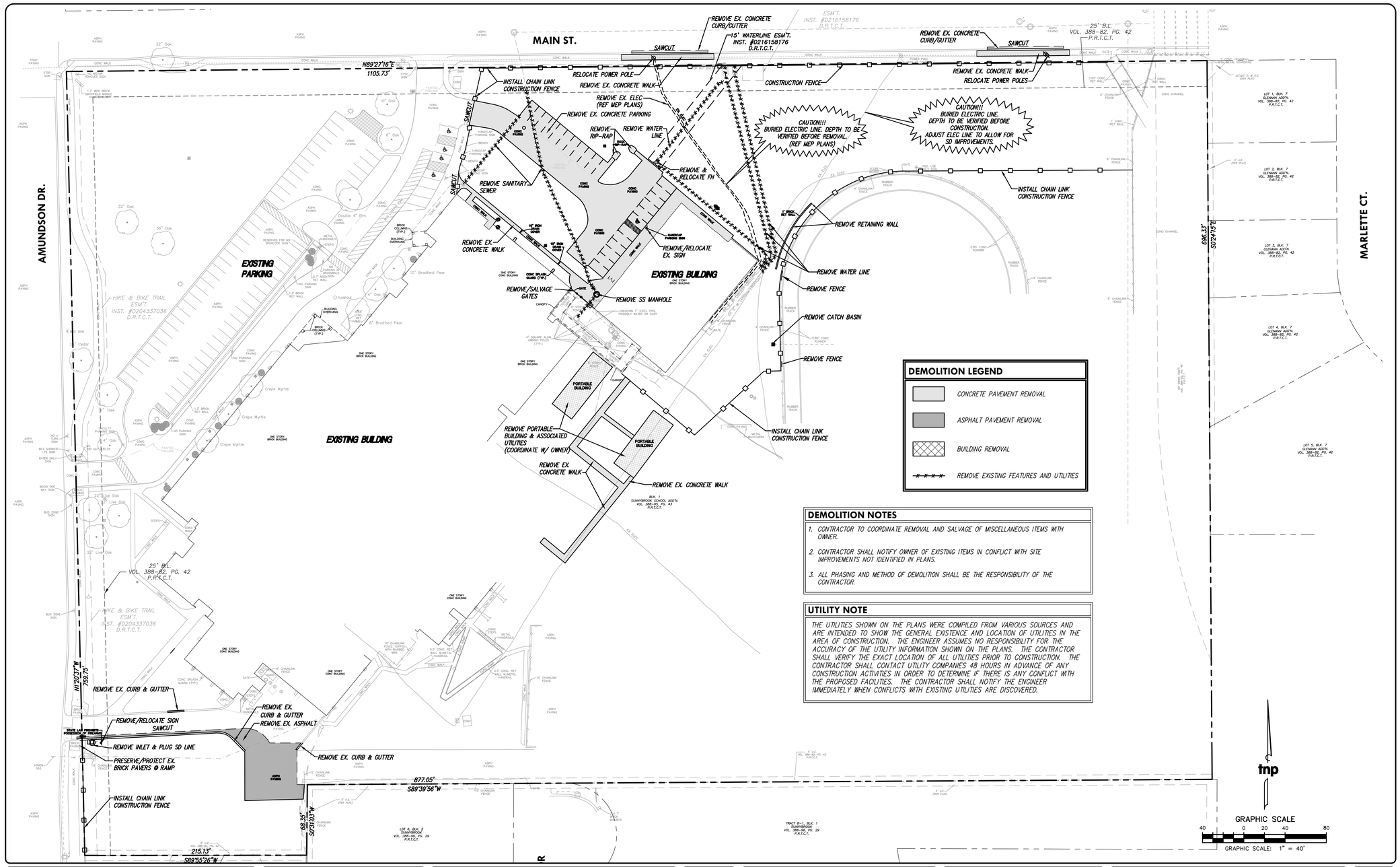

DEMOLITION LEGEND

- CONCRETE PAVEMENT REMOVAL
- ASPHALT PAVEMENT REMOVAL
- BUILDING REMOVAL
- REMOVE EXISTING FEATURES AND UTILITIES

DEMOLITION NOTES

1. CONTRACTOR TO COORDINATE REMOVAL AND SALVAGE OF MISCELLANEOUS ITEMS WITH OWNER.
2. CONTRACTOR SHALL NOTIFY OWNER OF EXISTING ITEMS IN CONFLICT WITH SITE IMPROVEMENTS NOT IDENTIFIED IN PLANS.
3. ALL PHASING AND METHOD OF DEMOLITION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

UTILITY NOTE

THE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL EXISTENCE AND LOCATION OF UTILITIES IN THE AREA OF CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES IN ORDER TO DETERMINE IF THERE IS ANY CONFLICT WITH THE PROPOSED FACILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS WITH EXISTING UTILITIES ARE DISCOVERED.

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scale horiz	1"=40'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
DEMOLITION PLAN

tnp project VLK 18477
sheet C1.04

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
DEMOLITION PLAN

SHEET NO.
C1.04

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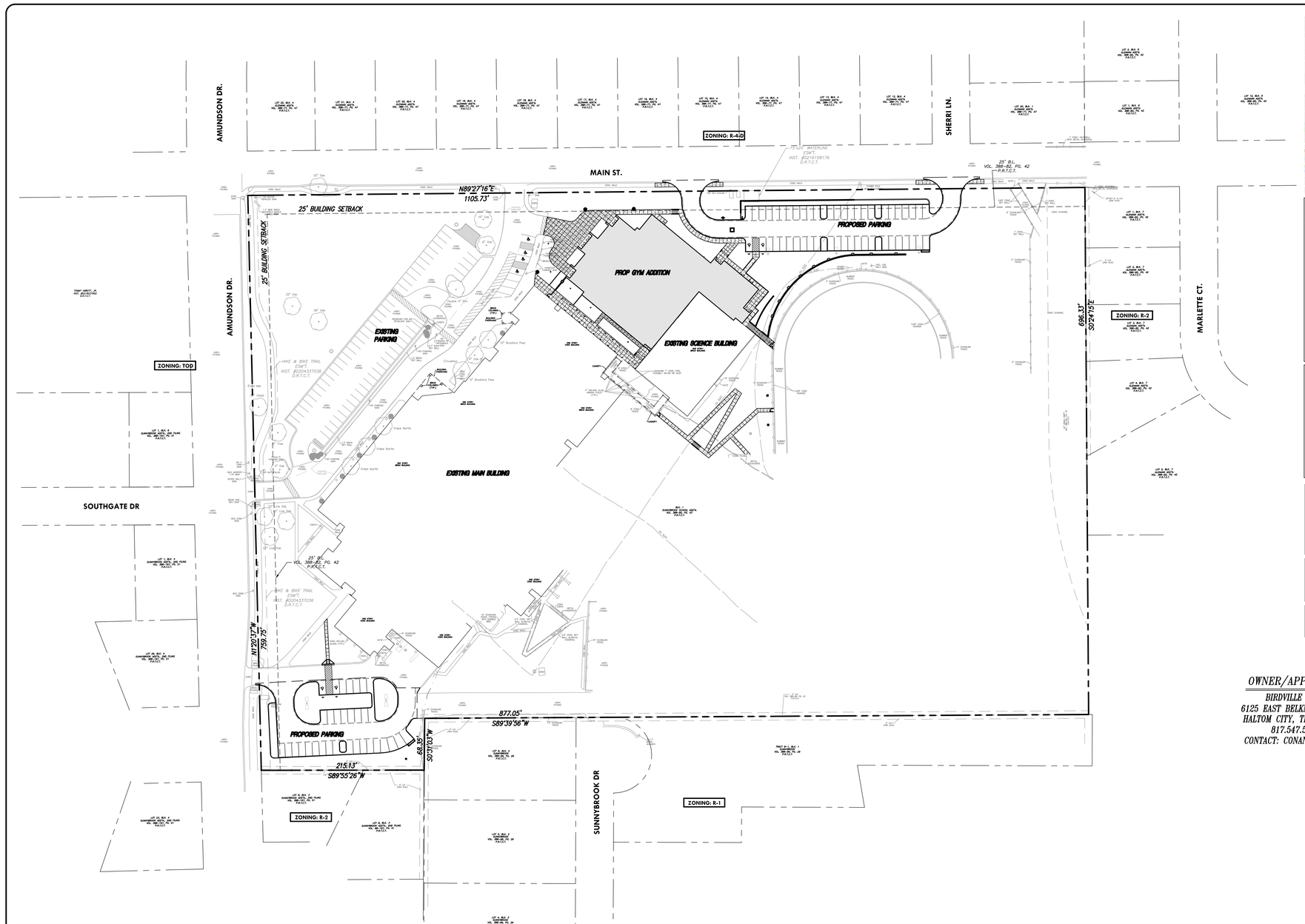

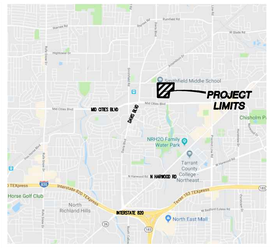

BUILDING/PARKING DATA

EXISTING GROUND LEVEL AREA:	12,576 SF (SCIENCE)
PROPOSED BUILDING AREA:	22,390 SF (GYM)
TOTAL BUILDING AREA:	34,966 SF
GROSS AREA:	778,445 SF
IMPROVEMENTS AREA:	75,966 SF
OPEN SPACE AREA:	25,836 SF
EXISTING PARKING:	94
EXISTING PARKING TO REMAIN:	71
PROPOSED PARKING:	78
PROPOSED HANDICAP PARKING:	4
TOTAL PARKING:	153

ZONING AG

FRONT YARD:
25' FRONT YARD
0' BLDG SETBACK

REAR YARD:
0' REAR YARD
0' BLDG SETBACK

NOTE:
ALL TRAFFIC CONTROL SIGNS, BARRICADES, AND FLAGGING SHALL BE IN ACCORDANCE WITH THE CURRENT TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND PHASING.

NOTE:
CONTRACTOR SHALL VERIFY EXACT LOCATION AND SIZE OF ALL UTILITIES AND USE EXTREME CAUTION DURING CONSTRUCTION.

NOTE:
CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR IMPROVEMENTS WITHIN PUBLIC ROW.

OWNER/APPLICANT:
BIRDVILLE I.S.D.
6125 EAST BELKNAP STREET
HALTOM CITY, TEXAS 76117
817.547.5700
CONTACT: CONAN MATHSON

PREPARED BY:
TEAGUE NALL & PERKINS, INC.
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FORT WORTH, TEXAS 76137
817.336.5773
CONTACT: PHILIP C. VARUGHESE, P.E.

DATE PREPARED:
MAY 2019

GRAPHIC SCALE
60 0 30 60 120
GRAPHIC SCALE: 1" = 60'

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scale	
horiz	1"=60'
vert	N/A
date	MAY 2019

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PHILIP C. VARUGHESE 114594 LICENSED PROFESSIONAL ENGINEER
Date: 05/06/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
OVERALL SITE PLAN

tnp project VLK 18477
sheet C1.05

TNP PROJECT NO. VLK 18477
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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
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PROJECT NO.
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SHEET TITLE
OVERALL SITE PLAN

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C1.05

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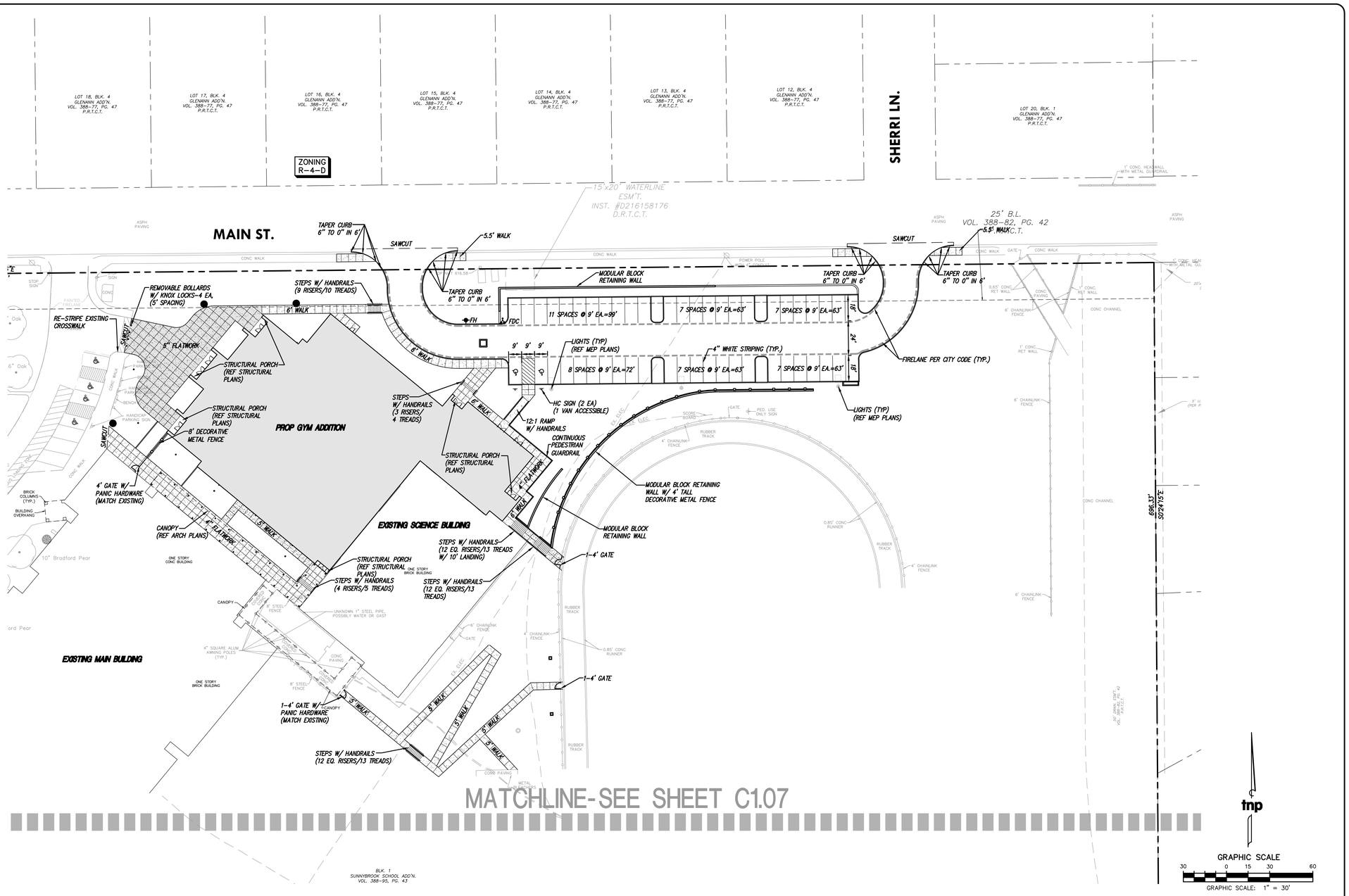

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BISD Birdville Independent School District excellence | integrity | service

scale	
horiz	1"=30'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
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LICENSED PROFESSIONAL ENGINEER
, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
SITE PLAN (SECTION A)

tnp project VLK 18477
sheet C1.06

TNP PROJECT NO. VLK 18477
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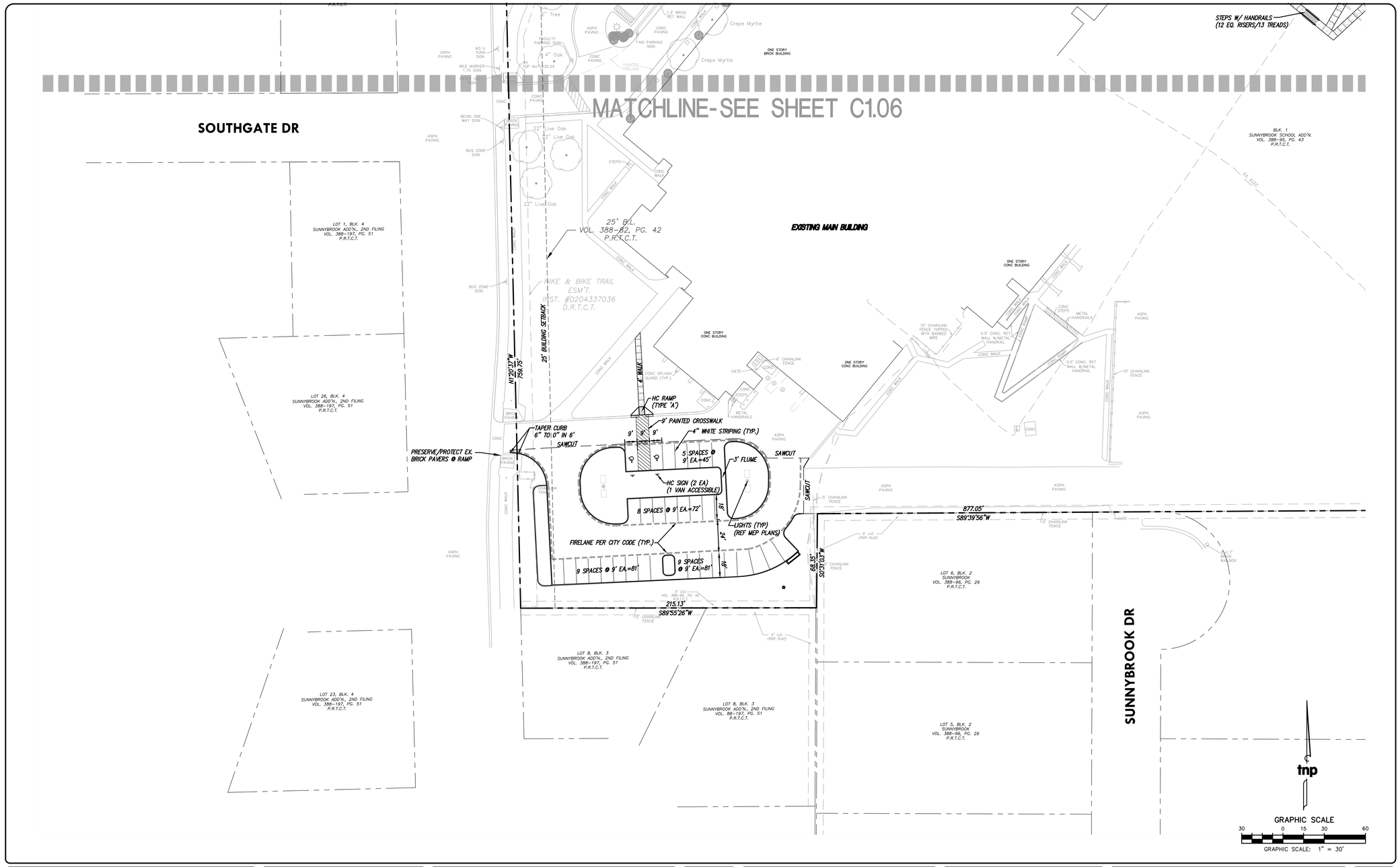

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scale horiz	1"=30'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
SITE PLAN (SECTION B)

tnp project	
VLK 18477	
sheet	C1.07

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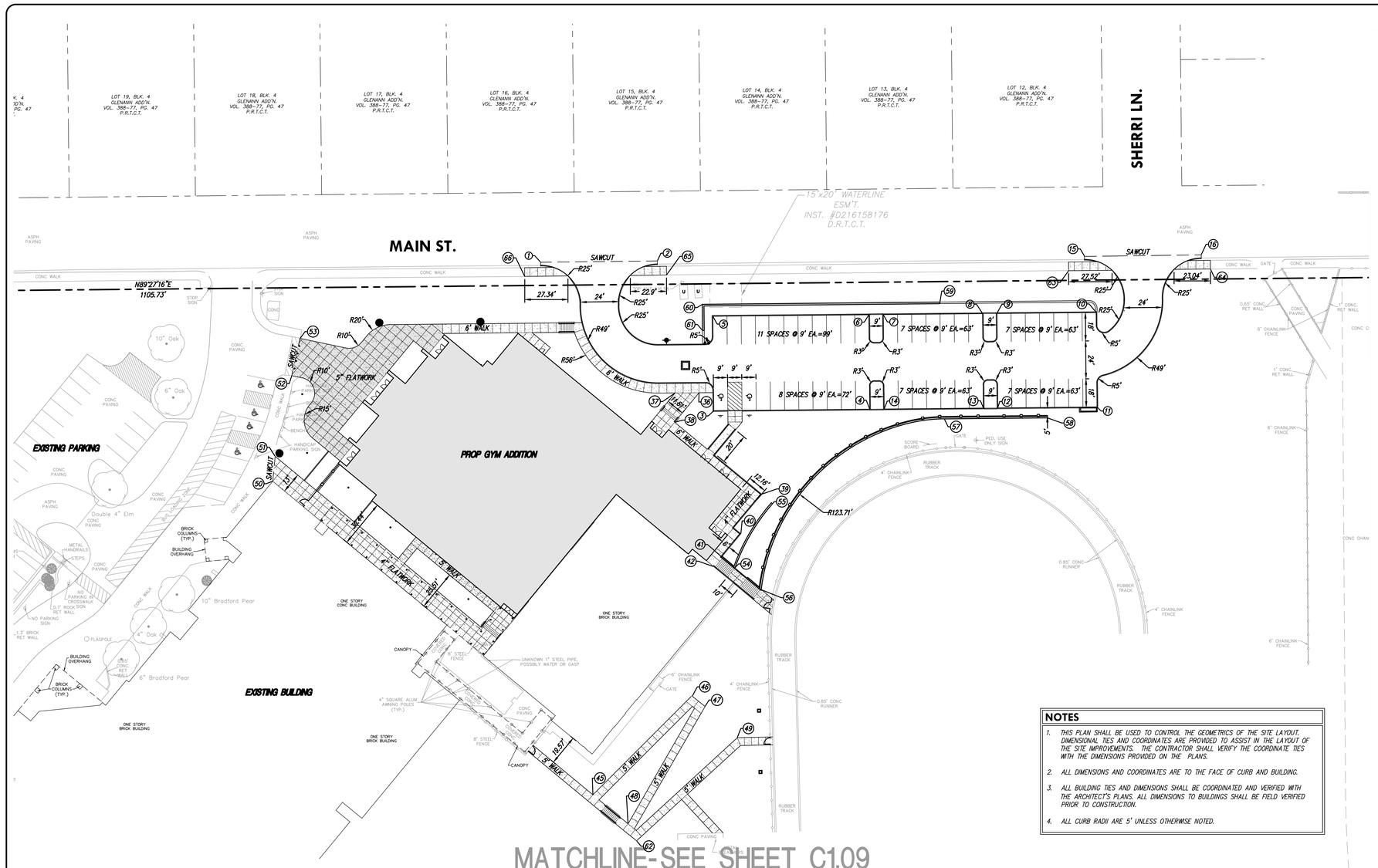

MATCHLINE-SEE SHEET C1.09

COORDINATE CONTROL TABLE			
Point #	Northing	Easting	Desc
1	7001897.17	2367537.83	CONNECT TO EX. CONCRETE
2	7001898.00	2367611.75	CONNECT TO EX. CONCRETE
3	7001803.02	2367647.46	PI
4	7001803.97	2367746.45	PI
5	7001863.02	2367646.89	PI
6	7001863.96	2367745.88	PI
7	7001864.05	2367754.88	PI
8	7001864.65	2367817.88	PI
9	7001864.73	2367826.88	PI
10	7001865.33	2367889.87	PI
11	7001805.34	2367890.45	PI
12	7001804.74	2367827.45	PI
13	7001804.65	2367818.45	PI
14	7001804.05	2367755.45	PI
15	7001900.87	2367882.53	CONNECT TO EX. CONCRETE
16	7001901.84	2367956.38	CONNECT TO EX. CONCRETE
17	7001134.43	2367030.58	PI
18	7001159.17	2367209.33	PI
19	7001197.12	2367085.29	PI
20	7001217.10	2367084.35	PI
21	7001232.57	2366999.88	CONNECT TO EX. ASPHALT
22	7001226.76	2367186.87	CONNECT TO EX. ASPHALT
23	7001226.76	2367217.39	CONNECT TO EX. ASPHALT
24	7001220.14	2367213.40	CONNECT TO EX. ASPHALT
25	7001186.42	2367220.43	CONNECT TO EX. ASPHALT
26	7001186.42	2367213.40	CONNECT TO EX. ASPHALT
36	7001814.44	2367638.20	PI
37	7001814.29	2367623.04	PI
38	7001795.71	2367622.74	PI
39	7001750.16	2367677.89	PI
40	7001725.05	2367664.69	PI
41	7001710.41	2367652.52	PI
42	7001704.25	2367647.40	PI
45	7001559.60	2367570.94	PI
46	7001622.07	2367633.90	PI
47	7001615.60	2367642.04	PI
48	7001541.18	2367593.22	PI
49	7001595.76	2367662.42	PI
50	7001758.35	2367368.09	CONNECT TO EX. CONCRETE
51	7001774.11	2367369.63	CONNECT TO EX. CONCRETE
52	7001825.26	2367380.16	CONNECT TO EX. CONCRETE
53	7001848.92	2367385.43	CONNECT TO EX. CONCRETE
54	7001703.40	2367660.99	RETAINING WALL
55	7001744.06	2367684.81	RETAINING WALL
56	7001689.61	2367677.66	RETAINING WALL
57	7001797.88	2367793.59	RETAINING WALL
58	7001798.51	2367859.01	RETAINING WALL
59	7001871.93	2367790.81	RETAINING WALL
60	7001870.49	2367640.25	RETAINING WALL
61	7001853.90	2367640.41	RETAINING WALL
62	7001530.46	2367598.64	PI
63	7001891.82	2367872.37	EX. WALK
64	7001892.80	2367962.21	EX. WALK
65	7001889.11	2367617.58	EX. WALK
66	7001888.13	2367527.74	EX. WALK

NOTES

1. THIS PLAN SHALL BE USED TO CONTROL THE GEOMETRICS OF THE SITE LAYOUT. DIMENSIONAL TIES AND COORDINATES ARE PROVIDED TO ASSIST IN THE LAYOUT OF THE SITE IMPROVEMENTS. THE CONTRACTOR SHALL VERIFY THE COORDINATE TIES WITH THE DIMENSIONS PROVIDED ON THE PLANS.
2. ALL DIMENSIONS AND COORDINATES ARE TO THE FACE OF CURB AND BUILDING.
3. ALL BUILDING TIES AND DIMENSIONS SHALL BE COORDINATED AND VERIFIED WITH THE ARCHITECT'S PLANS. ALL DIMENSIONS TO BUILDINGS SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
4. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.

tnp

GRAPHIC SCALE
30 0 15 30 60
GRAPHIC SCALE: 1" = 30'

no.	revision	by	date

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TBPE: F-230; TBPLS: 10011600, 10011601, 10194381

Birdville Independent School District
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scale horiz	1"=30'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019 , P.E.

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
DIMENSIONAL CONTROL PLAN (SECTION A)

tnp project	VLK 18477
sheet	C1.08

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
DIMENSIONAL CONTROL PLAN (SECTION A)

SHEET NO.
C1.08

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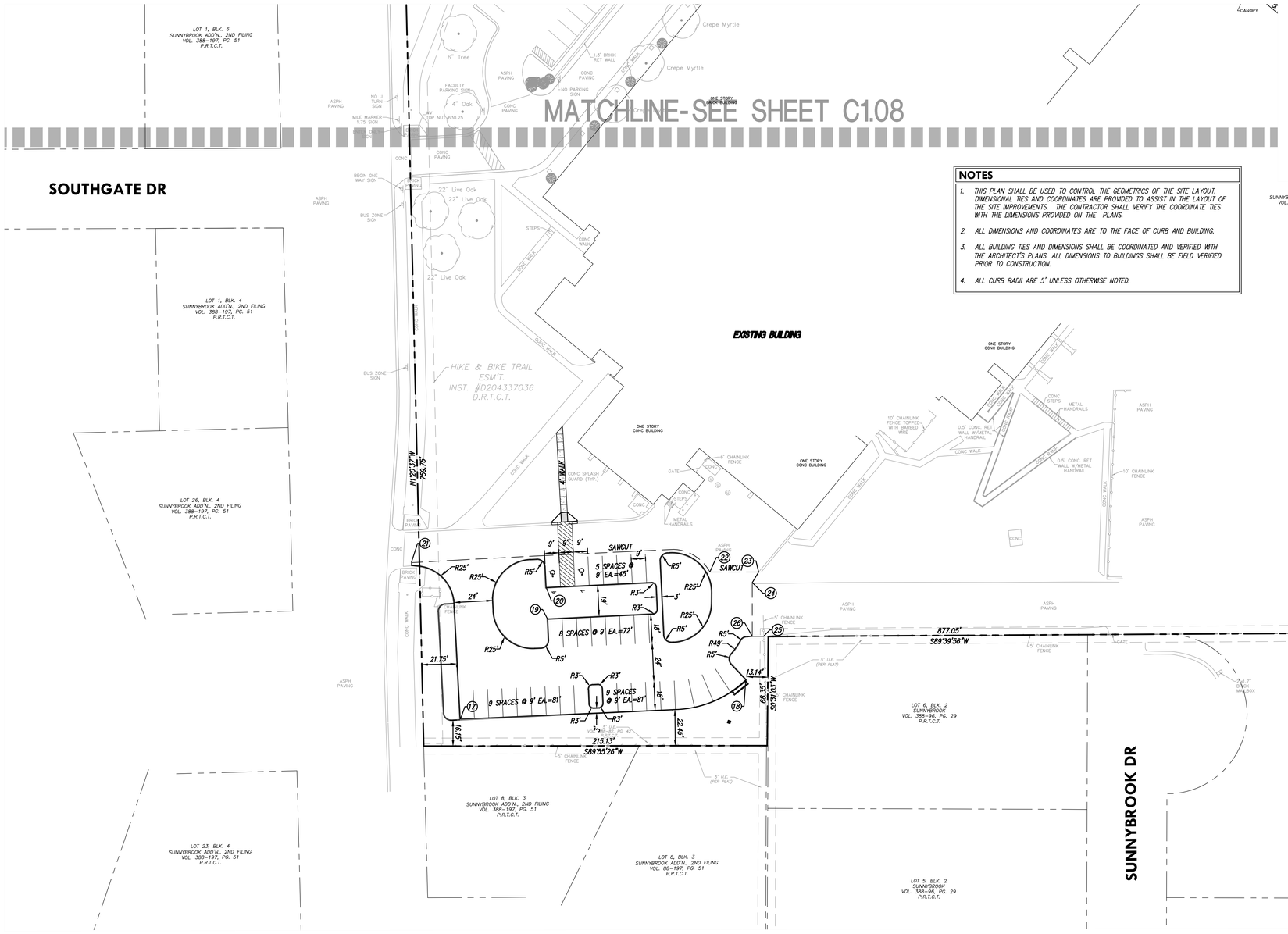

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COORDINATE CONTROL TABLE

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66	7001888.13	2367527.74	EX. WALK

GRAPHIC SCALE
30 0 15 30 60
GRAPHIC SCALE: 1" = 30'

no.	revision	by	date

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Birdville Independent School District
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scale	
horiz	1"=30'
vert	N/A
date	MAY 2019

PHILIP C. VARUGHESE 114594 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
DIMENSIONAL CONTROL PLAN (SECTION B)

tnp project: VLK 18477
sheet: C1.09

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director: JFK	Drawn By: TNP
Designer: VLK	Quality Control: VLK
Proj. Coord.: JD	

PROJECT NO.
1887.00

SHEET TITLE
DIMENSIONAL CONTROL PLAN (SECTION B)

SHEET NO.
C1.09

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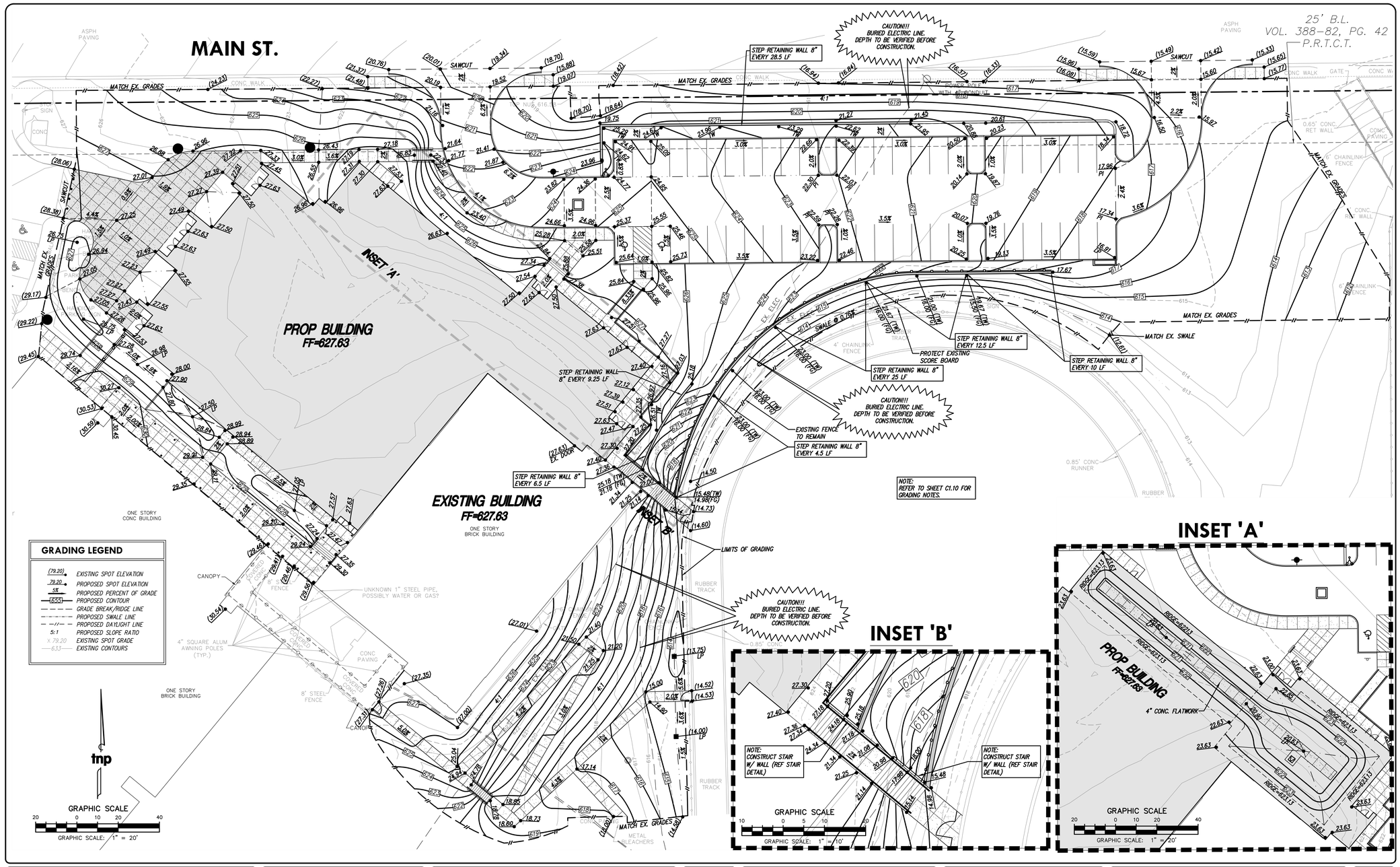

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Birdville Independent School District
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scale horiz	1"=20'
vert	N/A
date	MAY 2019

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
GRADING PLAN (SECTION A)

tnp project VLK 18477
sheet C1.10

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
GRADING PLAN (SECTION A)

SHEET NO.
C1.10

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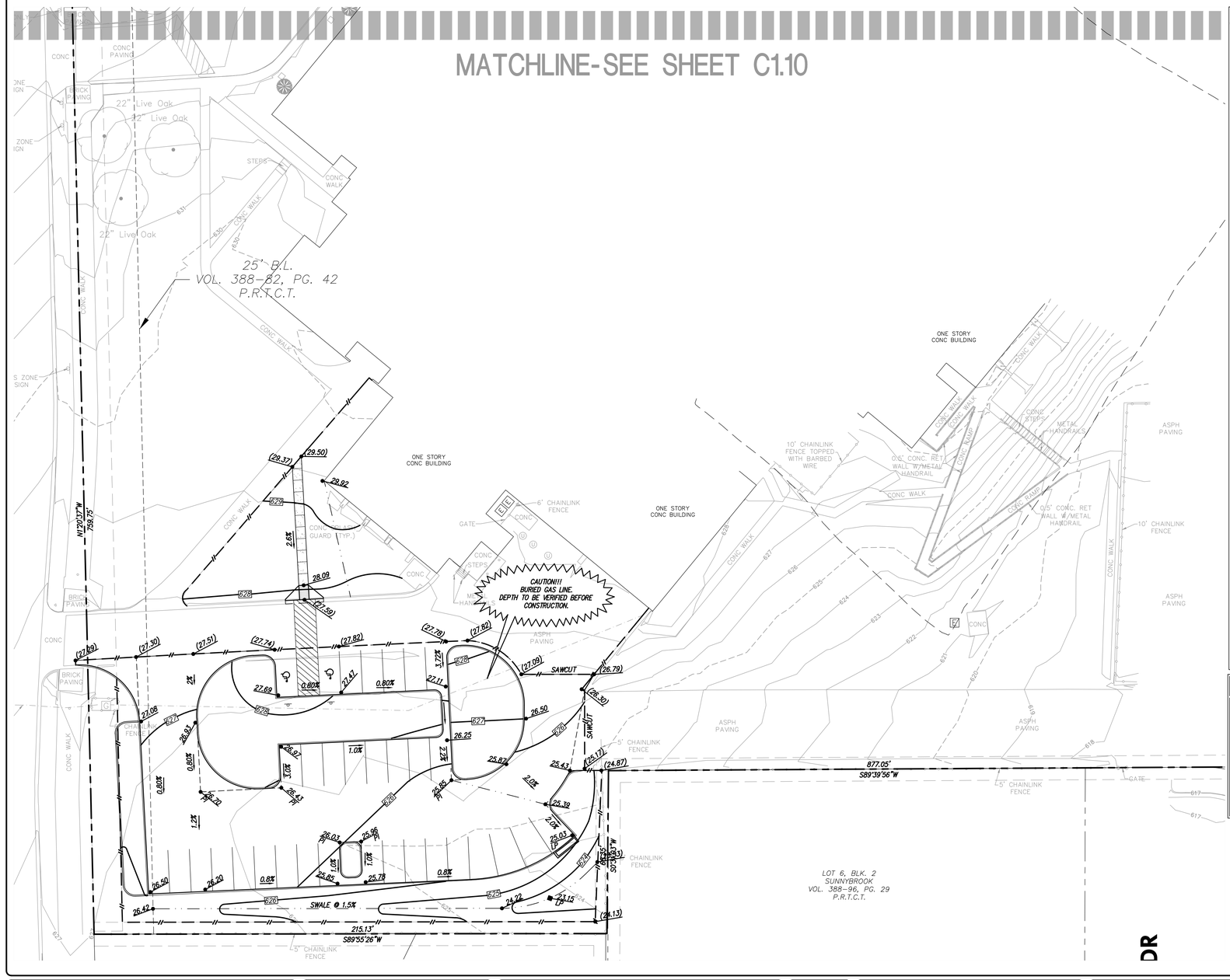

GRADING NOTES

1. THE GRADING OF THE DIFFERENT AREAS SHOWN ON THE SITE SHALL BE COMPACTED IN STRICT ACCORDANCE WITH THE SPECIFICATIONS WHICH SHALL BE CONSIDERED AS PART OF THESE DRAWINGS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING TO THE SUBGRADE OF ALL PAVED AREAS TO ALLOW FOR THE PAVEMENT SECTIONS. CONTRACTOR SHALL GRADE AND COMPACT ALL AREAS UNDER PAVEMENT TO ALLOW FOR THE RESPECTIVE PAVING SECTIONS AND SHALL MAINTAIN THESE FINISHED GRADES AS SHOWN UNTIL FINAL ACCEPTANCE.
3. CONTRACTOR IS REQUIRED TO INSTALL AND MAINTAIN EROSION CONTROL AT ALL TIMES THROUGHOUT THE PROJECT.
4. THE SPREADING AND COMPACTION OF ANY WASTE OR EXCESS MATERIAL NOT SUITABLE FOR FILLING, SUCH AS LARGE ROCK, CONCRETE, TREES, TRASH AND VEGETATION, SHALL BE DISPOSED OFFSITE AT THE CONTRACTOR'S EXPENSE ONLY IN THOSE AREAS APPROVED FOR DISPOSING OF WASTE MATERIAL. THE CONTRACTOR SHALL NOT DISPOSE OF ANY WASTE MATERIAL ON ADJACENT PROPERTY OWNER'S OR OTHER AREAS WHICH ARE NOT LEGALLY ACCEPTED BY THE CITY. NO BURNING OF ANY MATERIAL AT ANY TIME SHALL BE ALLOWED ON THIS SITE UNLESS PERMITTED BY CITY ORDINANCES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SAFETY LAWS IN ACCORDANCE WITH THE CITY, STATE AND FEDERAL LAWS WHICH GOVERN CONSTRUCTION.
6. ALL AREAS TO BE FILLED SHALL BE FILLED IN STRICT ACCORDANCE WITH THE SPECIFICATIONS. ALL VEGETATION, TREES, ROCKS AND OBJECTIONABLE MATERIALS SHALL BE REMOVED BY THE CONTRACTOR FROM THE SURFACE OF WHICH THE FILL IS PLACED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE, SPREAD, WATER AND COMPACT THE FILL IN STRICT ACCORDANCE WITH THE SPECIFICATIONS FOR THIS PROJECT.
7. ALL DRIVE, PARKING AREAS, CUT AND FILL SLOPES, BUILDING PADS AND OPEN SPACE AREAS SHALL BE TRIMMED AND COMPACTED TO THE FINISHED GRADE TO PRODUCE SMOOTH SURFACES AND UNIFORM CROSS-SECTIONS. THE SLOPES OF ALL EXCAVATIONS AND EMBANKMENTS SHALL BE LEFT IN A NEAT AND ORDERLY CONDITION. ALL STONES, ROOTS, TREES, AND OTHER WASTE MATERIAL SHALL BE REMOVED AND DISPOSED OFF SITE. ALL VOIDS SHALL BE FILLED AND ANY SOFT SPOTS OCCURRING ON THIS SITE SHALL BE RECOMPACTED PER THE SPECIFICATIONS. VERIFY ALL GRADES TO AVOID PONDING OF WATER.
8. NO ADJUSTMENT OF GRADES WILL BE PERMITTED TO ANY STRUCTURES, PAVEMENT OR WALK SURFACES. SHOULD THE CONTRACTOR DETERMINE THERE IS A DEFICIENCY OF MATERIAL, THEN ALLOWANCE WILL MADE IN THE CONTRACT TO IMPORT A CLEAN MATERIAL SUITABLE FOR FILLING. THE OWNER'S LABORATORY WILL BE ALLOWED TO TEST AND INSPECT THE BORROW SITE PRIOR TO BEGINNING HIS FILLING OPERATIONS. EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OFFSITE AS REQUIRED.
9. THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT SCOPE OF WORK. THE CONTRACTOR SHALL REMOVE ALL VEGETATION FROM THE LIMITS OF THE PROPOSED IMPROVEMENTS. ALL TREES OUTSIDE THE LIMITS OF CONSTRUCTION SHALL REMAIN UNLESS NOTED ON THE PLANS TO BE REMOVED OR APPROVED BY THE OWNER.
10. ALL WALKS SHALL NOT EXCEED THE MAXIMUM SLOPES ALLOWED BY THE TEXAS ACCECCIBILITY STANDARDS (TAS), UNLESS INDICATED. THE MAXIMUM CROSS SLOPE IS 2% AND THE MAXIMUM DIRECTIONAL SLOPE IS 5%.
11. ALL SPOT GRADES ARE FOR PROPOSED EDGE OF PAVEMENT OR GUTTER ELEVATIONS, UNLESS INDICATED OTHERWISE.
12. ALL AREAS SHALL BE TRIMMED AND COMPACTED TO THE FINISHED GRADE TO PRODUCE SMOOTH SURFACES AND UNIFORM CROSS- SECTIONS. THE SLOPES OF ALL EXCAVATIONS AND EMBANKMENTS SHALL BE LEFT IN A NEAT AND ORDERLY CONDITION. ALL STONES, ROOTS, TREES, AND OTHER WASTE MATERIAL SHALL BE REMOVED AND DISPOSED OFF SITE. ALL VOIDS SHALL BE FILLED AND ANY SOFT SPOTS OCCURRING ON THIS SITE SHALL BE RECOMPACTED PER THE SPECIFICATIONS. VERIFY ALL GRADES TO AVOID PONDING OF WATER.
13. EXISTING DEPRESSED AREAS, WHICH HOLD SURFACE WATER, SHALL BE PUMPED DRY. EXISTING SOGGY MATERIALS SHALL BE EXCAVATED AND REMOVED UNTIL A STABILE DRY MATERIAL IS AVAILABLE. THIS EXPOSED MATERIAL SHALL BE COMPACTED TO 95% STD PROCTOR. ON SITE MATERIAL SHALL BE PLACED IN 8" MAX LIFTS AND COMPACTED TO MAX 95% STD PROCTOR AT OPTIMUM MOISTURE CONTENT.
14. IN THE EVENT THE CONTRACTOR WILL BE STOCKPILING DIRT ON SITE, THE LOCATION OF THE STOCKPILE SHALL BE PLACED IN A LOCATION SO AS NOT TO CAUSE A DIVERSION OR CHANGE OF THE DRAINAGE PATTERNS THAT WILL IMPACT OFFSITE PROPERTIES.
15. ALL AREAS DISTURBED DUE TO CONSTRUCTION OR GRADING SHALL BE STABILIZED WITH SOLID SOD.

GRADING LEGEND

(79.20)	EXISTING SPOT ELEVATION
79.20	PROPOSED SPOT ELEVATION
5%	PROPOSED PERCENT OF GRADE
625	PROPOSED CONTOUR
	GRADE BREAK/RIDGE LINE
	PROPOSED SWALE LINE
	PROPOSED DAYLIGHT LINE
5:1	PROPOSED SLOPE RATIO
X 79.20	EXISTING SPOT GRADE
633	EXISTING CONTOURS

GRAPHIC SCALE
20 0 10 20 40
GRAPHIC SCALE: 1" = 20'

DR

no.	revision	by	date

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Birdville Independent School District
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scale horiz	1"=20'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
REGISTERED PROFESSIONAL ENGINEER
, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
GRADING PLAN (SECTION B)

tnp project VLK 18477
sheet C1.11

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

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Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
GRADING PLAN (SECTION B)

SHEET NO.
C1.11

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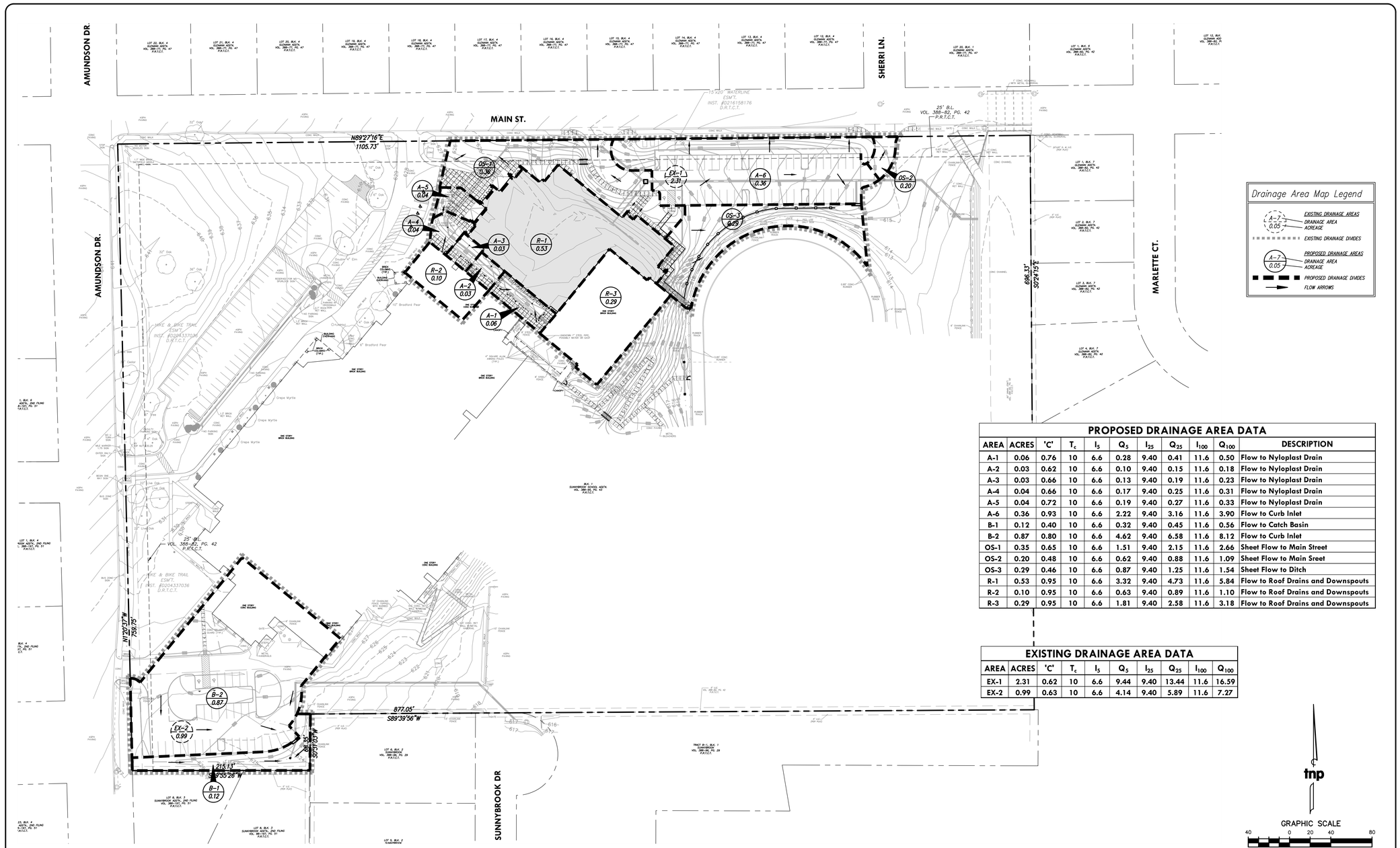

PROPOSED DRAINAGE AREA DATA

AREA	ACRES	'C'	T_c	I_5	Q_5	I_{25}	Q_{25}	I_{100}	Q_{100}	DESCRIPTION
A-1	0.06	0.76	10	6.6	0.28	9.40	0.41	11.6	0.50	Flow to Nyloplast Drain
A-2	0.03	0.62	10	6.6	0.10	9.40	0.15	11.6	0.18	Flow to Nyloplast Drain
A-3	0.03	0.66	10	6.6	0.13	9.40	0.19	11.6	0.23	Flow to Nyloplast Drain
A-4	0.04	0.66	10	6.6	0.17	9.40	0.25	11.6	0.31	Flow to Nyloplast Drain
A-5	0.04	0.72	10	6.6	0.19	9.40	0.27	11.6	0.33	Flow to Nyloplast Drain
A-6	0.36	0.93	10	6.6	2.22	9.40	3.16	11.6	3.90	Flow to Curb Inlet
B-1	0.12	0.40	10	6.6	0.32	9.40	0.45	11.6	0.56	Flow to Catch Basin
B-2	0.87	0.80	10	6.6	4.62	9.40	6.58	11.6	8.12	Flow to Curb Inlet
OS-1	0.35	0.65	10	6.6	1.51	9.40	2.15	11.6	2.66	Sheet Flow to Main Street
OS-2	0.20	0.48	10	6.6	0.62	9.40	0.88	11.6	1.09	Sheet Flow to Main Sreet
OS-3	0.29	0.46	10	6.6	0.87	9.40	1.25	11.6	1.54	Sheet Flow to Ditch
R-1	0.53	0.95	10	6.6	3.32	9.40	4.73	11.6	5.84	Flow to Roof Drains and Downspouts
R-2	0.10	0.95	10	6.6	0.63	9.40	0.89	11.6	1.10	Flow to Roof Drains and Downspouts
R-3	0.29	0.95	10	6.6	1.81	9.40	2.58	11.6	3.18	Flow to Roof Drains and Downspouts

EXISTING DRAINAGE AREA DATA

AREA	ACRES	'C'	T_c	I_5	Q_5	I_{25}	Q_{25}	I_{100}	Q_{100}
EX-1	2.31	0.62	10	6.6	9.44	9.40	13.44	11.6	16.59
EX-2	0.99	0.63	10	6.6	4.14	9.40	5.89	11.6	7.27

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Birdville Independent School District
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scale horiz	1"=40'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
DRAINAGE AREA MAP

tnp project VLK 18477
sheet C1.12

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
DRAINAGE AREA MAP

SHEET NO.
C1.12

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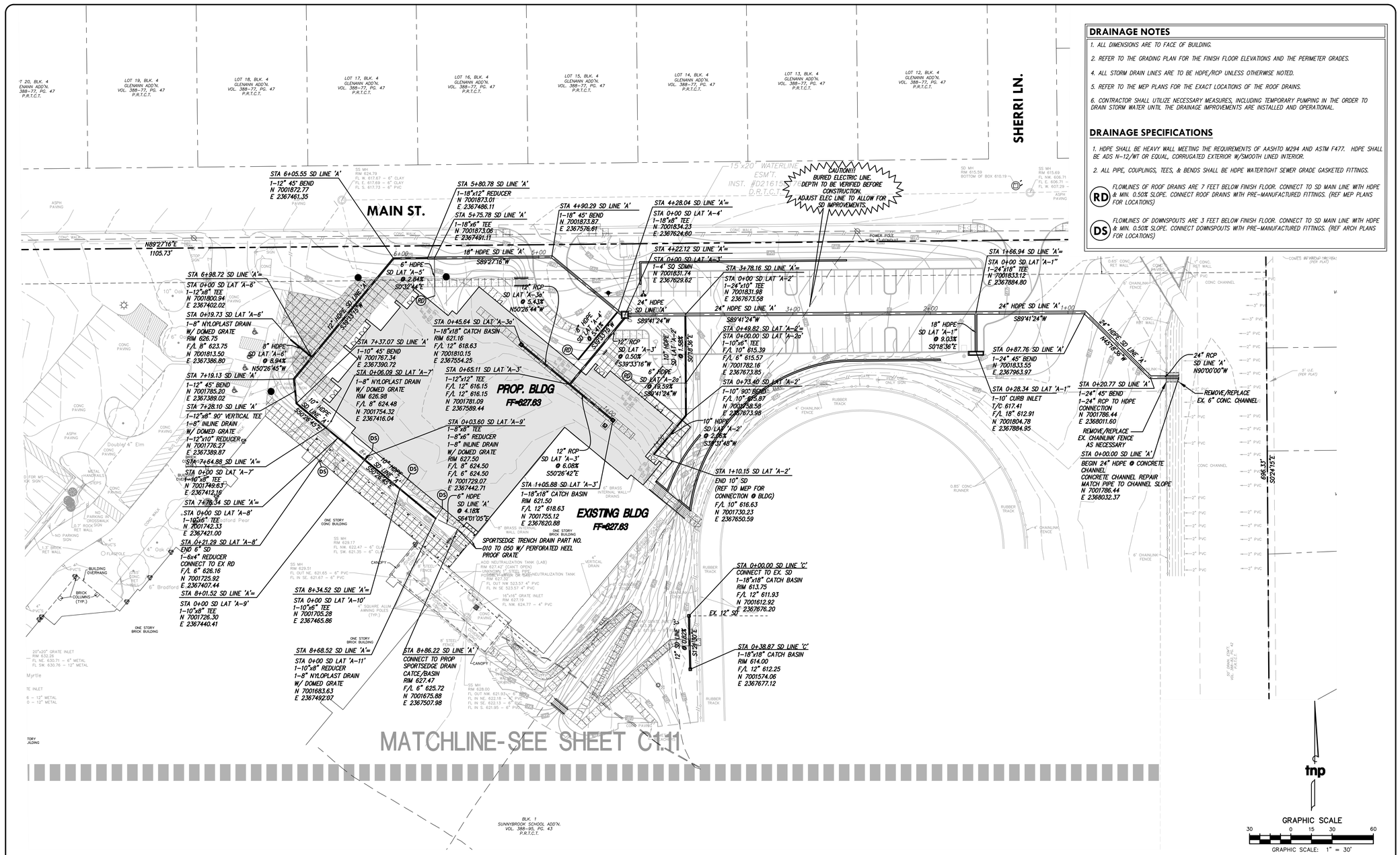

DRAINAGE NOTES

1. ALL DIMENSIONS ARE TO FACE OF BUILDING.
2. REFER TO THE GRADING PLAN FOR THE FINISH FLOOR ELEVATIONS AND THE PERIMETER GRADES.
4. ALL STORM DRAIN LINES ARE TO BE HDPE/RCP UNLESS OTHERWISE NOTED.
5. REFER TO THE MEP PLANS FOR THE EXACT LOCATIONS OF THE ROOF DRAINS.
6. CONTRACTOR SHALL UTILIZE NECESSARY MEASURES, INCLUDING TEMPORARY PUMPING IN THE ORDER TO DRAIN STORM WATER UNTIL THE DRAINAGE IMPROVEMENTS ARE INSTALLED AND OPERATIONAL.

DRAINAGE SPECIFICATIONS

1. HDPE SHALL BE HEAVY WALL MEETING THE REQUIREMENTS OF AASHTO M294 AND ASTM F477. HDPE SHALL BE ADS N-12/WT OR EQUAL, CORRUGATED EXTERIOR W/SMOOTH LINED INTERIOR.
2. ALL PIPE, COUPLINGS, TEES, & BENDS SHALL BE HDPE WATERTIGHT SEWER GRADE GASKETED FITTINGS.

(RD) FLOWLINES OF ROOF DRAINS ARE 7 FEET BELOW FINISH FLOOR. CONNECT TO SD MAIN LINE WITH HDPE & MIN. 0.50% SLOPE. CONNECT ROOF DRAINS WITH PRE-MANUFACTURED FITTINGS. (REF MEP PLANS FOR LOCATIONS)

(DS) FLOWLINES OF DOWNSPOUTS ARE 3 FEET BELOW FINISH FLOOR. CONNECT TO SD MAIN LINE WITH HDPE & MIN. 0.50% SLOPE. CONNECT DOWNSPOUTS WITH PRE-MANUFACTURED FITTINGS. (REF ARCH PLANS FOR LOCATIONS)

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vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
STORM DRAIN PLAN (SECTION A)

tnp project VLK 18477
sheet C1.13

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
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SHEET TITLE
STORM DRAIN PLAN (SECTION A)

SHEET NO.
C1.13

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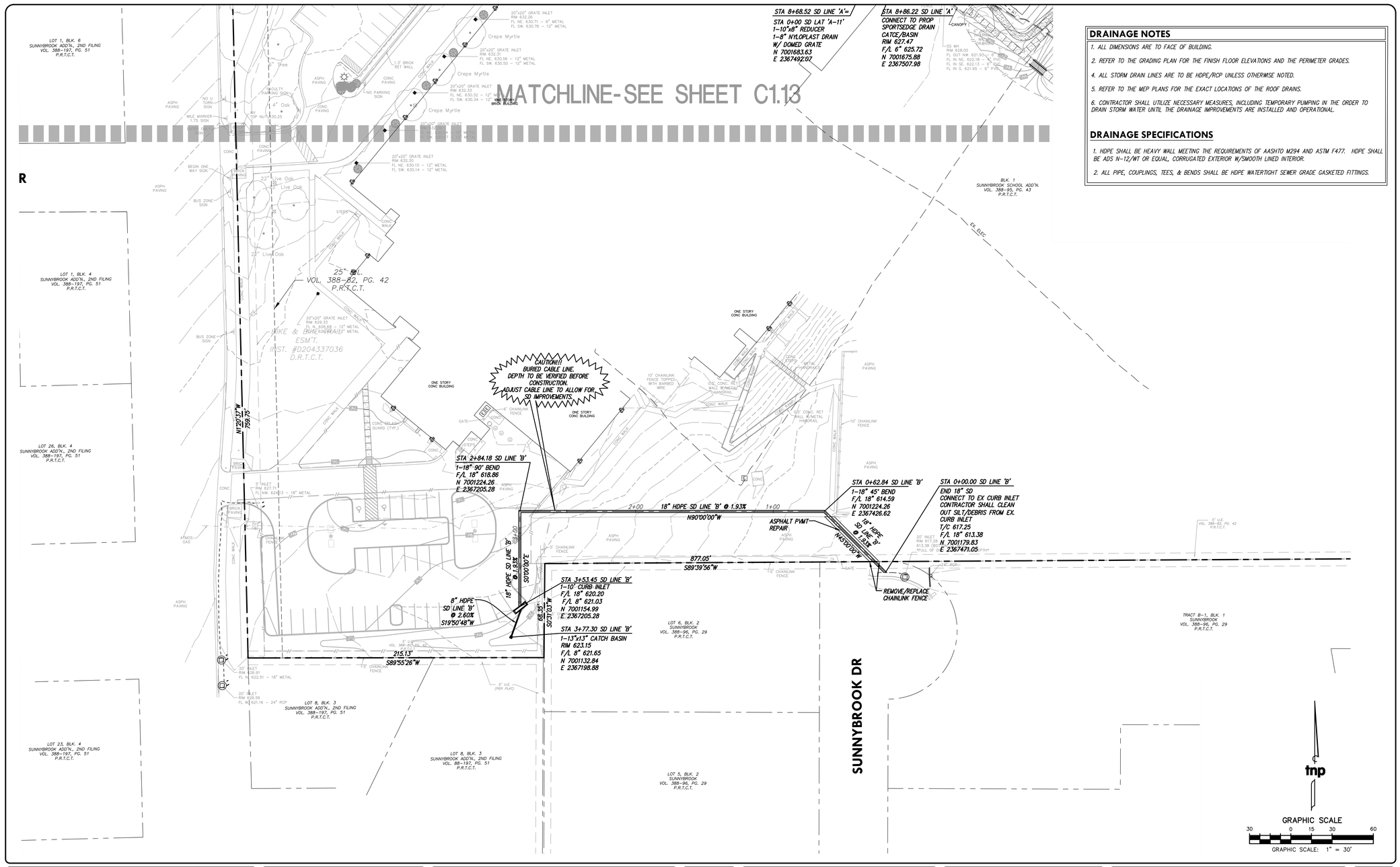

DRAINAGE NOTES

1. ALL DIMENSIONS ARE TO FACE OF BUILDING.
2. REFER TO THE GRADING PLAN FOR THE FINISH FLOOR ELEVATIONS AND THE PERIMETER GRADES.
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DRAINAGE SPECIFICATIONS

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, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
STORM DRAIN PLAN (SECTION B)

tnp project VLK 18477
sheet C1.14

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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REVISIONS

Revision No.

Director	Drawn By
JFK	TNP
Designer	Quality Control
VLK	VLK
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
STORM DRAIN PLAN (SECTION B)

SHEET NO.
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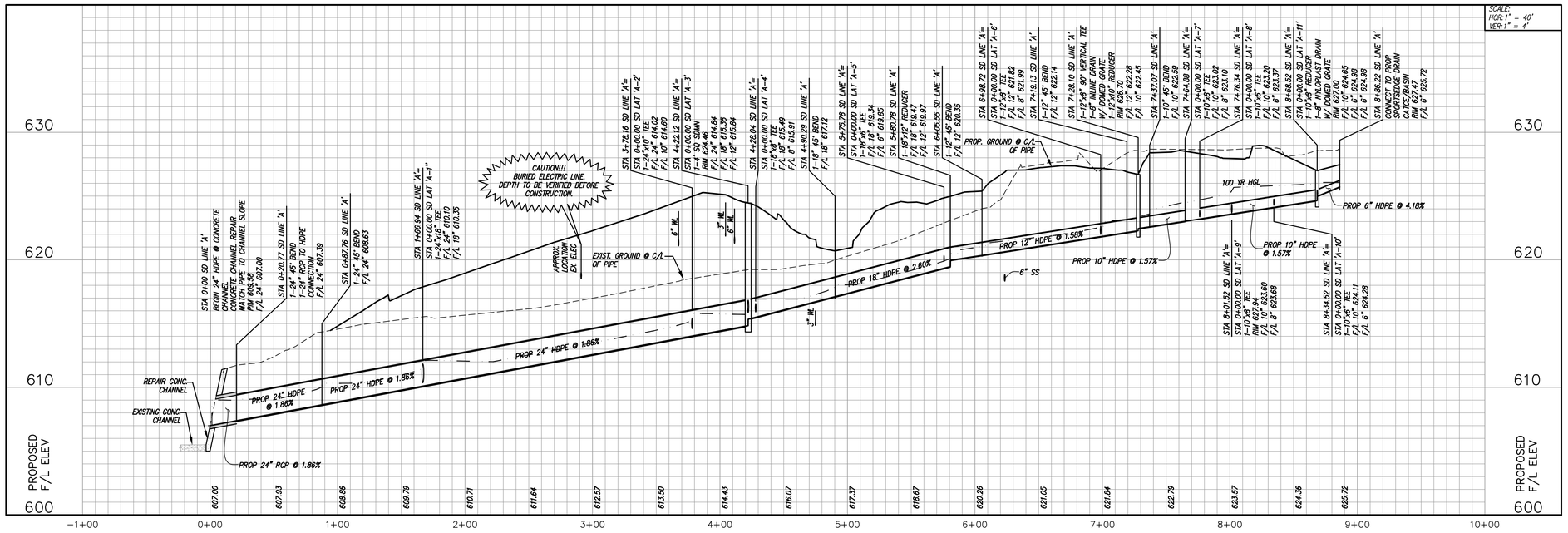

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date MAY 2019

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STATE OF TEXAS
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P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
STORM DRAIN PROFILE

tnp project VLK 18477
sheet C1.15

TNP PROJECT NO. VLK 18477
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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
STORM DRAIN PROFILE

SHEET NO.
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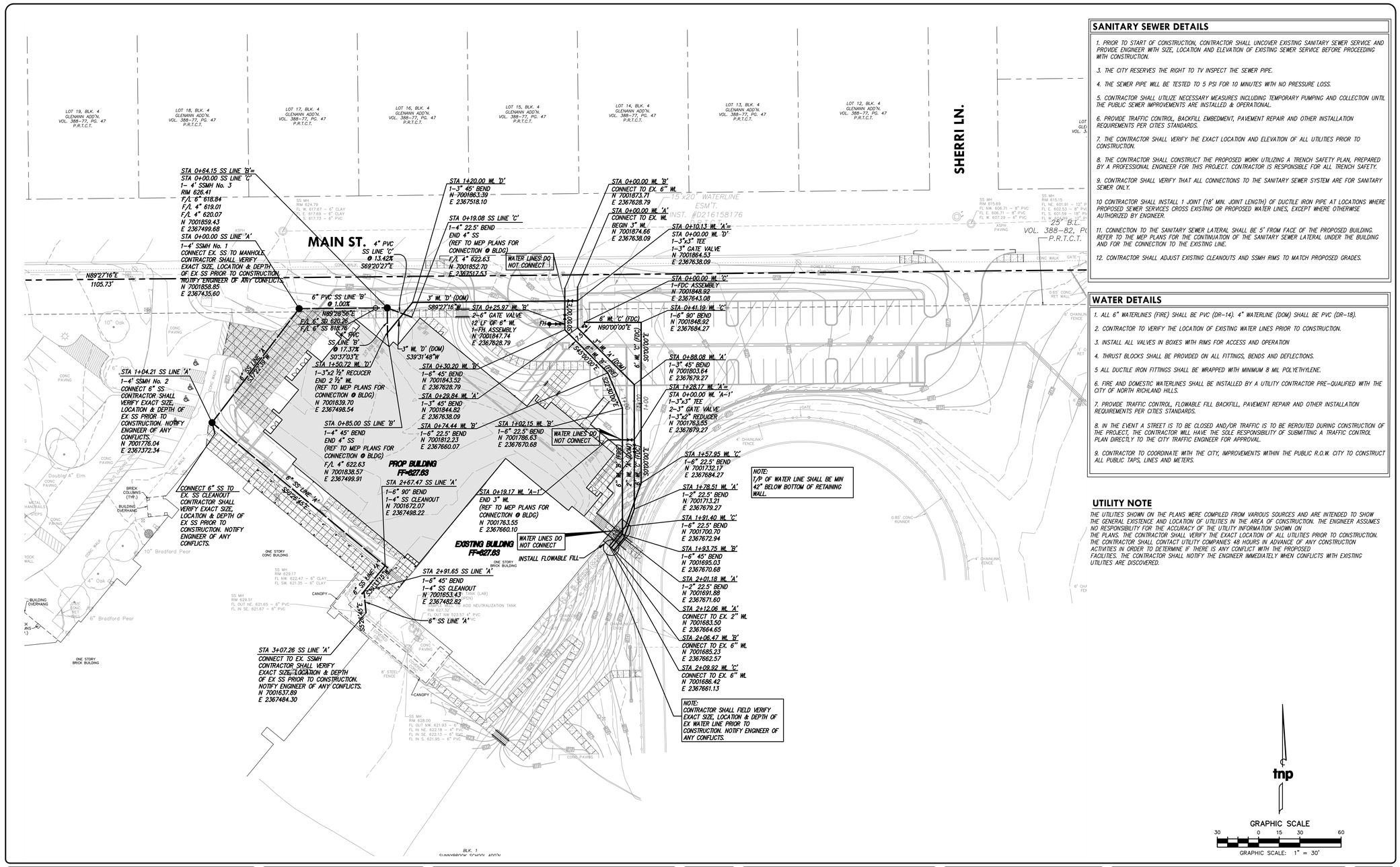

SANITARY SEWER DETAILS

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL UNCOVER EXISTING SANITARY SEWER SERVICE AND PROVIDE ENGINEER WITH SIZE, LOCATION AND ELEVATION OF EXISTING SEWER SERVICE BEFORE PROCEEDING WITH CONSTRUCTION.
3. THE CITY RESERVES THE RIGHT TO TV INSPECT THE SEWER PIPE.
4. THE SEWER PIPE WILL BE TESTED TO 5 PSI FOR 10 MINUTES WITH NO PRESSURE LOSS.
5. CONTRACTOR SHALL UTILIZE NECESSARY MEASURES INCLUDING TEMPORARY PUMPING AND COLLECTION UNTIL THE PUBLIC SEWER IMPROVEMENTS ARE INSTALLED & OPERATIONAL.
6. PROVIDE TRAFFIC CONTROL, BACKFILL EMBEDMENT, PAVEMENT REPAIR AND OTHER INSTALLATION REQUIREMENTS PER CITIES STANDARDS.
7. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WORK UTILIZING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY.
9. CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE FOR SANITARY SEWER ONLY.
10 CONTRACTOR SHALL INSTALL 1 JOINT (18' MIN. JOINT LENGTH) OF DUCTILE IRON PIPE AT LOCATIONS WHERE PROPOSED SEWER SERVICES CROSS EXISTING OR PROPOSED WATER LINES, EXCEPT WHERE OTHERWISE AUTHORIZED BY ENGINEER.
11. CONNECTION TO THE SANITARY SEWER LATERAL SHALL BE 5' FROM FACE OF THE PROPOSED BUILDING. REFER TO THE MEP PLANS FOR THE CONTINUATION OF THE SANITARY SEWER LATERAL UNDER THE BUILDING AND FOR THE CONNECTION TO THE EXISTING LINE.
12. CONTRACTOR SHALL ADJUST EXISTING CLEANOUTS AND SSMH RIMS TO MATCH PROPOSED GRADES.

WATER DETAILS

1. ALL 6" WATERLINES (FIRE) SHALL BE PVC (DR-14). 4" WATERLINE (DOM) SHALL BE PVC (DR-18).
2. CONTRACTOR TO VERIFY THE LOCATION OF EXISTING WATER LINES PRIOR TO CONSTRUCTION.
3. INSTALL ALL VALVES IN BOXES WITH RIMS FOR ACCESS AND OPERATION
4. THRUST BLOCKS SHALL BE PROVIDED ON ALL FITTINGS, BENDS AND DEFLECTIONS.
5 ALL DUCTILE IRON FITTINGS SHALL BE WRAPPED WITH MINIMUM 8 MIL POLYETHYLENE.
6. FIRE AND DOMESTIC WATERLINES SHALL BE INSTALLED BY A UTILITY CONTRACTOR PRE-QUALIFIED WITH THE CITY OF NORTH RICHLAND HILLS.
7. PROVIDE TRAFFIC CONTROL, FLOWABLE FILL BACKFILL, PAVEMENT REPAIR AND OTHER INSTALLATION REQUIREMENTS PER CITIES STANDARDS.
8. IN THE EVENT A STREET IS TO BE CLOSED AND/OR TRAFFIC IS TO BE REROUTED DURING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR WILL HAVE THE SOLE RESPONSIBILITY OF SUBMITTING A TRAFFIC CONTROL PLAN DIRECTLY TO THE CITY TRAFFIC ENGINEER FOR APPROVAL.
9. CONTRACTOR TO COORDINATE WITH THE CITY, IMPROVEMENTS WITHIN THE PUBLIC R.O.W. CITY TO CONSTRUCT ALL PUBLIC TAPS, LINES AND METERS.

UTILITY NOTE

THE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL EXISTENCE AND LOCATION OF UTILITIES IN THE AREA OF CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES IN ORDER TO DETERMINE IF THERE IS ANY CONFLICT WITH THE PROPOSED FACILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS WITH EXISTING UTILITIES ARE DISCOVERED.

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vert	N/A
date	MAY 2019

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STATE OF TEXAS
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114594
LICENSED PROFESSIONAL ENGINEER
, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
WATER & SANITARY SEWER PLAN

tnp project VLK 18477
sheet C1.16

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
WATER & SANITARY SEWER PLAN

SHEET NO.
C1.16

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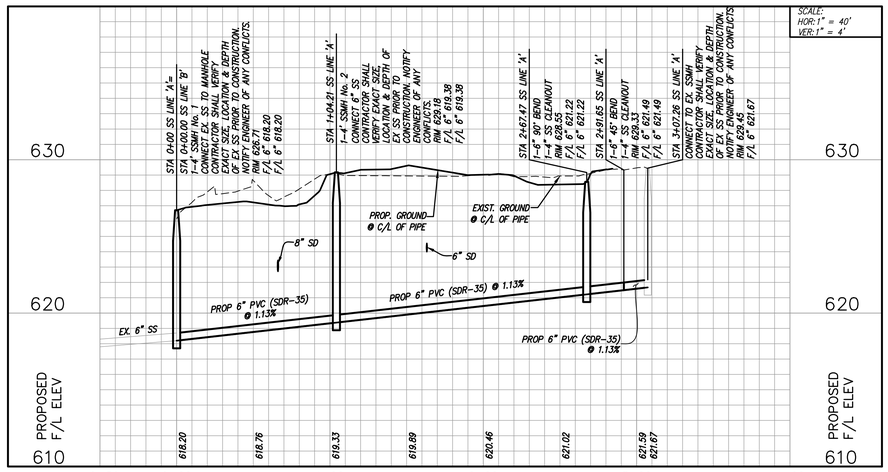

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scale	
horiz	1"=40'
vert	1"=4'
date	MAY 2019

STATE OF TEXAS
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114594
LICENSED PROFESSIONAL ENGINEER
, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
SANITARY SEWER PROFILE

tnp project	
VLK 18477	
sheet	C1.17

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

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JFK	TNP
Designer	Quality Control
VLK	VLK
Proj. Coord.	
JD	

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SHEET TITLE
SANITARY SEWER PROFILE

SHEET NO.
C1.17

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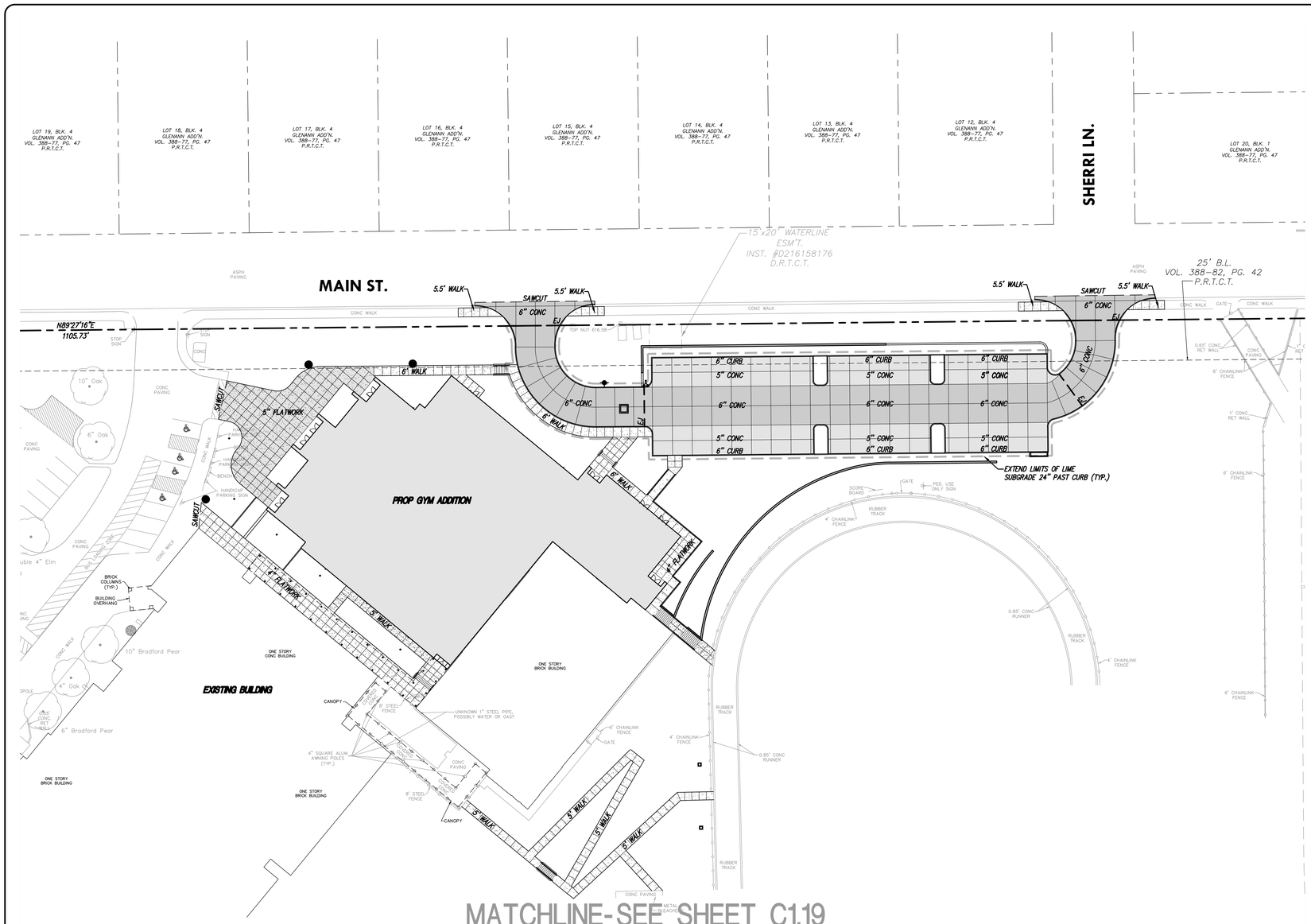

PAVING NOTES

1. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. MISC. CONCRETE FLATWORK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
2. CONCRETE PAVING SHALL BE PLACED ON 6" CEM-LIME STABILIZED SUBGRADE USING 7% (BY DRY SOIL UNIT WEIGHT) OF CEM-LIME AS MANUFACTURED BY MARTIN MARIETTA. RECOMPACT SUBGRADE TO AT LEAST 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) AND WITHIN 0 TO 4 PERCENTAGE POINTS ABOVE OPTIMUM MOISTURE CONTENT.
3. ALL CONCRETE SAWCUT JOINTS SHALL BE SPACED AT 12' MAXIMUM CENTERS EACH WAY. SAWCUTTING SHALL BE ACCOMPLISHED WITHIN 4 TO 12 HOURS OF PLACING CONCRETE PAVEMENT. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR LIGHTING, EQUIPMENT AND LABOR TO MEET THE SAWCUT SPECIFICATIONS. NO TOLERANCE IS PERMITTED IN THE SAWCUTTING TIME.
4. CONTRACTOR SHALL TAKE NOTE OF DIFFERENT TYPES OF EDGE OF PAVEMENTS TO BE USED ON THIS PROJECT.
5. CONCRETE SHALL BE PLACED USING A WALK BEHIND SCREED MACHINE (MAGIC SCREED). IN ADDITION, A BACKPACK VIBRATOR SHALL BE USED. A MINIMUM OF TWO (2) SCREED MACHINES AND BACKPACK VIBRATORS SHALL BE PRESENT DURING ALL CONCRETE POURS. CONTRACTOR SHALL USE A HAND-HELD MULE FOR RADIUS RETURNS AND ISLANDS.
6. ALL TRAFFIC CONTROL DEVICES AND PROCEDURES SHALL CONFORM TO THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
7. CONTRACTOR IS RESPONSIBLE FOR REMOVING DIRT, MUD, AND SPOILS TRACKED ONTO PUBLIC ROADS RESULTING FROM CONSTRUCTION ACTIVITIES.
8. CONTRACTOR SHALL VERIFY SLEEVE SIZE AND LOCATIONS WITH IRRIGATION PLANS AND MEP PLANS
9. CONTRACTOR SHALL STAMP CURBS INDICATING SIZE, LOCATION, AND TYPE OF SLEEVE.

NOTE:

CONTRACTOR IS RESPONSIBLE FOR REMOVING DIRT, MUD AND SPOILS TRACKED ONTO PUBLIC ROADS RESULTING FROM CONSTRUCTION ACTIVITIES. SEE EROSION CONTROL PLANS FOR REQUIREMENTS TO INSTALL A WHEEL-WASH STATION AT THE CONSTRUCTION EXIT.

LEGEND

- 5" CONCRETE PAVEMENT
- 6" CONCRETE PAVEMENT
- 4" CONCRETE FLATWORK
- 5" CONCRETE FLATWORK
- SAWED DUMMY JOINT
- EJ — EXPANSION JOINT

GRAPHIC SCALE
30 0 15 30 60
GRAPHIC SCALE: 1" = 30'

no.	revision	by	date

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scale horiz	1"=30'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019 , P.E.

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
PAVING PLAN (SECTION A)

tnp project VLK 18477
sheet C1.18

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
PAVING PLAN (SECTION A)

SHEET NO.
C1.18

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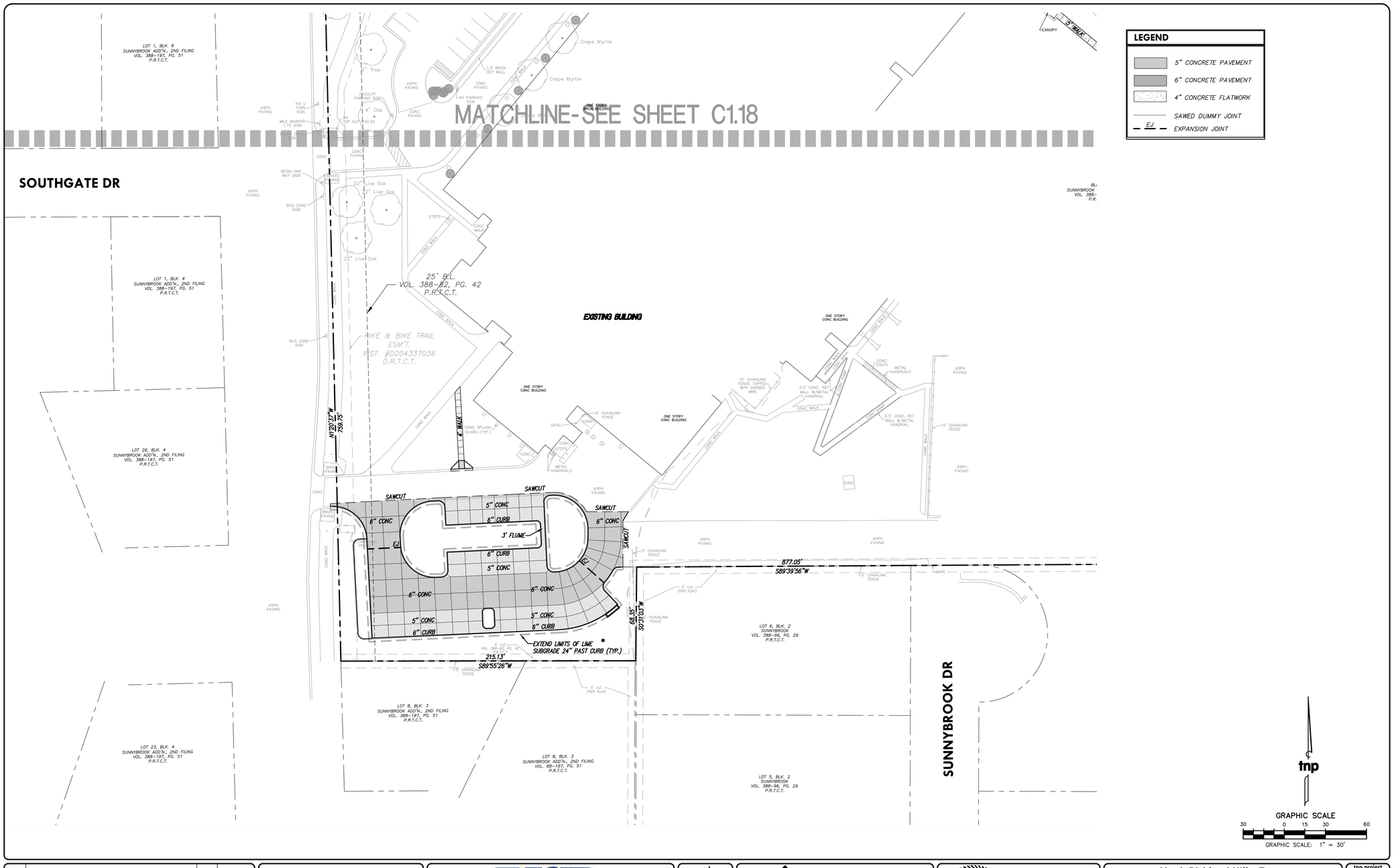

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scale horiz	1"=30'
vert	N/A
date	MAY 2019

tnp

PHILIP C. VARUGHESE 114594 LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
PAVING PLAN (SECTION B)

tnp project	VLK 18477
sheet	C1.19

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
PAVING PLAN (SECTION B)

SHEET NO.
C1.19

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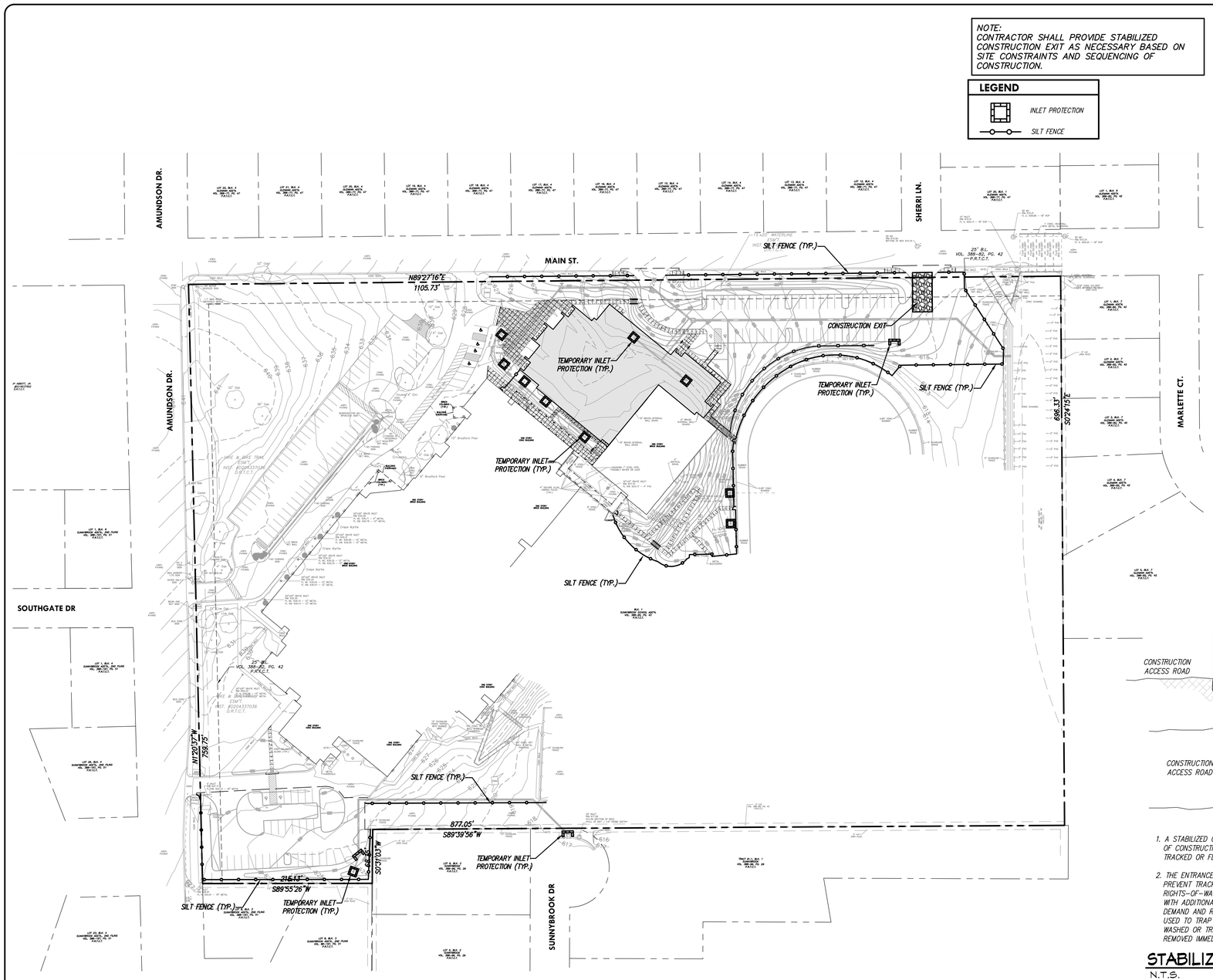
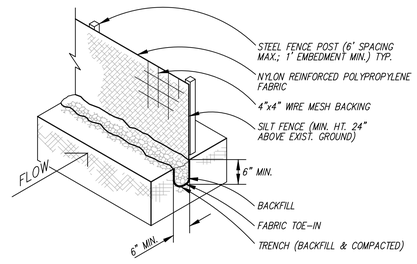
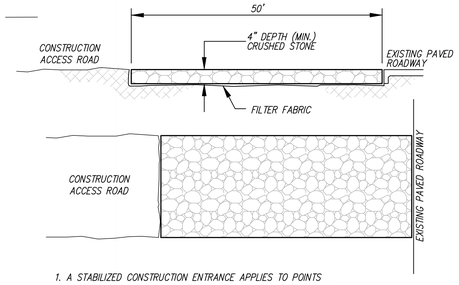


1. SILT FENCE MAY BE USED WHERE THE GROUND SLOPES ACROSS A DITCH OR SWALE.
2. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. THE POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
3. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF THE FLOW.
4. THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
5. THE SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST. ALTERNATIVELY, SILT FENCE SHALL BE FASTENED TO WOVEN WIRE WHICH IS FASTENED TO THE STEEL POST. THE ENDS OF FABRIC SHALL OVERLAP THREE FEET.
6. INSPECTION SHALL BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
7. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO THAT NATURAL DRAINAGE IS NOT BLOCKED OR IMPEDED.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT A SITE APPROVED BY THE OWNER AND IN SUCH A MANNER AS TO PREVENT ADDITIONAL SILTATION.
9. CONTRACTOR TO MAINTAIN SILT FENCING AND ALL OTHER EROSION CONTROL MEASURES AT ALL TIMES DURING THE DURATION OF THE PROJECT.
10. THE SILT FENCE LOCATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL INSTALL SILT FENCE AS NECESSARY TO PRESERVE AND PROTECT EXISTING TREES, FENCES, AND VEGETATION ALONG PROPERTY LINES.
11. CONTRACTOR SHALL STAKE THE PROPERTY LINE BEFORE SETTING SILT FENCE



SILT FENCE
N.T.S.



1. A STABILIZED CONSTRUCTION ENTRANCE APPLIES TO POINTS OF CONSTRUCTION INGRESS AND EGRESS WHERE SEDIMENT MAY TRACKED OR FLOW OFF THE CONSTRUCTION SITE.
2. THE ENTRANCE SHALL BE MAINTAINED IN CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION EXIT
N.T.S.

tnp
GRAPHIC SCALE
60 0 30 60 120
GRAPHIC SCALE: 1" = 60'

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scale	
horiz	1"=60'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS — PHILIP C. VARUGHESE — 114594 — LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
EROSION CONTROL PLAN

tnp project: VLK 18477
sheet: C1.20

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director: JFK	Drawn By: TNP
Designer: VLK	Quality Control: VLK
Proj. Coord.: JD	

PROJECT NO.
1887.00

SHEET TITLE
EROSION CONTROL PLAN

SHEET NO.
C1.20

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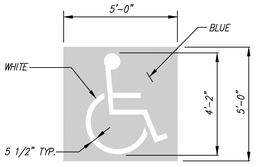

PAINTED HANDICAP PARKING LOGO

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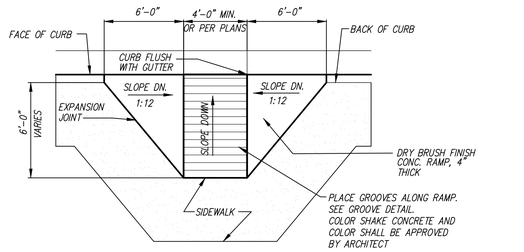

SURFACE REFLECTIVE VALUE & TEXTURE SHALL COMPLY WITH TEXAS ACCESSIBILITY STANDARDS (TAS) 4.7.4 AND 4.29.2

TYPE 'A'

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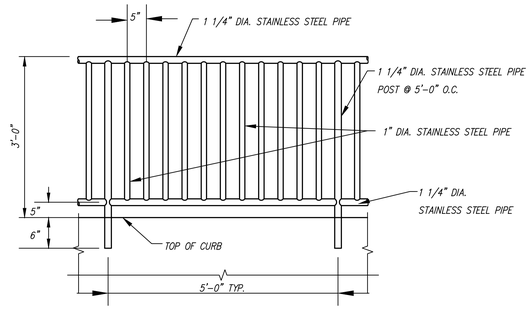

PEDESTRIAN GUARD RAIL DETAIL

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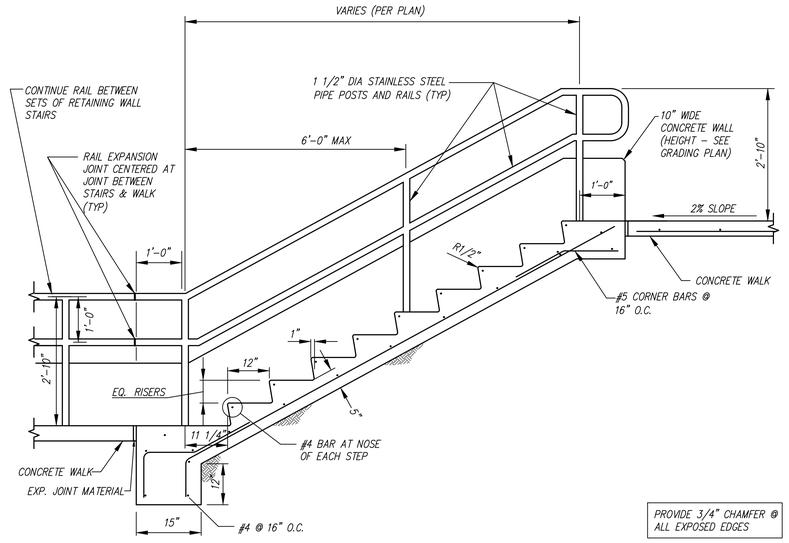
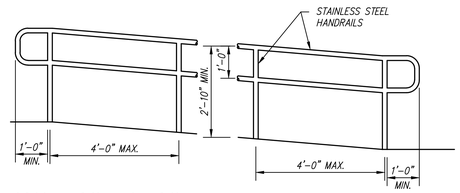


PROVIDE 3/4" CHAMFER @ ALL EXPOSED EDGES

STEP ELEVATION (EAST SIDE OF BUILDING)

N.T.S.



HANDRAIL DETAILS

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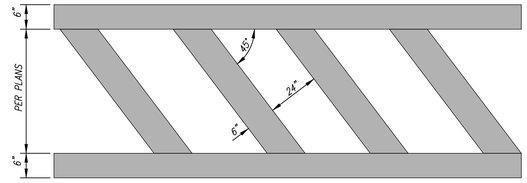

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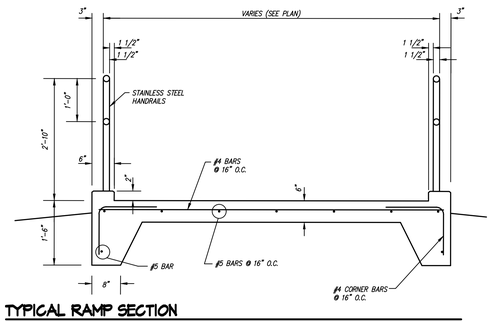

TYPICAL RAMP SECTION

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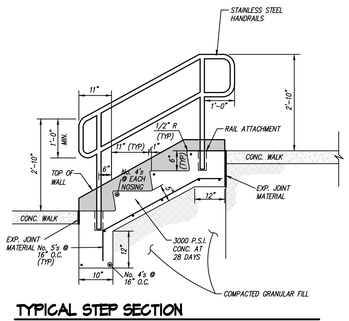

TYPICAL STEP SECTION

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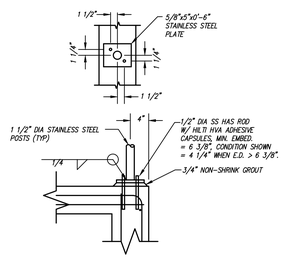

RAIL ATTACHMENT DETAIL

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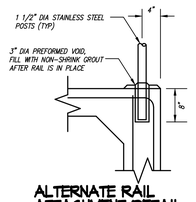

ALTERNATE RAIL ATTACHMENT DETAIL

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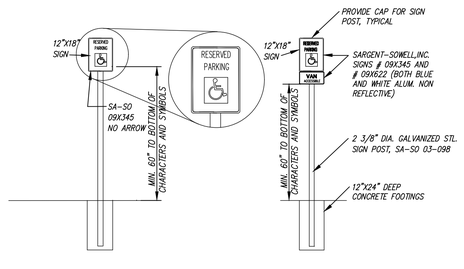

TRAFFIC SIGN DETAILS

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vert
N/A
date
MAY 2019

tnp

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PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
. P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
SITE DETAILS (1 OF 2)

tnp project VLK 18477
sheet C1.21

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK | Drawn By TNP
Designer VLK | Quality Control VLK
Proj. Coord. JD

PROJECT NO.
1887.00

SHEET TITLE
SITE DETAILS (1 OF 2)

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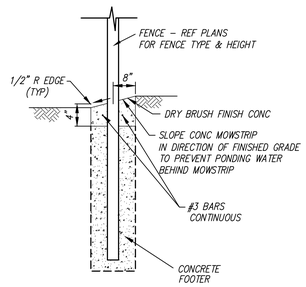

FENCE W/ MOWSTRIP

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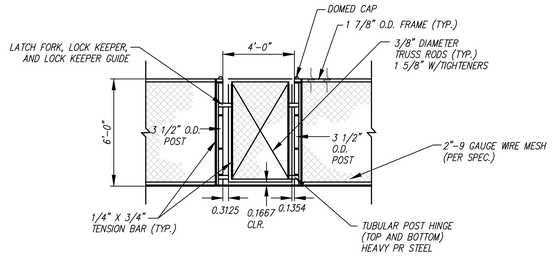

4' WIDE CHAIN LINK GATE

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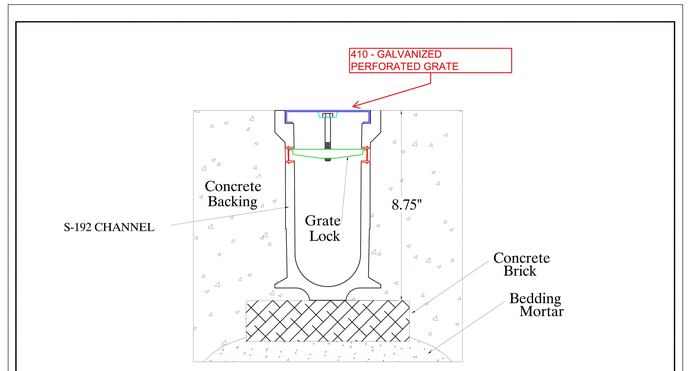

Section SportsEdge PRO-S Channel- Flush Curb Both Sides
No Scale

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SportsEdge
A Division of ABT, Inc.
P.O. Box 837 * 250 Murdock Road
Troutman, NC 28166
800.334.6057

TITLE:	SportsEdge PRO-S Channel Drain		
DRAWN BY:	CCC	CHECKED BY:	DRAWING NUMBER: S-192/420.4
SCALE:	NONE	DATE: 8-17-07	A-

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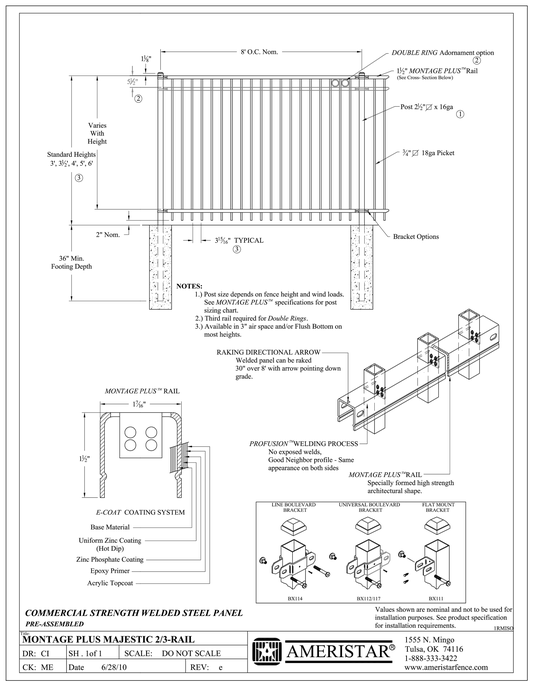
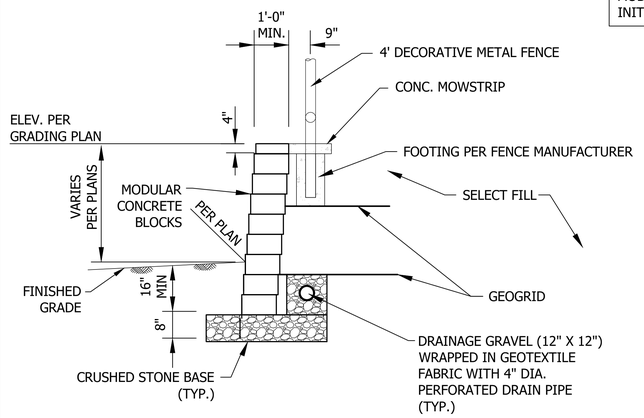
SPORTSEDGE TRENCH DRAIN

N.T.S.



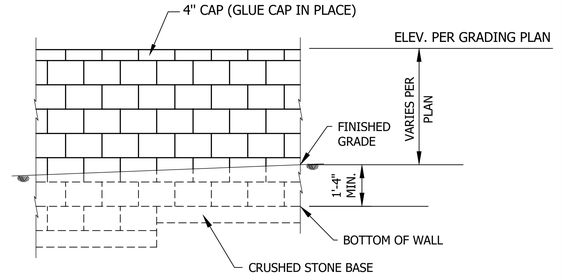
DECORATIVE METAL FENCE (2 RAIL TOP, 1 RAIL BOTTOM)

NOTE:
CONTRACTOR TO PROVIDE PLANS DESIGNED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS FOR ALL MODULAR RETAINING WALLS FOR REVIEW PRIOR TO INITIATING CONSTRUCTION OF WALLS.



TYPICAL MODULAR WALL SECTION

N.T.S.



TYPICAL MODULAR WALL ELEVATION

N.T.S.

no.	revision	by	date

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Birdville Independent School District
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scale	
horiz	N/A
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
REGISTERED PROFESSIONAL ENGINEER
Date: 05/08/2019 , P.E.

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
SITE DETAILS (2 OF 2)

tnp project VLK 18477
sheet C1.22

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
SITE DETAILS (2 OF 2)

SHEET NO.
C1.22

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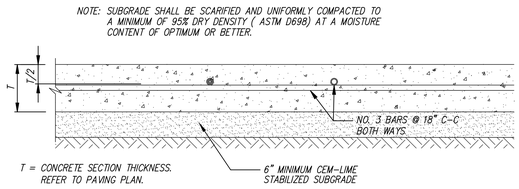
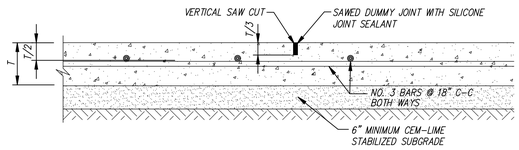


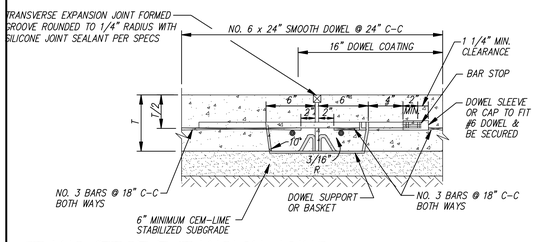
TYPICAL CONCRETE SECTION

N.T.S.



SAWED DUMMY JOINT

N.T.S.



TRANSVERSE EXPANSION JOINT

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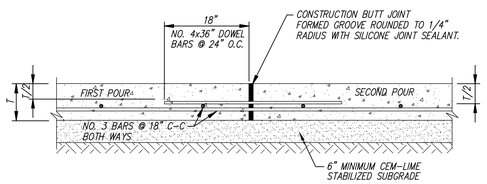

CONSTRUCTION BUTT JOINT

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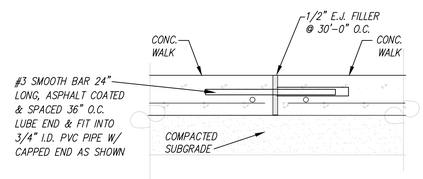

TYPICAL CONC. WALK EXPANSION JOINT

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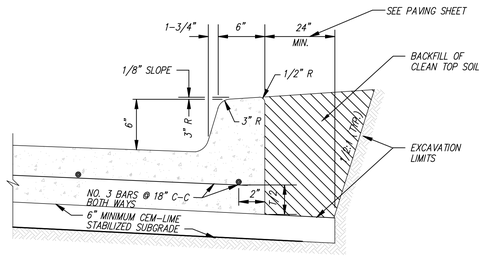
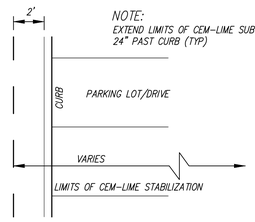


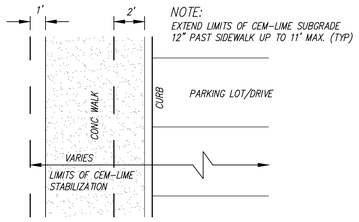
MONOLITHIC CURB

N.T.S.



LIMITS OF LIME ADJACENT TO BACK OF CURB

N.T.S.



LIMITS OF LIME ADJACENT TO SIDEWALK & BACK OF CURB

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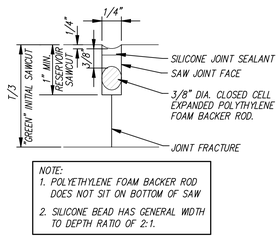

SAWED DUMMY JOINT SEAL

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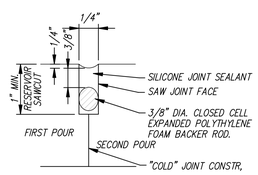

CONSTRUCTION BUTT JOINT SEAL

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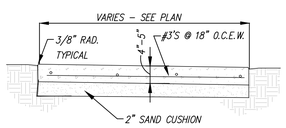
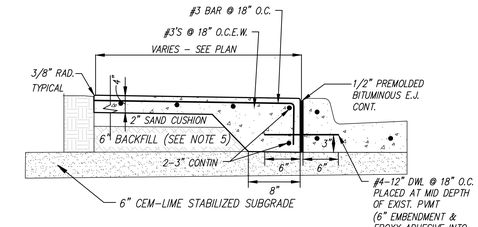


TYPICAL SIDEWALK/FLATWORK

N.T.S.



SIDEWALK W/ THICKENED EDGE (ADJACENT TO BACK OF CURB)

N.T.S.

SIDEWALK GENERAL NOTES:

1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS UNLESS SUPERCEDED BY CITY STANDARD SPECIFICATIONS.

2. REINFORCED CONCRETE SIDEWALK SHALL BE A MINIMUM 4 FEET WIDE, A MINIMUM OF 4 INCHES THICK AND SHALL BE CLASS "A" CONTAINING A MINIMUM OF 5 SACKS OF TYPE I CEMENT PER YARD. AGGREGATE SHALL CONSIST OF A MINIMUM OF 50% CRUSHED STONE. ALL CONCRETE PLACED SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% ± 1% AIR CONTENT.

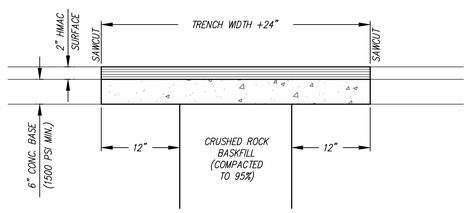
3. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/8 INCH.

4. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615 GRADE 60. REINFORCING STEEL SHALL BE PLACED WITH A MINIMUM OF 1-1/2" OF COVER FOR #5 BARS OR SMALLER. WHERE REINFORCING BARS ARE SPLICED. A 30 DIAMETER LAP SHALL BE USED.

5. SUBGRADE SHALL CONSIST OF NATIVE SOIL COMPACTED TO A DENSITY NOT LESS THAN 95% ASTM D698 WITHIN 0 TO +4% OF OPTIMUM.

6. SIDEWALKS SHALL BE FINISHED BY LIGHTLY BROOMING SURFACE TRANSVERSELY TO DIRECTION OF MAIN TRAFFIC OR WHERE ADJACENT SIDEWALKS DIFFER FROM FROM THIS STANDARD, NEW SIDEWALKS SHALL CONFORM TO ADJACENT SIDEWALK (E.G. EXPOSED AGGREGATE).

7. AN APPROVED WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO THE SURFACE OF THE PAVEMENT AS SOON AS IT HAS BEEN PLACED AND FINISHED.



ASPHALT PAVEMENT REPAIR

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horiz	N/A
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
PAVING DETAILS

tnp project	
VLK 18477	
sheet	C1.23

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
PAVING DETAILS

SHEET NO.
C1.23

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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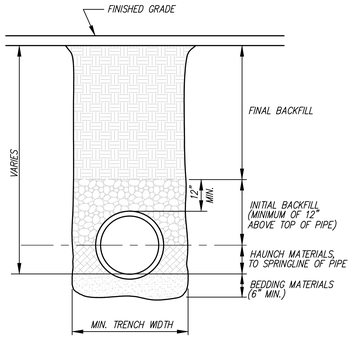


NOTES:

1. BEDDING MATERIALS SHALL BE CLASS IB (1/2" – 3/4" CRUSHED STONE) MATERIALS AS DEFINED IN TABLE 1, ASTM D–2321. INSTALLATION OF THESE MATERIALS SHALL BE AS PER TABLE 2.
2. HAUNCH MATERIALS SHALL BE CLASS IB (1/2" – 3/4" CRUSHED STONE) MATERIALS AS REQUIRED ABOVE, RESTRICTED AS PER D–2321, TABLE 2.
3. INITIAL BACKFILL MATERIALS SHALL BE CLASS IB (1/2" – 3/4" CRUSHED STONE) MATERIALS AS REQUIRED ABOVE, RESTRICTED AS PER D–2321, TABLE 2.
4. MIMIMUM TRENCH WIDTHS (AS REQUIRED BY ASTM D–2321) ARE AS FOLLOWS

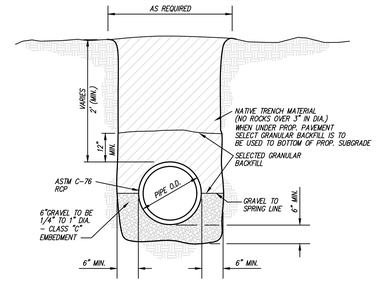
PIPE DIAMETER	MIN. TRENCH WIDTH
8"	25"
10"	27"
12"	30"
15"	34"
18"	38"
24"	48"
30"	52"
36"	65"

* A LESSER TRENCH WIDTH WILL BE PERMITTED ONLY WHERE IT IS DETERMINED THE CONTRACTOR CAN UTILIZE EQUIPMENT CAPABLE OF MEETING THE REQUIRED INSTALLED DENSITIES.

5. WHERE THE TRENCH BOTTOM IS UNSTABLE, CONTRACTOR SHALL EXCAVATE TO A DEPTH AS REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIALS; AS AN ALTERNATIVE. TRENCH BOTTOM MAY BE STABILIZED USING A GEOFABRIC.
6. FINAL BACKFILL UNDER PAVED AREAS SHALL BE CLASS II OR III MATERIALS AS DEFINED IN TABLE 1, ASTM D–2321 TO WITHIN 18" OF FINISHED GRADE.
7. FINAL BACKFILL OUTSIDE PAVED AREAS SHALL BE SELECT MATERIALS TO FINISHED GRADE.

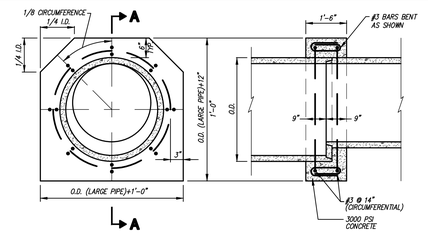
STORM DRAIN PIPE (PE OR PVC) EMBEDMENT & TRENCH BACKFILL DETAILS

N.T.S.



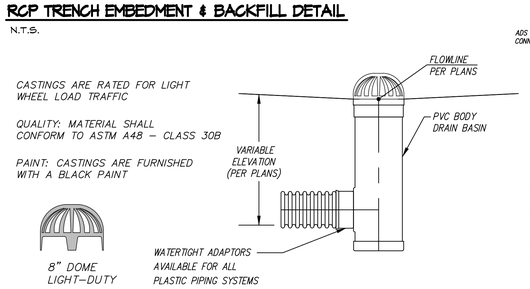
RCP TRENCH EMBEDMENT & BACKFILL DETAIL

N.T.S.



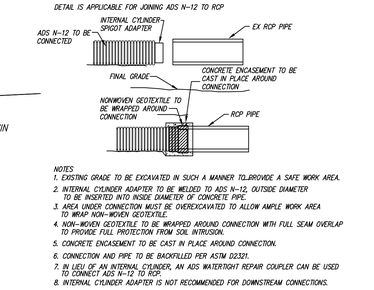
CONCRETE COLLAR

N.T.S.



8" NYLOPLAST DRAIN BASIN DETAIL

N.T.S.

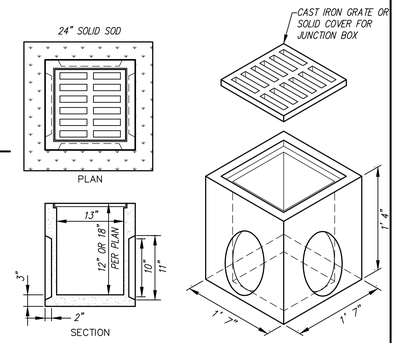


NOTES

1. EXISTING GRADE TO BE EXCAVATED IN SUCH A MANNER TO PROVIDE A SAFE WORK AREA.
2. INTERNAL CYLINDER ADAPTER TO BE WELDED TO ADS N–12, OUTSIDE DIAMETER TO BE INSERTED INTO INSIDE DIAMETER OF CONCRETE PIPE.
3. AREA UNDER CONNECTION MUST BE OVEREXCAVATED TO ALLOW AMPLE WORK AREA TO WRAP NON–WOVEN GEOTEXTILE.
4. NON–WOVEN GEOTEXTILE TO BE WRAPPED AROUND CONNECTION WITH FULL SEAM OVERLAP TO PROVIDE FULL PROTECTION FROM SOIL INTRUSION.
5. CONCRETE ENCASEMENT TO BE CAST IN PLACE AROUND CONNECTION.
6. CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D2321.
7. IN LIEU OF AN INTERNAL CYLINDER, AN ADS WATERTIGHT REPAIR COUPLER CAN BE USED TO CONNECT ADS N–12 TO RCP.
8. INTERNAL CYLINDER ADAPTER IS NOT RECOMMENDED FOR DOWNSTREAM CONNECTIONS.

HDPE/ RCP CONNECTION DETAIL

N.T.S.



BROOKS 13"x13" CB
13"x13"x13" CATCH BASIN
14"x14" CAST IRON GRATE
(OR APPROVED EQUAL)

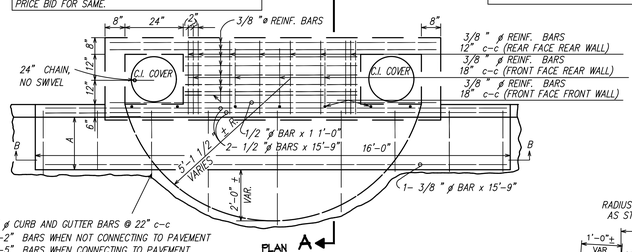
FEATURES:
1. CAST IRON FRAME & GRATE VFG 14"x14"
2. 4500 psi CONCRETE
3. GRADE 60 REBAR

13"X13" CATCH BASIN & JUNCTION BOX

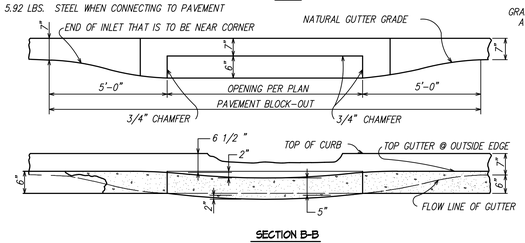
N.T.S.

ALL EXPOSED SURFACES ARE TO BE WELL FINISHED. EXCAVATION FOR INLET IS TO BE INCLUDED IN PRICE BID FOR SAME.

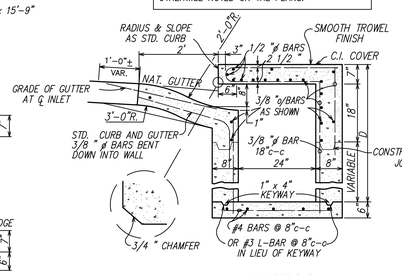
NOTE:
THE DEPTH "D" FOR ALL THE STANDARD INLETS SHALL BE 4'–0" AT THE END AND 4'–8" AT THE OUTLET END FROM THE TOP OF CURB TO THE FLOW LINE OF THE INLET. IF THE INLET IS NOT STANDARD, THE DEPTHS WILL BE SHOWN ON THE PLANS.



3/8 " ø CURB AND GUTTER BARS @ 22" c–c
USE 3'–2" BARS WHEN NOT CONNECTING TO PAVEMENT
USE 5'–5" BARS WHEN CONNECTING TO PAVEMENT
ADD 5.92 LBS. STEEL WHEN CONNECTING TO PAVEMENT



NOTES:
GUTTER CONSTRUCTION IN FRONT OF INLET AS SHOWN IS TO BE CONSIDERED AS PART OF SAME.
DIMENSION "A" SHALL BE 2' UNLESS OTHERWISE NOTED ON THE PLANS.



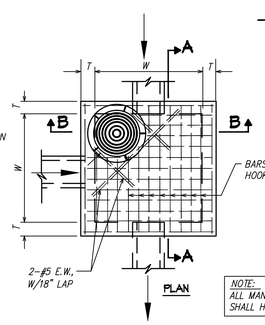
NOTE:
* NO PRECAST INLETS TOPS PERMITTED
* BLOCKOUT PAVEMENT AROUND INLET & CONSTRUCT INLET TOP AFTER COMPLETION OF PAVEMENT.

STANDARD STORM DRAIN CURB INLET

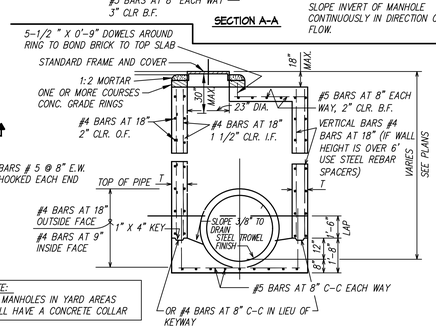
N.T.S.

NOTE: NO PRECAST INLETS TOPS WILL BE ALLOWED

NOTES:
"T" = 8" FOR W = 4' TO 5'
"T" = 9" FOR W = 6' TO 8'



NOTE:
ALL MANHOLES IN YARD AREAS SHALL HAVE A CONCRETE COLLAR

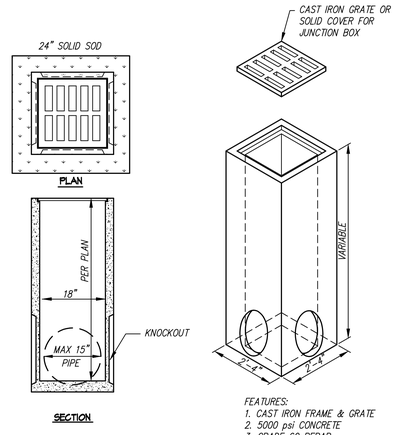


NOTE:
SLOPE INVERT OF MANHOLE CONTINUOUSLY IN DIRECTION OF FLOW.

STANDARD SQUARE MANHOLE

N.T.S.

NOTE: NO PRECAST MANHOLES WILL BE ALLOWED



FEATURES:
1. CAST IRON FRAME & GRATE
2. 5000 psi CONCRETE
3. GRADE 60 REBAR

18"x18" CATCH BASIN/JUNCTION BOX

N.T.S.

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scale	
horiz	N/A
vert	N/A
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STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
Date: 05/08/2019 , P.E.

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
STORM DRAIN DETAILS

tnp project: VLK 18477
sheet: C1.24

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
STORM DRAIN DETAILS

SHEET NO.
C1.24

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GENERAL WATER NOTES

1. CONTRACTOR'S PERSONNEL SHALL WEAR IDENTIFYING CLOTHING OR HATS AT ALL TIMES.
2. THE PROPOSED WATER MAINS AT TIMES WILL BE LAID CLOSE TO OTHER EXISTING UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, GAS MAINS, TELEPHONE CABLES, TU ELECTRIC CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY OWNERS PRIOR TO ANY CONSTRUCTION IN THE AREA AND VERIFY THE ACTUAL LOCATION OF ALL BURIED UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND AND OVERHEAD FACILITIES AND BE RESPONSIBLE FOR ANY DAMAGE HE MAY CAUSE TO THEM.

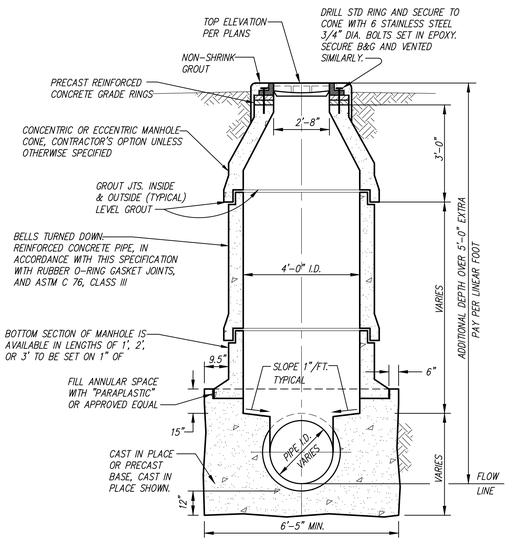
   THE CONTRACTOR SHALL CONTACT THE FOLLOWING AT LEAST 48 HOURS PRIOR TO EXCAVATING AT EACH LOCATION:

NORTH RICHLAND HILLS WATER DEPARTMENT	(817)-427-6200
NORTH RICHLAND HILLS TRANSPORTATION & PUBLIC WORKS	(817)-427-6300
LIGHTS & SIGNAL DIVISION	(817)-392-8100
CHARTER CABLE	509-6282
* TXU GAS	336-2328
* TXU ELECTRIC	(817) 336-2328
* SOUTHWESTERN BELL TELEPHONE COMPANY	ENTERPRISE 9800
* WESTERN UNION CABLE DIVISION	(214) 939-1930
* AT&T FIBER OPTIC	878-8711
* MCI FIBER OPTIC	1-800-624-9675

   * THESE UTILITIES SHALL BE NOTIFIED BY CALLING 1-800-DIG-TESS (1-800-344-8377) AND GIVING MAPSCO LOCATIONS INVOLVED. CONTRACTOR SHALL MAINTAIN CONFIRMATION NUMBERS AND PROVIDE TO THE CITY ON DEMAND.
3. CONTRACTOR SHALL VERIFY THE ELEVATION, CONFIGURATION, AND ANGULATION OF EXISTING LINES PRIOR TO CONSTRUCTION OF TIE-IN MATERIALS. SUCH VERIFICATION SHALL BE CONSIDERED AS SUBSIDIARY TO COST OF PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
4. NO EXCAVATED MATERIALS, BACKFILL MATERIALS, EQUIPMENT, OR SUPPLIES SHALL BE STORED WITHIN FLOODWAYS OR DRAINAGE EASEMENTS. (REFERENCE C6-6.6 GCD)
5. TRENCHES WHICH LAY OUTSIDE EXISTING OR FUTURE PAVEMENTS SHALL BE BACKFILLED ABOVE THE TOP OF THE EMBEDMENT WITH TYPE "C" BACKFILL MATERIAL. WHEN TYPE "C" BACKFILL MATERIAL IS NOT SUITABLE, AT THE DIRECTION OF THE ENGINEER, TYPE "B" MATERIAL SHALL BE USED. ALL BACKFILL MATERIAL FOR TRENCHES LOCATED OUTSIDE EXISTING OR FUTURE PAVEMENTS SHALL BE COMPACTED TO A MINIMUM OF 90% PROCTOR DENSITY BY MEANS OF TAMPING ONLY. TRENCHES WHICH CROSS UNDER EXISTING OR FUTURE PAVEMENT SHALL BE BACKFILLED PER FIG. "A" WITH 95% PROCTOR DENSITY BY TAMPING.
6. ALL EXISTING IMPROVEMENTS NOT SCHEDULED FOR REPLACEMENT DURING CONSTRUCTION WHICH ARE DAMAGED OR DESTROYED BY THE CONTRACTOR SHALL BE RESTORED TO EQUAL OR BETTER CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY OR THE AFFECTED OWNER.
7. THE TOP OF THE WATER LINES SHALL BE A MINIMUM OF 3'-6" BELOW THE TOP OF THE CURB OR FINISHED GRADE FOR 10" AND SMALLER MAINS EXCEPT WHERE OTHERWISE SHOWN ON THESE PLANS.
8. CONCRETE BLOCKING SHALL BE INSTALLED ON ALL WATER LINE BENDS, FIRE HYDRANTS, FITTINGS AND VALVES. ALL HORIZONTAL BLOCKING, CRADLE BLOCKING, AND VERTICAL TIE-DOWN BLOCKING TO BE IN ACCORDANCE WITH FIG.(S) 9, 10, AND 11 OF THE GCD. BLOCKING TO BE SUBSIDIARY TO WATER LINE CONSTRUCTION AND NO EXTRA PAY WILL BE ALLOWED.
9. FIRE HYDRANTS SHALL BE LOCATED AS SHOWN ON PLAN.
10. ALL GATE VALVE INSTALLATIONS FOR SIZES UP TO 12" ARE TO BE PER CITY OF NORTH RICHLAND HILLS.
11. ELEVATION ADJUSTMENTS OF WATER LINE AT CONNECTIONS MAY BE MADE WITH BENDS, OFFSETS, OR JOINT DEFLECTIONS. ALL NONSTANDARD BENDS SHALL BE MADE USING THE CLOSEST STANDARD M.J. FITTINGS WITH THE REQUIRED JOINT DEFLECTIONS. (DEFLECTIONS NOT TO EXCEED MANUFACTURER'S RECOMMENDED DEFLECTION PER JOINT.)
12. PROPOSED WATER EXCAVATION AND BACKFILL REPAIR SHALL BE IN ACCORDANCE WITH CITY OF NORTH RICHLAND HILLS STANDARDS.
13. THE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL EXISTENCE AND LOCATION OF UTILITIES IN THE AREA OF CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES IN ORDER TO DETERMINE IF THERE IS ANY CONFLICT WITH THE PROPOSED FACILITIES. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY WHEN CONFLICTS WITH EXISTING UTILITIES ARE DISCOVERED.

GENERAL CONSTRUCTION NOTES

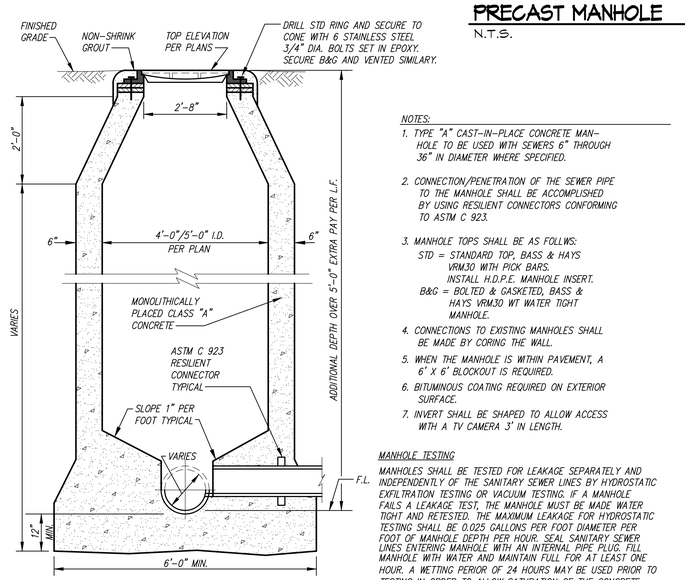
1. CONTRACTOR'S PERSONNEL SHALL WEAR IDENTIFYING CLOTHING OR HATS AT ALL TIMES.
2. NEW MANHOLES SHALL BE CONSTRUCTED SUCH THAT THE MANHOLE COVER IS AT FINISHED SURFACE GRADE, OR AS NOTED ON THE PLANS. CONCRETE COLLARS AND MANHOLE INSERTS SHALL BE PROVIDED WITH ALL NEW MANHOLES IN THIS PROJECT.
3. CONTRACTOR SHALL VERIFY THE ELEVATION, CONFIGURATION, AND ANGULATION OF EXISTING LINES PRIOR TO CONSTRUCTION OR ACQUIRING OF MATERIALS. SUCH VERIFICATION SHALL BE CONSIDERED AS SUBSIDIARY TO THE COST OF PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF LITTLE ELM & MUSTANG SUD STANDARD SPECIFICATIONS AND DETAILS, EXCEPT WHERE MODIFIED IN THESE PLANS OR IN THE SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL REMOVE FROM THE PROJECT AREA ALL SURPLUS MATERIAL. THIS SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM. SURPLUS MATERIALS FROM EXCAVATION INCLUDING DIRT, TRASH, ETC. SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO THE ENGINEER.
6. CONTRACTOR SHALL SAWCUT EXISTING CURB AND GUTTER, PAVEMENT, DRIVEWAYS, AND SIDEWALKS AT AREAS WHERE PAVEMENT OR CONCRETE IS TO BE REMOVED. SAWCUTS WILL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR LINEAR FOOT OF PIPE. CONTRACTOR SHALL PROVIDE COMPACTED SELECT MATERIAL AS NEEDED TO REPAIR DAMAGED DRIVES, STREETS, WALKS, AND PATIOS.
7. THE CONTRACTOR SHALL PRESERVE AND PROTECT OR REMOVE AND REPLACE (WITH PRIOR APPROVAL OF AFFECTED PROPERTY OWNER) ANY TREES, SHRUBS, HEDGES, RETAINING WALLS, LANDSCAPING, BUILDINGS, WALKS, ETC. IN OR NEAR PROPOSED CONSTRUCTION AREA. THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE PAY ITEM.
8. ALL GRASS AREAS DAMAGED BY CONSTRUCTION SHALL RECEIVE 4" OF TOPSOIL AND SOLID SODDING OR SEEDING. REMOVE SOD, GRASS, ROOTS, WEEDS, STICKS, STONES OVER TWO INCHES IN DIAMETER, AND OTHER FOREIGN MATERIAL FROM THE TOPSOIL.
9. ALL EMBEDMENT AND BACKFILL UNDER EXISTING PAVEMENT, WITHIN RIGHT OF WAY, OR UNDER GRAVEL OR OTHER TRAVEL SURFACES SHALL BE TOWN/SUD DETAILS. EMBEDMENT AND BACKFILL FOR SEWER LINES AND SERVICES OUTSIDE OF THESE AREAS SHALL BE IN ACCORDANCE WITH TOWN OF LITTLE ELM/MUSTANG SUD DETAILS. ALL EMBEDMENT AND BACKFILL COSTS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FEET OF SANITARY SEWER PIPE AND SERVICE RE-CONNECTIONS.
10. THE PROPOSED SANITARY SEWER LINES AT TIMES WILL BE LAID CLOSE TO OTHER EXISTING UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, GAS MAINS, TELEPHONE CABLES, SANITARY SEWER LINES, TU CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND DURING CONSTRUCTION. THE CONTRACTOR IS LIABLE FOR ALL DAMAGES DONE TO SUCH EXISTING FACILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS.
11. VERTICAL DEFLECTIONS AND SLOPES OF EXISTING PIPES SHOWN ON THE PLANS WERE OBTAINED FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED. SOME PIPE SLOPES WERE ADJUSTED TO MATCH SURVEYED MANHOLE FLOWLINES. RIM ELEVATIONS, FLOWLINES AND HORIZONTAL LOCATIONS OF EXISTING MANHOLES WERE DETERMINED FROM FIELD SURVEY. THE CONTRACTOR SHALL VERIFY THE LOCATION OF CONNECTIONS OF MAINS OR LATERALS TO SEWER LINES WHERE NO MANHOLE EXISTS PRIOR TO CONSTRUCTION TO DETERMINE IF LINES AND GRADES AS SHOWN ON THE PLANS WILL FUNCTION AND NOTIFY ENGINEER OF CONFLICTS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION CREW AND GENERAL PUBLIC AND THE SAFETY OF PUBLIC AND PRIVATE PROPERTY.
13. ALL BARRICADES, WARNING SIGNS, LIGHT DEVICES, ETC. FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE INSTALLATION SHOWN IN THE 2011 TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AS CURRENTLY AMENDED, TEXAS STATE DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION.
14. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
15. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES. ONE LANE OF TRAVELWAY AROUND CONSTRUCTION OPERATIONS IN PROGRESS WITH ADEQUATE SAFEGUARDS WILL BE ACCEPTABLE, ON STREETS CLASSIFIED AS "LOCAL" BY THE TOWN.
16. THE LOCATION OF DRIVEWAYS, STEPS, RETAINING WALLS, ETC. AND ALL WATER, SANITARY SEWER, STORM SEWER, TELEPHONE, GAS, ELECTRIC AND CABLE TELEVISION UTILITIES, AS SHOWN ON THESE PLANS ARE APPROXIMATE. ACCURATE LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AFTER CONSULTATION WITH THE PROPERTY OWNERS AND THE RESPECTIVE UTILITY COMPANIES.
17. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
18. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WORK UTILIZING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY.
19. CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE FOR SANITARY SEWER ONLY.
20. CONTRACTOR SHALL INSTALL 1 JOINT (18' MINIMUM JOINT LENGTH) OF DUCTILE IRON PIPE AT LOCATIONS WHERE PROPOSED SEWER SERVICES CROSS EXISTING OR PROPOSED WATER WATER LINES, EXCEPT WHERE OTHERWISE AUTHORIZED BY ENGINEER.
21. IN THE EVENT A STREET IS TO BE CLOSED AND/OR TRAFFIC IS TO BE REROUTED DURING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR WILL HAVE THE SOLE RESPONSIBILITY OF SUBMITTING A TRAFFIC CONTROL PLAN DIRECTLY TO THE TOWN TRAFFIC ENGINEER FOR APPROVAL.



SECTION A-A
N.T.S.

NOTE:
ALL MANHOLES IN YARD AREAS SHALL HAVE A CONCRETE COLLAR

PRECAST MANHOLE
N.T.S.

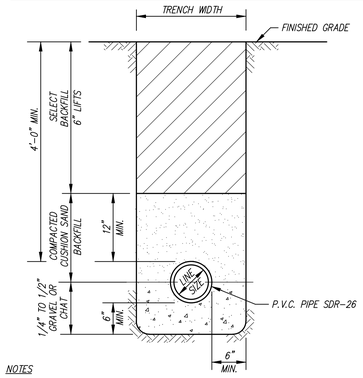


NOTES:
1. TYPE "A" CAST-IN-PLACE CONCRETE MANHOLE TO BE USED WITH SEWERS 6" THROUGH 36" IN DIAMETER WHERE SPECIFIED.
2. CONNECTION/PENETRATION OF THE SEWER PIPE TO THE MANHOLE SHALL BE ACCOMPLISHED BY USING RESILIENT CONNECTORS CONFORMING TO ASTM C 923.
3. MANHOLE TOPS SHALL BE AS FOLLWS:
   STD = STANDARD TOP, BASS & HAYS VRM30 WITH PICK BARS. INSTALL H.D.P.E. MANHOLE INSERT.
   B&G = BOLTED & GASKETED, BASS & HAYS VRM30 WT WATER TIGHT MANHOLE.
4. CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY CORING THE WALL.
5. WHEN THE MANHOLE IS WITHIN PAVEMENT, A 6' X 6' BLOCKOUT IS REQUIRED.
6. BITUMINOUS COATING REQUIRED ON EXTERIOR SURFACE.
7. INVERT SHALL BE SHAPED TO ALLOW ACCESS WITH A TV CAMERA 3' IN LENGTH.

MANHOLE TESTING

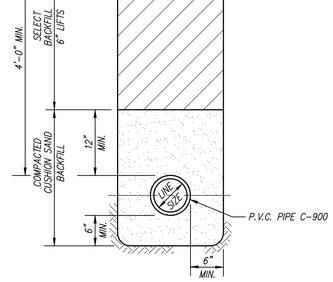
MANHOLES SHALL BE TESTED FOR LEAKAGE SEPARATELY AND INDEPENDENTLY OF THE SANITARY SEWER LINES BY HYDROSTATIC EXFILTRATION TESTING OR VACUUM TESTING. IF A MANHOLE FAILS A LEAKAGE TEST, THE MANHOLE MUST BE MADE WATER TIGHT AND RETESTED. THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING SHALL BE 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR. SEAL SANITARY SEWER LINES ENTERING MANHOLE WITH AN INTERNAL PIPE PLUG. FILL MANHOLE WITH WATER AND MAINTAIN FULL FOR AT LEAST ONE HOUR. A WETTING PERIOR OF 24 HOURS MAY BE USED PRIOR TO TESTING IN ORDER TO ALLOW SATURATION OF THE CONCRETE.

CAST-IN-PLACE MAHHOLE
N.T.S.



NOTES
1. SDR-26 PVC PIPE UNLESS NOTED OTHERWISE.
2. CUSHION SAND MUST PASS NO. 8 SIEVE.
3. SELECT BACKFILL IS NATIVE TRENCH MATERIAL WITH NO ROCKS OVER 3" IN DIAMETER.
4. COMPACT BACKFILL IN 6" LIFTS TO 95% PROCTOR DENSITY WITHIN RIGHT-OF-WAY AND 90% IN EASEMENTS.
5. SEE SEPARATION OF NEW WATER AND SEWER LINES DETAIL FOR ADDITIONAL INFORMATION.

SEWER PVC PIPE BEDDING & BACKFILL
N.T.S.



NOTES
1. NO A.C. PIPE ALLOWED.
2. WATER LINE SIZES 6" (INCHES) AND LESS SHALL BE C-900 CLASS 200. WATER LINE SIZES GREATER THAN 6" SHALL BE C-900 CLASS 150 (DR-18) PVC.
3. ALL FLUSHING VALVES AND GATE VALVES TO BE A.W.W.A. STANDARD COUNTERCLOCKWISE OPENING.
4. COMPACT BACKFILL IN 6" LIFTS TO 95% PROCTOR DENSITY WITHIN RIGHT-OF-WAY AND 90% IN OTHER AREAS.
5. CUSHION SAND MUST PASS NO. 8 SIEVE.
6. SELECT BACKFILL IS NATIVE TRENCH MATERIAL WITH NO ROCKS OVER 3" IN DIAMETER.

WATER PVC PIPE BEDDING & BACKFILL
N.T.S.

no.	revision	by	date

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scale	
horiz	N/A
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
PHILIP C. VARUGHESE
114594
LICENSED PROFESSIONAL ENGINEER
, P.E.
Date: 05/08/2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
WATER & SANITARY SEWER DETAILS

tnp project: VLK 18477
sheet: C1.25

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director: JFK	Drawn By: TNP
Designer: VLK	Quality Control: VLK
Proj. Coord.: JD	

PROJECT NO.
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SHEET TITLE
WATER & SANITARY SEWER DETAILS

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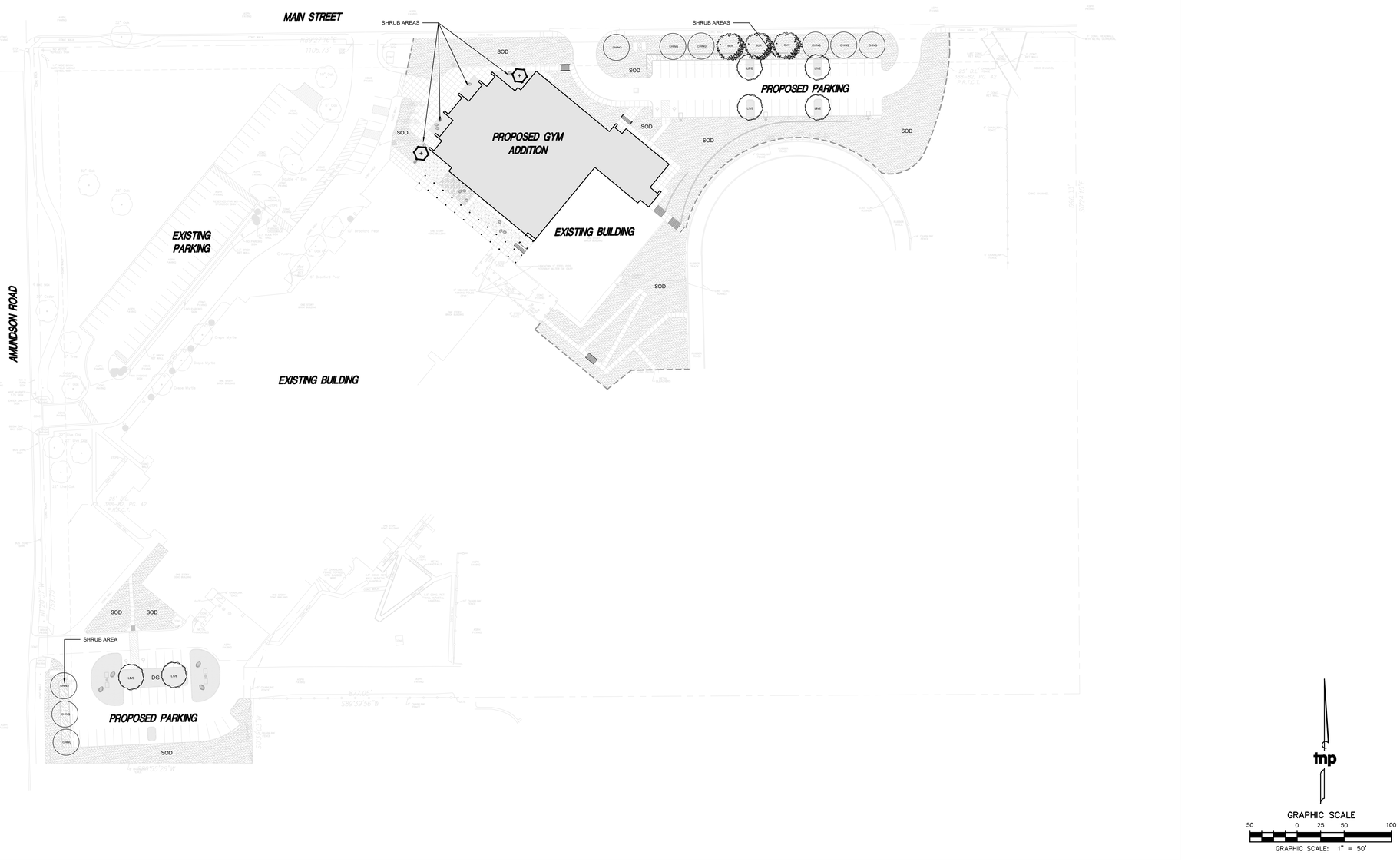

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horiz	1"=50'
vert	N/A
date	MAY 2019

tnp

REGISTERED LANDSCAPE ARCHITECT
JOE L. MADRID
3207
STATE OF TEXAS
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
OVERALL LANDSCAPE PLAN

tnp project VLK 18477
sheet L1.01

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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REVISIONS
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PROJECT NO.
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SHEET TITLE
OVERALL LANDSCAPE PLAN

SHEET NO.
L1.01

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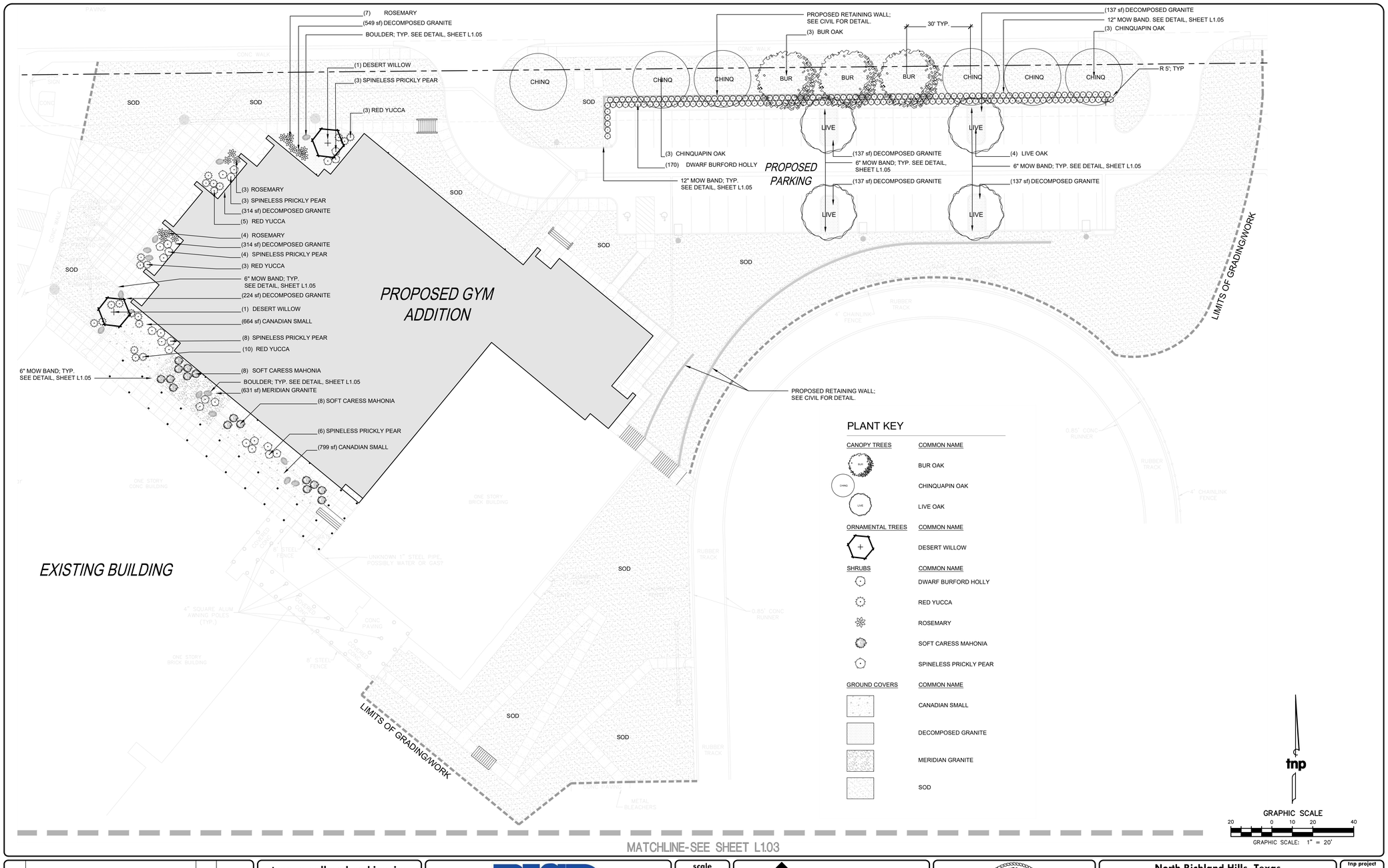

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scale horiz	1"=20'
vert	N/A
date	MAY 2019

REGISTERED LANDSCAPE ARCHITECT JOE L. MADRID 3207 STATE OF TEXAS
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
LANDSCAPE PLAN

tnp project VLK 18477
sheet L1.02

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SHEET TITLE
LANDSCAPE PLAN

SHEET NO.
L1.02

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TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

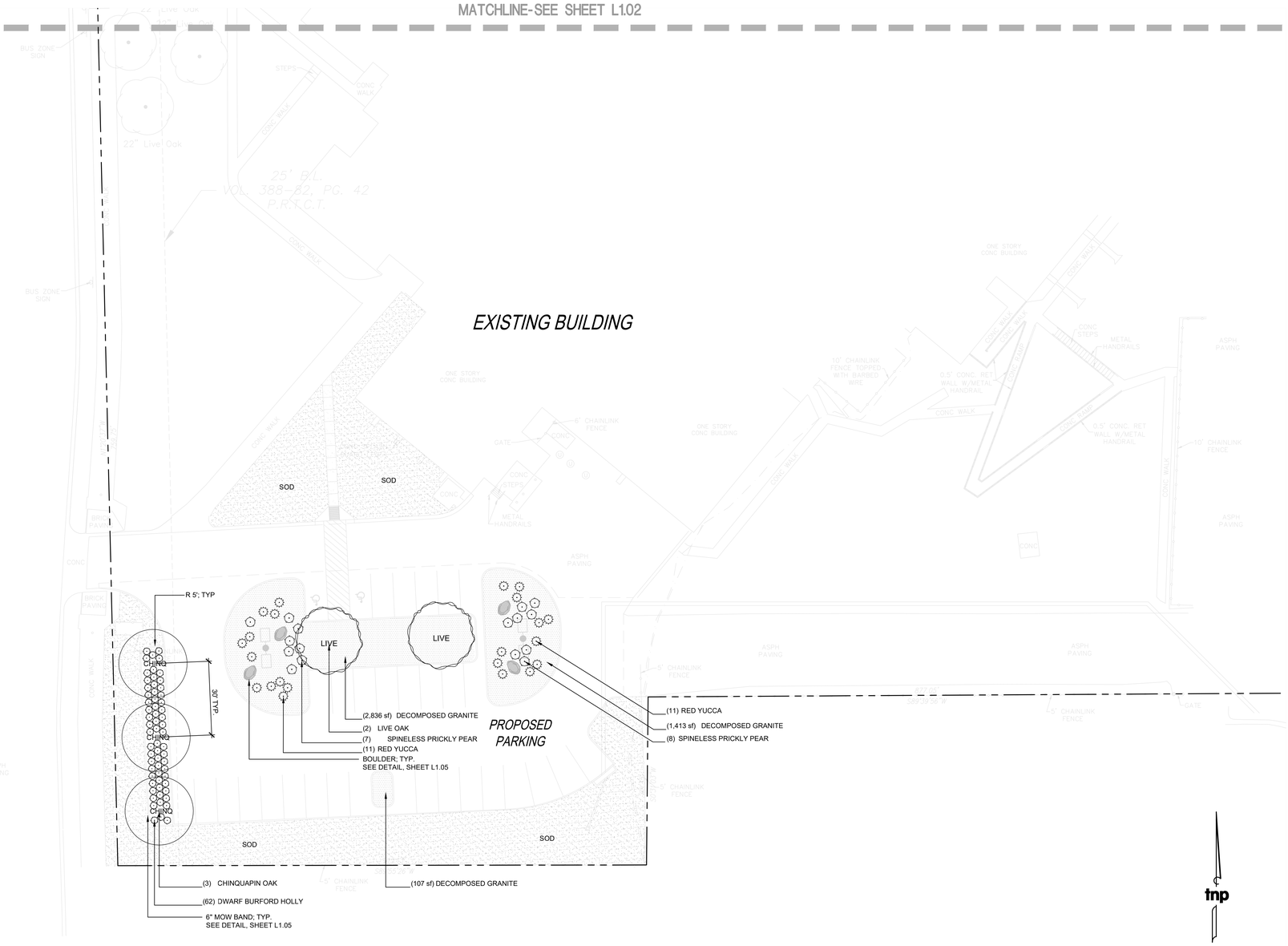
PLANT KEY

CANOPY TREES	COMMON NAME
BUR	BUR OAK
CHINQ	CHINQUAPIN OAK
LIVE	LIVE OAK

ORNAMENTAL TREES	COMMON NAME
	DESERT WILLOW

SHRUBS	COMMON NAME
	DWARF BURFORD HOLLY
	RED YUCCA
	ROSEMARY
	SOFT CARESS MAHONIA
	SPINELESS PRICKLY PEAR

GROUND COVERS	COMMON NAME
	CANADIAN SMALL
	DECOMPOSED GRANITE
	MERIDIAN GRANITE
	SOD



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Birdville Independent School District
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scale
horiz 1"=20'
vert N/A
date MAY 2019

tnp

REGISTERED LANDSCAPE ARCHITECT JOE L. MADDOX 3207 STATE OF TEXAS
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
LANDSCAPE PLAN

tnp project VLK 18477
sheet L1.03

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
LANDSCAPE PLAN

SHEET NO.
L1.03

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PLANT SCHEDULE

CANOPY TREES	QTY	COMMON NAME	BOTANICAL NAME	SIZE	HEIGHT	SPREAD	SPACING	REMARKS
BUR	3	BUR OAK	Quercus macrocarpa	3" Cal.	12`-14`	6`-8`	As shown	CONTAINER GROWN, FULL DENSE HEAD, SYMMETRICAL, SINGLE, STRAIGHT TRUNK
CHING	9	CHINQUAPIN OAK	Quercus muehlenbergi	3" Cal.	12`-14`	5`-6`	As shown	CONTAINER GROWN, FULL DENSE HEAD, SYMMETRICAL, SINGLE, STRAIGHT TRUNK
LIVE	6	LIVE OAK	Quercus virginiana	3" Cal.	11`-12`	6`-8`	As shown	CONTAINER GROWN, FULL DENSE HEAD, SYMMETRICAL, SINGLE, STRAIGHT TRUNK
ORNAMENTAL TREES	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**SIZE**	**HEIGHT**	**SPREAD**	**SPACING**	**REMARKS**
	2	DESERT WILLOW	Chilopsis linearis `Bubba`	45 Gal.	6`-7`	4`-6`	As shown	CONTAINER GROWN, FULL DENSE HEAD, SYMMETRICAL, SINGLE, STRAIGHT TRUNK
SHRUBS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**SIZE**	**HEIGHT**	**SPREAD**	**SPACING**	**REMARKS**
	232	DWARF BURFORD HOLLY	Ilex cornuta `Burfordii Nana`	5 Gal.	24"-28"	20"-24"	36" O.C.	CONTAINER GROWN, MATURE ROOT SYSTEM BUT NOT ROOT BOUND. FULL BOARD TOP.
	43	RED YUCCA	Hesperaloe parviflora	3 Gal.	18"-24"	12"-16"	As shown	CONTAINER GROWN, MATURE ROOT SYSTEM BUT NOT ROOT BOUND. FULL BOARD TOP.
	14	ROSEMARY	Rosmarinus officinalis	5 Gal.	3`-4`	3`-4`	As shown	CONTAINER GROWN, MATURE ROOT SYSTEM BUT NOT ROOT BOUND. FULL BOARD TOP.
	16	SOFT CARESS MAHONIA	Mahonia eurybracteata `Soft Caress`	5 Gal.	30"- 36"	4`-5`	As shown	CONTAINER GROWN, MATURE ROOT SYSTEM BUT NOT ROOT BOUND, FULL BOARD TOP
	40	SPINELESS PRICKLY PEAR	Opuntia cacanapa `Ellisiana`	5 Gal.	18"-24"	12"-16"	As shown	CONTAINER GROWN, MATURE ROOT SYSTEM BUT NOT ROOT BOUND. FULL BOARD TOP.
GROUND COVERS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**SIZE**	**HEIGHT**	**SPREAD**	**SPACING**	**REMARKS**
	1,463 sf	CANADIAN SMALL	Gravel	n/a	n/a	n/a	n/a	4" WITH FILTER FABRIC. REF DETAIL. WHIZ-Q-STONE OR APPROVED EQUAL.
	6,304 sf	DECOMPOSED GRANITE	Decomposed Granite	n/a	n/a	n/a	n/a	4" THICK WITH WEED BARRIER FABRIC. REF. DETAIL.
	631 sf	MERIDIAN GRANITE	Gravel	n/a	n/a	n/a	n/a	4" WITH FILTER FABRIC. REF DETAIL. WHIZ-Q-STONE OR APPROVED EQUAL.
	2,254 sf	SHREDDED HARDWOOD MULCH	Mulch	n/a	n/a	n/a	n/a	REF. SPECIFICATIONS AND DETAIL FOR TYPE AND THICKNESS. HATCH NOT SHOWN IN PLANS.
	56,132 sf	SOD	Cynodon Dactylon `TIF 419`	Solid Sod / Roll	n/a	n/a	n/a	REF PLANTING NOTES AND SPECIFICATIONS. ADD SF FOR SLOPES, CUT, AND WASTE.

PLANTING NOTES

SECTION 1 - GENERAL

1. These notes are intended as a field reference for the Contractor. The Contractor will thoroughly review these notes, specifications and the drawings prior to start of any work. The Contractor shall visit the site prior to submitting his bid and prior to start of work to become completely familiar with site conditions.

2. It is the responsibility of the contractor to advise the Landscape Architect (hereinafter, LA) of any condition found on the site which prohibits installation as shown on these drawings.

3. Prior to submitting a bid, the Contractor shall verify any discrepancies between the notes, specifications, or the drawings with the LA for clarification. If there is a discrepancy between the number of plants shown on the plans and the number of plants shown in the plant materials legend, the greater number of plants will take precedence for bidding purposes. All plant quantities listed are for information only. It is the contractor's responsibility to provide full coverage in all planting areas.

4. Written dimensions prevail over scaled dimensions. Notify landscape architect of any discrepancies

5. The Contractor bears all responsibility for obtaining all licenses and permits required by federal, state, and local agencies to accomplish the work of this project.

6. Contractor shall complete soil test in all planting areas to determine soil amendment requirements and submit test results to LA for approval. Contractor shall adjust pH and fertility based upon these results. No addition to or placement of soil is to be done prior to initial soil test report approval. Testing shall be done by LA approved laboratory. No planting shall begin until results and proper adjustment have been made. It is the Contractor's responsibility to ensure proper drainage and fertility of all planting areas.

7. Coordinate all work with the project's building contractor or owner.

8. Warning! Call toll-free 811 *before* you dig! The contractor bears all responsibility for verifying all underground utilities, pipes, and structures in the field prior to construction. Any damage to utilities that are to remain shall be repaired immediately at no expense to the owner. The Contractor shall contact the building contractor and all utility authorities to mark location of site utilities. Install flags or stakes and maintain them in place throughout the project. Damage to utilities or other work shall be repaired at the expense of the contractor responsible for the damage. The locations of existing utilities as shown on these plans are approximate. There may be other underground utilities within the project area that are not shown. Landscape Architect and/or Engineer assumes no responsibility for any utilities not shown on plans.

9. Due to existing vegetation and other site conditions, the Contractor should anticipate field adjustments by the LA and should understand such adjustments are not a change order.

10. The Contractor shall give the LA 48 hours' notice of required inspections *upon completion* of each of the following phases:

A. Pre-Construction Conference after award of bid (on-site)
B. Construction debris/ weed clean-up (before any grading, fill, or irrigation)
C. Rough Grading (within 2" of finish grade), Utility Marking, and Tree Staking
D. Fine Grading and Tree Staking (before any tree pits are dug)
E. Tree Planting
F. Staking of Bedlines and/or Edging
G. Shrub Planting
H. Substantial Completion
I. Final Acceptance

11. Contractor shall guarantee all plant material for one (1) full year from date of final acceptance. The cutting off of water or electricity by other trades or persons shall not void the warranty.

12. It is the contractor's responsibility to insure the availability of water to the plants at all times until final acceptance. The contractor shall reject and replace all trees with tip-dieback of more than one (1) inch over the entire canopy of the tree and replace all shrubs or plants with any dieback. All rejected plant material shall be replaced with specified plant material within 14 calendar days at the contractor's expense.

13. LA assumes no responsibility for damages, liabilities, or cost resulting from changes or alterations made to the plan without the express written consent of LA.

14. All materials, locations, and workmanship are subject to approval or refusal by the LA. All materials, locations, and workmanship rejected by the LA shall be remedied at the Contractor's expense.

SECTION 2 - MATERIALS

15. The Contractor shall check all material for specified requirements, shipping damage, pests, and diseases and shall reject all unsatisfactory materials. All plant material is to be carefully handled by the root ball, not the trunk, branches, and/or foliage of the plant. Mishandled material will be rejected. B&B material shall be 'hardened off' after digging for at least 90 days and have at least 10" of rootball for every caliper inch. All material rejected by the LA shall be removed from the site and replaced with acceptable material at the Contractor's expense

16. Plants shall be well formed, vigorous, growing specimens with growth typical of variety specified and shall be free from injury, insects, and diseases. All plant material is to be well rooted, not root bound, such that the root ball remains intact throughout the planting process. The Contractor shall reject all cracked root balls. All plant material shall conform to the specifications and sizes shown in the plant list and shall be nursery grown in accordance with the latest edition (ANSI Z60.1) of "American Standard for Nursery Stock." Any plant substitution shall be approved by landscape architect prior to purchase. Trees with co-dominant stems shall be rejected.

17. Do not make substitutions. If specified material is not available, submit proof of non-availability to LA.

18. All planting areas shall have organic topsoil that is natural, well-drained, friable, fertile, sandy-loam. Sandy-loam is to be pH 6.5-7.5. Heavy clays, limestone, poorly drained bottomland soil, silt, or alluvial soils are not allowed in any planting areas. Topsoil shall be free of harmful insects or nematodes, soil-borne diseases, toxins, select fill, inorganic subsoils, heavy metals, trash, petroleum by-products, rocks over 1/2" in diameter, rubble, roots, and weeds or weed seeds. Contractor shall submit a 2-cup sample in a gallon-size baggie to Landscape Architect before delivery of any soil to the site or placement of any soil in planting areas.

19. Sod shall consist of live growing plants secured from sources which have dense, thickly matted root system throughout the soil of the sod for a minimum of one inch. Sod shall be free of weeds or other varieties of grasses.

20. Sod shall not be used where the roots are dried because of sun or wind. The landscape architect has the right to reject any or all of sod due to lack of care, improper cutting, or other agronomic problems.

SECTION 3 - EXECUTION

21. The Contractor shall *thoroughly* remove from the construction site all limestone larger than 1/2" in diameter and all heavy clay to these depths: 6" minimum in turf and seed areas, and 18" minimum in planting beds. The LA shall verify that this is complete before the Contractor is authorized to proceed with fill of specified topsoil or grading. Scarify subsoil after removal of rock or heavy clay before adding topsoil so as to break up any surface tension.

22. The Contractor shall thoroughly remove from the construction site all the following particles that are larger than 1/2" in diameter: inorganic select fill, heavy clay, limestone, and construction debris, mortar, concrete, paint, chemicals, weeds, plastic, paper, steel, mortar, masonry, construction debris, and other substances that are harmful to plant growth. Remove the above items to these depths: 6" minimum in turf and seed areas, and 18" minimum in planting beds. The LA shall verify that the above items are removed before the Contractor is authorized to proceed with fill with specified topsoil or grading. DO NOT PLACE ANY FILL ON CONSTRUCTION DEBRIS.

22. Mow curbs shall be used at all planting bed edges when they are adjacent to lawn (see detail). Unless otherwise shown on plans, mow curbs shall intersect curbs, sidewalks, and buildings at 90 degrees (square). Mow curbs shall have expansion joints every 50' and at all abutments to other hardscape elements. Construction joints shall be saw cut at 10' on center. Mow curbs shall have curves that are smooth, flowing, and consistent in nature. Mow curbs with straight lines shall be straight. All formwork shall be within a ¼" tolerance of drawings. No mow curb shall have a radius smaller than 72" unless specifically called out on drawings.

23. Contractor shall fine grade all areas for approval by LA. Contractor shall be responsible for providing 2% positive drainage in all planting areas. No planting or mulching will take place until all construction, clean-up, fine grading, and irrigation is complete in the immediate area. Final finish grading shall be reviewed by the LA before any planting takes place. Contractor shall be responsible for any additional topsoil required to create a smooth condition prior to planting.

24. All planting beds shall be amended as per plans and specs. Contractor shall rototill 4" of specified soil amendments into the top 4" of existing or imported topsoil to achieve 8" of planting media for all shrub and/ or groundcover beds.

25. All sod and seed areas shall be amended as per plans and specifications.

26. Scarify all rootballs (#1 and larger) to prevent plants from remaining pot-bound. This is to be done by hand or with a 3-prong cultivator but never with a shovel or machete.

27. Place shrubs and groundcovers so that the top of the rootball is ¼" to ¾" above finish grade Trees shall be set 1" above finish grade for each caliper inch of trunk. Example: A 3" tree shall be set 3" above finish grade.

28. Water in and compact planting backfill to prevent formation of air pockets.

29. Plants shall be set plumb, unless otherwise directed by LA.

30. Back row of shrubs shall be planted 36" from face of building wall, groundcovers shall be 12" from building or as required by conditions. Front row of shrubs shall be planted a minimum of 24" behind (12" for ground cover) bed lines at lawns or walks and minimum 36" back from curbs, driveways, and parking areas.

31. After planting, remove strapping, wire "ears" and string, cords, burlap, etc. from top of B&B rootballs.

32. All planting beds and trees shall be mulched with 4" of mulch (3" after settlement).

33. All trees are to be stabilized per detail and specs immediately after planting.

34. All sod areas shall be thoroughly graded and smoothed with at least 8 passes in different directions using a drag-behind system such as a bunker rake or other device until very smooth and within 1/4" of specified grade (see civil sheets for grading plans).

35. Prior to sod installation, a fertilizer shall be applied and tilled into the prepared soil. Application must be done no longer than 24 hours prior to installation of sod. Do not apply fertilizer when a possibility of rain might occur before sod is installed. Reference specifications for specific type of fertilizer to be used.

36. Lay sod in parallel rows with tight joints. All sod must be placed perpendicular to slopes and staggered no less than 12" on each row. Slopes greater than 4:1 must be held in place with galvanized sod pins, wood pegs, or other method approved by LA. All sod shall be rolled with a 5-ton mechanical roller in at least two directions within 24 hours of laying. All sod areas shall be barricaded with wood stakes and ribbon for no less than 7 days.

37. Plant material shall be pruned as necessary to control size but not to disrupt the natural growth pattern or characteristic form of the plant except as necessary to achieve height clearance for visibility and pedestrian passage or to achieve a continuous opaque hedge if required.

38. All plant material shall be fully-maintained in a healthy and growing condition until final acceptance, and must be replaced with plant material of same variety and size if damaged, destroyed, or removed. This includes mowing, pruning, watering, and weeding.

39. Landscaped areas shall be kept free of trash, weeds, debris, and dead plant material until final acceptance. Any damage to landscape areas shall be repaired at no cost to owner.

no.	revision	by	date

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scale	
horiz	N/A
vert	N/A
date	MAY 2019

tnp

REGISTERED LANDSCAPE ARCHITECT — JOE L. MADRID — 3207 — STATE OF TEXAS
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
LANDSCAPE SCHEDULE AND NOTES

tnp project	
VLK 18477	
sheet	L1.04

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	TNP
Designer	Quality Control
VLK	VLK
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
LANDSCAPE SCHEDULE AND NOTES

SHEET NO.
L1.04

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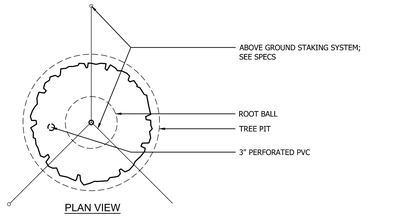
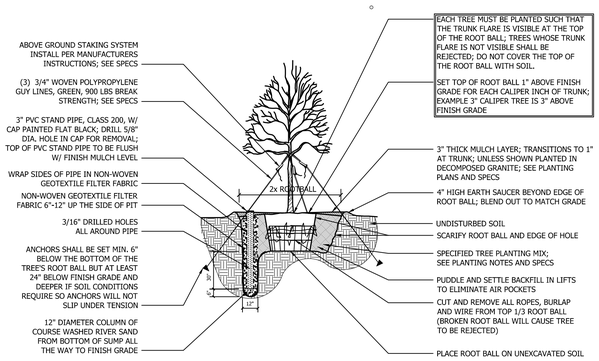


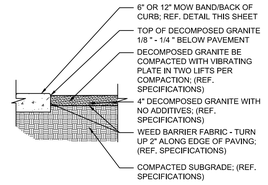
PLAN VIEW



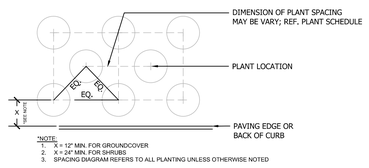
SECTION VIEW

NOTES:
1. ROOT BALL SIZE SHALL CONFORM TO THE LATEST EDITION OF AMERICAN STANDARD FRO NURSERY STOCK.
2. ROOT BALL WIDTH SHOULD BE DETERMINED BY THE FOLLOWING; 10" OF ROOT BALL FOR EACH CALIPER INCH OF TREE TRUNK.
3. ROOT BALL DEPTH IS 2/3 OF DIAMETER.
4. DO NOT HEAVILY PRUNE THE TREE AT PLANTING; PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

A TREE PLANTING
NTS

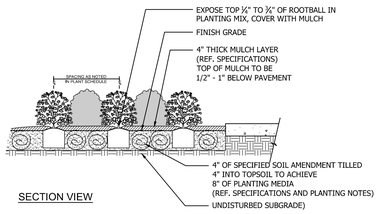


C DECOMPOSED GRANITE
NTS



*NOTE:
1. X = 12" MIN. FOR GROUNDCOVER
2. X = 24" MIN. FOR SHRUBS
3. SPACING DIAGRAM REFERS TO ALL PLANTING UNLESS OTHERWISE NOTED

PLAN VIEW



SECTION VIEW

D SHRUB AND GROUNDCOVER PLANTING DETAIL
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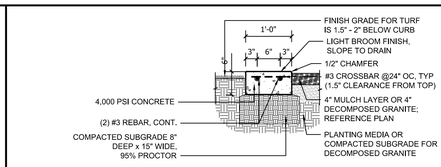
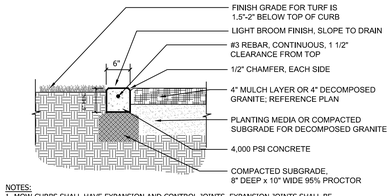


NOTE:
1. MOW CURBS SHALL HAVE EXPANSION AND CONTROL JOINTS. EXPANSION JOINTS SHALL BE LOCATED EVERY 50' O.C. AND TOOLED CONTROL JOINTS SHALL BE LOCATED EVERY 10' O.C.
2. PROVIDE POSITIVE DRAINAGE FROM PLANTING BED WITH MAX. 0.5% CROSS SLOPE, TYP.

E 12" WIDE CONCRETE MOW BAND
Scale: 1" = 1'-0"



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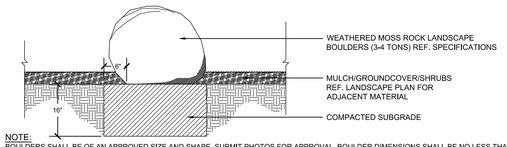
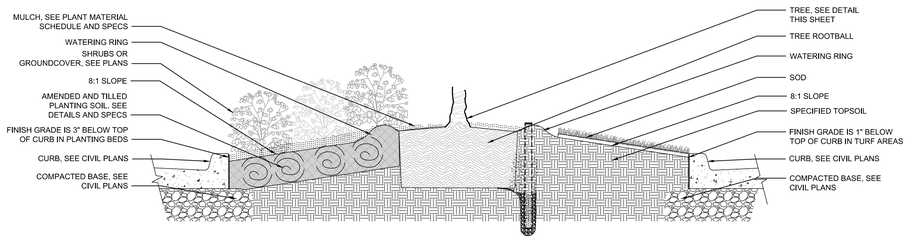
F 6" CONCRETE MOW BAND
NTS



NOTE:
BOULDERS SHALL BE OF AN APPROVED SIZE AND SHAPE. SUBMIT PHOTOS FOR APPROVAL. BOULDER DIMENSIONS SHALL BE NO LESS THAN FOURTEEN (14) INCHES IN HEIGHT NOR GREATER THEN EIGHTEEN (18) INCHES IN HEIGHT, NOT LESS THAN THREE (3) FEET IN THICKNESS, AND NOT LESS THAN FOUR (4) FEET IN WIDTH. BOULDERS SHALL BE FINISHED AS NECESSARY TO ENSURE CONSISTENT FIT AND SMOOTH AND ROUNDED SHAPE WITH NO SHARP CORNERS OR ANGULAR PROJECTIONS. REFERENCE SPECIFICATIONS

G BOULDER IN PLANTING BED
NTS



FOR PLANTING BED ISLANDS FOR TURF ISLANDS

B PARKING LOT ISLAND WITH 8:1 SLOPE (APPLIES TO ALL PARKNG ISLANDS)
NTS

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MAY 8, 2019

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Birdville Independent School District
Smithfield MS Gymnasium Addition
LANDSCAPE DETAILS

tnp project VLK 18477
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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	TNP
Designer	Quality Control
VLK	VLK
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
LANDSCAPE DETAILS

SHEET NO.
L1.05

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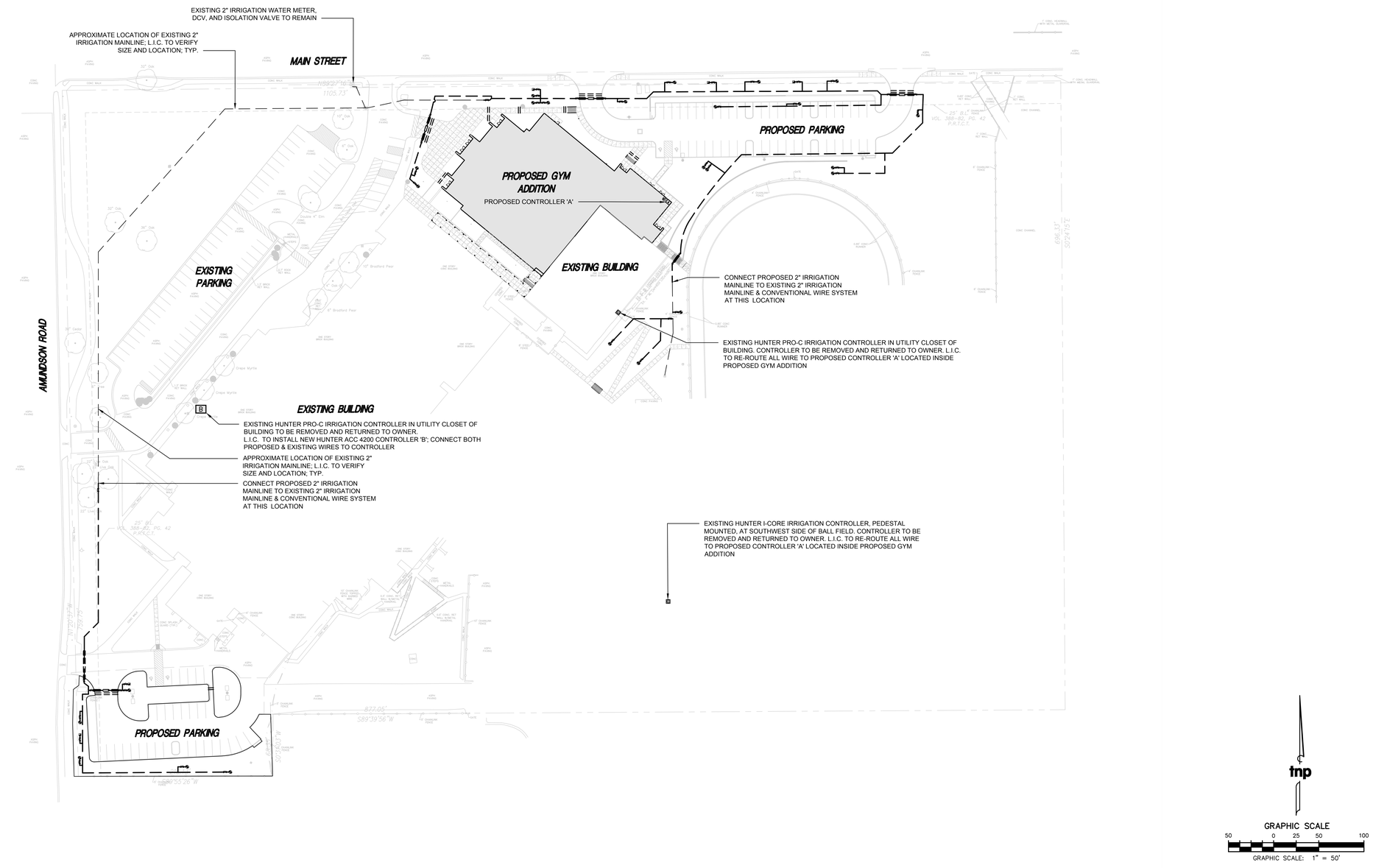

no.	revision	by	date

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Birdville Independent School District
excellence | integrity | service

scale	
horiz	1"=50'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
JOE L. MADRID
78013
REGISTERED
IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
OVERALL IRRIGATION PLAN

tnp project	VLK 18477
sheet	IR1.01

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
OVERALL IRRIGATION PLAN

SHEET NO.
IR1.01

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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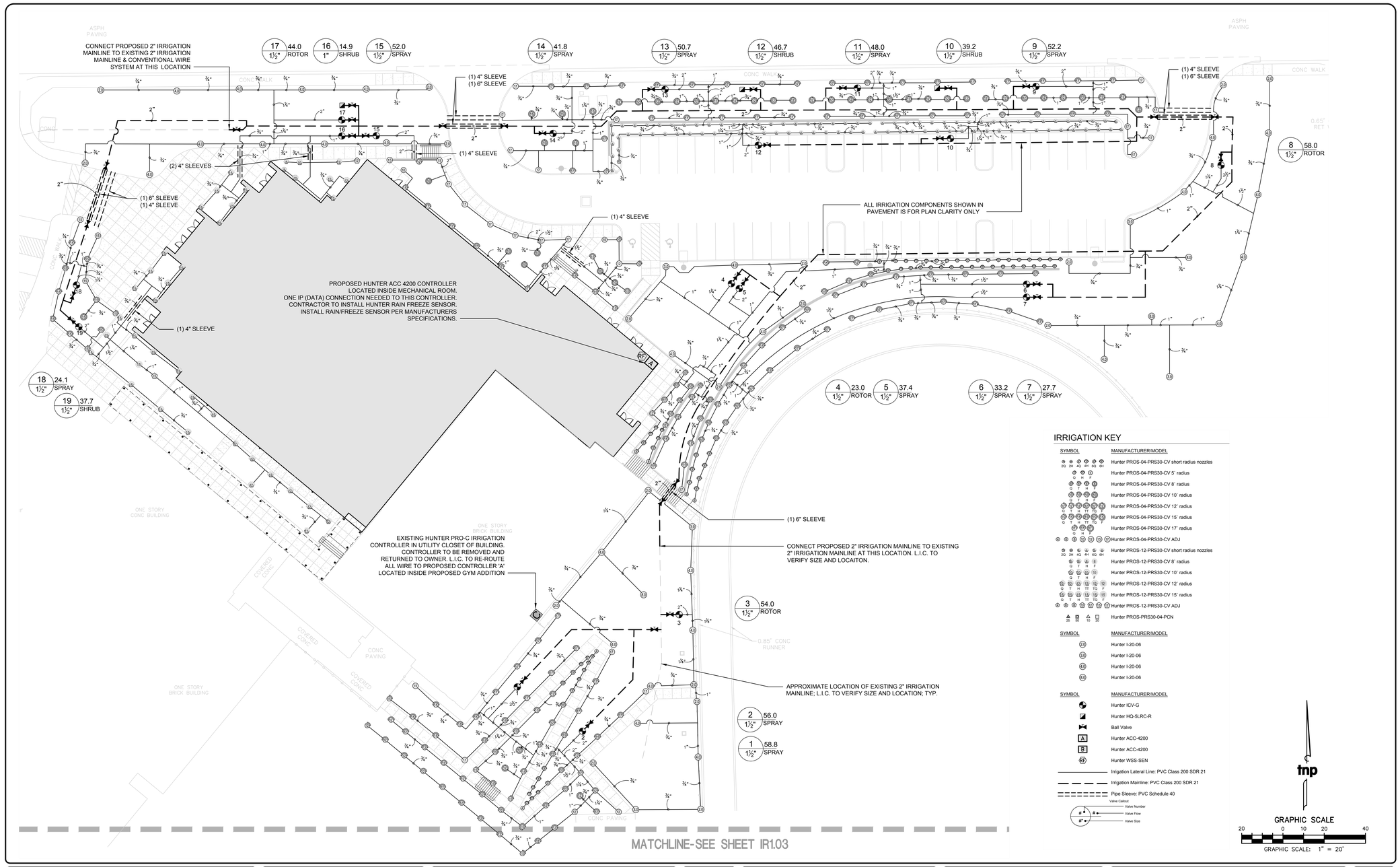

IRRIGATION KEY

SYMBOL	MANUFACTURER/MODEL
	Hunter PROS-04-PRS30-CV short radius nozzles
	Hunter PROS-04-PRS30-CV 5' radius
	Hunter PROS-04-PRS30-CV 8' radius
	Hunter PROS-04-PRS30-CV 10' radius
	Hunter PROS-04-PRS30-CV 12' radius
	Hunter PROS-04-PRS30-CV 15' radius
	Hunter PROS-04-PRS30-CV 17' radius
	Hunter PROS-04-PRS30-CV ADJ
	Hunter PROS-12-PRS30-CV short radius nozzles
	Hunter PROS-12-PRS30-CV 8' radius
	Hunter PROS-12-PRS30-CV 10' radius
	Hunter PROS-12-PRS30-CV 12' radius
	Hunter PROS-12-PRS30-CV 15' radius
	Hunter PROS-12-PRS30-CV ADJ
	Hunter PROS-PRS30-04-PCN

SYMBOL	MANUFACTURER/MODEL
2.0	Hunter I-20-06
3.0	Hunter I-20-06
4.0	Hunter I-20-06
6.0	Hunter I-20-06

SYMBOL	MANUFACTURER/MODEL
	Hunter ICV-G
	Hunter HQ-5LRC-R
	Ball Valve
A	Hunter ACC-4200
B	Hunter ACC-4200
WSS	Hunter WSS-SEN
	Irrigation Lateral Line: PVC Class 200 SDR 21
	Irrigation Mainline: PVC Class 200 SDR 21
	Pipe Sleeve: PVC Schedule 40

Valve Callout: # Valve Number; # Valve Flow; # Valve Size

GRAPHIC SCALE
20 0 10 20 40
GRAPHIC SCALE: 1" = 20'

no.	revision	by	date

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Birdville Independent School District
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scale horiz	1"=20'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
JOE L. MADRID
76612
REGISTERED IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
IRRIGATION PLAN

tnp project VLK 18477
sheet IR1.02

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
OVERALL SITE PLAN

SHEET NO.
C1.04

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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MATCHLINE-SEE SHEET IR1.02

IRRIGATION KEY

SYMBOL	MANUFACTURER/MODEL
2Q 2H 4Q 4H 6Q 6H	Hunter PROS-04-PRS30-CV short radius nozzles
Q H F	Hunter PROS-04-PRS30-CV 5' radius
Q T H F	Hunter PROS-04-PRS30-CV 8' radius
Q T H F	Hunter PROS-04-PRS30-CV 10' radius
Q T H TT TQ F	Hunter PROS-04-PRS30-CV 12' radius
Q T H TT TQ F	Hunter PROS-04-PRS30-CV 15' radius
Q H F	Hunter PROS-04-PRS30-CV 17' radius
Hunter PROS-04-PRS30-CV ADJ	
2Q 2H 4Q 4H 6Q 6H	Hunter PROS-12-PRS30-CV short radius nozzles
Q T H F	Hunter PROS-12-PRS30-CV 8' radius
Q T H F	Hunter PROS-12-PRS30-CV 10' radius
Q T H TT TQ F	Hunter PROS-12-PRS30-CV 12' radius
Q T H TT TQ F	Hunter PROS-12-PRS30-CV 15' radius
Hunter PROS-12-PRS30-CV ADJ	
2S 5S 1S 3S	Hunter PROS-PRS30-04-PCN

SYMBOL	MANUFACTURER/MODEL
2.0	Hunter I-20-06
3.0	Hunter I-20-06
4.0	Hunter I-20-06
6.0	Hunter I-20-06

SYMBOL	MANUFACTURER/MODEL
	Hunter ICV-G
	Hunter HQ-5LRC-R
	Ball Valve
A	Hunter ACC-4200
B	Hunter ACC-4200
WSS	Hunter WSS-SEN
	Irrigation Lateral Line: PVC Class 200 SDR 21
	Irrigation Mainline: PVC Class 200 SDR 21
	Pipe Sleeve: PVC Schedule 40

Valve Callout
- Valve Number
- Valve Flow
- Valve Size

EXISTING HUNTER PRO-C IRRIGATION CONTROLLER IN UTILITY CLOSET OF BUILDING TO BE REMOVED AND RETURNED TO OWNER. L.I.C. TO INSTALL NEW HUNTER ACC 4200 CONTROLLER 'B'; CONNECT BOTH PROPOSED & EXISTING WIRES TO CONTROLLER (SEE OVERALL SHEET IR1.01 FOR LOCATION)

CONNECT PROPOSED 2" IRRIGATION MAINLINE TO EXISTING 2" IRRIGATION MAINLINE & CONVENTIONAL WIRE SYSTEM AT THIS LOCATION

CONTRACTOR TO RETROFIT EXISTING IRRIGATION; TYP.

(1) BORE & 6" SLEEVE

(1) 6" SLEEVE
(1) 4" SLEEVE

(1) 4" SLEEVE

21 43.9 1½" SHRUB

22 13.5 1" SHRUB

23 46.4 1½" SPRAY

24 45.8 1½" SPRAY

25 41.2 1½" SPRAY

GRAPHIC SCALE
20 0 10 20 40
GRAPHIC SCALE: 1" = 20'

no.	revision	by	date

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Birdville Independent School District
excellence | integrity | service

scale	
horiz	1"=20'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
JOE L. MADRID
103812
LICENSED IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
IRRIGATION PLAN

tnp project VLK 18477
sheet IR1.03

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
OVERALL SITE PLAN

SHEET NO.
C1.04

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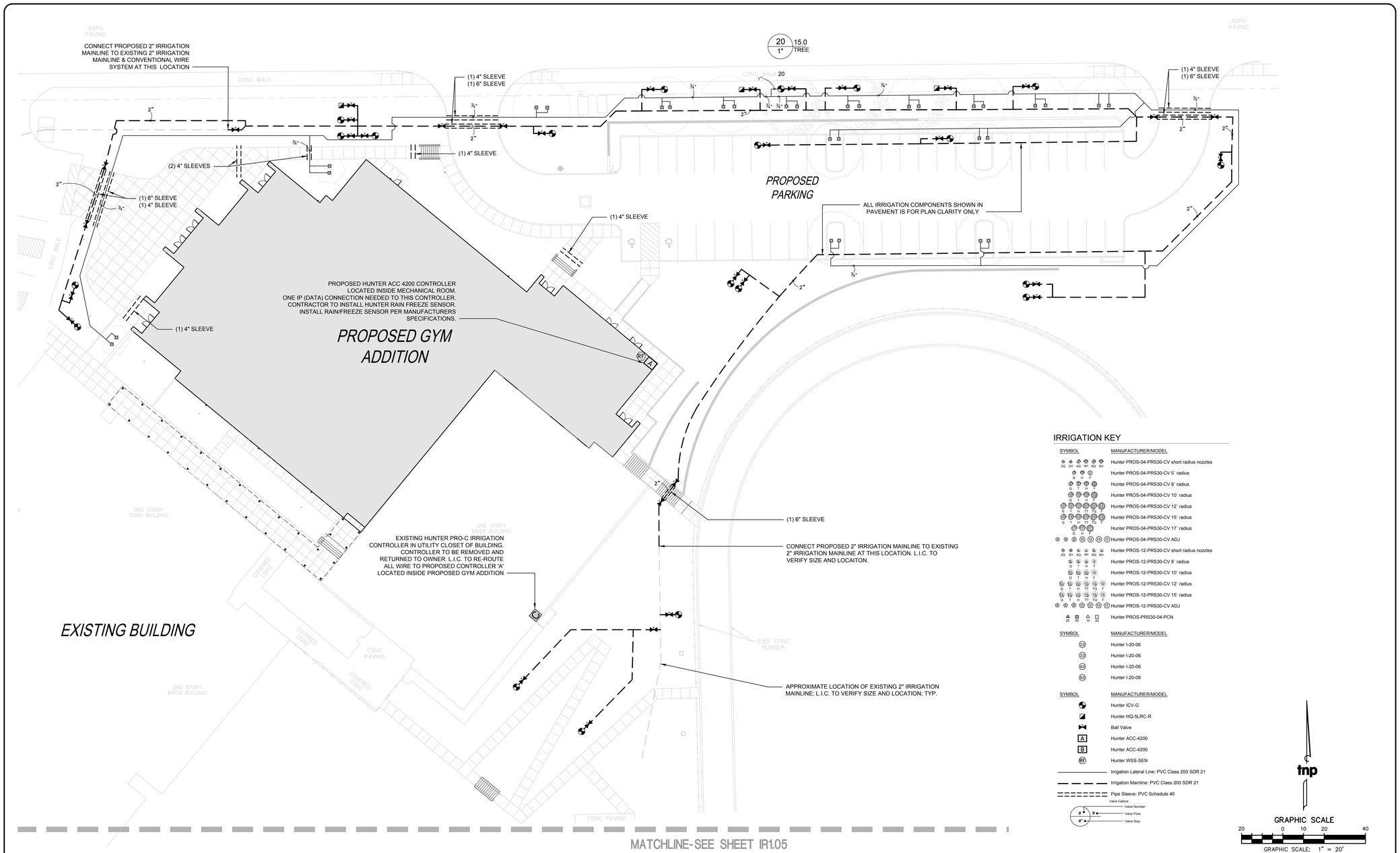

IRRIGATION KEY

SYMBOL	MANUFACTURER/MODEL
	Hunter PROS-04-PRS30-CV short radius nozzles
	Hunter PROS-04-PRS30-CV 5' radius
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	Hunter PROS-04-PRS30-CV 12' radius
	Hunter PROS-04-PRS30-CV 15' radius
	Hunter PROS-04-PRS30-CV 17' radius
	Hunter PROS-04-PRS30-CV ADJ
	Hunter PROS-12-PRS30-CV short radius nozzles
	Hunter PROS-12-PRS30-CV 8' radius
	Hunter PROS-12-PRS30-CV 10' radius
	Hunter PROS-12-PRS30-CV 12' radius
	Hunter PROS-12-PRS30-CV 15' radius
	Hunter PROS-12-PRS30-CV ADJ
	Hunter PROS-PRS30-04-PCN

SYMBOL	MANUFACTURER/MODEL
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	Hunter I-20-06
	Hunter I-20-06
	Hunter I-20-06

SYMBOL	MANUFACTURER/MODEL
	Hunter ICV-G
	Hunter HQ-5LRC-R
	Ball Valve
A	Hunter ACC-4200
B	Hunter ACC-4200
WSS	Hunter WSS-SEN
	Irrigation Lateral Line: PVC Class 200 SDR 21
	Irrigation Mainline: PVC Class 200 SDR 21
	Pipe Sleeve: PVC Schedule 40

Valve Callout: Valve Number, Valve Flow, Valve Size

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GRAPHIC SCALE
20 0 10 20 40
GRAPHIC SCALE: 1" = 20'

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Birdville Independent School District
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scale horiz	1"=20'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
JOE L. MADRID
78013
REGISTERED IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
TREE IRRIGATION PLAN

tnp project	VLK 18477
sheet	IR1.04

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

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Revision No.

Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

PROJECT NO
1887.00

SHEET TITLE
OVERALL SITE PLAN

SHEET NO
C1.04

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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MATCHLINE-SEE SHEET IR1.04

IRRIGATION KEY

SYMBOL	MANUFACTURER/MODEL
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Q T H TQ F	Hunter PROS-12-PRS30-CV 15' radius
Hunter PROS-12-PRS30-CV ADJ	
25 50 10 20	Hunter PROS-PRS30-04-PCN

SYMBOL	MANUFACTURER/MODEL
Z20	Hunter I-20-06
L10	Hunter I-20-06
4.0	Hunter I-20-06
6.0	Hunter I-20-06

SYMBOL	MANUFACTURER/MODEL
	Hunter ICV-G
	Hunter HQ-5LRC-R
	Ball Valve
A	Hunter ACC-4200
B	Hunter ACC-4200
WSS	Hunter WSS-SEN
	Irrigation Lateral Line: PVC Class 200 SDR 21
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	Pipe Sleeve: PVC Schedule 40

Valve Callout
- # = Valve Number
- # = Valve Flow
- # = Valve Size

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CONTRACTOR TO RETROFIT EXISTING IRRIGATION; TYP.

(1) BORE & 6" SLEEVE

(1) 6" SLEEVE
(1) 4" SLEEVE

(1) 4" SLEEVE

26 1" 5.00 TREE

EXISTING BUILDING

PROPOSED PARKING

GRAPHIC SCALE
20 0 10 20 40
GRAPHIC SCALE: 1" = 20'

no.	revision	by	date

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Birdville Independent School District
excellence | integrity | service

scale	
horiz	1"=20'
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
JOE L. MADRID
87812
LICENSED IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
TREE IRRIGATION PLAN

tnp project	VLK 18477
sheet	IR1.05

TNP PROJECT NO. VLK 18477
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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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SHEET TITLE
OVERALL SITE PLAN

SHEET NO.
C1.04

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01 4" SPRAY HEAD
NOT TO SCALE

02 12" SPRAY HEAD
NOT TO SCALE

NOTE:
MOUNT SENSOR WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY, NO MORE THAN 1000' FROM RECEIVER UNIT. MOUNT RECEIVER UNIT NO FURTHER THAN 6' FROM CONTROLLER.

03 RAIN/FREEZE SENSOR AND RECEIVER
NOT TO SCALE

NOTE:
FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

04 QUICK COUPLING VALVE
NOT TO SCALE

NOTES:

1. ALL PVC IRRIGATION SLEEVES TO BE CLASS 200 PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISH GRADE.
4. MECHANICALLY TAMP TO 95% PROCTOR.

05 SLEEVING DETAIL
NOT TO SCALE

06 REMOTE CONTROL VALVE WITH ISOLATION VALVE

07 BALL ISOLATION VALVE
NOT TO SCALE

NOTES:

1. SCHEDULE 40 PVC SLEEVE BELOW ALL HARDSCAPE ELEMENTS SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN, OR AS NOTED ON PLAN.
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

08 TRENCH DETAIL
NOT TO SCALE

09 6" ROTOR HEAD
NOT TO SCALE

10 WALL MOUNTED CONTROLLER

VALVE SCHEDULE

CONTROLLERS	NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PRECIP
A	1	Hunter ICV-G	1-1/2"	Turf Spray	58.84	35.04	1.78 in/h
A	2	Hunter ICV-G	1-1/2"	Turf Spray	55.99	37.64	1.60 in/h
A	3	Hunter ICV-G	1-1/2"	Turf Rotor	54.00	50.69	0.86 in/h
A	4	Hunter ICV-G	1-1/2"	Turf Rotor	23.00	48.46	0.94 in/h
A	5	Hunter ICV-G	1-1/2"	Turf Spray	37.42	34.70	1.61 in/h
A	6	Hunter ICV-G	1-1/2"	Turf Spray	33.18	34.11	1.31 in/h
A	7	Hunter ICV-G	1-1/2"	Turf Spray	27.68	36.01	1.67 in/h
A	8	Hunter ICV-G	1-1/2"	Turf Rotor	58.00	51.46	0.78 in/h
A	9	Hunter ICV-G	1-1/2"	Turf Spray	52.22	33.97	2.53 in/h
A	10	Hunter ICV-G	1-1/2"	Shrub Spray	39.24	33.26	5.03 in/h
A	11	Hunter ICV-G	1-1/2"	Turf Spray	48.00	33.14	2.38 in/h
A	12	Hunter ICV-G	1-1/2"	Shrub Spray	46.71	33.91	5.00 in/h
A	13	Hunter ICV-G	1-1/2"	Turf Spray	50.70	33.43	2.35 in/h
A	14	Hunter ICV-G	1-1/2"	Turf Spray	41.75	33.44	1.57 in/h
A	15	Hunter ICV-G	1-1/2"	Turf Spray	52.00	36.48	2.11 in/h
A	16	Hunter ICV-G	1"	Shrub Spray	14.92	35.63	1.85 in/h
A	17	Hunter ICV-G	1-1/2"	Turf Rotor	44.00	49.75	0.85 in/h
A	18	Hunter ICV-G	1-1/2"	Turf Spray	24.13	33.92	2.12 in/h
A	19	Hunter ICV-G	1-1/2"	Shrub Spray	37.71	34.65	1.38 in/h
A	20	Hunter ICV-G	1"	Bubbler	15.00	38.23	1.85 in/h
B	21	Hunter ICV-G	1-1/2"	Shrub Spray	43.93	34.02	1.43 in/h
B	22	Hunter ICV-G	1"	Shrub Spray	13.46	33.77	1.81 in/h
B	23	Hunter ICV-G	1-1/2"	Turf Spray	46.39	34.47	1.58 in/h
B	24	Hunter ICV-G	1-1/2"	Turf Spray	45.81	34.34	1.68 in/h
B	25	Hunter ICV-G	1-1/2"	Turf Spray	41.20	34.48	1.82 in/h
B	26	Hunter ICV-G	1"	Bubbler	5.00	33.05	1.77 in/h

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
2Q 2H 4Q 4H 6Q 6H	Hunter PROS-04-PRS30-CV short radius nozzles Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	6	30
Q H F (5)	Hunter PROS-04-PRS30-CV 5` radius Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	42	30
Q T H F (8)	Hunter PROS-04-PRS30-CV 8` radius Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	18	30
Q T H F (10)	Hunter PROS-04-PRS30-CV 10` radius Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	21	30
Q T H TT TQ F (12)	Hunter PROS-04-PRS30-CV 12` radius Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	72	30
Q T H TT TQ F (15)	Hunter PROS-04-PRS30-CV 15` radius Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	69	30
Q H F (17)	Hunter PROS-04-PRS30-CV 17` radius Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	99	30
4 6 8 10 12 15 17	Hunter PROS-04-PRS30-CV ADJ Turf Spray, 30 psi regulated 4.0" Pop-Up. With factory installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	44	30
2Q 2H 4Q 4H 6Q 6H	Hunter PROS-12-PRS30-CV short radius nozzles Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	89	30
Q T H F (8)	Hunter PROS-12-PRS30-CV 8` radius Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	2	30
Q T H F (10)	Hunter PROS-12-PRS30-CV 10` radius Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	18	30
Q T H TT TQ F (12)	Hunter PROS-12-PRS30-CV 12` radius Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	12	30
Q T H TT TQ F (15)	Hunter PROS-12-PRS30-CV 15` radius Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	42	30
4 6 8 10 12 15 17	Hunter PROS-12-PRS30-CV ADJ Shrub Spray, 30 psi regulated 12.0" Pop-Up. With Factory Installed Drain Check Valve. Co-molded wiper seal with UV Resistant Material.	4	30
25 50 10 20	Hunter PROS-PRS30-04-PCN Flood Bubbler, 4.0" pop-up.	40	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
2.0	Hunter I-20-06 Turf Rotor, 6.0" Pop-Up. Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Standard Nozzle.	18	45	2.00	34'
3.0	Hunter I-20-06 Turf Rotor, 6.0" Pop-Up. Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Standard Nozzle.	5	45	3.00	38'
4.0	Hunter I-20-06 Turf Rotor, 6.0" Pop-Up. Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Standard Nozzle.	26	45	4.00	40'
8.0	Hunter I-20-06 Turf Rotor, 6.0" Pop-Up. Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Standard Nozzle.	3	45	8.00	44'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Hunter ICV-G 1", 1-1/2", 2", and 3" Plastic Electric Remote Control Valves, Globe Configuration, with NPT Threaded Inlet/Outlet, for Commercial/Municipal Use.	26
	Hunter HQ-5LRC-R Quick coupler valve, purple locking rubber cover for reclaimed water use, red brass and stainless steel, with 1" NPT inlet, 1-piece body.	5
	Ball Valve LASCO, Same size as mainline	46
A	Hunter ACC-4200 24 Station Outdoor Modular Controller. With two ACM-600 module. High-End Commercial Use. Metal Cabinet.	1
B	Hunter ACC-4200 24 Station Outdoor Modular Controller. With two ACM-600 module. High-End Commercial Use. Metal Cabinet.	1
RF	Hunter WSS-SEN Wireless Solar, rain freeze sensor with outdoor interface, connects to Hunter X-Core and ACC Controllers, install as noted. Includes gutter mount bracket. Module not included.	1
	Irrigation Lateral Line: PVC Class 200 SDR 21	9,577 l.f.
	Irrigation Mainline: PVC Class 200 SDR 21	2,418 l.f.
	Pipe Sleeve: PVC Schedule 40	308.9 l.f.

Valve Callout
Valve Number
Valve Flow
Valve Size

no.	revision	by	date

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horiz N/A
vert N/A
date MAY 2019

STATE OF TEXAS
JOE L. MADRID
17812
LICENSED IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
IRRIGATION DETAILS

tnp project VLK 18477
sheet IR1.06

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director: JFK
Drawn By: TNP
Designer: VLK
Quality Control: VLK
Proj. Coord.: JD

PROJECT NO.
1887.00

SHEET TITLE
IRRIGATION DETAILS

SHEET NO.
IR1.06

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IRRIGATION NOTES

SECTION 1 - GENERAL

1. These notes are intended as a field reference for the Contractor. The Contractor will thoroughly review these notes, as well as the specifications, and drawings prior to start of any work. The Contractor shall visit the site prior to submitting his bid and prior to start of work to become completely familiar with site conditions.

2. Contractor shall provide a complete, functioning automatic irrigation system. This includes all materials, labor, fees, taxes, equipment, and other costs incidental to accomplishing the end.

3. Contractor shall be a licensed irrigator/installer in the State of Texas.

4. It is the responsibility of the Contractor to advise the Licensed Irrigator (hereinafter, LI) of any condition found on the site which prohibits installation as shown on these drawings. The term of "Licensed Irrigator" shall refer to Teague Nall and Perkins, Inc., 5237 N. Riverside Drive, Suite 100, Fort Worth, Texas 76137

5. Prior to submitting a bid, the Contractor shall verify any discrepancies between the notes, specifications, or the drawings with the LI for clarification. If there is a discrepancy between the number or quality of materials shown on the plans and the number of materials shown in the materials legend, the greater number of and greater quality materials will take precedence for bidding purposes. All quantities listed are for information only.

6. Written dimensions prevail over scaled dimensions. Notify LI of any discrepancies.

7. The Contractor bears all responsibility and costs for obtaining all licenses and permits required by federal, state, and local agencies to accomplish the work of this project. All work shall be installed in accordance with applicable codes and ordinances.

8. Contractor shall be responsible for coordinating their work with project's building contractor, other trades, and owner.

9. Warning! Call toll-free **811** *before* you dig! The contractor bears all responsibility for verifying all underground utilities, pipes, and structures in the field prior to construction. Any damage to utilities that are to remain shall be repaired immediately at no expense to the owner. The Contractor shall contact the building contractor and all utility authorities to mark location of site utilities. Install flags or stakes and maintain them in place throughout the project. Damage to utilities or other work shall be repaired at the expense of the contractor responsible for the damage. The locations of existing utilities as shown on these plans are approximate. There may be other underground utilities within the project area that are not shown. LI and/or Engineer and/or Surveyor assumes no responsibility for any utilities not shown on plans.

10. The design water pressure necessary for this system's proper operation is 80 p.s.i. Contractor shall verify static water pressure prior to commencement of construction/installation. Should a discrepancy occur between the design pressure and the actual pressure contact the LI before proceeding with the work. Failure to do so should a discrepancy occur will result in the Contractor making necessary changes to the irrigation system to the satisfaction of the LI without additional cost to the Owner or LI.

11. Contractor shall operate the existing irrigation system prior to the commencement of installation of the proposed work. Existing heads and mainline shall be located, and the proposed system adjusted to insure adequate irrigation coverage between the two systems.

12. Due to existing vegetation, utilities, and other site conditions, the Contractor should anticipate field adjustments by the LI and should understand such adjustments are not eligible for a change order

13. The irrigation system shall have 100% coverage of all planting areas, head-to-head spacing, and matched precipitation rates on each zone. Contractor shall be responsible for the supply and installation of additional heads needed to cover "dry spots" or slight variations from the plan.

14. The Contractor shall give the LI notice of required inspections upon completion of each of the following phases:

A. Pre-Job Conference - 7 days.
B. Pressure supply line installation & testing - 48 hours
C. Automatic controller installation - 48 hours
D. Control wire installation - 48 hours
E. Lateral line and irrigation installation - 48 hours
F. Coverage test - 48 hours
G. Final inspection - 7 days

15. The entire system shall be unconditionally guaranteed by the Contractor against defective work and materials for a period of one year after final acceptance. Damage to the irrigation system or cutting off of water or electricity by other trades or persons shall not void the warranty.

16. It is the contractor's responsibility to insure the availability of water to the plants at all times until final acceptance.

17. LI assumes no responsibility for damages, liabilities, or cost resulting from changes or alterations made to the plan without the express written consent of LI.

SECTION 2 - MATERIALS

18. All materials are subject to approval or refusal by the LI. All material rejected by the LI shall be removed from the site and replaced with acceptable material at the Contractor's expense. All material to be new and first quality. The Contactor shall check all material for specified requirements, shipping damage, manufacturing defects, and shall reject all unsatisfactory materials.

19. Contractor shall install anti-drain devices (check valves) where necessary to prevent low head drainage and shall install pressure compensating devices where necessary to prevent overspray or misting.

20. Do not make substitutions. If specified material is not available, submit proof of non-availability to LI. If contractor wishes to use substitute equipment he shall submit cut sheets and detailed calculations for the LI's approval or rejection. All substitutions shall have written approval form the LI 30 days prior to installation.

21. Contractor shall install one extra control wire, routed with the common wire to each control valve, with the installation of the pilot and common wires.(for bidding clarity, consider the extra control wire as a second common wire, different color. The length of the extra control wire is equal to the length of the common wire).

22. All control wire shall be direct burial, 600 volt, single conductor solid copper, plastic insulated cable, rated for direct burial applications, U.F., U.L. approved 14 gauge (minimum) pilot and common ground return wire.
- Pilot Wire: red (color)
- Common Ground Wire: white (color)
- Extra Control Wire: blue (color)

23. Install all wire connections to valves with wire nuts inside DBY weather-sealed connectors.

SECTION 3 - EXECUTION

24. All locations and workmanship are subject to approval or refusal by the LI. All locations and workmanship rejected by the LI shall be remedied at the Contractor's expense. All piping and head layout is shown diagrammatically and is to be located in planting areas where possible. Locate lines in such a way so as to cause the least conflict with other built and natural features.

25. The Irrigation Contractor shall be responsible for the final electrical connection of the controller. This shall include all necessary fuse boxes or other electrical requirements.

26. No installation (except sleeving) of any piping will take place until all clean-up and rough grading (to within 2" of finish grade) is complete in the immediate area.

27. If an irrigation pump is specified, the Contractor shall test the pump in presence of LI to verify it meets specified flow at the specified pressure and submit test results to LI for approval. No irrigation work shall begin until specified water quality, pressure, and flow is provided.

28. Installation of irrigation sleeves under paving as indicated on the drawings, shall be the responsibility of the Irrigation Contractor, unless otherwise noted. Provide 12" to top of sleeve from bottom of pavement when going under pavement. All sleeves shall be PVC schedule 40 with #12 pull wire wherever electrical conduit, lateral sprinkler lines, or main sprinkler lines pass through or go under masonry, paving, etc. It is the responsibility of the Irrigation Contractor to locate and mark the sleeve ends.

29. Contractor to provide minimum cover of 18" for pressure mainline and 12" for lateral lines. Lateral lines may be installed over mainlines.

30. Contractor shall hand trench through the root zone (within the dripline) of existing trees taking care not to cut any roots larger than one (1") inch. Where possible contractor shall trench around trees to avoid cutting roots. Where possible contractor shall trench directly towards tree trunk rather than across the root zone to minimize damage to tree roots. Irrigation trenches shall be routed to avoid proposed tree locations by a minimum of 5'-0". See landscape planting plans prior to trenching and installation and coordinate work with Landscape Contractors.

31. All heads shall be plumb, 1/2" above finish grade in sod areas, 1" above finish grade in planting beds, and evenly spaced to provide for uniform distribution. All heads shall be adjusted to provide even coverage and to keep water in landscaped areas and off of walls and pavement.

32. Contractor shall flush all lines prior to nozzle installation for pop-up spray heads and prior to head installation for rotor heads and bubblers.

33. Prior to installation, the final location of the automatic controller shall be determined by the Owner and LI.

34. Provide the LI and Owner a reproducible, As-Built Record Drawings (same size as drawing) and a reduced, laminated copy for the inside of the controller. As-built drawings shall show valves, controller, and sleeves dimensionally located from two permanent points of reference. Contractor shall also provide all irrigation product information and controller operating manuals.

35. All limestone, rocks, and building materials dug up during trenching shall be removed from the site and not put back into trenches.

36. Contractor is to test water for staining potential and submit results to LI. Install LI approved filtration system to prevent staining.

37. Contractor shall make every effort to prevent staining of walls, walks, driveways, vehicles, or other structures. Contractor guarantees job against such staining for thirty (30) days. Contractor shall install a suitable rust prevention system if required to prevent staining.

38. The entire irrigation system shall be fully-maintained until final acceptance by continuously checking the system to ensure that plants are receiving the proper amount of water. Any broken or defective materials shall be immediately replaced with material originally specified.

no.	revision	by	date

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scale	
horiz	N/A
vert	N/A
date	MAY 2019

tnp

STATE OF TEXAS
JOE L. MADRID
7813
LICENSED IRRIGATOR
MAY 8, 2019

North Richland Hills, Texas
Birdville Independent School District
Smithfield MS Gymnasium Addition
IRRIGATION NOTES

tnp project VLK 18477
sheet IR1.07

TNP PROJECT NO. VLK 18477
TNP TBPE REGISTRATION NO. F-230

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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Director JFK	Drawn By TNP
Designer VLK	Quality Control VLK
Proj. Coord. JD	

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SHEET TITLE
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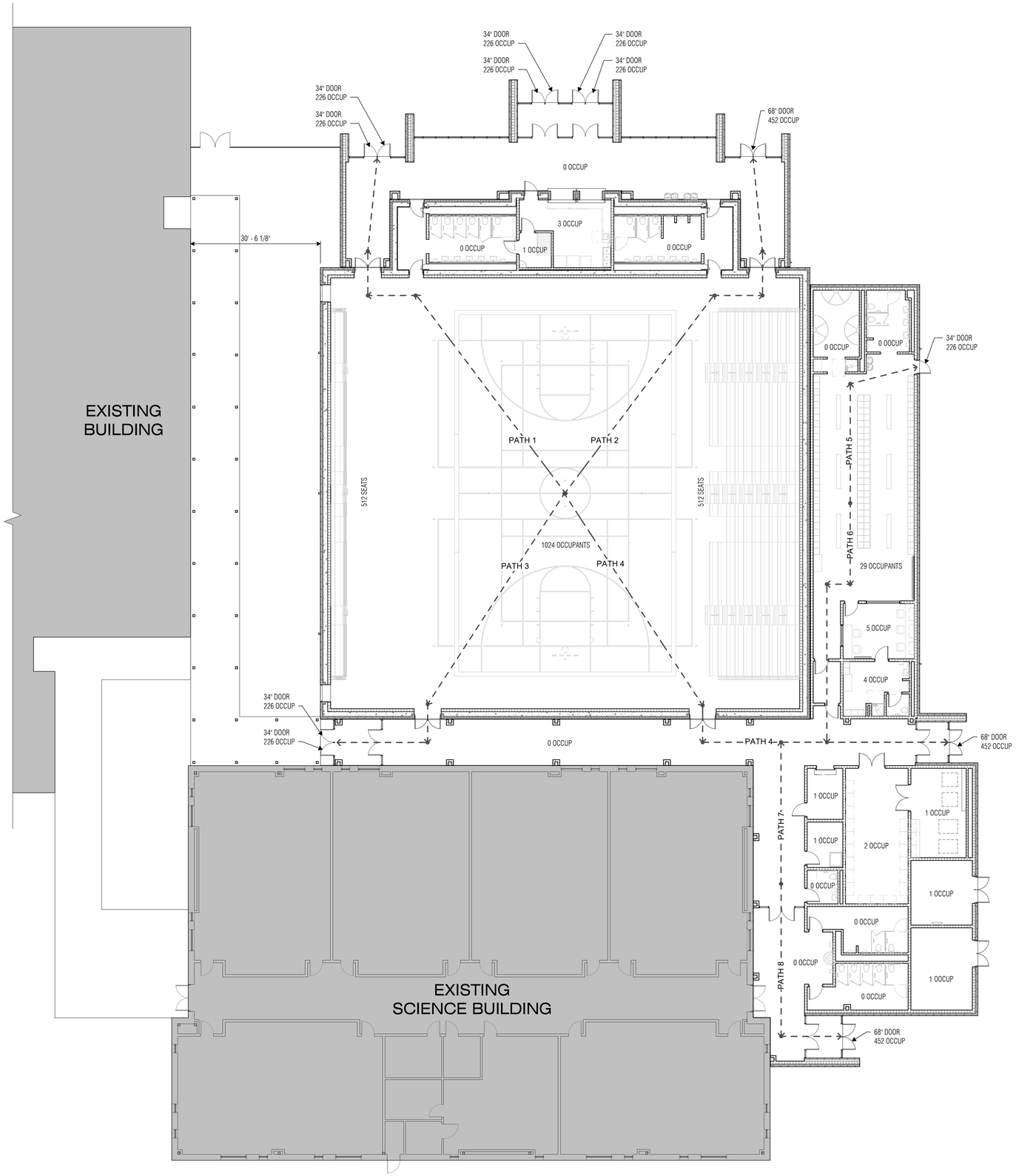

1 CODE REVIEW PLAN
SCALE: 3/32" = 1'-0"

N
PLAN NORTH TRUE NORTH

TRAVEL DISTANCE SCHEDULE	
Path ID	Travel Distance
PATH 1	101' - 9 5/16"
PATH 2	101' - 9 5/16"
PATH 3	89' - 3 1/2"
PATH 4	125' - 7 1/16"
PATH 5	44' - 1 13/16"
PATH 6	89' - 11 3/16"
PATH 7	72' - 5 9/16"
PATH 8	49' - 10 15/16"

BUILDING DESIGN CRITERIA

PROJECT INFORMATION
VLK Project Number: 1887.00
Project: Smithfield Middle School Gymnasium Addition
Owner: Birdville I.S.D.
Project Location: North Richland Hills, TX

Building Codes:
2012 International Building Code w/ local amendments
2012 International Plumbing Code w/ local amendments
2012 International Mechanical Code w/ local amendments
2014 National Electrical Code w/ local amendments
2009 International Energy Conservation Code w/ local amendments
2012 International Fire Code w/ local amendments

2012 Texas Accessibility Standards

Building Data: Single Story Type II-B w/ automatic sprinkler system

Exisitng Building: 12,576 sf

Proposed Building: 23,168 sf

Total: 35,744 sf

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION
Section 302 CLASSIFICATION
Section 305.1, 303.1.3 Education Group E w/ automatic fire sprinkler system throughout

CHAPTER 5: BUILDING HEIGHTS AND AREAS
Section 504.2, 506.3 Automatic sprinkler system increase

Table 503
Allowable height: 55 ft + 20 ft increase = 75 ft
Allowable stories: 2 stories + 1 story increase = 3 stories
Allowable area: 14,500 sf + 300 % (43,500 sf) increase = 58,000 sf

CHAPTER 6: TYPES OF CONSTRUCTION
Section 602 CONSTRUCTION CLASSIFICATION

Table 602 Fire-Resistance rating requirements for exterior walls based in fire separation distance:
X ≥ 30 = 0 Hrs

CHAPTER 10 MEANS OF EGRESS
Section 1004 OCCUPANT LOAD
Table 1004.1.2 Exception *Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.*

Gymnasium to be considered as Group E w/ bleachers for 1,024 seats
Occupant load factor = 1 per seat per City of North Richland Hills

Total Occupant Load = 1,024

Section 1005 MEANS OF EGRESS SIZING
Table 1005.3 Required capacity based on occupancy load

	Occupants	Stairways 0.2 inches per occupant	Other Egress Components 0.15 inches per occupant	
		Required	Required	Provided
Proposed Addition	1,024	-	154"	408"

Section 1014 EXIT ACCESS
Section 1014.3 COMMON PATH OF EGRESS TRAVEL
Table 1014.3 The common path of egress travel shall not exceed 75 feet.

Section 1016 EXIT ACCESS TRAVEL DISTANCE:
Table 1016.2 The total exit access travel distance shall not exceed 250 feet in a sprinklered Group E occupancy

Section 1018 CORRIDORS
Section 1018.4 DEAD ENDS
In occupancy in Group E, where the building is equipped throughout with an automatic sprinkler system, the lenght of the corridor shall not exceed 50 feet.

CHAPTER 29 PLUMBING SYSTEMS
Table 2902.1 Minimum number of required plumbing fixtures

TABLE 2902.1 - EDUCATIONAL						
	MALE	FEMALE	MALE REQ'D	FEMALE REQ'D	MALE PROVIDED	FEMALE PROVIDED
Group E Occupancy	512	512				
Water Closets	1 per 50	1 per 50	11	11	17	13
Urinals	Urinals shall not substitute more than 67% of water closet count				8	-
Lavatories	1 per 50	1 per 50	11	11	13	10
Drinking Fountains	1 per 100		11		6	
Service Sink	1		1		1	

2015 IECC REQUIREMENTS

CLIMATE ZONE 3
Roof:
Insulated entirely above deck
Required: R-25ci
Provided: Base Layer #1 = 2.3" Polyiso, R-11.5
Base Layer #2 = 2.3" Polyiso, R-11.5
Cover Board = Perlite Insulation, R-2.0

Walls:
Mass (CMU/Concrete Backup)
Required: R-7.6ci
Provided: R-8.4ci (2" Mineral wool)

Floor:
Unheated Slab
Required: R-0ci

Vertical Fenestration U-Factor:
Storefront
Required: 0.46 Min
Provided: 0.40

Entrance Doors
Required: 0.77 Min
Provided: 0.77

Vertical Fenestration SHGC
Required: 0.25 Min
Provided: 0.24

NOTE: CONTRACTOR TO PROVIDE VINYL NUMBERS ON EACH EXIT IDENTIFYING EACH EXIT REQUIRED BY BUILDING CODE

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REGISTERED ARCHITECT JOHN F. KLEIN STATE OF TEXAS
05/08/2019

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A0.01

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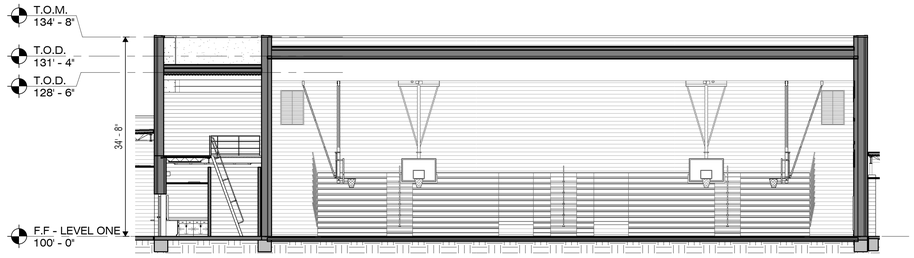
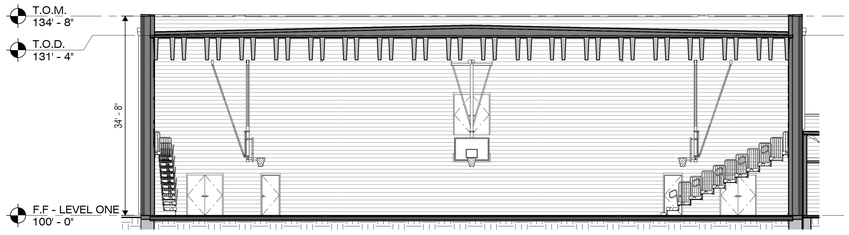
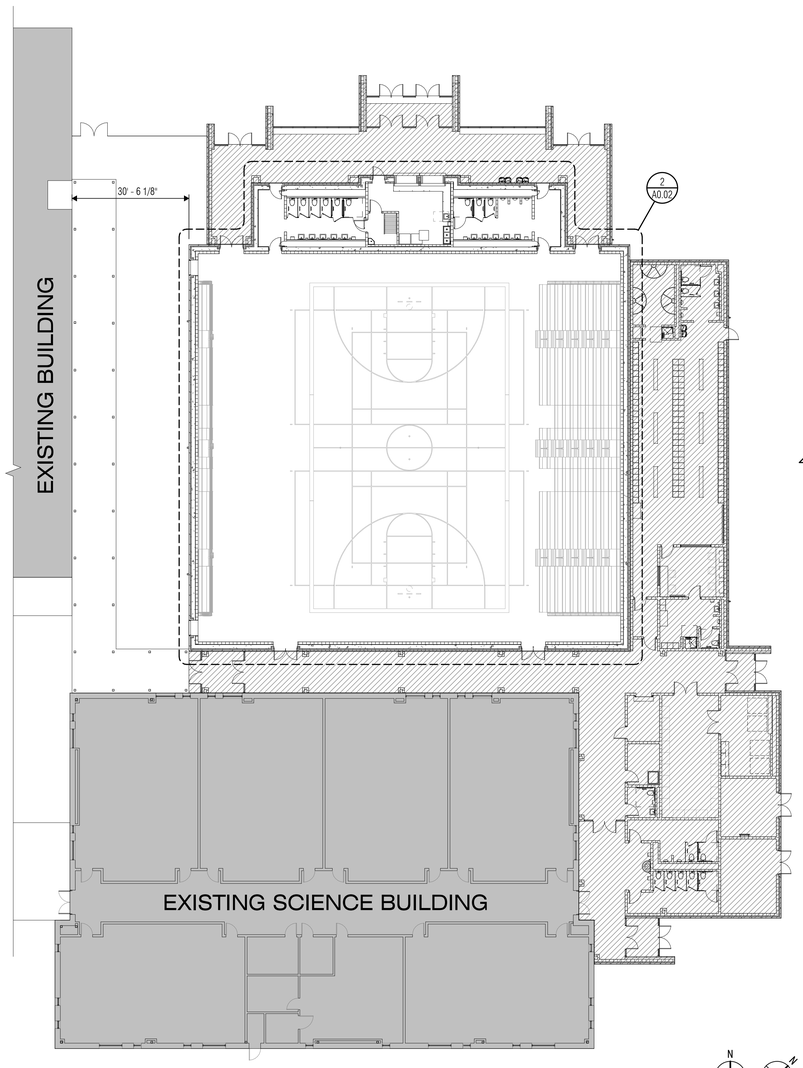


3 STORM SHELTER BUILDING SECTION 1
SCALE: 3/32" = 1'-0"

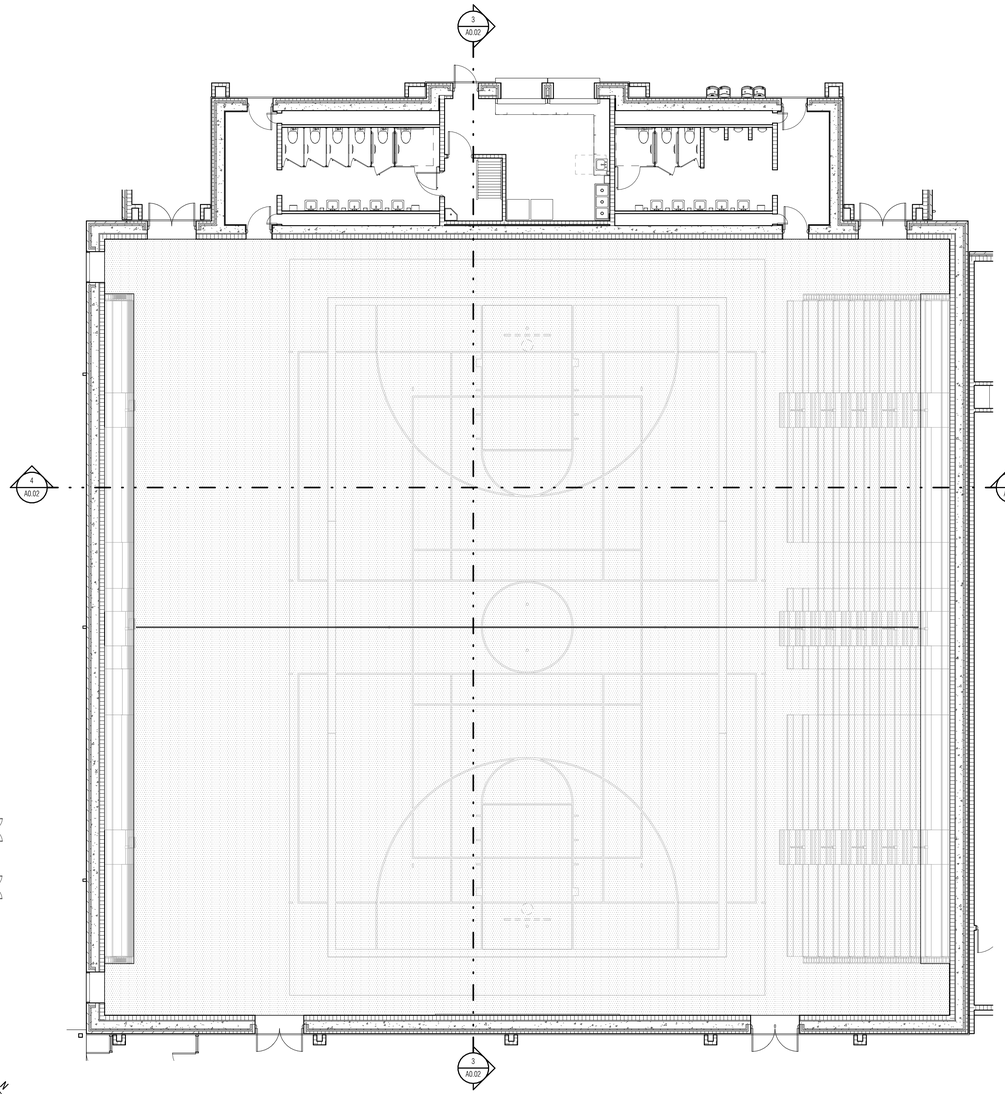


4 STORM SHELTLER BUILDING SECTION 2
SCALE: 3/32" = 1'-0"



1 CODE REVIEW PLAN - STORM SHELTER
SCALE: 1/16" = 1'-0"

N PLAN NORTH TRUE NORTH



2 CODE REVIEW PLAN - STORM SHELTER PLAN
SCALE: 1/8" = 1'-0"

DESIGN INFORMATION

ICC-500
SECTION 107.2.1 DESIGN INFORMATION.
FOR THE AREAS OF A BUILDING DESIGN FOR OCCUPANCY AS A STORM SHELTER, THE FOLLOWING INFORMATION SHALL BE PROVIDED WITHIN THE CONSTRUCTION DOCUMENTS.

1. TYPE OF SHELTER. RESIDENTIAL OR COMMUNITY TORNADO, HURRICANE, OR A COMBINATION OF BOTH.	COMMUNITY TORNADO
2. A STATEMENT THAT THE WIND DESIGN CONFORMS TO THE PROVISIONS OF THE ICC/NSSA *STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS*, WITH THE EDITION YEAR SPECIFIED.	ICC-500, 2014. SEE STRUCTURAL
3. THE SHELTER DESIGN WIND SPEED, MPH.	250 MPH
4. THE WIND EXPOSURE CATEGORY (INDICATE ALL IF MORE THAN ONE IS USED)	SEE STRUCTURAL
5. THE INTERNAL PRESSURE COEFFICIENT	SEE STRUCTURAL
6. THE TOPOGRAPHIC FACTOR	SEE STRUCTURAL
7. THE DIRECTIONALITY FACTOR	SEE STRUCTURAL
8. A STATEMENT THAT THE SHELTER HAS NOT BEEN CONSTRUCTED WITHIN AN AREA SUSCEPTIBLE TO FLOODING IN ACCORDANCE WITH CHAPTER 4 OF THIS STANDARD.	SHELTER NOT CONSTRUCTED WITHIN AN AREA SUSCEPTIBLE TO FLOODING
9. THE DESIGN FLOOD ELEVATION AND BASE FLOOD ELEVATION FOR THE SITE (IF APPLICABLE).	N/A
10. DOCUMENTATION SHOWING THAT COMPONENTS OF THE SHELTER ENVELOPE WILL MEET THE PRESSURE MISSILE IMPACT TEST REQUIREMENTS IDENTIFIED IN CHAPTER 3 AND 8 OF THIS STANDARD.	SEE STRUCTURAL
11. A FLOOR PLAN DRAWING OR IMAGE INDICATING LOCATION OF THE STORM SHELTER ON A SITE OR WITHIN A BUILDING OR FACILITY; INCLUDING A DRAWING OR IMAGE INDICATING THE ENTIRE FACILITY.	REF. SHEET A0.03
12. A STORM SHELTER SECTION OR ELEVATION INDICATING THE HEIGHT OF THE STORM SHELTER RELATIVE TO THE FINISHED GRADE, FINISHED FLOOR AND THE HOST BUILDING, WHERE APPLICABLE.	REF. SHEET A0.02
13. THE LOWEST SHELTER FLOOR ELEVATION AND CORRESPONDING DATUM EXCEPT FOR RESIDENTIAL SHELTERS OUTSIDE OF SPECIAL FLOOD HAZARD AREAS.	ARCH. ELEV. = 100'-0" CIVIL ELEV. = 627.63'
14. THE OCCUPANT LOAD OF THE STORM SHELTER.	SEE "STORM SHELTER OCCUPANCY COUNT" SCHEDULE
15. THE USABLE STORM SHELTER FLOOR AREA.	SEE "STORM SHELTER AREA" SCHEDULE
16. VENTING AREA (SQUARE INCHES) PROVIDED AND LOCATIONS IN THE SHELTER.	SEE MPE
17. CALCULATIONS FOR THE NUMBER OF SANITATION FACILITIES FOR COMMUNITY SHELTERS.	SEE "STORM SHELTER SANITATION FACILITIES" SCHEDULE
18. MINIMUM FOUNDATION CAPACITY REQUIREMENTS	SEE STRUCTURAL
19. SHELTER INSTALLATION REQUIREMENTS, INCLUDING ANCHOR LOCATION AND MINIMUM REQUIRED CAPACITY FOR EACH ANCHOR.	N/A - NO PREFABRICATED SHELTERS

STORM SHELTER OCCUPANCY COUNT

LOCATION	ROOM COUNT	OCCUPANT LOAD
GYMNASIUM	1	2,061 OCCUPANTS
TOTAL OCCUPANTS		2,061 OCCUPANTS

STORM SHELTER AREA

	OCCUPANTS	AREA FACTOR	AREA
STANDING	2,050 OCCUPANTS	5 SF / OCCUPANT	10,250 SF
WHEELCHAIR	11 OCCUPANTS	10 SF / OCCUPANT	110 SF
TOTAL AREA REQUIRED:			10,360 SF
TOTAL USABLE AREA PROVIDED:			10,496 SF

STORM SHELTER SANITATION FACILITIES

MAXIMUM CAPACITY OF STORM SHELTER:	2,061
TOILET FACILITIES REQUIRED FOR MAXIMUM CAPACITY:	6
HAND WASHING FACILITIES REQUIRED FOR MAXIMUM CAPACITY:	3
TOILET FACILITIES PROVIDED:	12
HAND WASHING FACILITIES PROVIDED:	10

STORM SHELTER LEGEND

- OTHER BUILDING AREA
- STORM SHELTER AREA
- USABLE SHELTER FLOOR AREA

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLUTTS 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

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SHEET TITLE
STORM SHELTER PLAN

SHEET NO.
A0.02

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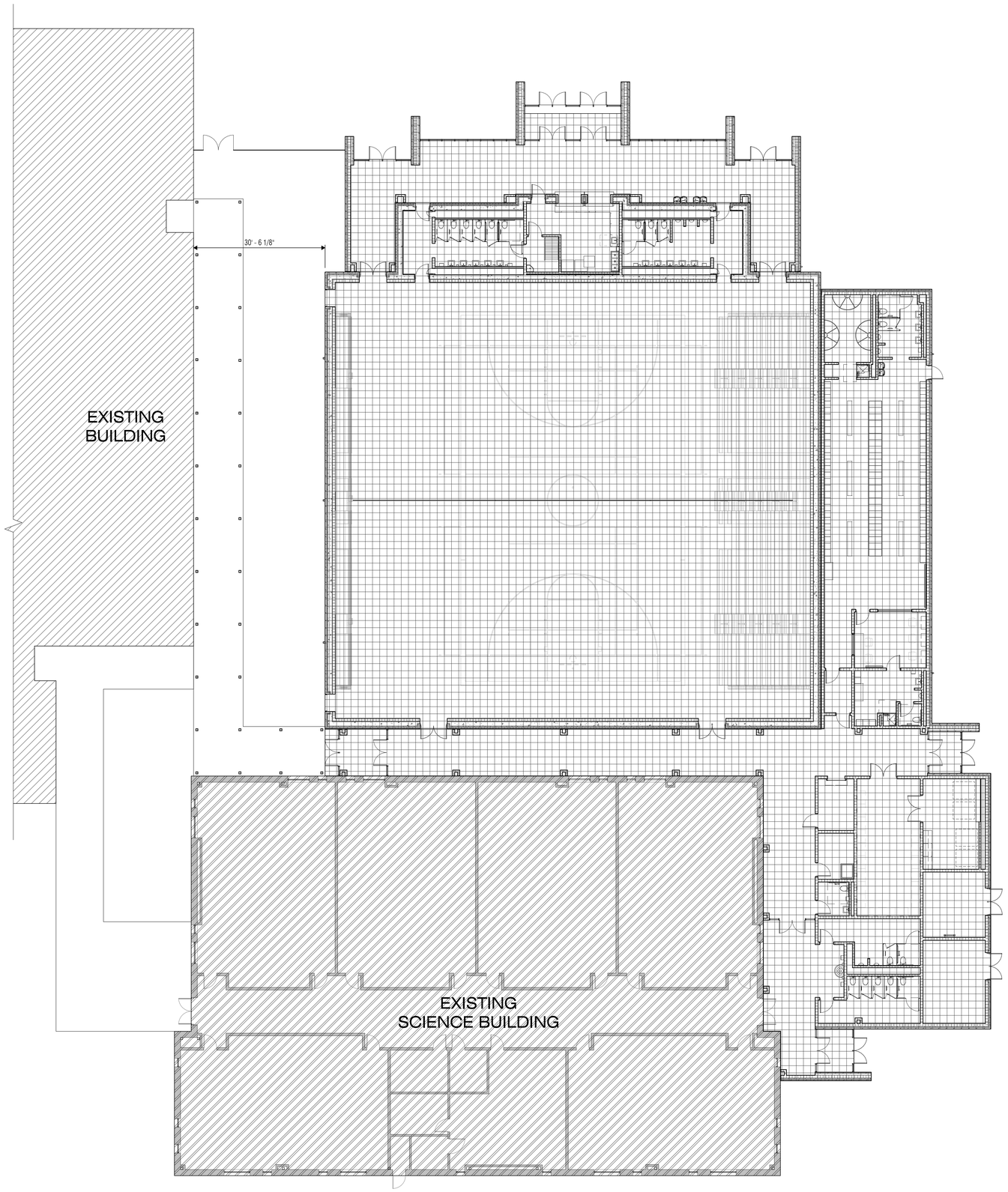

1 CODE REVIEW PLAN - FIRE PROTECTION
SCALE: 3/32" = 1'-0"

N
PLAN NORTH TRUE NORTH

GENERAL FIRE PROTECTION NOTES

1. PROVIDE FIRESTOP AS REQUIRED TO ACHIEVE THE FIRE RESISTIVE RATING AT EVERY PENETRATION, GAP AND OTHER OPENING THROUGH A RATED FLOOR, ROOF OR WALL.
2. CONSTRUCT PARTITIONS TO FULLY ACHIEVE THE FIRE RESISTIVE REQUIREMENTS INDICATED ON THE REFLECTED CEILING PLAN AND THIS PLAN.
3. COLUMN FIREPROOFING SHALL CONTINUE FROM FLOOR TO DECK, TYPICAL. REF. U.L. LEGEND THIS SHEET.
4. COLUMN, ROOF UNDERDECK, AND STRUCTURAL BEAMS TO ACHIEVE REQUIRED 1 HOUR FIRE RATING WITH CEMENTITIOUS FIREPROOFING WHERE INDICATED.
5. FIREPROOFING ON ROOF STRUCTURE IS NOT REQUIRED WHERE THE ENTIRE ROOF STRUCTURE IS ABOVE 20'-0" OF FINISH FLOOR. IF ANY PORTION OF A STRUCTURAL MEMBER IS BELOW 20'-0" THE ENTIRE STRUCTURAL MEMBER SHALL BE FIREPROOFED PER U.L. LEGEND.
6. STRUCTURAL MEMBER TO ACHIEVE SPECIFIED FIRE RATING WITH INTUMESCENT PAINT, WHERE INDICATED.

CODE REVIEW LEGEND

EXISTING AREA 1

TYPE II-B - NON-RATED (NON-SPRINKLERED)

EXISTING AREA 2

TYPE II-B - NON-RATED (SPRINKLERED)

PROPOSED ADDITION

TYPE II-B - NON-RATED (SPRINKLERED) PER TABLE 601
ALL COMPONENTS TO BE ZERO HOUR RATED

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CONSTRUCTION DOCUMENTS

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FIRE PROTECTION PLAN

SHEET NO.
A0.03

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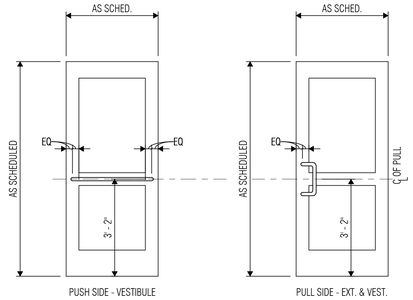
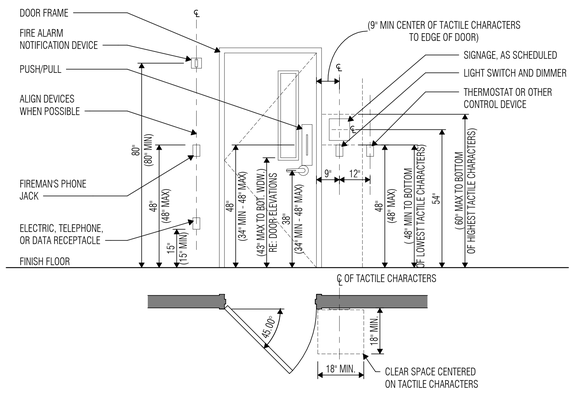
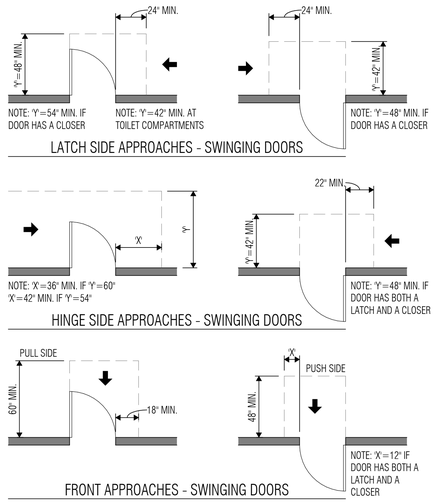


6 PUSH/ PULL HEIGHTS
SCALE: 1/2" = 1'-0"

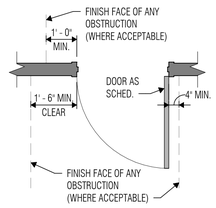
NOTES:
1. All items are to be located at the same height throughout the project, U.N.O. Notify Architect of any discrepancies.
2. Dimensions indicate project requirements. Dimensions in ( ) indicate maximum and/or minimum requirements per authorities having jurisdiction.



5 ACCESSIBLE MOUNTING CRITERIA AT DOORS
SCALE: 1/2" = 1'-0"

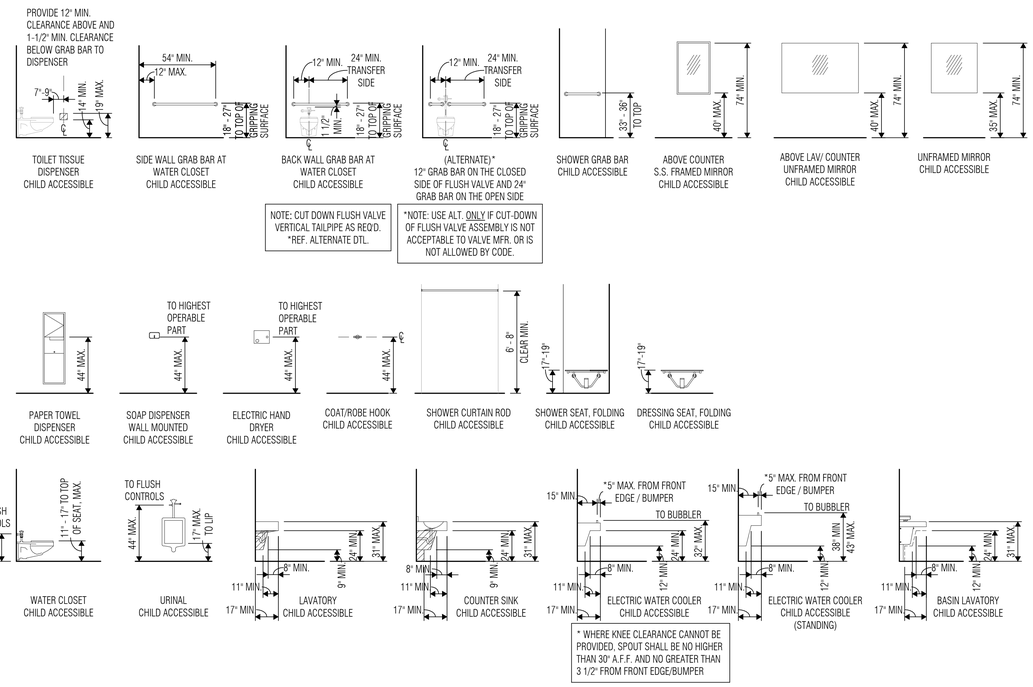


4 MINIMUM MANEUVERING CLEARANCES AT DOORS
SCALE: 1/4" = 1'-0"

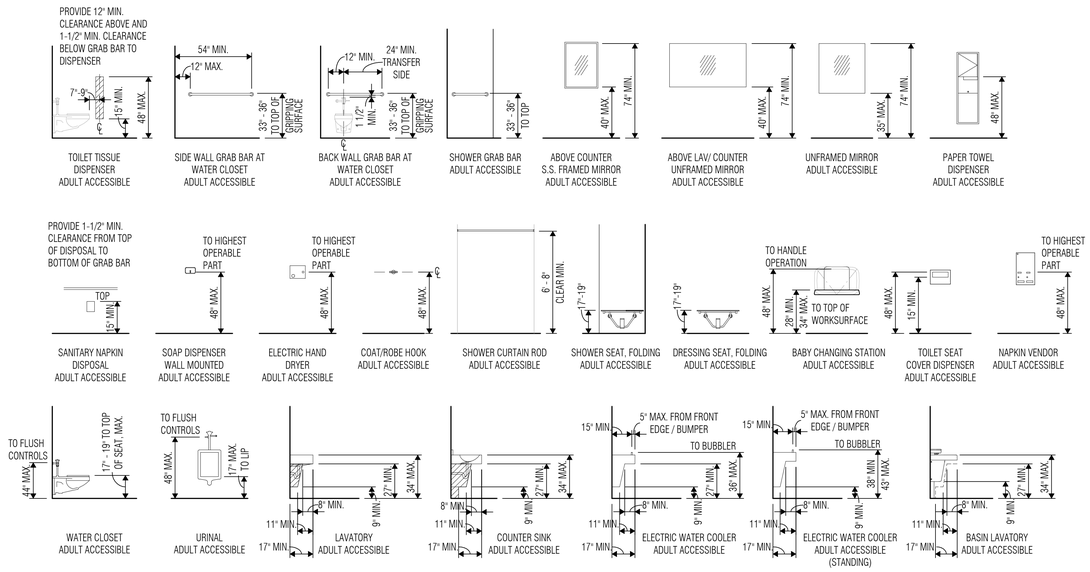


NOTES:
1. Confirm compliance of each door clearance prior to the layout or installation of any wall, door, casework or other item which may encroach into the required clearances.
2. Refer to Floor Plans for partition types. This detail applies to all new doors and all existing doors to remain within the areas containing work as defined by the construction documents.

3 TYPICAL DOOR CLEARANCES AT HINGE & STRIKE SIDE
SCALE: 1/2" = 1'-0"



2 ACCESSIBLE TOILET ACCESSORY & PLUMBING FIXTURE MOUNTING CRITERIA - CHILD
SCALE: 1/4" = 1'-0"



1 ACCESSIBLE TOILET ACCESSORY & PLUMBING FIXTURE MOUNTING CRITERIA - ADULT
SCALE: 1/4" = 1'-0"

TEXAS ACCESSIBILITY STANDARDS GENERAL NOTES

1. The dimensional ranges included for items on this sheet are the maximum and minimum dimensions allowed by the Texas Accessibility Standards (TAS). There are no tolerances allowed for these dimensions, more or less.
2. Mounting criteria for Toilet Accessories on this sheet is the allowable criteria per the TAS. Refer to Sheet A2.3__ for project-specific mounting criteria (if different than the TAS requirements), as well as for non-accessible mounting criteria.

EDITOR'S NOTES:
1. Upload Toilet & Shower Details Sheet (Sheet A2.3x & A2.3y). Edit Sheet Number as required for your specific project.

TEXAS ACCESSIBILITY STANDARDS

PROVISIONS FOR ADULTS AND CHILDREN	ADULTS AGE 13 & ABOVE	CHILDREN AGES 12 & UNDER
REACH RANGES		
UNOBSTRUCTED FRONTAL AND SIDE APPROACH	15" MIN. - 48" MAX.	16" MIN. - 44" MAX.
OBSTRUCTED FRONT APPROACH ≤ 20" D. (OPEN UNDER)	48" MAX.	44" MAX.
OBSTRUCTED FRONT APPROACH > 20" D. - 25" D. MAX (OPEN UNDER)	44" MAX.	44" MAX.
OBSTRUCTED SIDE APPROACH ≤ 10" D. - 34" D. MAX & 34" H. MAX	48" MAX.	44" MAX.
OBSTRUCTED SIDE APPROACH > 10" D. - 24" D. MAX & 34" H. MAX	46" MAX.	44" MAX.
RAMPS AND STAIRS		
TOP OF HANDRAIL GRIPPING SURFACE	34" - 38"	34" - 38"
DRINKING FOUNTAINS AND WATER COOLERS		
FRONTAL APPROACH		
SPOUT HEIGHT (TO OUTLET)	36" MAX.	USE SIDE
KNEE CLEARANCE	27" MIN.	APPROACH
SIDE APPROACH		
SPOUT HEIGHT (TO OUTLET)	USE FRONT	30" MAX.
KNEE CLEARANCE	APPROACH	NOT REQUIRED
STANDING		
SPOUT HEIGHT (TO OUTLET)	38" MIN. - 43" MAX.	38" MIN. - 43" MAX.
WATER CLOSETS		
CENTERLINE TO WALL OR PARTITION	16" - 18"	12" - 18"
CENTERLINE TO WALL OR PARTITION AT AMBULATORY STALL	17" - 19"	17" - 19"
TOP OF SEAT	17" - 19"	11" - 17"
GRAB BARS (TO TOP OF GRIPPING SURFACE)	33" - 36"	18" - 27"
TOILET TISSUE DISPENSER HEIGHT	15" - 48"	14" - 19"
HAND-OPERATED FLUSH CONTROLS	44" MAX.	36" MAX.
URINALS		
RIM OF BASIN	17" MAX.	17" MAX.[1]
HAND-OPERATED FLUSH CONTROLS	48" MAX.	44" MAX.
LAVATORIES AND SINKS		
RIM OR COUNTER SURFACE	34" MAX.	31" MAX.
KNEE CLEARANCE (LAVATORIES)	27" MIN.	24" MIN.
KNEE CLEARANCE (SINKS)	27" MIN.	24" MIN.
TO FAUCET HANDLES FROM FRONT EDGE	25" MAX.[2]	25" MAX.[1,2]
MIRRORS		
TO TOP OF REFLECTING SURFACE	74" MIN.	74" MIN.
TO BOTTOM OF REFLECTING SURFACE AT LAVS & COUNTERS	40" MAX.	40" MAX.[1]
TO BOTTOM OF REFLECTING SURFACE	35" MAX.	35" MAX.[1]
CONTROLS AND OPERATING MECHANISMS		
HIGHEST OPERABLE PART		
UNOBSTRUCTED FRONTAL AND SIDE APPROACH	48" MAX.	44" MAX.
OBSTRUCTED FRONT APPROACH ≤ 20" D. (OPEN UNDER)	48" MAX.	44" MAX.
OBSTRUCTED FRONT APPROACH > 20" D. - 25" D. MAX. (OPEN UNDER)	44" MAX.	44" MAX.
OBSTRUCTED SIDE APPROACH ≤ 10" D. - 34" D. MAX. & 34" H. MAX.	48" MAX.	44" MAX.
OBSTRUCTED SIDE APPROACH > 10" D. - 24" D. MAX. & 34" H. MAX.	46" MAX.	44" MAX.
FIXED OR BUILT-IN SEATING, TABLES, & WORK STATIONS		
HEIGHT OF TABLES OR COUNTERS	28" - 34"	26" - 30"
KNEE CLEARANCES	27" MIN.	24" MIN.
DRESSING, FITTING & LOCKER ROOMS		
TOP OF BENCH (20"-24" D x 42" L MIN.)	17" - 19"	17" - 19" [1]
BACK SUPPORT 18" H MIN. OR AFFIX BENCH TO WALL		
FOOD SERVICE LINES		
TOP OF TRAY SLIDE	28" - 34"	28" - 34" [1]

[1] NOTE: Dimension for Children is not specifically addressed in 2012 T.A.S.
[2] NOTE: Faucet handle location cannot be past the back of the allowable toe space, and only 6" deep toe space from the bottom portion of the provided kneespace is allowable for consideration.

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05/08/2019

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SHEET TITLE
ACCESSIBILITY STANDARDS

SHEET NO.
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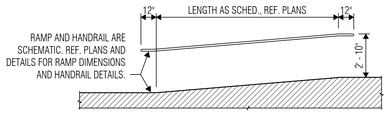
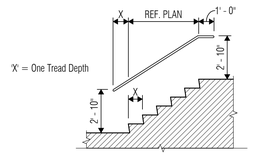


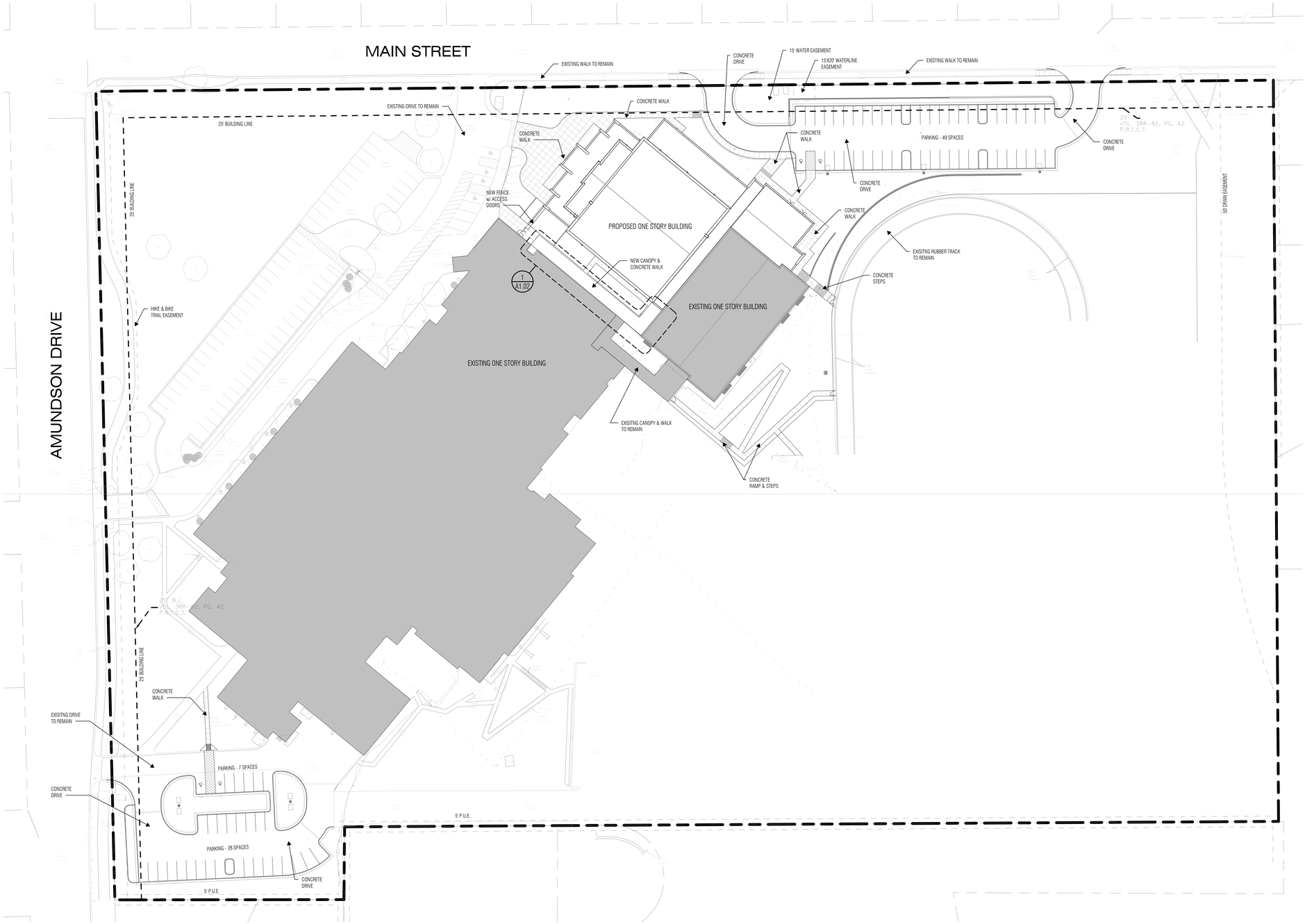
NOTE:
1. HANDRAILS SHALL EXTEND AT LEAST 12"BEYOND THE TOP AND THE BOTTOM OF THE RAMP SEGMENT & SHALL BE PARALLEL WITH THE FLOOR OR GROUND SURFACE.
2. THE CLEAR SPACE BETWEEN THE HANDRAIL AND THE WALL SHALL BE 1 1/2".
3. GRIPPING SURFACES SHALL BE CONTINUOUS.
4. ENDS OF HANDRAILS SHALL BE EITHER ROUNDED OR RETURNED SMOOTHLY TO FLOOR, WALL OR POST.
5. HANDRAILS SHALL NOT ROTATE IN THEIR FITTINGS.
6. HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF RAMP SEGMENTS.

3 HC301 - TYPICAL HANDRAIL ELEVATION
SCALE: 1/4" = 1'-0"



NOTES:
1. Handrails shall be continuous along both sides of inside handrail of switchback or dogleg stairs shall always be continuous.
2. If handrails are not continuous, they shall extend at least 12" beyond the top riser and one tread depth and at least 12" beyond the bottom riser. At the top, extensions shall be parallel with the floor or ground surface. At the bottom, the hand-rail shall continue to slope for a distance of one tread depth.
3. The clear space between the handrail and the wall shall be 1 1/2"
4. Gripping surfaces shall be continuous
5. Ends of handrails shall be either rounded or returned smoothly to floor, wall or post.
6. Handrails shall not rotate in their fittings.

2 HC300 - TYPICAL STAIR HANDRAIL ELEVATION
SCALE: 1/4" = 1'-0"



1 ARCHITECTURAL SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH TRUE NORTH

SITE PLAN GENERAL NOTES

1. Verify and document existing dimensions and conditions at the site before begining construction. Notify the Architect of conflicts or variations prior to commencement of construction.
2. To prevent damage to existing trees and shrubs in proximity to the Work, provide and maintain protective barriers around those items in accordance with the specified procedures, or in absence of those procedures, with recognized landscaping and horticultural practices.

SITE PLAN LEGEND

EXISTING TO REMAIN

NEW CONSTRUCTION

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLEIN TEXAS STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
ARCHITECTURAL SITE PLAN

SHEET NO.
A1.01

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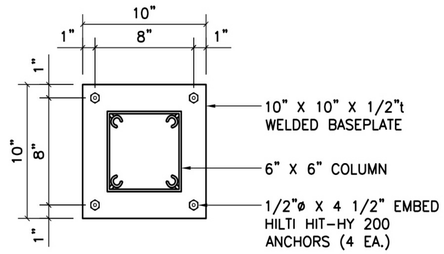
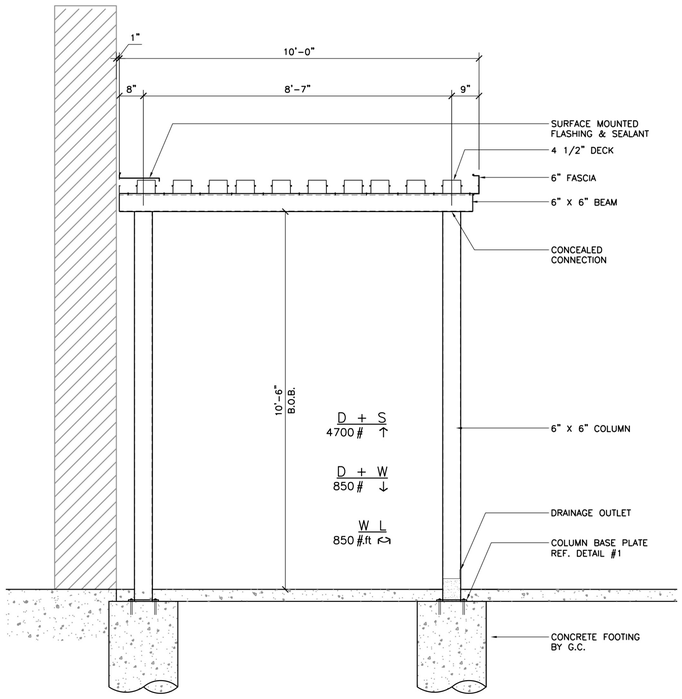
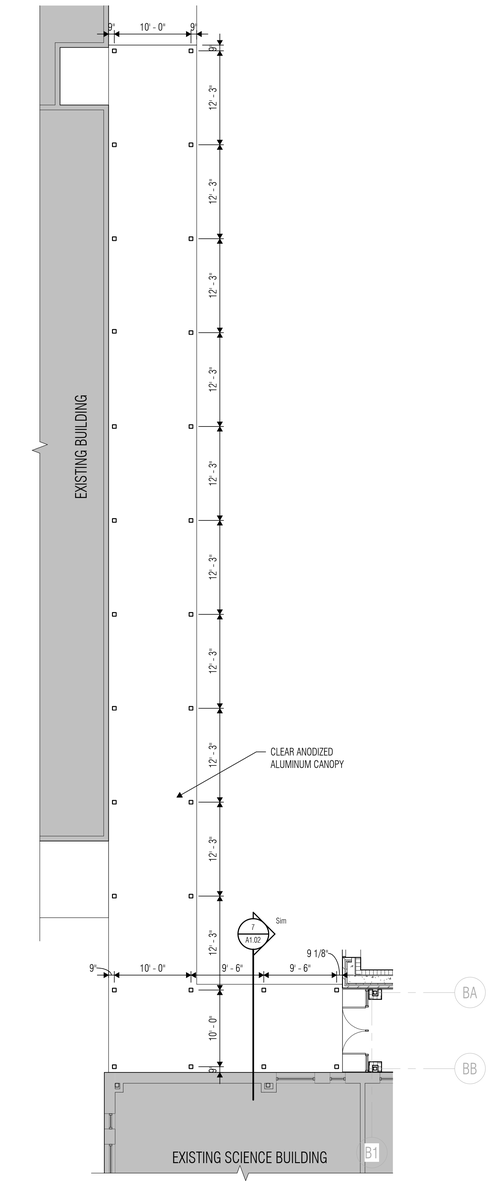


2 CANOPY BASE PLATE
SCALE: 1/8" = 1'-0"



7 CANOPY SECTION



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

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLUTTS 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

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SHEET TITLE
SITE DETAILS

SHEET NO.
A1.02

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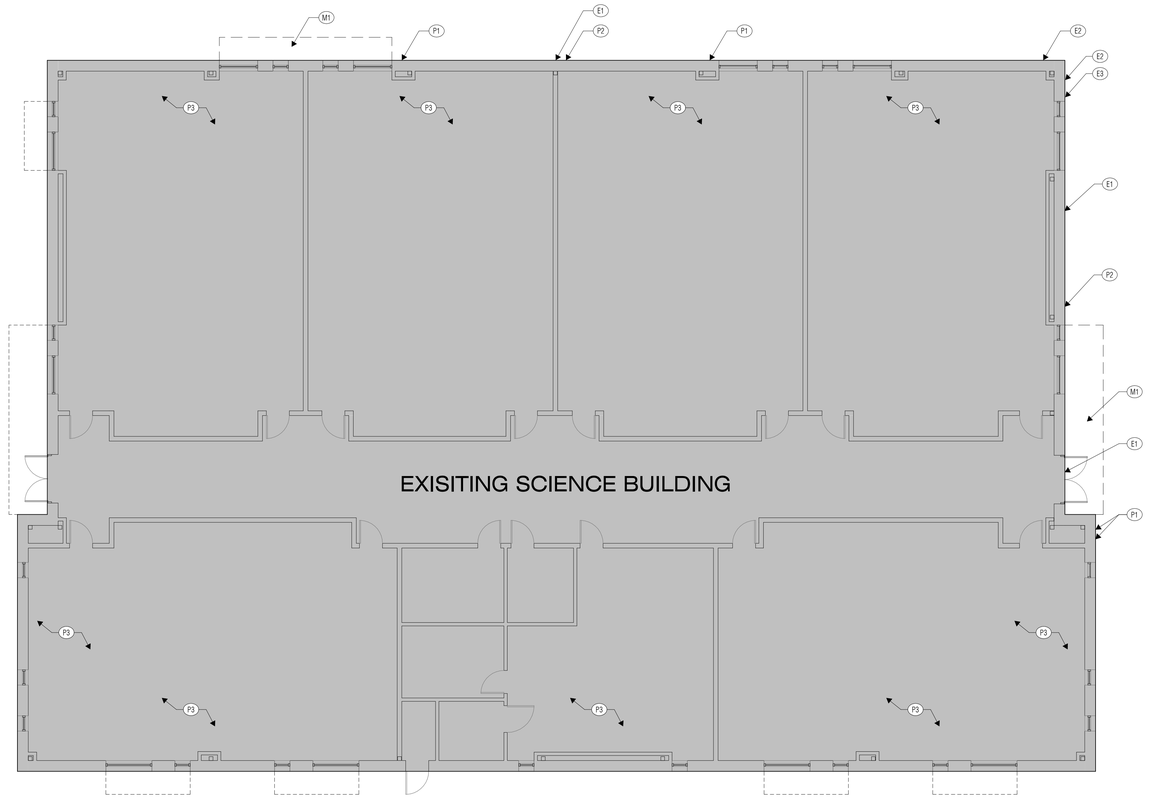

1 DEMOLIITON PLAN
SCALE: 1/8" = 1'-0"

DEMOLITION NOTES

1. DRAWINGS SHOW THE GENERAL EXTENT OF DEMOLITION WORK. HOWEVER IT IS IMPRACTICAL TO INDICATE OR NOTE EVERY ITEM OF DEMOLITION. ANY ITEMS SHOWN DASHED ARE TO BE REMOVED TO MAKE WAY FOR NEW CONSTRUCTION, UNLESS NOTED OTHERWISE.
2. EXISTING MATERIALS CONTAINING ASBESTOS TO BE REMOVED UNDER SEPARATE CONTRACT PRIOR TO CONSTRUCTION BY OWNER'S ASBESTOS ABATEMENT CONTRACTOR.
3. CONTACT THE OWNER PRIOR TO THE START OF DEMOLITION TO DETERMINE ITEMS TO BE SALVAGED AND RETURNED TO OWNER.
4. PROTECT ITEMS TO REMAIN FROM DAMAGE DURING DEMOLITION.
5. REFER TO ELECTRICAL AND MECHANICAL DEMOLITION PLAN FOR ADDITIONAL INFORMATION.
6. REPAIR @ NO COST TO THE OWNER ANY DAMAGES THEY INCUR ON THE EXISTING BUILDING AND SITE AS A RESULT OF THEIR ACTIVITIES NOT SCHEDULED FOR ALTERATION.
7. PATCH/REPAIR FLOORING TO MATCH EXISTING AT ALL REMOVED OR DEMOLISHED DOORS, WINDOWS, MILLWORK OR WALLS.

DEMOLITION KEYED NOTES

NOTE: NOT ALL NOTES MAY APPEAR ON THE SHEET

SITE
- S1 REMOVE EXISTING CONCRETE DRIVEWAY, CONCRETE CURB, CONCRETE SIDEWALK, AND/OR CONCRETE FLATWORK. REF. CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- S2 REMOVE EXISITNG STEEL FENCE AND GATE. VERIFY GATE AND FENCE ARE IN SUITABLE CONDITION FOR REINSTALATION IN NEW LOCATION. REF. SITE PLAN.

FLOORS
- F1 RESERVED

WALLS
- W1 RESERVED

DOORS & WINDOWS
- D1 RESERVED

CEILING
- C1 RESERVED

LOUVERS
- L1 RESERVED

PLUMBING
- P1 REMOVE EXISTING OVERFLOW DRAIN SPOUT AND ASSOCIATED PIPING. PATCH AND REPAIR ALL SURFACES AS REQUIRED TO MATCH EXISITNG CONDITIONS. REF. PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- P2 REMOVE EXISTING WALL HYDRANT, PIPING AND ANY ATTACHMENT DEVICES. PATCH AND REPAIR SURFACES AS REQUIRED TO MATCH EXISTING CONDITIONS. REF. PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- P3 REMOVE EXISTING ROOF DAIN AND OVERFLOW DRAIN PIPING AND ANY ATTACHMENT DEVICES ABOVE CEILING. REF. PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

ELECTRICAL
- E1 REMOVE EXISTING LIGHT FIXTURE, CONDUIT AND ANY ATTACHMENT DEVICES. REF. ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- E2 REMOVE EXISITNG WALL CAMERA, CONDUIT AND ANY ATTACHMENT DEVICES. REF. ELECTRICAL AND TECHNOLOGY DRAWINGS FOR ADDITIONAL INFORMATION.
- E3 REMOVE EXISITNG SOUND DEVICE, CONDUIT AND ANY ATTACHMENT DEVICES. REF. ELECTRICAL AND TECHNOLOGY DRAWINGS FOR ADDITIONAL INFORMATION.

MISCELLANEOUS
- M1 REMOVE EXTERIOR METAL SUN-SHADE DEVICE FROM WINDOW SYSTEM. WINDOWS TO REMAIN.

DEMOLITION LEGEND

- ITEMS TO BE DEMOLISHED
- EXISTING TO REMAIN
- WORK REQUIRED IN THIS AREA

N
PLAN NORTH TRUE NORTH

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CONSTRUCTION DOCUMENTS

JOHN F. KLEIN 19337 REGISTERED ARCHITECT STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

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SHEET TITLE
DEMOLITION PLAN

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A2.01

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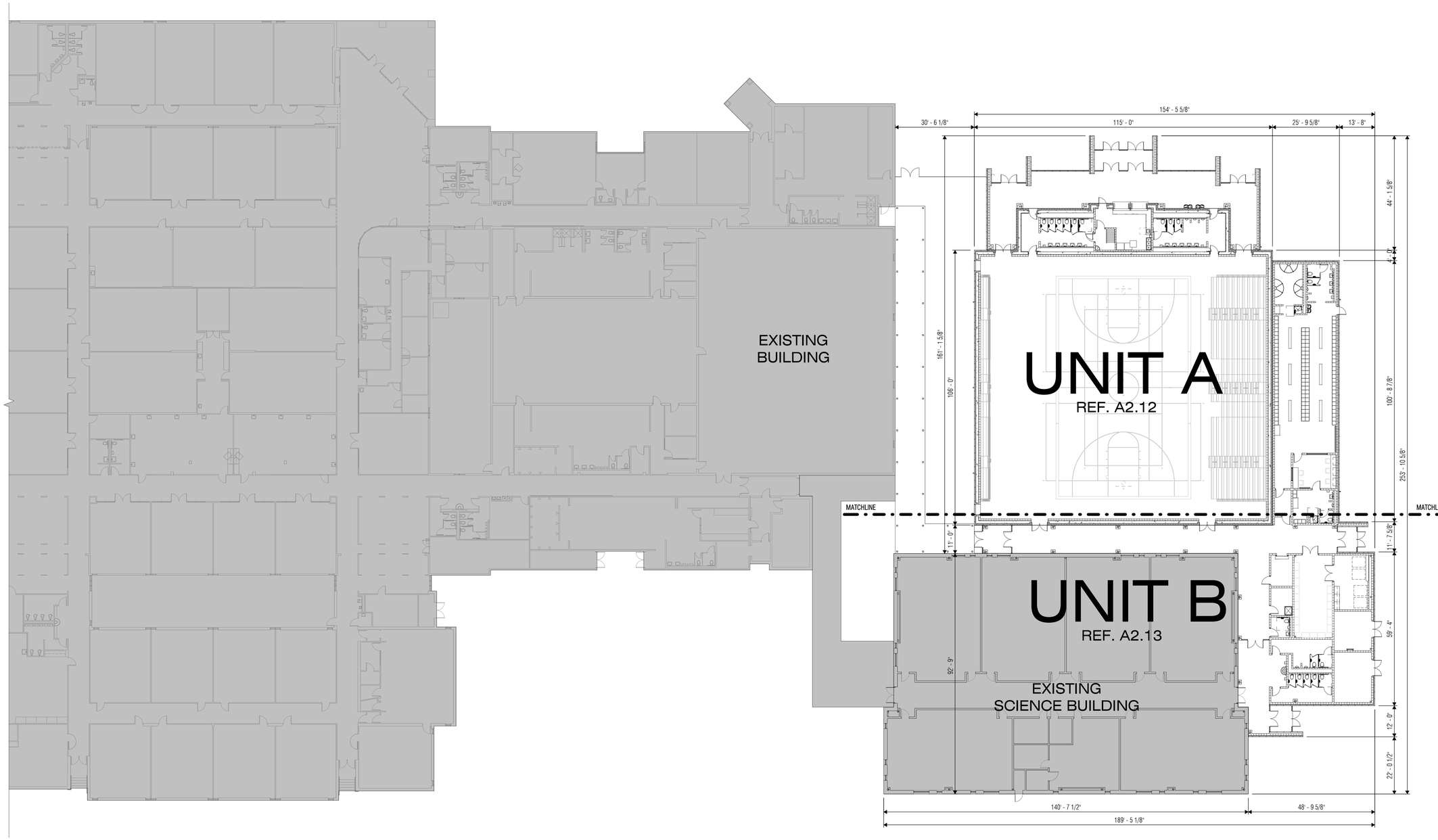

ORIENTATION PLAN LEGEND

EXISTING CONSTRUCTION

NEW CONSTRUCTION

1 ORIENTATION PLAN
SCALE: 1/16" = 1'-0"

N

PLAN NORTH TRUE NORTH

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

JOHN F. KLEIN — REGISTERED ARCHITECT — 76433 — STATE OF TEXAS
05/08/2019

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JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

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SHEET TITLE

ORIENTATION PLAN

SHEET NO.

A2.11

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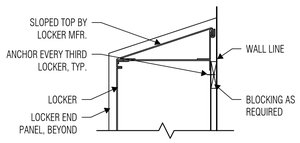
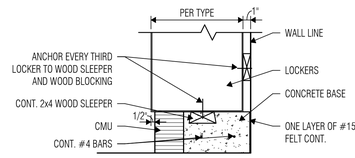
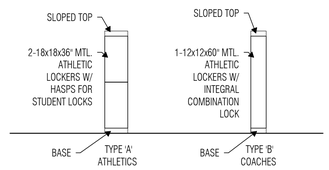


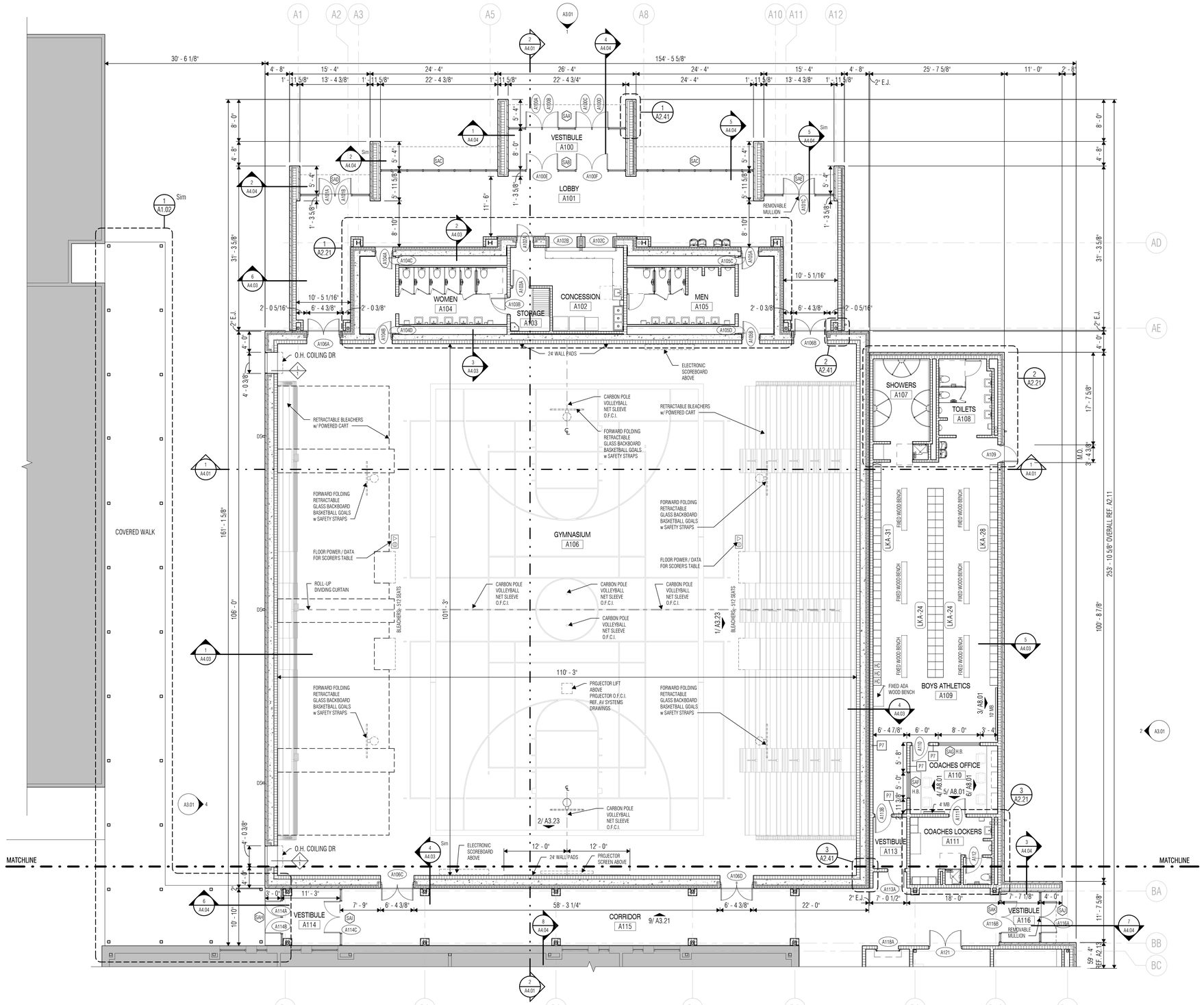




4 MC201 - LOCKER CAP DETAIL
SCALE: 1 1/2" = 1'-0"

3 MC206 - LOCKER BASE DETAIL
SCALE: 1 1/2" = 1'-0"

2 MC200 - LOCKER TYPE ELEVATIONS
SCALE: 1/4" = 1'-0"



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

FLOOR PLAN GENERAL NOTES

1. Primary Ground Level door elevation is 627.63 (Mean Sea Level), which is equal to 100 -0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Exterior wall construction is identified on the Wall Sections. Refer to the A4-series sheets for Wall Sections, and to Sheet A4.10 for Exterior Wall Assemblies.
4. Interior partitions are Type "P1" unless noted otherwise. Refer to Sheet A2.31 for Partition Types.
5. Refer to Detail 4/A0.31 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
6. Refer to Sheet A6.03 for Typical Gypsum Board Control Joint Details at all CFS and light-gauge steel stud partition openings.
7. Refer to Sheet A2.31 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
8. Refer to Sheet A2.31 for Typical Bracing at Non-Loadbearing CMU Partitions.
9. Refer to Exterior Elevations for exact locations of downspouts.
10. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square edge units shall be provided in lieu of bullnose units.
11. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
12. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
13. Provide minimum 20 gauge light-gauge steel studs at all interior partitions scheduled to receive ceramic tile or plaster.
14. Provide minimum 18 gauge cold-formed steel studs at all interior partitions scheduled to receive anchored masonry or stone veneer as well as interior partitions with steel plate or steel sheet X- bracing.
15. Provide minimum 18 gauge cold-formed steel studs as designed by stud engineer for all interior partitions scheduled to receive adhered masonry or stone veneer.
16. At light-gauge steel stud partitions that extend above the ceiling, provide diagonal 20 gauge stud braces at 4 -0" o.c. to structure above (not to steel deck) as required to provide rigid anchorage and support of partitions.
17. Provide minimum 2x6 fire-retardant treated wood blocking in both new and existing stud walls and partitions, at mounting locations for wall-mounted accessories, handrails, casework, markerboards, tackboards, folding partitions, toilet partitions, and all other wall mounted items. Refer to Sheet A2.3__ for typical blocking requirements at various conditions.
18. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
19. At Mechanical, Electrical, and Boiler Room partitions, seal lightly around all penetrations. Utilize fire safing material at rated partitions.
20. Provide sealant and/or fire safing at all floor penetrations, as applicable.
21. At inside corners of masonry veneer, provide a 3/8" control joint with backer rod and sealant (no mortar). Refer to Sheet A3.___ for Typical Masonry Veneer Control Joint at Inside Corner Detail.

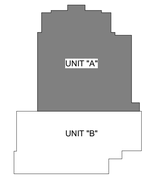
FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan General Notes. Refer to Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE (KA-4) For locker types, ref. 2/A2.12; LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent outlet, casework, etc.

MB	MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
TS	TACK STRIP. Preceding number is length, in feet.
IM	INTERACTIVE MARKERBOARD.
IFP	INTERACTIVE FLAT PANEL.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET.
FE	FIRE EXTINGUISHER WITH BRACKET.
FHC	FIRE HOSE CABINET.
HB	HORIZONTAL BLINDS.
DS	DOWNSPOUT.

PLAN NORTH TRUE NORTH

KEY PLAN



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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLINE 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

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SHEET TITLE
FLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.
A2.12

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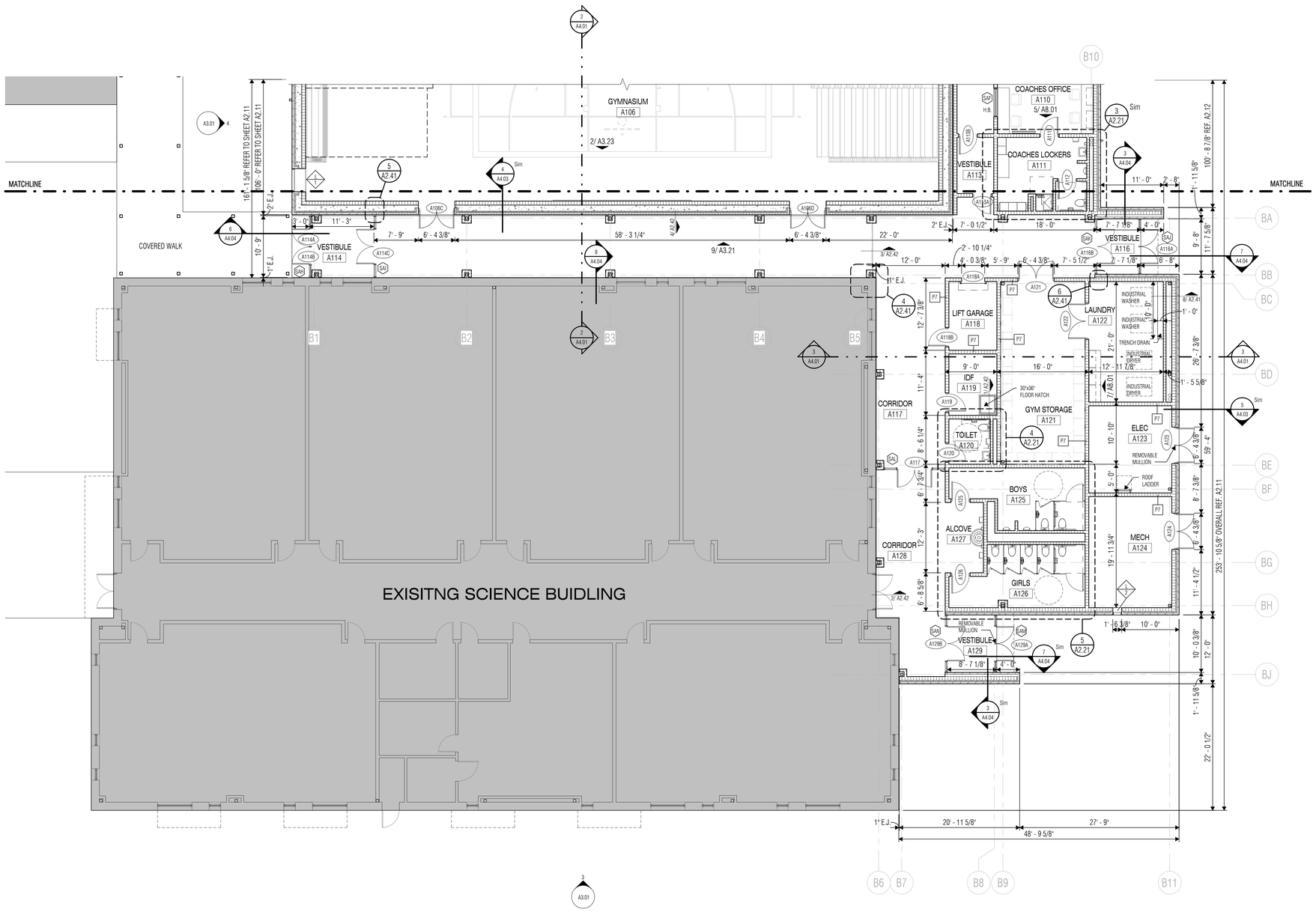

1 FLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. Primary Ground Level door elevation is 627.63 (Mean Sea Level), which is equal to 100 -0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Exterior wall construction is identified on the Wall Sections. Refer to the A4-series sheets for Wall Sections, and to Sheet A4.10 for Exterior Wall Assemblies.
4. Interior partitions are Type "P1" unless noted otherwise. Refer to Sheet A2.31 for Partition Types.
5. Refer to Detail 4/A0.31 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
6. Refer to Sheet A6.03 for Typical Gypsum Board Control Joint Details at all CFS and light-gauge steel stud partition openings.
7. Refer to Sheet A2.31 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
8. Refer to Sheet A2.31 for Typical Bracing at Non-Loadbearing CMU Partitions.
9. Refer to Exterior Elevations for exact locations of downspouts.
10. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square edge units shall be provided in lieu of bullnose units.
11. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
12. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
13. Provide minimum 20 gauge light-gauge steel studs at all interior partitions scheduled to receive ceramic tile or plaster.
14. Provide minimum 18 gauge cold-formed steel studs at all interior partitions scheduled to receive anchored masonry or stone veneer as well as interior partitions with steel plate or steel sheet X- bracing.
15. Provide minimum 18 gauge cold-formed steel studs as designed by stud engineer for all interior partitions scheduled to receive adhered masonry or stone veneer.
16. At light-gauge steel stud partitions that extend above the ceiling, provide diagonal 20 gauge stud braces at 4 -0' o.c. to structure above (not to steel deck) as required to provide rigid anchorage and support of partitions.
17. Provide minimum 2x6 fire-retardant treated wood blocking in both new and existing stud walls and partitions, at mounting locations for wall-mounted accessories, handrails, casework, markerboards, tackboards, folding partitions, toilet partitions, and all other wall mounted items. Refer to Sheet A2.3__ for typical blocking requirements at various conditions.
18. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
19. At Mechanical, Electrical, and Boiler Room partitions, seal lightly around all penetrations. Utilize fire safing material at rated partitions.
20. Provide sealant and/or fire safing at all floor penetrations, as applicable.
21. At inside corners of masonry veneer, provide a 3/8" control joint with backer rod and sealant (no mortar). Refer to Sheet A3.__ for Typical Masonry Veneer Control Joint at Inside Corner Detail.

FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan General Notes. Refer to Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE
- LX-1 — For locker types, ref. 2/A2.12
- LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent outlet, casework, etc.

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TB	TACKBOARD. Preceding number is length, in feet.
TS	TACK STRIP. Preceding number is length, in feet.
IM	INTERACTIVE MARKERBOARD.
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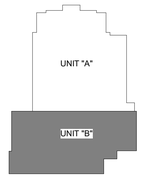
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET.
FE	FIRE EXTINGUISHER WITH BRACKET.
FHC	FIRE HOSE CABINET.
HB	HORIZONTAL BLINDS.
DS	DOWNSPOUT.

PLAN NORTH TRUE NORTH

KEY PLAN



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SHEET TITLE
FLOOR PLAN MAIN LEVEL - UNIT B

SHEET NO.
A2.13

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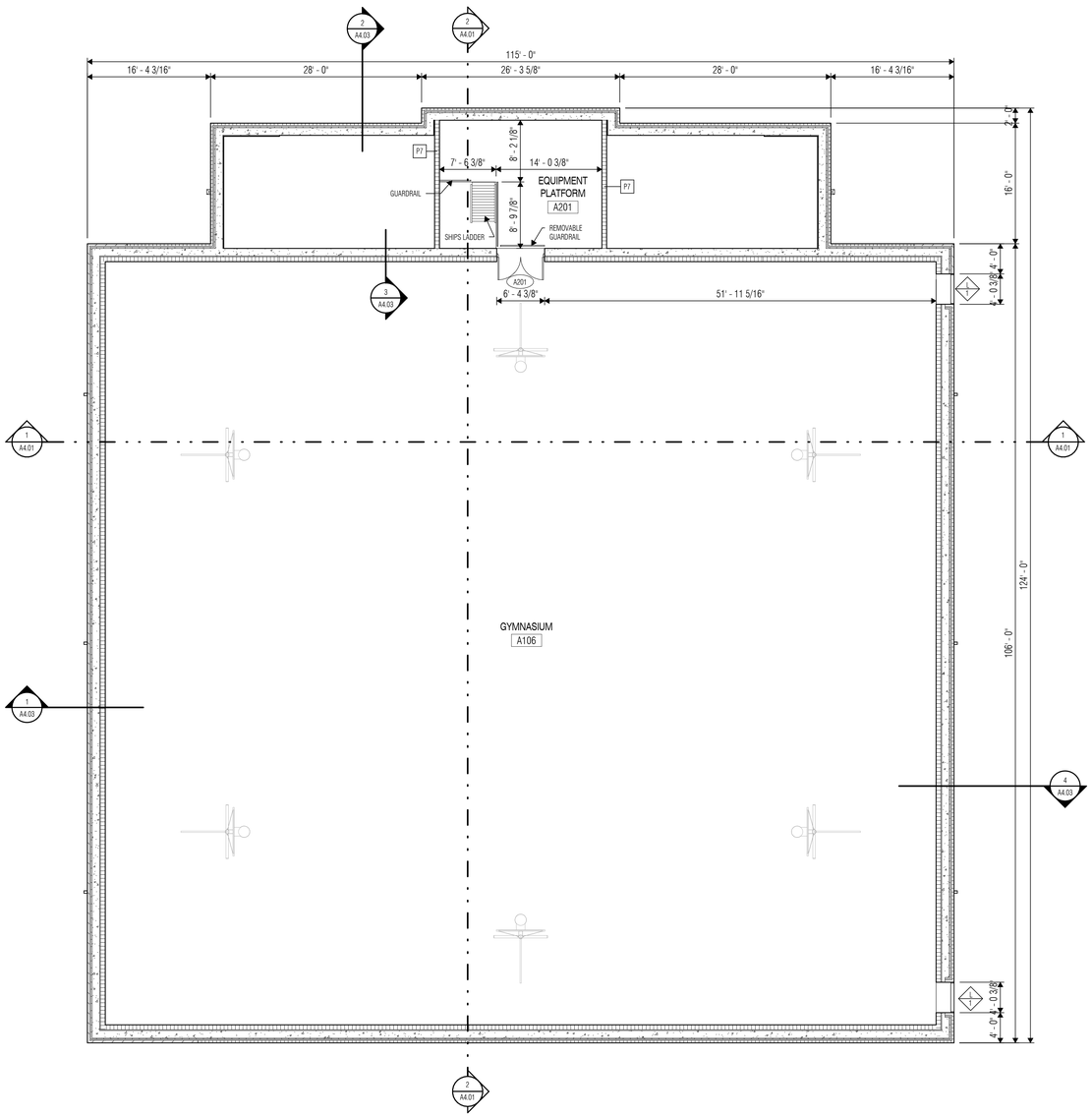


1 FLOOR PLAN - UPPER LEVEL
SCALE: 1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. Primary Ground Level door elevation is 627.63 (Mean Sea Level), which is equal to 100 -0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Exterior wall construction is identified on the Wall Sections. Refer to the A4-series sheets tor Wall Sections, and to Sheet A4.10 for Exterior Wall Assemblies.
4. Interior partitions are Type "P1" unless noted otherwise. Refer to Sheet A2.31 for Partition Types.
5. Refer to Detail 4/A0.31 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
6. Refer to Sheet A6.03 for Typical Gypsum Board Control Joint Details at all CFS and light-gauge steel stud partition openings.
7. Refer to Sheet A2.31 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
8. Refer to Sheet A2.31 for Typical Bracing at Non-Loadbearing CMU Partitions.
9. Refer to Exterior Elevations for exact locations of downspouts.
10. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square edge units shall be provided in lieu of bullnose units.
11. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
12. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
13. Provide minimum 20 gauge light-gauge steel studs at all interior partitions scheduled to receive ceramic tile or plaster.
14. Provide minimum 18 gauge cold-formed steel studs at all interior partitions scheduled to receive anchored masonry or stone veneer as well as interior partitions with steel plate or steel sheet X- bracing.
15. Provide minimum 18 gauge cold-formed steel studs as designed by stud engineer for all interior partitions scheduled to receive adhered masonry or stone veneer.
16. At light-gauge steel stud partitions that extend above the ceiling, provide diagonal 20 gauge stud braces at 4 -0" o.c. to structure above (not to steel deck) as required to provide rigid anchorage and support of partitions.
17. Provide minimum 2x6 fire-retardant treated wood blocking in both new and existing stud walls and partitions, at mounting locations for wall-mounted accessories, handrails, casework, markerboards, tackboards, folding partitions, toilet partitions, and all other wall mounted items. Refer to Sheet A2.3__ for typical blocking requirements at various conditions.
18. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
19. At Mechanical, Electrical, and Boiler Room partitions, seal lightly around all penetrations. Utilize fire safing material at rated partitions.
20. Provide sealant and/or fire safing at all floor penetrations, as applicable.
21. At inside corners of masonry veneer, provide a 3/8' control joint with backer rod and sealant (no mortar). Refer to Sheet A3.___ for Typical Masonry Veneer Control Joint at Inside Corner Detail.

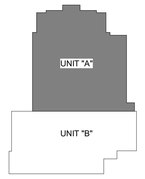
FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan General Notes. Refer to Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE (LKR-1) — For locker types, ref. 2/A2.12; LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent outlet, casework, etc.

MB	MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
TS	TACK STRIP. Preceding number is length, in feet.
IM	INTERACTIVE MARKERBOARD.
IFP	INTERACTIVE FLAT PANEL.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET.
FE	FIRE EXTINGUISHER WITH BRACKET.
FHC	FIRE HOSE CABINET.
HB	HORIZONTAL BLINDS.
DS	DOWNSPOUT.

PLAN NORTH TRUE NORTH

KEY PLAN



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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT — JOHN F. KLINE — 18433 — STATE OF TEXAS
05/08/2019

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FLOOR PLAN UPPER LEVEL

SHEET NO.
A2.14

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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				CEILING	REMARKS
				NORTH	EAST	SOUTH	WEST		
A100	VESTIBULE	15F	14B	-	4A	-	4A	22A	
A101	LOBBY	15F	14B	4A	4A/3L-1/6A	3L-1/6A	4A/3L-1/6A	22A	
A102	CONCESSION	1A	14B	6EP	6EP	6EP	6EP	22B	
A103	STORAGE	1A	14B	6A	6A	6A	6A	22A	
A104	WOMEN	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A105	MEN	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A106	GYMNASIUM	9B	14B	6C	6C	6C	6C	24A	
A107	SHOWERS	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A108	TOILETS	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A109	BOYS ATHLETICS	15C	15C	6EP	6EP	6EP	6EP	20A	4" BASE
A110	COACHES OFFICE	15F	14B	6A-1	6A	6A	6A	22A	
A111	COACHES LOCKERS	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A112	TOILET	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A113	VESTIBULE	15F	14B	3L-1/6A	3L-1/6A	3L-1/6A	3L-1/6A	22A	
A114	VESTIBULE	15F	14B	4A	-	4EX	-	22A	
A115	CORRIDOR	15F	14B	3L-1/6A	-	4EX/6A	-	22A	
A116	VESTIBULE	15F	14B	4A	-	4A	-	22A	
A117	CORRIDOR	15F	14B	-	3L-1/6A	-	4EX/6A	22A	
A118	LIFT GARAGE	1A	14B	6A	6A	6A	6A	21ES	
A119	IDF	1A	14B	6A	6A	6A	6A	21ES	
A120	TOILET	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A121	GYM STORAGE	1A	14B	6A	6A	6A	6A	22A	
A122	LAUNDRY	1A	14B	6A	6A	6A	6A	22A	
A123	ELEC	1A	-	6B	6B	6B	6B	21ES	
A124	MECH	1A	-	6B	6B	6B	6B	21ES	
A125	BOYS	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A126	GIRLS	3L-2	3L-1	3L-1	3L-1	3L-1	3L-1	20A	
A127	ALCOVE	15F	14B	6A	6A	6A	-	22A	
A128	CORRIDOR	15F	14B	-	3L-1/6A	3L-1/6A	4EX	22A	
A129	VESTIBULE	15F	14B	4A	-	4A	-	22A	
A201	EQUIPMENT PLATFORM	1A	-	-	6B	-	6B	21ES	

FINISH SCHEDULE GENERAL NOTES

1. Refer to Enlarged Toilet Plans and Interior Finish Plans for extents of floor finishes.
2. Refer to Interior Elevations and Interior Finish Plans for extents of wall finishes.
3. Refer to Interior Finish Plans for Floor Finish Patterns.
4. Refer to Detail 9/A3.21 for Typical Corridor Ceramic Tile Wall Pattern.
5. Refer to Detail 3/A3.21 for Typical Toilet Room Ceramic Tile Wall Pattern.
6. At outside corners and exposed edges of ceramic or porcelain tile, provide factory bullnose trim units, unless otherwise noted or detailed. If bullnose trim units are not available, provide anodized aluminum edge trim as manufactured by Schlüter, unless otherwise noted or detailed.

KEY TO MATERIALS

1A	SEALED MONOLITHIC CONCRETE	6EP	CONCRETE MASONRY UNITS - EPOXY PAINT	17A	CARPET
1B	CONCRETE TOPPING	6EX	EXISTING CMU - PAINT	17B	CARPET TILE
1C	PEDESTRIAN TRAFFIC COATING	6EXEP	EXISTING CMU - EPOXY PAINT	17C	CARPET BASE
1D	STAINED AND SEALED CONCRETE	6F	GLAZED CMU	17D	WALL CARPET
1E	CONCRETE WITH SPECIAL COATING	6G	GLAZED CMU - COVED	17E	ATHLETIC CARPET
1EX	EXISTING CONCRETE	6H	CONCRETE MASONRY UNITS - BURNISHED	--	-----
1F	POLISHED CONCRETE	--	-----	18A	CEMENT PLASTER
--	-----	9A	WOOD STRIP FLOORING	18EX	EXISTING CEMENT PLASTER - PATCH & PAINT
2A	FORMED CONCRETE WALLS	9B	RESILIENT WOOD FLOORING	--	-----
2B	RUBBED CONCRETE WALLS	9C	TEMPERED HARDBOARD FLOORING	19A	FLOOR MATS - LOOSE LAID
2C	SAND BLASTED CONCRETE	9D	MASONITE FLOORING SYSTEM	19B	FLOOR MATS - RECESSED
--	-----	9EX	EXISTING WOOD FLOORING	19C	WALK-OFF CARPET
3A	QUARRY TILE	--	-----	--	-----
3B	CERAMIC MOSAICS	12A	WOOD PANELING	20A	GYPSUM WALLBOARD - PAINT
3C	4 1/4" x 4 1/4" GLAZED CERAMIC TILE	12B	WOOD BASE	20B	GYPSUM WALLBOARD, ABUSE RESISTANT - PAINT
3D	6" x 6" GLAZED CERAMIC TILE	12C	WOOD TRIM	20EM	GYP. BD. FIREPROOFING MEMBRANE - PAINT
3E	8" x 8" GLAZED CERAMIC TILE	12D	PLASTIC LAMINATE PANELS	20EP	GYPSUM WALLBOARD - EPOXY PAINT
3F	16" x 16" CERAMIC TILE	12E	PREFINISHED PANELING	20EX	EXISTING GYPSUM WALLBOARD - PAINT
3G	8" X 8" PORCELAIN TILE	12F	PLYWOOD - PAINTED	--	-----
3H	12" X 12" PORCELAIN TILE	--	-----	21AS	EXPOSED STRUCTURE - ACOUSTIC SPRAY
3J	PORCELAIN TILE - TREADS AND RISERS	13A	VENTED ALUMINUM BASE	21ES	EXPOSED STRUCTURE - PAINT
3K	20" X 20" PORCELAIN TILE	13B	ALUMINUM FACED COMPOSITE PANELS	21EX	EXISTING EXPOSED STRUCTURE - PAINT
3L-1	12" X 24" PORCELAIN TILE	--	-----	21FP	EXPOSED STRUCT. - CEMENTITIOUS FIREPROOFING
3L-2	12" X 24" PORCELAIN TILE	14A	RUBBER FLOORING	--	-----
3M	12" X 24" UNGLAZED PORCELAIN TILE	14B	RUBBER BASE - COVED	22A	2' X 2' ACOUSTIC LAY-IN PANELS
3N	4" X 12" PORCELAIN TILE	14C	RUBBER BASE - VENTED	22B	2' X 2' VINYL COATED LAY-IN PANELS
3P	2" X 2" GLAZED COLOR BODY PORCELAIN BLEND	14D	RUBBER TREADS AND RISERS	22C	2' X 2' FIBERGLASS ACOUSTIC LAY-IN PANELS
3R	PORCELAIN MOSAIC	14E	RUBBER ATHLETIC SHEET FLOORING	22D	4' X 4' PYRAMID/BARREL DIFFUSER PANELS
3S	3/4" X 3/4" GLASS TILE BLEND	14F	RUBBER ATHLETIC TILE FLOORING	22E	2' X 2' PYRAMID DIFFUSER PANELS
--	-----	14G	RUBBER STAIR NOSING	22EX	REPLACE EXISTING LAY-IN PANELS IN EXISTING GRID
4A	BRICK VENEER	--	-----	22F	2' X 2' FIRE-RATED ACOUSTIC LAY-IN PANELS
4B	GLAZED BRICK	15A	VINYL COMPOSITION TILE	22G	2' X 4' ACOUSTIC LAY-IN PANELS
4C	CAST STONE	15B	VINYL COMPOSITION TILE - TEXTURED	--	-----
4D	GLASS BLOCK	15C	RESINOUS FLOORING	23A	LINEAR METAL CEILING
4E	MANUFACTURED STONE MASONRY	15D	SHEET VINYL FLOORING	--	-----
4EX	EXISTING BRICK VENEER	15E	ELASTOMERIC LIQUID FLOORING	24A	ACOUSTIC WALL PANELS
--	-----	15F	LUXURY VINYL TILE	24B	ACOUSTIC WOOD PLANKS
5A	BRICK PAVERS	15EX	EXISTING VINYL COMPOSITION TILE	24C	ACOUSTIC WOOD PANELING
5EX	EXISTING BRICK PAVERS	--	-----	--	-----
--	-----	16A	EPOXY TERRAZZO FLOORING	28A	VINYL WALL COVERING
6A-1	CONCRETE MASONRY UNITS - PAINT	16B	PRECAST TERRAZZO TREADS & RISERS	28B	VINYL WALL COVERING OVER 1/4" CORK
6B	CONCRETE MASONRY UNITS - NO PAINT	16C	POLYACRYLATE CEMENT TERRAZZO	28C	FABRIC WALL COVERING
6C	ACOUSTIC CMU - PAINT	16D	CEMENTITIOUS TERRAZZO	28D	GLASS TEXTILE WALL COVERING
6D	SOUND ABSORBING CMU - PAINT				

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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JOHN F. KLEIN — 76433 — REGISTERED ARCHITECT — STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

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JFK	JD
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SHEET TITLE

ROOM FINISH SCHEDULE

SHEET NO.

A2.15

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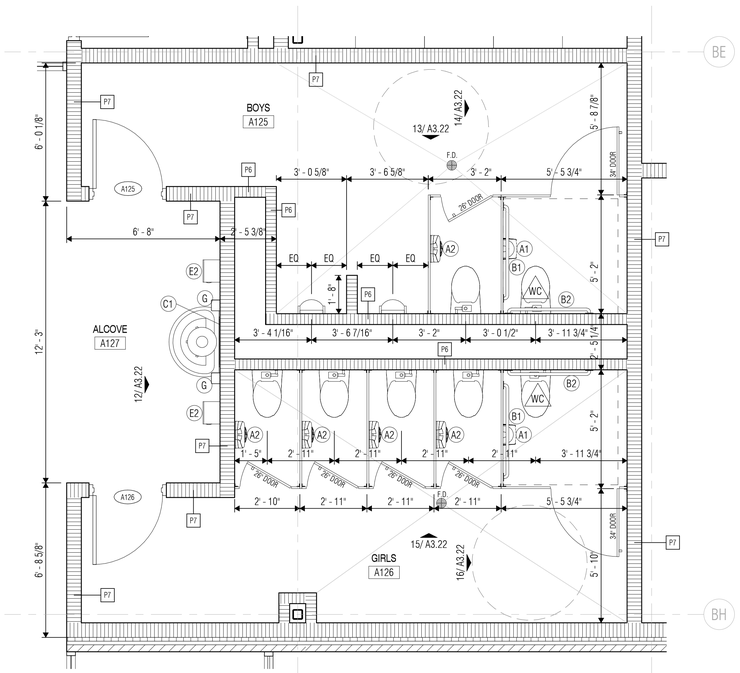
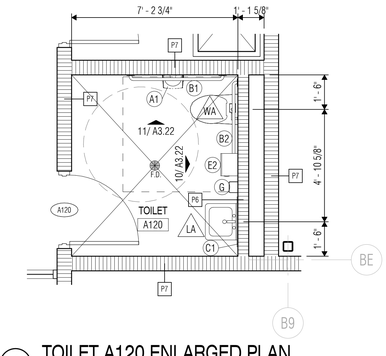
ENLARGED FLOOR PLAN GENERAL NOTES

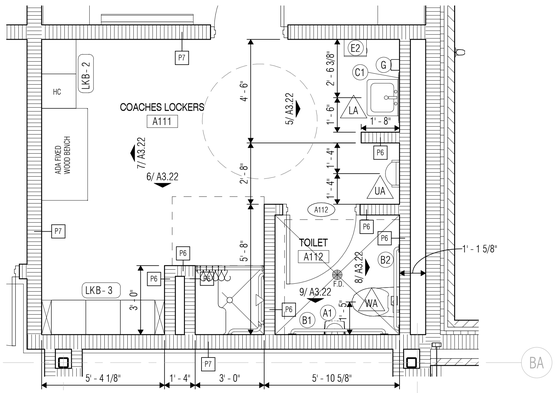
1. Dimensions on Enlarged Floor Plans are to face of wall finish material unless noted otherwise.
2. Dashed lines shown on Enlarged Floor Plans indicate accessibility requirements and are indicated for information only.
3. Refer to Sheets A0.31 and A2.22 for the minimum accessibility requirements at toilet rooms, toilet compartments and showers.
4. Refer to Detail 1 & 2/ A0.21 for Accessible Mounting Heights.
5. Install all accessible plumbing fixtures and toilet accessories in accordance with the Texas Accessibility Standards. Install all non-accessible plumbing fixtures and toilet accessories at manufacturers' recommended mounting heights, unless noted otherwise.
6. Install water closets at wheelchair accessible toilet compartments with the centerline of fixture at 1'-5" off the side wall finish material, and in the center of the compartment at both ambulatory accessible and non-accessible toilet compartments.
7. Install hand-operated flush controls for wheelchair accessible water closets on the open side of the water closet. Top of flush valve assembly shall be 1-1/2" minimum below the grab bar.
8. Provide pipe protection for all exposed piping at both accessible and non-accessible lavatories.
9. Floor drains are indicated for location purposes only. Refer to Plumbing Drawings for floor drain sizes and plumbing information.



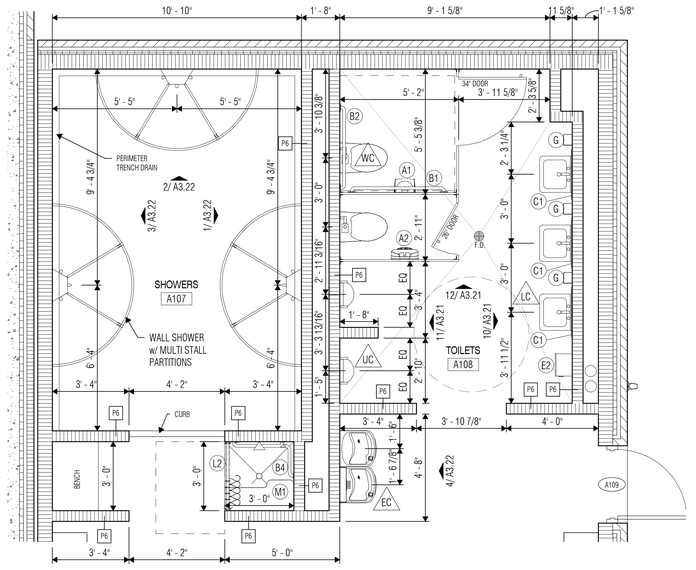
5 ALCOVE / TOILETS ENLARGED PLAN
SCALE: 3/8" = 1'-0"



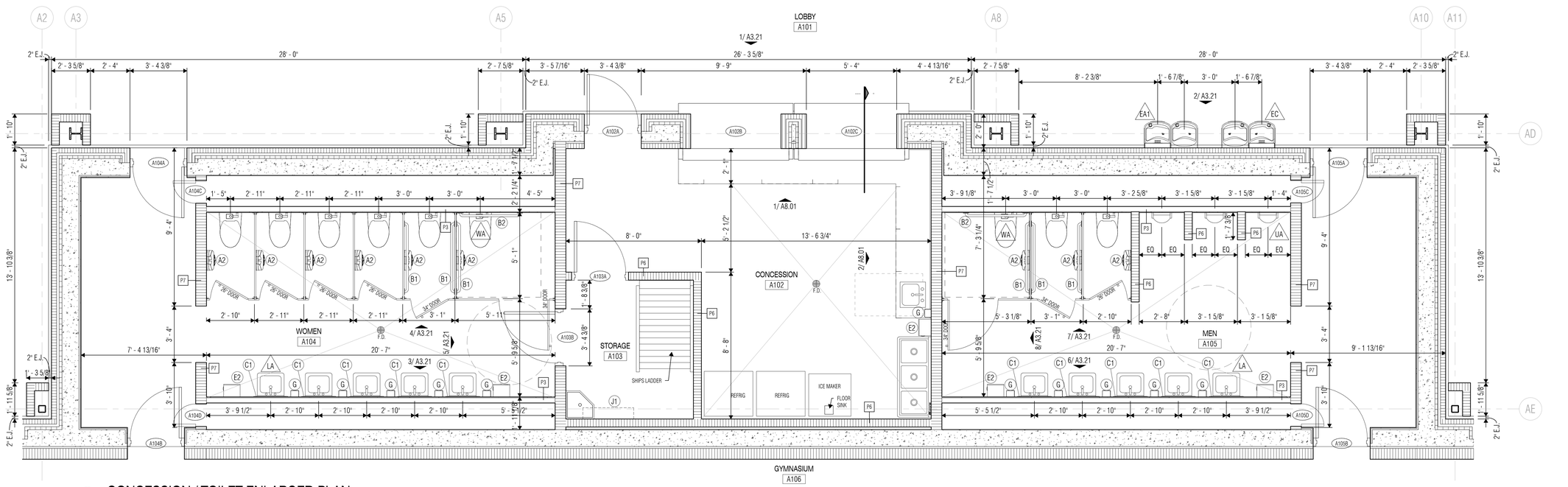
4 TOILET A120 ENLARGED PLAN
SCALE: 3/8" = 1'-0"



3 COACHES LOCKERS ENLARGED PLAN
SCALE: 3/8" = 1'-0"



2 TOILETS / SHOWERS ENLARGED PLAN
SCALE: 3/8" = 1'-0"



1 CONCESSION / TOILET ENLARGED PLAN
SCALE: 3/8" = 1'-0"

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ENLARGED PLANS

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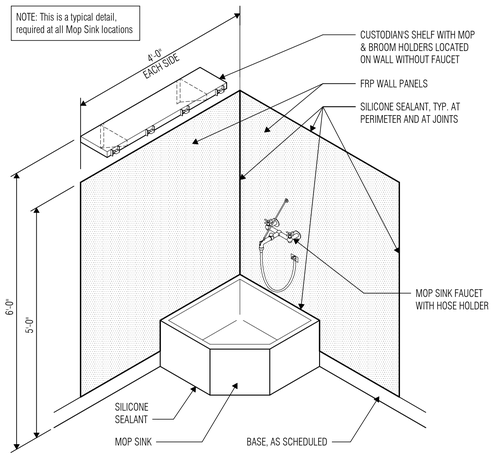


8 CUSTODIAN ROOM WAINSCOT & ACCESSORIES
SCALE: 3/4" = 1'-0"

TOILET ACCESSORY LEGEND

MARK	TOILET ACCESSORY ITEM	SIZE	STANDARD MOUNTING HEIGHT (Adult & Child)	ACCESSIBLE MOUNTING HEIGHT (Adult)	ACCESSIBLE MOUNTING HEIGHT (Child)	O.F.C.I.	O.F.O.I.	NOTES
A1	TOILET TISSUE DISPENSER, TWIN-ROLL		MFR.	REF: A0.31	REF: A0.31	•		
A2	TOILET TISSUE DISPENSER, 3-ROLL		MFR.	REF: A0.31	REF: A0.31	•		
B1	GRAB BAR (SIDE WALL AT WATER CLOSET)	48"		35 1/2" TO TOP	26 1/2" TO TOP			
B2	GRAB BAR (BACK WALL AT WATER CLOSET)	42"		35 1/2" TO TOP	26 1/2" TO TOP			
B4	GRAB BAR, TWO-WALL L-SHAPED (AT TRANSFER TYPE SHOWER)	16" x 31"		34" TO TOP	34" TO TOP			
C1	MIRROR, FRAMED (ABOVE LAVS AND COUNTERS)	24" x 36"	5" ABV LAV	40" TO BOT.	38" TO TOP			6
E2	PAPER TOWEL DISPENSER (SURFACE-MOUNTED)		MATCH ACCESS	47" TO CTRL.	43" TO CTRL.	•		
F1	SANITARY NAPKIN DISPOSAL (SURFACE-MOUNTED)		MFR.	25" TO TOP				
G1	SOAP DISPENSER, WALL-MOUNTED		MATCH ACCESS	47" TO CTRL.	43" TO CTRL.	•		
J1	MOP & BROOM HOLDER/ CUSTODIAN UTILITY SHELF	36"	PER DETAIL					
K1	COAT/ ROBE HOOK		MFR.	48"	48"			
L2	SHOWER CURTAIN ROD, CURTAIN & HOOKS (W/O SHOWER CURB)	78" H.		REF. A0.31	REF. A0.31			5
M1	SHOWER SEAT, FOLDING, L-SHAPED (AT TRANSFER TYPE SHOWER)	14 1/2" x 33"		18"	18"			
N1	DRESSING SEAT, FOLDING, RECTANGULAR	14 1/2" x 18"	18"	18"	18"			
P1	BABY CHANGING STATION	PER SPECS		REF. A0.31				
Q1	SANITARY NAPKIN VENDOR (RECESSED)	PER SPECS		REF. A0.31				

NOTES:
1. All items are contractor-furnished and installed unless noted otherwise.
2. Provide blocking in walls for all wall-mounted items, including O.F.C.I. and O.F.O.I. items. Refer to Sheet A2.31.
3. All mounting heights are from finished flooring material at centerline of accessory.
4. Roll-in Type Showers larger than 30"x60" will require different toilet accessories.
5. Set height of curtain rod so curtain is 1" above threshold.
6. Mounting height of mirrors at Standard Height Lavatories should be installed such that the bottom of mirror aligns with bottom of accessible mirror when possible.

ABBREVIATIONS:
ACCESS. = ACCESSIBLE
BOT. = BOTTOM
CTRL. = CONTROLS
STD. = STANDARD
See INDEX Sheet for additional abbreviations

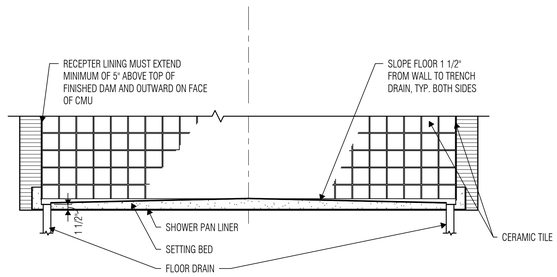
TOILET & SHOWER GENERAL NOTES

1. Install all accessible plumbing fixtures and toilet accessories in accordance with the Texas Accessibility Standards, and as indicated on this sheet. Install all non-accessible plumbing fixtures and toilet accessories at manufacturers' recommended mounting heights, unless noted otherwise.
2. At accessible toilet compartments, install water closets with the centerline of fixture at 1'-5" off the side wall finish material. At both ambulatory-accessible and non-accessible toilet compartments, install water closets at the center of the compartment.
3. Install hand-operated flush controls for wheelchair accessible water closets on the open side of the water closet. Flush control assembly shall not extend above grab bar, and top of flush control assembly shall be held a minimum of 1-1/2" below the grab bar.

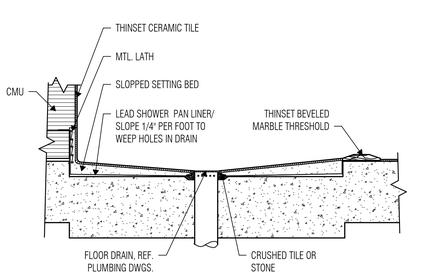
PLUMBING FIXTURE LEGEND

MARK	PLUMBING FIXTURE ITEM
BLA	BASIN LAVATORY - ADULT ACCESSIBLE
CSA	COUNTER SINK - ADULT ACCESSIBLE
EA1	ELECTRIC WATER COOLER - ADULT ACCESSIBLE
EA2	ELECTRIC WATER COOLER (STANDING) - ADULT ACCESSIBLE
EC	ELECTRIC WATER COOLER - CHILD ACCESSIBLE
LA	LAVATORY - ADULT ACCESSIBLE
LC	LAVATORY - CHILD ACCESSIBLE
UA	URINAL - ADULT ACCESSIBLE
UC	URINAL - CHILD ACCESSIBLE
WA	WATER CLOSET - ADULT ACCESSIBLE
WC	WATER CLOSET - CHILD ACCESSIBLE

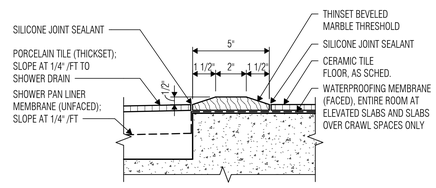
NOTES:
1. Tagged plumbing fixtures represent accessible fixtures. Note that plumbing drawing designations may differ from architectural marks.
2. Reference plumbing drawings for additional fixtures.
3. Reference Sheet A0.21 for plumbing fixture mounting heights.



10 MC025 - GROUP SHOWER PAN and CURB
SCALE: 3/4" = 1'-0"

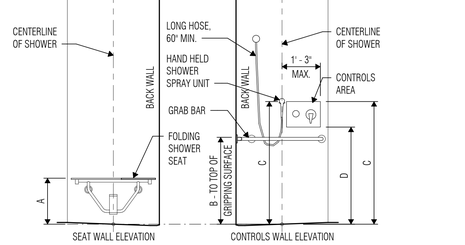


9 MC027 - ACCESSIBILE SHOWER PAN
SCALE: 1 1/2" = 1'-0"

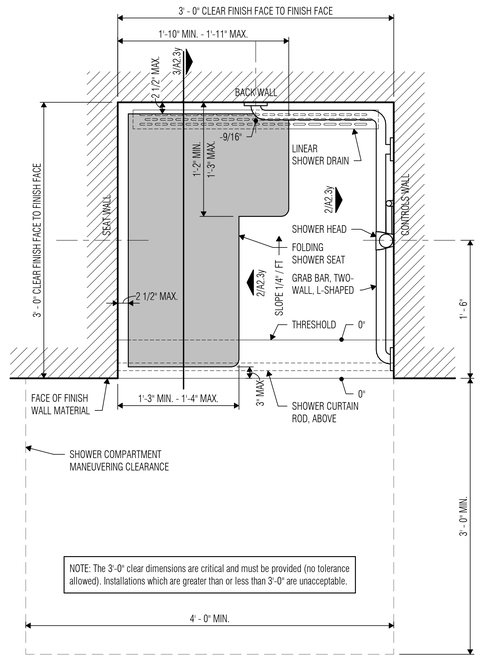


6 ACCESSIBLE SHOWER THRESHOLD
HC402
SCALE: 3" = 1'-0"

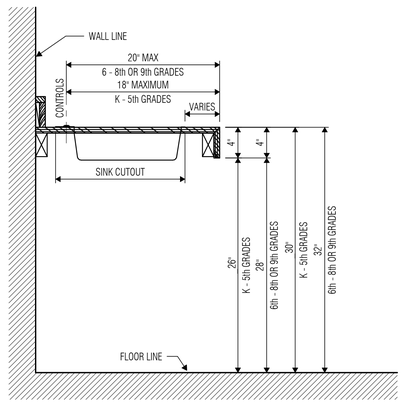
	HEIGHT ABOVE SHOWER FLOOR			
	A	B	C	D
ADULTS	18"	34"	48"	38"
CHILD	18"	34"	44"	38"



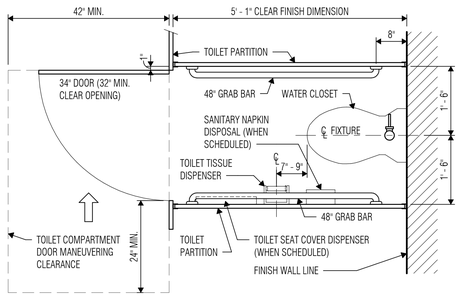
5 ELEVATION OF ACCESSIBLE SHOWER COMPARTMENT (TRANSFER TYPE)
HC203
SCALE: 1/2" = 1'-0"



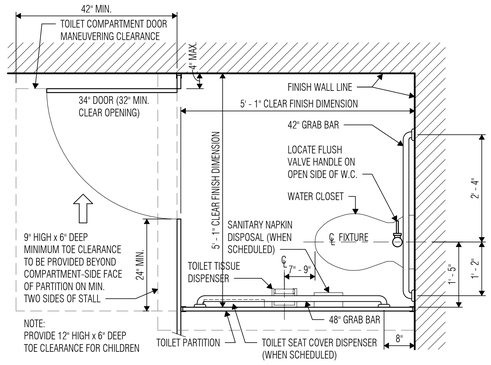
4 ACCESSIBLE SHOWER COMPARTMENT
HC200
TRANSFER TYPE
SCALE: 1 1/2" = 1'-0"



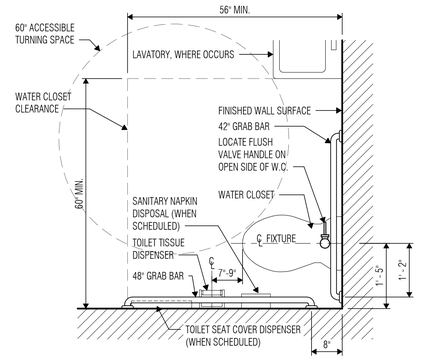
7 HC400 - TYPICAL ACCESSIBLE SINK REACH RANGES
SCALE: 1 1/2" = 1'-0"



3 AMBULATORY TOILET COMPARTMENT
HC104
SCALE: 3/4" = 1'-0"



2 ACCESSIBLE TOILET COMPARTMENT
HC100
TYPICAL
SCALE: 3/4" = 1'-0"



1 ACCESSIBLE TOILET ROOM
SCALE: 3/4" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

JOHN K. KLEIN — 76433 — REGISTERED ARCHITECT — STATE OF TEXAS
05/08/2019

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JFK	JD
Designer	Quality Control
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SHEET TITLE
ENLARGED PLANS DETAILS

SHEET NO.
A2.22

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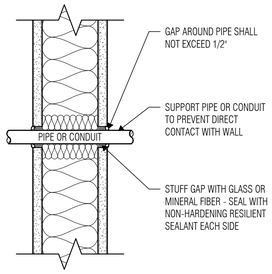
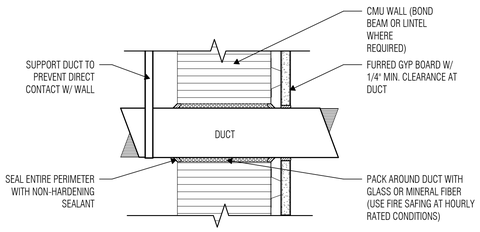
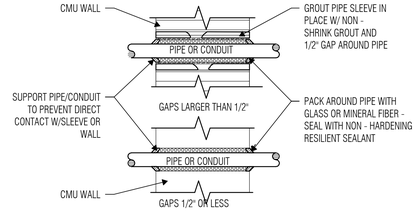


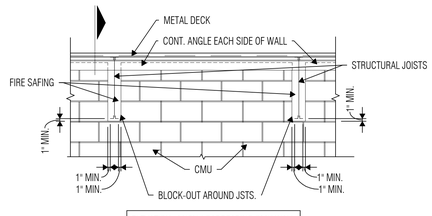
9 MC011 - PARTITION DETAIL_PIPE PENETRATION
SCALE: 3" = 1'-0"



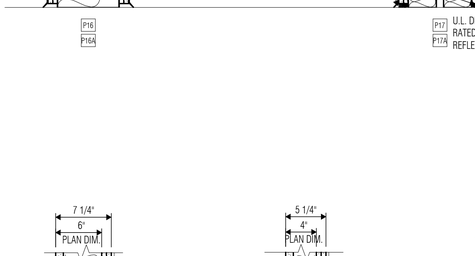
8 MC015 - PARTITION DETAIL_DUCT PENETRATION
SCALE: 3" = 1'-0"



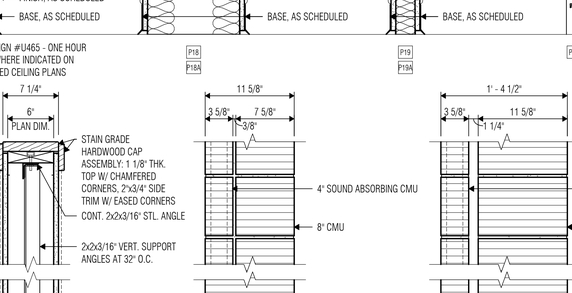
7 MC008 - PIPE CONDUIT WALL PENETRATION
SCALE: 3" = 1'-0"



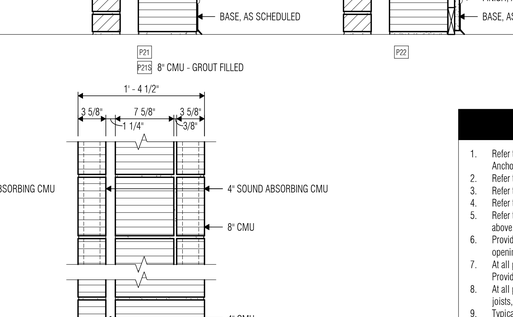
6 MC010 - BRACING ELEVATION AT NON-LOADBEARING CMU
SCALE: 1/2" = 1'-0"



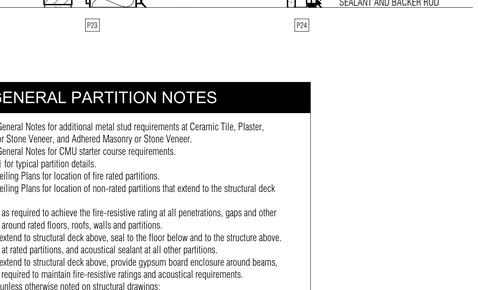
5 MC012 - TYP. BRACING AT NON-LOADBEARING CMU WALL WHICH EXTENDS UNDER JOIST
SCALE: 1/2" = 1'-0"



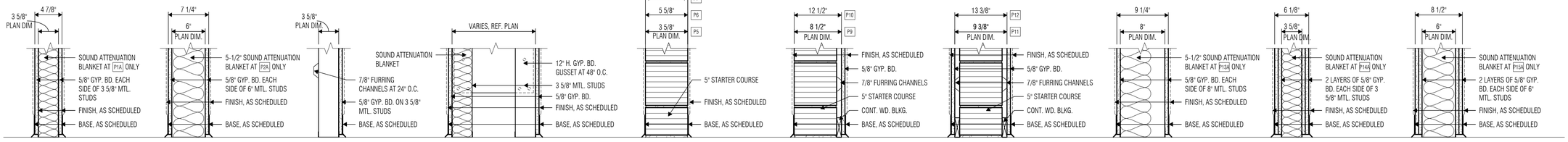
4 MC013 - TYP. BRACING at NON-LOAD BEARING CMU PERP TO JOIST DIRECTION
SCALE: 1/2" = 1'-0"



3 MC009 - BRACING AT NON-LOADBEARING CMU
SCALE: 1/2" = 1'-0"



2 MC022 - DETAIL NON-LOADBEARING CMU WALL
SCALE: 1 1/2" = 1'-0"



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

GENERAL PARTITION NOTES

1. Refer to Floor Plan General Notes for additional metal stud requirements at Ceramic Tile, Plaster, Anchored Masonry or Stone Veneer, and Adhered Masonry or Stone Veneer.
2. Refer to Floor Plan General Notes for CMU starter course requirements.
3. Refer to Sheet A2.31 for typical partition details.
4. Refer to Reflected Ceiling Plans for location of fire rated partitions.
5. Refer to Reflected Ceiling Plans for location of non-rated partitions that extend to the structural deck above.
6. Provide firestopping as required to achieve the fire-resistive rating at all penetrations, gaps and other openings through or around rated floors, roofs, walls and partitions.
7. At all partitions that extend to structural deck above, seal to the floor below and to the structure above. Provide firestopping at rated partitions, and acoustical sealant at all other partitions.
8. At all partitions that extend to structural deck above, provide gypsum board enclosure around beams, joists, ducts, etc. as required to maintain fire-resistive ratings and acoustical requirements.
9. Typical CMU notes, unless otherwise noted on structural drawings:
   A. Provide steel bracing as shown on Sheet A2.31
   B. Provide continuous bond beam with (2) #4 reinforcing bars at top course of all 6" and 8" CMU partitions, whether indicated on details or not.
10. 4" CMU shall not be used for interior partitions, except at chase walls where specifically indicated.

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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JFK	JD
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PARTITION TYPES

SHEET NO.
A2.31

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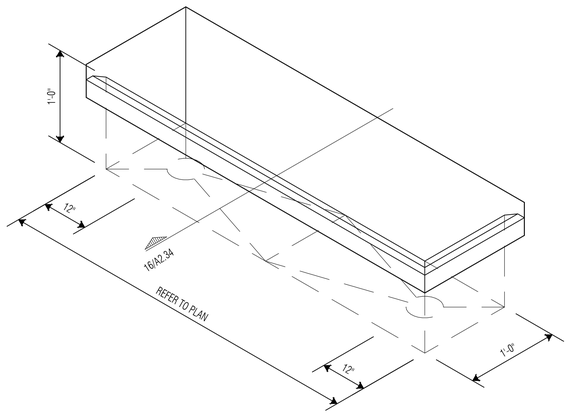
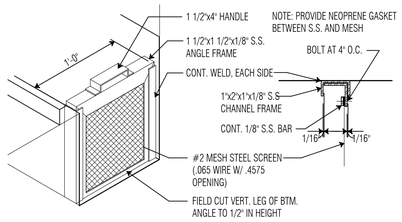
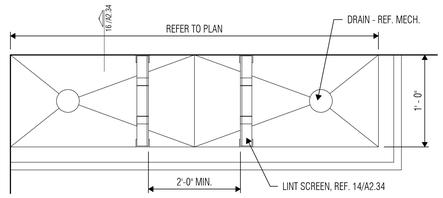


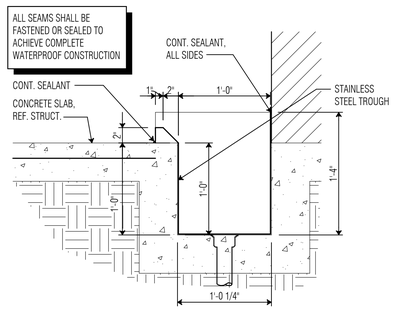
11 AXON OF S.S. TRENCH
SCALE: 1 1/2" = 1'-0"



10 LINT SCREEN DETAIL
SCALE: 1 1/2" = 1'-0"



9 PLAN VIEW LAUNDRY TRENCH DRAIN
SCALE: 1 1/2" = 1'-0"



8 SECTION VIEW LAUNDRY TRENCH
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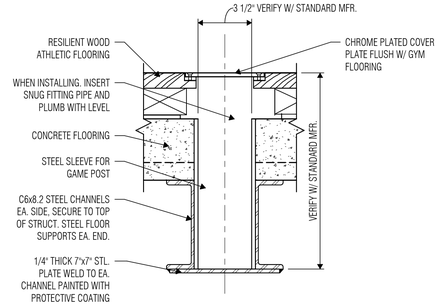
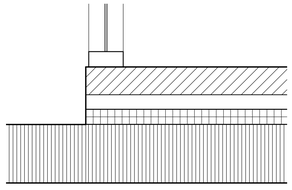
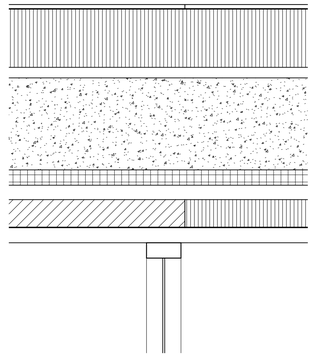


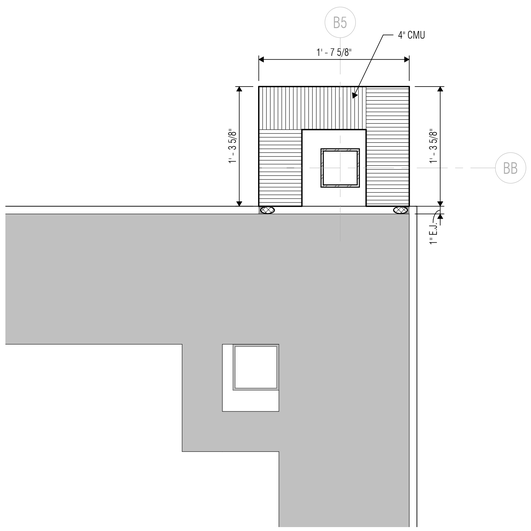
7 MC028 - VOLLEYBALL FLOOR SLEEVE_WOOD FLOORING
SCALE: 3" = 1'-0"



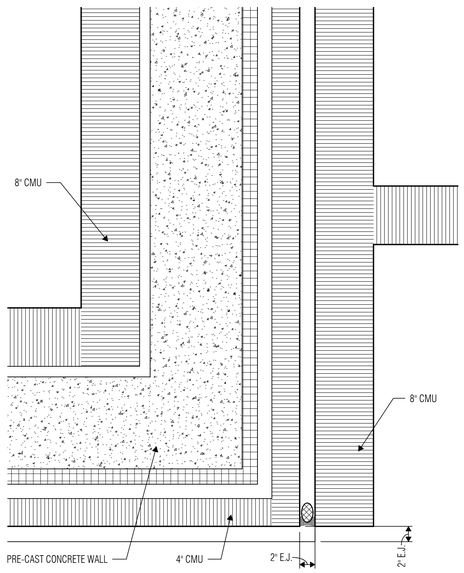
6 BRICK - CMU TRANSITION DETAIL
SCALE: 1 1/2" = 1'-0"



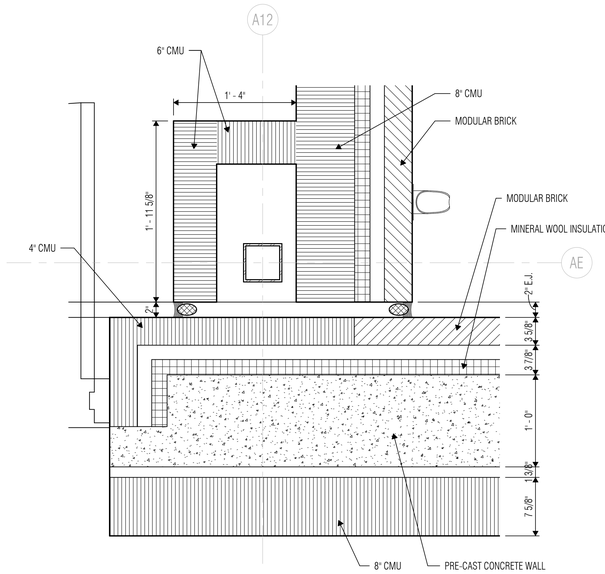
5 BRICK - CMU ON TPC WALL TRANSITION DETAIL
SCALE: 1 1/2" = 1'-0"



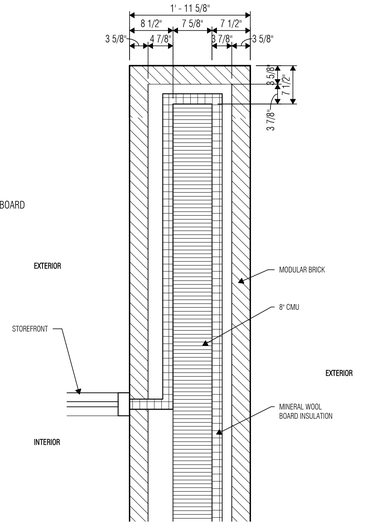
4 INTERIOR COLUMN WRAP (TYP.)
SCALE: 1 1/2" = 1'-0"



3 INTERIOR TCP WALL & CMU WALL DETAIL
SCALE: 1 1/2" = 1'-0"



2 EXTERIOR TCP WALL & CMU WALL DETAIL
SCALE: 1 1/2" = 1'-0"



1 WING WALL DETAIL (TYP.)
SCALE: 1" = 1'-0"

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JFK	JD
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Proj. Coord.	
JD	

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SHEET TITLE
PLAN DETAILS

SHEET NO.
A2.41

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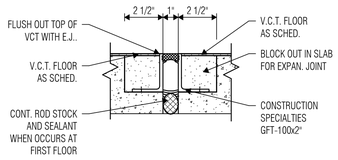
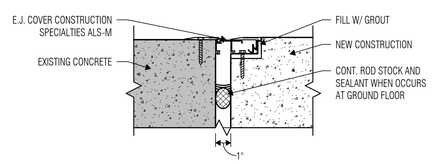
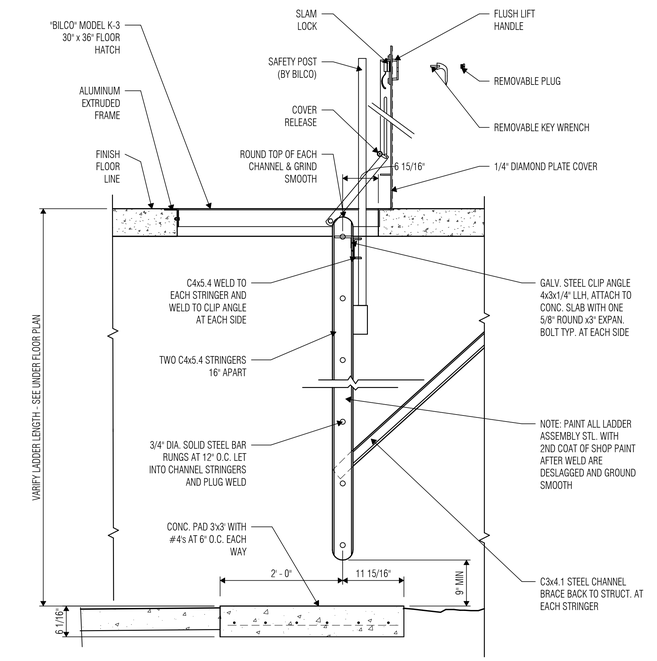
4 MC273 - DETAIL at EXP. JOINT
SCALE: 3" = 1'-0"



3 MC259 - DETAIL at EXP. JOINT
SCALE: 3" = 1'-0"



2 MC256 - DETAIL at EXP. JOINT_EX./ NEW FLOOR
SCALE: 3" = 1'-0"



1 MC504 - SECTION THRU TYPICAL FLOOR HATCH
SCALE: 1" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT — JOHN K. KLEIN — 18439 — STATE OF TEXAS
05/08/2019

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Approver	Author
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Checker	

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PLAN DETAILS

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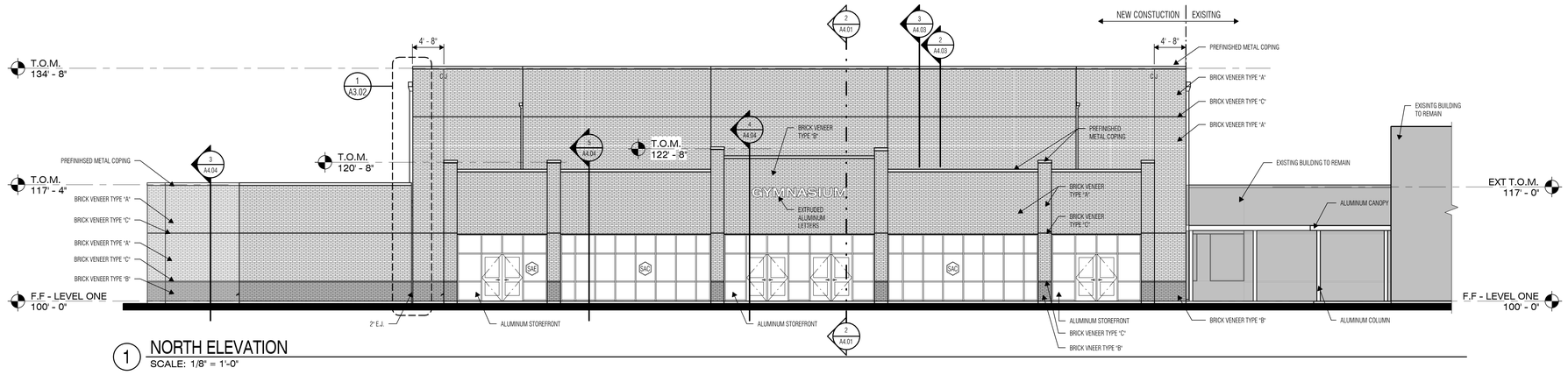
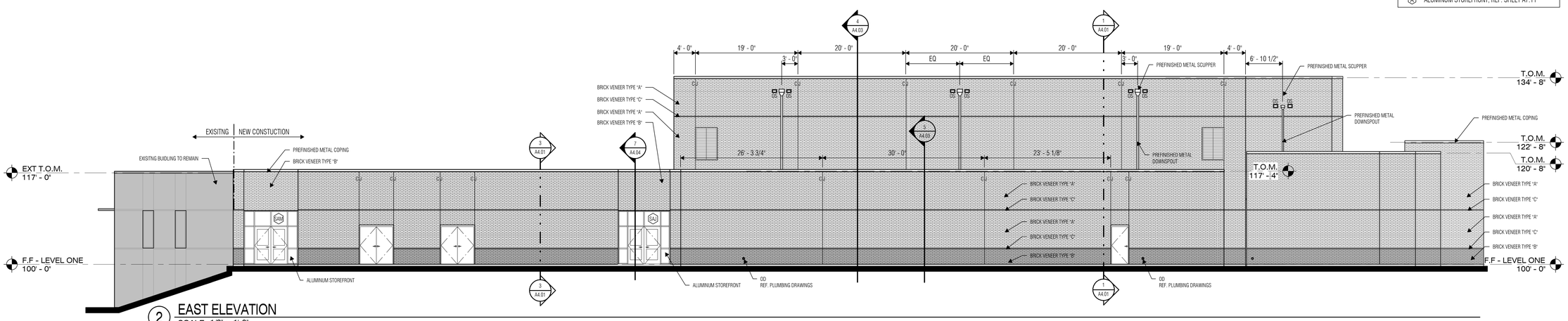
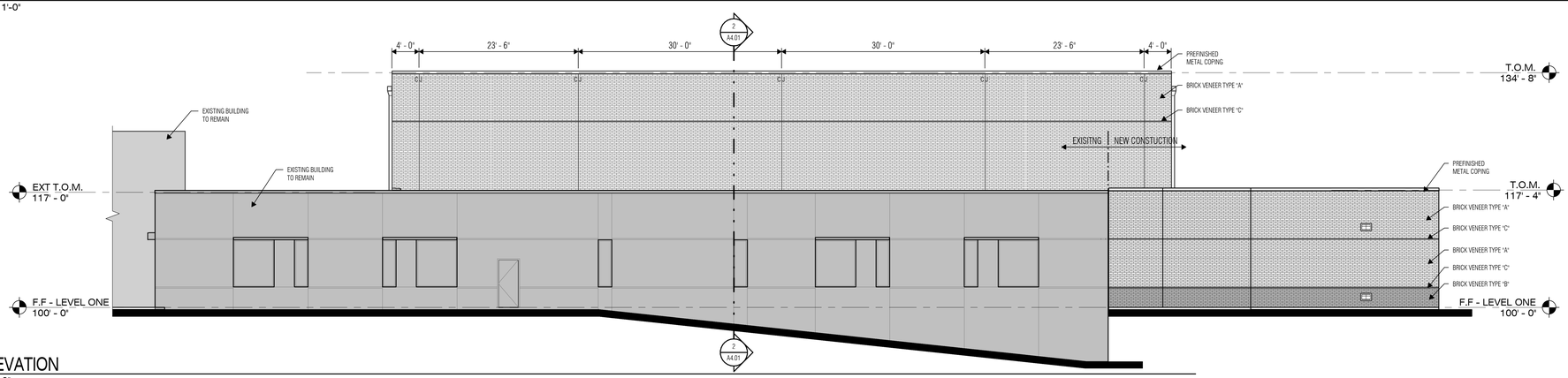


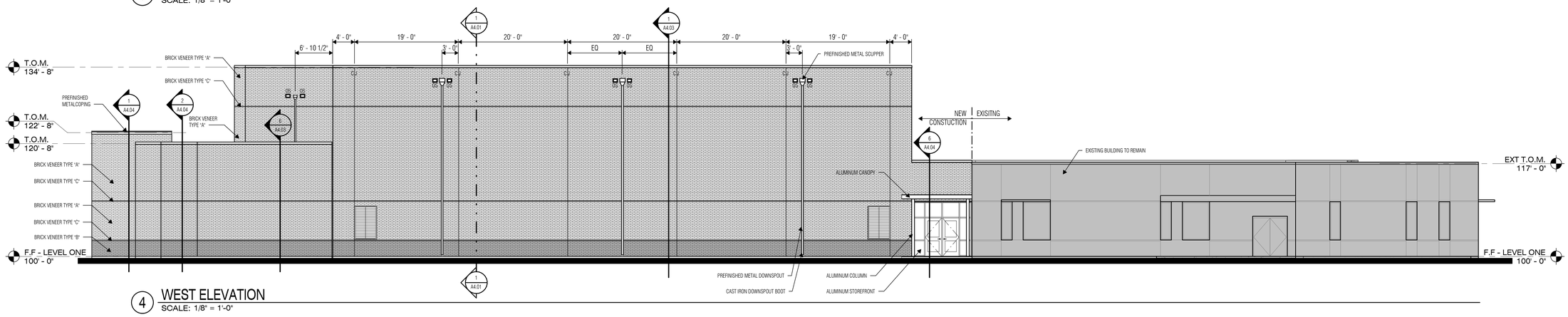
1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 EAST ELEVATION
SCALE: 1/8" = 1'-0"



3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



4 WEST ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR ELEVATION GENERAL NOTES

1. Refer to Sheet A3.02 for Typical Control Joint and Building Expansion Joint Details.
2. Based on the applicable design criteria, submit the proposed pattern of control joints in masonry veneer, CMU and stucco/cement plaster to the Architect for review and approval prior to construction.
3. Verify mounting heights of all Electrical and Mechanical items on the exterior of the building prior to construction, whether specifically indicated on the Exterior Elevations or not.
4. Install cast stone in accordance with the recommendations of the Cast Stone Institute, unless specifically noted or detailed otherwise.
5. Refer to Sheet A3.02 for Loose Lintel Details. Refer to Structural Drawings for maximum span and bearing requirements.
6. Terminate recessed and projected masonry veneer courses at 4" from intersecting window frames, door frames, sloping roofs, etc., unless noted otherwise.
7. Provide solid bricks for soldier courses at exterior corners (do not miter). Refer to Detail 6/A3.02.

EXT. ELEV. LEGEND

A	BRICK VENEER, TYPE 'A'
B	BRICK VENEER, TYPE 'B'
C	BRICK VENEER, TYPE 'C'
DS	DOWNSPOUT
OS	OVERFLOW SCUPPER, REF. 1/A5.02
CJ	CONTROL JOINT, REF. 2 & 3/A3.02
EJ	EXPANSION JOINT, REF. 8 & 9/A3.02
(A)	ALUMINUM STOREFRONT, REF. SHEET A7.11

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05/08/2019

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EXTERIOR ELEVATIONS

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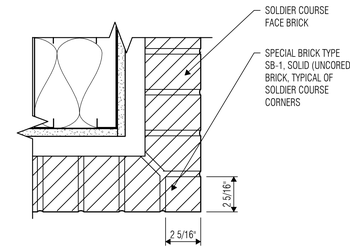
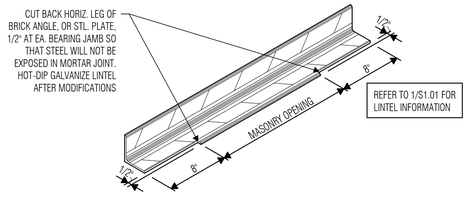
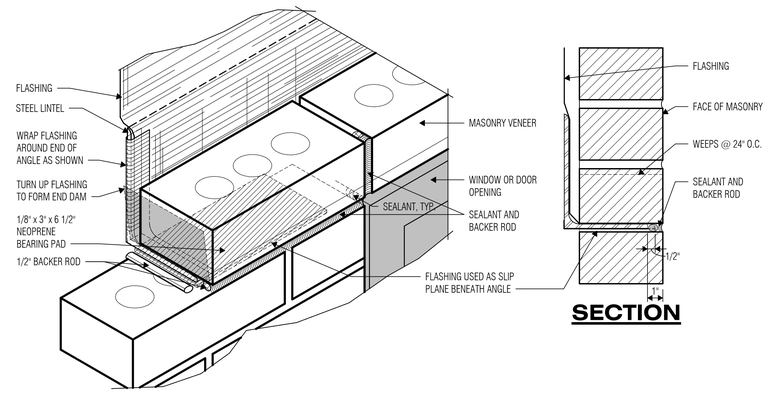


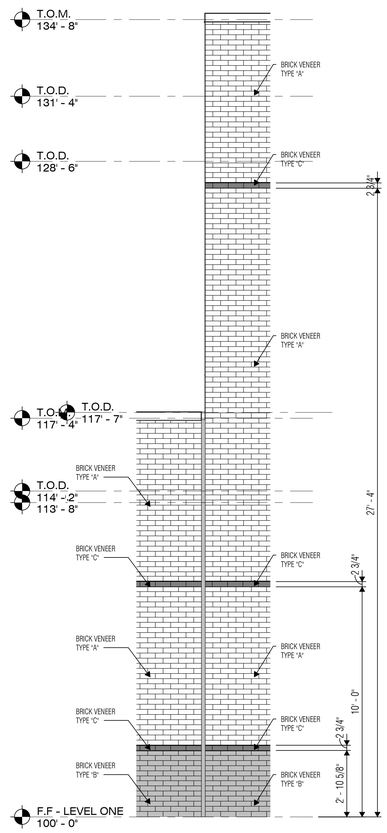
7 X600 - PLAN/DETAIL AT SOLDIER COURSE CORNER
SCALE: 3" = 1'-0"



6 MC030 - LOOSE LINTEL DETAIL, TYP.
SCALE: 1 1/2" = 1'-0"



5 MASONRY VENEER CONTROL JOINT (TYP. AT LOOSE LINTELS)1
SCALE: 3" = 1'-0"



1 BRICK COURSING (TYP.)
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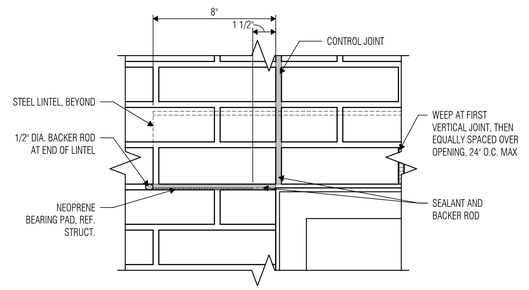
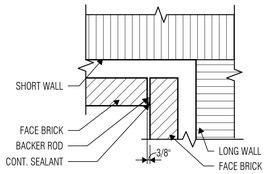
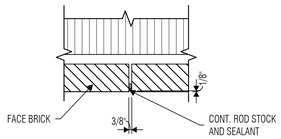


4 X401 - MASONRY VENEER C.J. ELEVATION
SCALE: 3" = 1'-0"



3 X002 - EXT. CONTROL JOINT
SCALE: 1 1/2" = 1'-0"



2 X007 - EXT. CONTROL JOINT
SCALE: 1 1/2" = 1'-0"

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05/08/2019

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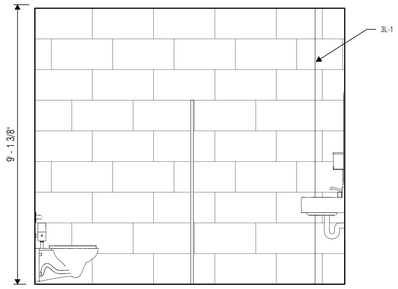

12 TOILETS A106 - NORTH ELEVATION
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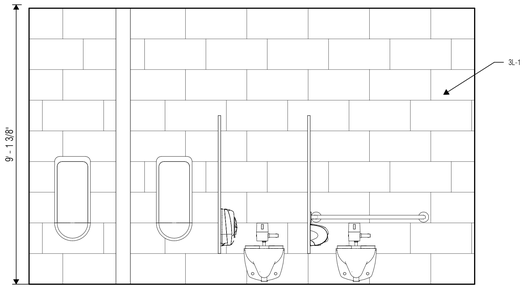

11 TOILETS 108 - WEST ELEVATION
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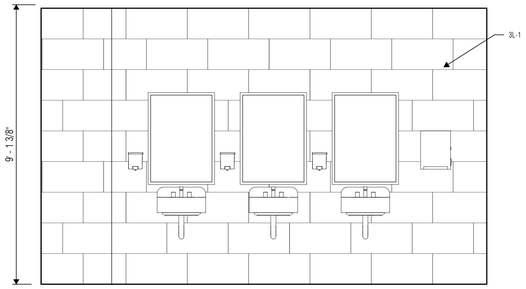

10 TOILETS 108 - EAST ELEVATION
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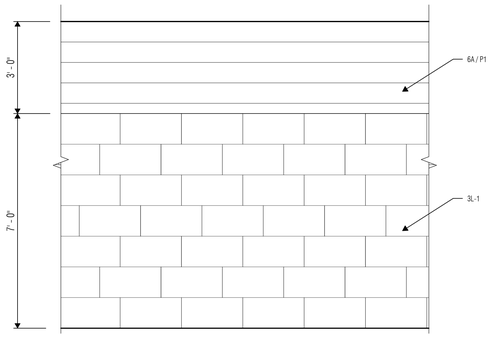

9 CORRIDOR (TYP)
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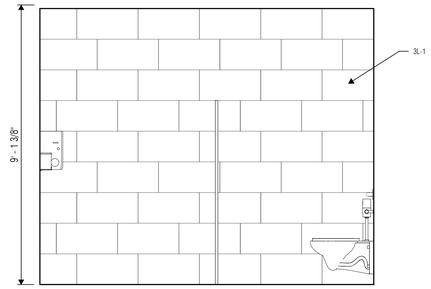
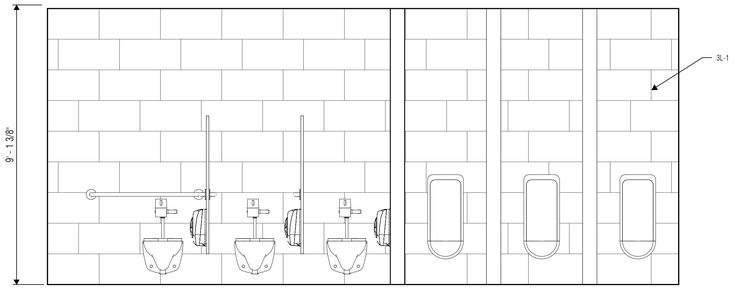


8 MEN A105 - WEST ELEVATION
SCALE: 1/2" = 1'-0"



7 MEN A105 - NORTH ELEVATION
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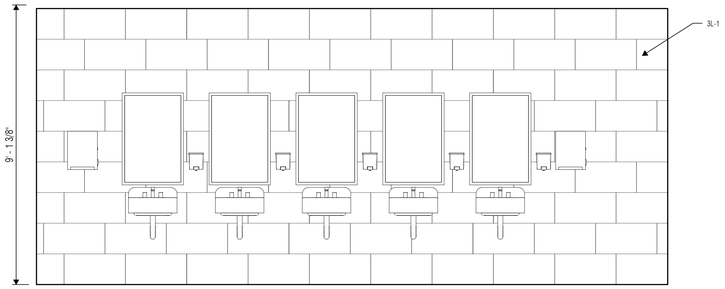
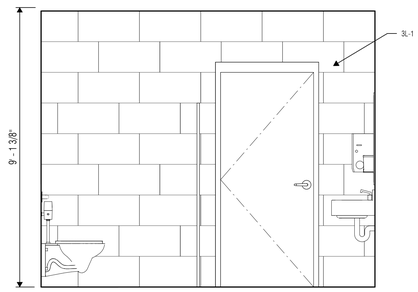


6 MEN A105 - SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



5 WOMEN A104 - EAST ELEVATION
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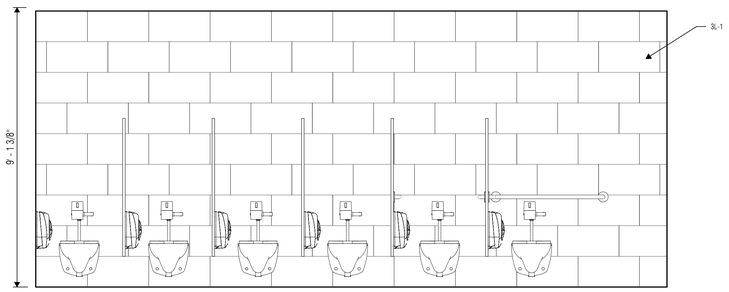

4 WOMEN A104 - NORTH ELEVATION
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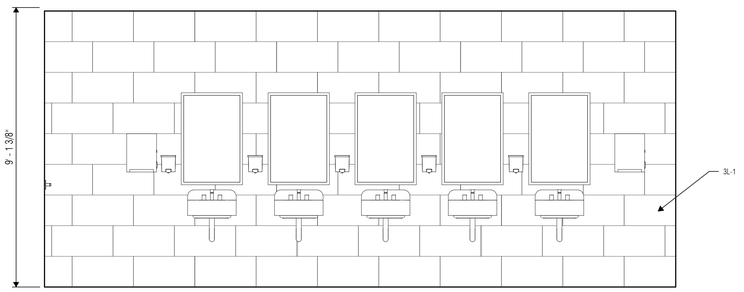

3 WOMEN A104 - SOUTH ELEVATION
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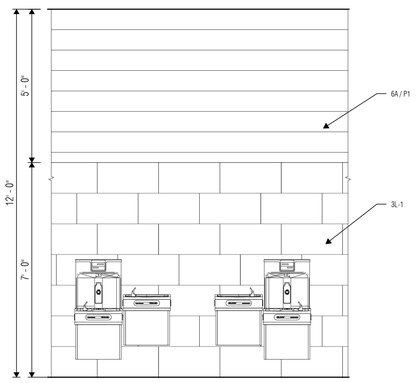

2 LOBBY A101 - SOUTH WALL B
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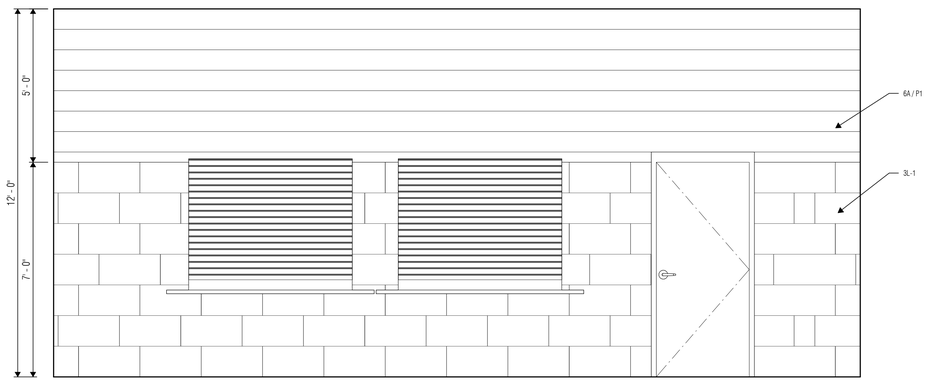

1 LOBBY A101 - SOUTH ELEVATION A
SCALE: 1/2" = 1'-0"

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INTERIOR ELEVATIONS

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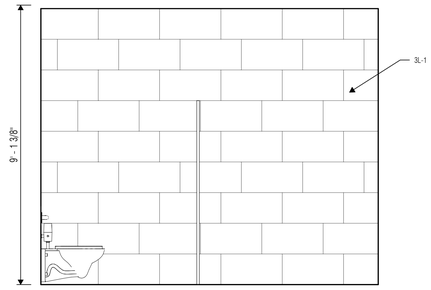
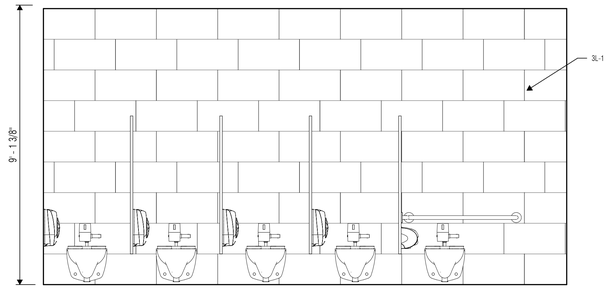
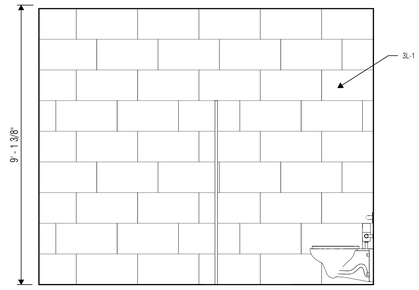


16 GIRLS A126 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



15 GIRLS A126 - NORTH ELEVATION
SCALE: 1/2" = 1'-0"



14 BOYS A125 - EAST ELEVATION
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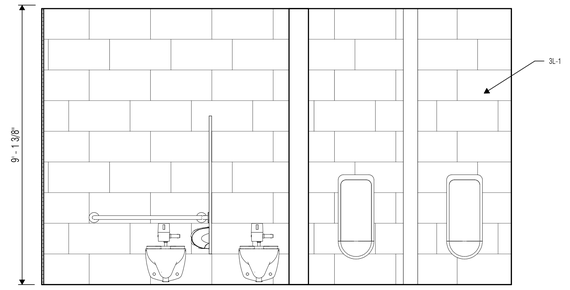
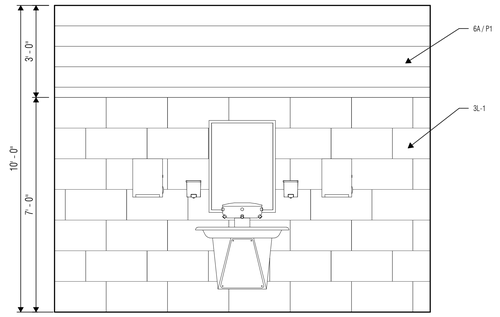
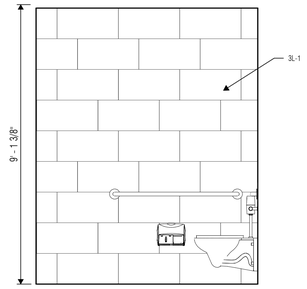


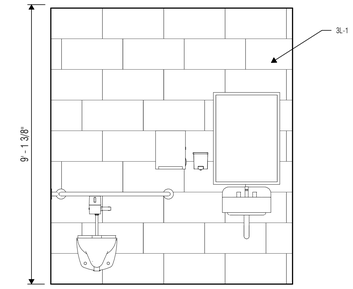
13 BOYS A125 - SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



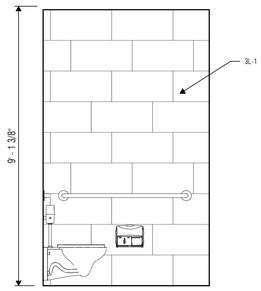
12 ALCOVE A127 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



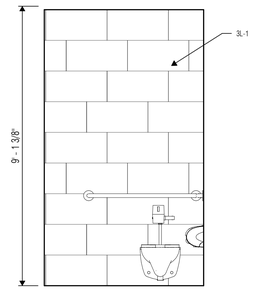
11 TOILET A120 - NORTH ELEVATION
SCALE: 1/2" = 1'-0"



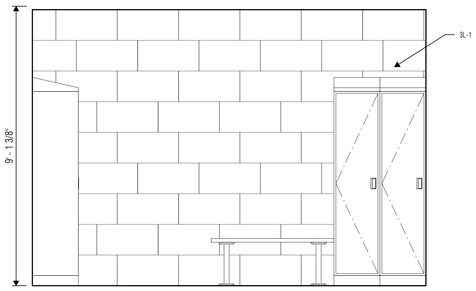
10 TOILET A120 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



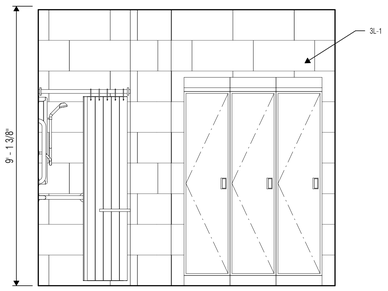
9 TOILET A112 - SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



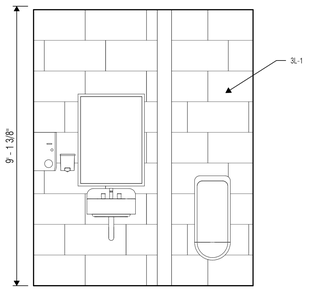
8 TOILET A112 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



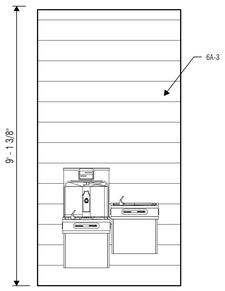
7 COACHES LOCKERS A111 - WEST ELEVATION
SCALE: 1/2" = 1'-0"



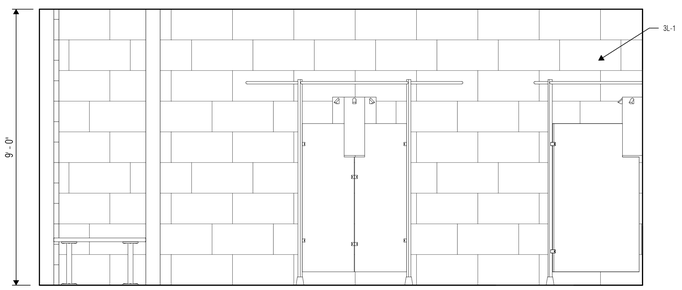
6 COACHES LOCKERS A111 - SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



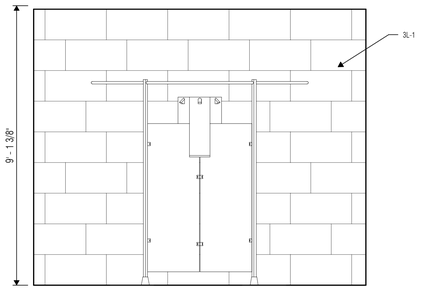
5 COACHES LOCKERS A111 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



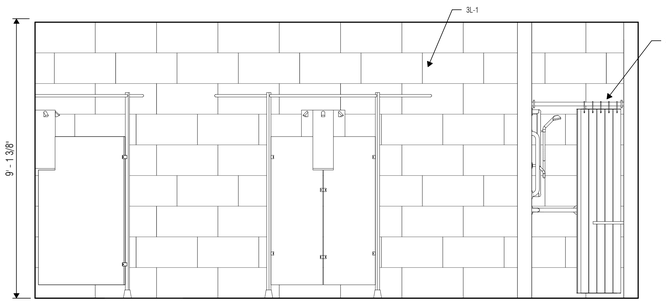
4 BOYS ATHLETICS - WEST ELEVATION
SCALE: 1/2" = 1'-0"



3 SHOWERS A107 - WEST ELEVATION
SCALE: 1/2" = 1'-0"



2 SHOWERS A107 - NORTH ELEVATION
SCALE: 1/2" = 1'-0"



1 SHOWERS A107 - EAST ELEVATION
SCALE: 1/2" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT — JOHN F. KLEIN — 76433 — STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
INTERIOR ELEVATIONS

SHEET NO.
A3.22

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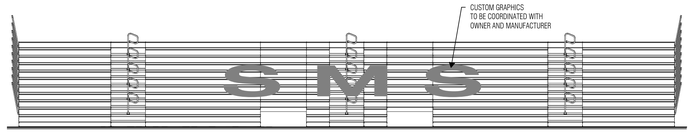
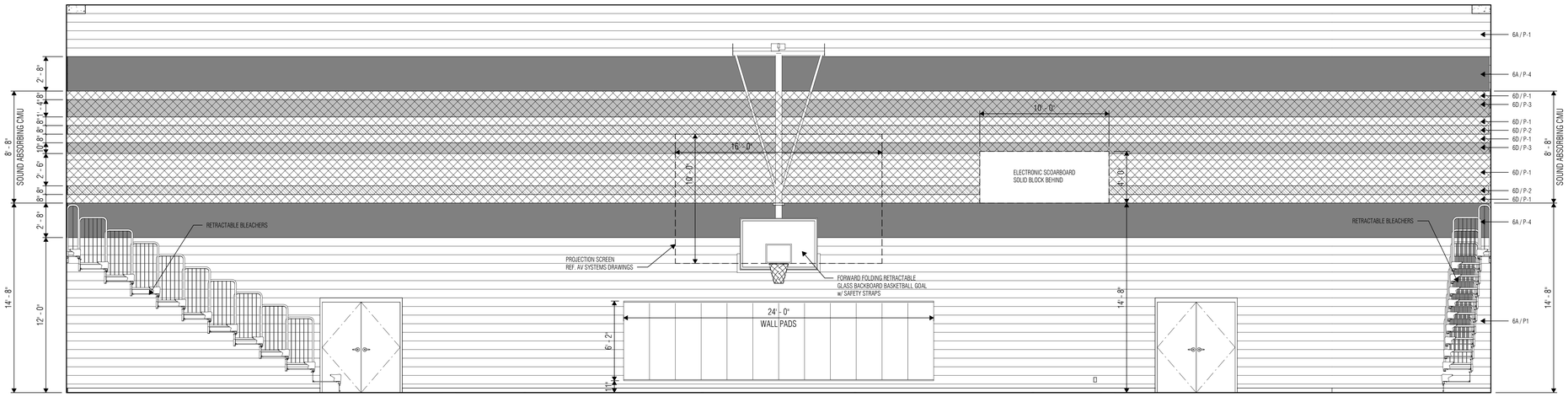
5 BLEACHERS OPEN POSITION - WEST WALL
SCALE: 1/8" = 1'-0"

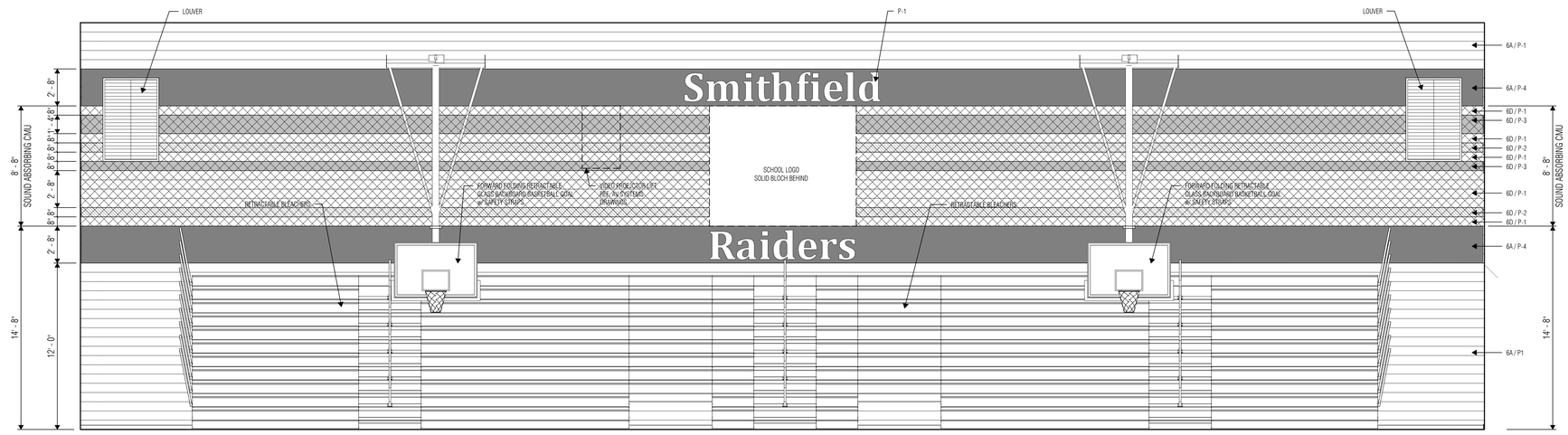


4 BLEACHERS OPEN POSITION - EAST WALL
SCALE: 1/8" = 1'-0"

3 SCHOOL LOGO



2 GYMNASIUM A106 - SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



1 GYMNASIUM A106 - EAST ELEVATION
SCALE: 1/4" = 1'-0"

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05/08/2019

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Proj. Coord.	
JD	

PROJECT NO.
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SHEET TITLE
INTERIOR ELEVATIONS

SHEET NO.
A3.23

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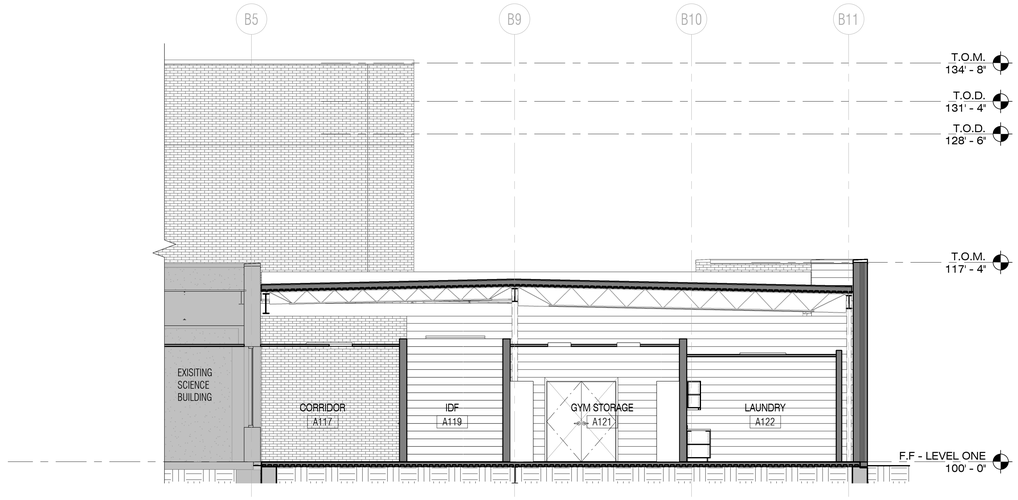
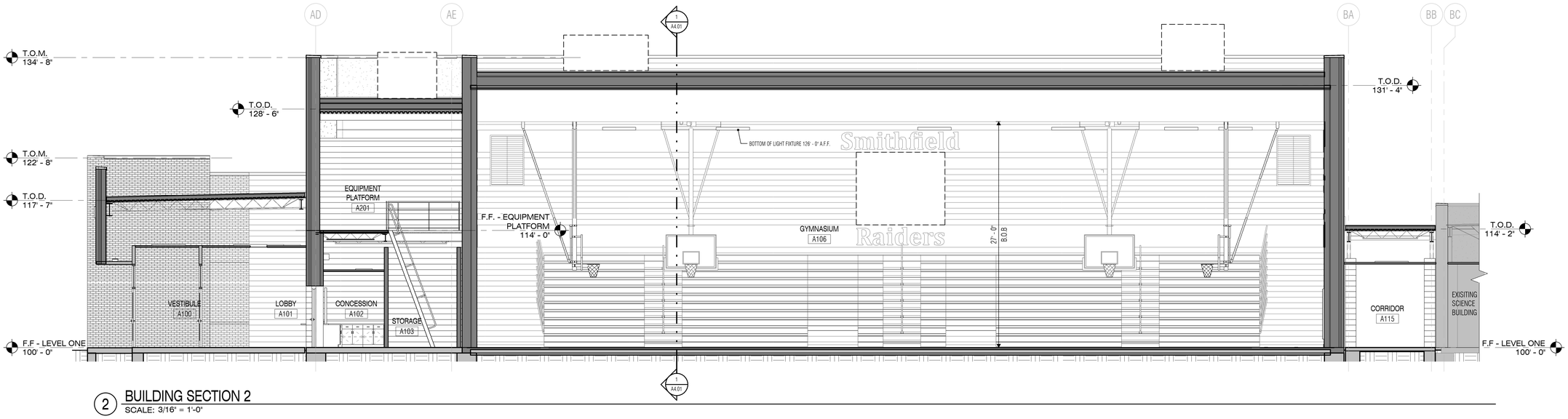
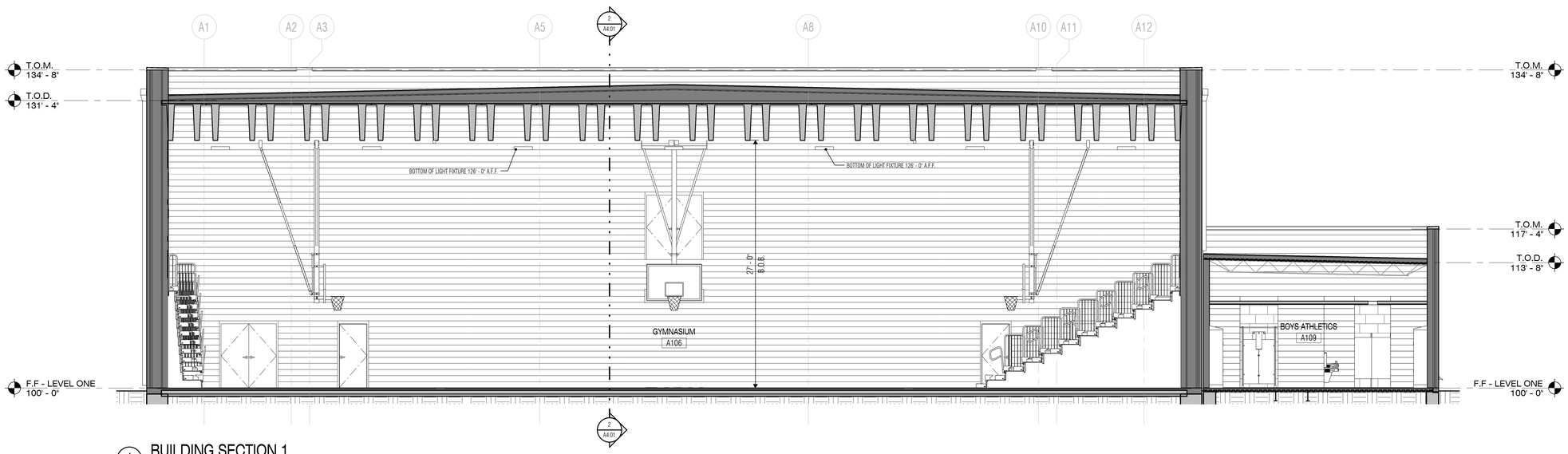


3 BUILDING SECTION 3
SCALE: 3/16" = 1'-0"



2 BUILDING SECTION 2
SCALE: 3/16" = 1'-0"



1 BUILDING SECTION 1
SCALE: 3/16" = 1'-0"

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Proj. Coord. JD	

PROJECT NO.

1887.00

SHEET TITLE

BUILDING SECTIONS

SHEET NO.

A4.01

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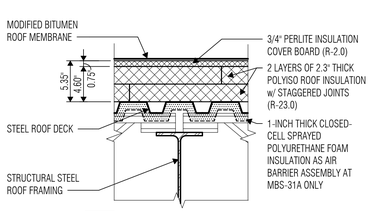
BUILDING ENVELOPE ASSEMBLY LEGEND - CLIMATE ZONE 3

KEY: VENEER BACKUP CLIMATE ZONE MARK — BMS-31

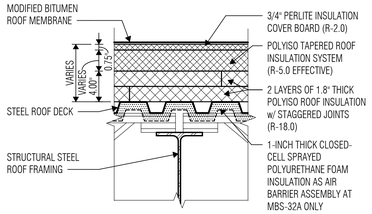
NOTES:
1. REFERENCE SHEET A4.10 FOR BUILDING ENVELOPE ASSEMBLY TYPES
2. CLIMATE ZONE DESIGNATION REFERS TO BUILDING LOCATION PER ENERGY CODE. 0 = NO CLIMATE ZONE CRITERIA AT THAT ASSEMBLY.

WALL ASSEMBLY		FLOOR ASSEMBLY	
Brick Veneer, Modular		CSG-01	Concrete Slab on Grade
BMS-31	Brick Veneer (Modular) on 6" Steel STUDSs	CSG-02	Concrete Slab on Grade w/ Concrete Topping
BMS-32	Brick Veneer (Modular) on 8" Steel STUDSs		
BMS-33	Brick Veneer (Modular) on 3 5/8" Steel STUDSs	CSS-01	Concrete Slab on Steel Deck & Framing
		CSS-02	Concrete Slab on Steel Deck & Framing w/ Concrete Topping
BMC-31	Brick Veneer (Modular) on 8" CMU	CSS-31	Concrete Slab on Steel Deck & Framing (over unconditioned space)
BMC-31A	Brick Veneer (Modular) on 8" CMU w/ Acoustic Insulation	CSS-32	Concrete Slab on Steel Deck & Framing w/ Concrete Topping (over unconditioned space)
BMC-32	Brick Veneer (Modular) on 12" CMU		
BMC-32A	Brick Veneer (Modular) on 12" CMU w/ Acoustic Insulation	ROOF ASSEMBLY	
BMC-33	Brick Veneer (Modular) on 8" CMU w/ Furring Channels	SPS-31	Single-Ply Roof System on Steel Deck & Framing, Sloping
BMC-33A	Brick Veneer (Modular) on 8" CMU w/ Furring Channels & Acoustic Insulation	SPS-32	Single-Ply Roof System on Steel Deck & Framing, Non-Sloping w/ Tapered Insulation
BMC-34	Brick Veneer (Modular) on 8" CMU w/ Furring Channels		
BMC-34A	Brick Veneer (Modular) on 8" CMU w/ Furring Channels & Acoustic Insulation	SPC-31	Single-Ply Roof System on Structural Concrete, Sloping
		SPC-32	Single-Ply Roof System on Structural Concrete, Non-Sloping w/ Tapered Insulation
BMT-31	Brick Veneer (Modular) on 8" Tilt-Up Concrete Panels		
BMT-32	Brick Veneer (Modular) on 8" Tilt-Up Concrete Panels w/ Furring Channels	PARAPET ASSEMBLY	
		SPP-01	Single-Ply Roof Membrane on Plywood Sheathing
BMI-31	Brick Veneer (Modular) on Insulated Concrete Form System (ICF) w/ 8" Concrete	MWP-01	Metal Wall Panel on Plywood Sheathing
BMI-32	Brick Veneer (Modular) on Insulated Concrete Form System (ICF) w/ 12" Concrete		
		SOFFIT ASSEMBLY	
Metal Wall Panel		MSS-01	Metal Soffit Panel on Suspended Steel Framing
MWS-31	Metal Wall Panel w/ Clip System on 6" Steel STUDSs	MSS-02	Metal Soffit Panel on Steel STUDS Framing
MWS-32	Metal Wall Panel w/ Clip System on 8" Steel STUDSs		
MWC-31	Metal Wall Panel w/ Clip System on 8" CMU		
MWC-32	Metal Wall Panel w/ Clip System on 12" CMU		



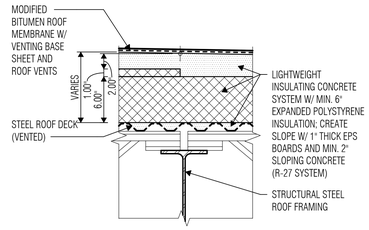
MBS-31 MODIFIED BITUMEN ROOF SYSTEM ON STEEL DECK & FRAMING, SLOPING

MBS-31A MODIFIED BITUMEN ROOF SYSTEM ON STEEL DECK & FRAMING, SLOPING (OVER VENTILATED PLENUM)



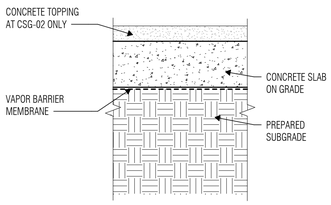
MBS-32 MODIFIED BITUMEN ROOF SYSTEM ON STEEL DECK & FRAMING, NON-SLOPING

MBS-32A MODIFIED BITUMEN ROOF SYSTEM ON STEEL DECK & FRAMING, NON-SLOPING (OVER VENTILATED PLENUM)



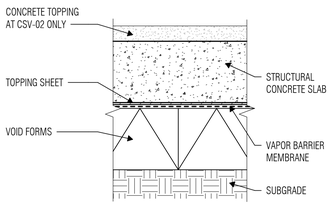
MBL-32 MODIFIED BITUMEN ROOF SYSTEM ON LIGHTWEIGHT INSULATING CONCRETE SYSTEM ON STEEL DECK & FRAMING, NON-SLOPING W/ SLOPING CONCRETE

3 BUILDING ENVELOPE ASSEMBLY ROOF TYPES_CZ3
SCALE: 1 1/2" = 1'-0"



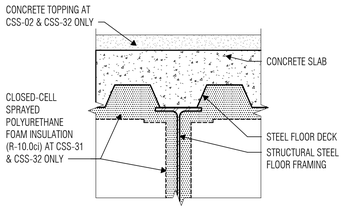
CSG-01 CONCRETE SLAB ON GRADE

CSG-02 CONCRETE SLAB ON GRADE w/ CONCRETE TOPPING



CSV-01 CONCRETE SLAB ON VOID FORMS

CSV-02 CONCRETE SLAB ON VOID FORMS w/ CONCRETE TOPPING

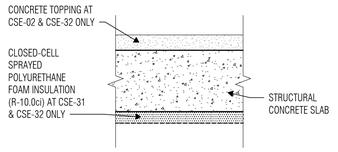


CSS-01 CONCRETE SLAB ON STEEL DECK & FRAMING

CSS-02 CONCRETE SLAB ON STEEL DECK & FRAMING w/ CONCRETE TOPPING

CSS-31 CONCRETE SLAB ON STEEL DECK & FRAMING (OVER UNCONDITIONED SPACE)

CSS-32 CONCRETE SLAB ON STEEL DECK & FRAMING w/ CONCRETE TOPPING (OVER UNCONDITIONED SPACE)



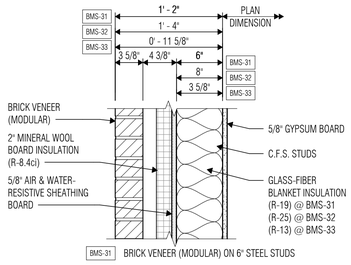
CSE-01 CONCRETE SLAB, ELEVATED

CSE-02 CONCRETE SLAB, ELEVATED w/ CONCRETE TOPPING

CSE-31 CONCRETE SLAB, ELEVATED (OVER UNCONDITIONED SPACE)

CSE-32 CONCRETE SLAB, ELEVATED w/ CONCRETE TOPPING (OVER UNCONDITIONED SPACE)

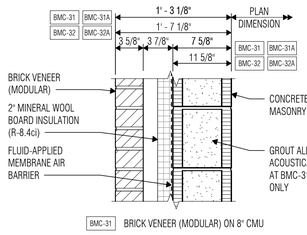
2 BUILDING ENVELOPE ASSEMBLY FLOOR TYPES_CZ3
SCALE: 1 1/2" = 1'-0"



BMS-31 BRICK VENEER (MODULAR) ON 6" STEEL STUDS

BMS-32 BRICK VENEER (MODULAR) ON 8" STEEL STUDS

BMS-33 BRICK VENEER (MODULAR) ON 3 5/8" STEEL STUDS

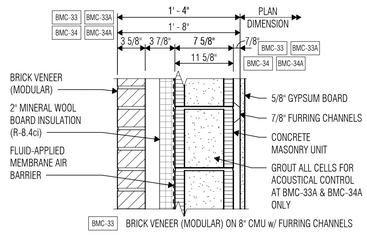


BMC-31 BRICK VENEER (MODULAR) ON 8" CMU

BMC-31A BRICK VENEER (MODULAR) ON 8" CMU w/ ALL CELLS GROUTED

BMC-32 BRICK VENEER (MODULAR) ON 12" CMU

BMC-32A BRICK VENEER (MODULAR) ON 12" CMU w/ ALL CELLS GROUTED

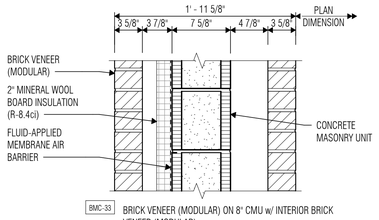


BMC-33 BRICK VENEER (MODULAR) ON 8" CMU w/ FURRING CHANNELS

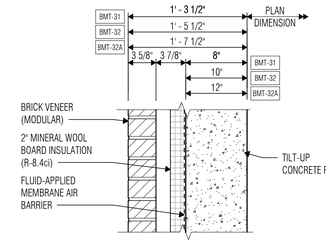
BMC-33A BRICK VENEER (MODULAR) ON 8" CMU w/ FURRING CHANNELS & ALL CELLS GROUTED

BMC-34 BRICK VENEER (MODULAR) ON 12" CMU w/ FURRING CHANNELS

BMC-34A BRICK VENEER (MODULAR) ON 12" CMU w/ FURRING CHANNELS & ALL CELLS GROUTED



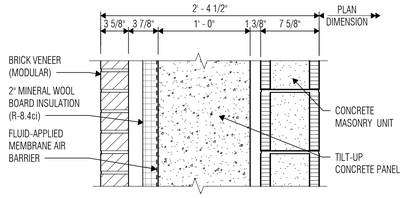
BMC-33 BRICK VENEER (MODULAR) ON 8" CMU w/ INTERIOR BRICK VENEER (MODULAR)



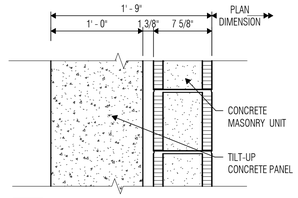
BMT-31 BRICK VENEER (MODULAR) ON 8" TILT-UP CONCRETE PANELS

BMT-32 BRICK VENEER (MODULAR) ON 10" TILT-UP CONCRETE PANELS

BMT-32A BRICK VENEER (MODULAR) ON 12" TILT-UP CONCRETE PANELS



BMT-35 BRICK VENEER (MODULAR) ON 12" TILT-UP CONCRETE PANELS w/ INTERIOR CMU



TCP-31 BRICK VENEER (MODULAR) ON 12" TILT-UP CONCRETE PANELS w/ INTERIOR CMU

1 BUILDING ENVELOPE ASSEMBLY WALL TYPES_CZ3
SCALE: 1 1/2" = 1'-0"

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

JOHN F. KLEIN 76439 REGISTERED ARCHITECT STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
BUILDING ASSEMBLY TYPES

SHEET NO.
A4.02

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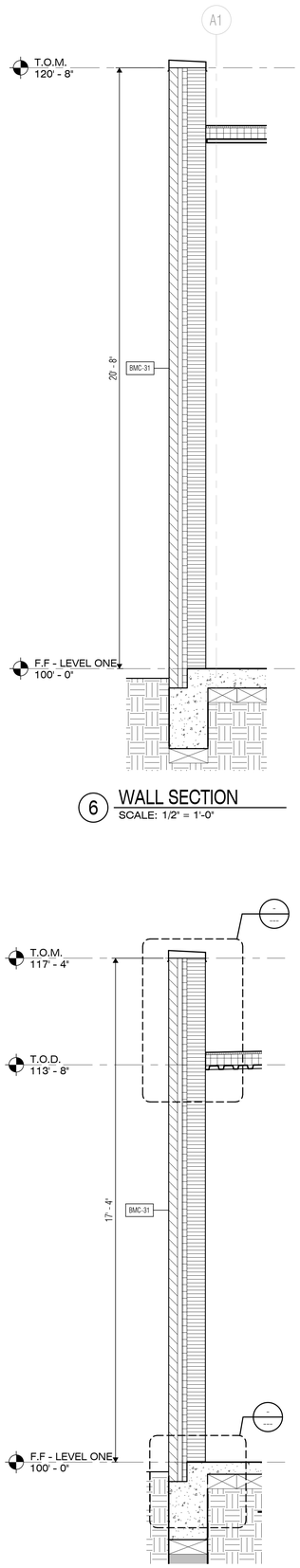
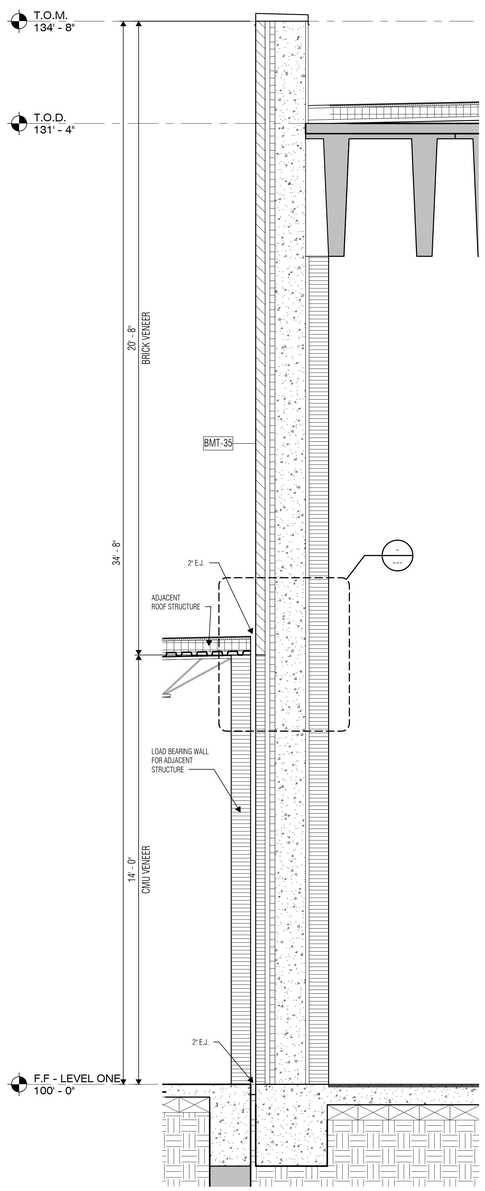


6 WALL SECTION
SCALE: 1/2" = 1'-0"

5 WALL SECTION
SCALE: 1/2" = 1'-0"



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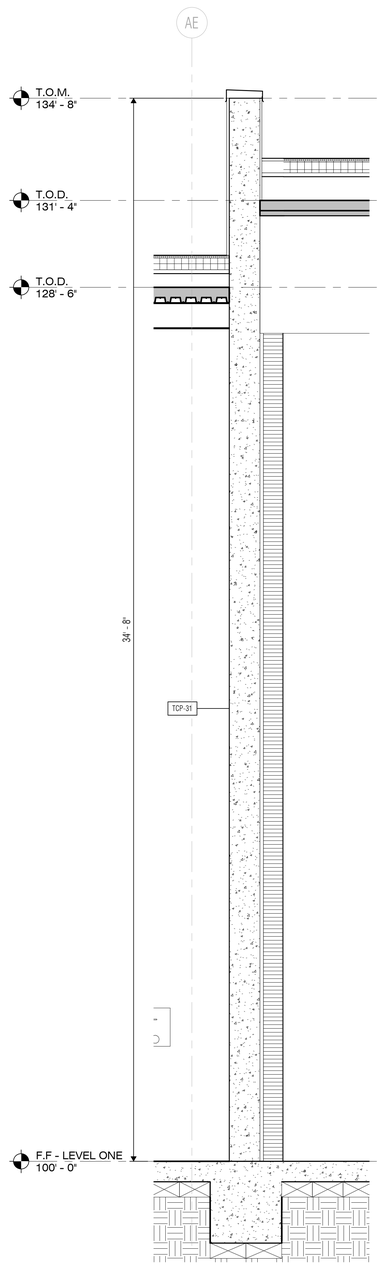

3 WALL SECTION - TCP + INT ACMU
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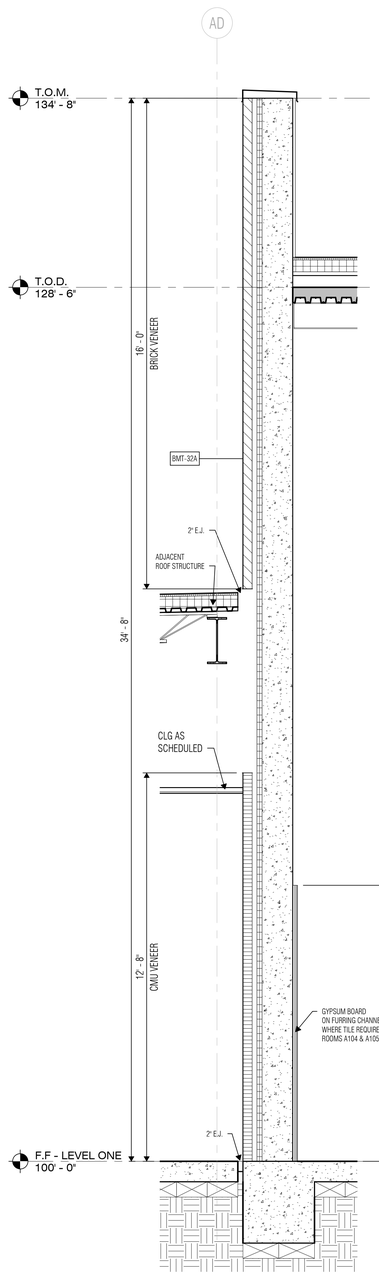

2 WALL SECTION - CMU/BRICK ON TCP
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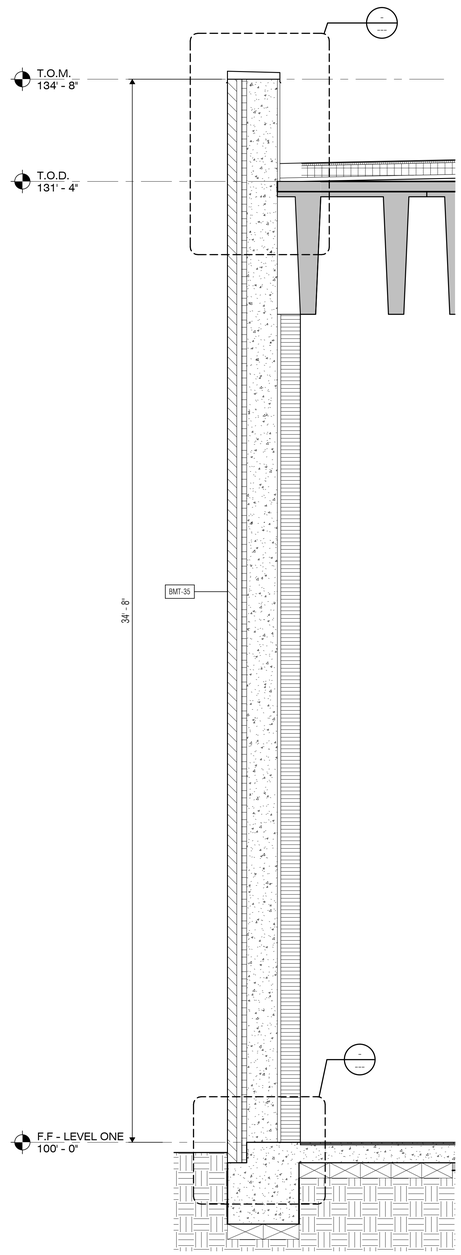

1 WALL SECTION
SCALE: 1/2" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLINE 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
WALL SECTIONS

SHEET NO.
A4.03

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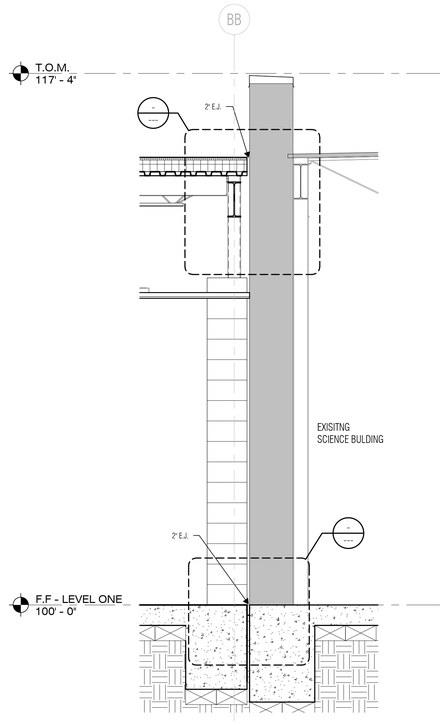

8 WALL SECTION - CORRIDOR A115/EXISTING BUILDING
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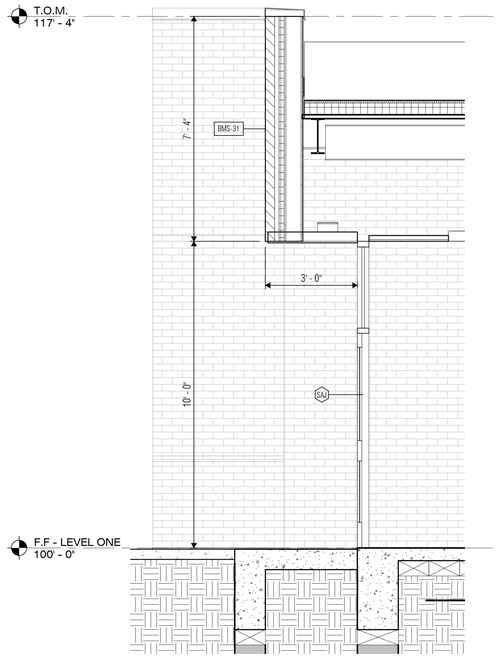
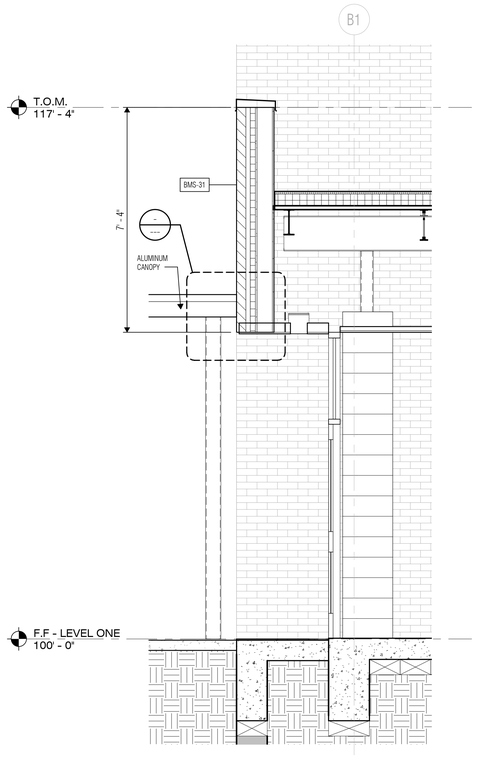


7 WALL SECTION - VESTIBULE A116 / A129
SCALE: 1/2" = 1'-0"



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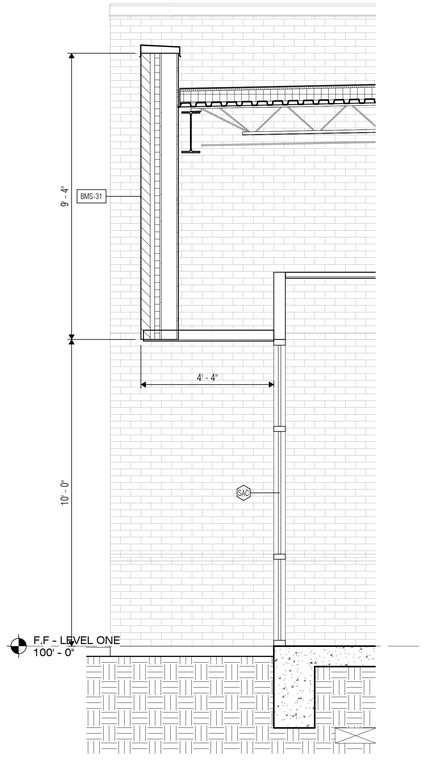

5 WALL SECTION - LOBBY A101
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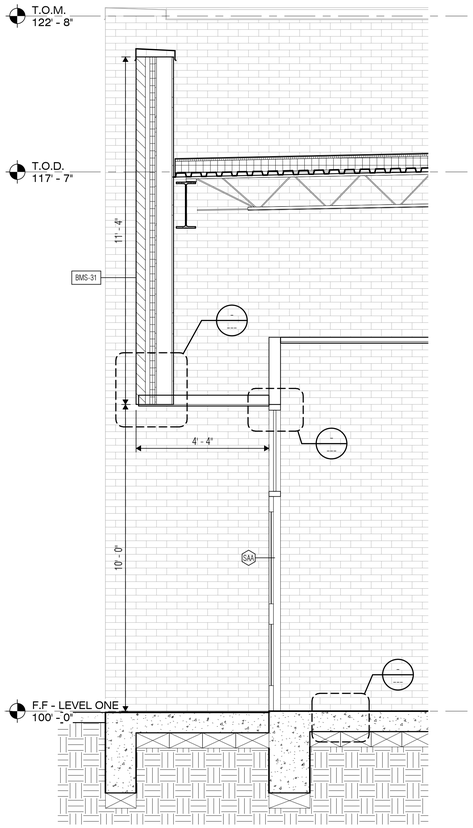

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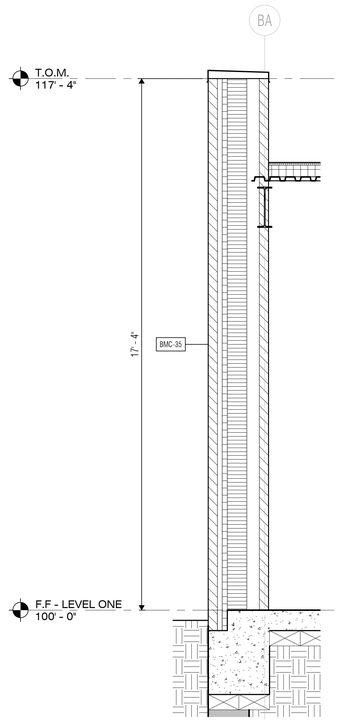

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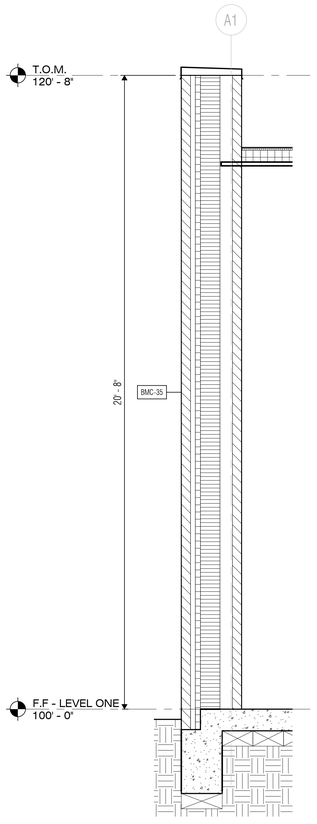

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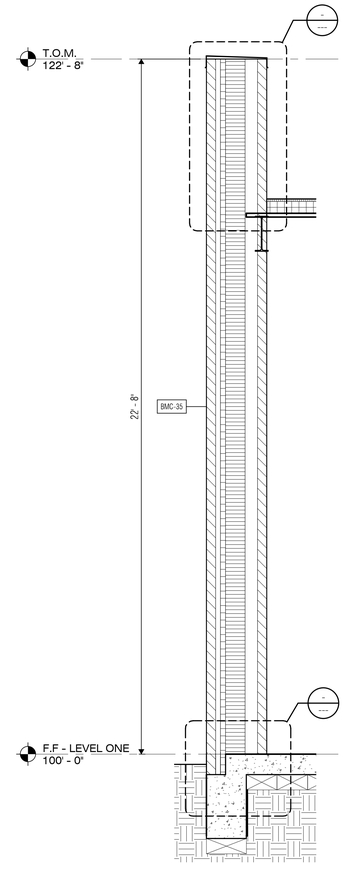

1 WALL SECTION
SCALE: 1/2" = 1'-0"

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Proj. Coord.	
Checker	

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1887.00

SHEET TITLE
WALL SECTIONS

SHEET NO.
A4.04

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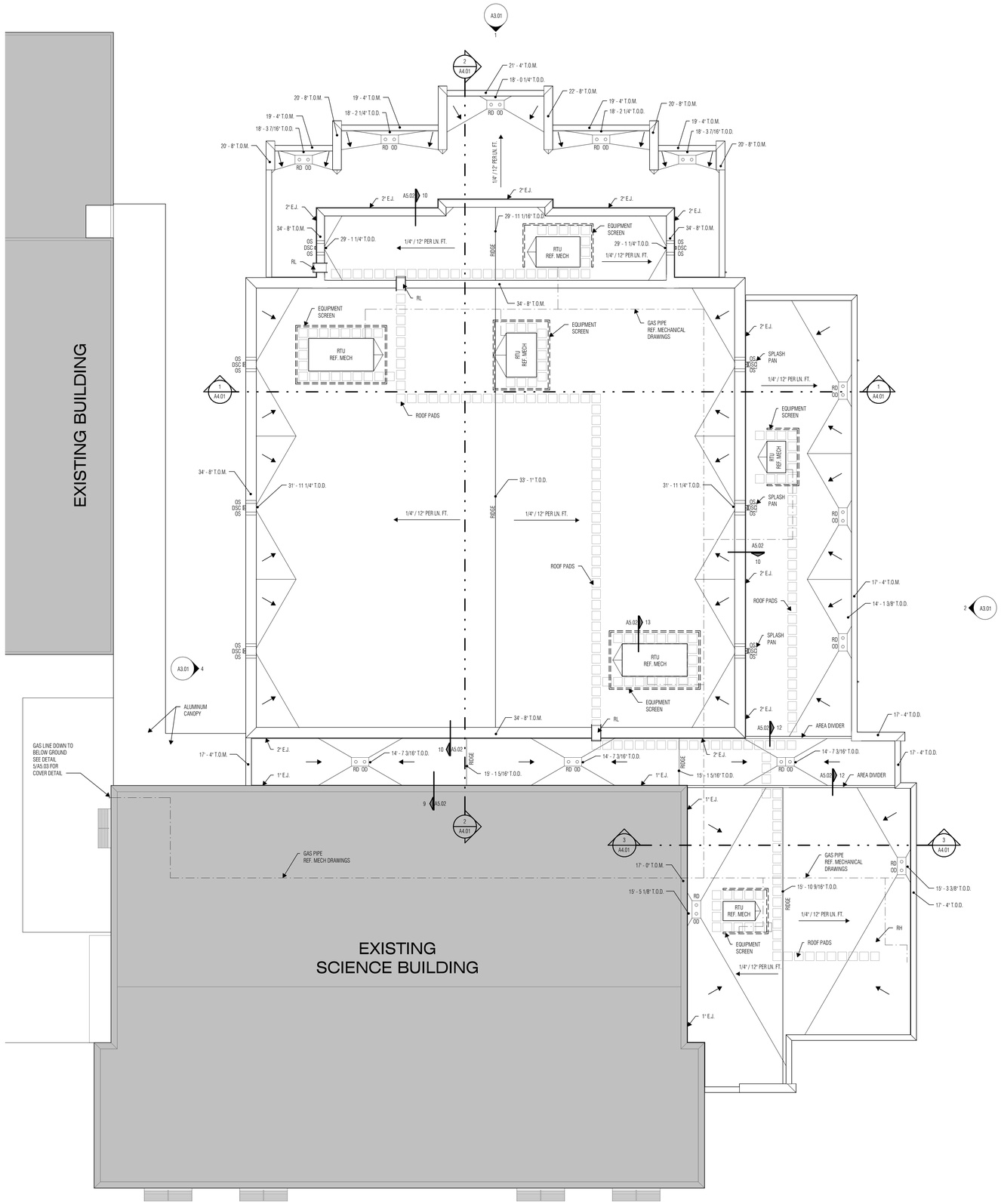

1 ROOF PLAN
SCALE: 3/32" = 1'-0"

ROOF PLAN GENERAL NOTES

1. Crickets are to slope 1/2" per foot, unless noted otherwise.
2. Locate overflow scuppers per elevations. If conflicts occur, contact architect prior to construction.

ROOF PLAN LEGEND

MBM	MODIFIED BITUMINOUS MEMBRANE ROOFING, REF. 3/A4.02
T.O.M.	TOP OF MASONRY ELEVATION
T.O.D.	TOP OF DECK ELEVATION
T.O.S.	TOP OF STEEL ELEVATION
RD	ROOF DRAIN, REF. 1/A5.02
OS	OVERFLOW SCUPPER, REF. 4/A5.02
DS	DOWNSPOUT, REF. 6 & 7/A5.02
SP	SPLASH PAN, REF. 6/A5.02
MC	MANUFACTURED COPING, REF. 14/A5.02
RH	ROOF HATCH, REF. 1/A5.03
RL	ROOF LADDER, REF. 2/A5.03
RTU	ROOF TOP UNIT, REF. MECH
CU	CONDENSING UNIT, REF. MEP
GP	GAS PIPE PENETRATION, REF. 6& 7/A5.03
RV	RELIEF VENT, REF. MEP
EF	EXHAUST FAN, REF. MEP
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE. REF.2/A5.03
DSC	DOWNSPOUT WITH SCUPPER AND CONDUCTOR HEAD. REF.3 & 5/A5.02

N
PLAN NORTH TRUE NORTH

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SHEET TITLE
ROOF PLAN

SHEET NO.
A5.01

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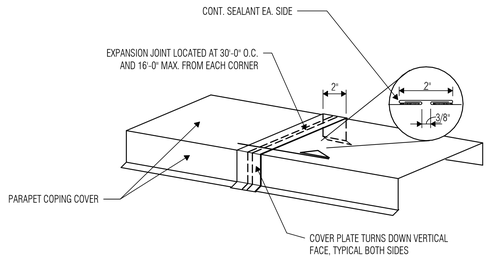
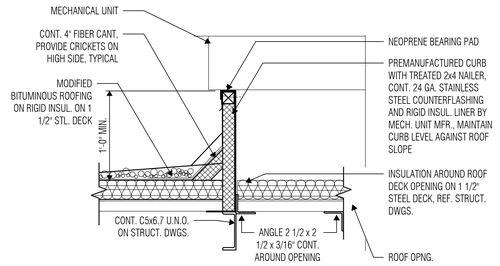
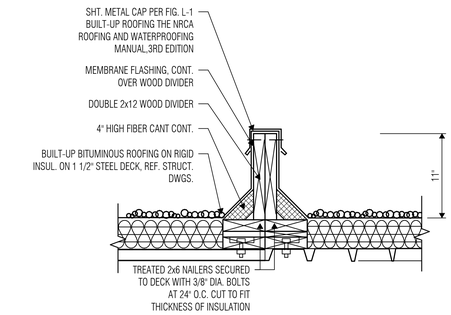


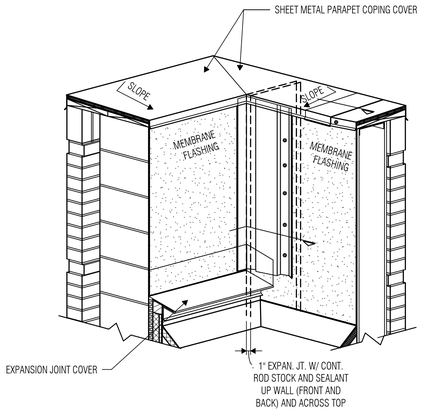
14 R808 - ROOF METAL COPING JOINT DETAILS
SCALE: 1 1/2" = 1'-0"



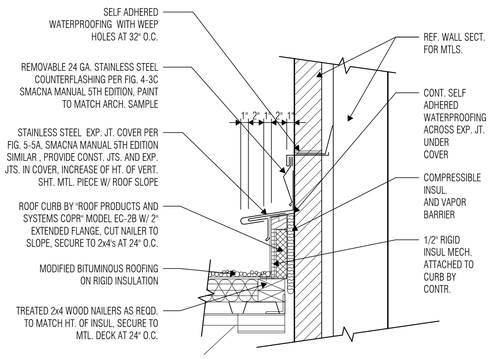
13 R010 - ROOF CURB at A/C UNIT
SCALE: 1 1/2" = 1'-0"



12 R015 - WOOD DIVIDER - ROOF DECK CHANGES DIRECTION BY 90
SCALE: 1 1/2" = 1'-0"



11 R822 - EXPAN. JOINT DETAIL at WALL
SCALE: 1 1/2" = 1'-0"



10 R805 - EXPANSION JOINT COVER (TYP.)
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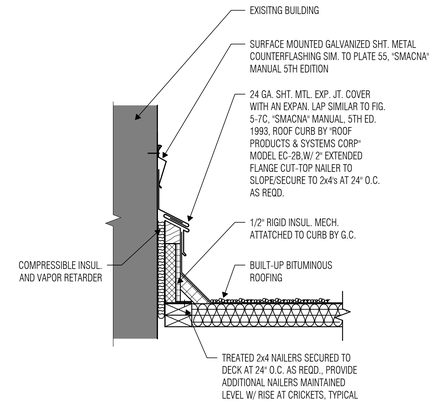
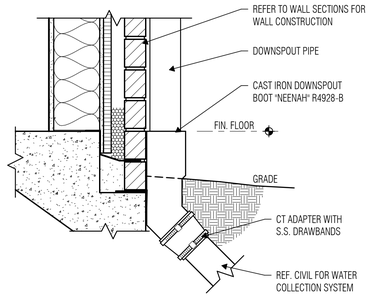
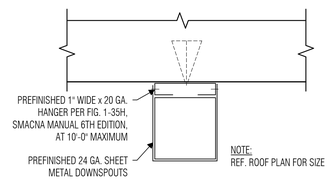


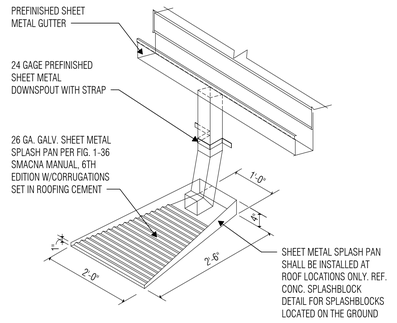
9 EXPANSION JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



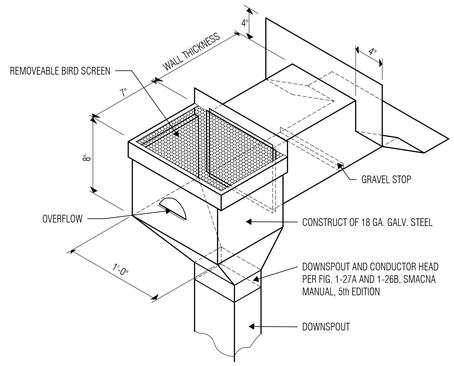
8 MC611 - DOWNSPOUT BOOT
SCALE: 1 1/2" = 1'-0"



7 R711 - DOWNSPOUT DETAIL PLAN
SCALE: 3" = 1'-0"



6 R713 - GUTTER & DOWNSPOUT
SCALE: 1 1/2" = 1'-0"



5 R706 - CONDUCTOR HEAD
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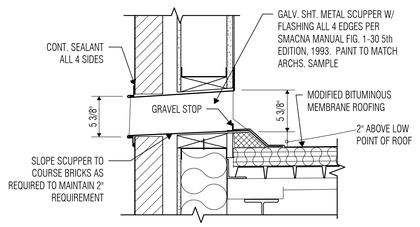
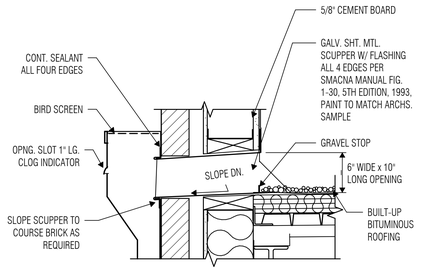
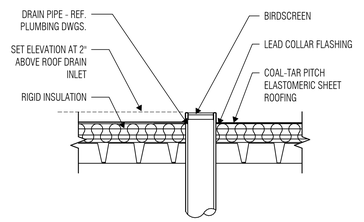


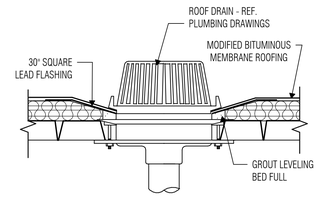
4 R704 - OVERFLOW SCUPPER
SCALE: 1 1/2" = 1'-0"



3 R700 - ROOF DETAIL_PRIMARY DRAIN SCUPPER
SCALE: 1 1/2" = 1'-0"



2 R205 - ROOF DETAIL_TYPICAL OVERFLOW DRAIN
SCALE: 1 1/2" = 1'-0"



1 R300 - ROOF DRAIN
SCALE: 1 1/2" = 1'-0"

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SHEET TITLE
ROOF DETAILS

SHEET NO.
A5.02

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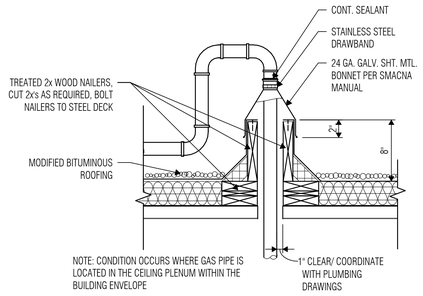
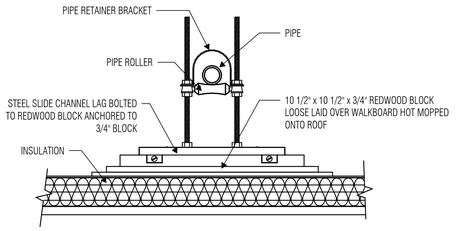


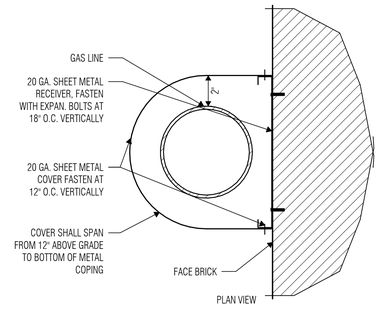
7 R011 - GAS PIPE PNETRATION at ROOF

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



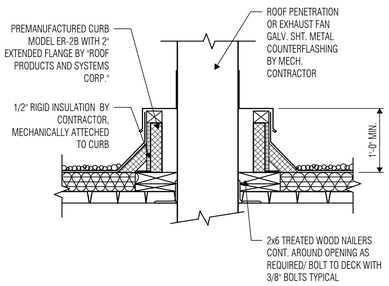
6 R803 - TYPICAL GAS PIPE MOUNTING_PEDESTAL for 2' O.D. or LARGER

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



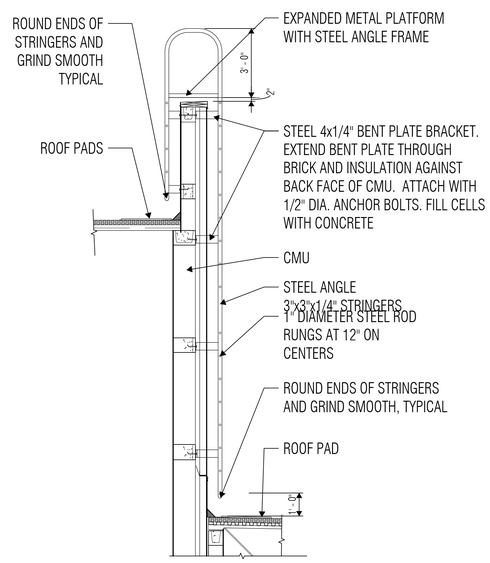
5 MC605 - TYPICAL GAS PIPE

SCALE: 3" = 1'-0"



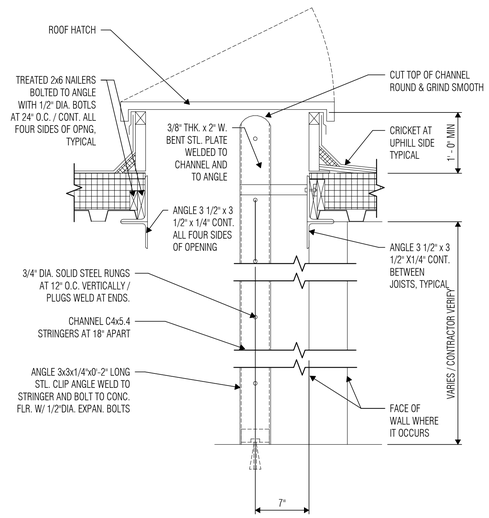
4 R835 - ROOF CURB at DUCT PENETRATION OR EXHAUST FAN

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



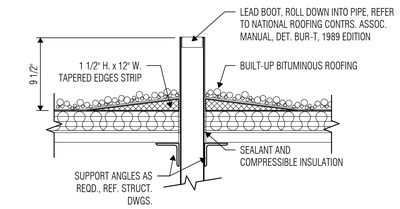
2 R602 - EXTERIOR ROOF LADDER

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



1 R600 - ROOF LADDER AND HATCH DETAIL

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



3 R006 - TYP. VENT STACK FLASHING

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

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLEIN 18439 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
ROOF DETAILS

SHEET NO.
A5.03

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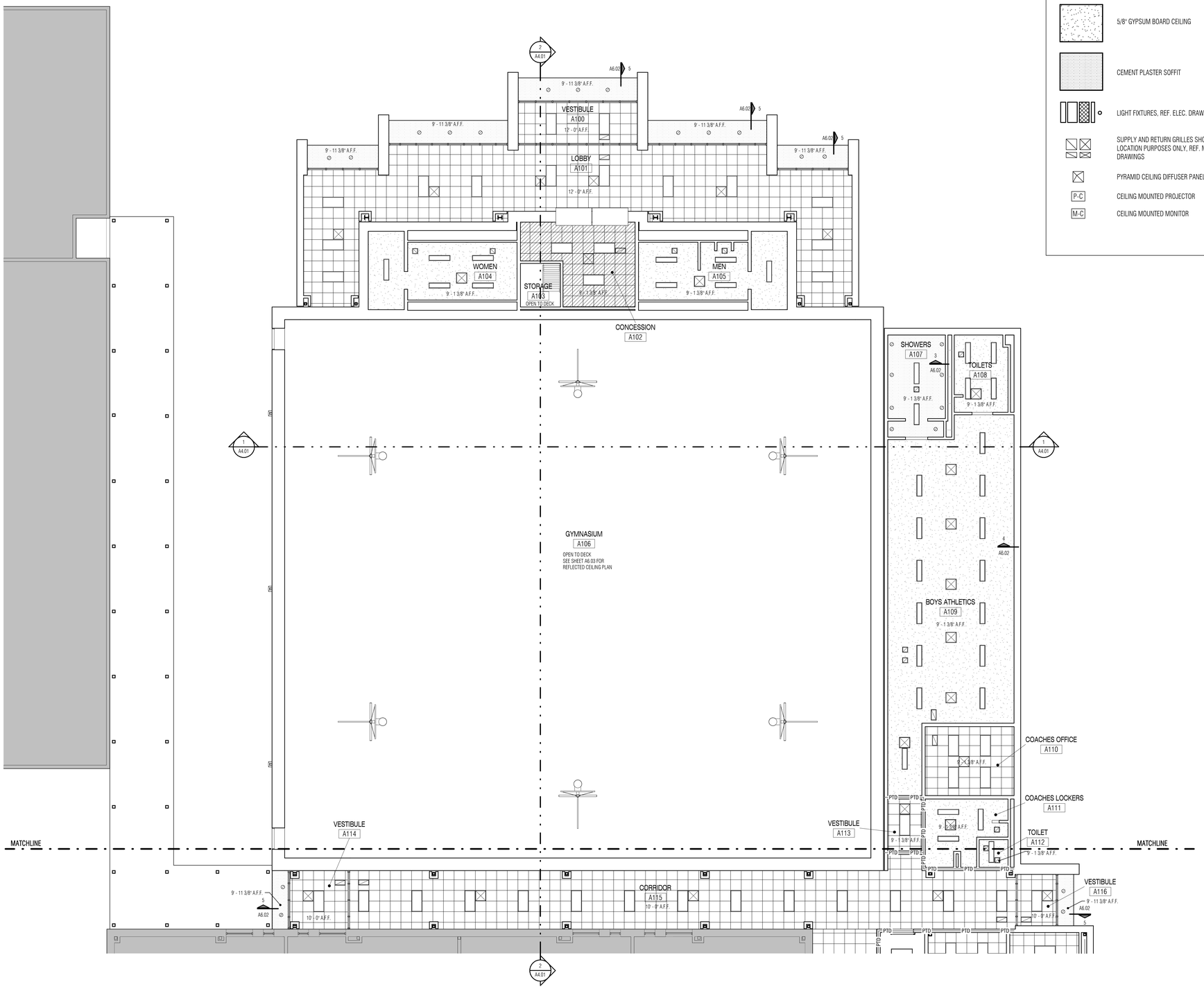


1 MAIN LEVEL - UNIT A - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND

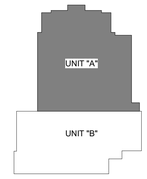
	2'x2' GRID W/ LAY-IN ACOUSTIC CEILING TILE	1HR	1 HOUR FIRE BARRIER PARTITION EXTEND & SEAL WITH FIRESTOPPING SEALANT TO DECK ABOVE FOR FIRE RESISTANCE REQUIREMENTS (PAINT STENCIL LABEL "1 HOUR FIRE AND SMOKE BARRIER-PROTECT ALL OPENINGS" ABOVE CEILING AT 15'-0" O.C.) BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
	2'x2' GRID W/ VINYL COATED LAY-IN GYPSUM BD. PANELS		
	2'x2' GRID W/ LAY-IN ACOUSTIC CEILING TILE. PROVIDE HOLD DOWN CLIPS, REF. SPECIFICATIONS FOR FURTHER INSTRUCTION	2HR	2 HOUR FIRE BARRIER PARTITION EXTEND & SEAL WITH FIRE STOPPING SEALANT TO DECK ABOVE FOR FIRE RESISTANCE REQUIREMENTS (PAINT STENCIL LABEL "2 HOUR FIRE AND SMOKE BARRIER-PROTECT ALL OPENINGS" ABOVE CEILING AT 15'-0" O.C.) BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
	5/8" GYPSUM BOARD CEILING		
	CEMENT PLASTER SOFFIT	SMK	SMOKE PARTITION TO EXTEND & SEAL TO DECK ABOVE TO RESIST THE PASSAGE OF SMOKE. PROVIDE SEALANT AT ALL WALL PENETRATIONS. BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
	LIGHT FIXTURES, REF. ELEC. DRAWINGS		
	SUPPLY AND RETURN GRILLES SHOWN FOR LOCATION PURPOSES ONLY, REF. MECH. DRAWINGS	SND	ACOUSTICAL DRYWALL PARTITION/ SOUND-CONDITIONED CMU PARTITION. EXTEND AND SEAL TO DECK ABOVE WITH ACOUSTICAL SEALANT. PROVIDE ACOUSTICAL SEALANT AT WALL PENETRATIONS. BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
	PYRAMID CEILING DIFFUSER PANELS		
P-C	CEILING MOUNTED PROJECTOR		
M-C	CEILING MOUNTED MONITOR	PTD	NON-RATED PARTITION EXTEND TO DECK ABOVE. SEALANT NOT REQUIRED. BRACE MT. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.

REFLECTED CEILING PLAN GENERAL NOTES

1. All ceiling heights shall be 9 -1 3/8" A.F.F. unless noted otherwise. Restroom ceiling heights shall be coordinated with Detail 3/A6.02.
2. Refer to Detail 1/A6.02 for Typical Gypsum Board Ceiling Control Joint Detail.
3. Refer to Detail 3/A6.02 for Typical Plaster Ceiling Control Joint Detail.
4. Provide vented reveals at perimeter of all non-insulated exterior soffits, whether specifically indicated on drawings or not.
5. Provide partition to deck (PTD) at walls surrounding spaces with exposed structure. Refer to RCP Legend for PTD requirements.
6. Provide hold-down clips for all acoustical lay-in ceiling panels at vestibules, within 20 feet from exterior doors without vestibules, at sloped ceilings and at fire-rated ceilings.
7. At ceiling furring details, the suspended assemblies, bracing, blocking, etc. shown are for schematic representation only. Provide stable, secure and permanent assemblies at these locations in accordance with recommended light-gauge steel framing installation practices.

PLAN NORTH TRUE NORTH

KEY PLAN



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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLINE 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS

Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
REFLECTED CEILING PLAN

SHEET NO.
A6.01

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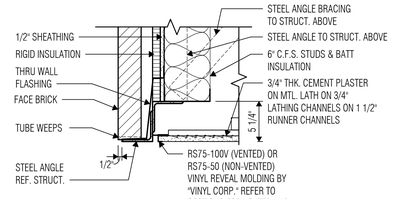
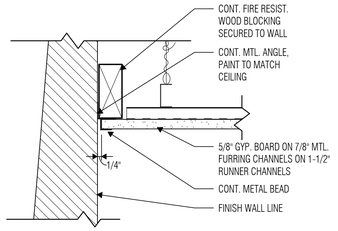
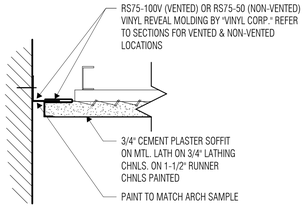


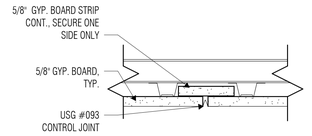
5 C203 - SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"



4 C004 - INT. TYP.GYP BD MEETS MASONRY WALL
SCALE: 3" = 1'-0"



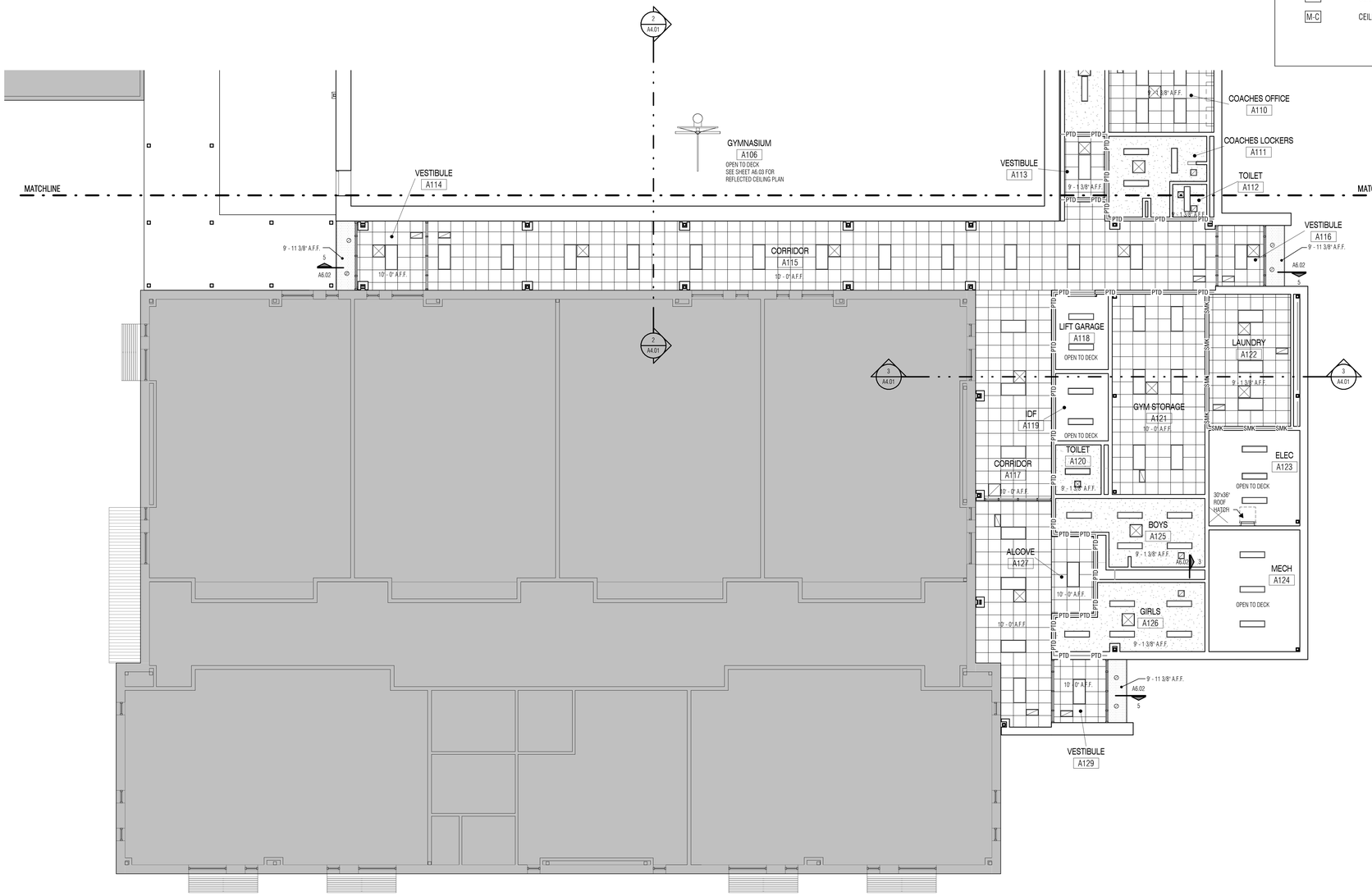
3 C201 - CEM. PLASTER PERIMETER E.J.
SCALE: 3" = 1'-0"



2 C000 - GYP. BOARD CJ
SCALE: 3" = 1'-0"

REFLECTED CEILING PLAN LEGEND

2'x2' GRID W/ LAY-IN ACOUSTIC CEILING TILE	1HR	1 HOUR FIRE BARRIER PARTITION EXTEND & SEAL WITH FIRESTOPPING SEALANT TO DECK ABOVE FOR FIRE RESISTANCE REQUIREMENTS (PAINT STENCIL LABEL "1 HOUR FIRE AND SMOKE BARRIER-PROTECT ALL OPENINGS" ABOVE CEILING AT 15'-0" O.C.) BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
2'x2' GRID W/ VINYL COATED LAY-IN GYPSUM BD. PANELS		
2'x2' GRID W/ LAY-IN ACOUSTIC CEILING TILE. PROVIDE HOLD DOWN CLIPS, REF. SPECIFICATIONS FOR FURTHER INSTRUCTION	2HR	2 HOUR FIRE BARRIER PARTITION EXTEND & SEAL WITH FIRE STOPPING SEALANT TO DECK ABOVE FOR FIRE RESISTANCE REQUIREMENTS (PAINT STENCIL LABEL "2 HOUR FIRE AND SMOKE BARRIER-PROTECT ALL OPENINGS" ABOVE CEILING AT 15'-0" O.C.) BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
5/8" GYPSUM BOARD CEILING		
CEMENT PLASTER SOFFIT	SMK	SMOKE PARTITION TO EXTEND & SEAL TO DECK ABOVE TO RESIST THE PASSAGE OF SMOKE. PROVIDE SEALANT AT ALL WALL PENETRATIONS. BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
LIGHT FIXTURES, REF. ELEC. DRAWINGS		
SUPPLY AND RETURN GRILLES SHOWN FOR LOCATION PURPOSES ONLY, REF. MECH. DRAWINGS	SND	ACOUSTICAL DRYWALL PARTITION/ SOUND-CONDITIONED CMU PARTITION. EXTEND AND SEAL TO DECK ABOVE WITH ACOUSTICAL SEALANT. PROVIDE ACOUSTICAL SEALANT AT WALL PENETRATIONS. BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
PYRAMID CEILING DIFFUSER PANELS		
P-C CEILING MOUNTED PROJECTOR		
M-C CEILING MOUNTED MONITOR	PTD	NON-RATED PARTITION EXTEND TO DECK ABOVE. SEALANT NOT REQUIRED. BRACE MT. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.



1 MAIN LEVEL - UNIT B - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

REFLECTED CEILING PLAN GENERAL NOTES

1. All ceiling heights shall be 9 -1 3/8" A.F.F. unless noted otherwise. Restroom ceiling heights shall be coordinated with Detail 3/A6.02.
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3. Refer to Detail 3/A6.02 for Typical Plaster Ceiling Control Joint Detail.
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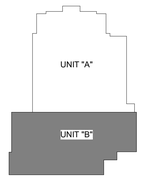
5. Provide partition to deck (PTD) at walls surrounding spaces with exposed structure. Refer to RCP Legend for PTD requirements.
6. Provide hold-down clips for all acoustical lay-in ceiling panels at vestibules, within 20 feet from exterior doors without vestibules, at sloped ceilings and at fire-rated ceilings.
7. At ceiling furring details, the suspended assemblies, bracing, blocking, etc. shown are for schematic representation only. Provide stable, secure and permanent assemblies at these locations in accordance with recommended light-gauge steel framing installation practices.

N
PLAN NORTH TRUE NORTH

KEY PLAN



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CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLEIN 16433 STATE OF TEXAS
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ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By JD
Designer CMD	Quality Control QC
Proj. Coord. JD	

PROJECT NO.
1887.00

SHEET TITLE
REFLECTED CEILING PLAN

SHEET NO.
A6.02

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REFLECTED CEILING PLAN LEGEND

2'x2' GRID W/ LAY-IN ACOUSTIC CEILING TILE	1HR	1 HOUR FIRE BARRIER PARTITION EXTEND & SEAL WITH FIRESTOPPING SEALANT TO DECK ABOVE FOR FIRE RESISTANCE REQUIREMENTS (PAINT STENCIL LABEL "1 HOUR FIRE AND SMOKE BARRIER-PROTECT ALL OPENINGS" ABOVE CEILING AT 15'-0" O.C.) BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
2'x2' GRID W/ VINYL COATED LAY-IN GYPSUM BD. PANELS		
2'x2' GRID W/ LAY-IN ACOUSTIC CEILING TILE. PROVIDE HOLD DOWN CLIPS, REF. SPECIFICATIONS FOR FURTHER INSTRUCTION	2HR	2 HOUR FIRE BARRIER PARTITION EXTEND & SEAL WITH FIRE STOPPING SEALANT TO DECK ABOVE FOR FIRE RESISTANCE REQUIREMENTS (PAINT STENCIL LABEL "2 HOUR FIRE AND SMOKE BARRIER-PROTECT ALL OPENINGS" ABOVE CEILING AT 15'-0" O.C.) BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
5/8" GYPSUM BOARD CEILING		
CEMENT PLASTER SOFFIT	SMK	SMOKE PARTITION TO EXTEND & SEAL TO DECK ABOVE TO RESIST THE PASSAGE OF SMOKE. PROVIDE SEALANT AT ALL WALL PENETRATIONS. BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
LIGHT FIXTURES, REF. ELEC. DRAWINGS		
SUPPLY AND RETURN GRILLES SHOWN FOR LOCATION PURPOSES ONLY, REF. MECH. DRAWINGS	SND	ACOUSTICAL DRYWALL PARTITION/ SOUND-CONDITIONED CMU PARTITION. EXTEND AND SEAL TO DECK ABOVE WITH ACOUSTICAL SEALANT. PROVIDE ACOUSTICAL SEALANT AT WALL PENETRATIONS. BRACE MTL. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
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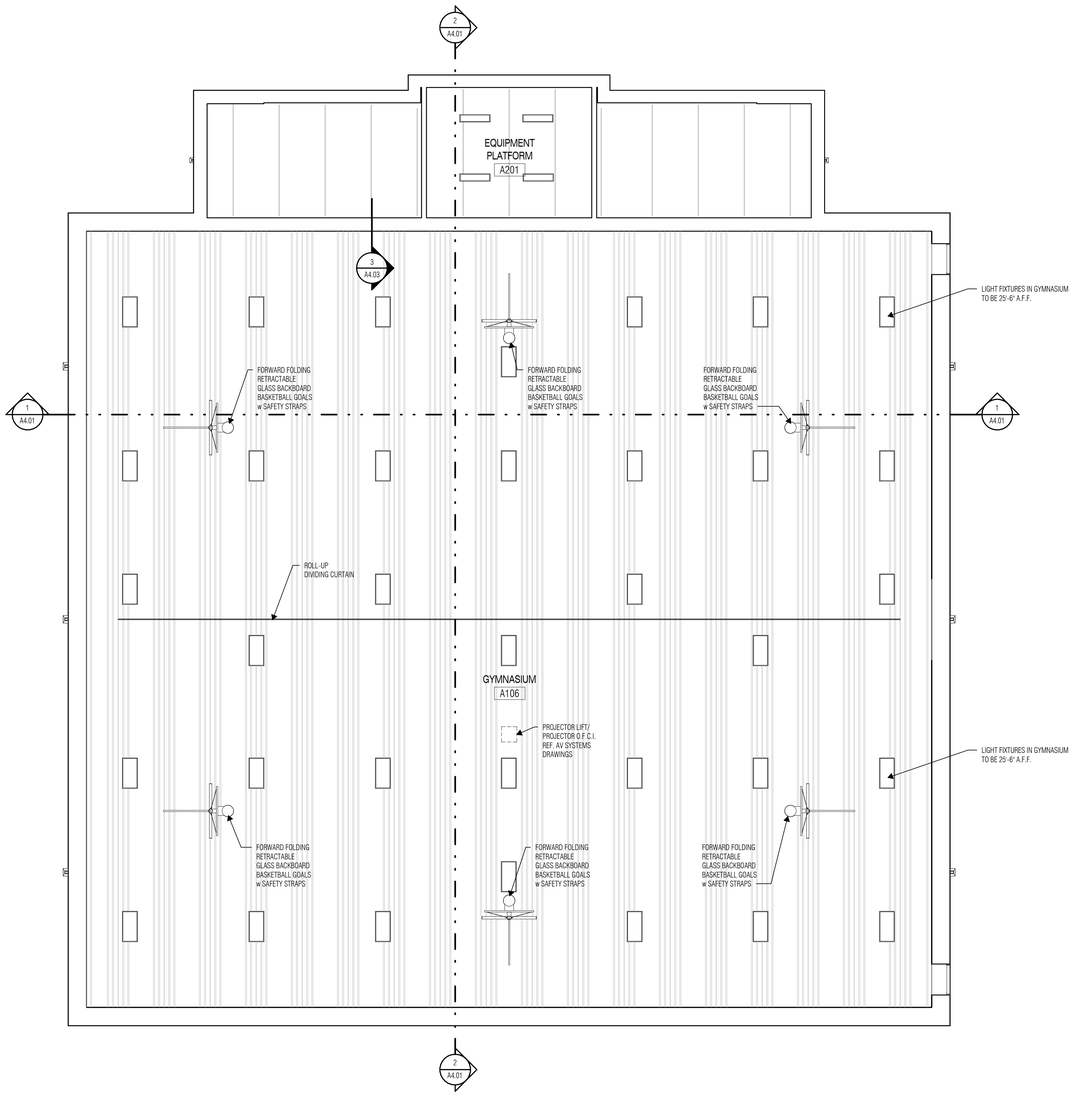
P-C CEILING MOUNTED PROJECTOR	PTD	NON-RATED PARTITION EXTEND TO DECK ABOVE. SEALANT NOT REQUIRED. BRACE MT. STUD PARTITIONS GREATER THAN 16'-0" HIGH W/ 20 GA. MTL. STUDS AT 4'-0" O.C., TYPICAL. REFER TO SHEET A2.31 FOR TYP. BRACING DETAILS AT NON-LOAD BEARING CMU PARTITIONS.
M-C CEILING MOUNTED MONITOR		



1 UPPER LEVEL - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

REFLECTED CEILING PLAN GENERAL NOTES

1. All ceiling heights shall be 9 -1 3/8" A.F.F. unless noted otherwise. Restroom ceiling heights shall be coordinated with Detail 3/A6.02.
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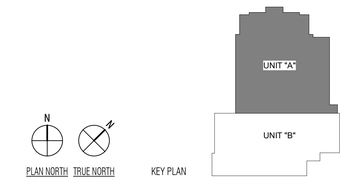

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT — JOHN F. KLEIN — 24625 — STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
REFLECTED CEILING PLAN

SHEET NO.
A6.03

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DOOR SCHEDULE

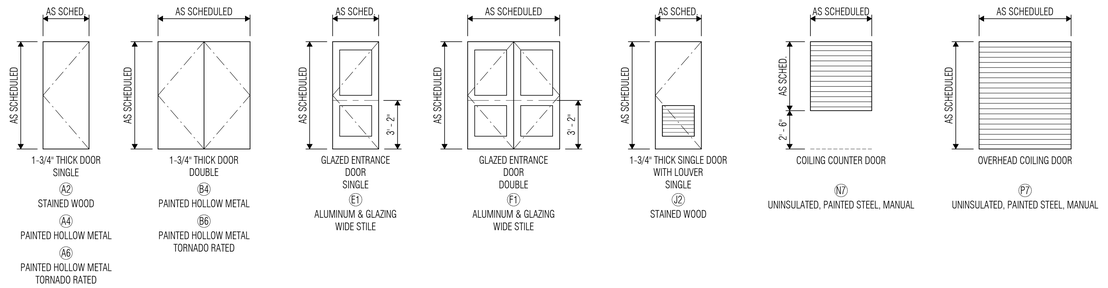
DOOR NUMBER	DOOR TYPE	FRAME TYPE	GLAZING TYPE	DOOR OPENING WIDTH	DOOR OPENING HEIGHT	DETAIL - REF. A7.01 U.N.O. HEAD	JAMB	SILL	FIRE RATING	HDWR SET	KEYED NOTES	REMARKS
A100A	E1	-	CT / BR	3' - 0"	7' - 0"			11		1.07		
A100B	E1	-	CT / BR	3' - 0"	7' - 0"			11		1.08		
A100C	E1	-	CT/BR	3' - 0"	7' - 0"			11		1.08		
A100D	E1	-	CT/BR	3' - 0"	7' - 0"			11		1.08		
A100E	F1	-	CT4	6' - 0"	7' - 0"			7		1.03		
A100F	F1	-	CT4	6' - 0"	7' - 0"			7		1.03		
A101A	E1	-	CT/BR	3' - 0"	7' - 0"			11		1.07		
A101B	E1	-	CT/BR	3' - 0"	7' - 0"			11		1.08		
A101C	F1	-	CT/BR	6' - 0"	7' - 0"			11		1.02		REMOVABLE MULLION
A102A	A6	5/13		3' - 0"	7' - 0"			8		6.02	13	PROVIDE DOOR PEEPHOLE
A102B	N7	-		5' - 4"	4' - 3 3/8"				----	6.04	13	
A102C	N7	-		5' - 4"	4' - 3 3/8"				----	6.04	13	
A103A	A2	1/12		3' - 0"	7' - 0"	1	2	7		8.01		
A103B	A2	1/12		3' - 0"	7' - 0"	1	2	9		8.04		
A104A	A6	5/13		3' - 0"	7' - 0"			10		6.01	13	
A104B	A4	5/13		3' - 0"	7' - 0"					2.01		
A104C	A4	1/12		1' - 4"	7' - 0"	1	2	8	----	2.02		
A104D	A4	1/12		1' - 4"	7' - 0"	1	2	8	----	2.02		
A105A	A6	5/13		3' - 0"	7' - 0"			10		6.01	13	
A105B	A4	5/13		3' - 0"	7' - 0"					2.01		
A105C	A4	1/12		1' - 4"	7' - 0"	1	2	8	----	2.02		
A105D	A4	1/12		1' - 4"	7' - 0"	1	2	8	----	2.02		
A106A	B4	5/13		6' - 0"	7' - 0"			14		6.03	13	
A106B	B4	5/13		6' - 0"	7' - 0"			14		6.03	13	
A106C	B4	5/13		6' - 0"	7' - 0"			14		6.03	13	
A106D	B6	5/13		6' - 0"	7' - 0"			14		6.03	13	
A109	A4	5/13		3' - 0"	7' - 0"	3	4	15		1.04		
A110	A4	1/12		3' - 0"	7' - 0"	1	2	12		3.01		
A111	A4	1/12		3' - 0"	7' - 0"	1	2	10		5.01		
A112	A4	1/12		3' - 0"	7' - 0"	1	2	7		7.01		
A113A	A4	1/12		3' - 0"	7' - 0"	1	2	7		4.01		
A113B	A4	1/12		3' - 0"	7' - 0"	1	2	12		2.03		
A114A	E1	-	CT/BR	3' - 0"	7' - 0"			11		1.08		
A114B	E1	-	CT/BR	3' - 0"	7' - 0"			11		1.07		
A114C	F1	-	CT4	6' - 0 1/4"	7' - 0 1/8"			7		1.03		
A116A	F1	-	CT/BR	6' - 0"	7' - 0"			11		1.01	9	REMOVABLE MULLION
A116B	F1	-	CT4	6' - 0 1/4"	7' - 0 1/8"			7		1.03		
A117	F1	-	CT4	6' - 0 1/4"	7' - 0 1/8"			7		9.01		
A118A	P7	-		4' - 0 3/8"	9' - 1 3/8"	5	6	13	----	6.04		
A118B	A2	1/12		3' - 0"	7' - 0"	1	2	8		8.02		
A119	J2	1/12		3' - 0"	7' - 0"	1	2	8		10.01	9	
A120	A2	1/12		3' - 0"	7' - 0"	1	2	10		7.01		
A121	B4	1/12		6' - 0"	7' - 0"	1	2	8		8.03		
A122	B4	1/12		6' - 0"	7' - 0"	1	2	7		3.02		PROVIDE CLOSURE & SMOKE SEALS
A123	B6	5/13		6' - 0"	7' - 0"	3	4	16		1.05	9	
A124	B4	5/13		6' - 0"	7' - 0"	3	4	16		1.06	9	
A125	A2	1/12		3' - 0"	7' - 0"	1	2	10		2.01		
A126	A2	1/12		3' - 0"	7' - 0"	1	2	10		2.01		
A129A	F1	-	CT/BR	6' - 0"	7' - 0"			11		1.01	9	REMOVABLE MULLION
A129B	F1	-	CT4	6' - 0 1/4"	7' - 0 1/8"			7		1.03		
A201	B4	5/13		6' - 0"	7' - 0"					11.01		

DOOR SCHEDULE KEYED NOTES

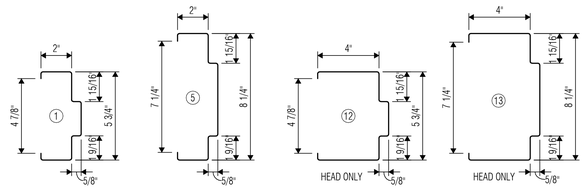
1. CASED OPENING
2. DOUBLE EGRESS DOORS
3. WIRED GLASS (WG)
4. FIRE RATED GLAZING (FR)
5. KEYED REMOVABLE MULLION
6. ELECTROMAGNETIC HOLD-OPEN
7. MANUAL HOLD-OPEN, FLOOR MOUNTED
8. MANUAL HOLD-OPEN, OVERHEAD
9. ACCESS CONTROL/ CARD READER
10. DOOR POSITION SWITCH
11. APPLIED SOUND SEALS & THRESHOLD
12. EXIT HARDWARE ONLY
13. STORM SHELTER DOOR
14. FIRE RATED - 45 MIN.
15. FIRE RATED - 90 MIN.
16. KEYED OPERATION SWITCH
17. STC RATED

DOOR GENERAL NOTES

1. WOOD STAIN TO MATCH EXISTING DOORS.



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



1 FRAME TYPES
SCALE: 3" = 1'-0"

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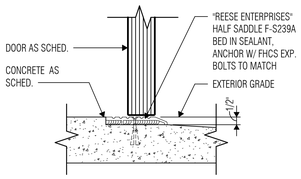

16 D825 - SILL DETAIL_EXT. - CONCRETE
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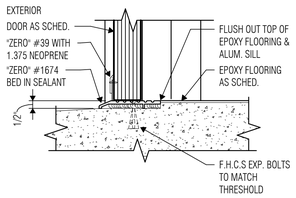

15 D833 - SILL DETAIL_EXT. - EPOXY
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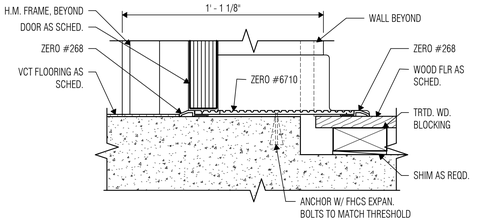
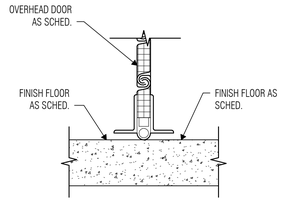
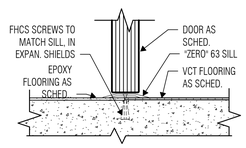


14 D844 - SILL DETAIL_WD FLOOR - VCT
SCALE: 3" = 1'-0"



13 D80x - SILL DETAIL_O.H. DOOR_FINISH AS SCHED.
SCALE: 3" = 1'-0"



12 D836 - SILL DETAIL_VCT -EPOXY
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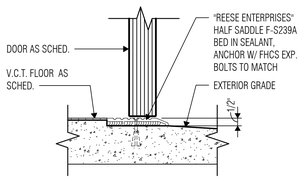

11 D824 - SILL DETAIL_EXT.- VCT
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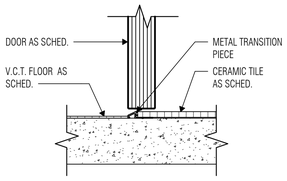

10 D805 - SILL DETAIL-METAL TRANSITION
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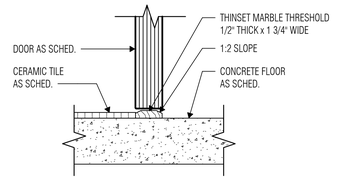
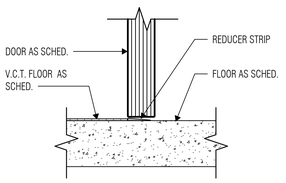
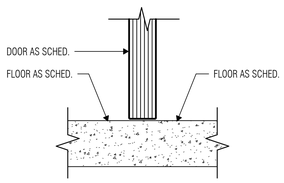


9 D804 - SILL DETAIL-MARBLE THRESHOLD
SCALE: 3" = 1'-0"



8 D802 - SILL DETAIL_VCT - FLOOR as SCHED.
SCALE: 3" = 1'-0"



7 D800 - SILL DETAIL_DOOR - FLOOR AS SCHED.
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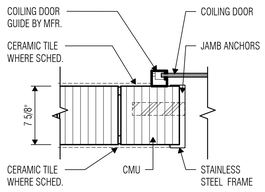
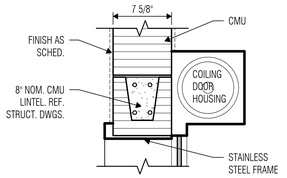
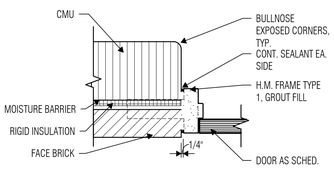


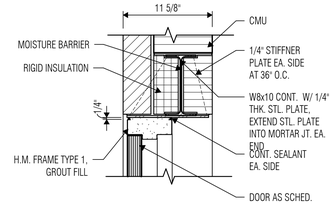
6 D210 - JAMB DETAIL_COILING DOOR_8" CMU SS FRAME
SCALE: 1 1/2" = 1'-0"



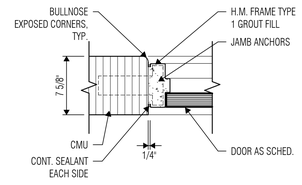
5 D209 - HEAD DETAIL_COILING DOOR 8" CMU
SCALE: 1 1/2" = 1'-0"



4 D216 - JAMB DETAIL_H.M. TYPE 1_CMU w FACE BRICK
SCALE: 1 1/2" = 1'-0"



3 D215 - HEAD DETAIL_H.M. TYPE 1_CMU w FACE BRICK
SCALE: 1 1/2" = 1'-0"



2 D202 - JAMB DETAIL_H.M. TYPE 1_8" CMU
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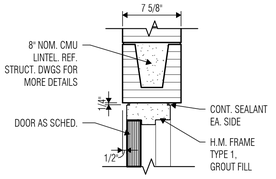

1 D200 - HEAD DETAIL_H.M. TYPE 1_ 8" CMU
SCALE: 1 1/2" = 1'-0"

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SHEET TITLE
DOOR DETAILS

SHEET NO.
A7.02

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GLAZING SYSTEM GENERAL NOTES

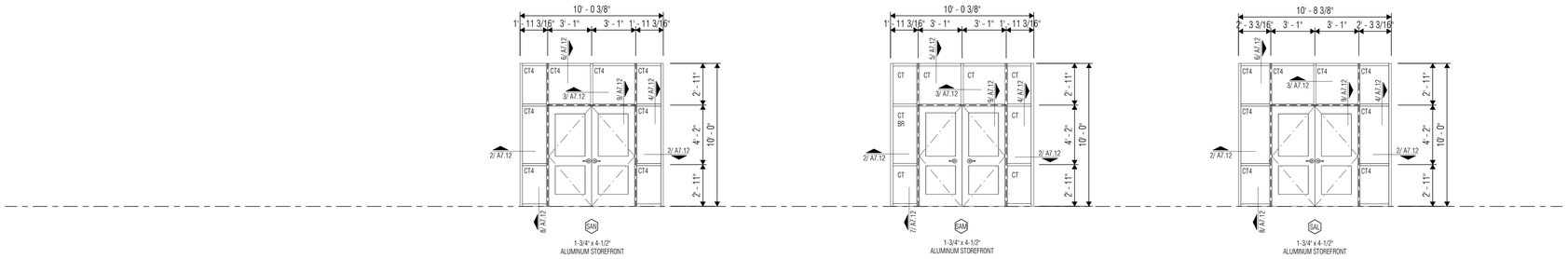
DASHED MEMBERS SHALL HAVE 3/16" THICK 'HEAVY WALL' MATERIAL. TYPICAL AT ALL DOOR FRAME MEMBERS.

SOLID MEMBERS SHALL BE CURTAIN WALL WITH STEEL REINFORCING PROVIDED BY MANUFACUTRER.

REFER TO 6/A0.31 FOR TYPICAL PUSH/PULL MOUNTING HEIGHTS FOR ALUMINUM DOORS

GLASS TYPE LEGEND

CT	TEMPERED INSULATING GLASS, 1" THICK, CLEAR
CT4	TEMPERED GLASS, 1/4" THICK, CLEAR
BR	LEVEL IIA SAFETY FILM
FR	FIRE RATED GLASS
FT	TEMPERED INSULATING GLASS, 1" THICK, FROSTED
FT4	TEMPERED GLASS, 1/4" THICK, FROSTED
LT	LAMINATED GLASS, 3/8" THICK
SP	INSULATED SPANDREL GLASS, 1" THICK
SP4	SPANDREL GLASS, 1/4" THICK
TT	TEMPERED INSULATING GLASS, 1" THICK, TINTED
TT4	TEMPERED GLASS, 1/4" THICK, TINTED
WG4	WIRE GLASS, 1/4" THICK



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SHEET TITLE

GLAZING

SHEET NO.

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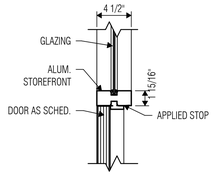

9 A329 - HEAD DETAIL
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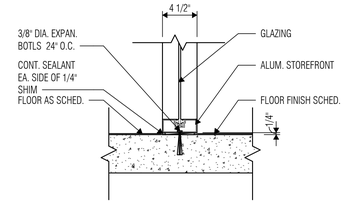
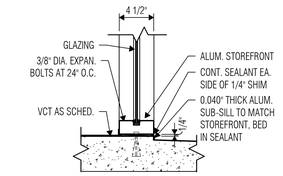
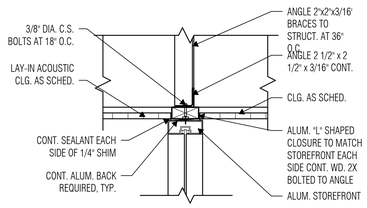


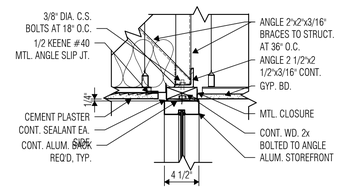
8 A317 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



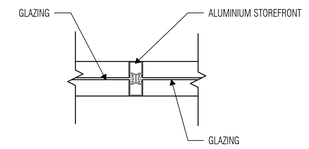
7 A316 - SILL DETAIL
SCALE: 1 1/2" = 1'-0"



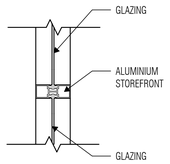
6 A315 - HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



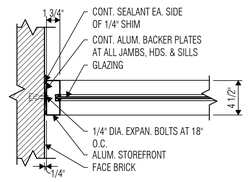
A309 - HEAD DETAIL_STOREFRONT EXT. TO INTERIOR SINGLE GLAZED
5 SCALE: 1 1/2" = 1'-0"



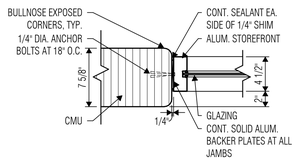
4 A301 - VERTICAL MULLION
SCALE: 1 1/2" = 1'-0"



3 A300 - HORIZONTAL MULLION
SCALE: 1 1/2" = 1'-0"



2 A226 - JAMB DETAIL_STOREFRONT AT FACE BRICK
SCALE: 1 1/2" = 1'-0"



1 A224 - JAMB DETAIL_STOREFRONT AT CMU
SCALE: 1 1/2" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLEIN 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

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SHEET TITLE
GLAZING DETAILS

SHEET NO.
A7.12

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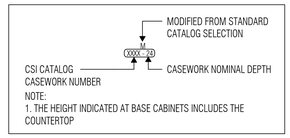
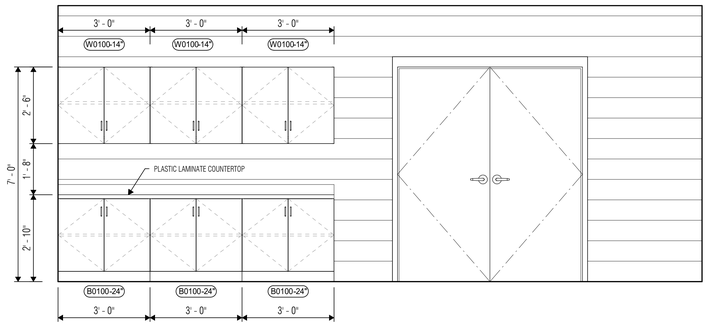
CASEWORK GENERAL NOTES

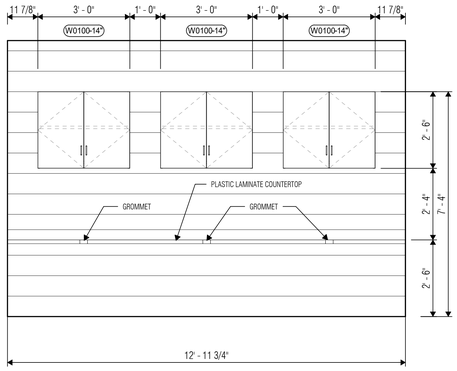
1. All casework 2'-6" or greater shall have a shelf thickness of no less than 1".
2. Provide finished surface on all exposed surfaces.
3. Provide filler panels, filler trim, and finished end panels as req'd.
4. Provide locks on all doors and drawers as indicated.
5. Casework shall meet criteria set forth in Americans with Disabilities Act and Texas Accessibility Standards.
6. All casework model numbers are based on Case Systems, Inc. numbers. Refer to elevations for height and width of each unit.
7. Contractor to verify locations of electrical and/or plumbing within casework and millwork. notify architect of any conflicts prior to installation.
8. All counters shall have 4" high backsplashes, u.n.o.
9. Verify all column locations prior to installation of casework.
10. At countertop locations, no joints in plastic laminate should occur over sinks or knee spaces.
11. Casework cabinet doors shall be flush overlay.
12. Base cabinets should not extend to floor. sub-base shall be separate and recessed at sides of cabinet to receive rubber base.
13. Provide a minimum 1 1/2" divider between open knee spaces and/or dishwasher/refrigerator openings.
14. Countertops should extend 1" over base cabinet. Refer to detail _/A_.__.
15. Provide custom height at all file-size drawers to be a minimum of 1'-0" deep. Provide locks at all file-size drawers.



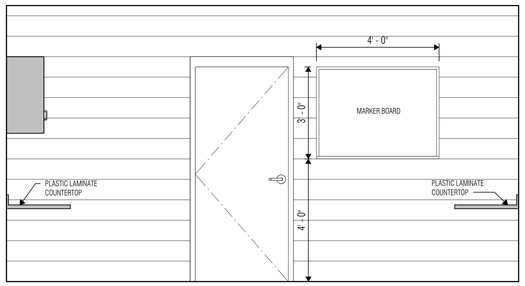
NOTE:
1. THE HEIGHT INDICATED AT BASE CABINETS INCLUDES THE COUNTERTOP



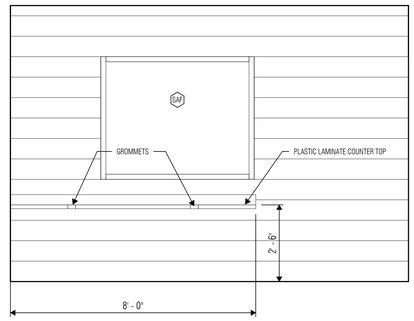
7 LAUNDRY A122 - WEST ELEVATION
SCALE: 1/2" = 1'-0"



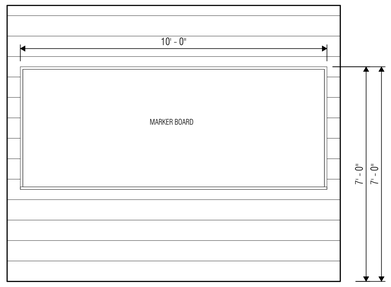
6 COACHES OFFICE A110 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



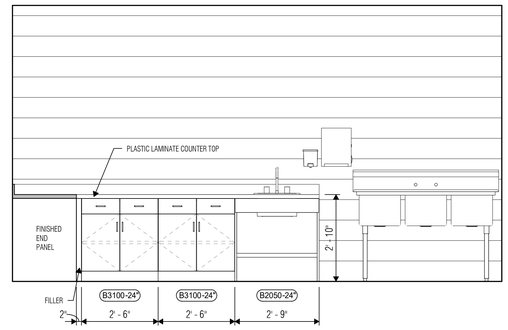
5 COACHES OFFICE A110 - SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



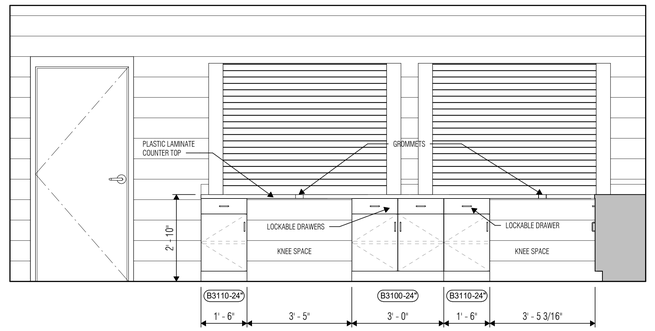
4 COACHES OFFICE A110 - WEST ELEVATION
SCALE: 1/2" = 1'-0"



3 BOYS ATHLETICS
SCALE: 1/2" = 1'-0"



2 CONCESSION A102 - EAST ELEVATION
SCALE: 1/2" = 1'-0"



1 CONCESSION A102 - NORTH ELEVATION
SCALE: 1/2" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

JOHN F. KLEIN 18439 REGISTERED ARCHITECT STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	JD
Designer	Quality Control
CMD	QC
Proj. Coord.	
JD	

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SHEET TITLE
CASEWORK

SHEET NO.
A8.01

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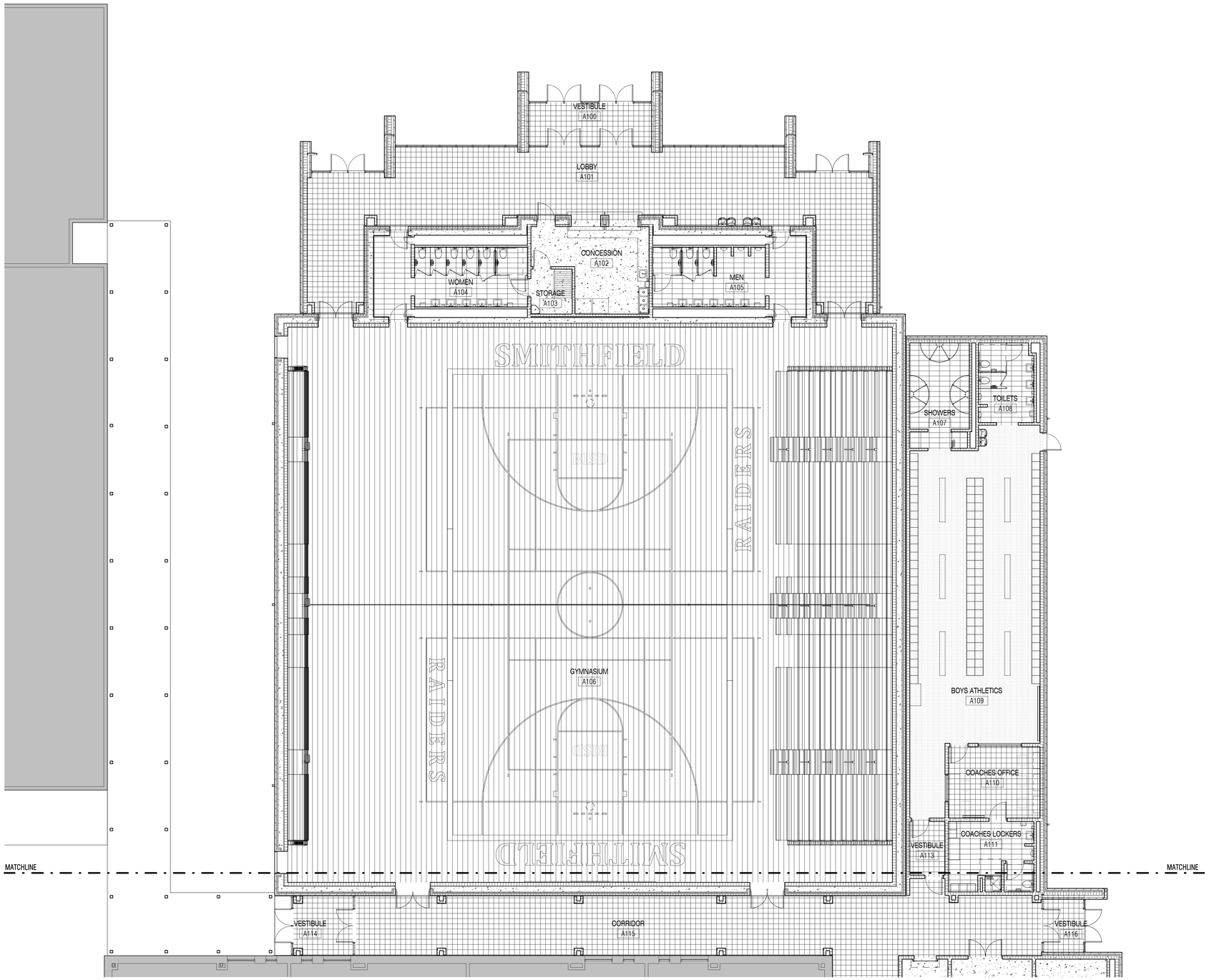
FLOOR PATTERN LEGEND

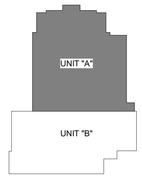
- (1A) - SEALED MONOLITHIC CONCRETE
- (3M) - 12" X 24" UNGLAZED PORCELAIN TILE
- (9B) - RESILIENT WOOD FLOORING
- (15C) - RESINOUS FLOORING
- (15F) - LUXURY VINYL TILE



1 FLOOR FINISH PATTERN - UNIT A
SCALE: 1/8" = 1'-0"

N
PLAN NORTH TRUE NORTH

KEY PLAN



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CONSTRUCTION DOCUMENTS

JOHN F. KLEIN — REGISTERED ARCHITECT — 26433 — STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

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Director	Drawn By
JFK	JD
Designer	Quality Control
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JD	

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SHEET TITLE
FLOOR FINISH PATTERNS - UNIT A

SHEET NO.
A9.01

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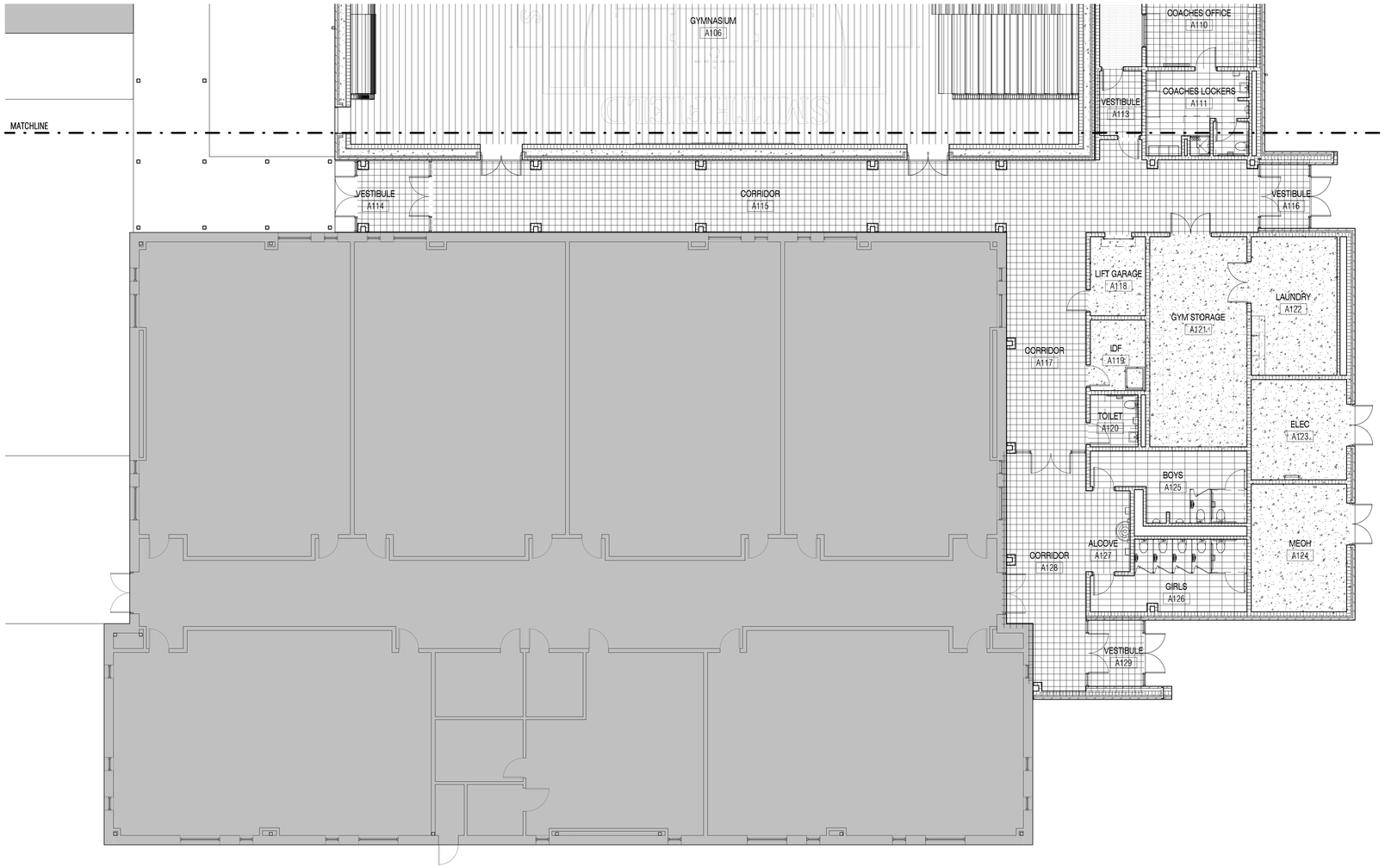
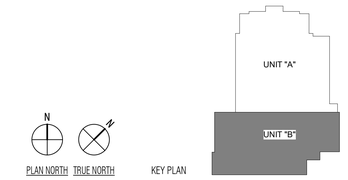
FLOOR PATTERN LEGEND

- (1A) - SEALED MONOLITHIC CONCRETE
- (3M) - 12" X 24" UNGLAZED PORCELAIN TILE
- (9B) - RESILIENT WOOD FLOORING
- (15C) - RESINOUS FLOORING
- (15F) - LUXURY VINYL TILE



1 FLOOR FINISH PATTERN - UNIT B
SCALE: 1/8" = 1'-0"



KEY PLAN

N
PLAN NORTH TRUE NORTH

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CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT JOHN F. KLINE 16433 STATE OF TEXAS
05/08/2019

ISSUED: MAY 8, 2019

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Director	Drawn By
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SHEET TITLE

FLOOR FINISH PATTERNS - UNIT B

SHEET NO.

A9.02

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GENERAL NOTES

THE STRUCTURAL DRAWINGS DEPICT THE STRUCTURE IN ITS FINAL CONSTRUCTED CONFIGURATION. NEITHER CONSTRUCTION MEANS AND METHODS NOR CONSTRUCTION SAFETY ARE PART OF THE STRUCTURAL ENGINEER'S EXPERTISE OR SCOPE OF WORK. THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE FULLY RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE STRUCTURE AND FOR FULL COMPLIANCE WITH ALL JOB SAFETY RELATED REGULATIONS AND CONDITIONS AT THE SITE. LIMITED SITE VISITS, IF ANY, BY THE STRUCTURAL ENGINEER ARE SOLELY TO OBSERVE COMPLETED PARTS OF THE STRUCTURE. THE STRUCTURAL ENGINEER IS NEITHER QUALIFIED TO OBSERVE NOR COMMENT ON CONSTRUCTION MEANS AND METHODS AND JOB SITE SAFETY. ADDITIONAL SHORING NOT INDICATED ON THE CONTRACT DOCUMENTS IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

PRINCIPAL OPENINGS ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, CURBS, INSERTS, DEPRESSIONS, ETC., NOT SHOWN.

DUNAWAY SHALL BE NOTIFIED IF MECHANICAL ROOFTOP EQUIPMENT LOCATIONS AND WEIGHTS VARY FROM THE INFORMATION SHOWN ON THE STRUCTURAL DRAWINGS. DUNAWAY SHALL BE NOTIFIED IF ROOFTOP EQUIPMENT CURBS WEIGH MORE THAN 20 PSF.

ALL DETAILS ARE TYPICAL UNLESS NOTED OTHERWISE. DETAILS SHALL APPLY TO ALL SIMILAR AND LIKE CONDITIONS.

THE GENERAL CONTRACTOR SHALL SUBMIT ELECTRONIC SHOP DRAWINGS TO THE ENGINEER FOR REVIEW OF THE FOLLOWING ITEMS:

CONCRETE MIX DESIGNS FOR EACH CLASS OF CONCRETE INCLUDING TEST DATA
CONCRETE ACCESSORIES (WATER VAPOR RETARDER, REINFORCING SUPPORT CHAIRS, ETC.)
VOID FORMS
CONCRETE REINFORCING
ANCHOR BOLT AND EMBEDDED ITEMS (PLATES, ANGLES, BOLTS, ETC.)
STRUCTURAL STEEL AND ERECTION DRAWINGS
MISCELLANEOUS STEEL
STEEL JOISTS
ROOF AND FLOOR METAL DECK

THE GENERAL CONTRACTOR SHALL SUBMIT ELECTRONIC SHOP DRAWINGS AND CALCULATIONS SEALED BY A LICENSED ENGINEER TO THE ENGINEER OF RECORD AND LOCAL JURISDICTION FOR REVIEW OF THE FOLLOWING DEFERRED SUBMITTALS:

STEEL STAIRS
STEEL JOISTS
LIGHT GAUGE COLD-FORMED METAL STUDS, ERECTION DRAWINGS WITH CALCULATIONS, INCLUDING DESIGN CRITERIA, MEMBER SIZES, AND CONNECTIONS
EXTERIOR WINDOW WALL SYSTEM
PRECAST CONCRETE DOUBLE TEES AND WALLS
PREFABRICATED CANOPY AND AWNING STRUCTURES

THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.

ALL SHOP DRAWINGS MUST BE REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO THE SUBMITTAL TO THE ENGINEER. THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS OR OMISSIONS THAT MAY OCCUR HEREON.

STRUCTURAL SLAB:

TO CONTRACTOR IS NOT ALLOWED TO LOAD THE STRUCTURAL SLAB WITH CRANES, CONCRETE TRUCKS, AND ALL OTHER HEAVILY LOADED VEHICLES. THE SLAB HAS NOT BEEN DESIGNED FOR CRANE LOADS.

ERECTION OF STRUCTURAL STEEL MAY NOT BEGIN UNTIL THE FIELD STRENGTH OF THE CONCRETE FOUNDATION MEETS A MINIMUM OF 70% OF THE 28 DAY DESIGN COMPRESSIVE STRENGTH. LIKEWISE, NEITHER STRUCTURAL STEEL NOR OTHER HEAVY CONSTRUCTION LOADS SHALL BE STOCKPILED ON ANY SLAB UNTIL THE SLAB MEETS THE MINIMUM STRENGTH REQUIREMENTS.

DESIGN CRITERIA:

BUILDING CODE: INTERNATIONAL BUILDING CODE, 2012 EDITION

LIVE LOAD:

ROOF - 20 PSF

SNOW LOAD:
FLAT ROOF SNOW - 5 PSF

FLOORS:
STORAGE - 125 PSF (LIGHT)
GYM AND LOCKER ROOMS - 100 PSF
LOBBIES AND CORRIDORS - 100 PSF

STAIRS AND EXITS - 100 PSF + 300# CONCENTRATED LOAD AT TREAD MIDSPAN
HANDRAILS & GUARDRAILS - 200# OR 50 PLF APPLIED IN ANY DIRECTION

WIND LOAD (SEE STORM SHELTER NOTES FOR SHELTER LOADING):

ULTIMATE DESIGN WIND SPEED (Vult) - 120 MPH (3-SECOND GUST)
NOMINAL DESIGN WIND SPEED (Vasd) - 93 MPH
RISK CATEGORY III
EXPOSURE - C
INTERNAL PRESSURE COEFFICIENT, Gcpi - +/- 0.18
MEAN ROOF HEIGHT - 31'-0"

MAIN WIND FORCE RESISTING SYSTEM (MWFRS):
MAXIMUM HORIZONTAL INTERIOR PRESSURE - 21.4 PSF
MAXIMUM HORIZONTAL EXTERIOR PRESSURE - 32.2 PSF
(24.8 FT FROM EACH CORNER)
MAXIMUM NET UPLIFT INTERIOR ZONE - 27 PSF
MAXIMUM NET UPLIFT EXTERIOR ZONE - 38.7 PSF
(24.8 FT FROM EACH CORNER)

COMPONENTS AND CLADDING:

NET WIND DESIGN PRESSURES (PSF)

LOCATION	EFFECTIVE WIND AREA (SQ. FT.) 10	20	50	100	500
ROOF INTERIOR ZONE	16.0 -36.6	16.0 -35.8	16.0 -34.2	16.0 -33.5	16.0 -33.5
ROOF EXTERIOR ZONE	16.0 -61.4	16.0 -55.2	16.0 -45.9	16.0 -39.7	16.0 -39.7
ROOF CORNER ZONE	16.0 -92.4	16.0 -76.9	16.0 -55.2	16.0 -39.7	16.0 -39.7
WALL INTERIOR ZONE	36.6 -39.7	35.0 -38.1	32.7 -35.8	31.1 -34.2	27.3 -30.4
WALL CORNER ZONE	36.6 -49.0	35.0 -45.9	32.7 -41.2	31.1 -38.1	27.3 -30.4
PARAPET INTERIOR ZONE	97.9	90.2	78.6	70.8	66.9
PARAPET CORNER ZONE	128.9	111.9	87.9	70.8	66.9

WIND LOADS SHOWN ARE ULTIMATE LOADS WITHOUT LOAD FACTORS FROM RELEVANT IBC LOAD COMBINATIONS. A DEAD LOAD OF 5 PSF MAY BE USED IN THE CALCULATION OF NET UPLIFT FOR THE JOISTS AND DECK.

MEAN ROOF HEIGHT - 31'-0"

LINEAR INTERPOLATION IS ALLOWED FOR EFFECTIVE AREAS BETWEEN THOSE PROVIDED.

SEISMIC:

IMPORTANCE FACTOR - Ie = 1.25
0.2 SEC SPECTRAL ACCELERATION - Ss = 0.091g
1.0 SEC SPECTRAL ACCELERATION - S1 = 0.049g
SITE CLASS - C
SPECTRAL RESPONSE COEFFICIENT - Sds = 0.072g
SPECTRAL RESPONSE COEFFICIENT - Sd1 = 0.056g
SEISMIC DESIGN CATEGORY - A

Fx=0.01Wx

EQUIVALENT LATERAL FORCE PROCEDURE USED IN DESIGN

ALLOWABLE SOIL BEARING CAPACITY IN LIMESTONE, CLAY SHALE, AND/OR SHALE

TOTAL LOAD - 10,000 PSF (AT 3'-0" INTO BEARING STRATUM TO 50'-0" BELOW EXISTING GRADE)
TOTAL LOAD - 18,000 PSF (AT LEAST 50'-0" BELOW EXISTING GRADE)

ALLOWABLE SKIN FRICTION CAPACITY IN LIMESTONE, CLAY SHALE, AND/OR SHALE

COMPRESSION LOAD - 1,800 PSF (AT 3'-0" INTO BEARING STRATUM TO 50'-0" BELOW EXISTING GRADE)
COMPRESSION LOAD - 2,700 PSF (AT LEAST 50'-0" BELOW EXISTING GRADE)
TENSION LOAD - 1,500 PSF (AT 3'-0" INTO BEARING STRATUM TO 50'-0" BELOW EXISTING GRADE)
TENSION LOAD - 2,300 PSF (AT LEAST 50'-0" BELOW EXISTING GRADE)

PIPE LOADS WITH WATER:

SIZE	WEIGHT	MAX. SPACING OF HANGERS
4" DIA.	16 PLF	10'
6" DIA.	32 PLF	10'
8" DIA.	50 PLF	5'
10" DIA.	75 PLF	5'
12" DIA.	100 PLF	5'

PLF = POUNDS PER LINEAR FOOT

ARCHITECTURAL BARRIER ACT

GRAB BAR - 250 POUNDS ANY DIRECTION
TUB OR SHOWER SEAT - 250 POUNDS ANY DIRECTION
FASTENERS & MOUNTING DEVICES - 250 POUNDS ANY DIRECTION

EXISTING DIMENSIONS AND CONDITIONS

THIS PROJECT CONSISTS OF AN ADDITION AND/OR MODIFICATIONS TO AN EXISTING BUILDING. INFORMATION ON EXISTING CONDITIONS HAS BEEN TAKEN FROM THE "AS-BUILT" DRAWINGS PROVIDED BY THE OWNER. THE ACCURACY OF THIS INFORMATION HAS NOT BEEN VERIFIED AND THUS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY AND PREPARE AN ACCURATE FIELD SURVEY OF ALL EXISTING INFORMATION SHOWN ON THESE DRAWINGS. THIS INCLUDES, BUT IS NOT LIMITED TO, FIELD VERIFICATION OF ALL DIMENSIONS, LOCATION AND SIZES OF STRUCTURAL FRAMING MEMBERS, ARCHITECTURAL ELEMENTS, MECHANICAL, ELECTRICAL, PLUMBING OR OTHER OBSTRUCTIONS THAT MAY AFFECT THE AREAS SCHEDULED TO RECEIVE NEW WORK.

THIS SURVEY SHALL BE SUBMITTED TO THE DESIGN TEAM WITH ANY VARIANCES NOTED PRIOR TO THE SUBMISSION OF SHOP DRAWINGS AND COMMENCEMENT OF CONSTRUCTION. CLAIMS FOR ADDITIONAL TIME OR EXTRA COST DUE TO OBSTRUCTIONS AND VARIANCES IN THE LOCATION OF THE STRUCTURAL MEMBERS OR EXISTING INFORMATION SHOWN HEREON WILL NOT BE HONORED AFTER WORK HAS BEGUN ON THE PROJECT.

IN THE CASE UNDOCUMENTED AND/OR DISCREPANT CONDITIONS ARE DISCOVERED DURING CONSTRUCTION THAT DO NOT ALLOW THE CONTRACT DOCUMENTS TO BE FOLLOWED EXACTLY, THE CONTRACTOR SHALL CEASE WORK IN THIS AREA AND IMMEDIATELY NOTIFY THE ENGINEER OF THE UNFORESEEN CONDITION(S).

SITE DRAINAGE

1. GRADE THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND SLABS. WATER SHALL NOT BE ALLOWED TO POND ADJACENT TO THE BUILDING FOUNDATIONS OR SLABS.
2. DOWNSPOUTS FROM ROOF DRAINS AND GUTTERS SHALL BE COLLECTED AND PIPED AWAY FROM THE BUILDING. WHEN WATER IS NOT PIPED AWAY FROM THE BUILDING, DOWNSPOUTS SHALL DUMP ONTO A CAST IN PLACE 4" THICK X 3'-0" WIDE CONCRETE SWALE REINFORCED WITH #4 AT 12" ON CENTER EACH WAY AND EXTENDING 10'-0" OUT FROM THE BUILDING.
3. TREES AND VEGETATION SHALL NOT BE ALLOWED WITHIN A DISTANCE EQUAL TO THREE QUARTERS THEIR ULTIMATE HEIGHT AWAY FROM THE BUILDING.
4. IRRIGATE VEGETATION AND SOILS ADJACENT TO BUILDING (NO MORE THAN 15 MINUTES THREE TIMES A WEEK) ON AN AS NEEDED BASIS TO MAINTAIN UNIFORM SOIL MOISTURE CONDITIONS AROUND THE PERIMETER OF THE BUILDING FOLLOWING CONSTRUCTION.

EARTHWORK AND FOUNDATIONS

1. FOUNDATION DETAILING SHOWN ON THE DRAWINGS IS BASED ON A FOUNDATION DESIGN SPECIFIED IN THE SOIL REPORT BY ALPHA TESTING, REPORT NO. W190349, DATED APRIL 4, 2019. THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT SHALL NOT SUPERCEDE THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS OR IN THE SPECIFICATIONS WHEN THE REQUIREMENTS SHOWN ON THE CONTRACT DOCUMENTS ARE MORE STRINGENT THAN THOSE SHOWN IN THE GEOTECHNICAL REPORT. THE CONTRACTOR IS REQUIRED TO SECURE A COPY OF THE GEOTECHNICAL REPORT FROM THE OWNER AND TO HAVE A COPY ON THE JOB SITE AT ALL TIMES FOR THEIR USE AND REFERENCE.
2. SITE PREPARATION FOR THE BUILDING PAD SHALL CONSIST OF THE REMOVAL OF EXISTING PAVEMENT, VEGETATION, ORGANIC MATTER AND ANY ADDITIONAL MATERIAL NECESSARY TO PROVIDE THE REQUIRED SUBGRADE ELEVATION FOR FORMING AND PLACING OF THE STRUCTURAL SLAB SYSTEM.
3. ON SITE FILL AS REQUIRED FOR PAD ADJUSTMENTS SHALL BE PLACED IN EIGHT INCH LOOSE LIFTS AND COMPACTED TO BETWEEN 90 AND 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN OPTIMUM AND +3 PERCENT OF THE OPTIMUM MOISTURE CONTENT FOR THE MATERIAL.
4. CONTRACTOR SHALL MAINTAIN A CLEAN EXCAVATION THAT IS FREE OF PONDING WATER 100% OF THE TIME. CONTRACTOR SHALL PROVIDE PUMPS AS REQUIRED TO REMOVE ANY WATER AT ALL TIMES.
5. THE SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING PAD DURING BUILDING PAD INSTALLATION AND WHEN THE BUILDING PAD AND BUILDING ARE COMPLETED.
6. FOUNDATION DETAILING SHOWN ON THE DRAWINGS IS BASED ON THE EARTHWORK NOTES OUTLINED ABOVE.
8. CONTRACTOR SHALL BE PREPARED TO USE TEMPORARY CASING AS REQUIRED TO FINISH THE DRILLED PIERS. CASING SIZE SHALL HAVE AN INTERIOR DIAMETER EQUAL TO THE SPECIFIED SHAFT SIZE SHOWN ON THE PLANS. CONTRACTOR SHALL PROVIDE A UNIT PRICE FOR A CASED DRILLED SHAFT.
9. THE BUILDING SITE MAY HAVE SOME BURIED EXISTING FOUNDATIONS AND UTILITIES. IF EXISTING FOUNDATIONS OR UTILITIES ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. SEAL ANY UTILITY LINES DISCOVERED WITH LEAN CONCRETE.
10. ALL FOOTINGS SHALL BE CONSOLIDATED WITH A CONCRETE VIBRATOR AS PER THE REQUIREMENTS OF ACI 318 AND ACI 308R, LATEST EDITION.
11. FOOTINGS SHALL BE POURED IMMEDIATELY UPON COMPLETION OF EXCAVATION AND CLEANING OF FOOTING BEARING SURFACE. ALL SPOILS FROM THE FOOTING EXCAVATIONS SHALL BE REMOVED FROM THE BUILDING PAD.
12. WHERE A DRILLED PIER IS SHOWN ON THE PLAN CLOSER THAN 6'-0 FROM ANOTHER FOOTING, DRILL ONE PIER, FILL WITH CONCRETE AND LET CURE 24 HOURS PRIOR TO DRILLING THE ADJACENT FOOTING. (6'-0" DIMENSION IS MEASURED BETWEEN EDGE OF BELL OR STRAIGHT SHAFT NOT CENTER TO CENTER.)
13. TOPS OF DRILLED PIERS SHALL NOT HAVE "MUSHROOMED" OR FLARED TOPS. CONTRACTOR SHALL USE SONOTUBE, SURETOP OR APPROVED EQUAL TO FORM TOP OF PIERS TERMINATED AT GRADE LEVEL. CONCRETE OF FLARED TOP FOOTINGS SHALL BE REMOVED PRIOR TO FORMING AND PLACING OF THE CONCRETE IN PIER CAPS OR GRADE BEAMS. TOPS OF ALL PIERS SHALL BE CLEANED PRIOR TO THE PLACEMENT OF ADDITIONAL CONCRETE.
14. PROVIDE A TREMIE TO PLACE CONCRETE IN DRILLED FOOTINGS SO THAT CONCRETE DOES NOT FREE FALL OVER 10'-0".
15. PROVIDE PIER SLEDS TO MAINTAIN 3" MINIMUM CLEAR COVER ON FOOTING SHAFT REINFORCING. PIER SLEDS SHALL BE STAGGERED ALONG THE VERTICAL REINFORCING. DO NOT PLACE SLEDS AT THE SAME LOCATION.
16. ALL BACKFILL FOR BURIED PIPES AND CONDUIT WITHIN THE BUILDING PAD AND EXTENDING OUT A MINIMUM OF 5'-0" BEYOND THE BUILDING SHALL BE BACKFILLED WITH SELECT FILL BACKFILL. DO NOT USE SAND BACKFILL. A 1'-0" WIDE BENTONITE PLUG SHALL BE PROVIDED IN ALL UTILITY TRENCHES AT THE FACE OF THE BUILDING FOUNDATION. SEE DETAIL 8/S0.2 FOR DETAIL AT PIPE BUILDING ENTRY.
17. PLUMBING AND UTILITY TRENCHES WITHIN THE BUILDING PAD SHALL HAVE PIPING BEDDED ON 6" MINIMUM OF DRY CEMENT STABILIZED SAND WITH 4" MINIMUM ALL AROUND. BACKFILL IN UTILITY TRENCHES SHALL CONSIST OF COMPACTED SELECT FILL. PROVIDE A 1'-0" WIDE BENTONITE PLUG FOR THE FULL DEPTH AND WIDTH OF THE UTILITY TRENCH TO A MINIMUM OF 1'-0" ABOVE THE BOTTOM OF THE FOUNDATION AT THE EXTERIOR FACE OF BUILDING FOUNDATIONS WHERE UTILITY TRENCHES ENTER THE BUILDING.
18. WHERE RECTANGULAR VOID CARTON FORMS ARE SHOWN ON THE PLANS AND DETAILS, SUCH FORMS SHALL BE 12" DEEP AND FURNISHED IN A STRENGTH CAPABLE OF SUPPORTING THE WEIGHT OF THE WET CONCRETE AND REINFORCEMENT. AFTER PLACEMENT ON THE SUBGRADE, THE FORMS SHALL BE TAPED AT ALL JOINTS AND/OR COVERED WITH A 1/8" THICK LAYER OF HARDBOARD LAID OVER THE TOP OF THE VOID FORMS PRIOR TO PLACEMENT OF THE REINFORCEMENT. WATER VAPOR BARRIER SHALL BE PLACED OVER THE VOID FORMS. RIGID HIGH DENSITY POLYPROPYLENE SOIL RETAINERS SHALL BE PROVIDED ON EACH SIDE OF THE RECTANGULAR VOID SPACE TO PREVENT BACKFILL FROM DISPLACING THE VOID FORMS. VOID FORMS AND SOIL RETAINERS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
19. CONDUITS SHALL NOT BE PLACED IN THE CONCRETE SLAB. CONDUITS SHALL BE PLACED IN THE VOID SPACE BENEATH THE VAPOR BARRIER. ALL PENETRATIONS OF THE VAPOR RETARDER SHALL BE SEALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
20. THE CONCRETE SLAB IS A STRUCTURAL SLAB AND SHALL NOT BE CUT OR CORED THROUGH AT ANY TIME. ALL PLUMBING AND OTHER PENETRATIONS SHALL BE INSTALLED PRIOR TO CASTING OF THE SLAB OR RUN THROUGH WETSET SLEEVES. ALL PLUMBING AND SLEEVES SHALL BE INSTALLED VERTICALLY. NO HORIZONTAL RUNS OR BENDS ARE PERMITTED WITHIN THE SLAB.
21. ALL VOID FORMS UNDER SLAB SHALL BE COVERED WITH A 15 MIL WATER VAPOR BARRIER MEETING THE REQUIREMENTS OF ASTM E 1745 (LATEST EDITION), CLASS A OR BETTER WITH MAXIMUM WATER PERMEANCE OF 0.01 PERMS WHEN TESTED IN ACCORDANCE WITH ASTM E96. THE WATER VAPOR RETARDER SHALL BE INSTALLED, LAPPED AND TAPED WITH MANUFACTURER'S APPROVED PRODUCT IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM E 1643 (LATEST EDITION). PENETRATIONS SHALL BE SEALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

CONCRETE

1. ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, EXCEPT WHERE NOTED. NO. 3 BARS SHALL CONFORM TO ASTM A615, GRADE 40. DEFORMED BAR ANCHORS SHALL CONFORM TO ASTM A496, GR 70.
2. CONCRETE PERTAINING TO THE FOLLOWING ITEMS SHALL HAVE SAND AND CRUSHED CARBONATE AGGREGATE CONFORMING TO ASTM C33, TYPE 1 PORTLAND CEMENT, FLY ASH CONFORMING TO ASTM C618, CLASS 'C' OR 'F' UP TO 25 PERCENT REPLACEMENT BY VOLUME AND THE FOLLOWING DESIGNATED COMPRESSIVE STRENGTH (f'c) IN 28 DAYS:

CONCRETE MIX DESIGN REQUIREMENTS

MEMBER TYPE	STRENGTH (PSI)	MAXIMUM AGGREGATE	MAXIMUM W/C RATIO
FOUNDATION			
GRADE BEAMS	4000	1"	0.45
DRILLED PIERS	3000	1"	0.55
STRUCTURAL SLAB	4000	1"	0.45
ELEVATED SLAB ON DECK	4000	3/4"	0.45
STORM SHELTER TOPPING SLAB	6000	3/4"	0.45
PRECAST DOUBLE TEES AND WALLS	BY PRECAST MANUF		

CONCRETE SUPPLIER SHALL BE AWARE OF CEMENTS THAT CAN CAUSE DELAYED ETTRINGITE FORMATION IN THE CEMENT PASTE AND BE PREPARED TO SHOW THAT THE CEMENTS USED WILL NOT CAUSE THIS PROBLEM.

LIGHT WEIGHT CONCRETE (LOCATIONS SHOWN ON PLAN) SHALL HAVE SAND AND LIGHT WEIGHT AGGREGATE CONFORMING TO ASTM C330 AND SHALL HAVE A MAXIMUM DENSITY OF 120 POUNDS PER CUBIC FOOT.

3. ALL WELDED WIRE FABRIC SHALL BE SMOOTH ROUND WIRE IN FLAT SHEETS (NOT ROLLED) AND CONFORM TO ASTM A185.
4. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS; SEE SEC. 7.7 ACI 318, LATEST EDITION FOR CONDITIONS NOT NOTED.

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH - 3"

CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 THRU #18 BARS - 2"
#5 BAR AND SMALLER - 1 1/2"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
#14 & #18 BAR - 1 1/2"
#11 BAR AND SMALLER - 3/4"

5. PROVIDE CHAIR SUPPORTS (AZTEC EZ CHAIR, WHC SERIES 'B' OR EQUAL) TO ADEQUATELY SUPPORT BARS FOR PROPER CLEARANCE AS RECOMMENDED BY THE AMERICAN CONCRETE INSTITUTE AND THE CONCRETE REINFORCING STEEL INSTITUTE. SLAB ON GRADE REINFORCEMENT SHALL BE SUPPORTED AT 45-INCH MAXIMUM INTERVALS OR EVERY THIRD BAR.
7. NO HORIZONTAL JOINTS WILL BE PERMITTED IN CONCRETE EXCEPT WHERE THEY NORMALLY OCCUR OR WHERE NOTED. VERTICAL JOINTS SHALL ONLY OCCUR AT LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER.
8. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI PUBLICATION 315, LATEST EDITION. ALL HOOKED BARS SHOWN IN DETAILS SHALL HAVE STANDARD HOOKS UNLESS NOTED OTHERWISE.
9. REINFORCING BARS SHALL NOT BE WELDED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
10. UNLESS OTHERWISE NOTED CONTINUOUS BOTTOM REINFORCING BARS SHALL BE SPLICED AT SUPPORTS AND CONTINUOUS TOP REINFORCING BARS SHALL BE SPLICED AT MID-SPAN.
11. ALL CONTINUOUS REINFORCEMENT SHALL BE SPLICED WITH A CLASS 'A' TENSION SPLICE, UNLESS NOTED OTHERWISE. PROVIDE TOP AND BOTTOM BARS (TWO 36" LEGS MINIMUM WITH 90 DEGREE BEND) TO MATCH SIZE AND SPACING OF CONTINUOUS REINFORCING AT CORNERS AND INTERSECTIONS, AND AT 18" ON CENTER VERTICALLY AT WALLS.
12. CONDUITS ARE NOT ALLOWED IN SLABS, BEAMS, WALLS OR COLUMNS. ALL CONDUITS SHALL BE SUSPENDED FROM OR ATTACHED TO THE CONCRETE STRUCTURE.
13. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301, LATEST EDITION.
14. ALL BASE PLATES AND ANCHOR RODS SHALL BE PROTECTED WITH 3" (MIN.) OF CONCRETE. ANCHOR RODS SHALL BE FABRICATED FROM FULL BODIED STEEL RODS CONFORMING TO ASTM F1554, GRADE 36, WASHERS CONFORMING TO ASTM F436 AND NUTS CONFORMING TO ASTM A194 OR A563 AND HAVING THE SAME DIAMETER AS THE BOLT DIAMETER AND USING CUT THREADS. ROLLED THREADS ARE NOT ACCEPTABLE. BOLTS SHALL BE SET USING RIGID TEMPLATES.
15. PROVIDE 2-#5x6'-0" AT RE-ENTRANT CORNERS OF SLAB ON GRADE AND ELEVATED DECKS.
16. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, PIPING, WATERSTOPS, INSERTS, GROUNDS, AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT. FOR EMBEDDED ITEMS AND REQUIRED DETAILS, SEE MECHANICAL, ELECTRICAL, AND ARCHITECTURAL DRAWINGS. VERIFY SIZE AND LOCATIONS OF ALL OPENINGS.

STRUCTURAL STEEL

1. A NON-SHRINK GROUT SHALL BE USED UNDER ALL STEEL COLUMN BASE PLATES. GROUT SHALL CONFORM TO ASTM C1090 AND THE CORPS OF ENGINEERS SPECIFICATION CRD-C-621. GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 6000 PSI. 100 PERCENT OF VOID UNDER ALL BASE PLATES IS TO BE GROUTED. ALL BASE PLATES WITH A DIMENSION GREATER THAN 24" SHALL HAVE TWO 1" DIAMETER GROUT HOLES. IF THE SPACE UNDER A COLUMN BASE PLATE IS LESS THAN 1/4", A PRESSURE INJECTION SYSTEM SHALL BE USED.
2. ALL STRUCTURAL STEEL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO LOAD AND RESISTANCE FACTOR DESIGN (LRFD) ACCORDING TO THE LATEST EDITION AISC SPECIFICATION.
3. ALL WELDING SHALL CONFORM TO THE STANDARDS OF THE LATEST EDITION OF THE MANUAL OF STEEL CONSTRUCTION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, AND THE AMERICAN WELDING SOCIETY ANSI/AWS D1.1 STRUCTURAL WELDING CODE-STEEL. WELDING OF REINFORCING BARS SHALL COMPLY TO THE AMERICAN WELDING SOCIETY AWS D1.4. SHORT CIRCUIT TRANSFER FOR THE GAS METAL ARC WELDING PROCESS IS NOT PERMITTED.
4. ELECTRODES FOR ALL FIELD AND SHOP WELDING SHALL BE CLASS E70XX. ELECTRODES FOR MOMENT CONNECTIONS SHALL BE CLASS E7018 WITH A CHARPY TOUGHNESS OF AT LEAST 20 T-LBS AT –20 DEGREES FAHRENHEIT.
5. ALL STRUCTURAL STEEL ROLLED W-SHAPES SHALL CONFORM TO ASTM A992, AND ALL ANGLES, BARS, CHANNELS AND PLATES SHALL CONFORM TO ASTM A36. ALL SQUARE AND RECTANGULAR HSS (Fy 46 KSI) AND ROUND HSS (Fy 42KSI) SHALL CONFORM TO ASTM A500 GRADE B. ROUND PIPES (Fy 36KSI) SHALL CONFORM TO ASTM A53 GR B. ALL COLD-FORMED GIRTS AND PURLINS SHALL CONFORM TO ASTM A570M GR. 55.
6. ALL STRUCTURAL STEEL DETAILS AND CONNECTIONS SHALL CONFORM TO STANDARDS OF THE AISC. DOUBLE CONNECTIONS THROUGH COLUMN WEBS, BEAMS THAT FRAME OVER THE TOP OF COLUMNS, AND BEAM TO BEAM CONNECTIONS SHALL HAVE A BEAM ERECTION SEAT OR A STAGGERED CONNECTION WITH AT LEAST ONE INSTALLED BOLT REMAINING IN PLACE TO SUPPORT THE FIRST BEAM WHILE THE SECOND BEAM IS BEING ERECTED.
7. CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE SELECTED FROM THE TABLES IN PART 10 OF THE LATEST EDITION OF THE MANUAL OF STEEL CONSTRUCTION OF THE AISC. TABLE 10—1 MAY BE USED FOR ALL-BOLTED DOUBLE ANGLE CONNECTIONS. TABLE 10-2 MAY BE USED FOR WELDED/BOLTED DOUBLE ANGLE CONNECTIONS. TABLE 10-3 MAY BE USED FOR ALL-WELDED DOUBLE ANGLE CONNECTIONS. TABLE 10-10a MAY BE USED FOR SINGLE-PLATE CONNECTIONS. BEAM REACTIONS USED ARE SHOWN ON PLAN.
8. ALL MISCELLANEOUS WELDS (FIELD OR SHOP) SHALL BE MINIMUM SIZE FILLET ALL AROUND IN ACCORDANCE WITH AISC. WELDING OF CONTINUOUS MEMBERS SHALL BE A MINIMUM OF 2 INCHES OF 3/16 INCH FILLET STITCH WELDS AT 12 INCHES O.C., STAGGERED EACH SIDE, UNLESS NOTED OTHERWISE. COLUMN BASE PLATES, CAP PLATES AND STIFFENER PLATES SHALL BE WELDED ALL AROUND.
9. PROVIDE ALL NECESSARY HOLES IN MISCELLANEOUS STRUCTURAL STEEL MEMBERS FOR ATTACHMENT OF NON-STRUCTURAL ITEMS (IE: WINDOW HEAD ANCHORS, CAST STONE ATTACHMENT, ETC), SEE ARCHITECTURAL DRAWINGS FOR REQUIREMENTS.
10. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
11. ALL CONNECTION BOLTS FOR STRUCTURAL STEEL MEMBERS SHALL CONFORM TO ASTM A325 EXCEPT WHERE NOTED OTHERWISE. MINIMUM SIZE SHALL BE 3/4 INCH DIAMETER UNLESS NOTED OTHERWISE. BOLTS SHALL BE TWIST OFF TYPE TENSION CONTROLLED BOLTS CONFORMING TO ASTM F1852 WITH HARDENED WASHERS UNDER THE NUT. HEX HEAD NUTS SHALL CONFORM TO ASTM A563 AND WASHERS SHALL CONFORM TO ASTM F436.
12. SHOP BOLTED CONNECTIONS ARE PERMISSIBLE IF SUFFICIENT BOLT CLEARANCE IS AVAILABLE FOR TIGHTENING OF HIGH STRENGTH BOLTS. CLEARANCES SHALL BE IN ACCORDANCE WITH TABLE 7-16 AND 7-17 OF THE LATEST EDITION OF THE MANUAL OF STEEL CONSTRUCTION OF THE AISC. ALL STEEL MEMBERS AND ASSEMBLIES SHALL BE SHOP FABRICATED TO THE GREATEST EXTENT POSSIBLE. TRUSSES SHALL BE PREASSEMBLED, AND FIELD SPLICES FOR SHIPPING SHALL BE APPROVED BY THE ENGINEER OF RECORD. THE STEEL FABRICATOR AND THE STEEL ERECTOR SHALL COORDINATE THE SHOP FABRICATION, SHIPPING AND ERECTION OF ALL STRUCTURAL MEMBERS AND ASSEMBLIES.
13. ALL OPEN-WEB STEEL JOISTS AND BRIDGING SHALL CONFORM TO THE STEEL JOIST INSTITUTE SPECIFICATIONS FOR THE JOIST TYPES INDICATED. JOISTS SHALL BE CAMBERED IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE SPECIFICATIONS. JOIST SUPPLIER SHALL ADJUST CAMBERS AT JOISTS ADJACENT TO EACH OTHER WITH VARYING LENGTHS AND AT JOISTS ADJACENT TO STEEL BEAM LINES OF SET ELEVATION SO THAT ELEVATIONS PRIOR TO ERECTION OF DECK DO NOT VARY BY MORE THAN 1" FOR ADJACENT MEMBERS. JOISTS ENDS SHALL BE STAGGERED FOR NARROW BEAMS TO ACHIEVE THE MINIMUM BEARING AS SPECIFIED BY JOIST SUPPLIER. STEEL FABRICATOR SHALL PROVIDE JUMPER PLATE AND STIFFENER PLATE TO MATCH BEAM FLANGE THICKNESS AND WELDED TO BEAM FLANGE AS REQUIRED AT SKEWED JOIST LOCATIONS TO PROVIDE MINIMUM JOIST BEARING REQUIREMENTS. JOISTS REQUIRING REPAIR OR MODIFICATION DUE TO FABRICATION ERROR OR DAMAGE DURING SHIPPING SHALL BE REPLACED WITH NEW JOISTS.
14. FINAL JOIST SEAT DEPTH IS DETERMINED BY THE JOIST ENGINEER AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OF THE JOISTS AND STEEL BEAMS. THE JOIST ENGINEER SHALL VERIFY THAT LARGER JOIST SEAT DEPTHS, THAN WHAT ARE SHOWN ON THE DRAWINGS, ARE NOT REQUIRED FOR FABRICATION OR BEARING CONDITIONS, INCLUDING TOP CHORD EXTENSIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE JOIST SEAT DEPTHS WITH THE STEEL FABRICATOR.
15. JOIST BRIDGING SHALL BE PROVIDED AND INSTALLED PER SJI SPECIFICATIONS PRIOR TO THE SLACKENING OF HOISTING LINES.
16. JOISTS SPANNING FORTY (40) FEET AND GREATER OR REQUIRING BRIDGING PER SJI SHALL HAVE AT LEAST ONE END FIELD BOLTED TO THE SUPPORT STRUCTURE BEFORE HOISTING CABLES ARE RELEASED. JOISTS SPANNING OVER SIXTY (60) FEET OR AS REQUIRED PER SJI SHALL HAVE BOTH ENDS FIELD BOLTED TO THE SUPPORT STRUCTURE. FINAL ATTACHMENT SHALL BE IN PLACE AND BRIDGING INSTALLED PER THE REQUIREMENTS OF OSHA CONSTRUCTION SAFETY AND HEALTH STANDARDS, SUBPART R, 29 CFR 1926 BEFORE HOISTING CABLES ARE RELEASED. FINAL ATTACHMENT OF ALL JOISTS TO THE SUPPORT STRUCTURE SHALL BE WELDED PER SJI SPECIFICATIONS.
17. EXTEND BOTTOM CHORD OF THE THREE JOISTS NEAREST EACH COLUMN WHERE BEAMS EXTEND OVER THE TOP OF COLUMNS, UNLESS SHOWN OTHERWISE. BOTH ENDS OF JOIST SHALL BE FIELD BOLTED TO THE SUPPORT STRUCTURE BEFORE HOISTING CABLES ARE RELEASED. PROVIDE A 6"x6" STABILIZER PLATE TO RECEIVE JOIST BOTTOM CHORD AT ALL COLUMN LOCATIONS; THE PLATE SHALL EXTEND A MINIMUM OF 3" BELOW JOIST BOTTOM CHORD. PROVIDE A 13/16" DIAMETER HOLE IN STABILIZER PLATE FOR GUYING CABLE. PROVIDE WT6x15 OFF BEAM BOTTOM FLANGE TO RECEIVE JOIST BOTTOM CHORD EXTENSION AT JOIST LOCATED ADJACENT TO COLUMN. BOTTOM CHORD EXTENSION MATERIAL SHALL BE L2x2x1/4 MINIMUM.
18. ROOF SYSTEM OVER OPEN-WEB STEEL JOISTS SHALL BE RIGID INSULATION BOARD ON 1 1/2" DEEP, 20 GAGE, TYPE B GALVANIZED DECK (CONFORMING TO ASTM A924-94, WITH MINIMUM COATING CLASS OF G60 AS DEFINED IN ASTM A653-94) MANUFACTURED FROM COLD ROLLED STEEL AND CONFORMING TO ASTM A653 OR ASTM A611 WITH Fy=33 KSI. AND HAVING A MINIMUM MOMENT OF INERTIA OF 0.234 INCH TO THE FOURTH PER FOOT OF WIDTH. SIDELAPS SHALL BE FASTENED WITH #10 TEKS AT 12" ON CENTER MAX. ROOF DECK ATTACHMENT SHALL BE HILTI X-HSN 24 FOR SUPPORTING MEMBER THICKNESS OF 1/8"-3/8" INCLUSIVE OR X-ENP 19 FOR SUPPORTING MEMBER THICKNESS OF 1/4" OR THICKER AS RECOMMENDED BY THE MANUFACTURER OR WELD DECK THROUGH 5/8" DIAMETER PUDDLE WELDS TO SUPPORTING MEMBERS AT WITH A 36/4 PATTERN AT END LAPS AND AT INTERMEDIATE SUPPORTS. AT SPANDREL BEAMS OR DECK SUPPORT ANGLES AND FOR A 10'-0" SQUARE AREA AT CORNERS WELD DECK TO ALL SUPPORTS AT 6" ON CENTER.
19. FLOOR SLAB OVER CRAWLSPACE SHALL BE 3" NORMAL WEIGHT CONCRETE, AS DESCRIBED IN NOTE ABOVE, ON 2" DEEP 20 GA. GALVANIZED (CONFORMING TO ASTM A924-94, WITH MINIMUM COATING CLASS OF G60 AS DEFINED IN ASTM A653-94) CORRUGATED COMPOSITE DECK FROM COLD ROLLED STEEL CONFORMING TO ASTM A653-99 OR ASTM A611 WITH Fy=50 KSI, AND HAVING A SECTION MODULUS OF 0.406 CU. IN. PER FOOT OF WIDTH. SIDELAPS SHALL BE WELDED OR BUTTON PUNCHED AT MIDSPAN OR 3'-0" ON CENTER MAX. WELD DECK TO SUPPORTING MEMBERS AT 1'-0" ON CENTER MAXIMUM WITH 5/8 IN. DIAMETER PUDDLE WELDS. WELD DECK TO SUPPORTING MEMBERS AT 6" ON CENTER AT SPANDREL BEAMS OR DECK SUPPORT ANGLES. REINFORCE SLAB WITH 6x6 – W1.4xW1.4 WELDED WIRE FABRIC LAPPED ONE MESH AT SPLICES. SEE CONCRETE NOTES FOR WWF REQUIREMENTS. SHEAR STUD CONNECTORS APPLIED THROUGH THE DECK TO SUPPORTING MEMBERS MAY BE USED TO REPLACE THE PUDDLE WELDS.
20. FLOOR SLAB AT EQUIPMENT MEZZANINE SHALL BE 3" NORMAL WEIGHT CONCRETE ON 9/16" DEEP CORRUGATED GALVANIZED (CONFORMING TO ASTM A924-94, WITH MINIMUM COATING CLASS OF G60 AS DEFINED IN ASTM A653-94) DECK FROM COLD ROLLED STEEL CONFORMING TO ASTM A653-99 OR ASTM A611 WITH Fy=60 KSI, AND HAVING A SECTION MODULUS OF 0.035 CU. IN. PER FOOT OF WIDTH. SIDELAPS SHALL BE FASTENED WITH #10 TEKS AT MIDSPAN OR 3'-0" ON CENTER MAX. DECK ATTACHMENT SHALL BE HILTI X-EDNK22 THQ12(1/8"-1/4" INCLUSIVE), X-EDN19 THQ12 (3/16"-3/8", INCLUSIVE), OR X-ENP19 (1/4" OR THICKER) AS RECOMMENDED BY THE MANUFACTURER OR WELD FORMS THROUGH WELD WASHERS TO SUPPORTING MEMBERS AT 1'-0" ON CENTER AT END LAPS, AND 2'-0" ON CENTER AT INTERMEDIATE SUPPORTS AND AT 6" ON CENTER AT SPANDREL BEAMS OR DECK SUPPORT ANGLES. REINFORCE SLAB WITH 6x6 –W2.9xW2.9 WELDED WIRE FABRIC LAPPED ONE MESH AT SPLICES. SEE CONCRETE NOTES FOR WWF REQUIREMENTS.
21. STEEL DECK SHALL ALWAYS BE INSTALLED WITH DIRECTION OF FLUTES PERPENDICULAR TO STEEL FRAMING MEMBERS. DECK SHALL BE CUT TO INSURE A MINIMUM OF TWO SPANS.
22. ALL STEEL FLOOR CONSTRUCTION HAS BEEN DESIGNED IN ACCORDANCE WITH AISC PROVISIONS NOT TO REQUIRE TEMPORARY SHORING DURING CONSTRUCTION. HOWEVER, THE STEEL BEAMS WILL DEFLECT FROM THE WEIGHT OF THE WET CONCRETE. THE CONTRACTOR IS HEREBY ALERTED THAT THESE DEFLECTIONS WILL RESULT IN MORE CONCRETE BEING REQUIRED THAN WOULD BE CALCULATED FROM THE GEOMETRY INDICATED ON THE DRAWINGS.
23. ALL STEEL LINTEL ANGLES ARE DESIGNED TO FULLY SUPPORT THE MASONRY VENEER WITH SOME NORMAL DEFLECTION DURING INSTALLATION. MASONRY SHALL BE INSTALLED WITHOUT SHORING THE SUPPORT ANGLE DURING CONSTRUCTION. SHORING THE MASONRY DURING CONSTRUCTION CAN RESULT IN HORIZONTAL BED JOINT CRACKING WHEN THE SHORES ARE REMOVED.
24. HEADED ANCHORS SHALL BE MANUFACTURED FROM COLD DRAWN WIRE CONFORMING TO ASTM A108, GR.50 WITH FLUXED ENDS. STUDS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT IN ACCORDANCE WITH AWS D1.1. STUDS FOR EMBEDDED PLATES AND OTHER ANCHORS SHALL BE SHOP INSTALLED. STUDS FOR COMPOSITE BEAMS SHALL BE FIELD INSTALLED.
25. ALL STRUCTURAL STEEL WHICH IS OUTSIDE THE BUILDING ENVELOPE SHALL BE HOT DIPPED GALVANIZED. ZINC COATING SHALL MEET THE REQUIREMENTS OF ASTM 123-73, WITH A MINIMUM COATING CLASS OF GR60 UNLESS SPECIFIED OTHERWISE BY ARCHITECT AND SHALL BE APPLIED AFTER FABRICATION. ALL FIELD WELDS SHALL BE GROUND SMOOTH AND TOUCHED UP WITH A ZINC RICH PAINT.
26. THE GENERAL CONTRACTOR AND SUBCONTRACTOR'S SHALL COMPLY TO OSHA 29 CFR 1926 SUBPART R, SAFETY STANDARDS FOR STEEL ERECTION.
27. AS SCOPE AND PERFORMANCE DOCUMENTS, THE DRAWINGS AND SPECIFICATIONS DO NOT INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE PERFORMANCE AND COMPLETION OF THIS WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE FABRICATION AND INSTALLATION OF ALL MISCELLANEOUS METAL ITEMS INDICATED, DESCRIBED, OR IMPLIED ON THE STRUCTURAL AND/OR THE ARCHITECTURAL DRAWINGS. MISCELLANEOUS STEEL ITEMS, WITHIN AN ASSEMBLY AND NOT ATTACHED TO THE STRUCTURE, ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SUBCONTRACTORS WHETHER THEY ARE SHOWN OR NOT SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. SUCH ASSEMBLIES INCLUDE BUT ARE NOT LIMITED TO, EXTERIOR AND INTERIOR WALLS, CEILINGS, PARTITIONS, SHELVES AND CABINETS, AND ALL OTHER SIMILAR ASSEMBLIES. ANY MISCELLANEOUS METAL ITEMS INDICATED ON THE ARCHITECTURAL DRAWINGS AND NOT SHOWN ON STRUCTURAL DRAWINGS SHALL BE A MINIMUM OF L4x4x1/2", C7x9.8, 3/8" PLATE OR HSS4x4x3/8" UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.

MASONRY

1. ALL CONCRETE MASONRY UNITS SHALL BE HOLLOW LOAD BEARING UNITS CONFORMING TO THE REQUIREMENTS OF ASTM C90, TYPE 1 AND THE QUALITY CONTROL STANDARDS OF THE CONCRETE MASONRY ASSOCIATION.
2. ALL CONCRETE MASONRY SHALL HAVE NORMALWEIGHT MASONRY UNITS WITH A DRY DENSITY OF NOT MORE THAN 125 POUNDS PER CUBIC FOOT.
3. ALL MASONRY UNITS SHALL HAVE A MINIMUM NET COMPRESSIVE STRENGTH OF 1900 PSI AND A MINIMUM NET TENSILE STRENGTH OF NOT LESS THAN 125 PSI, WHEN TESTED IN ACCORDANCE WITH THE METHODS SET FORTH IN THE QUALITY CONTROL STANDARDS OF THE CONCRETE MASONRY ASSOCIATION.
4. MASONRY UNITS SHALL HAVE CURED FOR NOT LESS THAN 28 DAYS WHEN PLACED IN THE STRUCTURE.
5. ALL MASONRY UNITS SHALL HAVE A MAXIMUM LINEAR SHRINKAGE OF .065 OF 1% FROM THE SATURATED TO THE OVEN DRY CONDITION, WHEN TESTED IN ACCORDANCE WITH THE METHODS SET FORTH IN THE QUALITY CONTROL STANDARDS OF THE CONCRETE MASONRY ASSOCIATION.
6. MORTAR SHALL BE FRESHLY PREPARED AND UNIFORMLY MIXED IN THE RATIO OF 1 PART PORTLAND CEMENT, 1/4 PART MINIMUM TO 1/2 PART MAXIMUM LIME PUTTY OR HYDRATED LIME, DAMP LOOSE SAND NOT LESS THAN 2-1/4 AND NOT MORE THAN 3 TIMES THE SUM OF THE VOLUMES OF THE CEMENT AND LIME USED, AND SHALL CONFORM TO ASTM C270, TYPE 'S'.
7. GROUT FOR POURING SHALL BE OF FLUID CONSISTENCY AND MIXED IN THE RATIO BY VOLUMES, 1 MINIMUM TO 2 PARTS MAXIMUM PEA GRAVEL, AND 0 TO 1/10 PART MAXIMUM HYDRATED LIME. MIX SHALL CONFORM TO ASTM C 476 WITH A 28-DAY COMPRESSIVE STRENGTH OF 2,000 PSI AND A SLUMP OF 8 TO 11 INCHES. MAXIMUM GROUT HEIGHT SHALL BE 4'-0".
8. GROUT FOR PUMPING SHALL BE OF FLUID CONSISTENCY AND SHALL HAVE NOT LESS THAN 7 SACKS OF CEMENT IN EACH CUBIC YARD OF GROUT. THE MIX SHALL BE SUBMITTED FOR APPROVAL.
9. THE COMPRESSIVE STRENGTH OF THE MASONRY (f'm) SHALL BE 1900 PSI.
10. ALL CELLS WITH REINFORCING BARS SHALL BE GROUTED SOLID.
11. ALL CELLS SHOWN TO HAVE DRILLED EXPANSION ANCHORS, EMBEDDED HEADED STUDS OR OTHER EMBEDDED ANCHORS SHALL BE GROUTED SOLID
12. HORIZONTAL JOINT REINFORCEMENT SPACED AT 16" O.C. MAX. VERTICALLY SHALL CONFORM TO ASTM A951 WITH A MINIMUM YIELD STRENGTH OF 70,000 PSI AND A MINIMUM SIZE OF 9 GAGE FOR SIDE RODS AND 9 GAGE FOR TRUSS RODS.
13. OPENINGS IN MASONRY WALLS SHALL HAVE EITHER MASONRY OR STEEL LINTELS AS DETAILED ON THE DRAWINGS. WHEN NO LINTEL IS DETAILED INSTALL REINFORCING PER MASONRY LINTEL SCHEDULE IN A SOLID GROUTED LINTEL BLOCK. THE BARS SHALL EXTEND A MINIMUM OF EIGHT INCHES BEYOND THE EDGE OF THE OPENING AND THE JAMB AT EACH SIDE OF THE OPENING SHALL BE GROUTED SOLID FOR A DISTANCE OF EIGHT INCHES WITH A #5 VERTICAL MINIMUM AT EACH JAMB. LAP BARS 2'-0"" MIN. OR 40 BAR DIAMETERS AT SPLICES, INTERSECTIONS AND CORNERS. STEEL LINTELS SHALL BEAR 8" MINIMUM AT EACH END ON FLASHING ABOVE AND BELOW THE ANGLE. VERTICAL CONTROL JOINTS SHALL EXTEND UP FROM THE END OF THE STEEL LINTEL, UNLESS NOTED OTHERWISE 15# FELT OR FLASHING SHALL BE PROVIDED TOP AND BOTTOM OF LINTEL ANGLE WHERE ANGLE BEARS ON BRICK.
14. LINTEL BLOCKS SHALL BE "U" SHAPED UNITS WITH SOLID BOTTOMS AND ARE TO BE USED OVER WINDOW AND DOOR OPENINGS. BOND BEAM BLOCKS SHALL BE OPEN BOTTOM UNITS AND ARE TO BE USED AT THE TOPS OF WALLS AND AT THE MID-HEIGHT OF WALL OR AT 8'-0" ON CENTER VERTICALLY MAXIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS. PROVIDE (2) #4 BARS IN A SOLID GROUTED BOND BEAM UNLESS NOTED OTHERWISE. LINTEL BLOCKS SHALL NOT BE USED IN PLACE OF BOND BEAM BLOCKS.
15. ALL MASONRY TIES TO BACKUP STRUCTURE SHALL BE HOT DIP GALVANIZED. PROVIDE A HECKMANN NO. 315 ANCHOR WITH N0. 316 TRIANGULAR TIE ON COLUMNS AT 16" (15" AT KING SIZE BRICK) ON CENTER VERTICALLY AND A HECKMANN NO. 191 OR 192 ANCHOR ON EACH SIDE OF ALL BEAMS AT 16" ON CENTER HORIZONTALLY UNLESS NOTED OTHERWISE ON THE DRAWINGS. MASONRY TIES TO WALL STUDS SHALL BE A HECKMANN NO. 316 TRIANGULAR TIE WITH A HECKMANN NO. 315-C SCREW ON ANCHOR STRAP OR HECKMANN #77 WING NUT POS-I-TIE ANCHOR SPACED 16" (15" AT KING SIZE BRICK) ON CENTER HORIZONTALLY AND 16" ON CENTER VERTICALLY. AT WALL CORNERS AND INTERSECTIONS PROVIDE TWO VERTICAL ROWS OF ANCHORS SPACED 16" APART AND 16" ON CENTER VERTICALLY. TRIANGULAR TIES SHALL EXTEND 3/4"" FROM FACE OF MASONRY. ANCHOR STRAPS SHALL BE ATTACHED TO METAL STUDS WITH TWO (2) #10-16x 1 1/2"" CADMIUM PLATED HEX HEAD SHEET METAL SCREWS WITH NEOPRENE WASHER.
16. MASONRY WALLS SHALL HAVE VERTICAL CONTROL JOINTS AT APPROXIMATELY SIXTEEN (16) FEET ON CENTER AND FOUR (4) FEET MAXIMUM FROM CORNERS. COORDINATE THE LOCATION OF JOINTS WITH THE ARCHITECT. PROVIDE HECKMANN NO. 351 CONTROL JOINT ANCHORS AT 16" ON CENTER VERTICALLY AT BRICK MASONRY AND HECKMANN NO. 350 CONTROL JOINT ANCHORS AT 16" ON CENTER VERTICALLY AT CONCRETE MASONRY UNITS. CONTROL JOINTS SHALL NOT BE CLOSER THAN 2'-0" TO ANY OPENING.
17. AT FREE VERTICAL EDGES OF WALLS PROVIDE 1-#5 VERTICAL IN GROUT FILLED END CORE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
18. PROVIDE A MINIMUM OF #4 AT 48" ON CENTER VERTICAL WALL REINFORCING AND DOWELS IN FULLY GROUTED CELLS AT ALL EXTERIOR AND INTERIOR WALLS UNLESS A GREATER REINFORCING IS SHOWN ON THE PLANS OR IN THE DETAILS. PROVIDE 1/2" DIAMETER DEFORMED BAR ANCHORS AT 48" ON CENTER WELDED TO STEEL MEMBERS SUPPORTING MASONRY ABOVE UNLESS NOTED OTHERWISE ON THE DRAWINGS.
19. PROVIDE HOHMANN AND BARNARD RB-8 REBAR POSITIONERS OR EQUAL AT EVERY THIRD COURSE AND AT SPLICE LOCATIONS
20. ALL REINFORCEMENT SHALL BE PLACED PRIOR TO POURING OF GROUT. "WET SETTING" REINFORCING BARS IS NOT PERMITTED.
21. ALL MASONRY DESIGN IS BASED CHAPTER 21 OF INTERNATIONAL BUILDING CODE, LATEST EDITION AND ACI 530, LATEST EDITION
22. COLD WEATHER AND HOT WEATHER PROCEDURES SHALL BE USED IN ACCORDANCE WITH ACI 530.1/ASCE 6/TMS 602 ARTICLE 1.8C AND 1.8D.
23. ALL MASONRY REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.

POST-INSTALLED ANCHORS

1. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.

A) ANCHORAGE TO CONCRETE:

i) ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
(1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH THE HILTI HIT-Z ROD PER ICC ESR-3187
(2) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM (VC 20-U OR VC 40-U) SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-3187
(3) HILTI HIT-RE 500v3 SAFE SET SYSTEM WITH IHLTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM (VC 20-U OR VC 40-U) WITH HAS-E THREADED ROD PER ICC ESR-3814
(4) HILTI HIT-RE 500v3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (HIT RT) WITH HAS-E THREADED ROD PER ICC ESR-3814 FOR DIAMOND CORED HOLES

ii) MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
(1) HILTI KWIK HUS EZ AND KWIK HUS EZ-I SCREW ANCHOR SAFE SET SYSTEM WITH HOLLOW DRILL BIT AND VACUUM PER ICC ESR-3027
(2) HILTI KWIK BOLT-TZ EXPANSION ANCHOR SAFE SET SYSTEM WITH HOLLOW DRILL BIT AND VACUUM AND SI-AT-A22 TOOL WITH ADAPTIVE TORQUE FOR APPLICABLE SIZES PER ICC ESR-1917
(3) HILTI KWIK BOLT 3 EXPANSION ANCHOR SAFE SET SYSTEM WITH HOLLOW DRILL BIT AND VACUUM AND SI-AT-A22 TOOL WITH ADAPTIVE TORQUE FOR APPLICABLE SIZES (UNCRACKED CONCRETE ONLY) PER ICC ESR-2302

iii) HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
(1) HILTI HDA UNDERCUT ANCHORS PER ICC ESR 1546
(2) HILTI HSL-3 EXPANSION ANCHORS PER ICC ESR 1545

B) REBAR DOWELING INTO CONCRETE

i) ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
(1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM (VC 20-U OR VC 40-U) SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187
(2) HILTI HIT-HY 500v3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM (VC 20-U OR VC 40-U) SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3814
(3) HILTI HIT-RE 500v3 SAFE SET SYSTEM WITH HILTI ROUGHENING TOOL (HIT RT) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3814 IN DIAMOND CORED HOLES.

C) ANCHORAGE TO SOLID GROUTED MASONRY

i) ADHESIVE ANCHORS USE:
(1) HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING)
(2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR

ii) MECHANICAL ANCHORS USE:
(1) HILTI KWIK BOLT 3 EXPANSION ANCHORS PER ICC ESR 1385

D) ANCHORAGE TO HOLLOW/MULTI-WYTHE MASONRY

i) ADHESIVE ANCHORS USE:
(1) HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3342
(2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR
(3) THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION

2. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEIMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLED INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
4. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI PROFI SYSTEM.
5. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THE THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
6. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCE INDICATED ON THE DRAWINGS.
7. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.
8. ALL ANCHORS REQUIRING INSTALLATION TORQUE WILL BE INSTALLED USING A CALIBRATED TORQUE WRENCH. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTATION OF CURRENT CALIBRATION AND TORQUE USED TO INSTALL ANCHORS.

BRICK MASONRY

1. MORTAR SHALL BE FRESHLY PREPARED AND UNIFORMLY MIXED IN THE RATIO OF 1 PART PORTLAND CEMENT, 1/4 PART MINIMUM TO 1/2 PART MAXIMUM LIME PUTTY OR HYDRATED LIME, DAMP LOOSE SAND NOT LESS THAN 2-1/4 AND NOT MORE 3 TIMES THE SUM OF THE VOLUMES OF THE CEMENT AND LIME USED, AND SHALL CONFORM TO ASTM C270, TYPE 'S'.
2. OPENINGS IN MASONRY WALLS SHALL HAVE STEEL LINTELS AS DETAILED ON THE DRAWINGS. STEEL LINTELS SHALL BEAR 8" MINIMUM AT EACH END. VERTICAL CONTROL JOINTS SHALL EXTEND UP FROM THE END OF THE LINTEL, UNLESS 15# FELT OR FLASHING IS PROVIDED TOP AND BOTTOM OF LINTEL ANGLE WHERE THE ANGLE BEARS ON THE BRICK.
3. ALL MASONRY TIES TO BACKUP STRUCTURE SHALL BE HOT DIP GALVANIZED. PROVIDE A HECKMANN NO. 315 ANCHOR WITH N0. 316 TRIANGULAR TIE ON COLUMNS AT 16" (15" AT KING SIZE BRICK) ON CENTER VERTICALLY AND A HECKMANN NO. 191 OR 192 ANCHOR ON EACH SIDE OF ALL BEAMS AT 16" ON CENTER HORIZONTALLY UNLESS NOTED OTHERWISE ON THE DRAWINGS. MASONRY TIES TO WALL STUDS SHALL BE A HECKMANN NO. 316 TRIANGULAR TIE WITH A HECKMANN NO. 315-C SCREW ON ANCHOR STRAP OR HECKMANN #77 WING NUT POS-I-TIE SPACED 16" (15" AT KING SIZE BRICK) ON CENTER HORIZONTALLY AND 16" ON CENTER VERTICALLY. AT WALL CORNERS AND INTERSECTIONS PROVIDE TWO VERTICAL ROWS OF ANCHORS SPACED 16" APART AND 16" ON CENTER VERTICALLY. TRIANGULAR TIES SHALL EXTEND 3/4" FROM FACE OF MASONRY. ANCHOR STRAPS SHALL BE ATTACHED TO METAL STUDS WITH TWO (2) #10-16x1 1/2" CADMIUM PLATED HEX HEAD SHEET METAL SCREWS WITH NEOPRENE WASHER.
4. MASONRY WALLS SHALL HAVE VERTICAL CONTROL JOINTS AT APPROXIMATELY SIXTEEN (16) FEET ON CENTER AND FOUR (4) FEET MAXIMUM FROM CORNERS. COORDINATE THE LOCATION OF JOINTS WITH THE ARCHITECT.
5. ALL MASONRY VENEER DESIGN IS BASED ON SECTION 1405.5 OF THE INTERNATIONAL BUILDING CODE, LATEST EDITION AND SECTION 6.1 AND 6.2 OF ACI 530, LATEST EDITION.

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
RUSSELL T. RANSBARGER
115975
LICENSED
PROFESSIONAL ENGINEER
05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
RR	NH
Designer	Quality Control
NH	
Proj. Arch.	
RR	

PROJECT NO.
5340

SHEET TITLE
GENERAL NOTES

SHEET NO.
S0.0

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STORM SHELTER

1. THE AREA DESIGNATED BY THE ARCHITECTURAL DRAWINGS AS A SHELTER HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AND ICC 500-14.

2. THE NOTES LISTED ON THIS SHEET FOR THE STORM SHELTER SHALL BE TAKEN IN ADDITION TO THE GENERAL NOTES LISTED ON S0.0. WHERE CONFLICTS OCCUR, THE NOTES LISTED ON THIS SHEET SHALL SUPERCEDE THE NOTES ON S0.0 FOR PORTIONS OF THE STORM SHELTER.

3. ANY PENETRATIONS IN THE SHELTER ENVELOPE GREATER THAN 3-1/2 SQUARE INCHES OR 2-1/16 INCHES IN DIAMETER SHALL BE BAFFLED AS SHOWN IN THE TYPICAL STORM SHELTER BAFFLING DETAIL UNLESS OTHERWISE PROTECTED BY A TESTED ASSEMBLY MEETING THE REQUIREMENTS OF ICC 500-14

4. STORM SHELTER DESIGN CRITERIA:

DEAD LOADS:
4" NORMAL WEIGHT CONCRETE TOPPING: 50 PSF
LIGHT WEIGHT DOUBLE TEES: 120 PSF
COLLATERAL LOADS: 15 PSF
OTHER LOADS SHOWN ON PLAN

ROOF LIVE LOAD: 100 PSF

WIND LOAD:

WIND SPEED: 250 MPH (3 SECOND GUST)
WIND EXPOSURE CATEGORY: C
INTERNAL PRESSURE COEFFICIENT (GCpi): +/- 0.55
TOPOGRAHPIC FACTOR (Kzt): 1.0
WIND DIRECTIONALITY FACTOR (Kd): 1.0
COMPONENTS AND CLADDING WIND LOADS FOR THE STORM SHELTER SHALL BE AS NOTED IN THE FOLLOWING TABLE:

COMPONENTS AND CLADDING PRESSURES - STORM SHELTER (PSF)					
	EFFECTIVE WIND AREA (SQ. FT.)				
LOCATION	10	20	50	100	500
ROOF INTERIOR ZONE	134.5 -245.3	130.5 -241.3	122.6 -233.4	118.7 -229.5	118.7 -229.5
ROOF EXTERIOR ZONE	134.5 -371.9	130.5 -340.2	122.6 -292.8	118.7 -261.1	118.7 -261.1
ROOF CORNERS AND OVERHANGS	134.5 -530.1	130.5 -451.0	122.6 -340.3	118.7 -261.1	118.7 -261.1
WALL INTERIOR ZONE	245.3 -261.1	237.4 -253.2	225.5 -241.3	217.6 -233.4	197.8 -213.6
WALL CORNER ZONE	245.3 -308.6	237.4 -292.8	225.5 -269.0	217.6 -253.2	197.8 -213.6
PARAPET INTERIOR	617.2	577.6	518.3	478.7	458.9
PARAPET CORNER	775.4	688.4	565.8	478.7	458.9

JOINTS IN PRECAST CONCRETE PANELS SHALL BE IN ACCORDANCE WITH ICC 500 - 2014 AND SHALL BE LOCATED BY THE CONTRACTOR'S PRECAST CONCRETE ENGINEER TO SATISFY ONE OF THE FOLLOWING REQUIREMENTS:

A.) JOINTS IN PRECAST CONCRETE PANELS AT THE STORM SHELTER SHALL BE 3/8" OR LESS IN WIDTH AND SEALED WITH A JOINT MATERIAL IN ACCORDANCE WITH ASTM C920 OR;

B.) JOINTS OR GAPS IN PRECAST CONCRETE PANELS SHALL BE ORIENTED SUCH THAT THE JOINT OR GAP WILL NOT ALLOW A DIRECT DEBRIS PATH THROUGH THE SHELTER ENVELOPE INTO THE PROTECTED OCCUPANT AREA. DEBIRS SHALL IMPACT AT LEAST TWO SURFACES MEETING THE MISSLE IMPACT CRITERIA OF SECTION 305.1 OF ICC 500-2014 PRIOR TO ARRIVING AT THE PROTECTED OCCUPANT AREA.

6. QUALITY ASSURANCE PLAN:

THE FOLLOWING COMPONENTS OF THE STORM SHELTER SHALL BE INCLUDED AS A PART OF THE QUALITY ASSURANCE PLAN AND SHALL BE INSPECTED AND TESTED AS NOTED ON THIS SHEET:
-ROOF CLADDING, SOFFITS, AND ROOF FRAMING CONNECTIONS
-CONNECTIONS OF WALLS TO ROOF AND FLOOR DIAPHRAGMS
-ROOF AND FLOOR DIAPHRAGM SYSTEMS, INCLUDING CONNECTIONS AND SUPPORTING COMPONENTS
-MAIN WIND FORCE RESISTING SYSTEMS (MWFRS) AND CONNECTIONS OF MWFRS AS INDICATED BELOW
-FABRICATION AND INSTALLATION OF COMPONENTS OF THE SHELTER ENVELOPE REQUIRED TO MEET THE MISSILE IMPACT TEST REQUIREMENTS OF ICC-500, SUCH AS THE ROOF DECK, THE WALL ASSEMBLY, AND THE STEEL BAFFLE ASSEMBLY
-COMPONENTS OF THE SHELTER FOUNDATION,SUCH AS BUT NOT LIMITED TO, PIERS, GRADE BEAMS, AND SLABS

THE MAIN WIND FORCE RESISTING SYSTEM AND WIND RESISTING COMPONENTS FOR THE STORM SHELTER SHALL INCLUDE ALL OF THE FOLLOWING:
PERIMETER PRECAST CONCRETE WALLS
PRECAST CONCRETE DOUBLE TEES WITH CONCRETE TOPPING SLAB
CONNECTIONS OF DOUBLE TEES TO PRECAST WALLS
CONNECTIONS OF PRECAST WALLS TO FOUNDATIONS
GRADE BEAMS
FOUNDATION SLAB
SLAB DOWELS
PIER DOWELS
PIERS
SOILS
STEEL BAFFLE SYSTEMS

DURING CONSTRUCTION OF THE STORM SHELTER, VISUAL OBSERVATIONS OF THE STRUCTURAL SYSTEM SHALL BE MADE BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF TEXAS FOR GENERAL CONFORMANCE OF THE CONSTRUCTION DOCUMENTS. THESE STRUCTURAL OBSERVATIONS SHALL NOT BE A SUBSTITUTE FOR THE SPECIAL INSPECTIONS OR TESTING REQUIRED BY THE CONSTRUCTION DOCUMENTS OR BUILDING CODE. DEFICIENCIES NOTED IN THE STRUCTURAL OBSERVATIONS SHALL BE REPORTED IN WRITING TO THE OWNER AND THE AUTHORITY HAVING JURISDICTION. AT THE CONCLUSION OF THE CONSTRUCTION OF THE STORM SHELTER, THE REGISTERED ENGINEER PERFORMING THE STRUCTURAL OBSERVATIONS SHALL SUBMIT A WRITTEN REPORT TO THE AUTHORITY HAVING JURISDICTION NOTING THAT SITE VISITS HAVE BEEN MADE AND SHALL IDENTIFY ANY REPORTED DEFICIENCIES THAT HAVE NOT BEEN RESOLVED TO THE BEST OF THE REGISTERED ENGINEER'S KNOWLEDGE. STRUCTURAL OBSERVATIONS SHALL TAKE PLACE AT SIGNIFICANT STRUCTURAL CONSTRUCTION STAGES.

THE SPECIAL INSPECTIONS AND TESTING LISTED ON THIS SHEET FOR THE STORM SHELTER SHALL BE TAKEN IN ADDITION TO THE SPECIAL INSPECTIONS AND TESTING LISTED ON S0.0 FOR THE STORM SHELTER. WHERE CONFLICTS OCCUR, THE NOTES LISTED ON THIS SHEET SHALL SUPERCEDE THE NOTES ON S0.0 FOR PORTIONS OF THE STORM SHELTER. ADDITIONAL TESTING AND INSPECTIONS FOR THE STORM SHELTER ARE AS FOLLOWS:

WHERE FABRICATION OF DEBRIS IMPACT RESISTANT AND LOAD BEARING COMPONENTS (SUCH AS STEEL BAFFLE SYSTEMS) OCCURS AT A FABRICATOR'S SHOP, SPECIAL INSPECTION OF THE FABRICATOR SHALL BE PROVIDED PER AISC 360 AND AISC CODE OF STANDARD PRACTICE UNLESS THE FABRICATOR IS AN AISC CERTIFIED FABRICATION PLANT.

PERIODIC SPECIAL INSPECTION SHALL BE REQUIRED FOR THE FOLLOWING WIND RESISTANT COMPONENTS NOTED IN THE QUALITY ASSURANCE PLAN ABOVE:
-SHEAR STUDS AND ROOF DECK ATTACHMENTS
-CONNECTIONS OF STEEL ROOF BEAMS TO ICF AND CMU WALLS
-CONNECTIONS OF ROOF DECK TO PERIMETER ICF WALLS
-CONNECTIONS OF ICF AND CMU WALLS TO FOUNDATIONS

7. EACH CONTRACTOR OR SUBCONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION, FABRICATON, OR INSTALLATION OF A MAIN FORCE RESISTING SYSTEM COMPONENT AS LISTED ABOVE OR ANY COMPONENT WITHIN THE QUALITY ASSURANCE PLANSHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE AUTHORITY HAVING JURISDICTION, THE RESPONSIBLE DESIGN PROFESSIONAL, AND THE OWNER PRIOR TO BEGINNING WORK ON THE SYSTEM OR COMPONENT TO BE CONSTRUCTED, FABRICATED, OR INSTALLED. THE WRITTEN STATEMENT OF RESPONSIBILITY SHALL MEET ALL OF THE REQUIREMENTS OF ICC 500-14 SECTION 107.3.3

8. VERIFICATION OF INSTALLATION AND CAPACITY FOR ALL POST-INSTALLED ANCHORAGE TO FOUNDATIONS WITHIN THE STORM SHELTER.

PRECAST CONCRETE

1. COVER PRECAST SHIMS AND ANCHORAGE HARDWARE THAT WILL BE EXPOSED TO BACKFILL WITH 2" OF CONCRETE MINIMUM.

2. LOCATE HANDLING AND ERECTION INSERTS IN INCONSPICUOUS LOCATIONS. SUBMIT TYPE AND LOCATION ON SHOP DRAWINGS.

3. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF INSERTS, OPENINGS, SLEEVES, REGLETS, AND DOWELS NOT SHOWN ON STRUCTURAL DRAWINGS.

4. CHAMFER ALL EXPOSED CORNERS 3/4".

5. CURE PRECAST CONCRETE MEMBERS A MINIMUM OF 28 DAYS OR UNTIL THE CONCRETE REACHES DESIGN STRENGTH BEFORE SHIPPING TO SITE.

6. DESIGN PRECAST MEMBERS FOR LOADS INDICATED. FABRICATOR SHALL PROVIDE CALCULATIONS, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECT, FOR ALL MEMBERS (BEAM, COLUMNS, ETC). FOR STANDARD PLANK AND TEE SECTIONS, SUBMIT CATALOG DESIGNATION AND APPLICABLE LOAD TABLES.

PRECAST CONCRETE TEE NOTES:

1. ROOF AREAS SHALL RECEIVE COMPOSITE BONDED TOPPING REINFORCED WITH #4 @ 12" OC. ADJUST THE THICKNESS OF THE TOPPING TO ACCOUNT FOR THE CAMBER IN THE PLANKS. CONNECTION OF TOPPING SLAB TO PRECAST TEES TO ACCOUNT FOR ROOF UPLIFT AS LISTED ON THE DRAWINGS.

2. SUPERIMPOSED LOADS SHOWN ON DRAWING DO NOT INCLUDE WEIGHT OF COMPOSITE TOPPING.

3. ALTERNATELY WELD OPPOSITE ENDS OF DOUBLE TEES.

STRUCTURAL TESTING AND INSPECTIONS

EARTHWORK TESTING

1. DURING EARTHWORK OPERATIONS KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT. SERVICES PROVIDED SHALL INCLUDE:

A. OBSERVE STRIPPING OPERATIONS AND EVALUATE THE REQUIRED STRIPPING DEPTH DURING THESE OPERATIONS.
B. VERIFY THAT THE SUBGRADE IS PREPARED PER EARTHWORK GENERAL NOTES.
C. OBSERVE THE EXCAVATION DAILY AND ENSURE THAT THE CONTRACTOR MAINTAINS A CLEAN EXCAVATION THAT IS FREE OF PONDING WATER 100% OF THE TIME. CONTRACTOR SHALL PROVIDE PUMPS AS REQUIRED TO REMOVE ANY WATER AT ALL TIMES.
D. OBSERVE GRADING OPERATIONS TO ENSURE THAT PROPER DRAINAGE AWAY FROM THE BUILDING PAD IS PROVIDED.

DRILLED PIERS TESTING

DURING DRILLED PIER OPERATIONS KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT. SERVICES PROVIDED SHALL INCLUDE:

A. OBSERVING THE BOTTOM OF SHAFT FOR CLEANLINESS.
B. CHECKING SHAFT FOR CONFORMANCE TO REQUIRED TOLERANCES. PIERS SHALL BE WITHIN 3" OF THEIR REQUIRED LOCATIONS AND SHAFTS SHALL NOT BE OUT OF PLUMB BY MORE THAN 2 PERCENT OF THE SHAFT LENGTH.
C. CHECKING SHAFT BOTTOM FOR PROPER BEARING MATERIAL.
D. NOTING DEPTH AND DIAMETER OF ALL PIERS.
E. VERIFY QUANTITY, SIZE AND LOCATION OF REINFORCEMENT.
F. CHECK FOR CAVING OF SHAFT WALLS.

2. ENSURE THAT THE SPOILS FROM THE DRILLED PIER EXCAVATIONS ARE REMOVED FROM THE BUILDING PAD AND THAT THE PAD IS MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED.

CONCRETE TESTING

1. CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW INDICATING CONFORMANCE WITH ACI 318, LATEST EDITION, CHAPTER 5, SECTION 5.3.

2. SLUMP TESTS, CONFORMING TO ASTM C143, SHALL BE TAKEN AT THE POINT OF DISCHARGE AT THE SAME RATE AS NOTED BELOW IN NOTE NUMBER 5.

3. AIR CONTENT TESTS CONFORMING TO ASTM C173, VOLUMETRIC METHOD FOR LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE; ASTM C231 PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE; SHALL BE TAKEN FOR EACH DAY'S POUR OF EACH TYPE OF AIR-ENTRAINED CONCRETE.

4. CONCRETE TEMPERATURE SHALL BE TESTED HOURLY WHEN AIR TEMPERATURE IS 40 DEG F (4 DEG C) AND BELOW, WHEN 80 DEG F (27 DEG C) AND ABOVE, AND EACH TIME A SET OF COMPRESSION TEST SPECIMENS IS MADE.

5. ONE SET OF FOUR COMPRESSION TEST SPECIMENS CONFORMING TO ASTM C31 SHALL BE MOLDED AND STORED FOR LABORATORY-CURED SPECIMENS. COMPRESSIVE STRENGTH TESTS SHALL CONFORM TO ASTM C39 AND SHALL CONSIST OF ONE SET FOR EACH DAY'S POUR EXCEEDING 5 CU. YDS. PLUS ADDITIONAL SETS FOR EACH 50 CU. YDS. MORE THAN THE FIRST 25 CU. YDS OF EACH CONCRETE CLASS PLACED IN ANY ONE DAY. ONE SPECIMEN SHALL BE TESTED AT 7 DAYS, TWO SPECIMENS SHALL BE TESTED AT 28 DAYS, AND ONE SPECIMEN SHALL BE RETAINED FOR LATER TESTING AS REQUIRED.

6. VERIFY CONCRETE IS BEING CONSOLIDATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF ACI 318 AND ACI 308R, LATEST EDITION.

7. VERIFY THAT POST INSTALLED ANCHORS ARE AS SPECIFIED AND THAT THE ANCHORS ARE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

REINFORCING STEEL INSTALLATION

1. A COMPETENT TRAINED TECHNICIAN SHOULD BE KEPT AT ALL TIMES DURING CAST-IN-PLACE REINFORCING PLACEMENT OPERATIONS. REINFORCING STEEL INSPECTION SHALL FOLLOW THE GUIDELINES SET FORTH IN ACI 311.4R "GUIDE FOR CONCRETE INSPECTION". INSPECTION SERVICES SHALL INCLUDE:

A. VERIFY TYPE AND GRADE OF ALL REINFORCING STEEL.
B. VERIFY REBAR IS FREE OF OIL, DIRT, EXCESSIVE RUST AND FROM DAMAGE DURING SHIPMENT TO SITE.
C. VERIFY REINFORCING IS ADEQUATELY TIED, CHAIRED AND SUPPORTED TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
D. VERIFY MINIMUM AND MAXIMUM CLEAR DISTANCES BETWEEN BARS AND MINIMUM STRUCTURAL DISTANCE TO OUTSIDE OF CONCRETE.
E. VERIFY QUANTITY, SIZE AND LOCATION OF REINFORCEMENT.
F. VERIFY MINIMUM CONCRETE COVER IS MAINTAINED BETWEEN REBAR AND SURFACE OF CONCRETE.
G. VERIFY SIZE, PLACEMENT, LAP LENGTHS, LOCATION OF LAPS, BEND LOCATIONS, SLOPE, LENGTH, HOOKED BAR LENGTHS AND LOCATIONS.

STRUCTURAL STEEL TESTING

1. CERTIFY WELDERS FOR THE WELD TYPES IN THE PROJECT AND CONDUCT INSPECTIONS AND TESTS AS REQUIRED, AS A MINIMUM, WELDERS SHALL BE AISC CERTIFIED. RECORD TYPES AND LOCATIONS OF DEFECTS FOUND IN WORK. RECORD WORK REQUIRED AND PERFORMED TO CORRECT DEFICIENCIES.

2. VISUALLY INSPECT 100% OF ALL FILLET WELDS.

3. VISUALLY INSPECT 100% OF ALL FULL PENETRATION WELDS, TEST 20% OF ALL FULL PENETRATION WELDS BY ONE OF THE FOLLOWING METHODS: LIQUID PENETRANT INSPECTION (ASTM E165), MAGNETIC PARTICLE INSPECTION (ASTM E709; PERFORMED ON THE ROOT PASS AND ON THE FINISHED WELD; CRACKS AND ZONES OF INCOMPLETE FUSION OR PENETRATION IS NOT ACCEPTABLE), RADIOGRAPHIC INSPECTION (ASTM E94 AND ASTM E142; MINIMUM QUALITY LEVEL OF "2-2T"), OR ULTRASONIC INSPECTION (ASTM E164). IF FAILURE RATE IS 20% OR GREATER, TEST 100% OF WELDS AT CONTRACTOR'S EXPENSE UNTIL FAILURE RATE FALLS BELOW 20%.

4. ALL WELDS THAT FAIL SHALL BE REWELDED AND RETESTED UNTIL THEY PASS THE TEST. TEST TWO ADDITIONAL WELDS AT THE CONTRACTOR'S EXPENSE FOR EVERY WELD FAILURE.

5. VISUALLY INSPECT WELDS ON 100% OF ALL STUDS AND TEST 10% BY THE METHOD DESCRIBED BELOW IN COMPLIANCE WITH AWS D1.1. HEADED STUD SHALL BE TESTED BY ALTERNATELY BENDING 30 DEG. IN OPPOSITE DIRECTIONS FROM ITS ORIGINAL AXIS BY EITHER STRIKING THE STUDS WITH A HAMMER ON THE UNWELDED END OR PLACING A PIPE OR OTHER SUITABLE HOLLOW DEVICE OVER THE STUD AND MANUALLY OR MECHANICALLY BENDING THE STUD. IF FAILURE RATE IS 10% OR GREATER, TEST 100% OF STUDS AT CONTRACTOR'S EXPENSE UNTIL FAILURE RATE FALLS BELOW 10%. IF A VISUAL INSPECTION REVEALS ANY STUD THAT DOES NOT SHOW A FULL 360 DEG. FLASH (AS DEFINED IN AWS D1.1) OR ANY STUD THAT HAS BEEN REPAIRED BY WELDING, SUCH STUD SHALL BE BENT TO AN ANGLE OF APPROXIMATELY 15 DEG. FROM ITS ORIGINAL AXIS. THE DIRECTION OF BENDING FOR STUDS WITH LESS THAN 360 DEG. FLASH SHALL BE OPPOSITE TO THE MISSING PORTION OF FLASH.

6. BOLTS SHALL BE VISUALLY INSPECTED WHEN TWIST-OFF SPLINES ARE USED, OTHERWISE BOLTS SHALL BE SNUG TIGHT.

7. ALL FULL PENETRATION WELDS AT MOMENT CONNECTIONS REQUIRING TESTING SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY USING NON-DESTRUCTIVE TESTING METHODS. FOR SHOP WELDS, CERTIFICATION SHALL BE SUBMITTED PRIOR TO SHIPPING TO THE JOB SITE. FOR FIELD WELDS, CERTIFICATION SHALL BE SUBMITTED PRIOR FLOOR DECK INSTALLATION AND CONCRETE PLACEMENT AND PRIOR TO COVERING CONNECTIONS WITH FIREPROOFING OR ARCHITECTURAL FINISHES.

MASONRY TESTING

1. MASONRY TESTING SHALL CONSIST OF A QUALIFIED TESTING LABORATORY PROVIDING THE FOLLOWING SERVICES:

A. VERIFY QUANTITY, SIZE AND SPACING OF REQUIRED REINFORCING SHOWN ON THE DRAWINGS.
B. OBSERVE THE INSTALLATION OF MASONRY UNITS.
C. INSPECTION OF GROUT SPACE, IMMEDIATELY PRIOR TO CLOSING OF CLEANOUTS AND PRIOR TO ALL GROUTING OPERATIONS. VERIFY THAT THE SPECIFIED CELLS HAVE BEEN FULLY GROUTED.
D. MONITOR THE PROPORTIONING, MIXING AND CONSISTENCY OF MORTAR AND GROUT. PROVIDE 28 DAY COMPRESSIVE STRENGTH TESTS ON EACH GROUT MIX IN ACCORDANCE WITH ASTM C1019. COMPRESSION TEST MASONRY PRISMS FOR EACH TYPE OF WALL CONSTRUCTION IN ACCORDANCE WITH ASTM C1314. CONTRACTOR SHALL PREPARE ONE SET OF PRISMS FOR TESTING AT 28 DAYS. TESTS ARE TO BE CONDUCTED FOR EACH 2000 SQUARE FEET OF WALL INSTALLED, BUT NOT LESS THAN TWO TESTS.

SPECIAL INSPECTIONS

SPECIAL INSPECTION WORK HAS NOT BEEN INCLUDED IN THE STRUCTURAL ENGINEER OF RECORD'S SCOPE OF SERVICES. THE OWNER IS RESPONSIBLE FOR OBTAINING THE SERVICES OF THE SPECIAL INSPECTOR AND THE TESTING LABORATORY. SPECIAL INSPECTIONS SHALL BE PROVIDED BY AN INDEPENDENT SPECIAL INSPECTOR APPROVED BY THE BUILDING AUTHORITY. THE SPECIAL INSPECTION WORK DOES NOT INCLUDE THE TESTING LABORATORY SERVICES AS CALLED FOR ON THE DRAWINGS. ARRANGEMENTS FOR SPECIAL INSPECTIONS SHOULD BE MADE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE OWNER IF SPECIAL INSPECTIONS ARE REQUIRED ON THE APPROVED PERMIT DRAWINGS AND FOR NOTIFYING THE TESTING LABORATORY AND SPECIAL INSPECTOR IN A TIMELY MANNER PRIOR TO PROCEEDING WITH CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK REQUIRING INSPECTIONS WITHOUT THE TESTING LABORATORY'S OR SPECIAL INSPECTOR'S PRESENCE. THE STRUCTURAL ENGINEER WILL NOT PROVIDE A FINAL LETTER OF COMPLIANCE AFTER THE WORK IS COMPLETE IF SPECIAL INSPECTIONS HAVE NOT BE PERFORMED AS REQUIRED.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION AND TEST REPORTS TO THE BUILDING OFFICIAL AND TO THE EOR AS THE REPORTS ARE PUBLISHED. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE EOR PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.

STRUCTURAL OBSERVATION HAS NOT BEEN INCLUDED IN THE STRUCTURAL ENGINEER OF RECORDS'S SCOPE OF SERVICES. THE OWNER IS RESPONSIBLE FOR OBTAINING THE SERVICES OF A LICENSED STRUCTURAL ENGINEER TO CONDUCT VISUAL OBSERVATIONS OF THE CONSTRUCTION OF THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE WITH CONSTRUCTION DOCUMENTS. THIS STRUCTURAL OBSERVATION REQUIREMENT IS SEPERATE FROM ALL OTHER REQUIRED TESTING AND INSPECTIONS.

CHAPTER 17 OF THE 2012 INTERNATIONAL BUILDING CODE IS INTERPRETED TO REQUIRE SPECIAL INSPECTION FOR THE FOLLOWING ITEMS:

SOILS - TABLE 1705.6
CONCRETE CONSTRUCTION - TABLE 1705.3
STRUCTURAL STEEL - PER REQUIREMENTS OF AISC 360
STEEL CONSTRUCTION - TABLE 1705.2.2
MASONRY CONSTRUCTION - PER REQUIREMENTS OF TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI530.1/ASCE6

CONCRETE CONSTRUCTION
(TABLE 1705.3)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.		X
2.	INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2.2, ITEM 2b.		
3.	INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.		X
4.	INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.		X
5.	VERIFYING USE OF REQUIRED DESIGN MIX.		X
6.	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	
7.	INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	
8.	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		X
9.	INSPECTION OF PRESTRESSED CONCRETE:		
a.	APPLICATION OF PRESTRESSING FORCES.	X	
b.	GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC FORCE-RESISTING SYSTEM.	X	
10.	ERECTION OF PRECAST CONCRETE MEMBERS.		X
11.	VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.		X
12.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.		X

CAST-IN-PLACE DEEP FOUNDATION ELEMENTS
(TABLE 1705.8)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	
2.	VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	X	
3.	FOR CONCRETE ELEMENTS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.		

STEEL CONSTRUCTION
(SECTION 1705.2)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK:		
a.	IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		X
b.	MANUFACTURER'S CERTIFIED TEST REPORTS		X
2.	INSPECTION OF WELDING:		
a.	COLD-FORMED STEEL DECK:		
	1) FLOOR AND ROOF DECK WELDS.		X
b.	REINFORCING STEEL:		
	1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.		X
	2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	
	3) SHEAR REINFORCEMENT.	X	
	4) OTHER REINFORCING STEEL.		X

MASONRY CONSTRUCTION - LEVEL B
(TABLE 1.19.2, TMS-402/ACI 530-11)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	PRIOR TO CONSTRUCTION (SPEC ARTICLE 1.5, TMS-602/ACI 530.1-11)		
a.	REVIEW MATERIAL CERTIFICATES, MIX DESIGNS, TEST RESULTS AND CONSTRUCTION PROCEDURES		X
2.	AS CONSTRUCTION BEGINS (TABLE 1.19.2, TMS-402/ACI 530-11)		
a.	PROPORTIONS OF SITE-PREPARED MORTAR		X
b.	CONSTRUCTION OF MORTAR JOINTS		X
c.	GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X
d.	LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES		X
e.	PRESTRESSING TECHNIQUE		X
f.	PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X	X
3.	PRIOR TO GROUTING (TABLE 1.19.2, TMS-402/ACI 530-11)		
a.	GROUT SPACE		X
b.	GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES		X
c.	PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES		X
d.	PROPORTIONS OF SITEPREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		X
e.	CONSTRUCTION OF MORTAR JOINTS		X
4.	DURING MASONRY CONSTRUCTION (TABLE 1.19.2, TMS-402/ACI 530-11)		
a.	SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X
b.	TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X
c.	WELDING OF REINFORCEMENT	X	
d.	PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (90°F)		X
e.	APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	
f.	PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X	
g.	PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X	X
h.	OBSERVATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		X
5.	MINIMUM TESTING (TABLE 1.19.2, TMS-402/ACI 530-11)		
a.	VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) FOR SELFCONSOLIDATING GROUT		
b.	VERIFICATION OF f'M AND f'AAC		

STRUCTURAL STEEL CONSTRUCTION
(AISC 360)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	INSPECTION TASKS PRIOR TO WELDING (TABLE N5.4-1)		
a.	WELDING PROCEDURE SPECIFICATIONS (WPsS) AVAILABLE	X	
b.	MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	X	
c.	MATERIAL IDENTIFICATION (TYPE/GRADE)		X
d.	WELDER IDENTIFICATION SYSTEM		X
e.	FIT-UP GROOVE WELDS (INCLUDING JOINT GEOMETRY)		
	1) JOINT PERPARATION		X
	2) DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)		X
	3) CLEANLINESS (CONDITION OF STEEL SURFACES)		X
	4) TACKING (TACK WELD QUALITY AND LOCATION)		X
	5) BACKING TYPE AND FIT (IF APPLICABLE)		X
f.	CONFIGURATION AND FINISH OF ACCESS HOLES		X
g.	FIT-UP OF FILLET WELDS		
	1) DIMENSIONS (ALIGNMENT, GAPS AT ROOT)		X
	2) CLEANLINESS (CONDITION OF STEEL SURFACES)		X
	3) TACKING (TACK WELD QUALITY AND LOCATION)		X
h.	CHECK WELDING EQUIPMENT		X
2.	INSPECTION TASKS DURING WELDING (TABLE N5.4-2)		
a.	USE OF QUALIFIED WELDERS		X
b.	CONTROL AND HANDLING OF WELDING CONSUMABLES		
	1) PACKAGING		X
	2) EXPOSURE CONTROL		X
c.	NO WELDING OVER CRACKED TACK WELDS		X
d.	ENVIRONMENTAL CONDITIONS		
	1) WIND SPEED WITHIN LIMITS		X
	2) PRECIPITATION AND TEMPERATURE		X
e.	WPS FOLLOWED		
	1) SETTINGS ON WELDING EQUIPMENT		X
	2) TRAVEL SPEED		X
	3) SELECTED WELDING MATERIALS		X
	4) SHIELDING GAS TYPE/FLOW RATE		X
	5) PREHEAT APPLIED		X
	6) INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)		X
	7) PROPER POSITION (F,V,H, OH)		X
f.	WELDING TECHNIQUES		
	1) INTERPASS AND FINAL CLEANING		X
	2) EACH PASS WITHING PROFILE LIMITATIONS		X
	3) EACH PASS MEETS QUALITY REQUIREMENTS		X
3.	INSPECTION TASKS AFTER WELDING (TABLE N5.4-3)		
a.	WELDS CLEANED		X
b.	SIZE, LENGTH AND LOCATION OF WELDS	X	
c.	WELDS MEET VISUAL ACCEPTANCE CRITERIA		
	1) CRACK PROHIBITION	X	
	2) WELD/BASE-METAL FUSION	X	
	3) CRATER CROSS SECTION	X	
	4) WELD PROFILES	X	
	5) WELD SIZE	X	
	6) UNDERCUT	X	
	7) POROSITY	X	
d.	ARC STRIKES	X	
e.	K-AREA	X	
f.	BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	X	
g.	REPAIR ACTIVITIES	X	
h.	DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	X	
4.	INSPECTION TASKS PRIOR TO BOLTING (TABLE N5.6-1)		
a.	MANUFACTURER'S CERTIFICATION AVAILABLE FOR FASTENER MATERIALS	X	
b.	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS		X
c.	PROPER FASTENERS SELECTED FOR JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)		X
d.	PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL		X
e.	CONNECTING ELEMENTS, INCLUDING APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS		X
f.	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED		X
g.	PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS		X
5.	INSPECTION TASKS DURING BOLTING (TABLE N5.6-2)		
a.	FASTENER ASSEMBLIES OF SUITABLE CONDITION, PACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED		X
b.	JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO PRETENSIONING OPERATIONS		X
c.	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING		X
d.	FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES		X
6.	INSPECTION TASKS AFTER BOLTING		
a.	DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	X	
7.	OTHER STEEL INSPECTIONS (SECTION N5.7)		
a.	ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL	X	
b.	FABRICATED STEEL OR ERECTED STEEL FRAME		X

COMPOSITE CONSTRUCTION
(AISC 360 TABLE N6.1 AND AISC 341-10)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT (TABLE N6.1)		
a.	PLACEMENT AND INSTALLATION OF STEEL DECK	X	
b.	PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	X	
c.	DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	X	
2.	COMPOSITE STRUCTURES PRIOR TO CONCRETE PLACEMENT (TABLE J9-1, AISC 341-10)		
a.	MATERIAL IDENTIFICATION OF REINFORCING STEEL (TYPE/GRADE)		X
b.	DETERMINATION OF CARBON EQUIVALENT FOR REINFORCING STEEL OTHER THAN ASTM A706		X
c.	PROPER REINFORCING STEEL SIZE, SPACING AND ORIENTATION		X
d.	REINFORCING STEEL HAS NOT BEEN REBENT IN THE FIELD		X
e.	REINFORCING STEEL HAS BEEN TIED AND SUPPORTED AS REQUIRED		X
f.	REQUIRED REINFORCING STEEL CLEARANCES HAVE BEEN PROVIDED		X
g.	COMPOSITE MEMBER HAS REQUIRED SIZE		X
3.	COMPOSITE STRUCTURES DURING CONCRETE PLACEMENT (TABLE J9-2, AISC 341-10)		
a.	CONCRETE: MATERIAL IDENTIFICATION (MIX DESIGN, COMPRESSIVE STRENGTH, MAXIMUM LARGE AGGREGATE SIZE, MAXIMUM SLUMP)		X
b.	LIMITS ON WATER ADDED AT THE TRUCK OR PUMP		X
c.	PROPER PLACEMENT TECHNIQUES TO LIMIT SEGREGATION		X

SOILS
(TABLE 1705.6)

	VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	
		CONTINUOUS	PERIODIC
1.	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
2.	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		X
3.	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		X
4.	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	
5.	PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
RUSSELL T. RANSBARGER
115975
LICENSED
PROFESSIONAL ENGINEER
05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

REVISIONS

Revision No.

Director RR
Drawn By NH
Designer NH
Quality Control
Proj. Arch. RR

PROJECT NO.
5340

SHEET TITLE
GENERAL NOTES

SHEET NO.
S0.1

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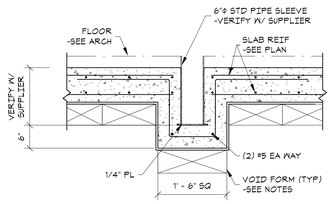
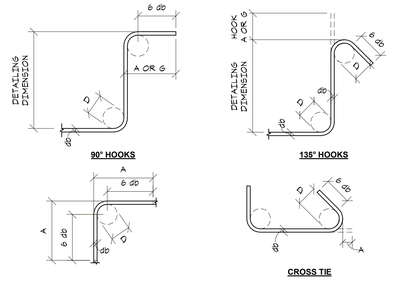


VERIFY LOCATION WITH ARCHITECTURAL DRAWINGS

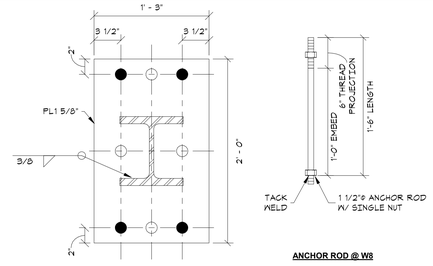
20 VOLLEYBALL INSERT DETAIL
SCALE: 3/4" = 1'-0"

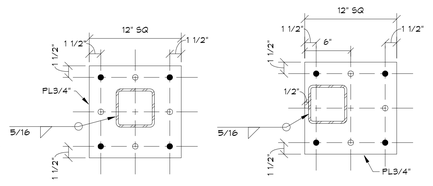


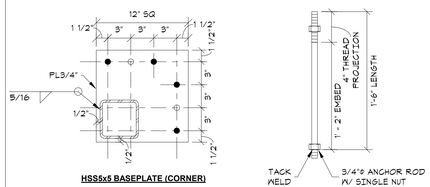
STIRRUP & TIE HOOK SCHEDULE			
BAR SIZE	D (IN)	90° HOOKS A OR G, (IN)	135° HOOKS A OR G (IN)
#3	1 1/2	4	4
#4	2	4 1/2	4 1/2
#5	2 1/2	6	5 1/2

D= INSIDE DIAMETER OF BEND

16 STIRRUP AND TIE HOOK SCHEDULE
SCALE: 3/4" = 1'-0"



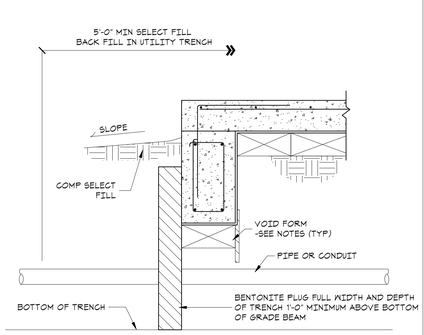




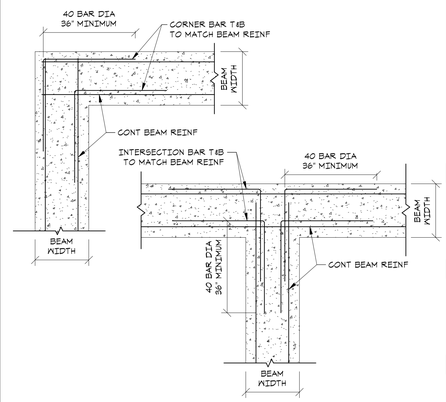
- ● INDICATES PRIMARY HOLES
- ○ INDICATES ADDITIONAL HOLE FOR ALTERNATE FIELD INSTALLED EPOXY ANCHORS. USE WHEN PRIMARY BOLTS ARE DAMAGED, MISSING OR MISLOCATED. PROVIDE HAS RODS & INSTALL W/ HIT-HY 200 EPOXY W/ 10" EMBED.

GC TO NOTIFY ENGINEER BEFORE FIELD INSTALLING ANY ANCHOR BOLTS @ MOMENT FRAME OR BRACED FRAME COLUMNS.

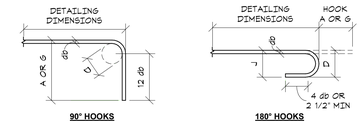
11 TYPICAL TUBE COLUMN BASEPLATE DETAIL
SCALE: 1 1/2" = 1'-0"



8 PIPE ENTRY DETAIL
SCALE: 3/4" = 1'-0"



4 TYPICAL CORNER BAR DETAIL
SCALE: 3/4" = 1'-0"



RECOMENDED END HOOKS, ALL GRADES				
BAR SIZE	FINISHED BEND DIAMETER, D (IN)	180° HOOKS		90° HOOKS
		A OR G, (IN)	J, (IN)	A OR G, (IN)
#3	2 1/4	5	3	6
#4	3	6	4	8
#5	3 3/4	7	5	10
#6	4 1/2	8	6	12
#7	5 1/4	10	7	14
#8	6	11	8	16
#9	9 1/2	15	11 3/4	19
#10	10 3/4	17	13 1/4	22
#11	12	19	14 3/4	24
#14	18 1/4	27	21 3/4	31
#18	24	36	28 1/2	41

D= INSIDE DIAMETER OF BEND

19 END HOOK SCHEDULE
SCALE: 3/4" = 1'-0"

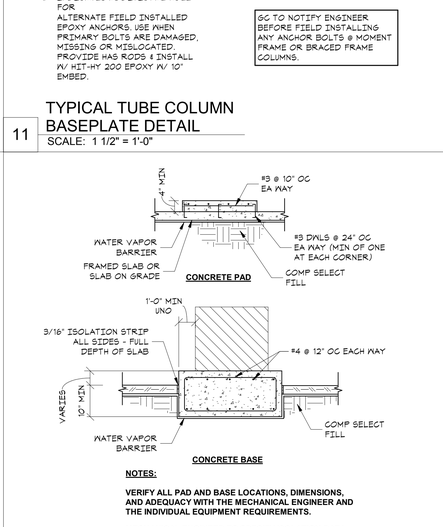
BEAM TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPLICE LENGTHS GRADE 60 REINFORCEMENT/NORMAL WEIGHT CONCRETE									
BAR SIZE	F'c=3000		F'c=4000		F'c=5000		F'c=6000		BAR SIZE
	CLASS A 1.0 Ld	CLASS B 1.3 Ld	CLASS A 1.0 Ld	CLASS B 1.3 Ld	CLASS A 1.0 Ld	CLASS B 1.3 Ld	CLASS A 1.0 Ld	CLASS B 1.3 Ld	
#3	17	22	15	19	13	17	12	16	#3
#4	22	29	19	25	17	22	16	20	#4
#5	28	36	24	31	22	28	20	25	#5
#6	33	43	29	37	26	33	24	31	#6
#7	48	63	42	54	37	49	34	44	#7
#8	55	72	48	62	43	55	39	51	#8
#9	62	81	54	70	48	63	44	57	#9
#10	70	91	61	79	54	70	49	64	#10
#11	78	101	67	87	60	78	55	71	#11

NOTES:

1. USE THIS DEVELOPMENT LENGTH AND LAP SPLICE TABLE FOR BEAMS ONLY. REFER TO OTHER DEVELOPMENT LENGTH TABLES FOR OTHER MEMBERS
2. Ld= TENSION DEVELOPMENT LENGTH.
3. ALL SPLICES ARE IN INCHES.
4. AT SPLICES FOR TOP BARS, MULTIPLY SPLICE LENGTHS (OR Ld/2 AS NOTED IN BEAM SCHEDULE) BY 1.30. A TOP BAR IS DEFINED AS HAVING A MINIMUM OF 12" OF FRESH CONCRETE BELOW BAR.
5. FOR EPOXY COATED BARS, MULTIPLY SPLICE LENGTHS BY 1.5. THE PRODUCT OF THE TOP BAR MULTIPLIER AND EPOXY COATED BAR MULTIPLIER NEED NOT BE MORE THAN 1.7.
6. WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LENGTH IS DETERMINED BY THE SMALLER BAR, BUT NOT TO BE LESS THAN THE CLASS A SPLICE LENGTH OF THE LARGER BAR.

15 BEAM TENSION DEVELOPMENT AND SPLICE LENGTHS SCHEDULE
SCALE: 3/4" = 1'-0"

14 REBAR PLACEMENT DETAIL
SCALE: 1 1/2" = 1'-0"

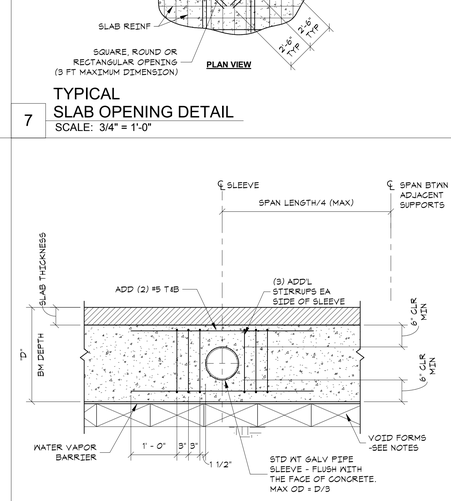


NOTES:

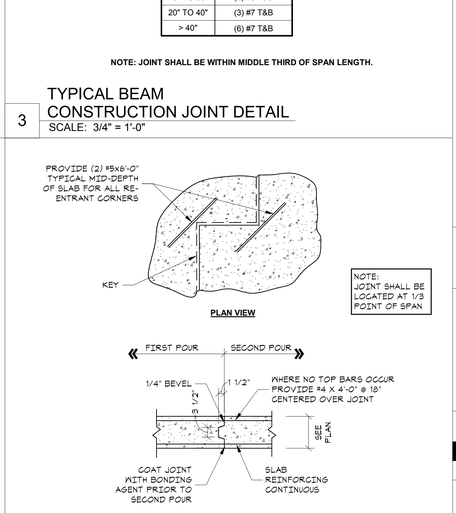
VERIFY ALL PAD AND BASE LOCATIONS, DIMENSIONS, AND ADEQUACY WITH THE MECHANICAL ENGINEER AND THE INDIVIDUAL EQUIPMENT REQUIREMENTS.

MECHANICAL ENGINEER TO SPECIFY ISOLATION DATA.

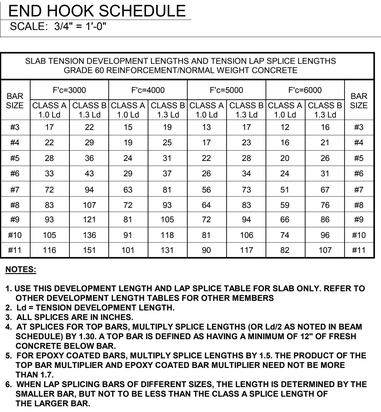
10 PAD AND BASE DETAIL
SCALE: 3/4" = 1'-0"



6 TYPICAL HORIZONTAL SLEEVE THROUGH BEAM DETAIL
SCALE: 3/4" = 1'-0"



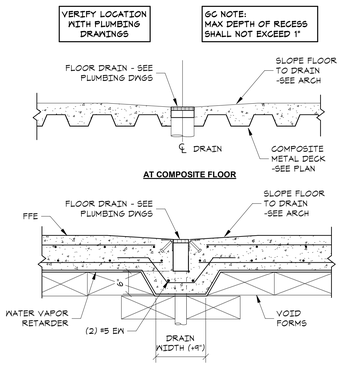
2 TYPICAL SLAB CONSTRUCTION JOINT DETAIL
SCALE: 3/4" = 1'-0"



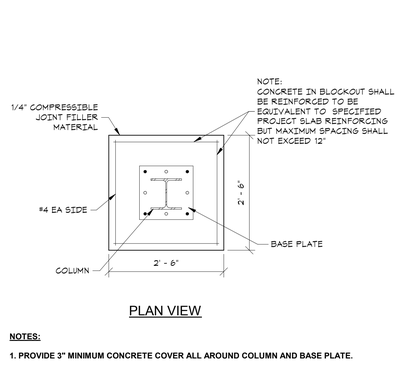
NOTES:

1. Ldh= DEVELOPMENT LENGTH OF STANDARD HOOKS IN TENSION (INCHES)
2. Ldh= Lhb UNLESS CONDITIONS OF ITEM 3 ARE SATISFIED
3. Ldh= 0.7 Lhb FOR #11 BARS AND SMALLER WHEN SIDE COVER (NORMAL TO PLANE OF HOOK) IS NOT LESS THAN 2 1/2 INCHES AND 90° HOOKS, COVER ON BAR EXTENSION BEYOND HOOK IS NOT LESS THAN 2 INCHES.
4. HOOKS ARE NOT CONSIDERED EFFECTIVE FOR DEVELOPING BARS IN COMPRESSION.
5. Ldh SHALL BE MULTIPLIED BY 1.2 FOR EPOXY-COATED HOOKED BARS.

17 DEVELOPMENT LENGTHS OF STANDARD HOOKS IN TENSION
SCALE: 3/4" = 1'-0"



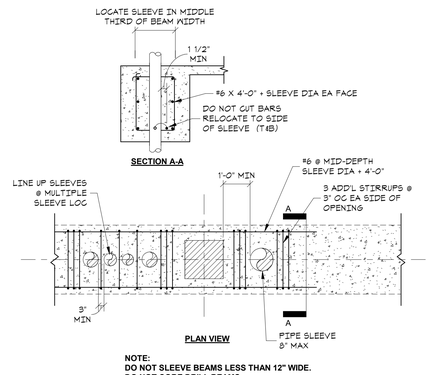
13 FLOOR DRAIN DETAIL
SCALE: 3/4" = 1'-0"



NOTES:

1. PROVIDE 3" MINIMUM CONCRETE COVER ALL AROUND COLUMN AND BASE PLATE.

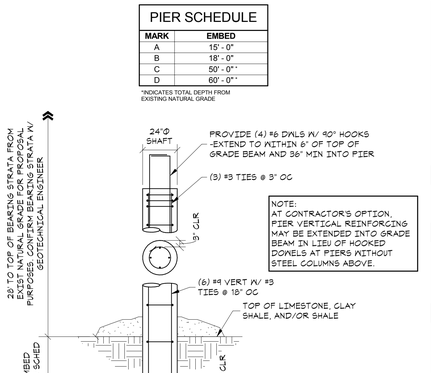
9 COLUMN BLOCKOUT
SCALE: 3/4" = 1'-0"



5 VERTICAL SLEEVE THROUGH BEAM DETAIL
SCALE: 3/4" = 1'-0"

PIER SCHEDULE	
MARK	EMBED
A	15' - 0"
B	18' - 0"
C	50' - 0"*
D	60' - 0"*

*INDICATES TOTAL DEPTH FROM EXISTING NATURAL GRADE



1 STRAIGHT SHAFT DRILLED FOOTING DETAIL
SCALE: 3/4" = 1'-0"

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NORTH RICHLAND HILLS, TEXAS

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TBPE FIRM F-1114

MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
RR	NH
Designer	Quality Control
NH	
Proj. Arch.	
RR	

PROJECT NO.

5340

SHEET TITLE

TYPICAL FOUNDATION DETAILS

SHEET NO.

S0.2

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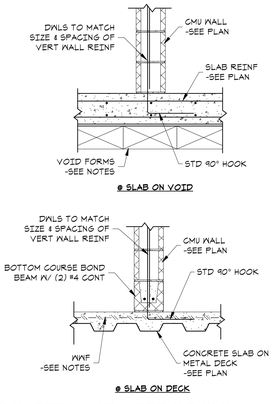
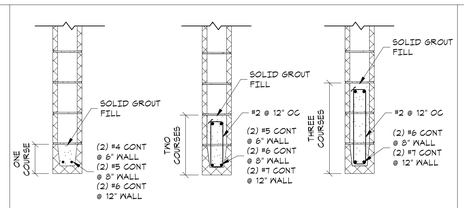


10 TYPICAL DETAIL AT INTERIOR CMU
SCALE: 3/4" = 1'-0"

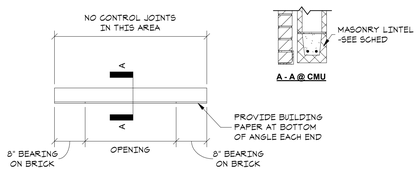


OPENINGS LESS THAN 5'-0" | OPENINGS LESS THAN 10'-0" | OPENINGS LESS THAN 15'-0"

NOTES:

1. **PROVIDE BLOCK LINTELS FOR ALL OPENINGS IN INTERIOR & EXTERIOR BLOCK WALLS FOR WHICH STEEL LINTELS ARE NOT SCHEDULED. SEE ARCHITECTURAL DRAWINGS FOR SIZE & LOCATION OF OPENINGS.**
2. **PROVIDE 8" MIN BEARING EACH END OF LINTEL.**
3. **PROVIDE (2) #5 VERTICALS IN FULLY GROUTED CELLS AT EACH JAMB.**
4. **PROVIDE (2) #4 IN BOND BEAM AT SILL FOR OPENINGS LESS THAT 5'-0", (2) #5 FOR OPENINGS LESS THAN 10'-0" OR (2) #6 FOR OPENINGS LESS THAN 15'-0".**

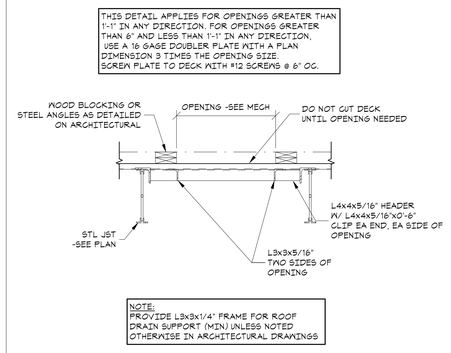
16 MASONRY LINTEL SCHEDULE
SCALE: 3/4" = 1'-0"



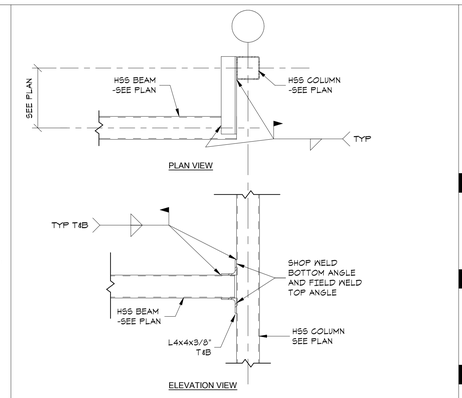
BRICK LOOSE LINTEL SCHEDULE	
OPENING	ANGLE SIZE
LESS THAN 5'-0"	L 3 1/2 x 3 1/2 x 5/16
5'-0" TO LESS THAN 6'-0"	L 5 x 3 1/2 x 5/16 (LLV)
6'-0" TO LESS THAN 8'-0"	L 6 x 3 1/2 x 5/16 (LLV)
8'-0" TO LESS THAN 9'-0"	L 7 x 4 x 3/8 (LLV)

LLV = LONG LEG VERTICAL
GALVANIZE ALL LINTEL ANGLES.
ANGLE SIZES ARE MIN - SEE ARCHITECTURAL DRAWINGS.

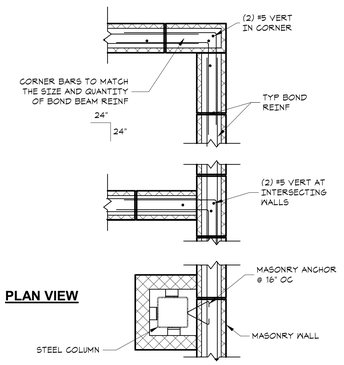
12 BRICK LOOSE LINTEL SCHEDULE
SCALE: 3/4" = 1'-0"



8 TYPICAL ROOF OPENING DETAIL
SCALE: 3/4" = 1'-0"



4 TYPICAL TUBE TO TUBE COLUMN CONNECTION DETAIL (OFFSET)
SCALE: 3/4" = 1'-0"



19 CMU REINFORCING AND ANCHOR PLAN
SCALE: 3/4" = 1'-0"

CMU WALL SCHEDULE			
DESCRIPTION	SIZE	WALL HEIGHT	VERTICAL REINFORCEMENT
EXTERIOR WALLS	12"	H ≤ 30'-0"	#6 @ 32" OC
	8"	20'-0" < H ≤ 25'-0"	#7 @ 24" OC
		14'-0" < H ≤ 20'-0"	#5 @ 32" OC
		0'-0" H ≤ 14'-0"	#4 @ 48" OC
INTERIOR WALLS	12"	H ≤ 30'-0"	#4 @ 48" OC
	8"	MAIN CORRIDOR WALLS	#5 @ 32" OC
		20'-0" < H ≤ 30'-0"	#5 @ 48" OC
		0'-0" < H ≤ 20'-0"	#4 @ 48" OC
	6"	ALL HEIGHTS	#4 @ 48" OC

NOTES:

1. **WALL HEIGHT, H, SHALL BE CONSIDERED AS THE DISTANCE BETWEEN LATERAL SUPPORTS**
2. **ALL DOWELS TO FLOOR SLAB SHALL MATCH SIZE & SPACING OF VERTICAL REINFORCEMENT**
3. **PROVIDE (2) #4 CONT. IN FULLY GROUTED BOND BEAM SPACED @ 8'-0" O.C. VERTICALLY (MAX) ((2) #5 IN 12" CMU WALLS)**
4. **ALL CELLS WITH REINFORCING SHALL BE FULLY GROUTED**
5. **f'm = 1,500 PSI**

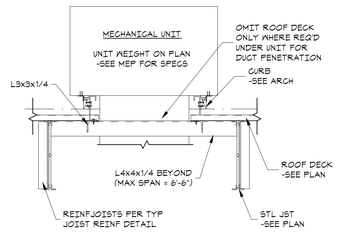
15 CMU WALL SCHEDULE
SCALE: 3/4" = 1'-0"

DESIGN CRITERIA

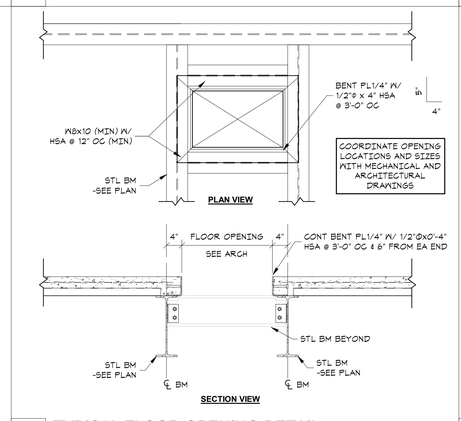
INTERNATIONAL BUILDING CODE 2015
WIND VELOCITY = 120 MPH (3-SEC)
EXPOSURE = C
IMPORTANCE FACTOR = 1.15

NOTES:

1. VERIFY SIZE OF FRAME W/ MECH CONTRACTOR
2. VERIFY UNIT LOCATION ON SITE PRIOR TO FRAME FABRICATION
3. CONTRACTOR TO VERIFY UNIT WEIGHT WITH WEIGHT SHOWN ON PLAN

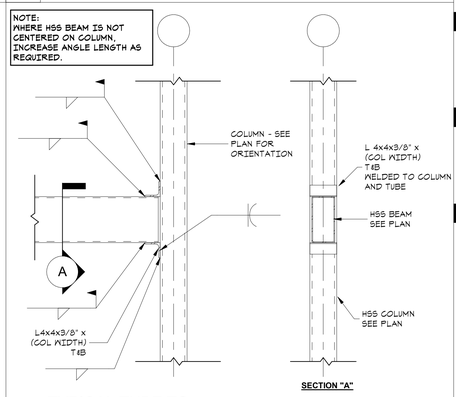


CROSS SECTION

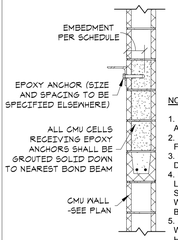


7 TYPICAL FLOOR OPENING DETAIL
SCALE: 3/4" = 1'-0"

NOTE:
WHERE HSS BEAM IS NOT CENTERED ON COLUMN, INCREASE ANGLE LENGTH AS REQUIRED.



3 TYPICAL TUBE TO TUBE COLUMN CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



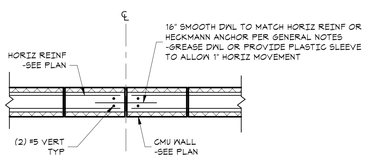
EPOXY ANCHOR SCHEDULE	
SPECIFIED DIAMETER	EMBEDMENT DEPTH
1/2"	4 1/2"
5/8"	5 5/8"
3/4"	6 3/4"

NOTES:

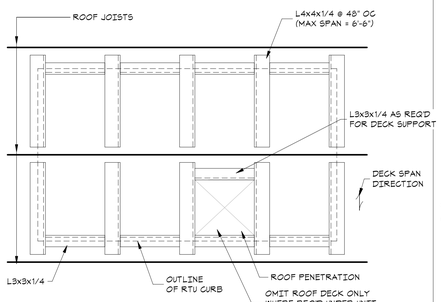
1. THIS DETAIL SHALL APPLY AT ALL LOCATIONS WHERE EPOXY OR ADHESIVE ANCHORS ARE SPECIFIED WITHIN THE DRAWINGS.
2. ALL THREADED RODS FOR EPOXY ANCHORS SHALL BE MADE FROM EITHER A307 OR A36 STEEL.
3. IF GREATER EMBEDMENT DEPTHS ARE SPECIFIED IN THE DRAWINGS, THOSE EMBEDMENT DEPTHS SHALL GOVERN.
4. EPOXY ANCHORS IN CMU AND CONCRETE SHALL BE LOCATED AT LEAST 4" AWAY FROM ALL EDGES. THE CENTER TO CENTER SPACING OF EPOXY ANCHORS SHALL NOT BE LESS THAN 8". WHERE EPOXY ANCHORS ARE LOCATED IN CMU, THERES SHALL BE A MAXIMUM OF ONE ANCHOR PER CELL.
5. ALL EPOXY ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS (INCLUDING HOLE DIAMETERS, HOLE CLEANING PROCEDURES, TORQUE SPECIFICATIONS, AND SPECIAL INSPECTIONS).
6. HILTI HIT-HY 70 ADHESIVE ANCHORING SYSTEM SHALL BE USED AT ALL ADHESIVE ANCHORS IN CMU.

18 TYPICAL EPOXY ANCHOR DETAIL
SCALE: 3/4" = 1'-0"

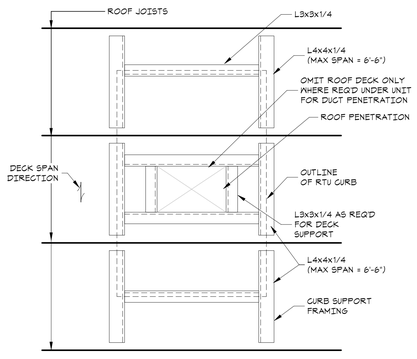
CONTROL JOINTS SHALL NOT BE LOCATED CLOSER THAN 2'-0" FROM ALL OPENINGS



14 TYPICAL CONTROL JOINT DETAIL
SCALE: 3/4" = 1'-0"



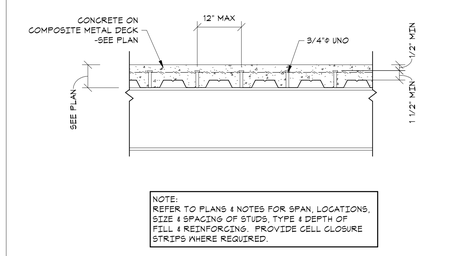
UNIT PARALLEL TO FRAMING



UNIT PERPENDICULAR TO FRAMING

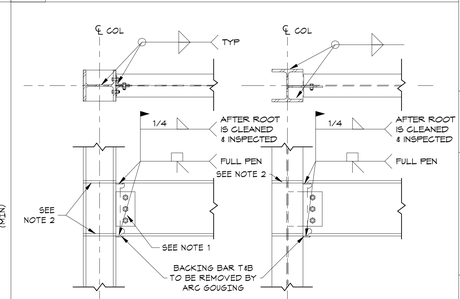
9 TYPICAL SUPPORT AT MECHANICAL UNIT DETAIL
SCALE: 3/4" = 1'-0"

6 TYPICAL STUD PLACEMENT PLAN
SCALE: 3/4" = 1'-0"



NOTE:
REFER TO PLANS & NOTES FOR SPAN, LOCATIONS, SIZE & SPACING OF STUDS, TYPE & DEPTH OF FILL & REINFORCING. PROVIDE CELL CLOSURE STRIPS WHERE REQUIRED.

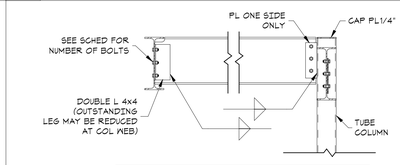
5 TYPICAL STUD PLACEMENT DETAIL
SCALE: 3/4" = 1'-0"



NOTES:

1. **SEE CONNECTION SCHEDULE**
2. **STIFFENER PLATES TO MATCH BEAM FLANGE THICKNESS +1/2" TOP & BOTTOM CENTER ON BEAM FLANGE.**
3. **SEE PLANS FOR LOCATIONS, BEAM AND COLUMN SIZES.**
4. **PROVIDE COMPLETE PENETRATION GROOVE WELDS UNLESS OTHERWISE SHOWN.**
5. **AT TOP LEVELS PROVIDE COLUMN CAP PLATE IN LIEU OF TOP STIFFENER.**

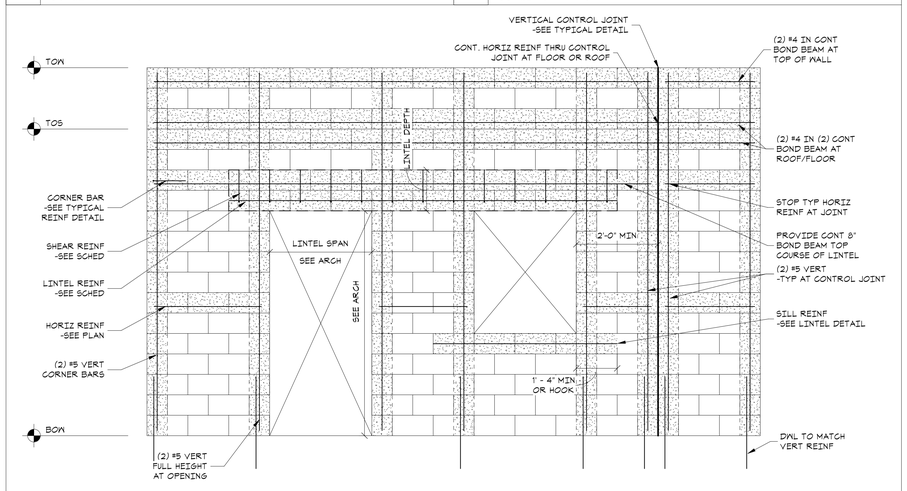
2 MOMENT CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



BEAM DEPTH	MIN. PLATE THICKNESS	MIN. NO. 3/4"ø A325 BOLTS
8"	3/8"	2
10"	3/8"	2
12"	3/8"	3
14"	3/8"	3
16"	3/8"	4
18"	3/8"	5
21"	3/8"	6
24"	3/8"	6
27"	3/8"	7
30"	3/8"	8

SEE PLAN FOR LRFD BEAM REACTIONS. NUMBERS OF BOLTS SHOWN IN TABLE ARE MINIMUMS. REFER TO STRUCTURAL STEEL NOTES FOR AISC CONNECTION DESIGN TABLES.

1 SIMPLE SHEAR CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



17 TYPICAL MASONRY WALL ELEVATION
SCALE: 1/2" = 1'-0"

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05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

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Revision No.

Director: RR | Drawn By: NH
Designer: NH | Quality Control:
Proj. Arch.: RR

PROJECT NO.
5340

SHEET TITLE
TYPICAL FRAMING DETAILS

SHEET NO.
S0.3

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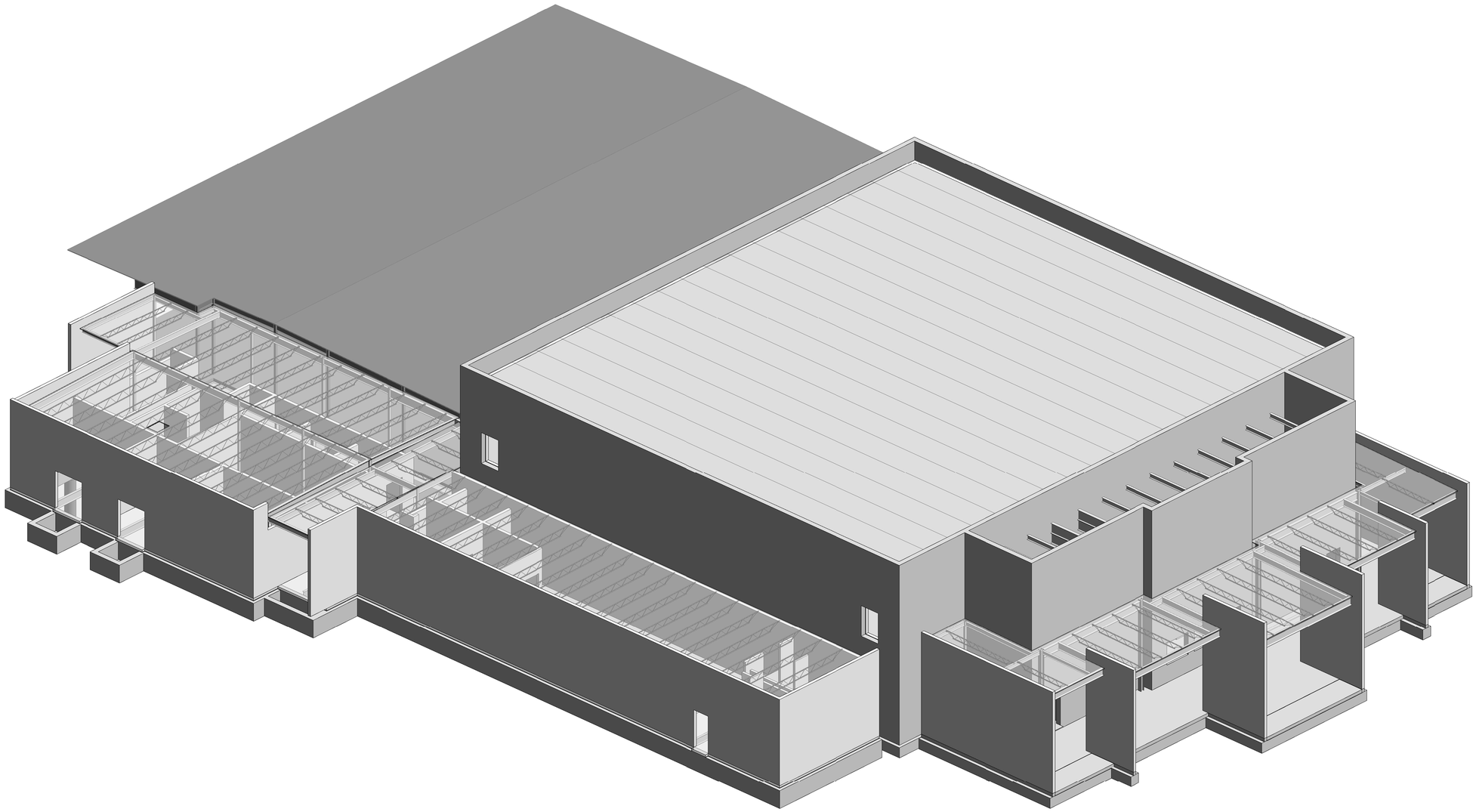

NOTE:
ISOMETRIC VIEWS ARE PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY. STRUCTURAL PLAN SHEETS AND DETAILS GOVERN ANY DATA OBTAINED FROM ISOMETRIC VIEWS.

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ISOMETRIC VIEW

SHEET NO.

S0.4

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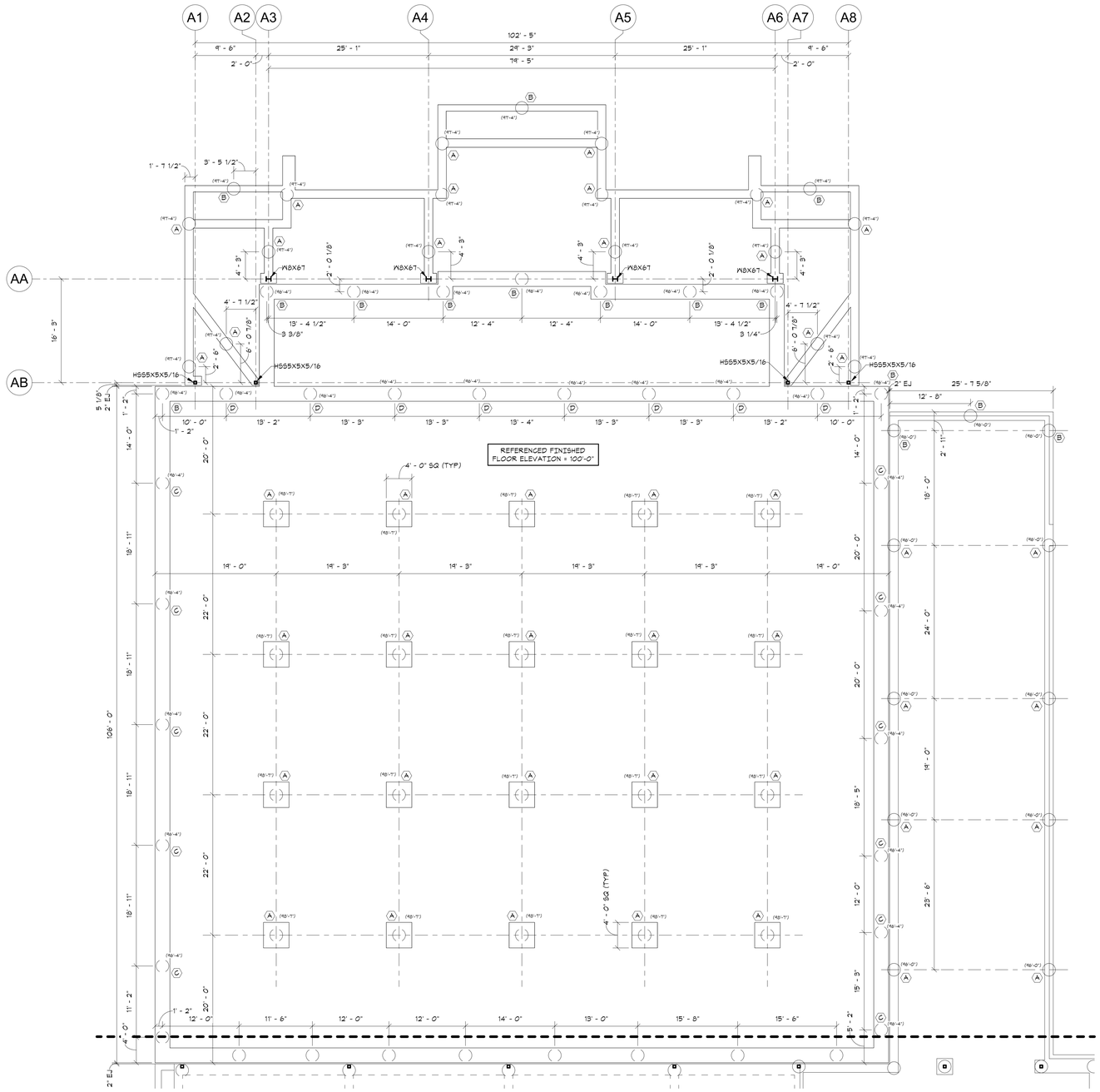
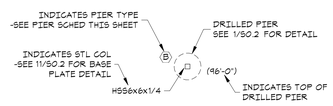


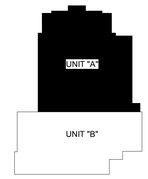
PIER SCHEDULE	
MARK	EMBED
A	15' - 0"
B	18' - 0"
C	50' - 0" *
D	60' - 0" *

*INDICATES TOTAL DEPTH FROM EXISTING NATURAL GRADE



PIER LEGEND

PIER AND COLUMN PLAN - UNIT A
SCALE: 1/8" = 1'-0"



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SHEET TITLE
PIER AND COLUMN PLAN - UNIT A

SHEET NO.
S1.1

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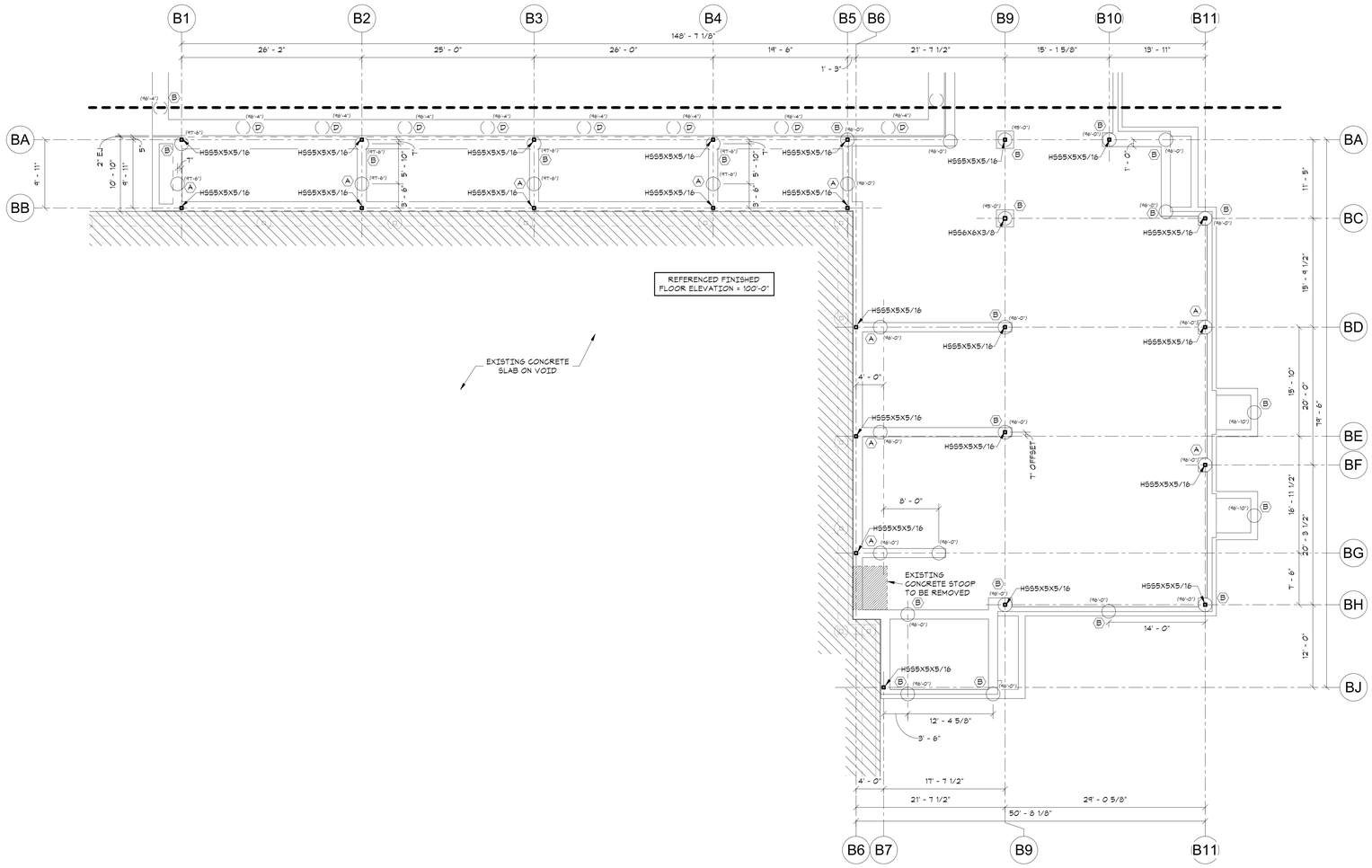

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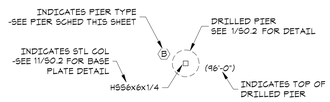
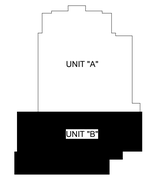
C	50' - 0" *
D	60' - 0" *

*INDICATES TOTAL DEPTH FROM EXISTING NATURAL GRADE



PIER LEGEND

PIER AND COLUMN PLAN - UNIT B
SCALE: 1/8" = 1'-0"



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PIER AND COLUMN PLAN - UNIT B

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S1.2

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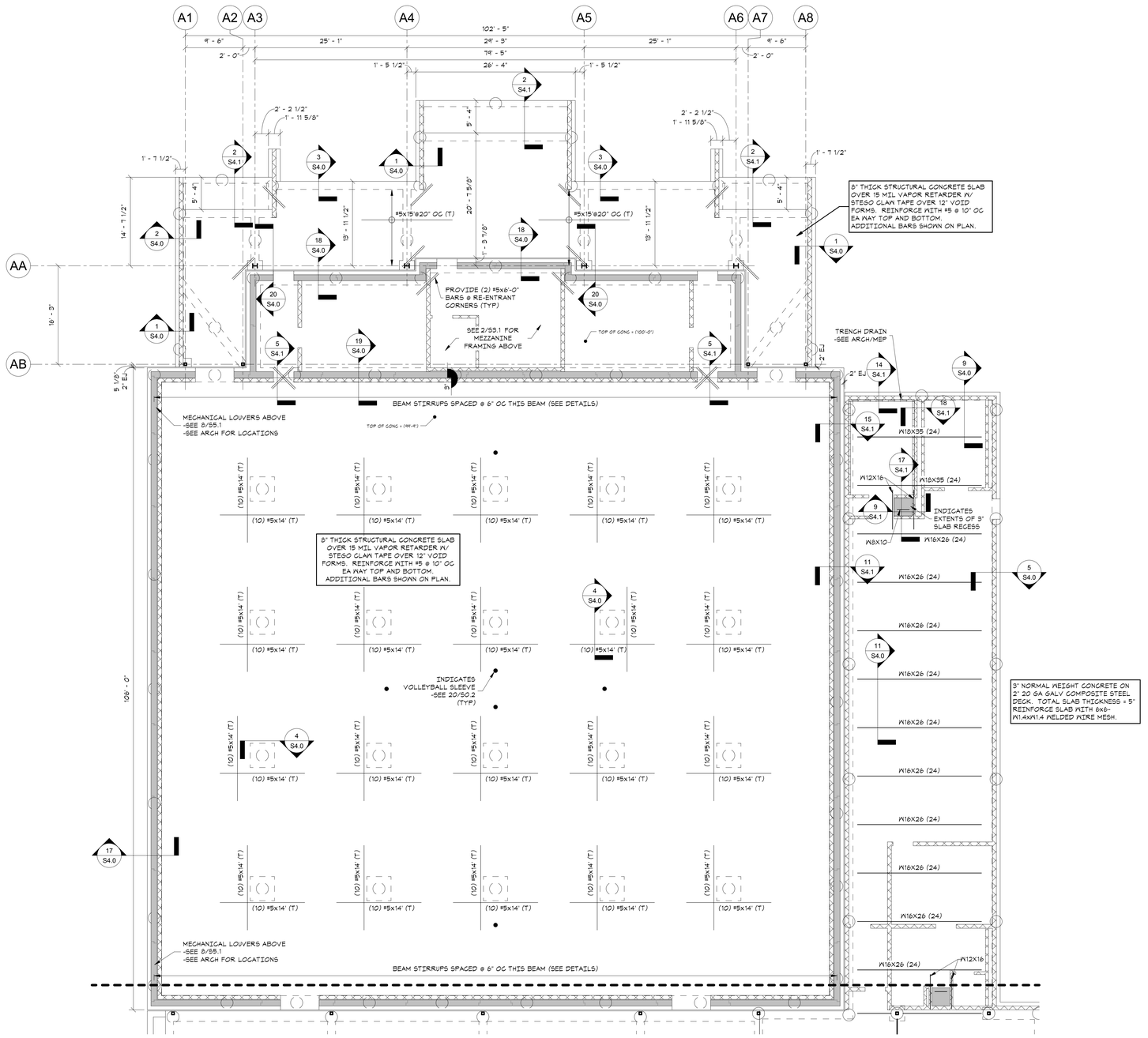


INDICATES CMU WALL. SEE 15/S0.3 FOR REQ'D REINF.

INDICATES 12" PRECAST CONCRETE WALL BY CONTRACTOR'S PRECAST ENG

NOTE: SEE SHEET S0.3 FOR TYPICAL WALL CONSTRUCTION AND SUPPLEMENTARY REINFORCING DETAILS (TYP)

WALL LEGEND

REFERENCED FINISHED FLOOR ELEVATION = 100'-0"

TOP OF STEEL ELEVATION = BOTTOM OF DECK = 99'-1" UNO

INDICATES NUMBER OF EQUALLY SPACED SHEAR STUDS

60k W16x31 (14) 60k

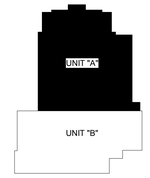
INDICATES LRFD LOAD REACTION IN KIPS AT BEAM END (12k UNO)

BEAM LEGEND

FOUNDATION PLAN - UNIT A

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

KEY PLAN



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SHEET TITLE

FOUNDATION PLAN - UNIT A

SHEET NO.

S2.1

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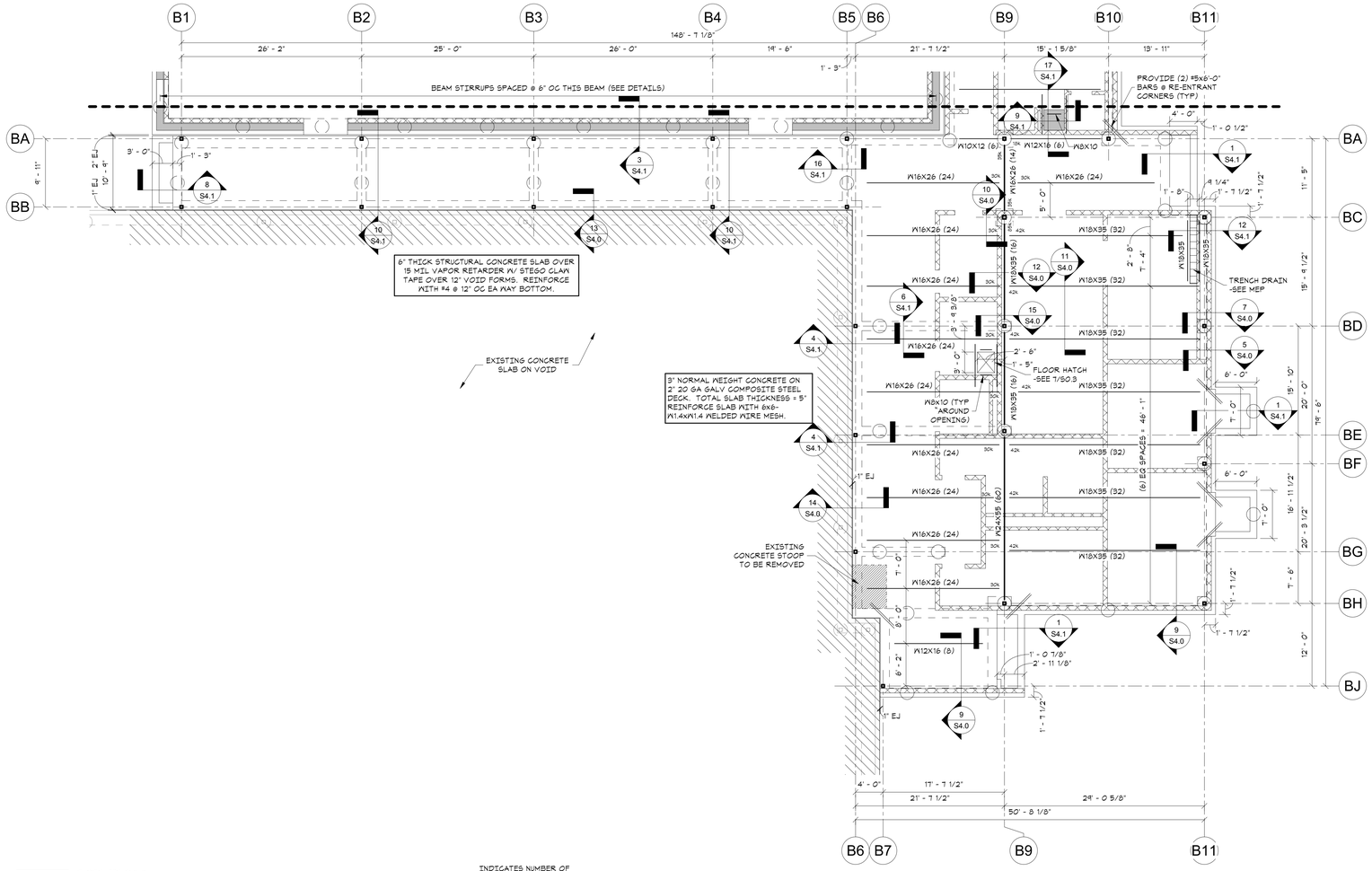


INDICATES CMU WALL SEE 15/S0.3 FOR REQ'D REINF.

INDICATES 12" PRECAST CONCRETE WALL BY CONTRACTOR'S PRECAST ENG

NOTE: SEE SHEET S0.3 FOR TYPICAL WALL CONSTRUCTION AND SUPPLEMENTARY REINFORCING DETAILS (TYP.)

WALL LEGEND

REFERENCED FINISHED FLOOR ELEVATION = 100'-0"

TOP OF STEEL ELEVATION = BOTTOM OF DECK + 99'-7" UNO

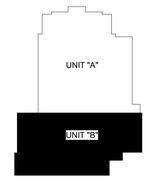
INDICATES NUMBER OF EQUALLY SPACED SHEAR STUDS

60k W16x31 (14) 60k

INDICATES LRFD LOAD REACTION IN KIPS AT BEAM END (12k UNO)

BEAM LEGEND

FOUNDATION PLAN - UNIT B
SCALE: 1/8" = 1'-0"



KEY PLAN

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
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115975
LICENSED PROFESSIONAL ENGINEER
05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
RR	NH
Designer	Quality Control
NH	
Proj. Arch.	
RR	

PROJECT NO.
5340

SHEET TITLE
FOUNDATION PLAN - UNIT B

SHEET NO.
S2.2

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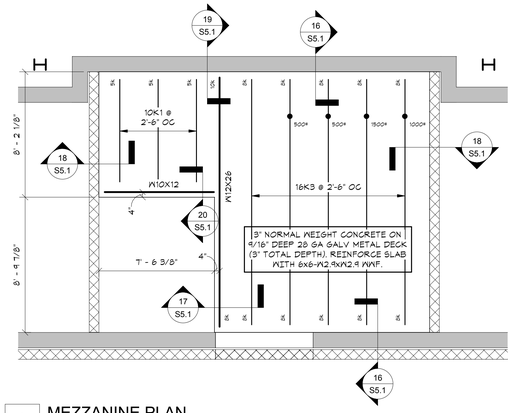
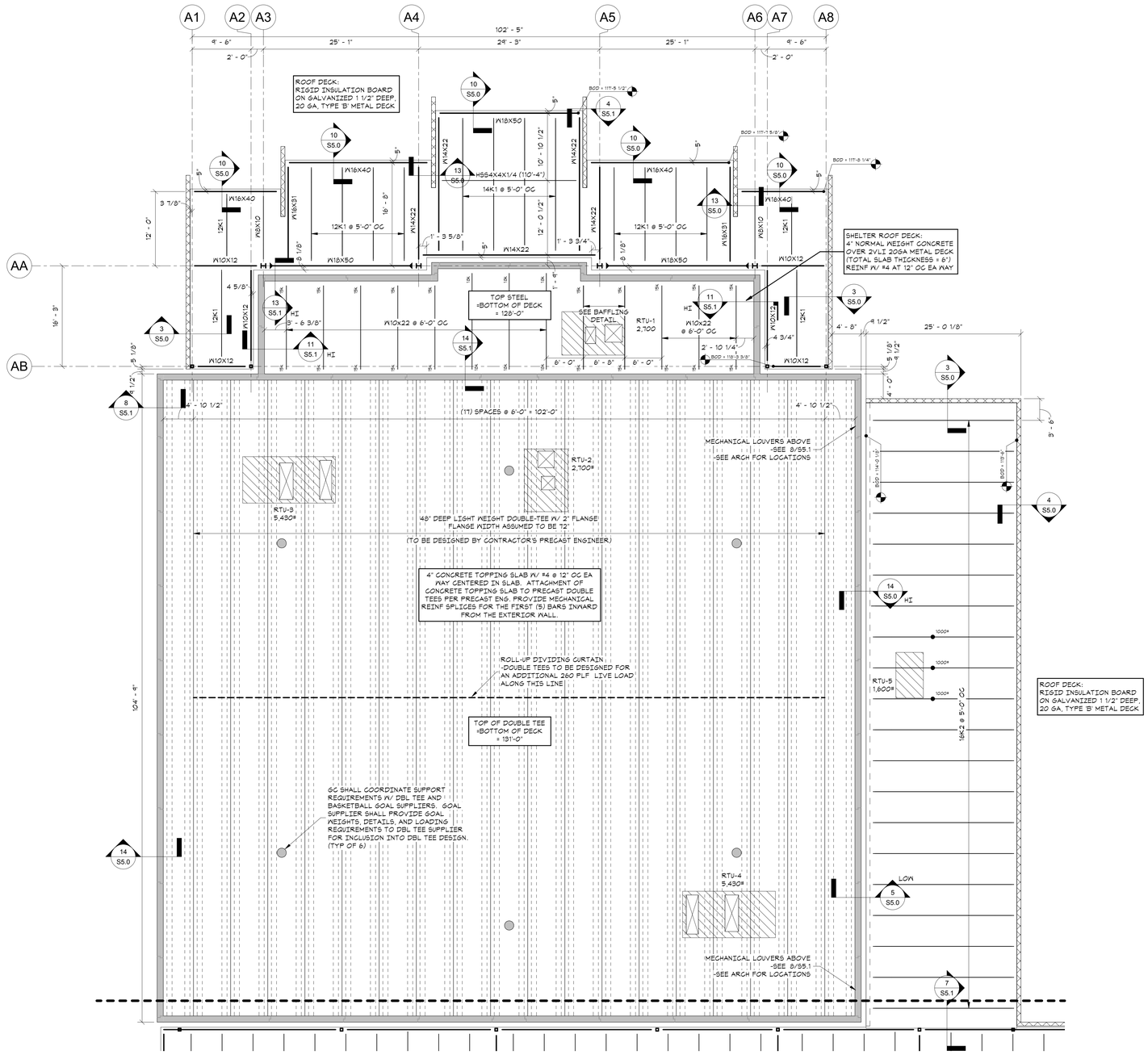


2 MEZZANINE PLAN
SCALE: 1/4" = 1'-0"



INDICATES CMU WALL. SEE 15/S0.3 FOR REQ'D REINF.

INDICATES 12" PRECAST CONCRETE WALL BY CONTRACTOR'S PRECAST ENG

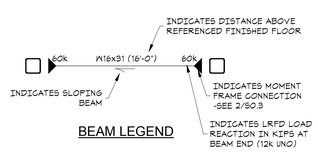
NOTE: SEE SHEET S0.3 FOR TYPICAL WALL CONSTRUCTION AND SUPPLEMENTARY REINFORCING DETAILS (TYP)

WALL LEGEND

INDICATES ADD LOAD TO BE APPLIED ANYWHERE ALONG THE JOIST SPAN

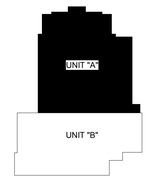
XXX#

NOTE:
JOIST MANUFACTURER TO DESIGN JOISTS SUPPORTING ROOF TOP EQUIPMENT FOR ADD LOAD AS SHOWN ON PLAN APPLIED ANYWHERE ALONG JOIST SPAN, IN ADDITION TO TABULATED VALUES.



BEAM LEGEND

FRAMING PLAN - UNIT A
SCALE: 1/8" = 1'-0"



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TBPE FIRM F-1114

MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
RR	NH
Designer	Quality Control
NH	
Proj. Arch.	
RR	

PROJECT NO.
5340

SHEET TITLE
FRAMING PLAN - UNIT A

SHEET NO.
S3.1

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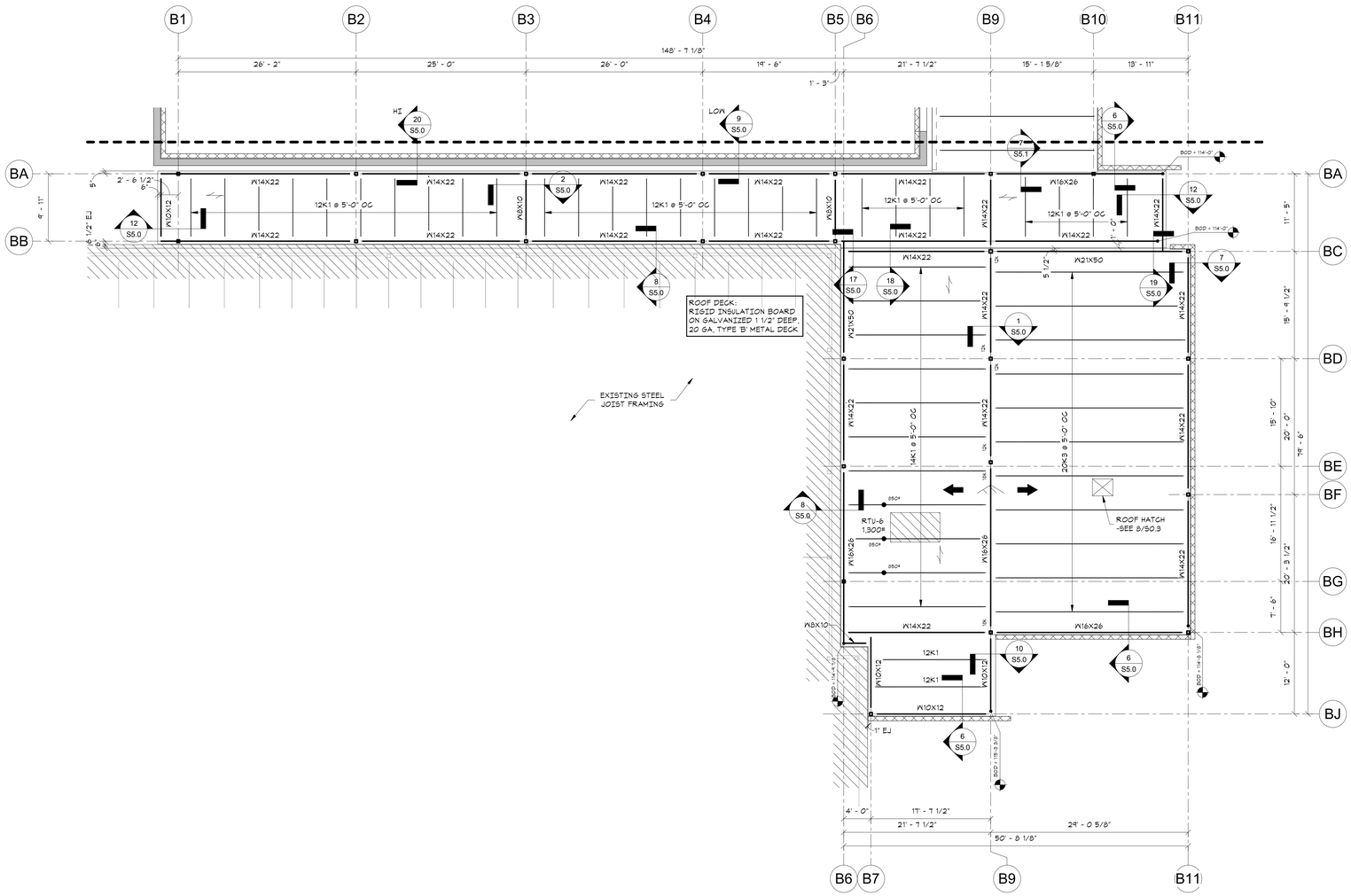


INDICATES CMU WALL.
SEE 15/S0.3 FOR REQ'D REINF.

INDICATES 12" PRECAST CONCRETE
WALL BY CONTRACTOR'S PRECAST ENG

NOTE: SEE SHEET S0.3 FOR TYPICAL
WALL CONSTRUCTION AND
SUPPLEMENTARY REINFORCING
DETAILS (TYP)

WALL LEGEND

INDICATES ADD LOAD TO
BE APPLIED ANYWHERE
ALONG THE JOIST SPAN

XXK#

NOTE:
JOIST MANUFACTURER TO DESIGN JOISTS
SUPPORTING ROOF TOP EQUIPMENT FOR
ADD LOAD AS SHOWN ON PLAN APPLIED
ANYWHERE ALONG JOIST SPAN, IN
ADDITION TO TABULATED VALUES.

INDICATES DISTANCE ABOVE
REFERENCED FINISHED FLOOR

60k W16x31 (16'-0") 60k

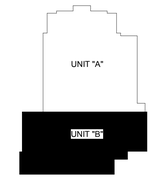
INDICATES SLOPING
BEAM

INDICATES MOMENT
FRAME CONNECTION
-SEE 2/S0.3

INDICATES LRFD LOAD
REACTION IN KIPS AT
BEAM END (12k UNO)

BEAM LEGEND

FRAMING PLAN - UNIT B
SCALE: 1/8" = 1'-0"



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REVISIONS
Revision No.

Director RR	Drawn By NH
Designer NH	Quality Control
Proj. Arch. RR	

PROJECT NO.
5340

SHEET TITLE
FRAMING PLAN - UNIT B

SHEET NO.
S3.2

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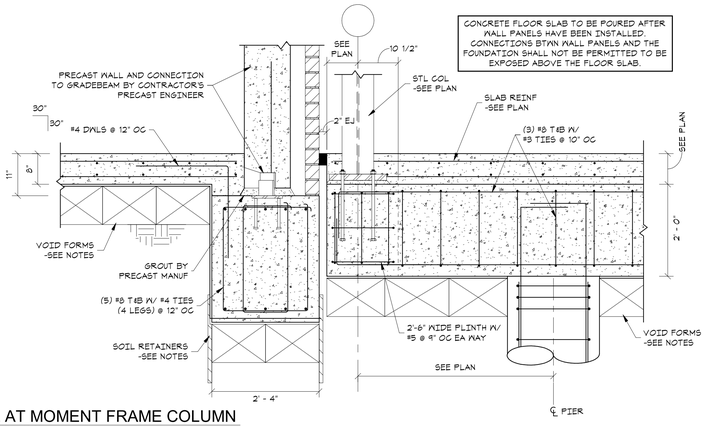
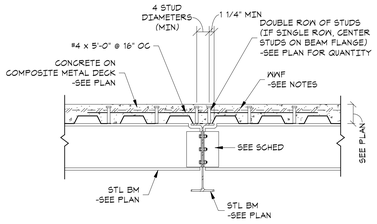
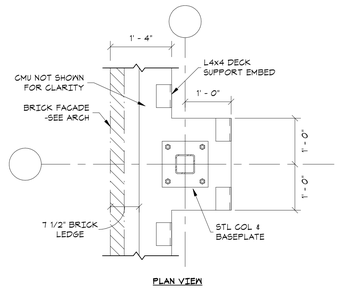
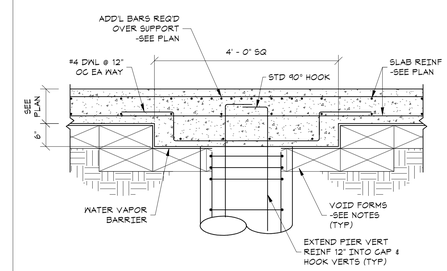


20 DETAIL AT MOMENT FRAME COLUMN
SCALE: 3/4" = 1'-0"



12 INTERIOR GIRDER BEAM DETAIL
SCALE: 3/4" = 1'-0"





4 TYPICAL DROP CAP DETAIL
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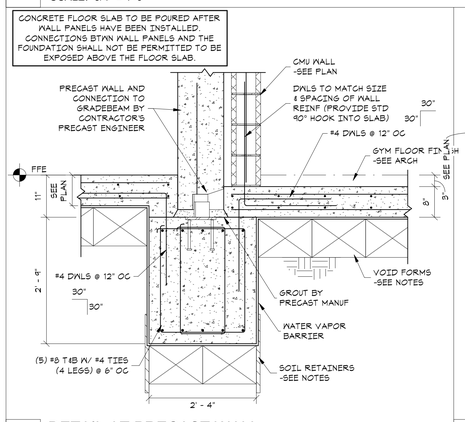
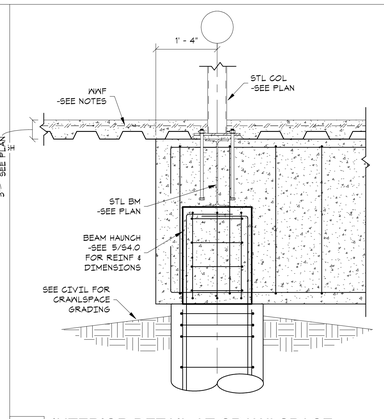
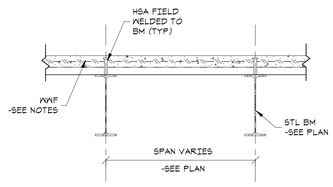


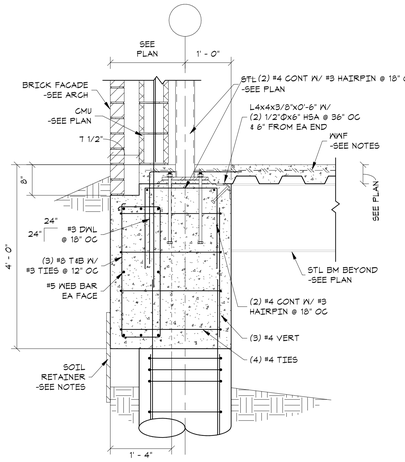
19 DETAIL AT PRECAST WALL
SCALE: 3/4" = 1'-0"



15 INTERIOR DETAIL AT CRAWLSPACE
SCALE: 3/4" = 1'-0"



11 INTERIOR BEAM DETAIL
SCALE: 3/4" = 1'-0"



7 EDGE DETAIL AT CRAWLSPACE
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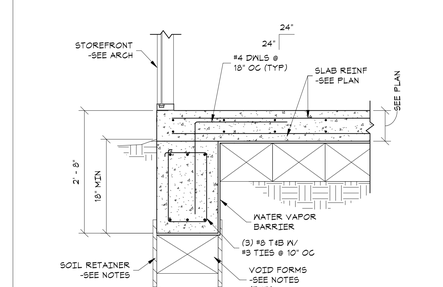
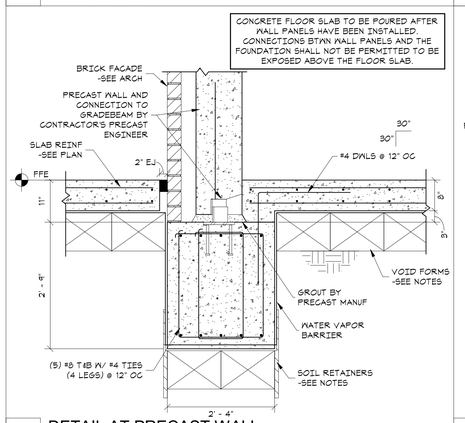


3 EXTERIOR GRADE BEAM DETAIL
SCALE: 3/4" = 1'-0"



18 DETAIL AT PRECAST WALL
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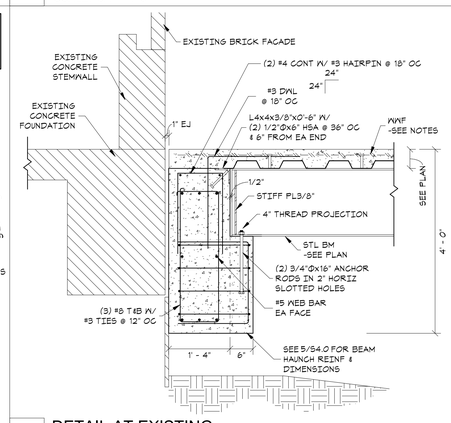

14 DETAIL AT EXISTING
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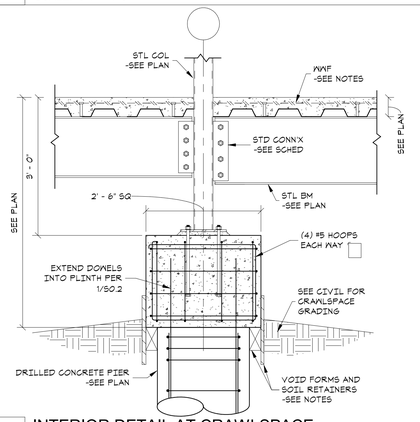

10 INTERIOR DETAIL AT CRAWLSPACE
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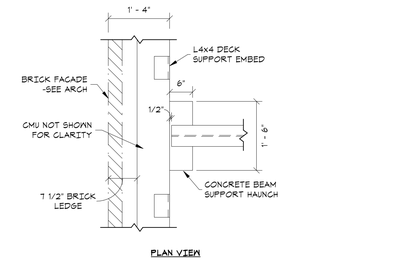
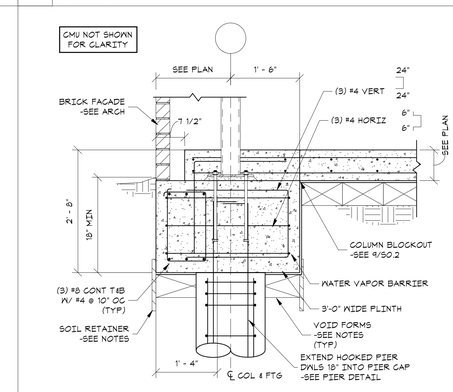
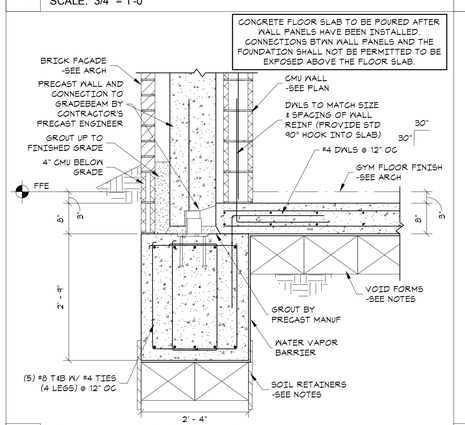
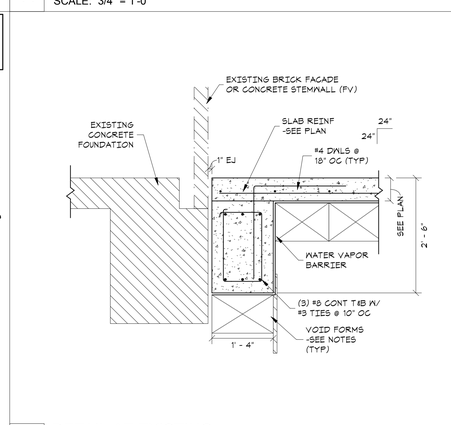




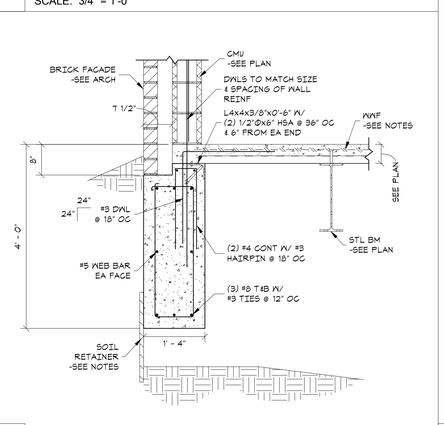
2 EXTERIOR GRADE BEAM AT COLUMN W/ BRICK LEDGE
SCALE: 3/4" = 1'-0"



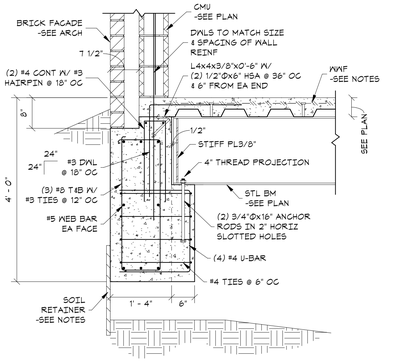
17 DETAIL AT PRECAST WALL
SCALE: 3/4" = 1'-0"



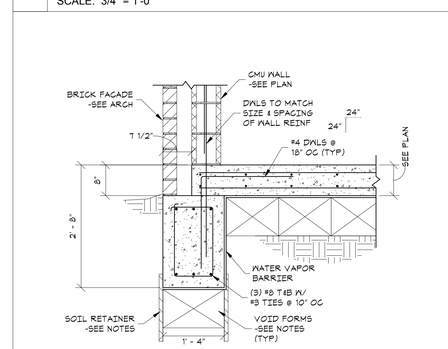
13 DETAIL AT EXISTING
SCALE: 3/4" = 1'-0"



9 EDGE DETAIL AT CRAWLSPACE
SCALE: 3/4" = 1'-0"



5 EDGE DETAIL AT CRAWLSPACE
SCALE: 3/4" = 1'-0"



1 EXTERIOR GRADE BEAM AT BRICK LEDGE
SCALE: 3/4" = 1'-0"

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RR	

PROJECT NO.
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SHEET TITLE
FOUNDATION DETAILS

SHEET NO.
S4.0

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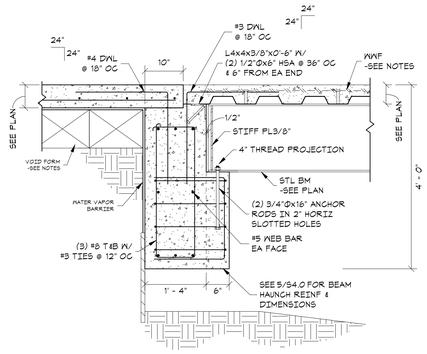
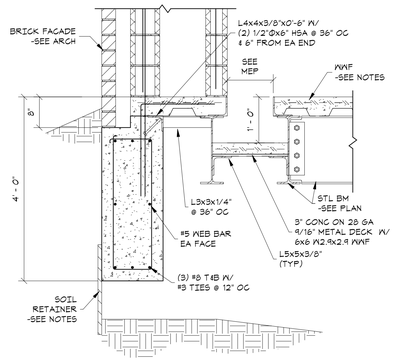
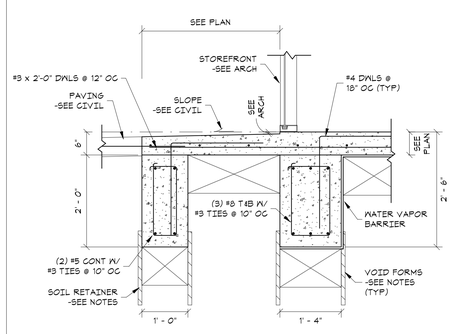


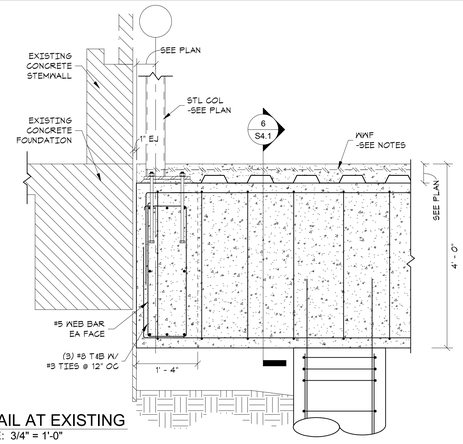
16 DETAIL AT FOUNDATION TRANSITION
SCALE: 3/4" = 1'-0"



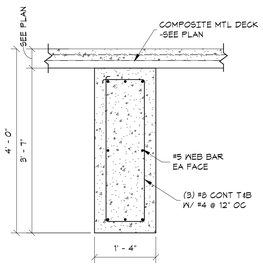
12 DETAIL AT TRENCH DRAIN
SCALE: 3/4" = 1'-0"



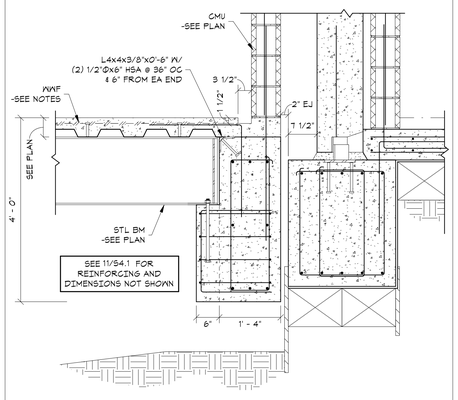
8 STOOP DETAIL AT SLAB ON VOID
SCALE: 3/4" = 1'-0"



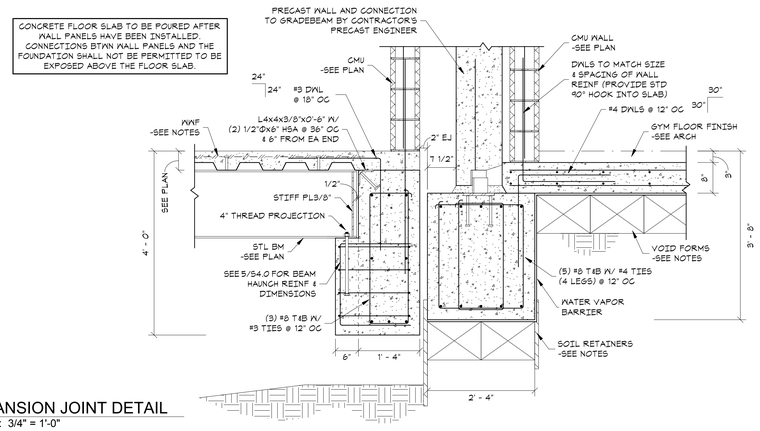
4 DETAIL AT EXISTING
SCALE: 3/4" = 1'-0"



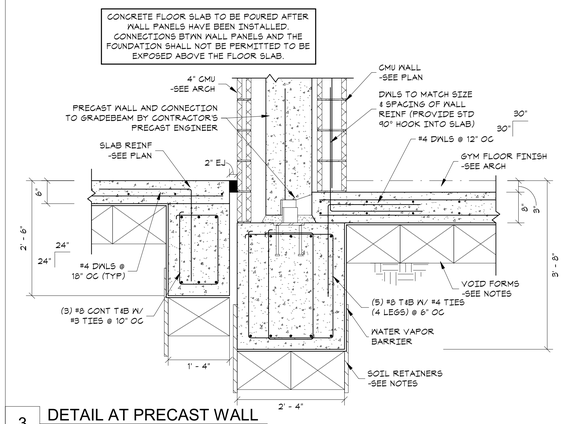
6 INTERIOR BEAM AT CRAWLSPACE
SCALE: 3/4" = 1'-0"



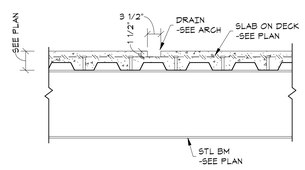
15 DETAIL AT TRENCH DRAIN
SCALE: 3/4" = 1'-0"



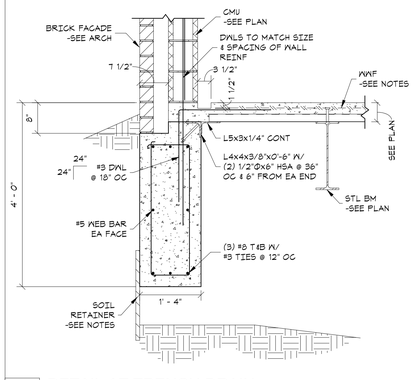
11 EXPANSION JOINT DETAIL
SCALE: 3/4" = 1'-0"



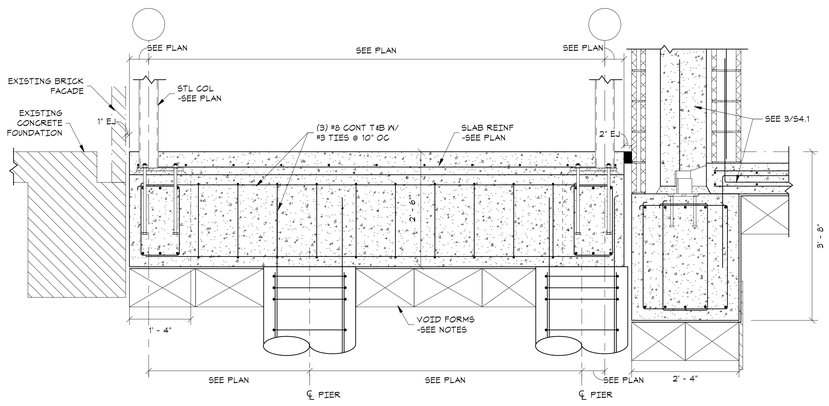
3 DETAIL AT PRECAST WALL
SCALE: 3/4" = 1'-0"



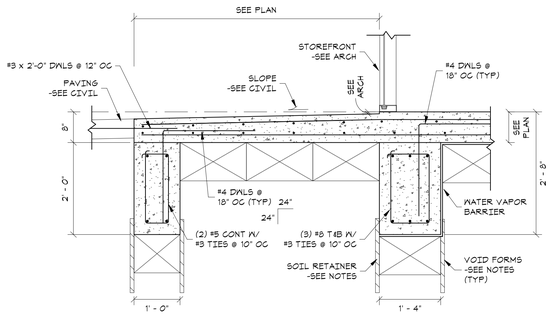
18 DETAIL AT TRENCH DRAIN
SCALE: 3/4" = 1'-0"



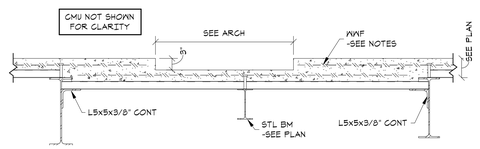
14 DETAIL AT TRENCH DRAIN
SCALE: 3/4" = 1'-0"



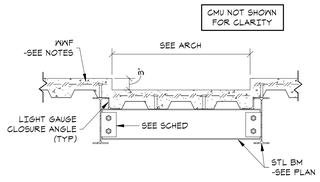
10 DETAIL AT CORRIDOR
SCALE: 3/4" = 1'-0"



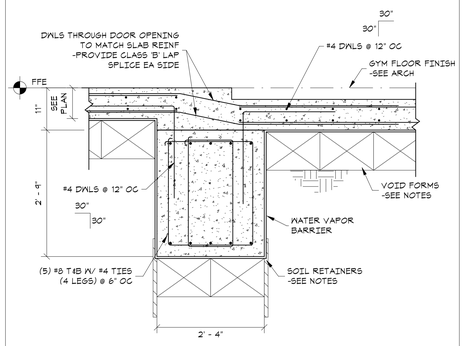
2 STOOP DETAIL AT SLAB ON VOID
SCALE: 3/4" = 1'-0"



17 DETAIL AT SHOWER RECESS
SCALE: 3/4" = 1'-0"



9 DETAIL AT SHOWER RECESS
SCALE: 3/4" = 1'-0"



5 SLAB RECESS DETAIL
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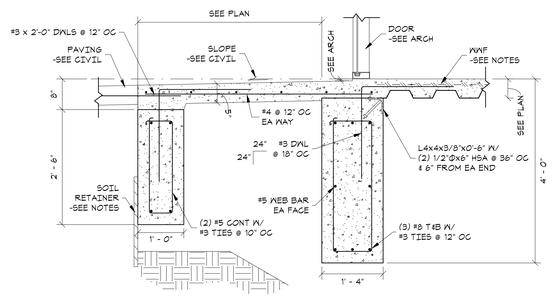

1 STOOP DETAIL AT CRAWLSPACE
SCALE: 3/4" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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RUSSELL T. RANSBARGER
115975
LICENSED
PROFESSIONAL ENGINEER
05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
RR	NH
Designer	Quality Control
NH	
Proj. Arch.	
RR	

PROJECT NO.
5340

SHEET TITLE
FOUNDATION DETAILS

SHEET NO.
S4.1

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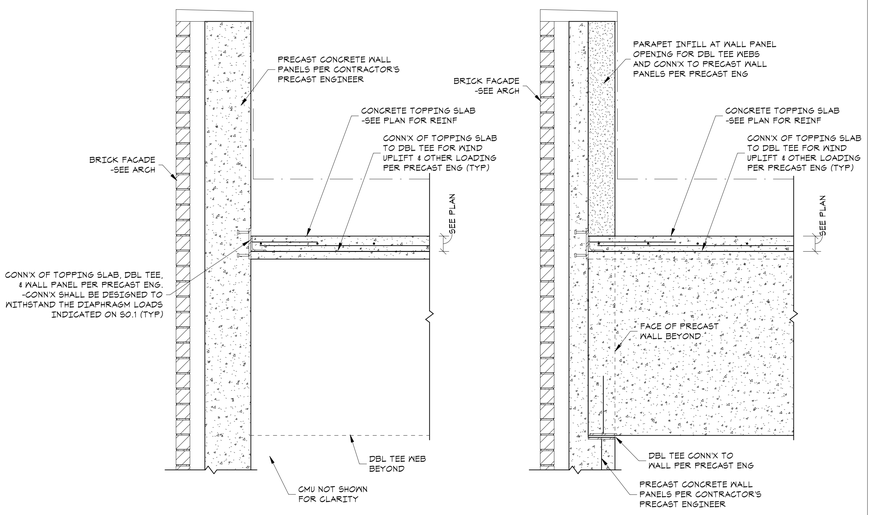
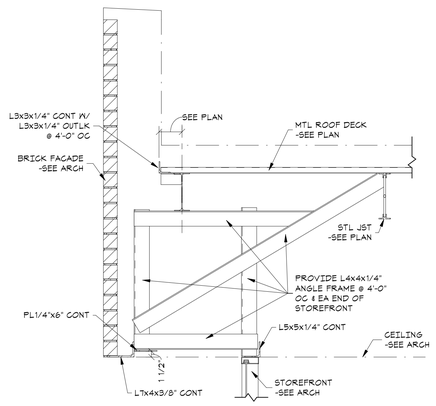
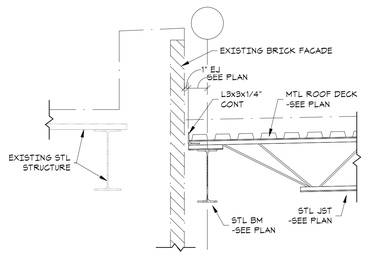


20 DETAIL AT PRECAST DOUBLE TEE
SCALE: 3/4" = 1'-0"



12 HANGING BRICK DETAIL
SCALE: 3/4" = 1'-0"



8 EDGE DETAIL AT EXISTING
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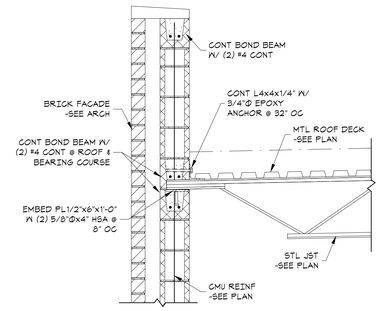
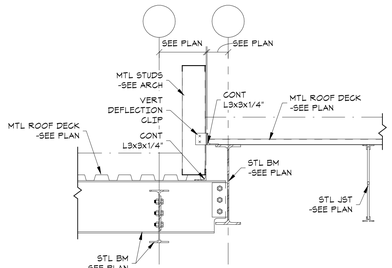
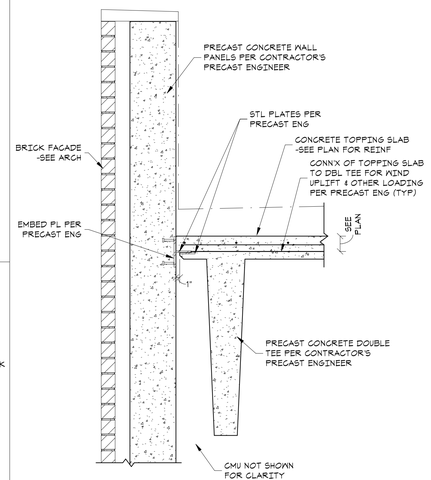


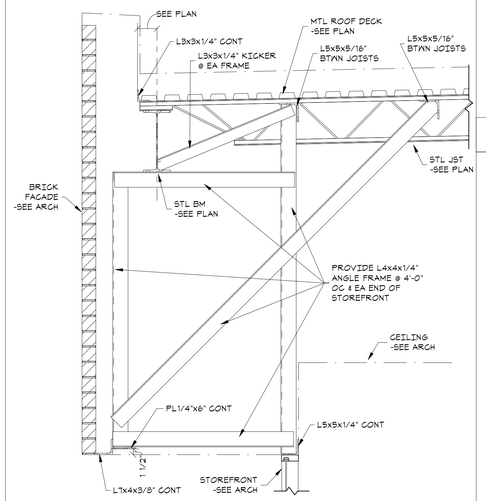
4 EDGE DETAIL AT LOAD BEARING CMU
SCALE: 3/4" = 1'-0"



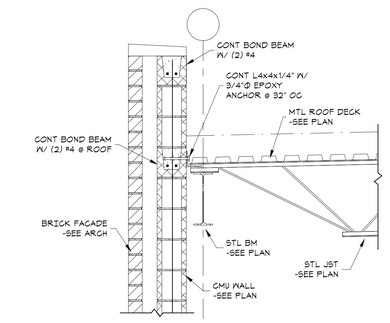
19 EDGE FRAMING DETAIL
SCALE: 3/4" = 1'-0"



14 DETAIL AT PRECAST DOUBLE TEE
SCALE: 3/4" = 1'-0"



10 HANGING BRICK DETAIL
SCALE: 3/4" = 1'-0"



7 EDGE DETAIL AT CMU
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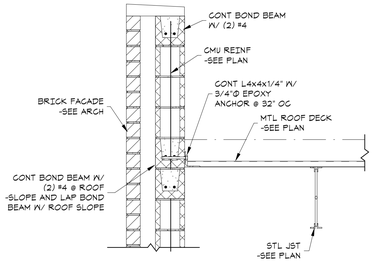
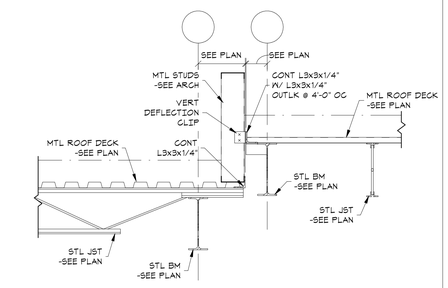
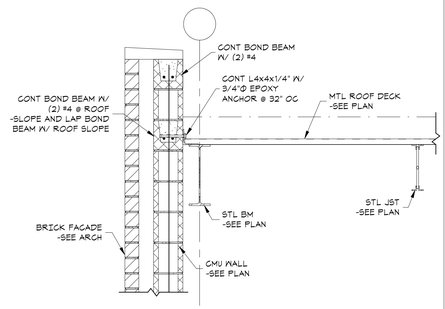


3 EDGE DETAIL AT LOAD BEARING CMU
SCALE: 3/4" = 1'-0"

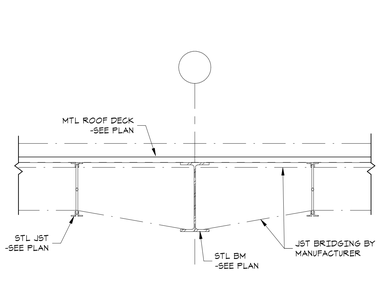


18 HIGH/LOW FRAMING DETAIL
SCALE: 3/4" = 1'-0"

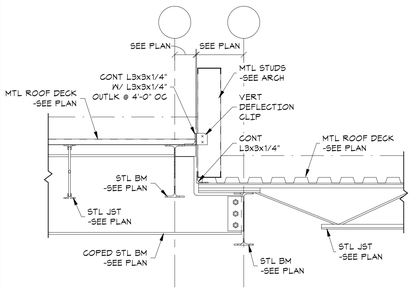
10 HANGING BRICK DETAIL
SCALE: 3/4" = 1'-0"



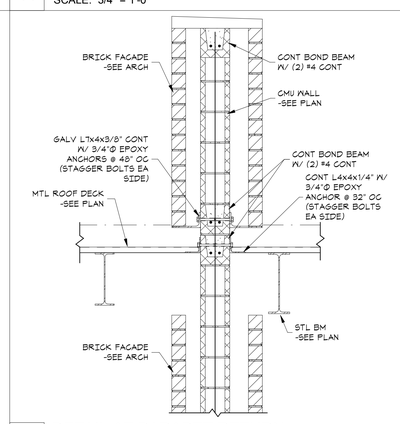
6 EDGE DETAIL AT CMU
SCALE: 3/4" = 1'-0"



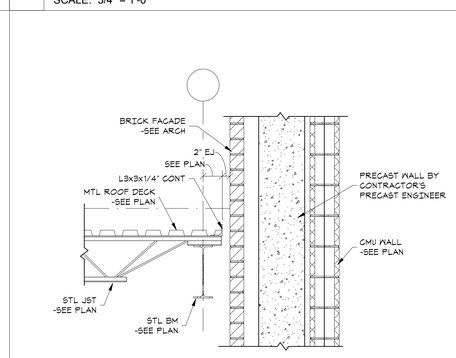
2 INTERIOR DETAIL
SCALE: 3/4" = 1'-0"



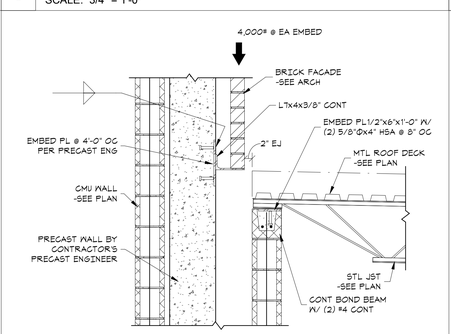
17 EDGE DETAIL AT COPED BEAM
SCALE: 3/4" = 1'-0"



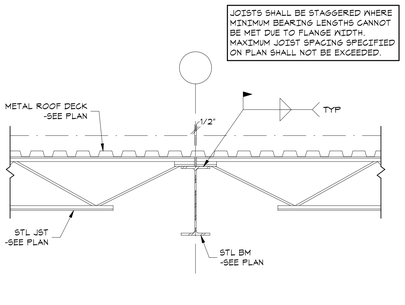
13 DETAIL AT PARAPET RETURN
SCALE: 3/4" = 1'-0"



9 LOW ROOF DETAIL
SCALE: 3/4" = 1'-0"



5 EDGE DETAIL AT LOAD BEARING CMU
SCALE: 3/4" = 1'-0"



1 INTERIOR DETAIL AT K JOIST BEARING
SCALE: 3/4" = 1'-0"

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

CONSTRUCTION DOCUMENTS

STATE OF TEXAS — RUSSELL T. RANSBARGER — 115975 — LICENSED PROFESSIONAL ENGINEER
05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

REVISIONS
Revision No.

Director RR	Drawn By NH
Designer NH	Quality Control
Proj. Arch. RR	

PROJECT NO.
5340

SHEET TITLE
FRAMING DETAILS

SHEET NO.
S5.0

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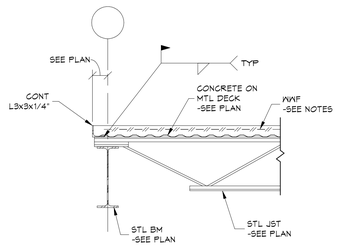
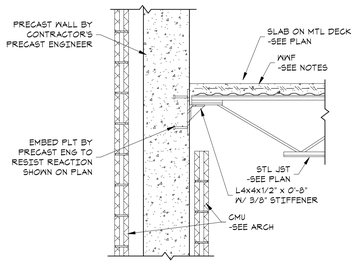
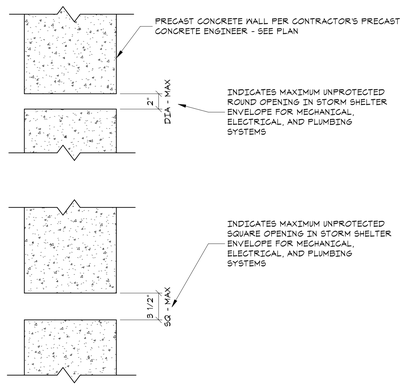


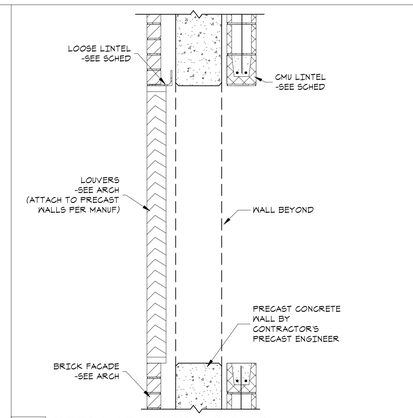
20 DETAIL AT MEZZANINE
SCALE: 3/4" = 1'-0"



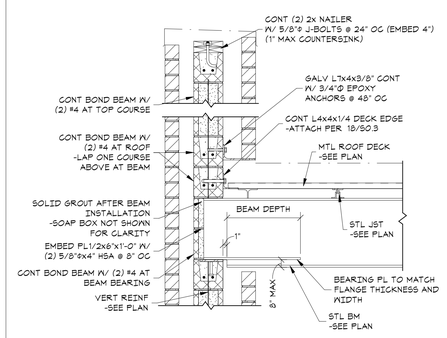
16 DETAIL AT MEZZANINE
SCALE: 3/4" = 1'-0"



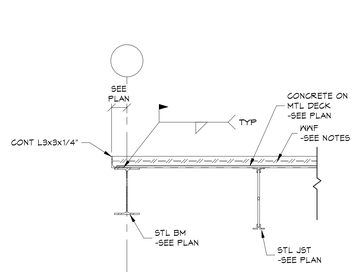
12 STORM SHELTER WALL PENETRATION DETAIL
SCALE: 1 1/2" = 1'-0"



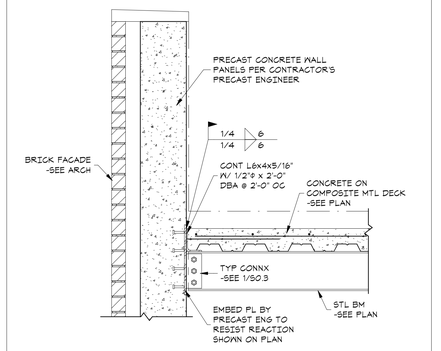
8 DETAIL AT STORM LOUVER
SCALE: 3/4" = 1'-0"



4 GIRDER BEARING AT PARAPET
SCALE: 3/4" = 1'-0"



18 DETAIL AT MEZZANINE
SCALE: 3/4" = 1'-0"



14 INTERIOR PARAPET DETAIL
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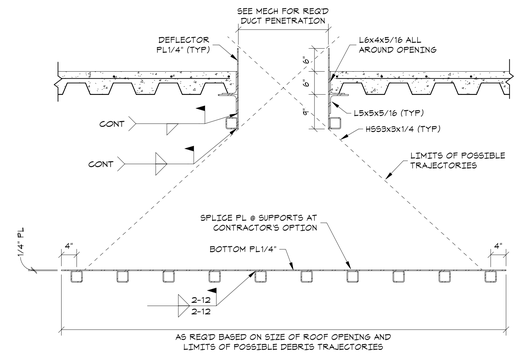
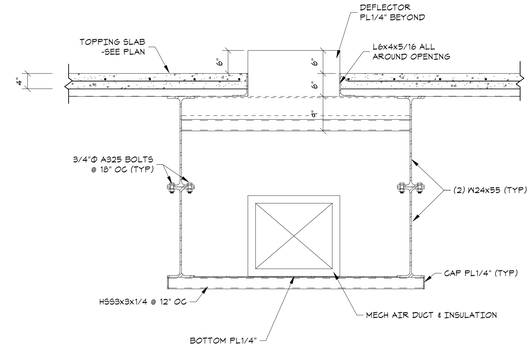
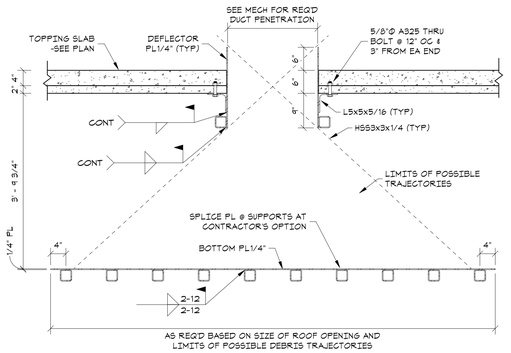


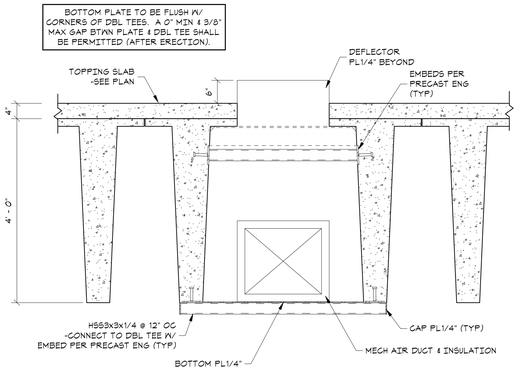
10 BAFFLING DETAIL
SCALE: 3/4" = 1'-0"



17 DETAIL AT MEZZANINE
SCALE: 3/4" = 1'-0"

13 EDGE FRAMING DETAIL
SCALE: 3/4" = 1'-0"





9 BAFFLING DETAIL
SCALE: 3/4" = 1'-0"

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05/08/2019
TBPE FIRM F-1114

MAY 8, 2019

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Revision No.

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Arch.	
Checker	

PROJECT NO.
5340

SHEET TITLE
FRAMING DETAILS

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S5.1

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PLAN NORTH / TRUE NORTH

1 MPE - DEMOLITION SITE PLAN
SCALE: 1" = 40'-0"

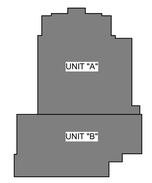
GENERAL DEMOLITION NOTES:

1. THE INFORMATION SHOWN ON THE DEMOLITION DRAWINGS IS NOT TAKEN FROM "AS BUILT" DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE GENERAL AMOUNT OF WORK THAT WILL BE REQUIRED. CONTRACTOR SHALL EXAMINE THE EXISTING BUILDING, VERIFY THE GENERAL LOCATION OF ALL EXISTING WORK, AND BECOME INFORMED AS TO THE RELATION TO AND IMPACT ON THE WORK REQUIRED. SUBMISSION OF A BID WILL CONSTITUTE EVIDENCE THAT THE CONTRACTOR HAS INSPECTED THE SITE IN THE FASHION NOTED ABOVE.
2. COORDINATE DEMOLITION WORK WITH DISTRICT MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF EQUIPMENT OR SYSTEMS THAT SHALL AFFECT OTHER SYSTEMS WITHING THE LIMITS OF NEW CONSTRUCTION OR OTHER AREAS OF THE EXISTING BUILDING.
3. WORK SHOWN ON THE DEMOLITION DRAWINGS DOES NOT ACCURATELY REFLECT ALL OF THE EXISTING CONDITIONS OR THE COMPLETE SCOPE OF THE DEMOLITION WORK. THIS WORK SHALL BE BASED ON THE DEMOLITION DRAWINGS, EXISTING DRAWINGS MADE AVAILABLE TO THE CONTRACTOR AND FIEL
4. THE DRAWINGS ONLY REFLECT KNOWN AREAS OF DEMOLITION. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE COMPLETE SCOPE OF THE DEMOLITION WORK.
5. CONTRACTOR SHALL TRACE ALL PIPING BACK TO MAIN RISERS AND/OR SUPPLIES, AND VERIFY THAT PIPING DOES NOT SERVE ANY OTHER FIXTURES TO REMAIN. CONTRACTOR SHALL OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO REMOVAL OF PIPING TO BE DEMOLISHED.
6. FLUSH AND CLEAN ALL EXISTING FLOOR DRAINS, AREAWAY DRAINS, AND RELATED DRAIN PIPING AS NEEDED DURING CONSTRUCTION, AND AT THE COMPLETION OF THE PROJECT, TO PREVENT BLOCKAGE OF THE DRAINS WITH CONSTRUCTION DIRT, TRASH AND DEBRIS.
7. CONTRACTOR SHALL PATCH AND REPAIR ALL WALLS, FLOORS AND CEILINGS TO MATCH EXISTING FINISHES OR PROPOSED NEW FINISHES, AS APPLICABLE, AND AS NECESSARY WHICH ARE AFFECTED BY THE REMOVAL AND/OR REWORK OF PLUMBING FIXTURES AND PIPING.

ELECTRICAL NOTES BY SYMBOL: "◯"

1. DISCONNECT EXISTING POWER, PA, AND FIRE ALARM FEEDS BACK TO SOURCE OF SUPPLY IN PREPARATION FOR DEMOLITIONG OF EXISTING PORTABLE BUILDING.
2. APPROXIMATE LOCATION OF EXISTING BURIED PRIMARY FEEDERS TO EXISTING ONCOR TRANSFORMER FOR MAIN BUILDING. BURIED FEEDER DEPTH TO BE VERIFIED BY POT-HOLING. BURIED FEED TO BE LOWERED IF NEW GRADING WILL REDUCE BURY DEPTH TO LESS THAN 36" BELOW FINISH GRADE. NEW CONDUITS THROUGH AREA OF CONSTRUCTION AND NEW FEEDERS PULLED FROM POLE RISER TO TRANSFORMER INSTALLED, SUMMER OF 2019.
3. EXISTING ONCOR POWER POLE WITH PRIMARY SERVICE RISER TO MIDDLE SCHOOL TRANSFORMER TO REMAIN.
4. EXISTING POWER POLE WITH EXISTING ONCOR TRANSFORMERS AND SECONDARY SERVICE RISER. DISCONNECT SERVICE AND FEED FROM XFMR AND PREPARE FOR RE-ROUTE OF FEEDER TO AVOID NEW CONSTRUCTION AREAS. POWER POLE AND FEEDERS TO BE REMOVED UPON COMPLETION OF NEW GYM SERVICE.
5. EXISTING BURIED FEEDER TO EXISTING MAIN ELECTRICAL ROOM TO BE RE-ROUTED.
6. EXISTING CLASSROOM BUILDING ELECTRICAL SERVICE AND MAIN DISCONNECT SWITCH. DISCONNECT AND REMOVE EXISTING METER ONCE NEW FEED FROM GYM ADDITION IS INSTALLED.
7. EXISTING ONCOR TRANSFORMER SERVING MAIN BUILDING.
8. EXISTING PORTION OF BURIED FEEDER TO REMAIN IN PLACE.
9. INTERRUPT EXISTING PRIMARY CONDUITS IN THIS APPROXIMATE LOCATION, AND PREPARE TO EXTEND OUTSIDE OF LIMITS OF CONSTRUCTION OF NEW AREA.

KEY PLAN



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RWB PROJECT #18154-00

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By HV/PL
Designer CMD	Quality Control NPH
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
MPE - DEMOLITION SITE PLAN

SHEET NO.
DMPE1.01

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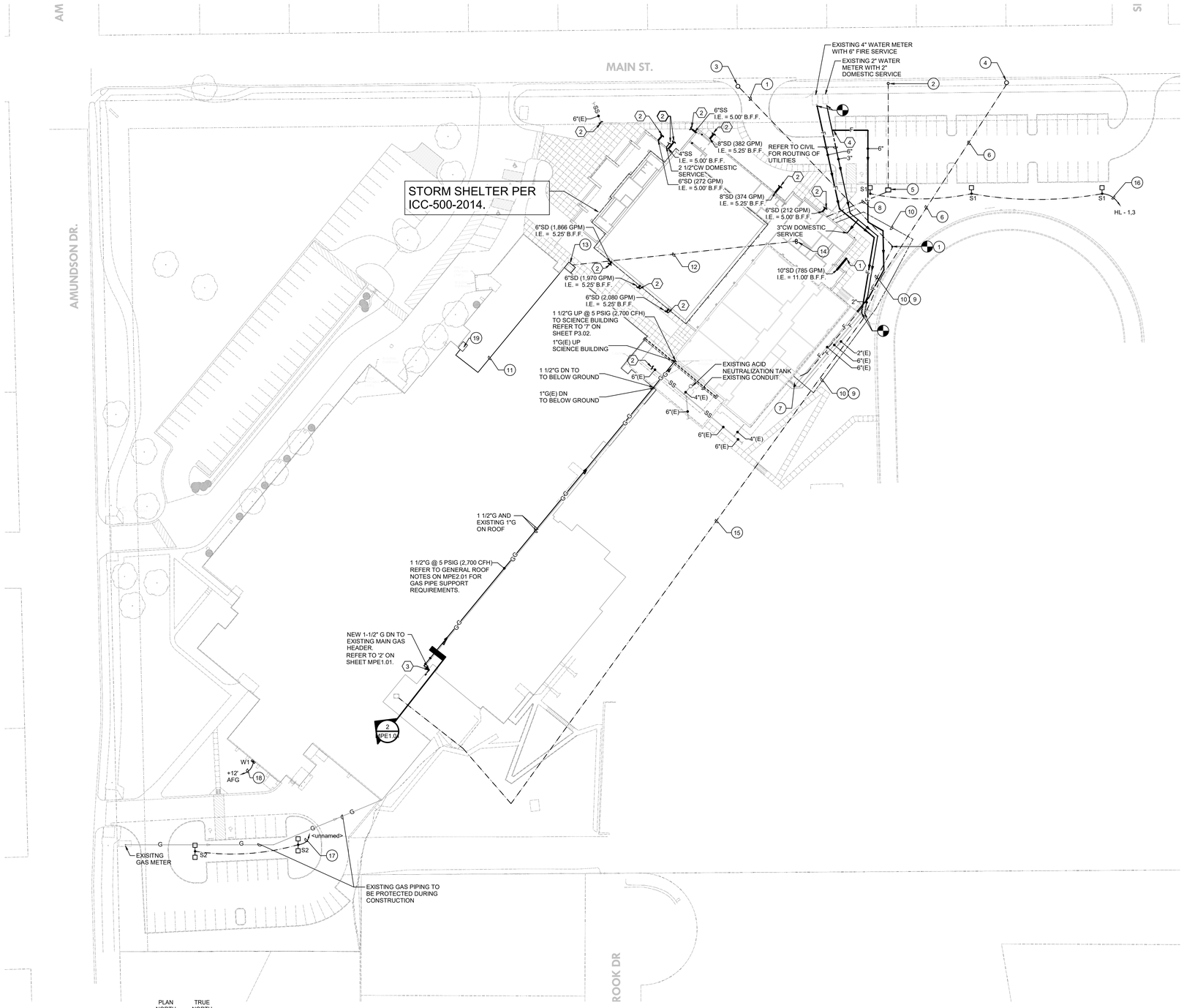
FILE PATH:
DATE/TIME:5/8/2019 4:17:05 PM
PLOT SCALE: 1" = 40'-0"

GENERAL SITE NOTES:

1. EXTEND STORM DRAIN, SANITARY SEWER, DOMESTIC WATER, AND FIRE MAIN PIPING FROM LOCATIONS SHOWN ON THE SITE AS REQUIRED, AND CONNECT TO STUB-OUTS SHOWN ON CIVIL ENGINEERING DRAWINGS.
2. CONTRACTOR SHALL BACK FILL ALL TRENCHES WITH NATIVE SOILS WHERE ALL PIPES AND CONDUITS PASS UNDER EXTERIOR GRADE BEAMS. NATIVE SOIL BACK FILL SHALL EXTEND TO 2'-0" ON EITHER SIDE OF THE GRADE BEAM. REFER TO THE GEOTECHNICAL REPORT FOR THE DEFINITION AND REQUIREMENTS FOR NATIVE SOILS.
3. ALL UNDERGROUND AND ABOVE GRADE ELECTRICAL INSTALLATIONS SHOWN ON THE SITE SHALL BE WEATHERPROOF.
4. ALL EXISTING SITE UTILITIES SHALL BE FLAGGED AND MARKED PRIOR TO CONSTRUCTION. THESE FLAGS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. ALL UTILITIES ARE TO REMAIN ACTIVE UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DOCUMENTS.
5. USE LONG RADIUS BENDS FOR ALL OFFSETS IN ELECTRICAL AND TELECOMMUNICATION LINES SHOWN.
6. ALL ELECTRICAL UTILITY WORK TO BE COORDINATED WITH LOCAL ELECTRIC UTILITY COMPANY, AND INSTALLATION SHALL BE PER LOCAL ELECTRICAL UTILITY REQUIREMENTS.



PLAN NORTH / TRUE NORTH

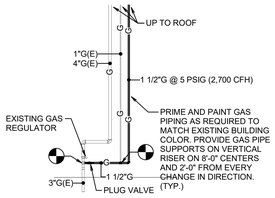
1 MPE - SITE PLAN
SCALE: 1" = 40'-0"

PLUMBING NOTES BY SYMBOL '⬡':

1. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
2. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. PROVIDE OUTSIDE WALL BRACKETS FOR VERTICAL GAS PIPING AND SUPPORT IN THREE PLACES (HIGH, MIDDLE, AND LOW) WITH CORROSION RESISTANT FASTENERS. PRIME AND PAINT GAS PIPING TO MATCH WALL FINISH.
4. REMOTE FIRE DEPARTMENT CONNECTION. REFER TO CIVIL FOR EXACT LOCATION.

ELECTRICAL NOTES BY SYMBOL: "◯"

1. NEW TEMPORARY UNDERGROUND CONDUIT ROUTE OUTSIDE OF CONSTRUCTION LINE. EXISTING CONDUIT TO BE INTERCEPTED AND TIED INTO WITH NEW CONDUITS. MUST BE DONE IN SUMMER OF 2019. NEW SERVICE CONDUCTORS INSTALLED FOR TEMPORARY FEED FOR 2019-2020 SCHOOL YEAR. TIE-IN NEW CONDUITS TO EXISTING. COORDINATE WITH OTHER SITE UTILITES. REMOVE CONDUCTORS AFTER NEW PERMANANT FEED IS CONNECTED.
2. NEW POWER POLE WITH PRIMARY SERVICE RISER TO NEW GYM SERVICE TRANSFORMER. NEW SERVICE SIZED FOR EXISTING CLASSROOM BUILDING. EXISTING CLASSROOM FED FROM GYM SERVICE ONCE GYM BUILDING IS OPERATIONAL. CHANGE FROM TEMPORARY TO NEW SERVICE SUMMER OF 2020. COORDINATE WITH OTHER SITE UTILITES.
3. EXISTING POWER POLE WITH EXISTING ONCOR TRANSFORMERS AND SECONDARY RISER. CONNECT RE-ROUTED FEEDER TO EXISTING MAIN CLASSROOM BUILDING ELECTRICAL SERVICE DISCONNECT.
4. EXISTING ONCOR POWER POLE WITH PRIMARY SERVICE RISER TO MIDDLE SCHOOL TRANSFORMER.
5. NEW UTILITY COMPANY TRANSFORMER.
6. APPROXIMATE LOCATION OF EXISTING BURIED PRIMARY FEEDERS TO EXISTING ONCOR TRANSFORMER FOR MAIN BUILDING. BURIED FEEDER DEPTH TO BE VERIFIED BY POT-HOLING. BURIED FEED TO BE LOWERED IF NEW GRADING WILL REDUCE BURY DEPTH TO LESS THAN 36" BELOW FINISH GRADE. NEW CONDUITS THROUGH AREA OF CONSTRUCTION AND NEW FEEDERS PULLED FROM POLE RISER TO TRANSFORMER INSTALLED, SUMMER OF 2019.
7. EXISTING CLASSROOM BUILDING MAIN ELECTRICAL SERVICE DISCONNECT SWITCH TO REMAIN.
8. SECONDARY FEED FROM NEW UTILITY TRANSFORMER INTO NEW ELECTRICAL ROOM. COORDINATE WITH OTHER SITE UTILITES.
9. EXISTING CLASSROOM BUILDING UNDERGROUND ELECTRICAL SERVICE. CONNECT TO NEW, RE-ROUTED BURIED CONDUITS. FED FROM NEW GYM DISTRIBUTION PANEL. CONDUCT WORK IN SUMMER OF 2020 CHANGE-OVER.
10. NEW BURIED FEED FROM NEW GYM ADDITION ELECTRICAL ROOM TO EXISTING BUILDING SERVICE DISCONNECT. REFER TO ONE-LINE DIAGRAM, REFER TO 02/E2.12.
11. (2) 3" CONDUITS ABOVE CEILING FROM EXISTING MDF ROOM TO BUILDING EXTERIOR.
12. (2) 3" CONDUITS BELOW FLOOR.
13. (2) 3" CONDUITS, UP FROM BELOW GROUND ON WALL TO 24"X24" J-BOX, EXTEND THROUGH WALL, AND OVER TO ABOVE CORRIDOR CEILING, TO EXISTING MDF ROOM.
14. STUB UP LOCATION FOR CONDUITS IN NEW IDF ROOM. REFER TO SHEET E3.12 FOR EXACT LOCATION.
15. EXISTING PORTION OF BURIED FEEDER TO REMAIN IN PLACE.
16. EXTERIOR LIGHTING CIRCUIT TO BE CONTROLLED THROUGH CONTACTOR VIA BUILDING EMS.
17. TIE-IN EXTERIOR LIGHTING CIRCUIT TO NEAREST EXISTING EXTERIOR LIGHTING CIRCUIT, AND CONTROL THROUGH EXISTING EXTERIOR LIGHTING CONTROL SYSTEM.
18. NEW LIGHT FIXTURE MOUNTED ON WALL. EXTEND TO NEAREST EXISTING 277V EXTERIOR LIGHTING CIRCUIT, CONTROL THROUGH EXISTING EXTERIOR LIGHTING CONTROL SYSTEM.
19. EXISTING MDF ROOM.



2 GAS MAIN HEADER
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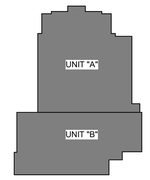

KEY PLAN

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

DAVID M. BOON 95600 LICENSED PROFESSIONAL ENGINEER 2019-05-03

NATHAN P. HART 93906 LICENSED PROFESSIONAL ENGINEER 5/8/19

MAY 8, 2019

REVISIONS

Revision No.

Director JFK	Drawn By HV/PL
Designer CMD	Quality Control NPH
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
MPE - SITE PLAN

SHEET NO.
MPE1.01

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FILE PATH:
DATE/TIME:5/8/2019 4:13:20 PM
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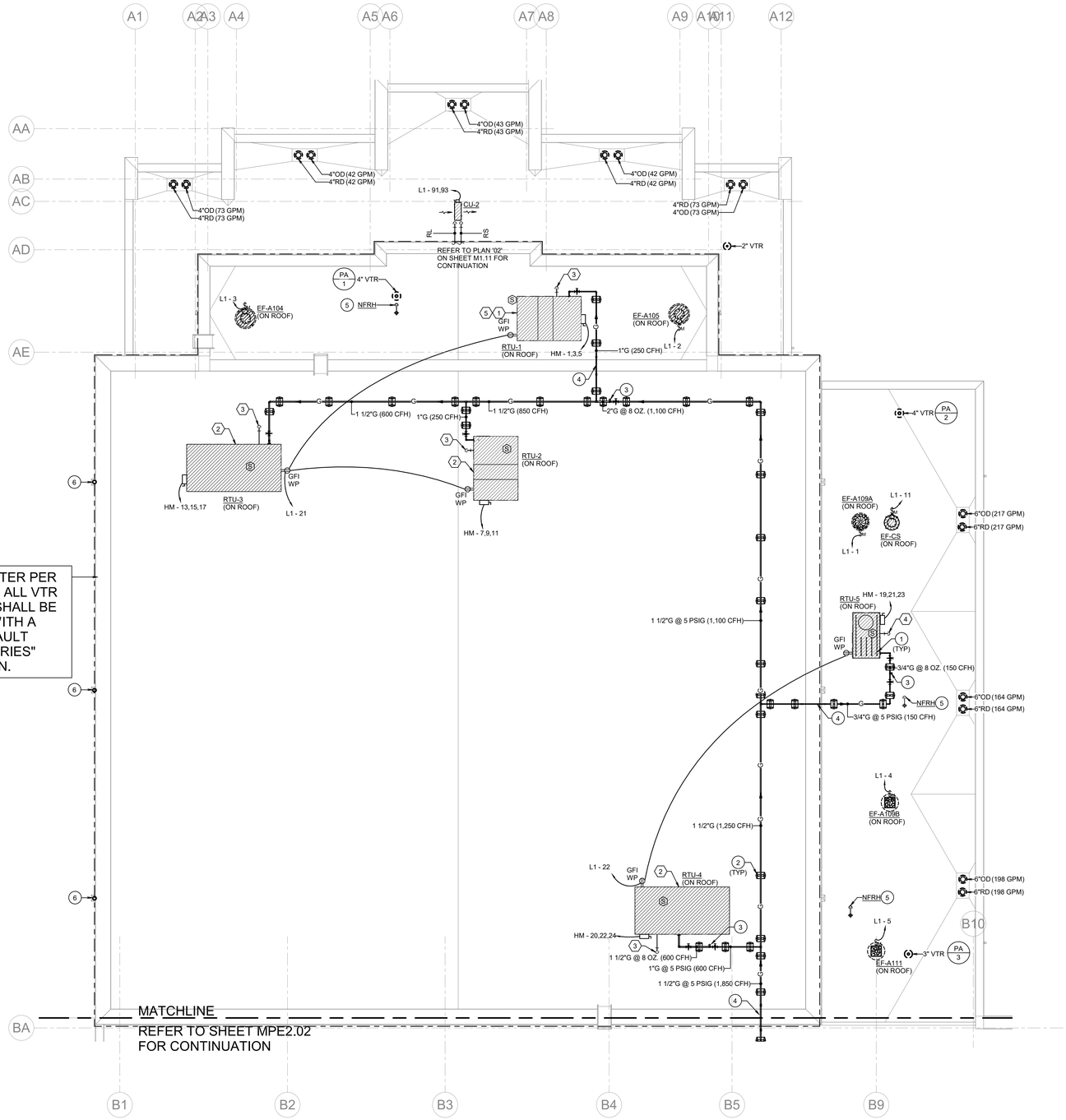


STORM SHELTER PER ICC-500-2014. ALL VTR LOCATIONS SHALL BE INSTALLED WITH A "CYCLONE VAULT CVTR2000 SERIES" PENETRATION.

PLAN NORTH / TRUE NORTH

1 MPE - ROOF PLAN - UNIT A
SCALE: 1/8" = 1'-0"

GENERAL ROOF NOTES:

1. ALL ROOF PENETRATIONS SHALL BE MADE WATERTIGHT AND BE AS RECOMMENDED BY THE ROOF SYSTEM MANUFACTURER. REFER TO ARCHITECTURAL AND ROOFING SYSTEM CONSULTANT DRAWINGS.
2. LOCATE EQUIPMENT ON ROOF IN GENERAL LOCATIONS SHOWN. COORDINATE WITH STRUCTURE AND ARCHITECT FOR FINAL LOCATION.
3. MAINTAIN A MINIMUM OF 25'-0" CLEARANCE FROM PLUMBING VENTS AND EXHAUST FANS TO OUTSIDE AIR INTAKES.
4. COORDINATE ALL WORK WITH STRUCTURAL AND ROOFING SYSTEMS INSTALLED TO INCLUDE SUPPORTS FOR PIPING, CONDUIT, AND EQUIPMENT.
5. ALL OUTDOOR ELECTRICAL COMPONENTS, INCLUDING DISCONNECT SWITCHES, SHALL BE WEATHERPROOF. DISCONNECT SWITCHES SHALL BE IN A NEMA 3R ENCLOSURE.
6. ALL ROOF MOUNTED RECEPTACLES SHALL BE WEATERPROOF GFCI TYPE.
7. NOT ALL GAS OR CONDENSATE PIPE SUPPORTS ARE FULLY SHOWN. CONTRACTOR SHALL INSTALL SUPPORTS, AS DETAILED, IN THE LOCATIONS AS PER THE FOLLOWING CRITERIA:
   a.WITHIN 3'-0" OF ALL EQUIPMENT CONNECTIONS.
   b.WITHIN 2'-0" OF EACH CHANGE OF DIRECTION, ELBOW AND TEE.
   c.NOT MORE THAN EVERY 10'-0" ON CENTER BEYOND THOSE REQUIRED ABOVE."
8. ALL CONDENSATE DRAIN PIPING ROUTED DOWN FROM UNIT TO BELOW THE ROOF SHALL PENETRATE THE ROOF A MINIMUM OF 18" FROM THE ROOF CURB TO ALLOW FOR PROPER ROOF FLASHING.
9. ALL MECHANICAL EQUIPMENT CURBS SHALL BE THE MINIMUM HEIGHT AS REQUIRED BY THE ROOFING VENDOR TO MEET THE ROOFING WARRANTY. PROVIDE TALLER CURBS AS REQUIRED TO MEET THE MINIMUM HEIGHT REQUIREMENTS.
10. ALL MECHANICAL, ELECTRICAL AND/OR PLUMBING ROOF PENETRATIONS SHALL OCCUR BEYOND 24" FROM THE ROOF PERIMETER.

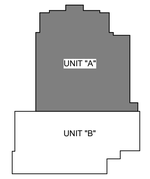
PLUMBING NOTES BY SYMBOL '⬡':

1. GAS CONNECTION TO ROOF TOP UNIT. REFER TO DETAIL '4' ON P3.02. (TYP.)
2. GAS PIPE SUPPORT. REFER TO DETAIL '3' ON P3.02. (TYP.)
3. GAS PRESSURE REGULATOR AT 5 PSI TO 8 OUNCES. REFER TO DETAIL '2' ON SHEET P3.02. (TYP.)
4. GAS PIPE OVER PARAPET. REFER TO DETAIL '1' ON P3.02. (TYP.)
5. NON-FREEZE ROOF HYDRANT, REFER TO DETAIL '7' ON P3.01.
6. 6" STORM LINE TO PICK UP DRAINAGE FROM DOWNSPOUT PROVIDED BY ARCHITECT. PROVIDE CAST IRON DOWNSPOUT BOOT WITH 60" LONG STOCK LENGTH. REFER TO CIVIL DRAWINGS FOR CONTINUATION.

ME NOTES BY SYMBOL '⬡':

1. PROVIDE CUSTOM ROOF CURB W/HEIGHT AS NEEDED TO HAVE THE TOP OF UNIT IN-LINE WITH OR SLIGHTLY ABOVE PARAPET HEIGHT
2. PROVIDE CUSTOM ROOF CURB W/HEIGHT AS NEEDED TO ACCOMODATE TRANSITION FROM RTU CONNECTIONS TO DUCTWORK SIZES SHOWN ON FLOOR PLANS.
3. 1 1/4" CD WITH P-TRAP DOWN THROUGH ROOF.
4. 1" CD WITH P-TRAP DOWN THROUGH ROOF.
5. RTU IS LOCATED TO MAINTAIN MANUFACTURER RECOMMENDED MINIMUM SERVICE CLEARANCE. CONTRACTOR TO BE CAUTIOUSLY COORDINATE THE LOCATION.

KEY PLAN



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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS — DAVID M. BOON — 96600 — LICENSED PROFESSIONAL ENGINEER — 2019-05-08

STATE OF TEXAS — NATHAN P. HART — 93906 — LICENSED PROFESSIONAL ENGINEER — 5/8/19

MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By HV/PL
Designer CMD	Quality Control NPH
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
MPE - ROOF PLAN - UNIT A

SHEET NO.
MPE2.01

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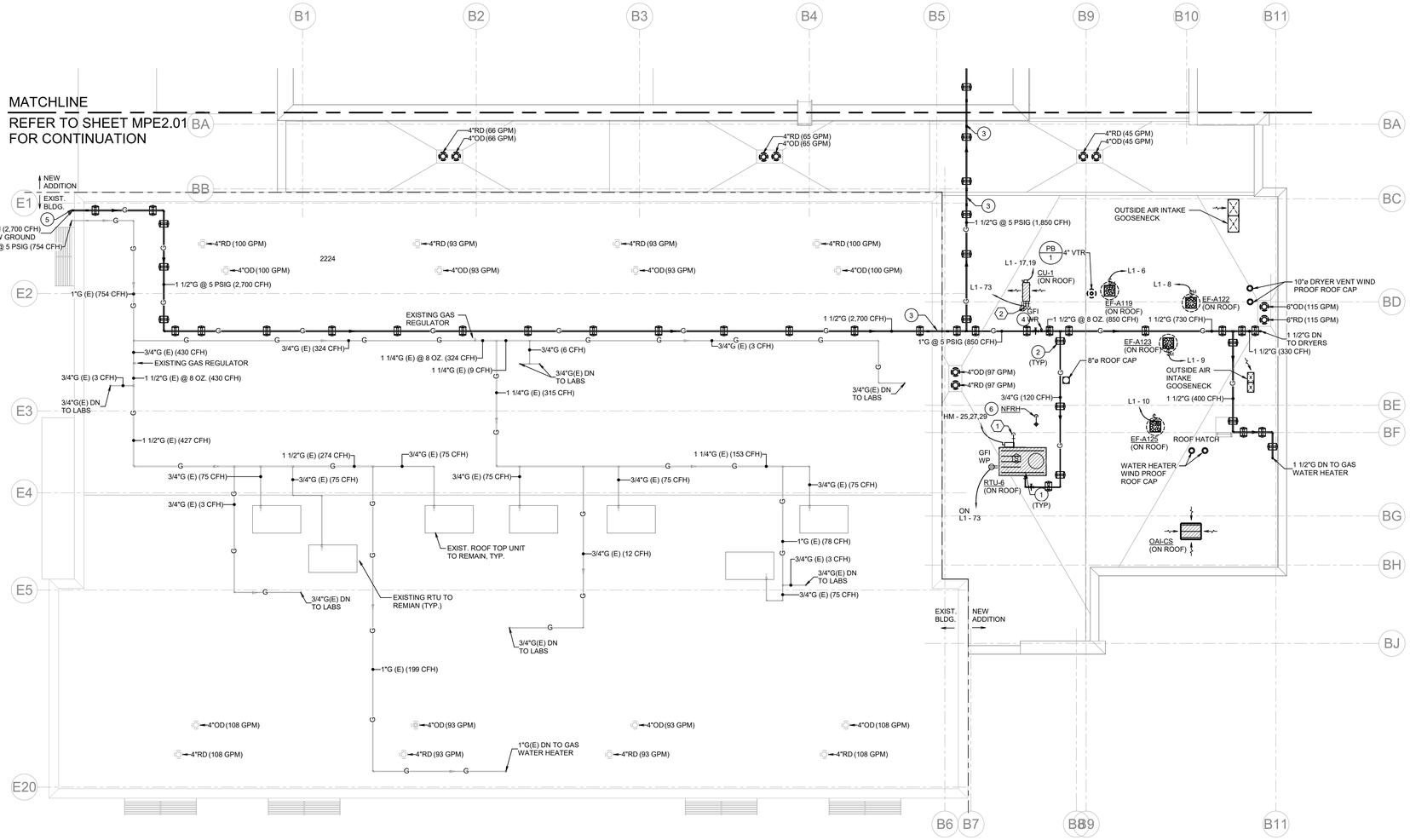


PLAN NORTH / TRUE NORTH

1 MPE - ROOF PLAN - UNIT B
SCALE: 1/8" = 1'-0"

GENERAL ROOF NOTES:

1. ALL ROOF PENETRATIONS SHALL BE MADE WATERTIGHT AND BE AS RECOMMENDED BY THE ROOF SYSTEM MANUFACTURER, REFER TO ARCHITECTURAL AND ROOFING SYSTEM CONSULTANT DRAWINGS.
2. LOCATE EQUIPMENT ON ROOF IN GENERAL LOCATIONS SHOWN. COORDINATE WITH STRUCTURE AND ARCHITECT FOR FINAL LOCATION.
3. MAINTAIN A MINIMUM OF 25'-0" CLEARANCE FROM PLUMBING VENTS AND EXHAUST FANS TO OUTSIDE AIR INTAKES.
4. COORDINATE ALL WORK WITH STRUCTURAL AND ROOFING SYSTEMS INSTALLED TO INCLUDE SUPPORTS FOR PIPING, CONDUIT, AND EQUIPMENT.
5. ALL OUTDOOR ELECTRICAL COMPONENTS, INCLUDING DISCONNECT SWITCHES, SHALL BE WEATHERPROOF. DISCONNECT SWITCHES SHALL BE IN A NEMA 3R ENCLOSURE.
6. ALL ROOF MOUNTED RECEPTACLES SHALL BE WEATERPROOF GFCI TYPE.
7. NOT ALL GAS OR CONDENSATE PIPE SUPPORTS ARE FULLY SHOWN. CONTRACTOR SHALL INSTALL SUPPORTS, AS DETAILED, IN THE LOCATIONS AS PER THE FOLLOWING CRITERIA:
   a.WITHIN 3'-0" OF ALL EQUIPMENT CONNECTIONS.
   b.WITHIN 2'-0" OF EACH CHANGE OF DIRECTION, ELBOW AND TEE.
   c.NOT MORE THAN EVERY 10'-0" ON CENTER BEYOND THOSE REQUIRED ABOVE."
8. ALL CONDENSATE DRAIN PIPING ROUTED DOWN FROM UNIT TO BELOW THE ROOF SHALL PENETRATE THE ROOF A MINIMUM OF 18" FROM THE ROOF CURB TO ALLOW FOR PROPER ROOF FLASHING.
9. ALL MECHANICAL EQUIPMENT CURBS SHALL BE THE MINIMUM HEIGHT AS REQUIRED BY THE ROOFING VENDOR TO MEET THE ROOFING WARRANTY. PROVIDE TALLER CURBS AS REQUIRED TO MEET THE MINIMUM HEIGHT REQUIREMENTS.
10. ALL MECHANICAL, ELECTRICAL AND/OR PLUMBING ROOF PENETRATIONS SHALL OCCUR BEYOND 24" FROM THE ROOF PARAPET IN ORDER TO ALLOW FOR PROPER ROOF FLASHING.

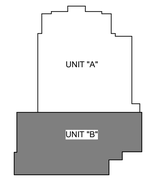
PLUMBING NOTES BY SYMBOL '⬡':

1. GAS CONNECTION TO ROOF TOP UNIT. REFER TO DETAIL '4' ON P3.02. (TYP.)
2. GAS PIPE SUPPORT. REFER TO DETAIL '3' ON P3.02. (TYP.)
3. GAS PIPE OVER PARAPET. REFER TO DETAIL '1' ON P3.02. (TYP.)
4. GAS PRESSURE REGULATOR AT 5 PSI TO 8 OUNCES. REFER TO DETAIL '2' ON SHEET P3.02. (TYP.)
5. PROVIDE OUTSIDE WALL BRACKETS FOR VERTICAL GAS PIPING AND SUPPORT IN THREE PLACES (HIGH, MIDDLE, AND LOW) WITH CORROSION RESISTANT FASTENERS. PRIME AND PAINT GAS PIPING TO MATCH WALL FINISH.
6. NON-FREEZE ROOF HYDRANT, REFER TO DETAIL '7' ON P3.01.

ME NOTES BY SYMBOL '⬡':

1. 3/4" CD WITH P-TRAP DOWN THROUGH ROOF.
2. RS & RL REFRIGERANT PIPING DOWN THROGH ROOF.

KEY PLAN



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SMITHFIELD MS - GYMNASIUM ADDITION

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STATE OF TEXAS — DAVID M. BOCH — 95600 — REGISTERED PROFESSIONAL ENGINEER — 2019-05-08

MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	HV/PL
Designer	Quality Control
CMD	NPH
Proj. Arch.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
MPE - ROOF PLAN - UNIT B

SHEET NO.
MPE2.02

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FILE PATH:
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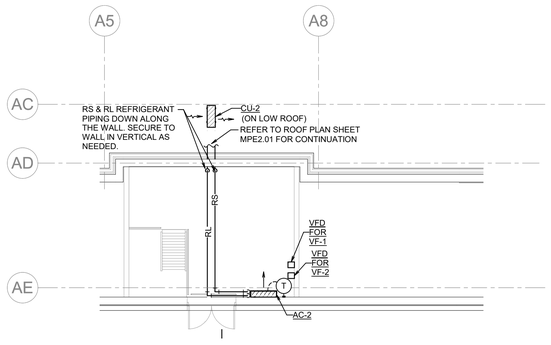
STORM SHELTER VENTILATION SEQUENCE OF OPERATION:

1. IN THE EVENT OF STORM, STORM SHELTER VENTILATION FANS TO BE ENEGIZED WITH MANUALLY OPERATED SWITCH LOCATED IN 'STORAGE A103'.
2. PRIOR TO VENTILATION FANS BEING ENERGIZED, THE COILING DOORS OVER THE INTAKE LOUVERS SHALL BE OPENED.
3. THE RESTROOMS AND CONCESSIONS AREA ARE NOT INCLUDED IN THE OCCUPIABLE STORM SHELTER SQUARE FOOTAGE.

STORM LOUVER SCHEDULE

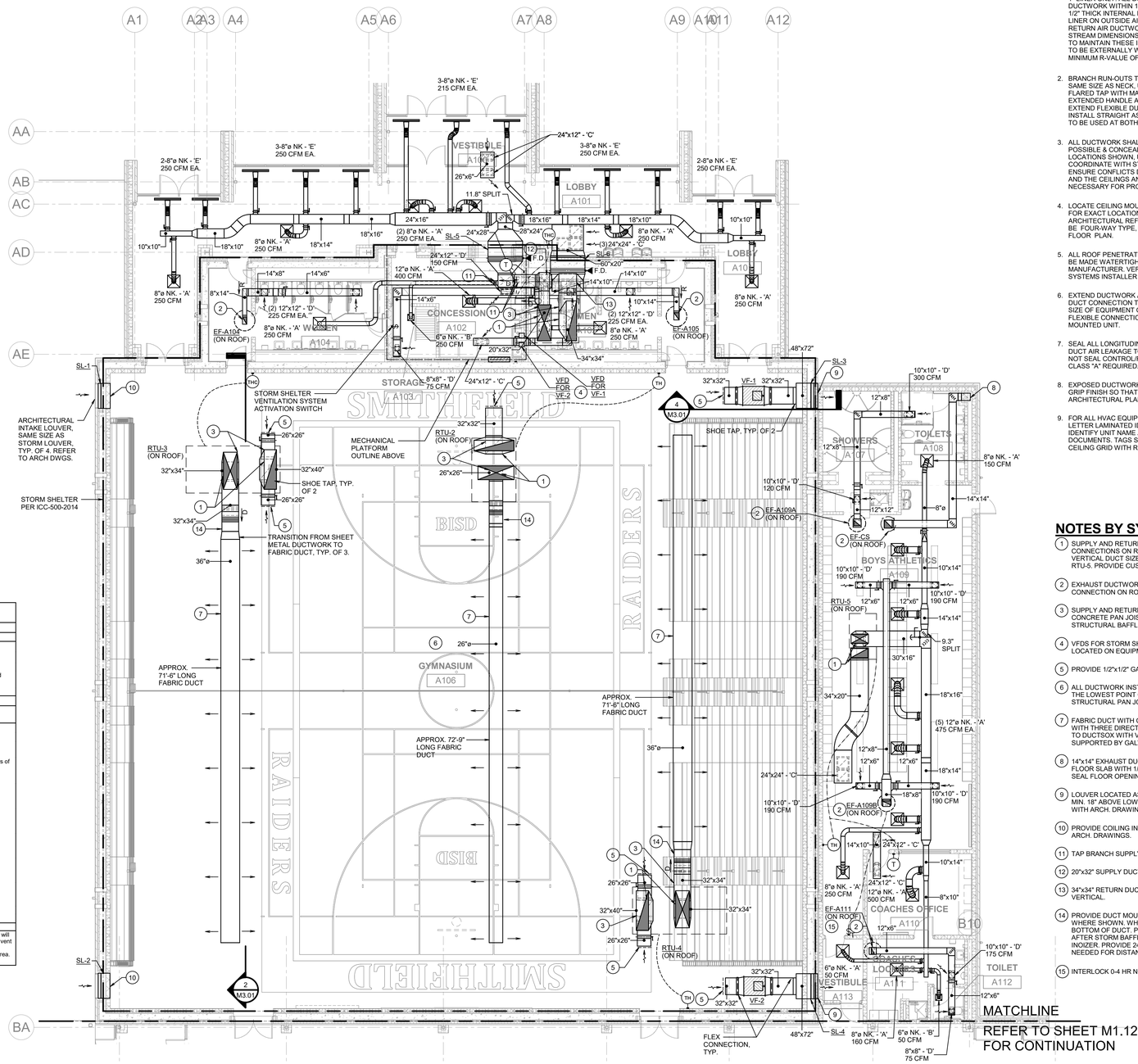
DESIGNATION	LOUVER TYPE	MOUTING LOCATION	SYSTEM	AIR FLOW	WIDTH	HEIGHT	FREE AREA	Pressure Drop (IN.-W.G.)	MANUFACTURER	MODEL
SL-1	FEMA 361 ICC 500-2014 STORM SHELTER	WALL	STORM SHELTER VENTILATION - INTAKE	5,315 CFM	4' - 0"	6' - 0"	10.63 ft²	0.100	GREENHECK	AFL-501
SL-2	FEMA 361 ICC 500-2014 STORM SHELTER	WALL	STORM SHELTER VENTILATION - INTAKE	5,315 CFM	4' - 0"	6' - 0"	10.63 ft²	0.100	GREENHECK	AFL-501
SL-3	FEMA 361 ICC 500-2014 STORM SHELTER	WALL	STORM SHELTER VENTILATION - RELIEF	5,315 CFM	4' - 0"	6' - 0"	10.63 ft²	0.100	GREENHECK	AFL-501
SL-4	FEMA 361 ICC 500-2014 STORM SHELTER	WALL	STORM SHELTER VENTILATION - RELIEF	5,315 CFM	4' - 0"	6' - 0"	10.63 ft²	0.100	GREENHECK	AFL-501
SL-5	FEMA 361 ICC 500-2014 STORM SHELTER	WALL	RTU-1 SUPPLY DUCTWORK	4,645 CFM	5' - 6"	3' - 6"	8.93 ft²	0.100	GREENHECK	AFL-501
SL-6	FEMA 361 ICC 500-2014 STORM SHELTER	WALL	RTU-1 RETURN DUCTWORK	4,645 CFM	5' - 6"	3' - 6"	8.93 ft²	0.100	GREENHECK	AFL-501

NOTE: SL-5 & SL-6 STORM LOUVERS SHALL ALL BE ONE SECTION. MULTIPLE SECTIONS TO ATTAIN THE SPECIFIED WIDTH IS NOT ACCEPTABLE.



PLAN NORTH TRUE NORTH

2 EQUIPMENT PLATFORM FLOOR PLAN - HVAC
SCALE: 1/8" = 1'-0"



PLAN NORTH TRUE NORTH

1 HVAC - FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

ICC-500-2014 STORM SHELTER CODE COMPLIANCE CHART

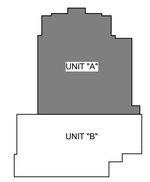
Storm Shelter Type	Tornado - (Event Time = minimum 2 hours); Community
Shelter Design Occupancy	2,061 people
Sanitation Requirements:	
1. Water Supply	Dedicated underground service; Refer to Plumbing Drawing Sheet P1.11.
2. Sanitary Sewer	Dedicated underground service; Refer to Plumbing Drawing Sheet P1.11
3. Toilet Facilities required = 2 minimum for first 500 occupants; 1 per 500 occupants thereafter	6 Required, 9 Water Closets & 3 Urinals Provided; Refer to Plumbing Drawing Sheet P2.11 and Architectural Drawings.
4. Hand Washing Facilities required: 1 per 1000 occupants	3 Required, 10 Provided; Refer to Plumbing Drawing Sheet P2.11 and Architectural Drawings.
Fire Protection System Requirements	Fire Extinguishers furnished as an allowed option. Refer to Architectural Drawings.
Emergency Lighting: Minimum two (2) hours of operation required to a level of one (1) foot candle (11 Lux).	Normal LED lighting fixtures served by a two (2) hour rated inverter (battery) system; Refer to Electrical Drawing E1.11.
Ventilation Requirements:	Ventilation Provisions:
Mechanical Ventilation option used which requires:	Mechanical Ventilation Provisions / Design:
1. Mechanical ventilation equal to the ventilation required under normal occupation. Per ASHRAE 62.1:	1. Mechanical ventilation is provided with SL-1 & 2 and VF-1 & 2.
Gym Spectators Area : Rp = 7.5 CFM per person @ 1,000 occupants = 7,500 CFM Ra = 0.06 CFM per Sq. Ft. @ 4,865 Sq. Ft. = 291.9 CFM	2. VF-1 & 2 provided with battery backup and inverter capable of providing 2 hours of operation after an electrical utility failure.
Gym Play area: Rp = 20 CFM per person @30 occupants = 600 CFM Ra = 0.18 CFM per Sq. Ft. @ 6,300 Sq. Ft. = 1,134 CFM	
Mens Restroom: 75 CFM/Fixture @6 fixtures = 450 CFM	
Womens Restroom: 75 CFM/Fixture @ 6 fixtures = 450 CFM	
Storage: 1 CFM per Sq. Ft. @ 51 Sq. Ft. = 51 CFM	
Concessions: Rp = 5 CFM per person @ 3 occupants = 15 CFM Ra = 0.06 CFM per Sq. Ft. @ 256 Sq. Ft. = 15.36 CFM	
Total Ventilation Required: 10,507.3 CFM	Total Ventilation Provided: 10,630 CFM
Fire Rated Walls: Shelter enclosure required to have 2-hour fire rated enclosure.	Fire dampers provided on duct penetrations to other spaces.
Penetrations: All rectangular openings larger than 3-1/2 square inches and round openings larger than 2-1/16" diameter require protection.	Storm rated steel baffle plates will be provided for all duct roof penetrations. Steel baffle plates will be provided for all piping and sprinkler piping openings exceeding maximum size. Storm rated vent piping will be provided where shown on plumbing drawings. Refer to Structural, Electrical and Plumbing Drawings. Storm louvers are provided for all ventilation openings on wall for shelter area.

GENERAL MECHANICAL NOTES:

1. RECTANGULAR AND ROUND SUPPLY/RETURN AIR DUCTWORK IS TO BE EXTERNALLY INSULATED WITH 2" THICK ACOUSTICAL AND THERMAL WRAP TO MEET ENERGY CODE (IECC 2015) REQUIREMENTS WHERE CONCEALED ABOVE CEILING. RECTANGULAR TRANSFER AIR DUCT SHALL BE LINED WITH 1" LINER ONLY. ALL DUCTWORK EXPOSED IN MECHANICAL ROOMS AND ALL DUCTWORK WITHIN 10'-0" OF UNIT TO BE INTERNALLY LINED. PROVIDE MIN. 1 1/2" THICK INTERNAL LINER ON SUPPLY AIR DUCTWORK, 2" THICK INTERNAL LINER ON OUTSIDE AIR DUCTWORK, AND 1" THICK INTERNAL LINER ON RETURN AIR DUCTWORK. DUCTWORK SIZES SHOWN ARE NET INTERNAL AIR STREAM DIMENSIONS. SHEET METAL SIZES ARE TO BE INCREASED IN SIZE TO MAINTAIN THESE INTERNAL CLEAR DIMENSIONS. ROUND DUCTWORK IS TO BE EXTERNALLY WRAPPED. FLEXIBLE ROUND DUCT SHALL HAVE A MINIMUM R-VALUE OF 6.0.
2. BRANCH RUN-OUTS TO CEILING/COVE MOUNTED AIR DEVICES SHALL BE SAME SIZE AS NECK, UNLESS NOTED OTHERWISE. PROVIDE A TWIST-IN FLARED TAP WITH MANUAL VOLUME DAMPER AT MAIN DUCT TAP AND EXTENDED HANDLE AS SHOWN (REFER TO SPECIFICATIONS FOR DETAILS). EXTEND FLEXIBLE DUCTWORK A MAXIMUM OF 5'-0" FROM DIFFUSERS. INSTALL STRAIGHT AS POSSIBLE WITH LONG RADIUS BENDS WITH CLAMPS TO BE USED AT BOTH ENDS.
3. ALL DUCTWORK SHALL BE RUN CONCEALED ABOVE CEILINGS AS HIGH AS POSSIBLE & CONCEALED IN WALLS, CHASES, OR FURROUTS IN GENERAL LOCATIONS SHOWN, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH STRUCTURE, ARCHITECTURE, AND OTHER TRADES TO ENSURE CONFLICTS DO NOT OCCUR. ABOVE CEILING SPACE IS MINIMAL AND THE CEILINGS AND ROOF ARE VARIOUSLY SLOPED. CAUTION IS NECESSARY FOR PROPER INSTALLATION AND COORDINATION.
4. LOCATE CEILING MOUNTED AIR DEVICES APPROXIMATELY WHERE SHOWN. FOR EXACT LOCATION AND FRAME MOUNTING TYPES, REFER TO ARCHITECTURAL REFLECTED CEILING PLANS. ALL CEILING DIFFUSERS TO BE FOUR-WAY TYPE, UNLESS NOTED OTHERWISE BY AIR FLOW ARROWS ON FLOOR PLAN.
5. ALL ROOF PENETRATIONS, ROOF PIPE SUPPORTS, FLASHING, ETC., SHALL BE MADE WATERTIGHT AND BE AS RECOMMENDED BY THE ROOF SYSTEM MANUFACTURER. VERIFY WITH OWNER WHAT ACCEPTABLE ROOFING SYSTEMS INSTALLER CAN BE USED.
6. EXTEND DUCTWORK AS SHOWN THROUGH ROOF INSIDE CURB TO EACH DUCT CONNECTION TO/FROM A ROOF MOUNTED UNIT. TRANSITION TO FULL SIZE OF EQUIPMENT OPENING FROM DUCT SIZES SHOWN. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCT CONNECTIONS AT EACH ROOF MOUNTED UNIT.
7. SEAL ALL LONGITUDINAL AND TRANSVERSE DUCT JOINTS TO PREVENT DUCT AIR LEAKAGE TO INCLUDE DUCT AND ACCESSORY PENETRATIONS. DO NOT SEAL CONTROL/FIRE DAMPER CONTROL ROD PENETRATIONS. SEAL CLASS "A" REQUIRED.
8. EXPOSED DUCTWORK SHALL BE INTERNALLY LINED AND RECEIVE A PAINT GRIP FINISH SO THAT PAINT MAY BE APPLIED IN ACCORDANCE WITH ARCHITECTURAL PLANS AND SPECIFICATIONS.
9. FOR ALL HVAC EQUIPMENT ABOVE CEILINGS, PROVIDE BLUE ON WHITE LETTER LAMINATED IDENTIFICATION TAGS ON CEILING GRID BELOW TO IDENTIFY UNIT NAME AND NUMBER AS DEFINED BY THE CONSTRUCTION DOCUMENTS. TAGS SHOULD BE LAMINATED PLASTIC AND FASTENED TO CEILING GRID WITH RIVETS. TAG WIDTH TO MATCH GRID WIDTH.

NOTES BY SYMBOL '◯':

1. SUPPLY AND RETURN DUCTWORK TRANSITION IN VERTICAL UP TO UNIT CONNECTIONS ON ROOF. TRANSITION FROM UNIT CONNECTION TO VERTICAL DUCT SIZE IN ROOF CURB FOR ALL UNITS ON THIS SHEET EXCEPT RTU-5. PROVIDE CUSTOM ROOF CURB HEIGHT AS REQUIRED.
2. EXHAUST DUCTWORK TRANSITION IN VERTICAL UP TO EXHAUST FAN CONNECTION ON ROOF.
3. SUPPLY AND RETURN DUCTWORK SHALL BE ROUTED IN BETWEEN CONCRETE PAN JOISTS ABOVE BOTTOM OF CORD UNTIL PAST THE STRUCTURAL BAFFLE. REFER TO STRUCTURAL FOR BAFFLE DETAILS.
4. VFDS FOR STORM SHELTER VENTILATION FANS (VF-1 & 2) SHALL BE LOCATED ON EQUIPMENT PLATFORM.
5. PROVIDE 1/2"x1/2" GALV. STEEL HARDWARE CLOTH OVER OPENING, TYP.
6. ALL DUCTWORK INSTALLED IN GYM SHALL BE AT A MINIMUM 25'-0" A.F.F. TO THE LOWEST POINT OF THE SYSTEM. ROUTE DUCTWORK IN BETWEEN STRUCTURAL PAN JOISTS.
7. FABRIC DUCT WITH CONTINUOUS AIR OPENINGS ON BOTTOM 1/4 OF DUCT WITH THREE DIRECTION DISCHARGE PATTERN. FABRIC DUCT TO BE EQUAL TO DUCTSOX WITH VERONA FABRIC, SKELECORE FTS SUSPENSION SUPPORTED BY GALVANIZED CABLE.
8. 14"x14" EXHAUST DUCT DOWN TO CRAWL SPACE. TERMINATE MIN. 6" BELOW FLOOR SLAB WITH 1/2"x1/2" GALV. STEEL HARDWARE CLOTH OVER OPENING. SEAL FLOOR OPENING AIR TIGHT.
9. LOUVER LOCATED AS HIGH AS POSSIBLE BELOW ROOF STRUCTURE AND MIN. 18" ABOVE LOW ROOF. COORDINATE EXACT LOCATION AND HEIGHT WITH ARCH. DRAWINGS.
10. PROVIDE COILING INSULATED COVER OVER LOUVER OPENING. REFER TO ARCH. DRAWINGS.
11. TAP BRANCH SUPPLY DUCTWORK OFF OF VERTICAL MAIN, TYP. OF 4.
12. 20"x32" SUPPLY DUCT DOWN AND TRANSITION TO 24"x28" DUCT IN VERTICAL.
13. 34"x34" RETURN DUCT DOWN AND TRANSITION TO 60"x20" DUCT IN VERTICAL.
14. PROVIDE DUCT MOUNTED POLAR IONIZATION DEVICE(S) IN DUCT APPROX. WHERE SHOWN. WHERE DUCT IS UP IN CONCRETE STRUCTURE MOUNT ON BOTTOM OF DUCT. PROVIDE SPOOL PIECE ON UNITS WITH FABRIC DUCT AFTER STORM BAFFLE AND PRIOR TO FABRIC DUCT LENGTH REQUIRED FOR INOIZER. PROVIDE 24 VAC FROM UNIT CONTROL PANEL. SIZE WIRING AS NEEDED FOR DISTANCE.
15. INTERLOCK 0-4 HR NO HOLD TIMER SWITCH WITH EF-109B.



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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

MAY 8, 2019

REVISIONS

Revision No.

Director JFK	Drawn By HV
Designer CMD	Quality Control NPH
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
HVAC - FLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.
M1.11

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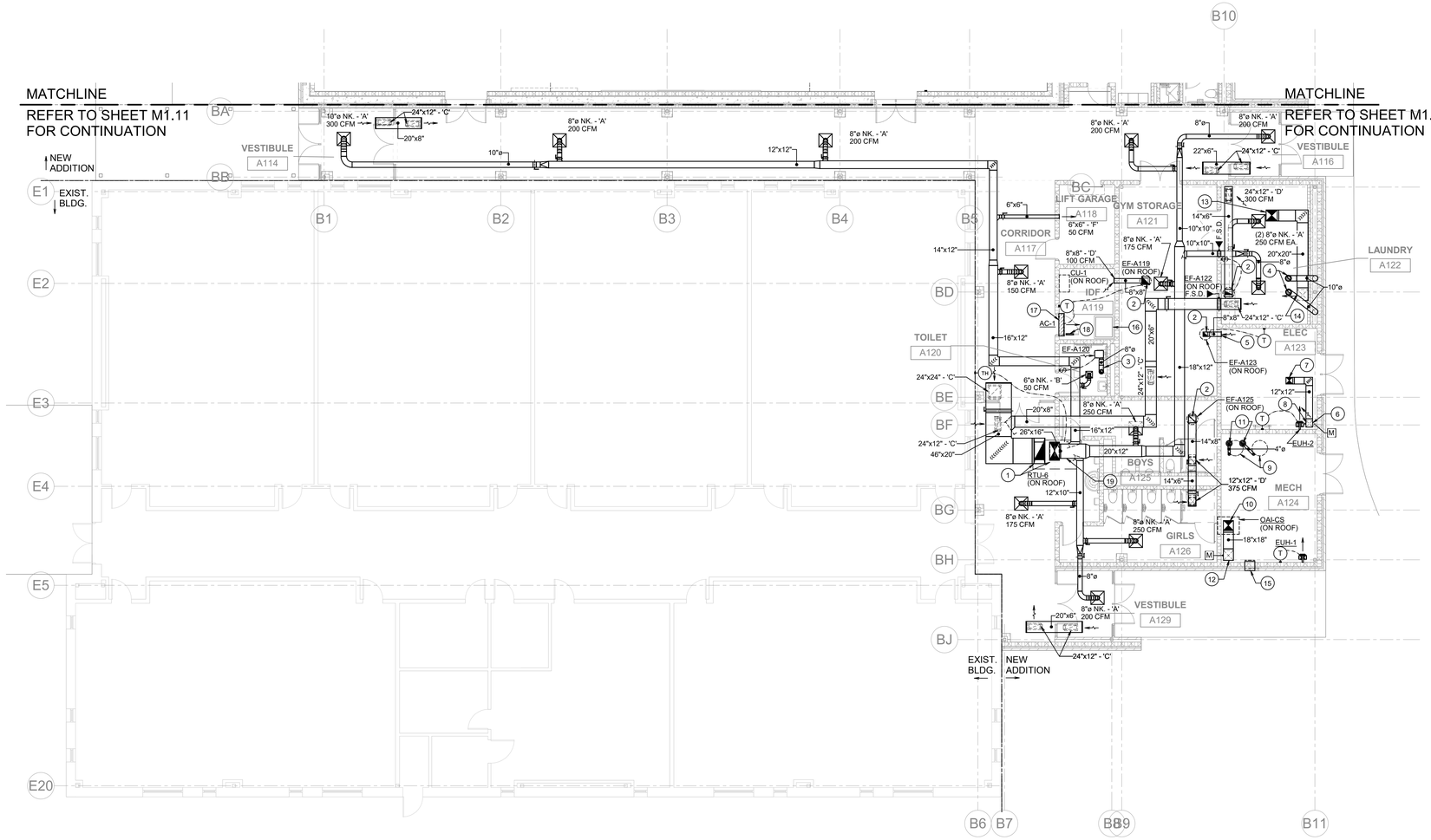

PLAN NORTH TRUE NORTH

1 HVAC - FLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"

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GENERAL MECHANICAL NOTES:

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7. SEAL ALL LONGITUDINAL AND TRANSVERSE DUCT JOINTS TO PREVENT DUCT AIR LEAKAGE TO INCLUDE DUCT AND ACCESSORY PENETRATIONS. DO NOT SEAL CONTROL/FIRE DAMPER CONTROL ROD PENETRATIONS. SEAL CLASS "A" REQUIRED.
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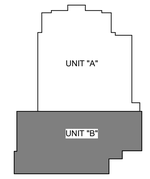
NOTES BY SYMBOL '◯':

1. SUPPLY AND RETURN DUCTWORK TRANSITION IN VERTICAL UP TO UNIT CONNECTIONS ON ROOF.
2. EXHAUST DUCTWORK TRANSITION IN VERTICAL UP TO EXHAUST FAN CONNECTION ON ROOF.
3. EXHAUST DUCTWORK UP TO ROOF CAP ON ROOF.
4. 10"ø DRYER VENT UP TO VENT CAP ON ROOF AND DOWN IN WALL FURROUT TO DRYER CONNECTION. COORDINATE LOCATION OF FINAL CONNECTION WITH DRYER. TRANSITION TO DRYER CONECTION SIZE AT DRYER.
5. 8"x8"-'D', 200 CFM
6. MOTORIZED OUTSIDE AIR DAMPER 4'-0" A.F.F. WITH MIN 6"x6" ACCESS DOOR. INTERLOCK WITH EF-A123.
7. OA DUCT UP TO GOOSENECK ON ROOF.
8. OA DUCT DOWN TO 12" A.F.F. AND PROVIDE 1/2"x1/2" GALV. STEEL HARDWARE CLOTH OVER OPENING. SECURE TO WALL IN VERTICAL.
9. WATER HEATER OUTLINE. REFER TO PLUMBING DRAWING.
10. OUTSIDE AIR DUCTWORK TRANISTION IN VERTICAL UP TO OAI-CS ON ROOF.
11. 4"ø WATER HEATER FLUE UP TO WIND PROOF ROOF CAP ON ROOF.
12. 18"x18" OUTSIDE AIR DUCT DOWN TO CRAWL SPACE. EXTEND DUCT DOWN TO MIN. 6" PAST THE CRAWL SPACE STRUCTURE. PROVIDE 1/2"x1/2" GALV. STEEL HARDWARE CLOTH OVER OPENING. COORDINATE DUCT FLOOR OPENING WITH STRUCTURE. PROVIDE 4" HIGH x 4" WIDE CONCRETE CURB AND OPENING WITH 1" CHAMFERED EDGEDS. PROVIDE MOTORIZED DAMPER IN VERTICAL WI MIN 12"x12" ACCESS DOOR.
13. 20"x20" OUTSIDE AIR DUCT UP TO GOOSE NECK ON ROOF.
14. 20"x20" OUTSIDE AIR DUCT TERMINATE AT CEILING LEVEL WITH 1/2"x1/2" GALV. STEEL HARDWARE CLOTH OVER OPENING.
15. TWO COMBUSTION AIR INTAKE LOUVERS WITH MINIMUM OF 0.7 SQ. FT. FREE AREA (1.4 SQ. FT. TOTAL AREA) EACH. INSTALL ONE LOUVER 12" BELOW BOTTOM OF ROOF DECK (OR STUCTURE) AND OTHER 12" A.F.F. TO BOTTOM OF LOUVER. PROVIDE 1/2"x1/2" GALV. STEEL HARDWARE CLOTH OVER OPENING ON MECH. ROOM SIDE.
16. CRAWL SPACE ACCESS HATCH. PROVIDE THERMOSTAT AND HUMIDITY SENSOR IN CRAWLSPACE NEAR ACCESS HATCH.
17. A/C UNIT TO BE MOUNTED ABOVE DOOR IN ROOM.
18. 12"x12" DOOR LOUVER. REFER TO ARCH DWGS.
19. PROVIDE DUCT MOUNTED POLAR IONIZATION DEVICE(S) IN DUCT APPROX. WHERE SHOWN. WHERE DUCT IS UP IN CONCRETE STRUCTURE MOUNT ON BOTTOM OF DUCT. PROVIDE 24 VAC FROM UNIT CONTROL PANEL. SIZE WIRING AS NEEDED FOR DISTANCE.



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SMITHFIELD MS - GYMNASIUM ADDITION

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LICENSED PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	HV
Designer	Quality Control
CMD	NPH
Proj. Arch.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
HVAC - FLOOR PLAN MAIN LEVEL - UNIT B

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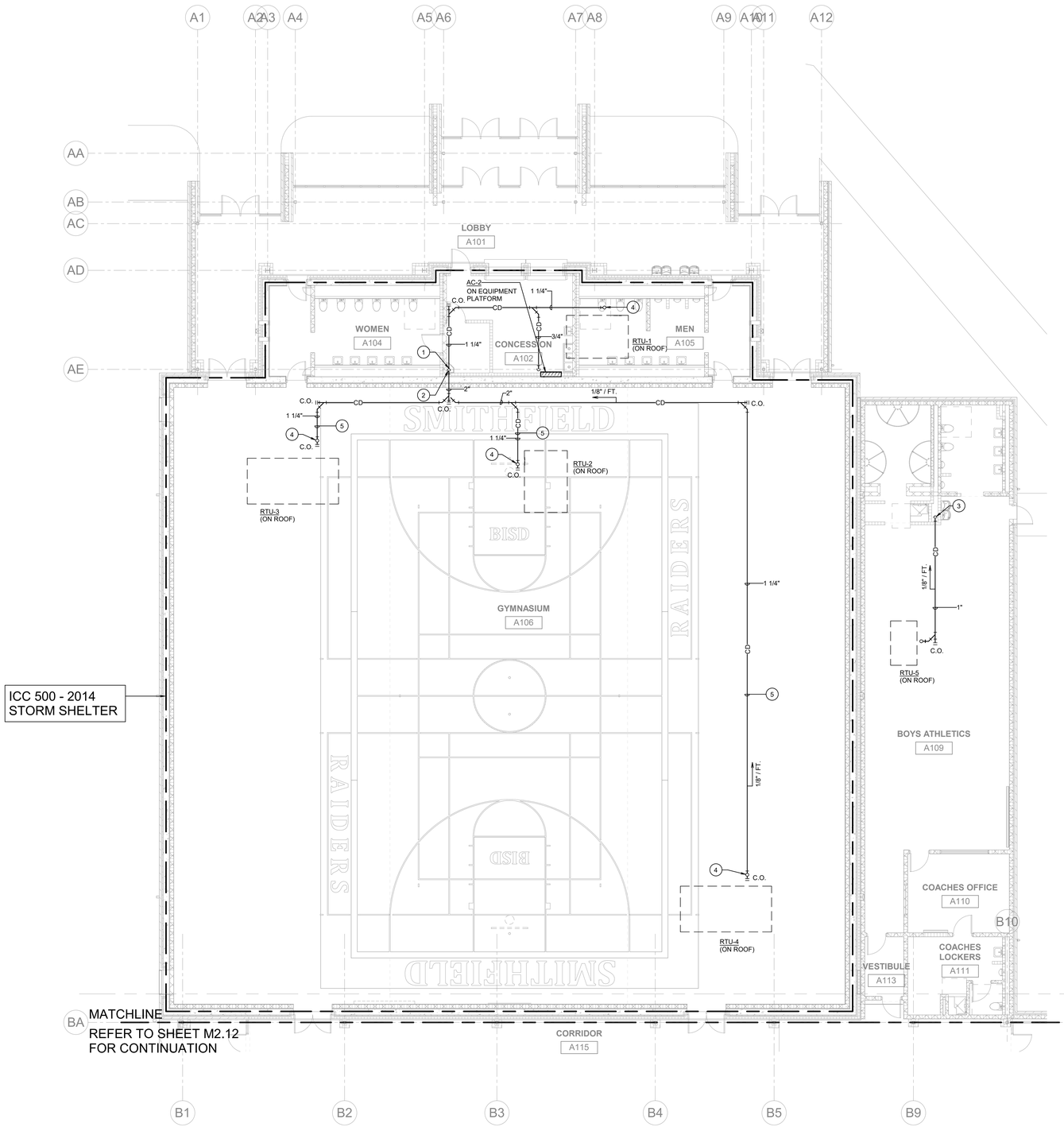


ICC 500 - 2014
STORM SHELTER

PLAN NORTH / TRUE NORTH

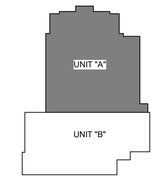
1 HVAC PIPING - FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

GENERAL MECHANICAL PIPING NOTES:

1. ALL RUN-OUT PIPING SHALL BE ROUTED AS GENERALLY INDICATED AND BE THE FULL SIZE SHOWN UP TO THE POINT OF CONNECTION TO THE UNIT. REDUCE AS REQUIRED UNLESS NOTED OTHERWISE.
2. SLOPE CONDENSATE DRAIN PIPING AND AUXILIARY DRAIN PIPING 1/8" PER FOOT TOWARD DRAIN.
3. PIPING ABOVE CEILING SHALL BE ROUTED TIGHT TO STRUCTURE WITH ADEQUATE SPACE FOR INSULATION. COORDINATE WITH STRUCTURE, ARCHITECTURE, AND OTHER TRADES TO AVOID CONFLICTS.
4. MAIN CONDENSATE DRAIN LINES SHALL BE SIZED AND ROUTED AS SHOWN WITH A SLOPE OF 1/8"/1'-0". ROUTE CONDENSATE DRAIN PIPING THROUGH JOIST WEBBING, AS HIGH AS POSSIBLE WHILE MAINTAININ SLOPE. PROVIDE CONNECTIONS TO EACH ROOF TOP UNIT FULL SIZE OF UNIT CONNECTION (MINIMUM 3/4" OR 1" AS NOTED ON ROOF PLANS).
5. PROVIDE CLEANOUTS IN ALL CONDENSATE DRAIN PIPING AT A MINIMUM OF EVERY 40'-0" ON CENTER AND AT ALL CHANGES OF DIRECTION.
6. ALL REFRIGERANT PIPING TO BE ROUTED APPROXIMATELY AS SHOWN AND SIZED PER MANUFACTURER'S REQUIREMENTS.

NOTES BY SYMBOL '◯':

1. CONNECT 1 1/4 CD FROM RTU-1 TO 2" CD PIPING IN VERTICAL.
2. 2" CD PIPING DOWN TO MOP SINK. SECURE TO WALL IN VERTICAL AT THREE LOCATIONS.
3. 1" CD PIPING DOWN TO 3" HUB DRAIN. REFER TO PLUMBING DRAWINGS FOR DETAILS.
4. MAXIMUM ROOF PENETRATION SIZE TO BE 2 1/16". DO NOT INSULATE CONDENSATE PIPING TROUGH ROOF.
5. ROUTE CONDENSTE PIPING FROM UNIT UP IN CONCRETE PAN JOIST BAY UNTIL NORTH SIDE OF GYM.



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SHEET TITLE
HVAC PIPING - FLOOR PLAN MAIN LEVEL - UNIT A

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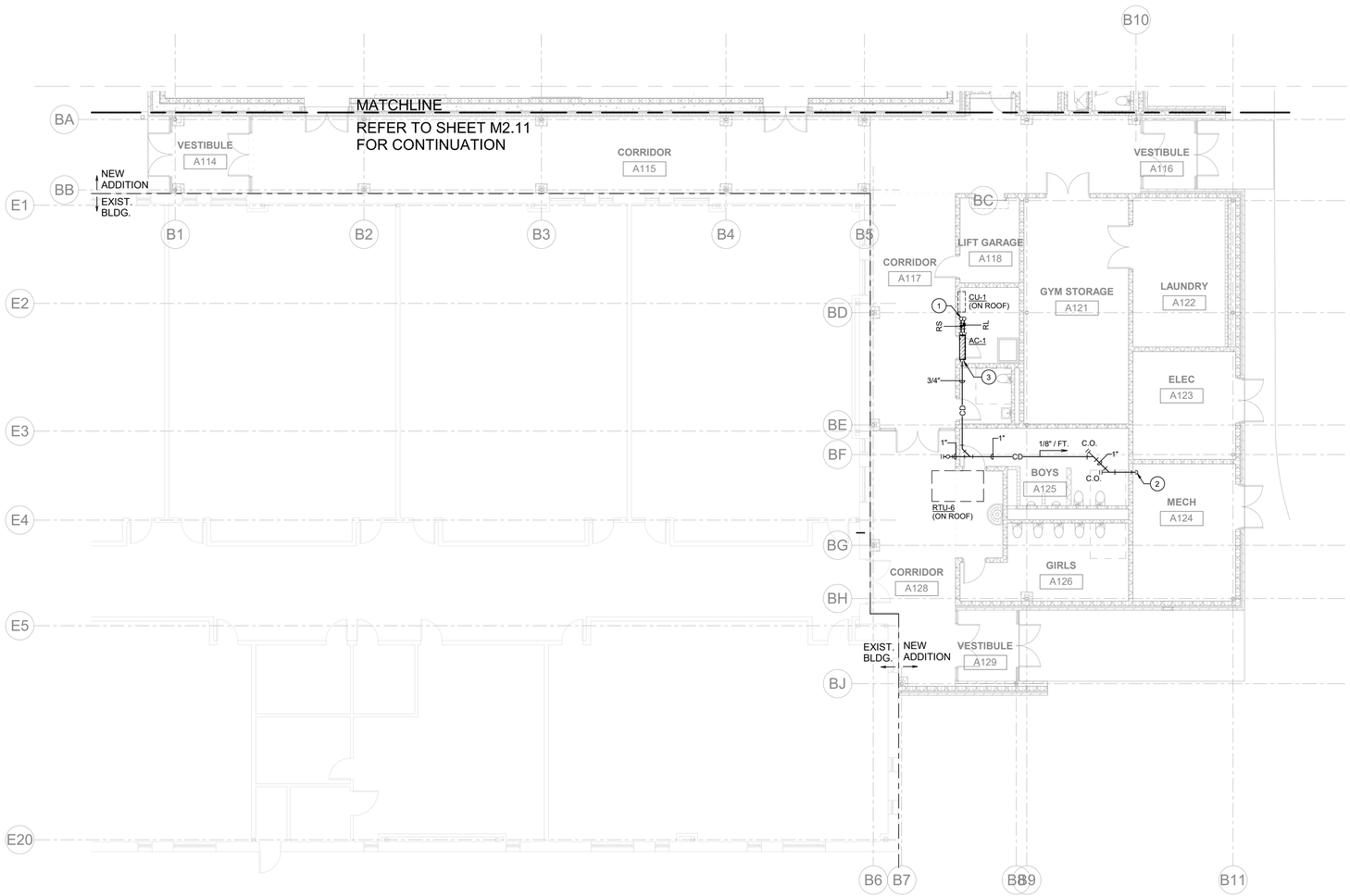


PLAN NORTH

TRUE NORTH

1 HVAC PIPING - FLOOR PLAN - UNIT B

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

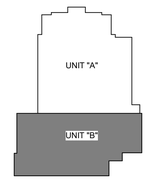
GENERAL MECHANICAL PIPING NOTES:

1. ALL RUN-OUT PIPING SHALL BE ROUTED AS GENERALLY INDICATED AND BE THE FULL SIZE SHOWN UP TO THE POINT OF CONNECTION TO THE UNIT. REDUCE AS REQUIRED UNLESS NOTED OTHERWISE.
2. SLOPE CONDENSATE DRAIN PIPING AND AUXILIARY DRAIN PIPING 1/8" PER FOOT TOWARD DRAIN.
3. PIPING ABOVE CEILING SHALL BE ROUTED TIGHT TO STRUCTURE WITH ADEQUATE SPACE FOR INSULATION. COORDINATE WITH STRUCTURE, ARCHITECTURE, AND OTHER TRADES TO AVOID CONFLICTS.
4. MAIN CONDENSATE DRAIN LINES SHALL BE SIZED AND ROUTED AS SHOWN WITH A SLOPE OF 1/8"/1'-0". ROUTE CONDENSATE DRAIN PIPING THROUGH JOIST WEBBING, AS HIGH AS POSSIBLE WHILE MAINTAININ SLOPE. PROVIDE CONNECTIONS TO EACH ROOF TOP UNIT FULL SIZE OF UNIT CONNECTION (MINIMUM 3/4" OR 1" AS NOTED ON ROOF PLANS).
5. PROVIDE CLEANOUTS IN ALL CONDENSATE DRAIN PIPING AT A MINIMUM OF EVERY 40'-0" ON CENTER AND AT ALL CHANGES OF DIRECTION.
6. ALL REFRIGERANT PIPING TO BE ROUTED APPROXIMATELY AS SHOWN AND SIZED PER MANUFACTURER'S REQUIREMENTS.

NOTES BY SYMBOL '◯':

1. RS & RL REFRIGERANT PIPING UP TO CONDENSING UNIT CU-1 ON ROOF.
2. 1" CD DOWN TO NEAREST FLOOR DRAIN IN MECH. ROOM. SECURE TO WALL IN VERTICAL AT THREE LOCATIONS.
3. PUMPED CONDENSATE FROM A/C UNIT.

KEY PLAN



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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
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PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	HV
Designer	Quality Control
CMD	NPH
Proj. Arch.	
JD	

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SHEET TITLE
HVAC PIPING - FLOOR PLAN MAIN LEVEL - UNIT B

SHEET NO.
M2.12

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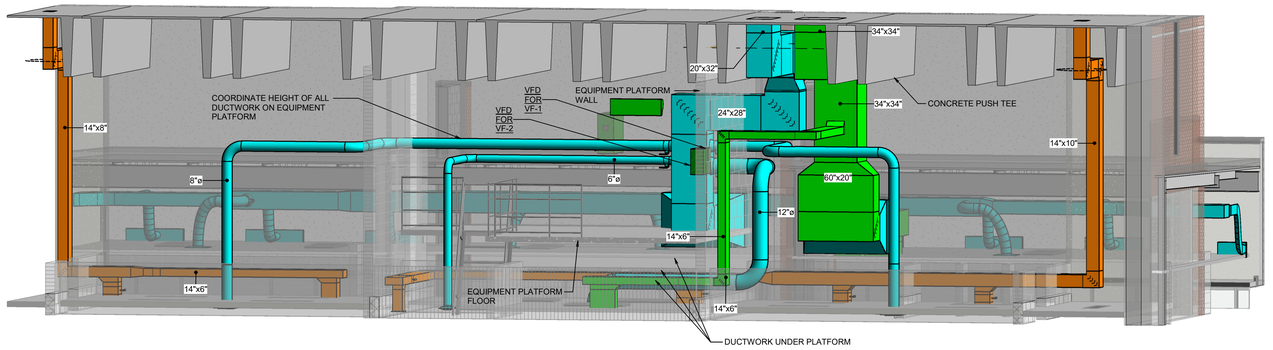
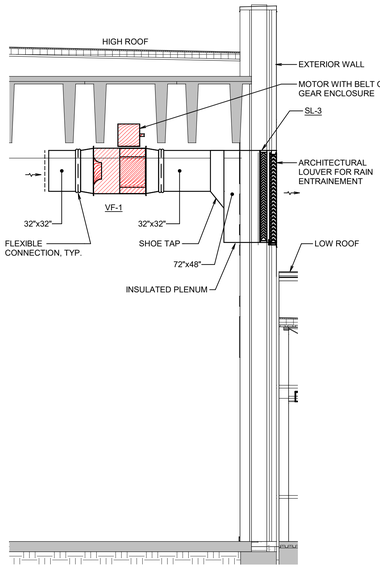


1 LOBBY DUCTWORK ISOMETRIC VIEW - HVAC
NO SCALE



4 MECHANICAL - SECTION - VF-1
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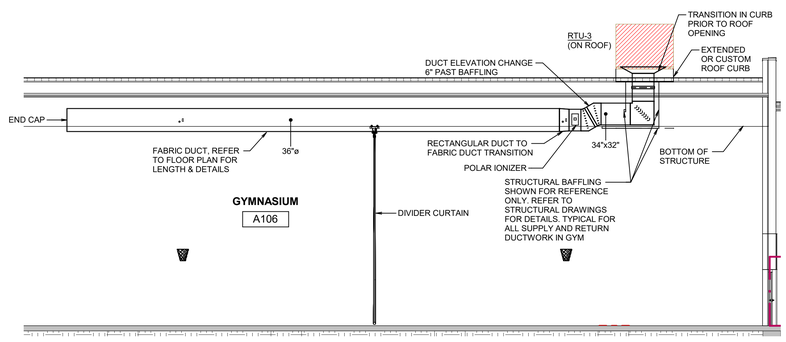

2 GYM DUCTWORK SECTION - HVAC
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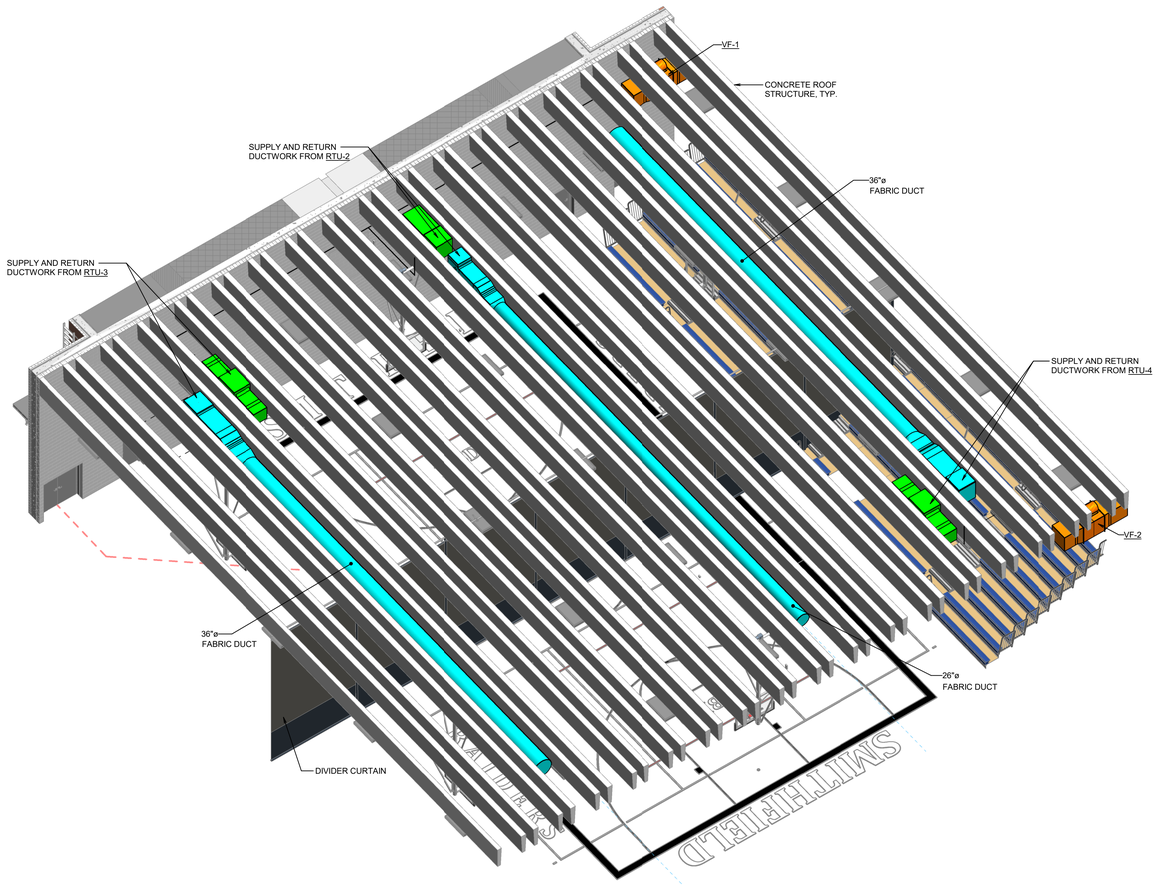

3 GYM DUCTWORK ISOMETRIC VIEW - HVAC
NO SCALE

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SHEET TITLE
SECTIONS & ISOMETRIC VIEWS - HVAC

SHEET NO.
M3.01

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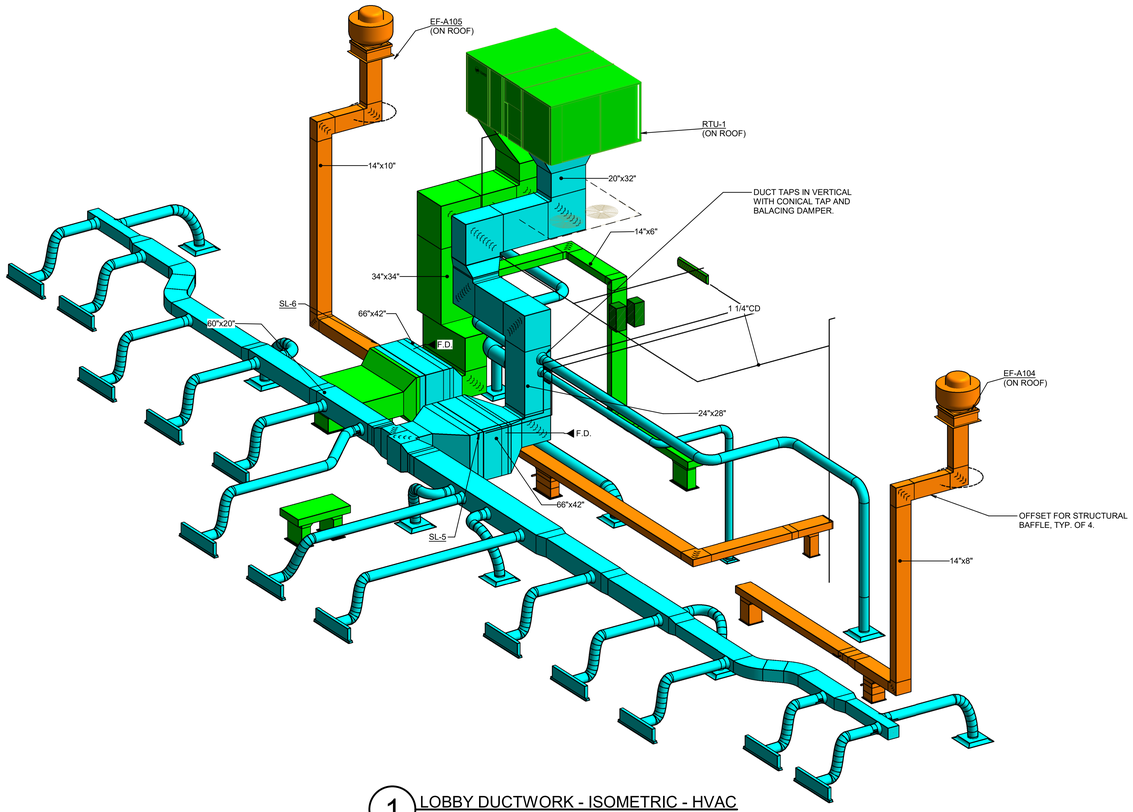

1 LOBBY DUCTWORK - ISOMETRIC - HVAC
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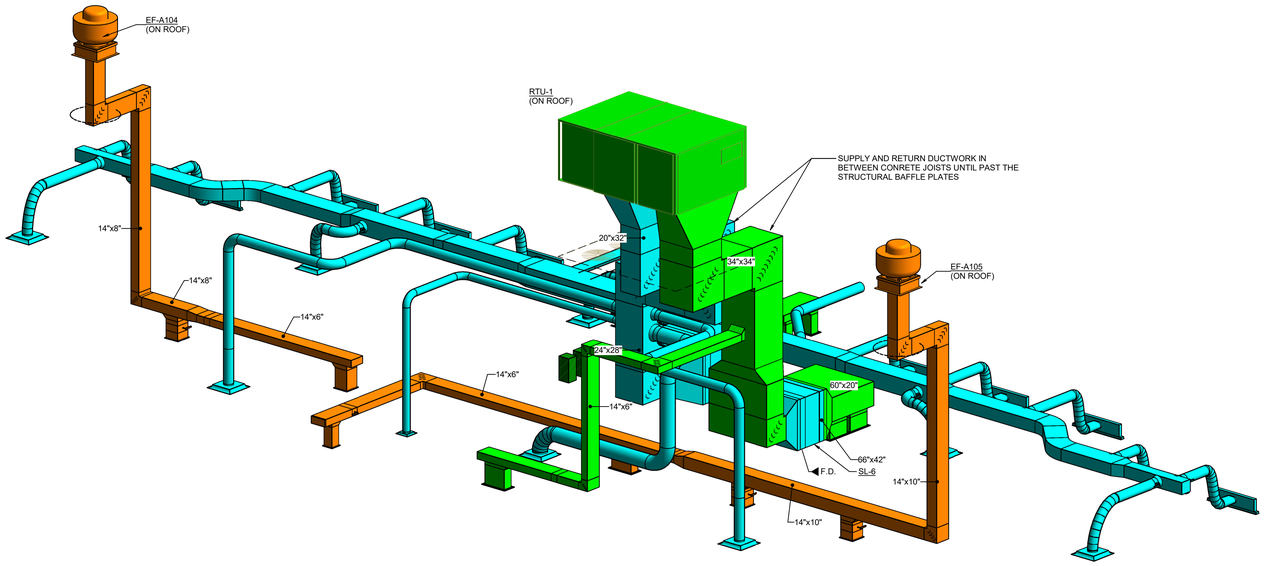

2 LOBBY DUCTWORK - ISOMETRIC - HVAC
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ISOMETRIC VIEWS - HVAC

SHEET NO.

M3.02

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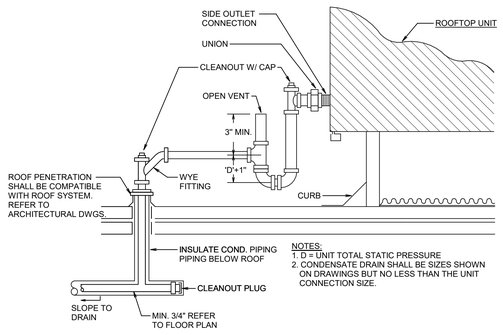

3 ROOFTOP A/C UNIT CONDENSATE DRAIN PIPING DETAIL
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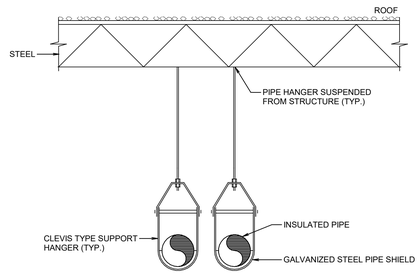

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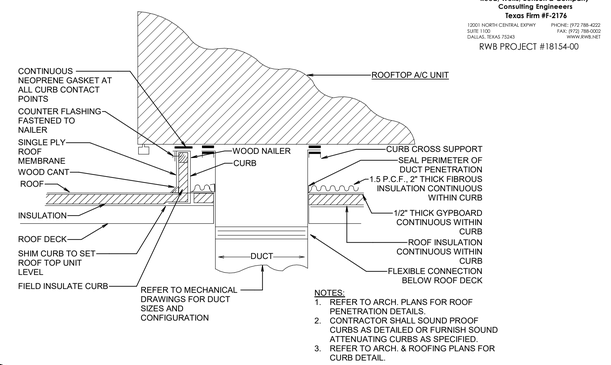

1 ROOF TOP A/C UNIT CURB DETAIL
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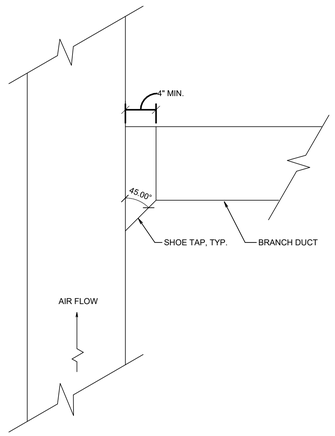

6 SHOE TAP DETAIL
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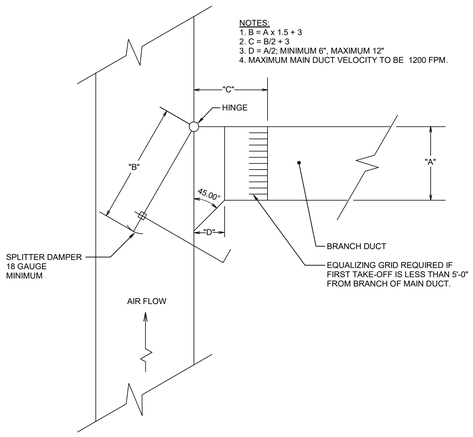

5 BRANCH DUCT DETAIL
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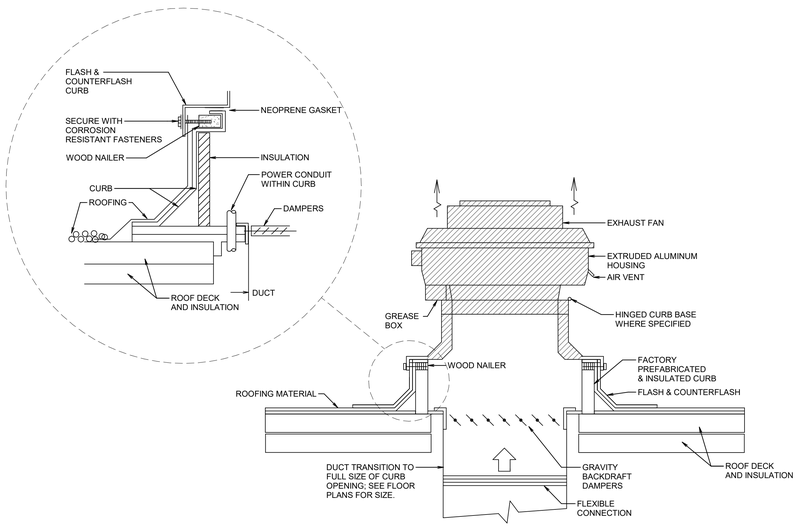

4 ROOF TOP CENTRIFUGAL UPBLAST TYPE EXHAUST FAN DETAIL
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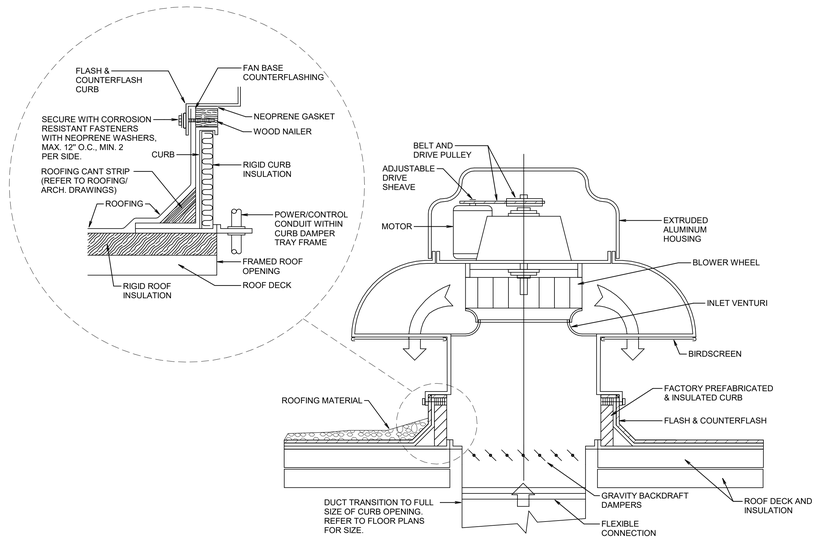

9 ROOF TOP CENTRIFUGAL EXHAUST FAN DETAIL
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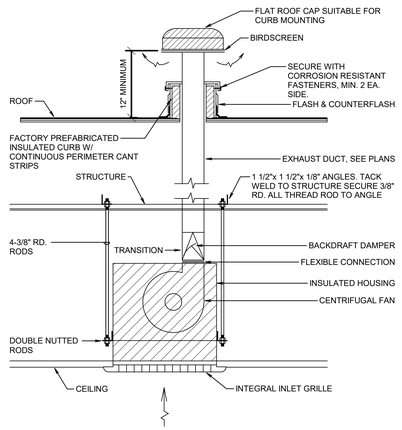

8 CEILING EXHAUST FAN WTH ROOF CAP DETAIL
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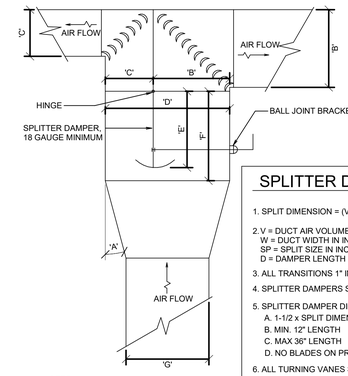

SPLITTER DAMPER NOTES

1. SPLIT DIMENSION = (V2/V1) X W1 (MIN. 4" SPLIT)
2. V = DUCT AIR VOLUME IN CFM
   W = DUCT WIDTH IN INCHES
   SP = SPLIT SIZE IN INCHES = W2
   D = DAMPER LENGTH = 1 1/2" x W2
3. ALL TRANSITIONS 1" IN 7"
4. SPLITTER DAMPERS SHALL BE MIN. 18 GA.
5. SPLITTER DAMPER DIMENSIONS:
   A. 1-1/2 x SPLIT DIMENSION
   B. MIN. 12" LENGTH
   C. MAX 36" LENGTH
   D. NO BLADES ON PRIMARY AIR (VAV SYSTEM) SPLITS
6. ALL TURNING VANES SHALL BE DOUBLE THICKNESS TYPE
7. SEE PLANS FOR DUCT SIZES.

NOTES:
1. ANGLE "A" SHALL BE 15 DEGREES OR LESS
2. D= B + C
3. E= 1.5 X B
4. F= E + 3"
5. SEE FLOOR PLANS FOR DIMENSIONS B, C & G
6. DEPTH SHALL BE EQUAL TO THE DEEPEST OF THE THREE CONVERGING DUCTS
7. ANY CHANGES IN DEPTH OF DUCT SHALL OCCUR DOWNSTREAM OF TURN

7 SPLITTER DAMPER DETAIL
NO SCALE

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SHEET TITLE
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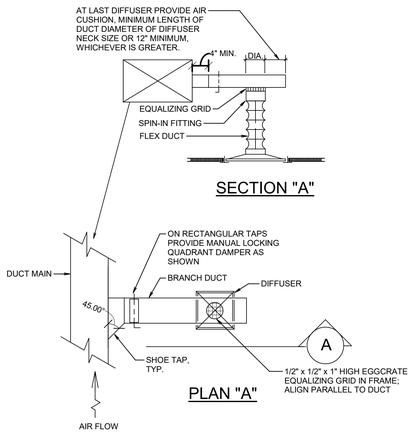

3 TYPICAL RECTANGULAR DUCT DIFFUSER DETAILS
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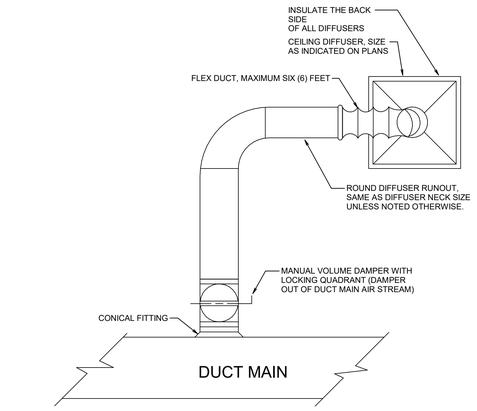
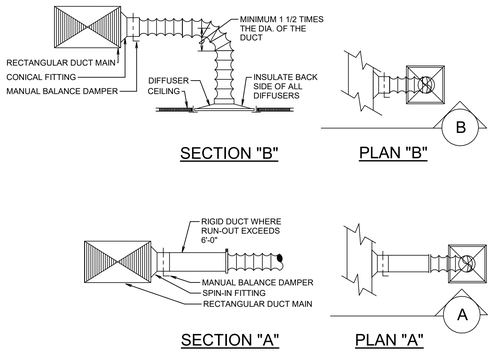


2 ROUND DIFFUSER TAP DETAIL
NO SCALE

GENERAL NOTES:
1. FOR ROUND DUCT USE STRAIGHT SPIN-IN TYPE FITTINGS WITH SEPARATE LOCKING HANDLE BALANCING DAMPERS IN ALL AREAS WITH LAY-IN CEILINGS.
2. IN AREAS WITH HARD CEILINGS, USE SPIN-IN FITTINGS AND DAMPERS WITH REMOTE YOUNG REGULATORS LOCATED ON THE CEILING. ALTERNATELY PROVIDE CEILING ACCESS DOORS LARGE ENOUGH TO FACILITATE AIR BALANCING. THE NUMBER OF ACCESS PANELS SHALL BE MINIMIZED AND CONSOLIDATED. ALL ACCESS PANEL LOCATIONS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.
3. MAXIMUM LENGTH OF FLEXIBLE DUCT USED SHALL NOT EXCEED 6'-0".
4. RIGID AND FLEX DUCT DIAMETER TO BE EQUAL TO NECK SIZE SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE.
5. FLEXIBLE DUCT DROPS SHOULD BE STRAIGHT DOWN TO THE DIFFUSER NECK WITH NO MORE THAN A 10" OFFSET FROM THE VERTICAL. PROVIDE A SMOOTH RADIUS TURN BEFORE THE DROP AS DETAILED.



1 SUPPLY DIFFUSER DETAILS
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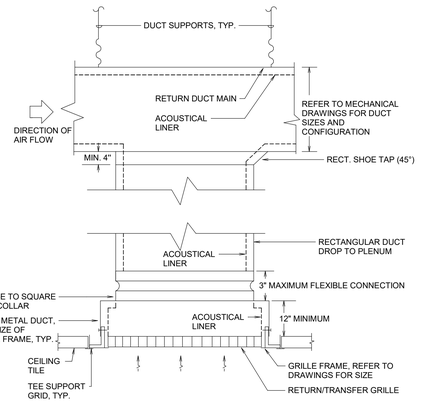

6 RETURN/TRANSFER AIR GRILLE (RECTANGULAR DUCT) DETAIL
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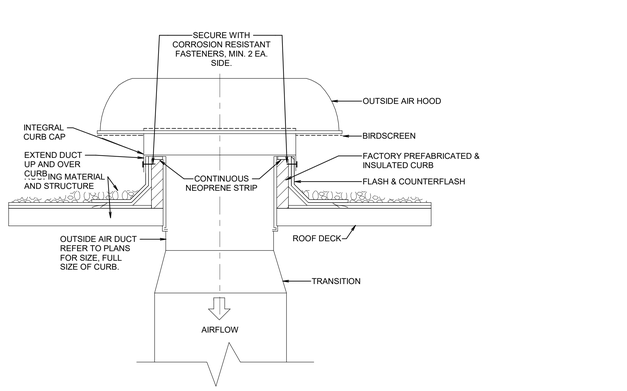

5 OUTSIDE AIR INTAKE HOOD DETAIL
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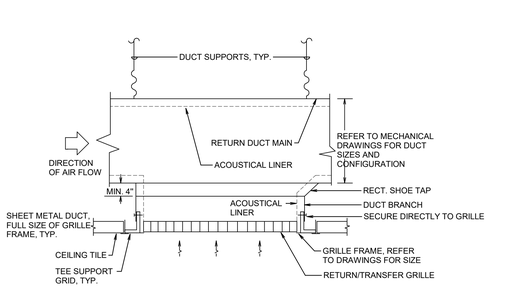

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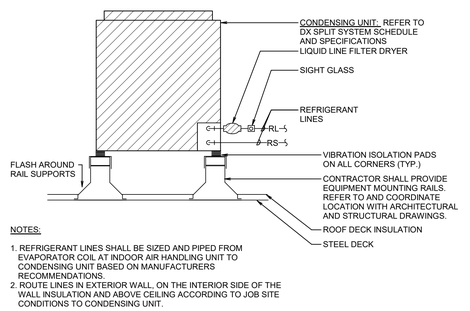
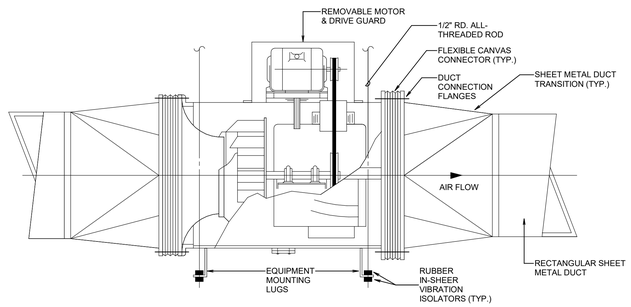


NOTES:
1. REFRIGERANT LINES SHALL BE SIZED AND PIPED FROM EVAPORATOR COIL AT INDOOR AIR HANDLING UNIT TO CONDENSING UNIT BASED ON MANUFACTURERS RECOMMENDATIONS.
2. ROUTE LINES IN EXTERIOR WALL, ON THE INTERIOR SIDE OF THE WALL INSULATION AND ABOVE CEILING ACCORDING TO JOB SITE CONDITIONS TO CONDENSING UNIT.

9 ROOF MOUNTED CONDENSING UNIT DETAIL
NO SCALE



8 IN-LINE CENTRIFUGAL EXHAUST FAN DETAIL
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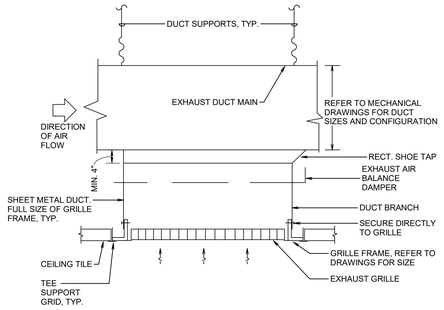

7 EXHAUST GRILLE DETAIL
NO SCALE

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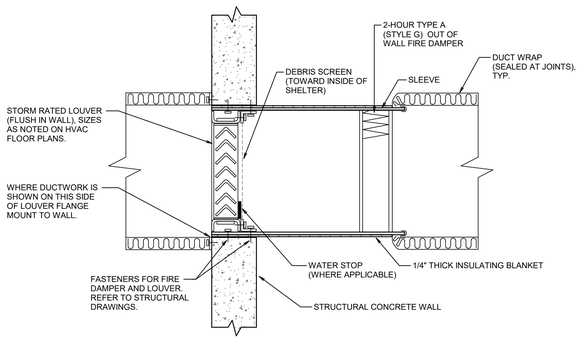

3 STORM SHELTER WALL DUCT PENETRATION DETAIL (WITH 2-HOUR FIRE DAMPER)
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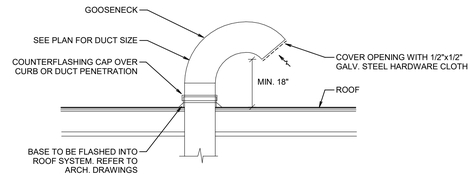
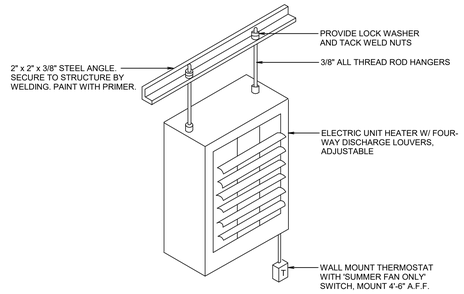
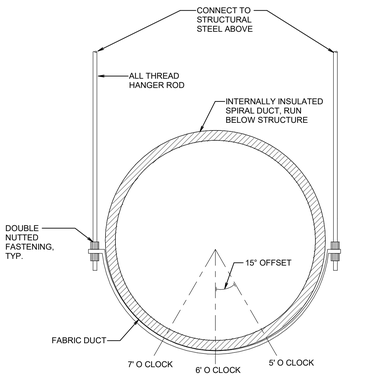


2 GOOSENECK DUCT DETAIL
NO SCALE



NOTES:
1. ALTERNATE UNIT MOUNTING IS TO USE MANUFACTURE SUPPLIED WALL MOUNTING BRACKET.
2. WHERE INTERLOCKED WITH EXHAUST FAN PROVIDE HEATING-COOLING THERMOSTAT AND ADJUST TO PREVENT SIMULTANEOUS HEATING AND EXHAUST.

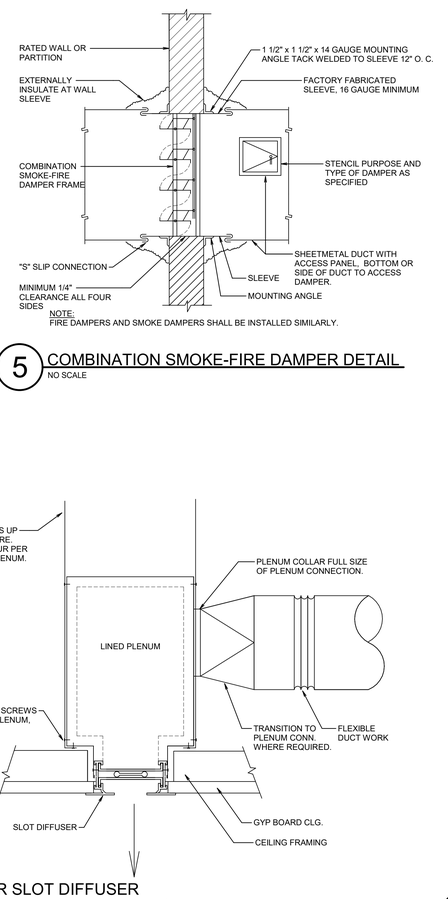
1 UNIT HEATER DETAIL - ELECTRIC
NO SCALE



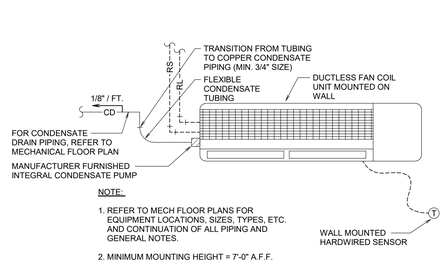
RTU - 3 & 4 FABRIC DUCT HAVE NOZZLES AT 5, 6 & 7 ' O CLOCK

RTU-2 FABRIC DUCT HAVE NOZZELS AT 5 AND 7' O CLOCK

6 GYM FABRIC DUCTWORK SECTION DETAIL
NO SCALE



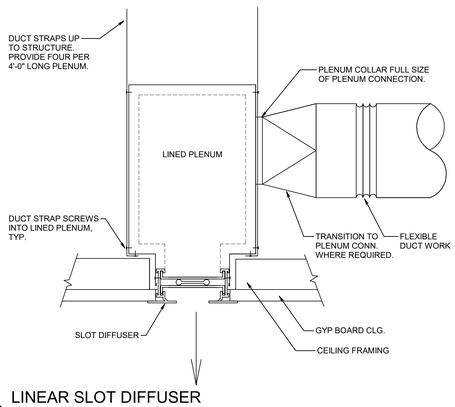
5 COMBINATION SMOKE-FIRE DAMPER DETAIL
NO SCALE



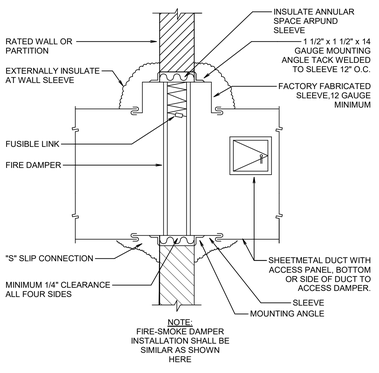
NOTE:

1. REFER TO MECH FLOOR PLANS FOR EQUIPMENT LOCATIONS, SIZES, TYPES, ETC. AND CONTINUATION OF ALL PIPING AND GENERAL NOTES.
2. MINIMUM MOUNTING HEIGHT = 7'-0" A.F.F.

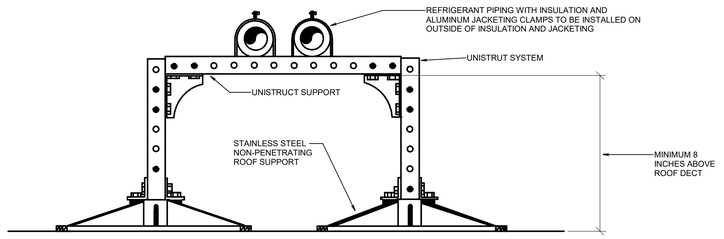
4 TYPICAL DUCTLESS FAN COIL A/C UNIT DETAIL
NO SCALE



8 LINEAR SLOT DIFFUSER CEILING MOUNTING & HANGER DETAIL
NO SCALE



9 FIRE DAMPER DETAIL
NO SCALE



NOTES:
1. ALL EXPOSED STEEL TO BE GALVANIZED.
2. SUPPORT SPACING SHALL BE NO MORE THAN 8 FEET ON CENTERS, AND BE SUPPORTED WITHIN TWO FEET OF EACH SIDE OF EACH TEE, ELBOW, OR CHANGE IN DIRECTION.
3. PROVIDE RUBBER ROOF PIPE SUPPORT PAD BELOW ROOF SUPPORT.

7 ROOF REFRIGERANT PIPING SUPPORT DETAIL
NO SCALE

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
NATHAN P. HART
93906
LICENSED
PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS

Revision No.

Director	Drawn By
JFK	HV
Designer	Quality Control
CMD	NPH
Proj. Arch.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
DETAILS - HVAC

SHEET NO.
M4.03

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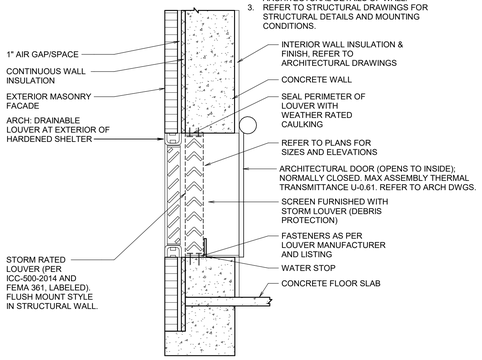
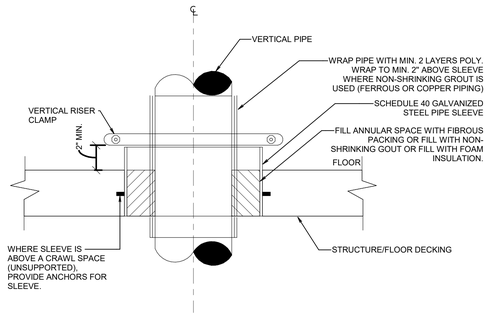
FILE PATH:
DATE/TIME:5/8/2019 3:41:09 PM
PLOT SCALE: 12" = 1'-0"

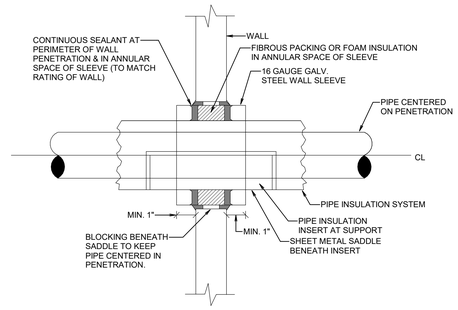
NOTES:
1. STORM RATED LOUVER SPECIFIED IN SECTION 23 30 00, HVAC AIR DISTRIBUTION SYSTEMS
2. REFER TO ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL DETAILS OF WALL.
3. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL DETAILS AND MOUNTING CONDITIONS.



3 STORM SHELTER LOUVER INTAKE PENETRATION DETAIL
NO SCALE

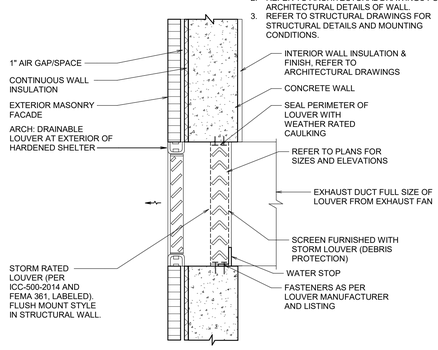


2 FLOOR PIPE PENETRATION DETAIL
NO SCALE

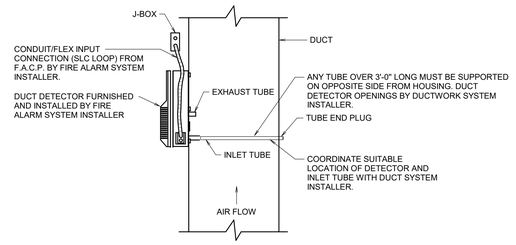


1 BUILDING WALL PIPE PENETRATION DETAIL
NO SCALE

NOTES:
1. STORM RATED LOUVER SPECIFIED IN SECTION 23 30 00, HVAC AIR DISTRIBUTION SYSTEMS
2. REFER TO ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL DETAILS OF WALL.
3. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL DETAILS AND MOUNTING CONDITIONS.



5 STORM SHELTER LOUVER PENETRATION WITH DUCT DETAIL
NO SCALE



4 TYPICAL DUCT DETECTOR MOUNTING DETAIL
NO SCALE

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RWB PROJECT #18154-00

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SHEET TITLE
DETAILS - HVAC

SHEET NO.
M4.04

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RWB PROJECT #18154-00

UNIT HEATERS - ELECTRIC TYPE

GENERAL	DESIGNATION		EUH-1 & 2
	SERVES		MECH. RM & ELEC. RM
FAN RATING	CFM		350
	MAX. RPM		1600
HEATING DATA	ELECTRICAL RESISTANCE	KW	3.0
		OUTPUT (BTUH)	10,200
		STAGES	1
ELEC. DATA	VOLTS/PHASE		208/1
	CONTROL VOLTAGE		24V
MANUF./MODEL			QMARK/MUH0381
REMARKS			W/ WALL MOUNTED THERMOSTAT & UNIT HANGER ROD

ROOFTOP UNIT SCHEDULE

GENERAL INFO.	DESIGNATION	RTU-1	RTU-2	RTU-3 & 4	RTU-5	RTU-6
	AREA SERVED	LOBBY	GYMNASIUM	GYMNASIUM	LOCKERS	CORRIDOR
	MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE
	MODEL NO.	YHD180	YHD180	YCD360	YHC120	YHC092
	NOMINAL CAPACITY (TONS)	15	15	30	10	7.5
	MAXIMUM WEIGHT (LBS.)	2,700	2,700	5,430	1,600	1,300
SUPPLY FAN SECTION	SUPPLY AIR (CFM)	5,600	5,250	10,500	3,530	2,900
	MIN.-MIN./MIN.-MAX./MAX. OUTSIDE AIR (CFM)	500 / 1,000 / 5,600	500 / 1,550 / 5,250	1,000 / 2,500 / 10,500	500 / 1,250 / 3,530	1,000 / 2,900
	EXTERNAL STATIC PRESSURE (IN. WG)	1.0	1.0	1.0	0.5	0.75
	MAX. FAN RPM	570	570	570	1,200	1,100
	MIN. MOTOR HP	3.0	3.0	7.5	2.75	2.75
COOLING SECTION	COIL ENTERING AIR TEMPERATURE, DB/WB...	77.8 / 65.8	81.3 / 67.0	80.2 / 66.8	83.3 / 66.9	82.3 / 66.5
	COIL LEAVING AIR TEMPERATURE, DB/WB (°F)	58.5 / 57.3	58.4 / 57.0	58.0 / 56.7	58.5 / 57.1	58.0 / 57.0
	AMBIENT AIR TEMPERATURE (°F)	105	105	105	105	105
	SENSIBLE CAPACITY (MBTUH)	117.6	130.4	253.2	94.2	76.6
	TOTAL CAPACITY (MBTUH)	146.2	166.7	335.0	110.2	87.0
	MAX. AIR P.D. (IN. WG)	0.5	0.5	0.5	0.5	0.5
	MAX. FACE VELOCITY (FPM)	500	500	500	500	500
	STAGES OF COOLING	2	2	2	2	2
	MIN. SEER/EER/IEER AT ARI CONDITIONS	- / 12.1 / 15.0	- / 12.1 / 15.0	- / 10.3 / 12.0	- / 12.4 / 15.2	- / 12.6 / 15.0
HEATING SECTION	ENTERING AIR TEMPERATURE (°F)	59.1	53.2	56.1	50.1	50.8
	LEAVING AIR TEMEPERATURE (°F)	90.0	90.0	90.0	90.0	90.0
	TYPE OF HEAT	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS
	HEATING INPUT (MBTUH)	175.0 / 250.0	175.0 / 250.0	425.0 / 600.0	200.0 / 140.0	150.0 / 105.0
	HEATING OUTPUT (MBTUH)	140.0 / 200.0	140.0 / 200.0	344.5 / 486.0	160.0 / 112.0	120.0 / 84.0
	STAGES OF CONTROL	2	2	2	2	2
	MIN. AFUE (%)	80	80	80	80	80
ELEC. CHAR.	VOLTS/PHASE	460/3	460/3	460/3	460/3	460/3
	MIN. CIRCUIT AMPS REQUIRED	35.0	35.0	75.5	22.0	20.0
	MAX. OVERCURRENT PROTECTION (AMPS)	45	45	90	25	25
FILTER SECTION	THICKNESS - TYPE	2" - PLEATED	2" - PLEATED	2" - PLEATED	2" - PLEATED	2" - PLEATED
	MIN. AREA (SQ. FT.)	8.9	8.9	35.5	8.3	13.8
	MAX. A.P.D. CLEAN (IN. WG)	0.2	0.2	0.2	0.2	0.2
	MANUFACTURER / MODEL NO.	CAMFIL FARR / AP-ELEVEN	CAMFIL FARR / AP-ELEVEN	CAMFIL FARR / AP-ELEVEN	CAMFIL FARR / AP-ELEVEN	CAMFIL FARR / AP-ELEVEN
REMARKS		1,2,3,5,6,7,8	1,2,3,5,6,7,8	1,2,3,5,6,7(ONLY ON RTU-4),8	1,2,3,6,7,8,9	1,2,3,4,6,7,8

REMARKS KEY:

1. PROVIDE MANUFACTURER FURNISHED, UNIT MOUNTED, NON-FUSED DISCONNECT SWITCH.
2. PROVIDE ECONOMIZER WITH BAROMETRIC RELIEF DAMPERS OR POWERED EXHAUST. REFER TO SPECIFICATIONS.
3. PROVIDE UNIT WITH HOT GAS RE-HEAT OPTION.
4. TWO OUTSIDE AIR VALUES ARE FOR MINIMUM OUTSIDE AIR AND ECONOMIZER.
5. THREE OUTSIDE AIR VALUES ARE FOR MINIMUM OUTSIDE AIR, CARBON DIOXIDE CONTROL, AND ECONOMIZER.
6. CONTRACTOR TO PROVIDE SMOKE DETECTORS IN RETURN AIR DUCTWORK.
7. PROVIDE MANUFACTURER FURNISHED NON-POWERED SERVICE OUTLET ON UNIT.
8. PROVIDE POLAR IONIZER WITH 24 VAC CONTROL POWER FROM UNIT.
9. THREE OUTSIDE AIR SETTINGS ARE FOR MINIMUM OUTSIDE AIR, EXHAUST MAKE-UP AND ECONOMIZER.

MECHANICAL LEGEND

RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID
RG	REFRIGERANT GAS
CD	CONDENSATE DRAIN
	FLOW IN DIRECTION OF ARROW
1/8" / FT.	SLOPE DOWN IN DIRECTION OF ARROW WITH SLOPE SHOWN
	RISE IN PIPING
	DROP IN PIPING
T	THERMOSTAT/TEMERATURE SENSOR
H	HUMIDITY SENSOR
C	CARBON DIOXIDE SENSOR
S	SPACE PRESSURIZATION SENSOR
THC	COMBINATION SENSOR (TEMPERATURE, HUMIDITY, & CARBON DIOXIDE)
S	DUCT SMOKE DETECTOR
$	WALL SWITCH
$P	WALL SWITCH WITH PUSH BUTTON
$T	WALL TIMER SWITCH
	SUPPLY AIR ARROW
	RETURN AIR ARROW
R	RISE IN DUCT
D	DROP IN DUCT
	SUPPLY DUCT
	RETURN OR EXHAUST DUCT
	MANUAL DAMPER
M	MOTORIZED DAMPER
F.D.	FIRE DAMPER
S.D.	SMOKE DAMPER
F.S.D.	FIRE-SMOKE DAMPER
	NEW WORK

NOTE: NOT ALL SYMBOLS USED.

FAN SCHEDULE

DESIGNATION	EF-A104	EF-A105	EF-A109A	EF-A109B	EF-A111	EF-A119	EF-A120	EF-A122	EF-A123	EF-A125	EF-CS	RF-1& 2
AIR SYSTEM	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST	RELIEF
SERVES	A104-WOMEN RR	A105-MEN RR, A102-CONCESSION, A103-STORAGE	A107-SHOWERS, A108-TOILETS	A109-BOYS ATHLETICS	A111-LOCKERS, A112-TOILET	A119-IDF	A120-TOILET	A122-LAUNDRY	A123-ELEC	A125-BOYS RR, A126-GIRLS RR	CRAWL SPACE	STORM SHELTER VENTILATION
MOUNTING	ROOF MTD.	ROOF MTD.	ROOF MTD.	ROOF MTD.	ROOF MTD.	ROOF MTD.	CEILING MTD.	ROOF MTD.	ROOF MTD.	ROOF MTD.	ROOF MTD.	STRUCTURE MTD.
TYPE	UPBLAST	UPBLAST	DOWNBLAST	DOWNBLAST	DOWNBLAST	DOWNBLASDOWNBLAST	--	DOWNBLAST	DOWNBLAST	DOWNBLAST	DOWNBLAST	IN-LINE
IMPELLER SIZE (INCHES)	10	10	10	10	9	10	--	9	9	10	12	24.5
DRIVE	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	BELT
MANUFACTURER	COOK	COOK	COOK	COOK	COOK	COOK	COOK	COOK	COOK	COOK	COOK	COOK
MODEL	ACRUD-150RH10D	ACRUD-150RH10D	ACED-100C15DH	ACED-101C17D	ACED-100C15DL	ACED-101C28D	GC-128	ACED-90C15DH	ACED-90C10DM	ACED-101C28D	ACED-120C13D	245SQIB
WEIGHT, LBS.	40	40	30	35	25	35	15	30	30	35	30	325
AIR FLOW, CFM	450	675	320	760	250	750	75	300	200	750	915	5,315
STATIC PRESSURE, IN. W.G.	0.5	0.5	0.35	0.5	0.35	0.5	0.125	0.25	0.25	0.5	0.5	0.5
FAN ROTATIONAL SPEED, RPM	925	1,050	1,150	1,700	1,190	1,680	750	1,118	1,073	1,680	1,200	650
MOTOR POWER, HP	1/4	1/4	1/8	1/4	1/8	1/4	26.8 WATTS	1/4	1/4	1/4	1/4	1.0
VOLTAGE	120	120	120	120	120	120	120	120	120	120	120	460
PHASE	1	1	1	1	1	1	1	1	1	1	1	3
CONTROLS	EMS	EMS	EMS	0-4 HR TIMER	EMS	EMS	WALL SWITCH	WALL SWITCH	TEMPERATURE SENSOR	EMS	EMS	V.F.D. / WALL SWITCH
REMARKS												4

REMARKS KEY:

1. WALL SWITCHES: REFER TO MOTOR STARTER SWITCHES TO BE FURNISHED UNDER DIVISION 23 AND INSTALLED UNDER DIVISION 26 (RECESSED IN WALL).
2. EMS: FAN TO BE CONTROLLED BY ENERGY MANAGEMENT SYSTEM.
3. MOTOR STARTER CAN SUBSTITUTE AS FAN DISCONNECT WHERE NOT WALL MOUNTED AND LOCATED AT FAN MOTOR. A DISCONNECT CANNOT SUBSTITUTE FOR A MOTOR STARTER.
4. FAN TO BE POWERED THROUGH INVERTER. PROVIDE VFD FOR SOFT START AND BALANCING.

DIRECT EXPANSION (DX) DUCTLESS SPLIT SYSTEM INDOOR/OUTDOOR UNIT SCHEDULE

INDOOR AIR HANDLING UNIT	GENERAL	DESIGNATION	AC-1 & 2
		SERVES	IDF ROOM & EQUIPMENT PLATFORM
		LOCATION	WALL MOUNTED
		MIN. O.A., CFM	0
		MAX. OPERATING WEIGHT, LBS.	40
		TOTAL DESIGN CFM	400
		EXT. S.P., IN. W.G.	0.25
	COOLING COIL	ENT. AIR TEMP.-DB/WB - F°	75.0 / 62.0
		COIL L.A.T., DB/WB - F°	55.6 / 54.0
		TOTAL COOLING, BTUH	18,000
		MIN. COIL FACE AREA, SQ. FT.	2.16
	ELECTRICAL	VOLTS/PHASE	120/1
		RLA	0.4
		POWER OUTPUT, W	58
	MANUFACTURER		TRANE
	MODEL NO.		4MXW8518
	REMARKS		2,3,4,
CONDENSING UNIT	DESIGNATION		CU- 1 & 2
	SERVES		AC- 1 & 2
	CAPACITY, BTUH		18,000
	MIN. EFFICIENCY SEER/EER		18.8 / 8.33
	MAX. AMBIENT TEMP., F°		105.0
	MIN. AMBIENT TEMP., F°		22.0
	MIN. NO. STEPS OF CAPACITY CONTROL		1
	VOLTS/PHASE		208/1
	MIN. CIRCUIT AMPACITY		15.0
	MAX. OVERCURRENT PROTECTION - AMPS		25
	MANUFACTURER		TRANE
	MODEL NO.		4TXK8518
	MAX. OPERATING WEIGHT, LBS		110
	REMARKS		1, 2

REMARKS:

1. PROVIDE HAIL GUARD ON CONDENSING UNIT. IF MANUFACTURER DOESN'T FURNISH, CONTRACTOR TO FABRICATE AND INSTALL.
2. PROVIDE SINGLE POINT POWER CONNECTION AT CONDENSING UNIT. CONTRACTOR TO PROVIDE MANUFACTURER RECOMMENDED WIRING BETWEEN INDOOR AND OUTDOOR UNIT.
3. INDOOR UNIT SCHEDULED AT MEDIUM AIRFLOW.
4. PROVIDE MANUFACTURER FURNISHED INTEGRAL CONDENSATE PUMP.
5. PROVIDE HARD-WIRED MANUFACTURER FURNISHED THERMOSTAT.

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE

DESIGNATION	TYPE	MOUNTING TYPE	MATERIAL	FINISH	MAX. N.C. LEVEL	OPPOSED DAMPER BLADE	EQUALIZING GRID	MANUFACTURER	MODEL	REMARKS
A	SUPPLY DIFFUSER - LOUVERED	LAY-IN / SURFACE MTD.	STEEL	WHITE	30	NO	NO	TITUS	TMS	24"x24" FACE
B	SUPPLY DIFFUSER - LOUVERED	LAY-IN / SURFACE MTD.	STEEL	WHITE	30	NO	NO	TITUS	TMS	12"x12" FACE
C	RETURN AIR GRILLE	LAY-IN / SURFACE MTD.	ALUM.	WHITE	30	NO	NO	TITUS	50F	1/2"x1/2"x1" EGGCRATE WITH FRAMED BORDER; DO NOT STACK 1/2" GRILLES
D	EXHAUST REGISTER	LAY-IN / SURFACE MTD.	ALUM.	WHITE	30	NO	NO	TITUS	355FL	35° FIXED DEFLECTION
E	SUPPLY SLOT DIFFUSER	LAY-IN	ALUM.	WHITE	30	NO	NO	TITUS	FL-10-JT	4'-0" LONG, 1 SLOT, 1" SLOT WIDTH, JET THROW, WITH MANUFACTURER FURNISHED LINED PLENUM WITH MOUNTING CLIPS AND BORDER TYPE 11 FRAME
F	SUPPLY REGISTER - SIDEWALL	SURFACE MTD.	STEEL	WHITE	30	NO	NO	TITUS	350FS	ADJUSTABLE DOUBLE DEFLECTION

HVAC GRAVITY VENTILATOR SCHEDULE

DESIGNATION	SPACE SERVED	TYPE	VOLUMETRIC AIR FLOW RATE (CFM)	MAX. AIR SPEED THROUGH HOOD (FPM)	THROAT		HOOD PERIMETER SIZE (IN. X IN.)	MAX. UNIT HEIGHT WITH CURB (IN.)	A.P.D. (IN. W.C.)	WEIGHT (LB.)	MANUFACTURER	MODEL	COMMENTS
					SIZE (IN. X IN.)	AREA (SQ. FT.)							
OAI-CS	CRAWL SPACE	GRAVITY INTAKE VENTILATOR	915	500	18"x24"	3.0	39 x 39	26	0.02	120	COOK	18 x 24GI	INTERLOCK WITH EF-CS

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PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS

Revision No.

Director JFK
Drawn By HV
Designer CMD
Quality Control NPH
Proj. Arch. JD

PROJECT NO.
1887.00

SHEET TITLE
SCHEDULES - HVAC

SHEET NO.
M5.01

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FILE PATH:
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PLOT SCALE: 12" = 1'-0"

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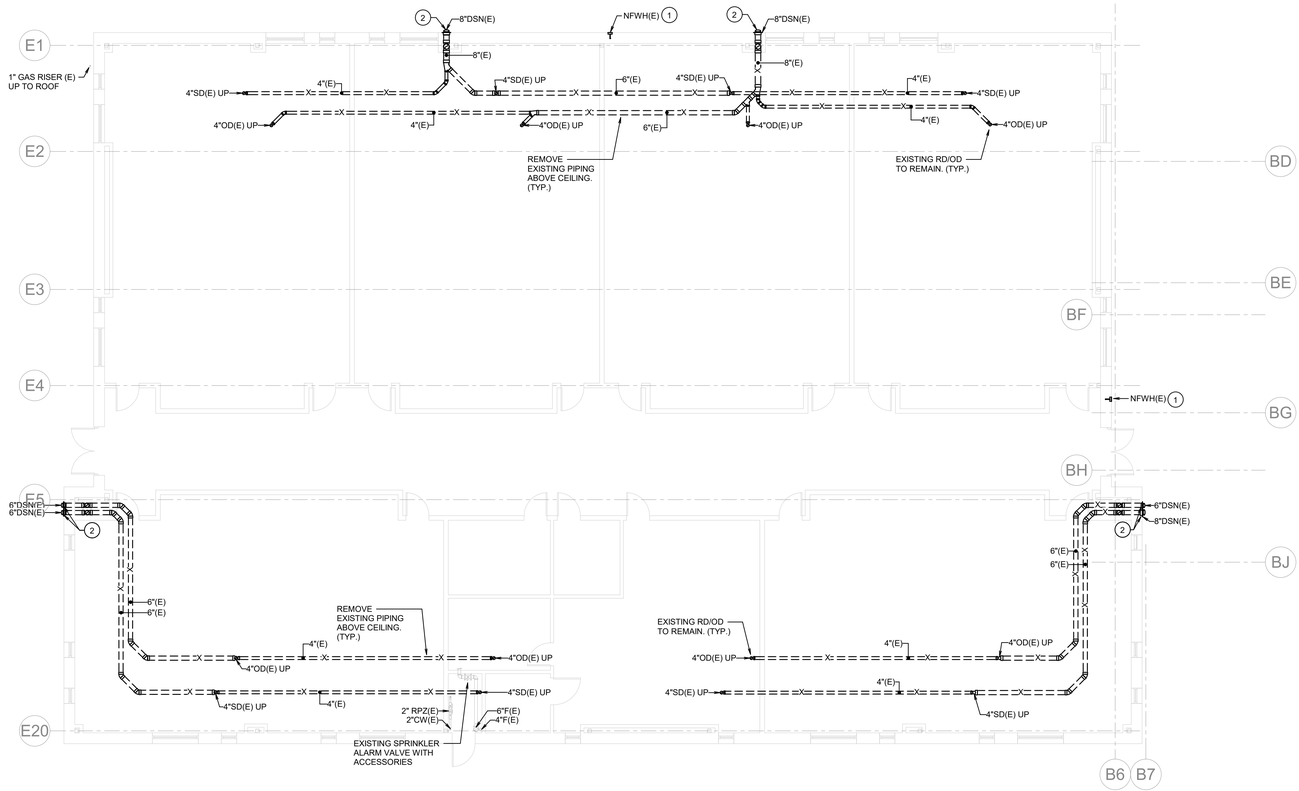
RWB PROJECT #18154-00

GENERAL DEMOLITION NOTES:

1. THE INFORMATION SHOWN ON THE DEMOLITION DRAWINGS IS NOT TAKEN FROM "AS BUILT" DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE GENERAL AMOUNT OF WORK THAT WILL BE REQUIRED. CONTRACTOR SHALL EXAMINE THE EXISTING BUILDING, VERIFY THE GENERAL LOCATION OF ALL EXISTING WORK, AND BECOME INFORMED AS TO THE RELATION TO AND IMPACT ON THE WORK REQUIRED. SUBMISSION OF A BID WILL CONSTITUTE EVIDENCE THAT THE CONTRACTOR HAS INSPECTED THE SITE IN THE FASHION NOTED ABOVE.
2. COORDINATE DEMOLITION WORK WITH DISTRICT MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF EQUIPMENT OR SYSTEMS THAT SHALL AFFECT OTHER SYSTEMS WITHING THE LIMITS OF NEW CONSTRUCTION OR OTHER AREAS OF THE EXISTING BUILDING.
3. WORK SHOWN ON THE DEMOLITION DRAWINGS DOES NOT ACCURATELY REFLECT ALL OF THE EXISTING CONDITIONS OR THE COMPLETE SCOPE OF THE DEMOLITION WORK. THIS WORK SHALL BE BASED ON THE DEMOLITION DRAWINGS, EXISTING DRAWINGS MADE AVAILABLE TO THE CONTRACTOR AND FIEL
4. THE DRAWINGS ONLY REFLECT KNOWN AREAS OF DEMOLITION. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE COMPLETE SCOPE OF THE DEMOLTITION WORK.
5. CONTRACTOR SHALL TRACE ALL PIPING BACK TO MAIN RISERS AND/OR SUPPLIES, AND VERIFY THAT PIPING DOES NOT SERVE ANY OTHER FIXTURES TO REMAIN. CONTRACTOR SHALL OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO REMOVAL OF PIPING TO BE DEMOLISHED.
6. FLUSH AND CLEAN ALL EXISTING FLOOR DRAINS, AREAWAY DRAINS, AND RELATED DRAIN PIPING AS NEEDED DURING CONSTRUCTION, AND AT THE COMPLETION OF THE PROJECT, TO PREVENT BLOCKAGE OF THE DRAINS WITH CONSTRUCTION DIRT, TRASH AND DEBRIS.
7. CONTRACTOR SHALL PATCH AND REPAIR ALL WALLS, FLOORS AND CEILINGS TO MATCH EXISTING FINISHES OR PROPOSED NEW FINISHES, AS APPLICABLE, AND AS NECESSARY WHICH ARE AFFECTED BY THE REMOVAL AND/OR REWORK OF PLUMBING FIXTURES AND PIPING.

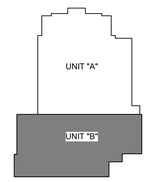
PLUMBING NOTES BY SYMBOL '◯':

1. REMOVE EXISTING NON-FREEZE WALL HYDRANT AND ALL ASSOCIATED PIPING. REMOVE EXISTING WATER PIPING TO ABOVE CEILING AND CAP AT MAIN. PATCH AND REPAIR ALL SURFACES AS REQUIRED TO MATCH EXISTING CONDITIONS.
2. REMOVE EXISTING DOWNSPOUT NOZZLE. PATCH AND REPAIR ALL WALL AS REQUIRED TO MATCH EXISTING FINISHED SURFACES.



PLAN NORTH / TRUE NORTH

1 PLUMBING - DEMOLITION PLAN - UNIT B
SCALE: 1/8" = 1'-0"



KEY PLAN

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
NATHAN P. HART
93906
LICENSED
PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By PL
Designer CMD	Quality Control
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
PLUMBING - DEMOLITION PLAN MAIN LEVEL - UNIT B

SHEET NO.
DP1.12

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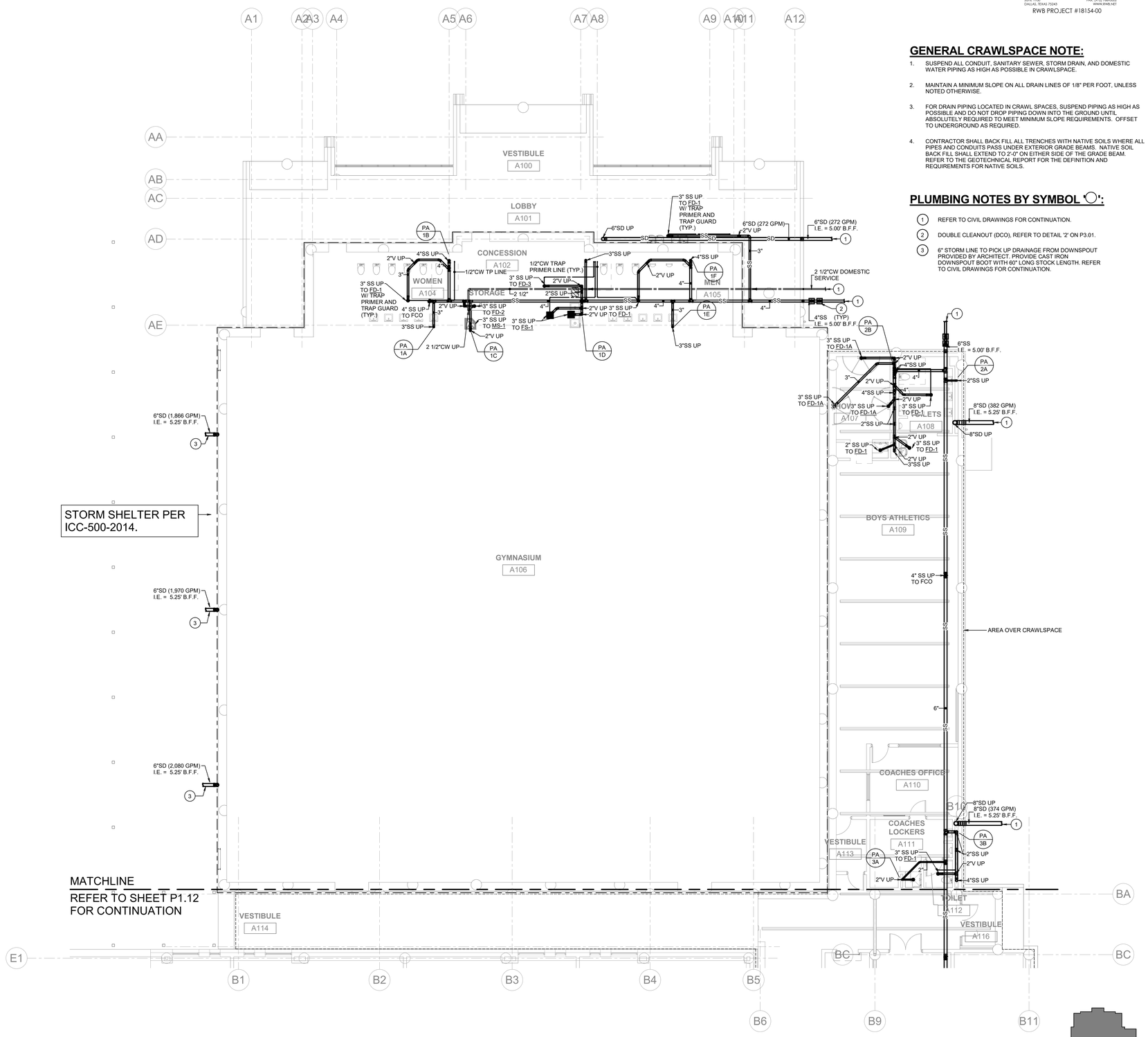
RWB PROJECT #18154-00



GENERAL CRAWLSPACE NOTE:

1. SUSPEND ALL CONDUIT, SANITARY SEWER, STORM DRAIN, AND DOMESTIC WATER PIPING AS HIGH AS POSSIBLE IN CRAWLSPACE.
2. MAINTAIN A MINIMUM SLOPE ON ALL DRAIN LINES OF 1/8" PER FOOT, UNLESS NOTED OTHERWISE.
3. FOR DRAIN PIPING LOCATED IN CRAWL SPACES, SUSPEND PIPING AS HIGH AS POSSIBLE AND DO NOT DROP PIPING DOWN INTO THE GROUND UNTIL ABSOLUTELY REQUIRED TO MEET MINIMUM SLOPE REQUIREMENTS. OFFSET TO UNDERGROUND AS REQUIRED.
4. CONTRACTOR SHALL BACK FILL ALL TRENCHES WITH NATIVE SOILS WHERE ALL PIPES AND CONDUITS PASS UNDER EXTERIOR GRADE BEAMS. NATIVE SOIL BACK FILL SHALL EXTEND TO 2'-0" ON EITHER SIDE OF THE GRADE BEAM. REFER TO THE GEOTECHNICAL REPORT FOR THE DEFINITION AND REQUIREMENTS FOR NATIVE SOILS.

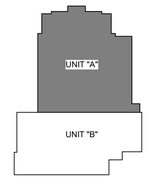
PLUMBING NOTES BY SYMBOL '⬡':

1. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
2. DOUBLE CLEANOUT (DCO), REFER TO DETAIL '2' ON P3.01.
3. 6" STORM LINE TO PICK UP DRAINAGE FROM DOWNSPOUT PROVIDED BY ARCHITECT. PROVIDE CAST IRON DOWNSPOUT BOOT WITH 60" LONG STOCK LENGTH. REFER TO CIVIL DRAWINGS FOR CONTINUATION.

PLAN NORTH / TRUE NORTH

1 PLUMBING - UNDERFLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

KEY PLAN



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1887.00

SHEET TITLE
PLUMBING - UNDERFLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.
P1.11

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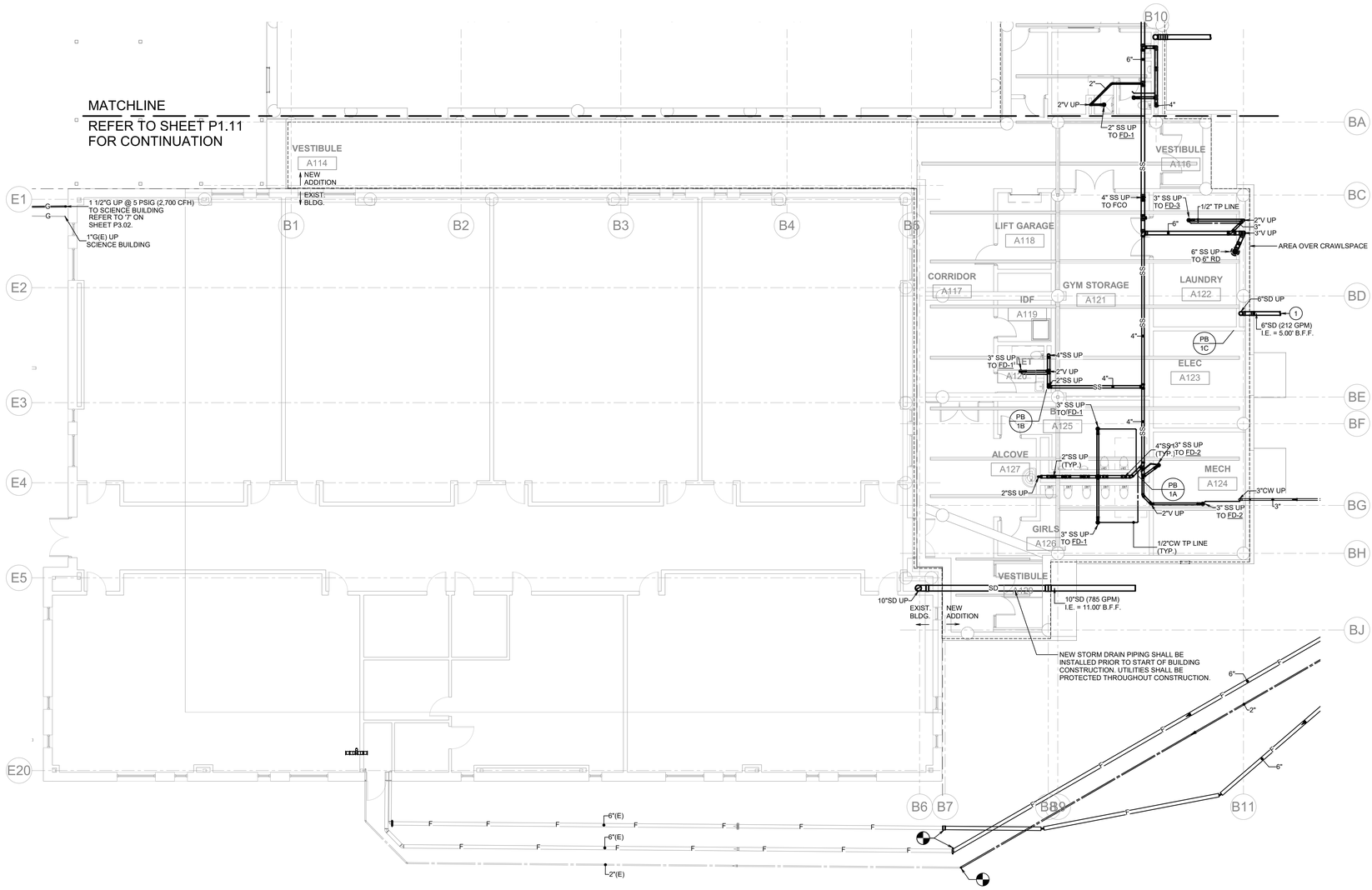
GENERAL CRAWLSPACE NOTE:

1. SUSPEND ALL CONDUIT, SANITARY SEWER, STORM DRAIN, AND DOMESTIC WATER PIPING AS HIGH AS POSSIBLE IN CRAWLSPACE.
2. MAINTAIN A MINIMUM SLOPE ON ALL DRAIN LINES OF 1/8" PER FOOT, UNLESS NOTED OTHERWISE.
3. FOR DRAIN PIPING LOCATED IN CRAWL SPACES, SUSPEND PIPING AS HIGH AS POSSIBLE AND DO NOT DROP PIPING DOWN INTO THE GROUND UNTIL ABSOLUTELY REQUIRED TO MEET MINIMUM SLOPE REQUIREMENTS. OFFSET TO UNDERGROUND AS REQUIRED.
4. CONTRACTOR SHALL BACK FILL ALL TRENCHES WITH NATIVE SOILS WHERE ALL PIPES AND CONDUITS PASS UNDER EXTERIOR GRADE BEAMS. NATIVE SOIL BACK FILL SHALL EXTEND TO 2'-0" ON EITHER SIDE OF THE GRADE BEAM. REFER TO THE GEOTECHNICAL REPORT FOR THE DEFINITION AND REQUIREMENTS FOR NATIVE SOILS.

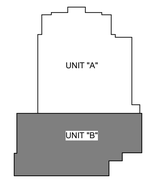
PLUMBING NOTES BY SYMBOL '◯':

(1) REFER TO CIVIL DRAWINGS FOR CONTINUATION.



PLAN NORTH / TRUE NORTH

1 PLUMBING - UNDERFLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"



KEY PLAN

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CONSTRUCTION DOCUMENTS

NATHAN P. HART 93906 LICENSED PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By PL
Designer CMD	Quality Control
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
PLUMBING - UNDERFLOOR PLAN MAIN LEVEL - UNIT B

SHEET NO.
P1.12

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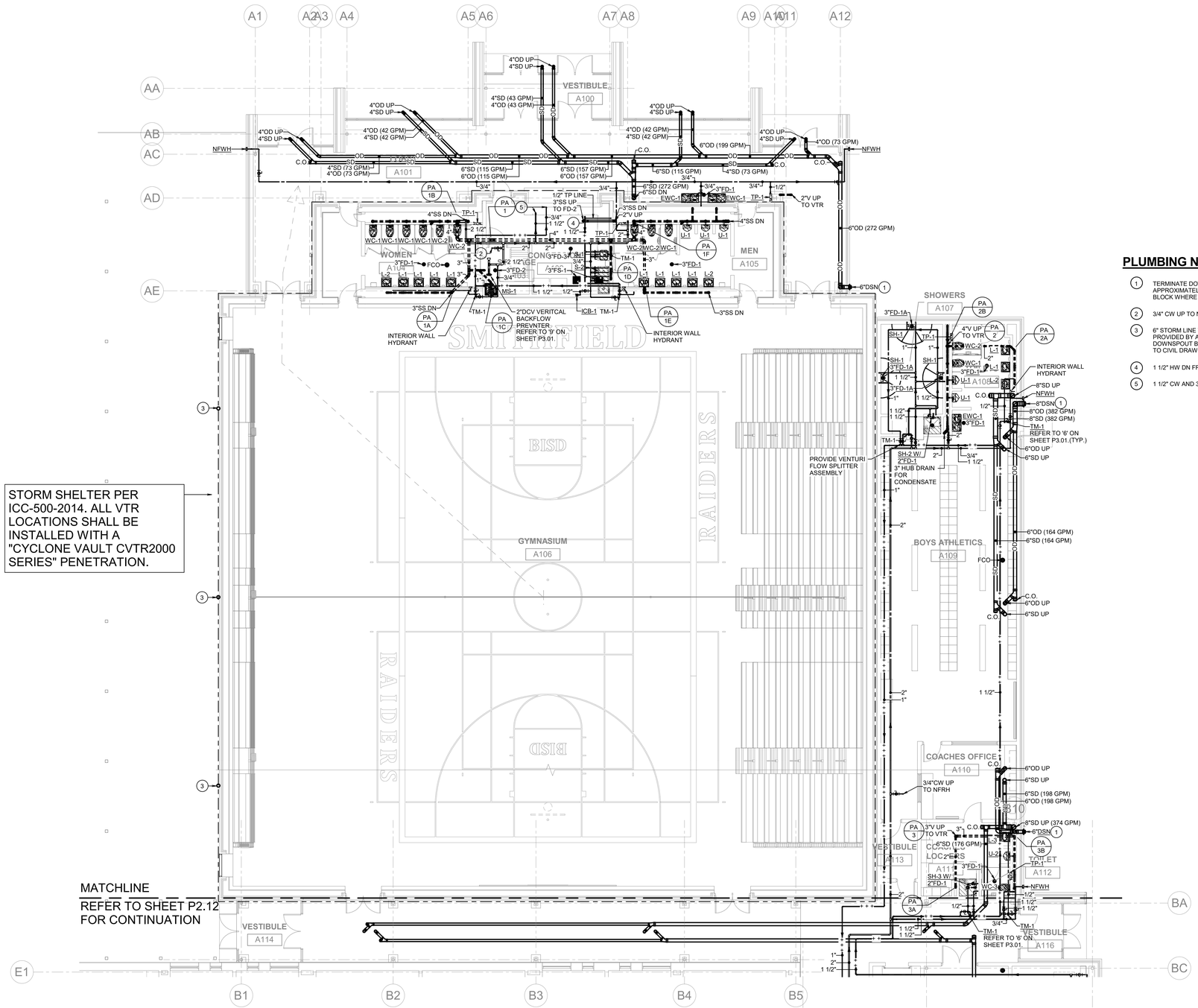


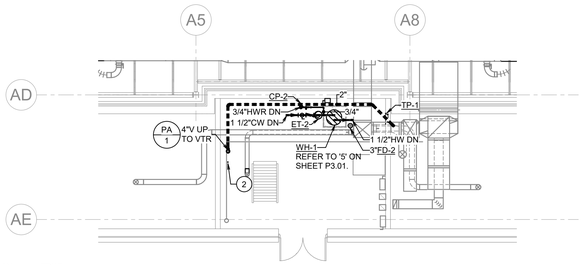
PLUMBING NOTES BY SYMBOL ◯':

1. TERMINATE DOWNSPOUT NOZZLE (DSN) OPEN SIGHT, APPROXIMATELY 12" ABOVE GRADE. PROVIDE SPLASH BLOCK WHERE REQUIRED. (TYP).
2. 3/4" CW UP TO NFRH.
3. 6" STORM LINE TO PICK UP DRAINAGE FROM DOWNSPOUT PROVIDED BY ARCHITECT. PROVIDE CAST IRON DOWNSPOUT BOOT WITH 60" LONG STOCK LENGTH. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
4. 1 1/2" HW DN FROM ABOVE MECHANICAL MEZZANINE.
5. 1 1/2" CW AND 3/4" HWR UP TO MECHANICAL MEZZANINE.

PLAN NORTH / TRUE NORTH

1 PLUMBING - FLOOR PLAN - UNIT A

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

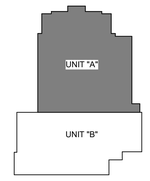


PLAN NORTH / TRUE NORTH

2 PLUMBING - FLOOR PLAN - CONCESSION MEZZANINE

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

KEY PLAN



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5/8/19

MAY 8, 2019

REVISIONS
Revision No.

Director	Drawn By
JFK	PL
Designer	Quality Control
CMD	
Proj. Arch.	
JD	

PROJECT NO.
1887.00

SHEET TITLE
PLUMBING - FLOOR PLAN
MAIN LEVEL - UNIT A

SHEET NO.
P2.11

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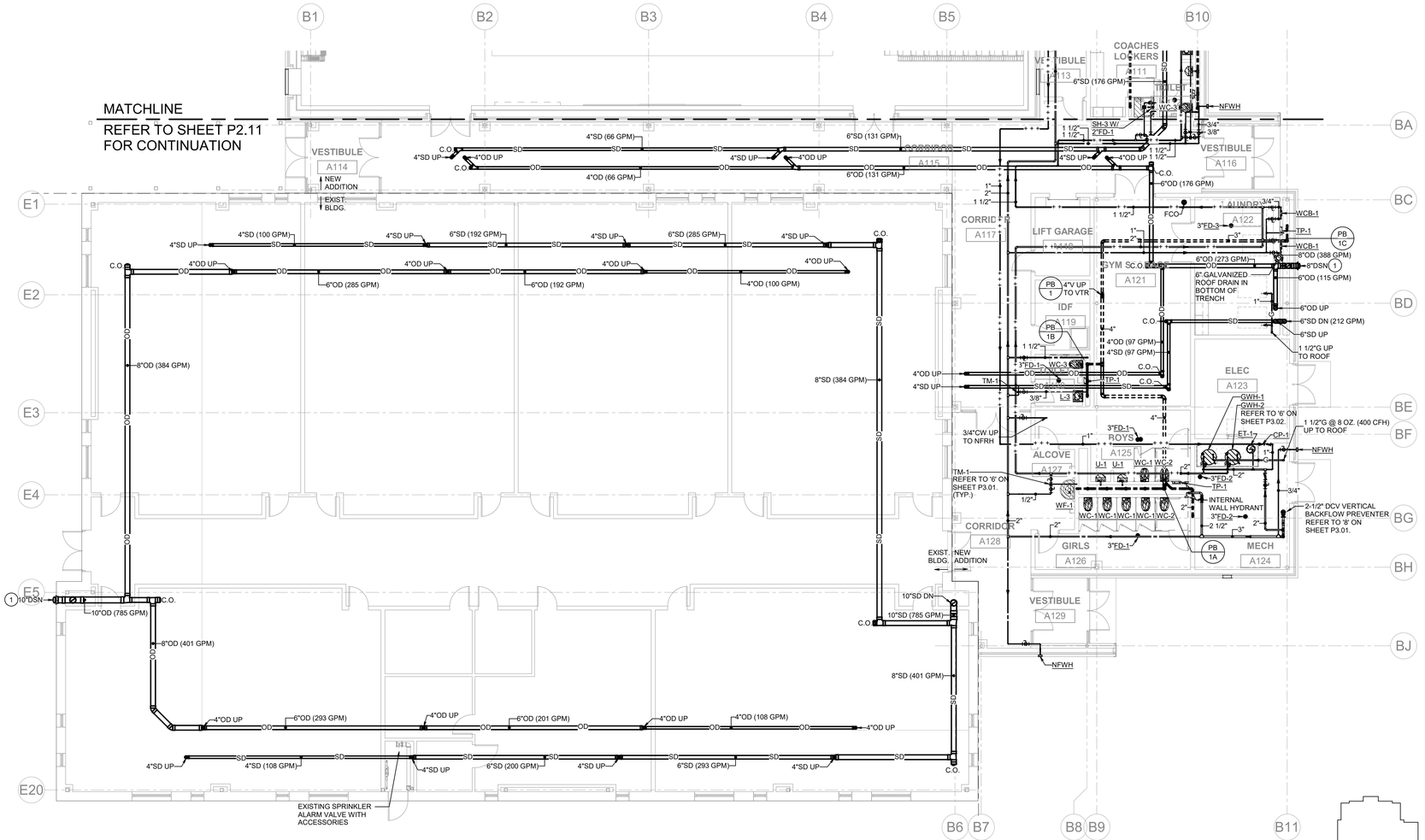
RWB PROJECT #18154-00

PLUMBING NOTES BY SYMBOL ◯':

(1) TERMINATE DOWNSPOUT NOZZLE (DSN) OPEN SIGHT, APPROXIMATELY 12" ABOVE GRADE. PROVIDE SPLASH BLOCK WHERE REQUIRED. (TYP).



PLAN NORTH / TRUE NORTH

1 PLUMBING - FLOOR PLAN - UNIT B
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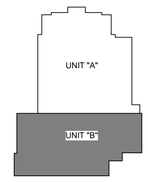

KEY PLAN

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5/8/19

MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By PL
Designer CMD	Quality Control
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PROJECT NO.
1887.00

SHEET TITLE
PLUMBING - FLOOR PLAN MAIN LEVEL - UNIT B

SHEET NO.
P2.12

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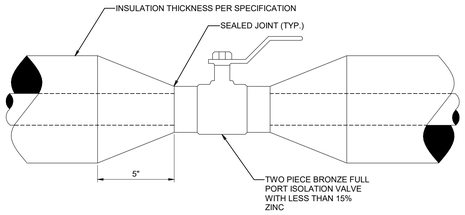

1 ISOLATION TAPER AT DOMESTIC WATER ISOLATION VALVE DETAIL
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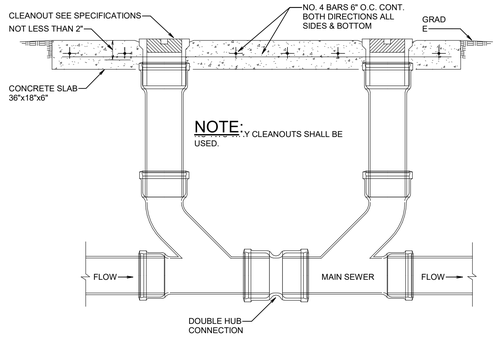

2 DOUBLE EXTERIOR CLEANOUT
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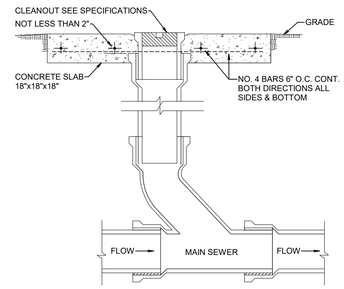

3 EXTERIOR CLEANOUT/GRADE CLEANOUT
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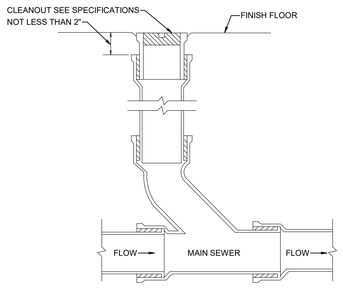

4 INTERIOR FLOOR CLEANOUT
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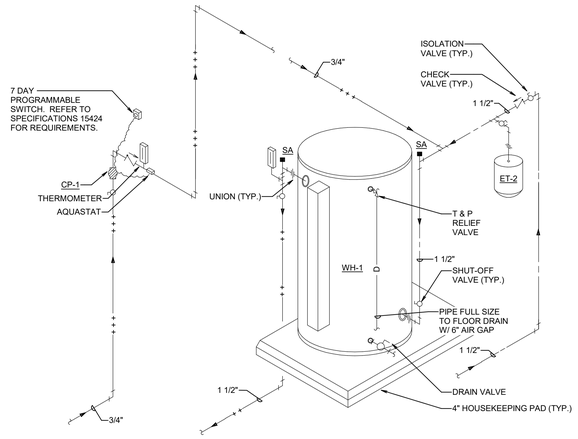
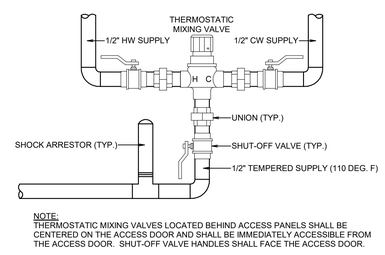
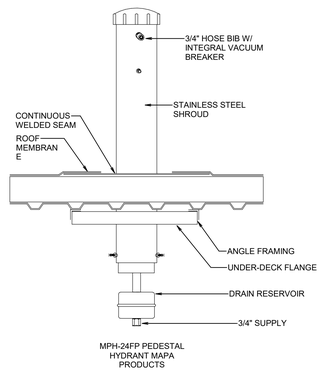


5 WATER HEATER - ELECTRIC
NO SCALE

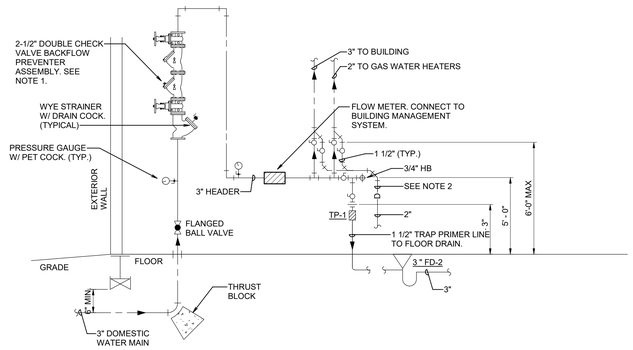


NOTE:
THERMOSTATIC MIXING VALVES LOCATED BEHIND ACCESS PANELS SHALL BE CENTERED ON THE ACCESS DOOR AND SHALL BE IMMEDIATELY ACCESSIBLE FROM THE ACCESS DOOR. SHUT-OFF VALVE HANDLES SHALL FACE THE ACCESS DOOR.

6 POINT-OF-USE THERMOSTATIC MIXING VALVE DETAIL
NO SCALE



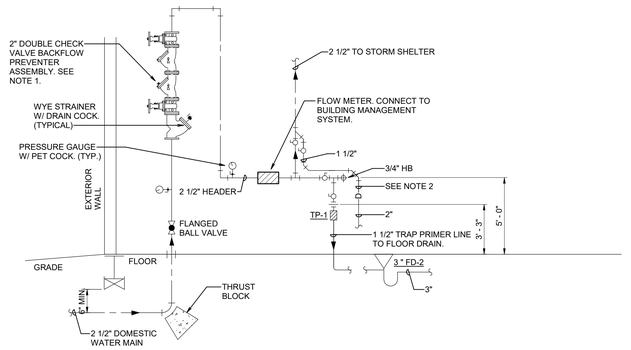
7 NON-FREEZE ROOF HYDRANT DETAIL
NO SCALE



1) ALL BACKFLOW PREVENTORS SHALL BE TESTED BY AN APPROVED BACKFLOW PREVENTION SPECIALIST PRIOR TO PLACING IN SERVICE. A CUSTOMER SERVICE INSPECTION CERTIFICATE SHALL BE REQUIRED PRIOR TO OBTAINING A CERTIFICATE OF OCCUPANCY PERMIT.

2) EXTEND DRAIN LINE FULL SIZE TO NEAREST FLOOR DRAIN AND TERMINATE OPEN SIGHT A MINIMUM OF 2" ABOVE THE TOP OF THE DRAIN.

8 DOMESTIC WATER PIPING - DCV BACKFLOW PREVENTER DETAIL - MECHANICAL ROOM
NO SCALE



1) ALL BACKFLOW PREVENTORS SHALL BE TESTED BY AN APPROVED BACKFLOW PREVENTION SPECIALIST PRIOR TO PLACING IN SERVICE. A CUSTOMER SERVICE INSPECTION CERTIFICATE SHALL BE REQUIRED PRIOR TO OBTAINING A CERTIFICATE OF OCCUPANCY PERMIT.

2) EXTEND DRAIN LINE FULL SIZE TO NEAREST FLOOR DRAIN AND TERMINATE OPEN SIGHT A MINIMUM OF 2" ABOVE THE TOP OF THE DRAIN.

9 DOMESTIC WATER PIPING - DCV BACKFLOW PREVENTER DETAIL - STORM SHELTER
NO SCALE

FILE PATH:
DATE/TIME:8/8/2019 10:45:39 AM
PLOT SCALE:As indicated

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SHEET TITLE
DETAILS - PLUMBING

SHEET NO.
P3.01

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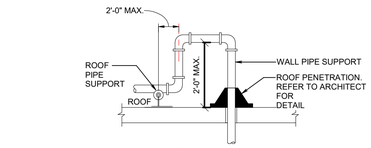
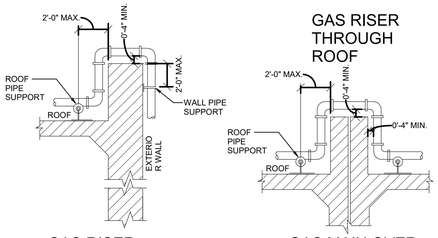


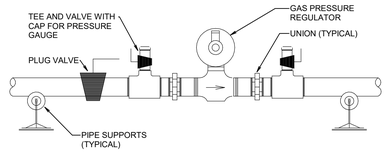
GAS RISER THROUGH ROOF



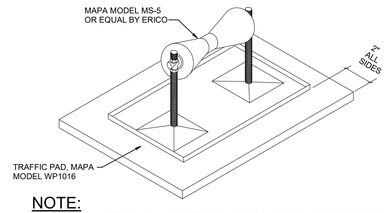
GAS RISER AT EXTERIOR WALL

GAS MAIN OVER EXPANSION JOINT

1 GAS RISER SUPPORT DETAIL
NO SCALE



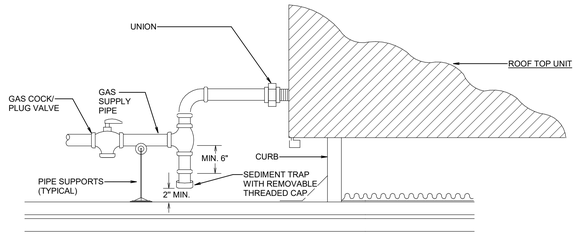
2 GAS PRESSURE REGULATOR DETAIL
NO SCALE



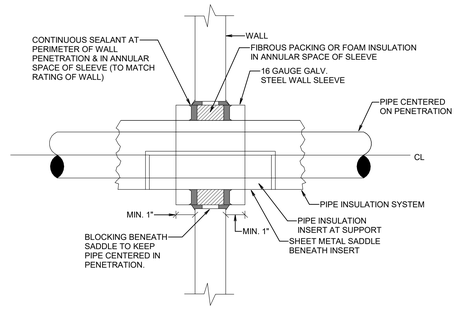
NOTE:

PROVIDE GALVANIZED OR STAINLESS STEEL ADJUSTABLE HEIGHT HARD CAST RUBBER ROLLER W/ NYLON BUSHING PIPE SUPPORTS FOR ALL ROOF TOP UTILITY LINES. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SPACING AND APPROPRIATE PIPE SUPPORT SIZE OF PIPE. PROVIDE, AS A MINIMUM, SUPPORTS WHERE SHOWN.

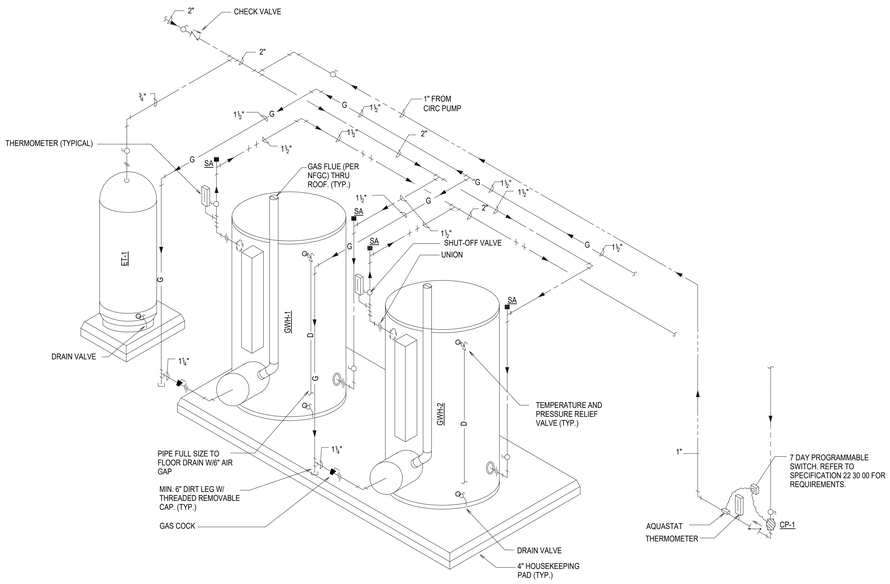
3 GAS PIPE SUPPORT DETAIL
NO SCALE



4 ROOF TOP A/C UNIT DETAIL
NO SCALE



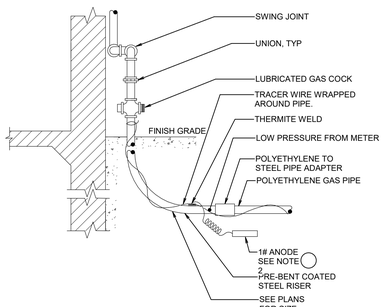
5 BUILDING WALL PIPE PENETRATION DETAIL
NO SCALE



NOTES:

1. PIPE SIZES & ROUTING SHOWN ON PLANS
2. WATER HEATERS SHALL BE PIPED EQUALLY AND IN PARALLEL REVERSE FLOW MANNER (WITH FIRST HEATER SUPPLIED FROM THE COLD WATER SUPPLY SHALL BE THE LAST HEATER TO SUPPLY THE HOT WATER SUPPLY.)
3. INSTALL PIPING TO FACILITATE REMOVAL OF EACH HEATER WITH OUT INTERUPTING THE OPERATION OF THE OTHER HEATERS.

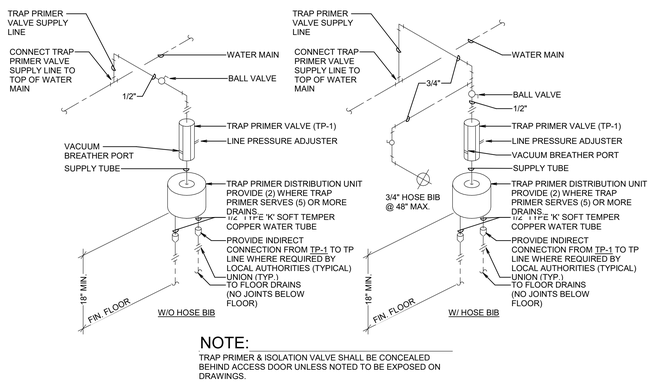
6 DUAL GAS WATER HEATERS
NO SCALE



NOTES:

1. ADEQUATE SLACK SHALL BE LEFT IN LEAD WIRE TO PREVENT DAMAGE TO LEAD WIRE DURING BACKFILLING.
2. ANODE SHALL BE AT LEAST 6" BELOW SERVICE LINE UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR SHALL COORDINATE GAS SERVICE REQUIREMENTS WITH THE LOCAL NATURAL GAS UTILITY COMPANY TO INSURE THE TIMELY PROVISION OF THIS SERVICE. TO KEEP UP WITH THE PROJECT REQUIREMENTS. COORDINATE EXACT PIPE ROUTING, SIZE, INSTALLATION, AND PAY ALL COSTS TO THE UTILITY COMPANY FOR ALL NEW GAS PIPING FROM THE OFF-SITE GAS MAIN TRUNK CONNECTION UP TO THE PROPERTY LINE, EXTENDED ON TO THE SITE, UP TO AND INCLUDING THE GAS METER INSTALLATION AT THE PROPOSED LOCATION. CONTRACTOR SHALL INSTALL GAS PIPING FROM THE GAS METER UP TO THE BUILDING ENTRY POINT. THIS SYSTEM SHALL BE PROVIDED WITH THE SERVICE PRESSURE NOTED ON THE PLANS WITH ISOLATION VALVES, TEST PORTS, AND REGULATION COMPONENTS TO ADJUST THE DOWNSTREAM PRESSURE TO THAT INDICATED ON THE PLANS.

7 GAS MAIN DETAIL
NO SCALE



NOTE:

TRAP PRIMER & ISOLATION VALVE SHALL BE CONCEALED BEHIND ACCESS DOOR UNLESS NOTED TO BE EXPOSED ON DRAWINGS.

8 TP-1 TYPICAL AUTOMATIC TRAP PRIMER PIPING DETAIL
NO SCALE

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CONSTRUCTION DOCUMENTS

STATE OF TEXAS
NATHAN P. HART
93906
LICENSED
PROFESSIONAL ENGINEER
5/8/19

MAY 8, 2019

REVISIONS

Revision No.

Director JFK	Drawn By PL
Designer CMD	Quality Control
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
DETAILS - PLUMBING

SHEET NO.
P3.02

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FILE PATH:
DATE/TIME:5/8/2019 10:30:16 AM
PLOT SCALE:12" = 1'-0"

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER (CW)
	DOMESTIC HOT WATER (HW)
	DOMESTIC HOT WATER RETURN (HWR)
	140°F DOMESTIC HOT WATER (HW)
	140°F DOMESTIC HOT WATER RETURN (HWR)
SS	SANITARY WASTE (SS)
V	SANITARY VENT (V)
SD	STORM DRAIN (SD)
OD	OVERFLOW STORM DRAIN (OD)
GW	GREASE WASTE (GW)
GV	GREASE VENT (GV)
	SUB SOIL DRAIN
G	GAS PIPE (G)
D	DRAIN, INDIRECT (D)
F	FIRE LINE (F)
SP	FIRE SPRINKLER PIPING (SP)
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	WET FIRE SPKLR. VALVE ASSEMBLY
	FLOOR DRAIN
	FLOOR SINK
	DEMO END
	GAS METER
	ROOF PIPE SUPPORT
	PLUG VALVE
R.D.	ROOF DRAIN
O.D.	OVERFLOW DRAIN
	GAS PRESSURE REGULATOR
	CAP
	DIRECTION OF SLOPE
	DIRECTION OF FLOW

NOTE: NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	RISE & DROP IN PIPING
C.O. C.O.	CLEANOUT
	GATE VALVE
	OS&Y GATE VALVE
	BALL VALVE
	CHECK VALVE
	UNION
SA	SHOCK ARRESTOR
	STRAINER W/ BLOWDOWN VALVE
	GAS COCK
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	TEMPERATURE & PRESSURE RELIEF VALVE
	GAUGE COCK
	PRESSURE GAUGE W/GAUGE COCK
	THERMOMETER
NFWH	NON-FREEZE WALL HYDRANT
NFRH	NON-FREEZE ROOF HYDRANT
HB	HOSE BIBB
	ALARM BELL
	NEW CONNECTION TO EXISTING
A.F.F.	ABOVE FINISHED FLOOR
B.F.F.	BELOW FINISHED FLOOR
B.F.G.	BELOW FINISHED GRADE
EXT. GB.	EXTERIOR GRADE BEAM
FL	FLOWLINE ELEVATION
CO	CLEAN OUT
FCO	FLOOR CLEAN OUT
GCO	GRADE CLEAN OUT
DCO	DOUBLE CLEAN OUT
WCO	WALL CLEAN OUT
VTR	VENT THROUGH ROOF
(E)	EXISTING UTILITIES
DSN	DOWNSPOUT
GPM	GALLON PER MINUTE

NOTE: NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED

GENERAL PLUMBING NOTES:

1. ALL DIMENSIONS AND FIELD CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE. THE LOCATION OF ALL NEW PIPING, FIXTURES, EQUIPMENT, LOCATIONS, SIZES, SCALES, AND DIMENSIONS SHALL BE CHECKED AND VERIFIED ON SITE.

2. CONTRACTOR SHALL LAY OUT THEIR WORK BASED ON ACTUAL FIELD MEASUREMENTS AND ACTUAL DIMENSIONS OF EQUIPMENT AND FIXTURS INSTALLED. ALL PIPING AND EQUIPMENT OF ALL TRADES SHALL BE PROPERLY COORDINATED AND SET IN PLACE TO MAINTAIN REQUIRED SERVICE CLEARANCES. ALL INSTALLATIONS SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.

3. CONTRACTOR SHALL CHANGE THE LOCATION OF NEW PIPING, WHERE REQUIRED, TO MEET FIELD CONDITIONS.

4. CONTRACTOR SHALL SUBMIT COMPLETE PRODUCT DATA ALONG WITH SHOP DRAWINGS. PREPARE AND SUBMIT 1/4" = 1'-0" SCALE PLUMBING PIPING SHOP DRAWINGS. CONTRACTOR SHALL FULLY COORDINATE ALL PIPING SHOP DRAWINGS WITH SHEET METAL SHOP DRAWINGS AND WITH THE WORK OF ALL OTHER TRADES. PRIOR TO SUBMITTAL SHOP DRAWINGS SHALL BE CHECKED FOR OBSTRUCTIONS AND INTERFERENCES, ETC. FAILURE TO SUBMIT SHOP DRAWINGS IN A TIMELY MANNER AS REQUIRED TO KEEP PACE WITH THE CONSTRUCTION SCHEDULE MAY RESULT IN DELAYS, AND POSSIBLE STOPPAGE OF PAYMENT TO THE CONTRACTOR. ADDITIONALLY, NO WORK MAY PROCEED UNTIL SUCH SHOP DRAWINGS ARE SUBMITTED, REVIEWED, AND FOUND TO BE ACCEPTABLE BY THE ARCHITECT AND ENGINEER.

5. REFER TO STRUCTURAL ENGINEER'S PLANS FOR EXACT LOCATION OF STRUCTURAL PEIRS, BEAMS, JOISTS AND OTHER STRUCTURAL ELEMENTS. MODIFY PIPE ROUTING AS REQUIRED TO AVOID CONFLICTS WHERE SUCH OCCURS.

6. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL WALLS, PARTITIONS, CEILINGS, CEILING HEIGHTS, AND EQUIPMENT/FIXTURES.

7. COORDINATE ALL UNDERGROUND UTILITIES WITH CIVIL ENGINEERING PLANS FOR CONNECTION OF ALL SANITARY WASTE, STORM DRAINS, DOMESTIC WATER AND FIRE WATER SUPPLIES THAT EXTEND 5'-0" BEYOND THE BUILDING LINE. VERIFY EXACT FLOW LINE ELEVATIONS OF WASTE AND STORM MAINS PRIOR TO MAKING ANY CONNECTIONS.

8. CONTRACTOR SHALL CONFIRM SCALE OF PLUMBING DRAWINGS BY COMPARISON WITH ARCHITECTURAL DRAWINGS TO VERIFY THE ACCURACY OF ALL TAKE-OFFS MADE DURING THE BIDDING PERIOD.

9. ANY PIPE PENETRATIONS OF CEILINGS, WALLS OR FLOORS SHALL BE RESTORED TO THE FIRE RATINGS INDICATED ON THE ARCHITECTURAL DRAWINGS. FLOOR, WALL AND CEILING PIPING PENETRATIONS SHALL BE PATCHED, SLEEVED, SEALED, AND BE PROVIDED WITH APPROPRIATE ESCUTCHEONS WHERE LOCATED IN FINISHED/EXPOSED SPACES.

10. SHUT-OFF VALVES, SHOCK ARRESTORS, THERMOSTATIC MIXINGS VALVES AND CLEAN-OUTS LOCATED BEHIND ACCESS PANELS SHALL BE CENTERED ON THE ACCESS DOOR AND SHALL BE IMMEDIATELY ACCESSIBLE FROM THE ACCESS DOOR. SHUT-OFF VALVE HANDLES SHALL FACE THE ACCESS DOOR.

11. ACCESS DOORS OR ACCESS PANELS SHALL BE A MINIMUM OF 18"x18". WHERE MORE THAN ONE DEVICE IS SERVICED FROM THE ACCESS LOCATION THE PANEL SHALL BE A MINIMUM OF 24"x24".

12. ALL POINT-OF-USE THERMOSTATIC MIXING VALVES SHALL BE PROVIDED WITH SHUT-OFF VALVES AND UNIONS ON THE COLD WATER SUPPLY, HOT WATER SUPPLY AND TEMPERED WATER OUTLET OF THE DEVICE.

13. CONTRACTOR SHALL RUN ALL PLUMBING LINES AS HIGH AS POSSIBLE EXCEPT WHERE DIRECTED OTHERWISE.

14. ALL VENTS THRU ROOF SHALL TERMINATE A MINIMUM OF 25'-0" FEET FROM ANY OUTSIDE AIR INTAKES, EXCEPT WHERE DIRECTED OTHERWISE. COORDINATE WITH MECHANICAL CONTACTOR AND OTHER TRADES.

15. REFER TO ENLARGED SCALE TOILET ROOM PLANS ON ARCHITECTRUAL DRAWINGS FOR EXACT LOCATION OF FLOOR DRAINS AND PLUMBING FIXTURES.

16. SUSPEND SANITARY SEWER, STORM DRAIN & DOMESTIC WATER PIPING AS HIGH AS POSSIBLE. MAINTAIN A MINIMUM SLOPE ON ALL DRAIN LINES OF 1/8" PER FOOT. FOR DRAIN PIPING LOCATED IN CRAWL SPACES, SUSPEND PIPING AS HIGH AS POSSIBLE AND DO NOT DROP PIPING DOWN INTO SOIL UNTIL FLOW LINE DICTATES SUCH. UNDER THESE CONDITIONS OFFSET PIPE AT A 45 DEGREE ANGLE TO DROP THE PIPE TO BELOW GRADE AND TO CLEAR THE PERIMETER GRADE BEAM AND THE HEIGHT OF THE ANY CARTON FORMS LOCATED BELWO THESE BEAMS.

17. AL SANITARY SEWER PIPING THAT RECEIVES A DISCHARGE OF WASTE OR WATER THAT IS 140 DEGREE F. OR GREATER IN TEMPERATURE SHALL BE STANDARD WEIGHT CAST IRON PIPE WITH HUB AND SPIGOT FITTINGS FOR BURIED PIPING (UNDER DIRT EVEN IF IN A CRAWL SPACE) INSTALLATIONS AND NO-HUB FOR ABOVE SLAB INSTALLATIONS OR SUSPENDED ABOVE GROUND IN A CRAWL SPACE, WITHOUT EXCEPTION. EXTEND CAST IRON PIPE TO BE A MINIMUM OF 20' TWENTY LINEAR FEET IN LENGTH BEFORE ALLOWING TRANSITION BACK TO ANOTHER PIPE MATERIAL, OR AFTER CONNECTING TO A MAIN DRAIN LINE.

18. CONTRACTOR SHAL NOT DEVIATE FROM THE CONSTRUCTION DOCUMENTS. ANY DEVIATION SHALL RECEIVE WRITTEN ACCEPTANCE AND APPROVAL FROM THE OWNER AND ARCHITECT IN ADVANCE OF SUCH WORK BEING PERFORMED. SUBMIT SUCH REQUESTS TO THE ARCHITECT AND ENGINEER ALONG WITH THE MONETARY CREDIT, AS APPLICABLE. ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS FOUND ON THE PROJECT THAT DID NOT RECEIVE A LETTER OF ACCEPTANCE AND APPROVAL FROM THE OWNER OR ARCHITECT SHALL BE FULLY REPLACED AND SHALL BE MADE TO BE IN FULL COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS AT THE EXPENSE OF THE CONTRACTOR.

PLUMBING FIXTURE ROUGH-IN SCHEDULE

DESIGNATION	FIXTURE TYPE	FIXTURE CONNECTIONS				HOT WATER TEMP. (°F)	DESCRIPTION
		COLD WATER	HOT WATER	WASTE	VENT		
EWC-1	ELECTRIC WATER COOLER	1/2"		1 1/2"	1 1/2"		WALL MOUNTED ALL STAINLESS STEEL BI-LEVEL, WITH BOTTLE FILLER AND CANE APRON AS REQUIRED - ADA/TAS
FD-1	FLOOR DRAIN				2"		GENERAL PURPOSE, VANDAL RESISTANT NICKEL BRONZE GRATE, CAST IRON BODY
FD-1A	FLOOR DRAIN			3"	2"		GENERAL PURPOSE, VANDAL RESISTANT NICKEL BRONZE GRATE, CAST IRON BODY - FOR GANG SHOWERS TRENCH DRAIN
FD-2	FLOOR DRAIN			3"	2"		MECHANICAL ROOM, FIXED DUCTILE IRON GRATE, CAST IRON BODY.
FD-3	FLOOR DRAIN			3"	2"		9" STAINLESS STEEL RIM & GRATE, CAST IRON BODY
FS-1	FLOOR SINK			3"	2"		12"X12"X8" FLOOR SINK W/ 3/4 GRATE, INTERNAL DOME STRAINER, ACID RESISTANT COATED INTERIOR UNLESS NOTED OTHERWISE
ICB-1	ICE MAKER CONNECTION BOX	1/2"					WALL MOUNTED, FULLY RECESSED, WITH 1/4" THREADED CONNECTION
IWH	INTERNAL WALL HYDRANT	3/4"					HOSE BIBB WITH ANTI SIPHON VACUUM BREAKER, 3/4" THREADED HOSE CONNECTION, LOOSE KEY HANDLE
L-1	LAVATORY		3/8"	1 1/2"	1 1/2"	110 °F	WALL MOUNTED, 4" CENTERS WITH 5" SPOUT, METERING - STUDENT
L-2	LAVATORY		3/8"	2"	1 1/2"	110 °F	WALL MOUNTED, 4" CENTERS WITH 5" SPOUT, METERING - STUDENT - ADA/TAS
L-3	LAVATORY	3/8"	3/8"	2"	1 1/2"	110 °F	WALL MOUNTED, 8" CENTERS WITH 5" SPOUT, LEVER HANDLES - ADULT - ADA/TAS
MS-1	MOP SINK	3/4"	3/4"	3"	2"	140 °F	FLOOR MOUNTED TERRAZZO BASIN, WALL MOUNTED FAUCET WITH SUPPLY CHECK ARMS, VACUUM BREAKER
NFRH	NON-FREEZE ROOF HYDRANT	3/4"					ROOF MOUNTED FREEZE PROOF WITH VACUUM BREAKER, AUTOMATIC DRAIN DOWN RESEVOIR WITH VENTURI PRINCIPLE, UNDERDECK MOUNTING FLANGE
NFWH	NON-FREEZE WALL HYDRANT	3/4"					RECESSED BOX, 3/4" THREADED HOSE CONNECTION, LOOSE KEY HANDLE, WITH INTEGRAL ASSE 1052 DOUBLE CHECK VACUUM BREAKER
S-1	SINK	1/2"	1/2"	2"	2"	110 °F	SINGLE COMPARTMENT, STAINLESS STEEL, OFF-SET DRAIN TO CENTER REAR, 5" GOOSENECK, 4" WRIST BLADE HANDLE - ADA/TAS
S-2	SINK - FREESTANDING	3/4"	3/4"	2"	2"	140 °F	TRIPLE COMPARTMENT, FREE STANDING 14 GAUGE TYPE 304 STAINLESS STEEL, 16 GAUGE STAINLESS STEEL ADJUSTABLE LEGS, SOLIDS INTERCEPTOR, 8" GOOSENECK, AND 4" WRIST BLADE HANDLES
SH-1	GROUP SHOWER						PRESSURE BALANCING VALVE AND (3) FIXED SHOWER HEADS, WITH FD-1A IN STRUCTURAL TRENCH
SH-2	SHOWER	1/2"	1/2"	2"	2"	110 °F	PRESSURE BALANCING VALVE, FIXED SHOWER HEAD, HAND HELD SHOWER HEAD, SLIDE BAR, QUICK DISCONNECT, AND VACUUM BREAKER, WITH 2" FLOOR DRAIN -STUDENT - ADA/TAS
SH-3	SHOWER	1/2"	1/2"	2"	2"	110 °F	PRESSURE BALANCING VALVE, FIXED SHOWER HEAD, HAND HELD SHOWER HEAD, SLIDE BAR, QUICK DISCONNECT, AND VACUUM BREAKER, WITH 2" FLOOR DRAIN- ADULT - ADA/TAS
TP-1	TRAP PRIMER	1/2"				0 °F	MOUNT AT A MINIMUM OF 18" A.F.F. WITH AIR GAP. PRESSURE ACTIVATED DISCHARGE, DISTRIBUTION UNIT & SHUT-OFF VALVE
U-1	URINAL	3/4"		2"	2"		WALL MOUNTED, MANUAL 0.5 GPF FLUSH VALVE - ELONGATED RIM - STUDENT - ADA/TAS
U-2	URINAL	3/4"		2"	2"		WALL MOUNTED, MANUAL 0.5 GPF FLUSH VALVE - ELONGATED RIM - ADULT - ADA/TAS
WC-1	WATER CLOSET	1 1/4"		4"	2"		WALL MOUNTED, BACK OUTLET, MANUAL 1.28 GPF FLUSH VALVE - STUDENT
WC-2	WATER CLOSET	1 1/4"		4"	2"		WALL MOUNTED, BACK OUTLET, MANUAL 1.28 GPF FLUSH VALVE - STUDENT - ADA/TAS
WC-3	WATER CLOSET	1 1/4"		4"	2"		WALL MOUNTED, BACK OUTLET, MANUAL 1.28 GPF FLUSH VALVE - ADULT - ADA/TAS
WCB-1	WASHING MACHINE CONNECTION BOX	3/4"	3/4"			140 °F	HOT AND COLD WATER HOSE BIBBS
WF-1	WASH FOUNTAIN		1/2"	1 1/2"	1 1/2"	110 °F	WALL MOUNT 1-STATION NATURAL QUARTZ BASIN, AUTOMATIC HARD WIRED INFRARED - ADA/TAS

NOTES:

1. ROUGH-IN SUPPLY WASTE & VENT PIPE SIZES INDICATED ABOVE ARE MINIMUM PIPE SIZES SHOWN FOR ROUGH-IN ONLY. MAIN SIZES SHALL BE AS INDICATED ON DRAWINGS.
2. COORDINATE WITH PLUMBING FIXTURE MFG. DIMENSIONED ROUGH-IN SHEET/DRAWINGS FOR EXACT LOCATIONS, SIZES, REQUIREMENTS, ETC.. PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AS REQUIRED FOR A COMPLETE INSTALLATION AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS, IN FULL ACCORDANCE WITH ALL APPLICABLE CODES HAVING JURISDICTION.
3. REFER TO PLUMBING FIXTURE SPECIFICATIONS FOR ACCEPTABLE MANUFACTURER & MODEL NUMBER. ALL FIXTURES SHALL BE OF COMMERCIAL GRADE UNLESS NOTED OTHERWISE.
4. REFER TO ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS AND EXACT LOCATIONS. COORDINATE WITH GENERAL CONTRACTOR PRIOR TO STARTING ANY WORK. PROVIDE ANY ADDITIONAL SUPPORTS, HANGERS, OPENINGS, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. COORDINATE ALL CLEARANCES AND LOCATIONS WITH OTHER TRADES AS REQUIRED.
5. PROVIDE AN AIR CHAMBER ON EACH BRANCH PIPE AT EACH FIXTURE. THE AIR CHAMBER SHALL HAVE A MINIMUM VERTICAL LENGTH OF 18", SHALL BE CONCEALED IN THE WALL, AND SHALL BE OF THE SAME PIPE MATERIAL AND DIAMETER AS THE BRANCH PIPE.

ELECTRIC WATER HEATER SCHEDULE

DESIGNATION	HEATER TYPE	MANUFACTURER	MODEL	SERVICE	TANK VOLUME	WATER TEMP. (°F)	ELECTRICAL DATA					RECOVERY RATE AT 100°F RISE	DESCRIPTION
							KW (TOTAL)	ELEMENTS	VOLTS	PH	HZ		
WH-1		A. O. SMITH	DEN-80	STORM SHELTER	80 gal	140 °F	12 kW	2	480 V	3	60 Hz	49 GPH	SIMULTANEOUS OPERATION

NOTES:

1. PRIOR TO THE PURCHASE OF WATER HEATERS, CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR AND VERIFY THE AVAILABLE VOLTAGE TO ASSURE THE FACTORY WIRES THE HEATERS PROPERLY.

GAS WATER HEATER SCHEDULE

DESIGNATION	MANUFACTURER	MODEL	SERVICE	LOCATION	GAS INPUT	TANK VOLUME	WATER TEMP. (°F)	ELECTICAL DATA		RECOVERY RATE	DESCRIPTION
								VOLTS	PH		
GWH-1	PVI	20 L 100A-GCL			199,900 Btu/h	100.0 gal	140 °F	120 V	1	326 GPH	CONDENSING HEATERS WITH ACID NEUTRALIZATION KIT AND CONCENTRIC VENTING KIT.
GWH-2	PVI	20 L 100A-GCL			199,900 Btu/h	100.0 gal	140 °F	120 V	1	326 GPH	CONDENSING HEATERS WITH ACID NEUTRALIZATION KIT AND CONCENTRIC VENTING KIT.

NOTES:

1. DOMESTIC WATER HEATERS IN EXCESS OF 119 GALLONS STORAGE AND/OR HEAT INPUT IN EXCESS OF 199,000 BTU/HR (54 KW) SHALL BE INSTALLED TO MEET ALL LOCATION AND CLEARANCE REQUIREMENTS AND COMBUSTION AIR REQUIREMENTS AS SET FORTH IN THE TEXAS STATE BOILER LAW.

DOMESTIC HOT WATER CIRCULATION PUMP SCHEDULE

DESIGNATION	PUMP TYPE	MANUFACTURER	MODEL	SERVICE	TEMP. (°F)	GPM	PUMP HEAD	RPM	ELECTRICAL DATA				DESCRIPTION
									HP	VOLTS	PH	HZ	
CP-1	CIRCULATION PUMP	GRUNFOS	UPS26-99SFC	GWH-1,2	140 °F	8 GPM	25 FT	3150	1/6 HP	120 V	1	60 Hz	AT SPEED 3 - STAINLESS STEEL BODY
CP-2	CIRCULATION PUMP	GRUNFOS	UPS26-99SFC	WH-1	140 °F	0 GPM	25 FT	3150	1/6 HP	120 V	1	60 Hz	AT SPEED 3 - STAINLESS STEEL BODY

THERMAL EXPANSION TANK SCHEDULE

DESIGNATION	TANK TYPE	MANUFACTURER	MODEL	SERVICE	TANK VOLUME	MAX. OPERATING PRESSURE	MAX. OPERATING TEMP. (°F)	DESCRIPTION
ET-1		AMTROL	ST-20VC	GWH-1,2	6.3 gal	692.02 FT	200.0 °F	
ET-2		AMTROL	ST-12-C	WH-1	2.5 gal	346.01 FT	200.0 °F	

THERMOSTATIC MIXING VALVE SCHEDULE

DESIGNATION	VALVE TYPE	MANUFACTURER	MODEL	SERVICE	WATER TEMPERATURE		SENSING RANGE		PRESSURE DROP	ELECTRICAL DATA		DESCRIPTION
					INLET	OUTLET	MIN.	MAX.		VOLTS	PH	
TM-1		LEONARD	270-LF		140 °F	110 °F	0 GPM	12 GPM	46.13 FT			

NOTES:

1. ALL MIXING VALVES SHALL BE PIPED WITH SHUT-OFF VALVES AND UNIONS ON THE COLD WATER SUPPLY, HOT WATER SUPPLY AND TEMPERED WATER OUTLET DIRECT AT THE MIXING VALVE. WHERE AN ACCESS PANEL IS PROVIDED, MIXING VALVE AND ISOLATION VALVES SHALL BE CENTERED ON THE ACCESS PANEL. PANEL SHALL BE A MINIMUM OF 18"X18" IF SERVING MIXING VALVE ONLY. IF SERVING OTHER DEVICES PANEL SHALL BE A MINIMUM OF 24"X24"

WATER HAMMER/SHOCK ARRESTOR (SA) SCHEDULE

PDI UNIT TYPES	'A'	'B'	'C'	'D'	'E'	'F'
RANGE OF FIXTURE UNITES SERVED	1-11	12-32	33-60	61-113	114-154	155-330
SHOCK ARRESTOR CONNECTION SIZE PER PDI TABLES, NOT SUPPLY PIPE SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"

NOTE:

1. UNITS SHALL BE INSTALLED IN SIZE AND LOCATION PER THE MANUFACTURER'S RECOMMENTATIONS. WHERE UNITS ARE LOCATED BEHIND A WALL, THE CONTRACTOR SHALL PROVIDE ACCESS PANEL PER SPECIFICATIONS.

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

NATHAN P. HART 93906 LICENSED PROFESSIONAL ENGINEER 5/8/19

MAY 8, 2019

REVISIONS

Revision No.

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SHEET TITLE
PLUMBING LEGEND, SCHEDULES, & NOTES

SHEET NO.
P4.01

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1 PLUMBING RISER DIAGRAMS
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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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LICENSED PROFESSIONAL ENGINEER
5/8/19

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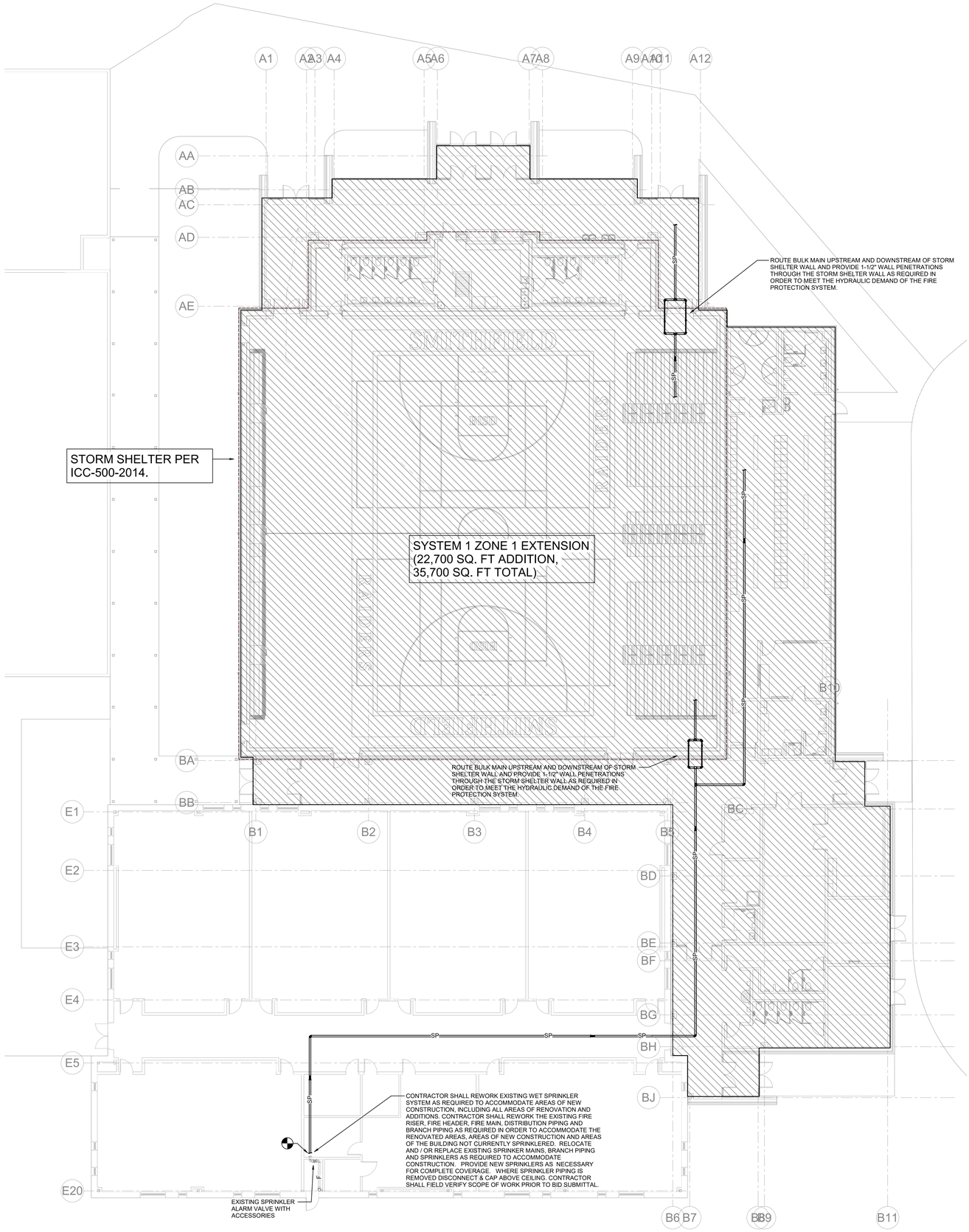


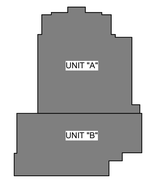
1 FIRE PROTECTION - OVERALL FLOOR PLAN
SCALE: 3/32" = 1'-0"

GENERAL FIRE SPRINKLER NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY WATER SUPPLY INFORMATION INCLUDING FLOW TEST AND SYSTEM'S WORKING PRESSURE.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION AND SIZES OF PIPING THAT WILL BE CONNECTED TO SUPPLY SYSTEM(S).
3. SPRINKLER SYSTEM PIPING (ALL FEED MAINS, CROSS MAINS AND BRANCH LINES) SHALL BE HYDRAULICALLY SIZE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING PIPING LAYOUT WITH BEAMS AND GUIDES, ALL DUCTWORK, DIFFUSERS, LIGHTING FIXTURES, AND OTHER PIPING, ETC. SEE ARCH
4. CONTRACTOR SHALL NOT SCALE DRAWINGS.
5. IN AREAS WHERE THERE ARE NO FINISHED CEILING OR WHERE BEAMS ARE EXPOSED, CONTRACTOR SHALL COORDINATE SPRINKLER LOCATION WITH STRUCTURAL MEMEBERS TO INSURE CODE COMPLIANCE.
6. ALL FIRE LINES SHALL BE PRIMED & PAINTED WHERE EXPOSED (IN FINISHED AREAS).
7. NO MECHANICAL TEES SHALL BE INSTALLED.
8. ALL VALVES SHALL BE EQUIPPED WITH A TAMPER SWITCH, EXCEPT DRAIN VALVES, UNLESS INSTRUCTED OTHERWISE BY ARCH.
9. CONTRACTOR SHALL REVISE LOCATIONS OF PIPING, AS SHOWN, TO MEET UNFORESEEN CONDITIONS OR CONTRACTOR'S REQUIREMENTS. PREPARE SHOP DRAWINGS, AS REQUIRED, SUBJECT TO APPROVAL OF THE STATE INSURANCE AUTHORITIES AND THE LOCAL AUTHORITIES.
10. ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE. ALL PIPING AND EQUIPMENT, LOCATIONS, SIZES, AND DIMENSIONS SHALL BE CHECKED AND VERIFIED AT THE BUILDING SITE.
11. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL WALLS, PARTITIONS, CEILING HEIGHTS, AND EQUIPMENT.
12. CONTRACTOR SHALL COORDINATE FINAL LOCATIONS OF SPRINKLERS FROM THE ARCHITECTURAL REFLECTING CEILING PLANS.
13. CONTRACTOR SHALL RUN NEW LINES PER FIELD CONDITIONS.
14. COMPLETED BUILDING SPRINKLER SYSTEM SHALL BE ACCEPTABLE TO THE "AUTHORITIY HAVING JURISDICTION".
15. PRIOR TO BID SUBMITTAL THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS TO VERIFY FLOOR PLAN SCALE OF MECHANICAL DRAWINGS PRIOR TO ANY QUANTITATIVE TAKE-OFF OR MATERIALS.

GENERAL FIRE SPRINKLER REWORK NOTE:

1. CONTRACTOR SHALL REWORK EXISTING WET SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE AREAS OF NEW CONSTRUCTION, INCLUDING ALL AREAS OF RENOVATION, AREAS OF THE EXISTING BUILDING NOT CURRENTLY SPRINKLERED AND ADDITIONS. CONTRACTOR SHALL REWORK THE EXISTING FIRE RISER, FIRE HEADER, FIRE MAIN, DISTRIBUTION PIPING AND BRANCH PIPING AS REQUIRED IN ORDER TO ACCOMMODATE THE RENOVATED AREAS, AREAS OF NEW CONSTRUCTION AND AREAS OF THE BUILDING NOT CURRENTLY SPRINKLERED. RELOCATE AND / OR REPLACE EXISTING SPRINKER MAINS, BRANCH PIPING AND SPRINKLERS AS REQUIRED TO ACCOMMODATE CONSTRUCTION. PROVIDE NEW SPRINKLERS AS NECESSARY FOR COMPLETE COVERAGE. WHERE SPRINKLER PIPING IS REMOVED DISCONNECT & CAP ABOVE CEILING. CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK PRIOR TO BID SUBMITTAL.



KEY PLAN

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SHEET TITLE
FIRE PROTECTION - FLOOR PLAN MAIN LEVEL - UNIT A

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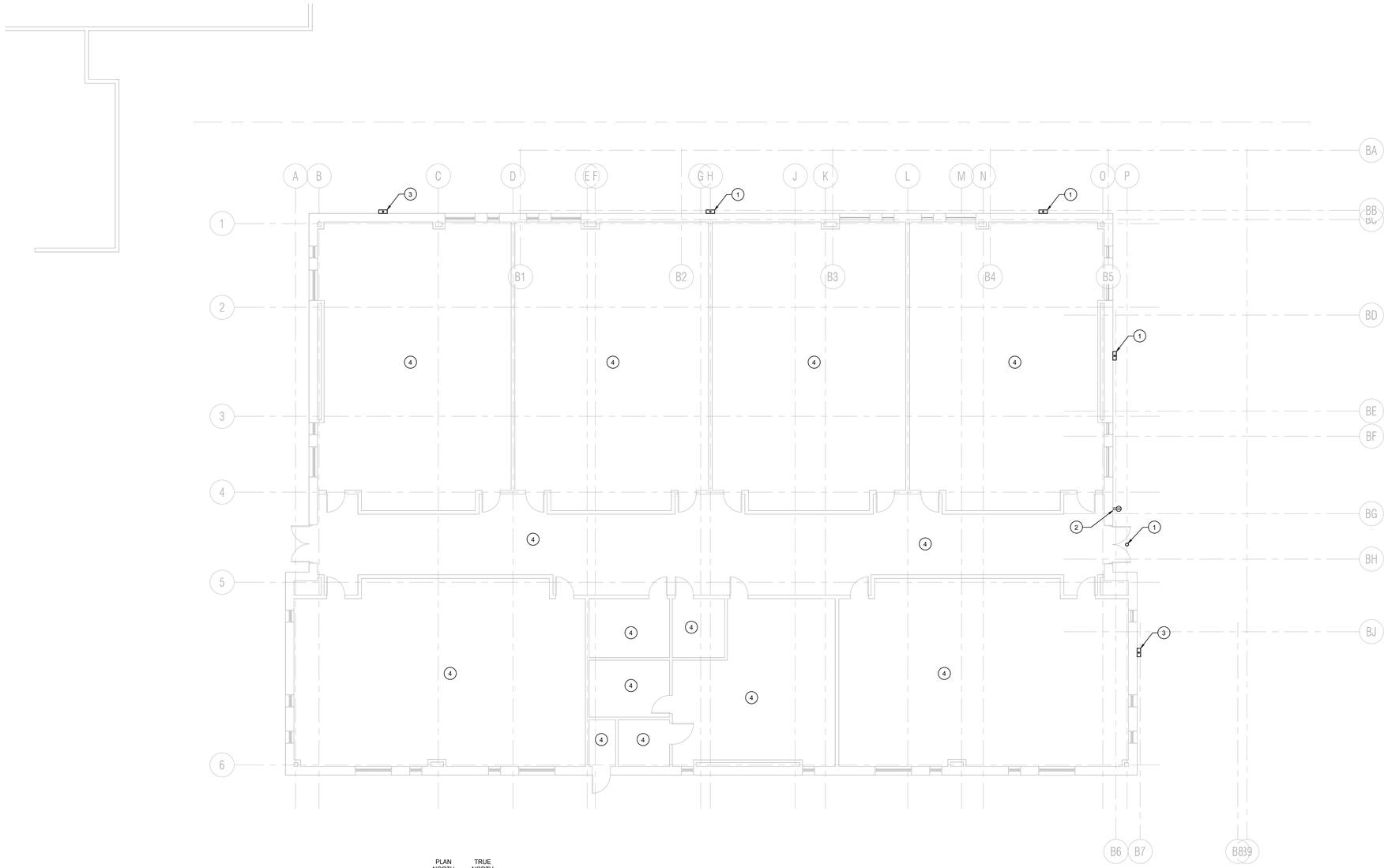
NOTES BY SYMBOL: "◯"

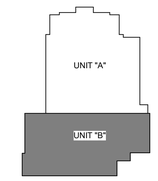
1. DISCONNECT AND REMOVE LIGHT FIXTURE ALONG WITH ALL ASSOCIATE CONDUIT AND CONDUCTORS BACK TO SOURCE OF SUPPLY.
2. EXISTING RECEPTACLE TO REMAIN.
3. EXISTING LIGHT FIXTURE TO REMAIN.
4. EXISTING FIRE ALARM SYSTEM TO BE REPLACED WITH NEW VOICE EVACUATION FIRE ALARM SYSTEM. REMOVE ALL EXISTING FIRE ALARM DEVICES AND ASSOCIATED PERIPHIALS IN DESIGNATED AREA AFTER INSTALLATION AND ACCEPTANCE BY AUTHORITY HAVING JURISDICTION OF NEW FIRE ALARM.



PLAN NORTH / TRUE NORTH

1 ELECTRICAL - DEMOLITION PLAN - UNIT B

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



KEY PLAN

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FLOOR PLAN - UNIT B - ELECTRICAL DEMOLITION

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DE1.02

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GENERAL DEMOLITION NOTES:

1. THE INFORMATION ON THE DEMOLITION DRAWINGS ARE NOT FROM "AS BUILT" DRAWINGS BUT FROM ORIGINAL DRAWINGS. THIS INFORMATION IS INCLUDED FOR REFERENCE ONLY. CONTRACTOR WILL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE AMOUNT OF WORK THAT WILL BE REQUIRED. CONTRACTOR SHALL EXAMINE THE EXISTING BUILDING AND GENERALLY VERIFY THE LOCATION OF ALL EXISTING WORK AND BECOME INFORMED AS TO THE RELATION TO AND EFFECT ON. THE WORK REQUIRED BEFORE SUBMITTING A BID. SUBMISSION OF A BID WILL CONSTITUTE EVIDENCE THAT THE CONTRACTOR HAS INSPECTED THE SITE OF THE PROPOSED WORK.
2. EXISTING MPE ITEMS TO BE REMOVED SHALL BE RETURNED TO THE OWNER OR DISPOSED OF AS DIRECTED BY THE DESIGNATED OWNER'S REPRESENTATIVE.
3. COORDINATE DEMOLITION WORK WITH THE BUILDING MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF EQUIPMENT OR SYSTEMS THAT WILL EFFECT OTHER SYSTEMS WITHIN THE LIMIT OF NEW CONSTRUCTION OR OTHER AREAS OF THE BUILDING. CONTRACTOR SHALL VERIFY WITH THE OWNER IF THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION, AND THEREFORE, UTILITIES MUST REMAIN IN OPERATION AT ALL TIMES. ANY REQUIRED OUTAGES MUST BE COORDINATED WITH THE OWNER.
4. PRIOR TO THE REMOVAL OF ANY MPE ITEMS OF EQUIPMENT, CONTRACTOR MUST VERIFY THE ORIGIN AND TERMINATION OF THOSE SYSTEMS AND CONFIRM THAT THE ITEMS BEING REMOVED DO NOT SERVE ANY ITEMS THAT ARE TO REMAIN (INCLUDING THOSE IN AREAS OUTSIDE THE CONTRACT LIMITS).
5. REFER TO ARCHITECTURAL DRAWINGS FOR OTHER DEMOLITION INFORMATION TO INCLUDE PHASING OF WORK AND CONSTRUCTION SCHEDULE.
6. DO NOT ABANDON ANY ITEMS IN PLACE. REMOVE ALL COMPONENTS ASSOCIATED WITH EACH ITEM CALLED OUT TO BE REMOVED.
7. REMOVE ELECTRICAL CONNECTIONS TO EXISTING MECHANICAL AND PLUMBING EQUIPMENT BEING REMOVED. REFER TO MECHANICAL AND PLUMBING PLANS FOR EQUIPMENT TO BE REMOVED.

GENERAL FIRE ALARM NOTES:

1. BUILDING PLAN IS DIAGRAMMATIC ONLY, SOME DIFFERENCES OCCUR BETWEEN PLANS AND ACTUAL BUILDING, CONTRACTOR TO FAMILIARIZE HIMSELF WITH BUILDING, AND VERIFY ACTUAL LAY-IN.
2. ALL EXISTING PA, TELEPHONE, POWER AND OTHER WIRING ABOVE EXISTING LAY-IN CEILING AND HARD CEILINGS SHALL BE MAINTAINED IN OPERATION AT ALL TIMES. CONTRACTOR IS RESPONSIBLE FOR RECONNECTING ANY SERVICES DISRUPTED AT NO ADDITIONAL COST TO OWNER.
3. ALL ELECTRICAL WORK, NEW CIRCUITS, ECT. REQUIRED TO FACILITATE NEW FIRE ALARM SYSTEM SHALL BE PROVIDED BY CONTRACTOR.
4. EXISTING FIRE ALARM SYSTEM MUST BE KEPT IN OPERATION, UNTIL THE NEW FIRE ALARM SYSTEM IS ACCEPTED BY THE LOCAL AUTHORITY AND GREEN TAG IS...
5. MAINTAIN MINIMUM 36" CLEAR FROM ALL AIR DISTRIBUTION DEVICES.
6. DEVICE LOCATIONS SHOWN ARE APPROXIMATE; ADJUST DEVICE LOCATIONS TO ACCOMMODATE EXISTING CEILING ELEMENTS, HVAC GRILLES, LIGHT FIXTURES OR...
7. PROTECT ALL DEVICES DURING INSTALLATION FROM DUST AND DEBRIS.
8. PROTECT ALL EXISTING PA, AND SECURITY SYSTEM DEVICES DURING INSTALLATION FROM DUST AND DEBRIS.
9. REMOVE ALL ABANDONED DEVICES / PANELS / EQUIPMENT THRU OUT FACILITY. PATCH AND PAINT ALL EXISTING WALL OPENINGS AND OPENINGS IN GYPSUM/HARD CEILINGS AS DIRECTED BY ARCHITECT
10. ALL WIRING LOCATED IN GYMS, MECHANICAL ROOMS, ELECTRICAL ROOMS, AND OTHER LOCATIONS WHERE SUBJECT TO DAMAGE SHALL BE INSTALLED IN A METALLIC RACEWAY SYSTEM.
11. WHERE WIRING IS TO BE INSTALLED ON EXISTING MASONRY WALLS, PROVIDE A SURFACE MOUNTED RACEWAY SYSTEM EQUAL TO WIREMOLD 2000 SERIES, AND INCLUDE ALL REQUIRED COMPONENTS FOR A COMPLETE SYSTEM REQUIRED FOR...
12. PROVIDE CEILING NOTIFICATION DEVICES WHERE POSSIBLE.
13. PROVIDE CLASS A WIRING FOR BOTH INITIATION AND NOTIFICATION CIRCUITS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
14. NEW FIRE ALARM SYSTEM SHALL BE EQUIPPED WITH VOICE EVACUATION FOR THE AUDIBLE NOTIFICATION SIGNALING.
15. FIRE ALARM DEVICES SHOWN ON THESE DRAWINGS ARE OFFERED AS A GUIDE TO THE DESIGN INTENT AND TO COORDINATE WITH ARCHITECTURAL FEATURES. THE EXACT QUANTITIES, LOCATIONS AND TYPES OF DEVICES SHALL BE DETERMINED BY THE DETAILED DESIGN PREPARED BY A LICENSED FIRE ALARM SYSTEM CONTRACTOR. REFER TO SPECIFICATIONS FOR THE REQUIRED CONTRACTOR...
16. PROVIDE FIRE ALARM SYSTEM TO PROTECT BUILDING IN COMPLIANCE WITH APPLICABLE CODES AND JURISDICTION.
17. SUBMIT FIRE ALARM SHOP DRAWINGS AND RECEIVE NECESSARY APPROVALS AND PERMITS FROM AUTHORITY HAVING JURISDICTION.
18. PROVIDE FIRE ALARM BOOSTER PANELS CONNECTIONS TO A DEDICATED 20A, SINGLE POLE CIRCUIT BREAKER FROM NEAREST 120V BRANCH PANELBOARD VIA 2#12, 1#12, 3/4"C. SIZE RACEWAY SYSTEM AND CONDUCTORS AS REQUIRED FOR VOLTAGE DROP. FIELD VERIFY LOCATIONS AND QUANTITIES WITH FIRE ALARM INSTALLER.
19. PROVIDE MAXIMUM OF 20 FIRE/SMOKE DAMPERS CONNECTIONS TO A DEDICATED 20A, SINGLE POLE CIRCUIT BREAKER FROM NEAREST 120V BRANCH PANELBOARD VIA 2#12, 1#12, 3/4"C. SIZE RACEWAY SYSTEM AND CONDUCTORS AS REQUIRED FOR VOLTAGE DROP. FIELD VERIFY LOCATIONS AND QUANTITIES WITH MECHANICAL/FIRE ALARM INSTALLER.
20. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT OF HVAC UNITS AS NOTED. PROVIDE NECESSARY HARDWARE NEEDED TO SHUTDOWN UNIT IN EVENT OF SMOKE DETECTION IN SUPPLY AIR DUCT.
21. FIRE ALARM DEVICES SHALL BE CONNECTED WITH PLENUM RATED CABLES TO THE FIRE ALARM CONTROL PANEL. PROVIDE CONDUIT FROM WALL MOUNTED DEVICES TO ABOVE AN ACCESSIBLE CEILING SPACE AND IN AREAS WITHOUT CEILINGS.
22. PROVIDE 120V. CONNECTIONS AND DUCT MOUNTED SMOKE DETECTORS AND FIRE ALARM INTERFACE AT ALL FIRE/SMOKE DAMPERS. (SEE DETAILS 05/E6.01 & 06/E6.01). REFER TO MECHANICAL PLANS FOR ALL FIRE AND FIRE/SMOKE DAMPER LOCATIONS. 120V. POWER TO DAMPER SHALL BE SERVED FROM THE NEAREST 208/120 VOLT PANELBOARD, MAXIMUM OF 6 PER CIRCUIT.
23. MOUNT FIRE ALARM MANUAL PULL STATIONS 48" A.F.F. TO CENTER OF BOX.
24. REFER TO PLUMBING DRAWINGS FOR ALL SPRINKLER SYSTEM FLOW ALARM VALVES AND TAMPER SWITCH LOCATIONS. (CONNECT TO FACP).
25. PROVIDE HILTI FIRE STOP SPEED SLEEVE OR FIRE STOP SEALANT FOR ALL FIREWALL PENETRATIONS.
26. PROVIDE WIRE GUARDS FOR WALL MOUNTED FIRE SAFETY DEVICES IN GYMNASIUM.
27. THE EXACT QUANTITIES, LOCATIONS AND TYPES OF DEVICES SHALL BE DETERMINED BY THE DETAILED DESIGN PREPARED BY A LICENSED FIRE ALARM SYSTEM CONTRACTOR.

GENERAL LIGHTING NOTES:

1. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, REGULATIONS.
2. ALL WORK SHALL COMPLY WITH THE BUILDING OWNER'S CONSTRUCTION GUIDELINES.
3. GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY IF CONFLICTS OCCUR BETWEEN LIGHTING AND ANY OTHER TRADE. DO NOT PROCEED WITH INSTALLATION IN THAT AREA UNTIL CONFLICT HAS BEEN RESOLVED TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING INSTRUCTIONS FOR ALL LIGHT FIXTURES. NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND THE ARCHITECTURAL PLANS RELATING TO QUANTITY, TYPE AND LOCATION OF DEVICES AND/OR FIXTURES.
5. WHEN SPECIFIC LIGHT FIXTURE TYPE HAS BEEN SPECIFIED IN THE FIXTURE INFORMATION, ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE ASSEMBLY INCLUSIVE OF ALL PARTS AND HARDWARE.
6. ALL CIRCUITS SHOWN SHALL BE 277V, 20A CIRCUITS UNLESS NOTED OTHERWISE.
7. ALL CONDUCTORS SHALL BE #12 AWG UNLESS NOTED OTHERWISE.
8. ALL 120V RUNS LONGER THAN 60' SHALL BE #10 AWG AND 277V RUNS LONGER THAN 150' SHALL BE #10 AWG UNLESS NOTED OTHERWISE ON PLANS.
9. ALL CONDUCTORS SHALL BE COPPER (#10 AND SMALLER SHALL BE SOLID).
10. WHERE CONDUCTOR SIZES ARE NOTED ON DRAWINGS, THAT WIRE SIZE SHALL BE THROUGH THE ENTIRE RUN UNLESS NOTED OTHERWISE.
11. MOUNT LIGHT SWITCHES AS INDICATED ON ARCHITECTURAL DRAWINGS (48" AFF UNLESS NOTED OTHERWISE).
12. ALL GANGED SWITCHES SHALL HAVE A COMMON SEAMLESS FACEPLATE. EACH MULTI-GANG BOX SHALL BE NO MORE THAN SIX (6) SWITCHES WIDE. WHERE MORE THAN SIX (6) SWITCHES ARE SHOWN AT ONE (1) LOCATION, ADDITIONAL MULTI-GANG BOXES SHALL BE STACKED VERTICALLY AND THE WIDTH OF THE MULTI-GANGS SHALL BE AS EVEN AS POSSIBLE.
13. EMERGENCY LIGHTING FIXTURES WITH BATTERY PACKS DESIGNED TO BE SWITCHED SHALL BE CONNECTED TO AREA LIGHTING HOT LEG AND SWITCH LEG TO ALLOW LAMPS TO BE CONTROLLED FROM LOCAL WALL SWITCH AND ILLUMINATE UPON POWER FAILURE.
14. CONTRACTOR SHALL PROVIDE ALL REQUIRED SWITCH PACKS, MOTION SENSORS AND ASSOCIATED WIRING TO CONTROL EACH ROOM AS SHOWN. SWITCH PACKS SHALL BE LOCATED ABOVE THE CEILING.
15. FIXTURES DESIGNATED "NL" SHALL REMAIN ON AT ALL TIMES FOR NIGHT LIGHTING.
16. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL NOTES, SYMBOLS AND DETAILS.

GENERAL POWER NOTES:

1. PANELBOARD DIRECTORIES SHALL BE COMPLETELY FILLED OUT TO ACCURATELY IDENTIFY EACH CIRCUIT (EXISTING AND NEW CIRCUITS) IN ALL PANELS WITHIN SCOPE OF WORK. DIRECTORIES SHALL BE TYPEWRITTEN.
2. REFER TO MECHANICAL FLOOR PLANS FOR WALL MOUNTED THERMOSTAT, SENSOR AND ALL OTHER CONTROL DEVICE LOCATIONS. PROVIDE FLUSH, GALVANIZED STEEL, WALL MOUNTED JUCTION BOX WITH 3/4" EMT CONDUIT AND NYLON PULL-STRING TO 4" ABOVE ACCESSIBLE CEILING FOR EACH DEVICE.
3. ALL DEVICES SHALL BE MOUNTED AS INDICATED ON THE ARCHITECTURAL DRAWINGS. COORDINATE EXACT MOUNTING LOCATIONS, HEIGHTS AND ORIENTATIONS WITH ARCHITECTURAL DRAWINGS.
4. ELECTRIC CONNECTIONS TO PANELBOARDS AND BUS DUCTS SHALL BE MADE ONLY WHEN PANELBOARD OR BUS DUCT HAS BEEN DE-ENERGIZED.
5. ALL ELECTRICAL PANELS AND TRANSFORMERS SHALL HAVE PERMANENT ENGRAVED LABELS ON COVER INDICATING PANEL OR TRANSFORMER DESIGNATION.
6. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ALL MOTOR STARTERS AND CONTROL PANEL LOCATIONS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL NOTES, SYMBOLS AND DETAILS.

ABBREVIATIONS

A	AMPERE(S)
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY (SYMMETRICAL ROOT MEAN SQUARE)
AWG	AMERICAN WIRE GAGE
BFC	BELOW FINISHED CEILING
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CLG	CEILING
DWG	DRAWING
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
EGS	ENGINE-GENERATOR SET
EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EX	EXISTING
F	FUSE OR FUSIBLE
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM PANEL
FLA	FULL LOAD CURRENT
FMC	FLEXIBLE METAL CONDUIT
FSS	FUSIBLE SAFETY SWITCH
FT	FOOT OR FEET
FVNR	FULL-VOLTAGE, NON-REVERSING
FVR	FULL-VOLTAGE, REVERSING
G	GROUND, GROUNDED, OR GROUNDING
GFI	GROUND FAULT CIRCUIT INTERRUPTER/INTERRUPTING
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
IG	ISOLATED GROUND
KCMIL	THOUSANDS OF CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT-AMPERE(S)
KVAR	KILOVOLT-AMPERE(S) REACTIVE
KW	KILOWATT(S)
LSI	LONG-TIME, SHORT-TIME, INSTANTANEOUS
LSIG	LONG-TIME, SHORT-TIME, INSTANTANEOUS, GROUND FAULT
LTFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFSS	NON-FUSIBLE SAFETY SWITCH
NL	NIGHT LIGHT
NO	NORMALLY OPEN
P	POLE(S)
PA	PUBLIC ADDRESS
PNLBD	PANELBOARD
PVC	POLYVINYL CHLORIDE
PWR	POWER
REC	RECEPTACLE(S)
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL
RTU	ROOFTOP UNIT
RVSS	REDUCED VOLTAGE, SOLID-STATE
STP	SHORT THROW PROJECTOR
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TA	TRIP AMPERES
TYP	TYPICAL
UH	UNIT HEATER
UG	UNDERGROUND
UNO	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT(S) OR VOLTAGE
VA	VOLT-AMPERE(S)
VFD	VARIABLE FREQUENCY DRIVE
W	WATT(S) OR WATTAGE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER

LIGHTING LEGEND

	CEILING MOUNTED EXIT LIGHT ASSEMBLY (SINGLE OR DOUBLE FACE)
	WALL MOUNTED EXIT LIGHT ASSEMBLY (SINGLE OR DOUBLE FACE)
	CEILING MOUNTED LIGHT FIXTURE (HATCHING INDICATES EMERGENCY FIXTURE)
	WALL MOUNTED LIGHT FIXTURE (HATCHING INDICATES EMERGENCY FIXTURE)
	SURFACE MOUNTED FLUORESCENT FIXTURE (HATCHING INDICATES EMERGENCY FIXTURE)
	1'X4' FLUORESCENT LIGHT FIXTURE (HATCHING INDICATES EMERGENCY FIXTURE)
	2'X2' FLUORESCENT LIGHT FIXTURE (HATCHING INDICATES EMERGENCY FIXTURE)
	2'X4' FLUORESCENT LIGHT FIXTURE (HATCHING INDICATES EMERGENCY FIXTURE)
	POLE MOUNTED OUTDOOR AREA LIGHT FIXTURE (SINGLE OR MULTIPLE HEADS PER POLE)
	TRACK LIGHT FIXTURE (LENGTH OF TRACK AS INDICATED ON DRAWINGS, NUMBER OF HEADS AS SPECIFIED)
$	SINGLE POLE SWITCH
$2	TWO POLE SWITCH
$3	THREE WAY SWITCH
$4	FOUR WAY SWITCH
$D	DIMMER SWITCH
$K	SINGLE POLE KEYED SWITCH
$3K	THREE WAY KEYED SWITCH
$4K	FOUR WAY KEYED SWITCH
$LV	LOW VOLTAGE SWITCH
$M	MANUAL MOTOR STARTER
$T	TIMER SWITCH
$P	SINGLE POLE SWITCH WITH PILOT LIGHT
$a	SINGLE POLE SWITCH WITH SWITCH LEG DESIGNATION
$OC	SINGLE POLE SWITCH WITH OCCUPANCY SENSOR
OC	OCCUPANCY SENSOR
PH	PHOTOCELL
DS	DAYLIGHT SENSOR
L	LOW-VOLTAGE LIGHTING CONTROL STATION

NOT ALL SYMBOLS USED

POWER LEGEND

	RACEWAY IN WALL OR ABOVE CEILING
	RACEWAY IN OR BELOW FLOOR
B-4	HOMERUN : LETTER(S) DENOTES PANEL NAME NUMBER DENOTES CIRCUIT NUMBER
A	DENOTES DEVICE MOUNTED ABOVE COUNTER
WP	DENOTES WEATHERPROOF DEVICE
GFI	DENOTES GROUND FAULT INTERRUPTING DEVICE
	DUPLEX RECEPTACLE
	CONTROLLED RECEPTACLE
	QUADRAPLEX RECEPTACLE
	ISOLATED GROUND DUPLEX RECEPTACLE
	ISOLATED GROUND QUADRAPLEX RECEPTACLE
	FLOOR DUPLEX RECEPTACLE
	FLOOR ISOLATED GROUND DUPLEX RECEPTACLE
	FLOOR QUADRAPLEX RECEPTACLE
	FLOOR ISOLATED GROUND QUADRAPLEX RECEPTACLE
	USB RECEPTACLE
	USB DUPLEX COMBO RECEPTACLE
	USB QUADRAPLEX COMBO RECEPTACLE
	ISOLATED GROUND USB DUPLEX COMBO RECEPTACLE
	ISOLATED GROUND USB QUAD COMBO RECEPTACLE
	125V. SIMPLEX RECEPTACLE
50	250V., SINGLE PHASE, 3 WIRE GROUNDED RECEPTACLE (NUMBER INDICATES AMPERAGE RATING)
	SPECIAL PURPOSE RECEPTACLE
	125V. RECESSED CLOCK RECEPTACLE
	JUNCTION BOX
	WALL JUNCTION BOX
	POWER/DATA SURFACE RACEWAY
	POWER/DATA POWER POLE
	CONTROL DEVICE
	CONDUIT STUB-UP
	SCOREBOARD FLUSH FLOOR BOX
	MOTOR CONNECTION
	MOTOR STARTER
	DISCONNECT SWITCH
	DISCONNECT SWITCH - FUSED
	480V PANELBOARD
	208V PANELBOARD
	DISTRIBUTION PANELBOARD
T	DRY-TYPE TRANSFORMER

RISER DIAGRAM LEGEND

	TRANSFORMER
M	METER
	GROUND CONNECTION
	CIRCUIT BREAKER
	DRAW-OUT CIRCUIT BREAKER
	FUSED SWITCH
	NON-FUSED DISCONNECT
	AUTOMATIC TRANSFER SWITCH
	GENERATOR
	HEATER CONNECTION

NOT ALL SYMBOLS USED

SPECIAL SYSTEMS LEGEND

F	FIRE ALARM MANUAL PULL STATION
F	FIRE ALARM HORN/STROBE ASSEMBLY
S	FIRE ALARM STROBE ASSEMBLY
S	CEILING MOUNTED SMOKE DETECTOR
S	DUCT MOUNTED SMOKE DETECTOR
H	CEILING MOUNT HEAT DETECTOR
FS	FIRE ALARM SPRINKLER SYSTEM WATER FLOW SENSOR
TS	FIRE ALARM SPRINKLER SYSTEM VALVE TAMPER SENSOR
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR PANEL
DH	FIRE ALARM DOOR HOLD DEVICE
HS	HOOD SUPPRESSION SYSTEM INTERLOCK
GAP	EMERGENCY GENERATOR ANNUNCIATOR PANEL
	WALL MOUNTED TELEPHONE OUTLET
	WALL MOUNTED DATA OUTLET
	WALL MOUNTED DATA/TELEPHONE OUTLET
	FLUSH FLOOR MOUNTED MOUNTED TELEPHONE OUTLET
	FLUSH FLOOR MOUNTED MOUNTED DATA OUTLET
	FLUSH FLOOR MOUNTED MOUNTED DATA/TELEPHONE OUTLET
	WALL MOUNTED TELEVISION OUTLET
	WALL MOUNTED SINGLE FACE SYSTEM CLOCK
	WALL MOUNTED DOUBLE FACE SYSTEM CLOCK
S	CEILING MOUNTED SPEAKER ASSEMBLY
S	WALL MOUNTED SPEAKER ASSEMBLY
M	FLOOR/CEILING MOUNTED MICROPHONE OUTLET
M	WALL MOUNTED MICROPHONE OUTLET
V	VOLUME CONTROL
K	SECURITY SYSTEM KEYPAD
M	SECURITY SYSTEM MOTION SENSOR
M	SECURITY SYSTEM WALL MOUNTED MOTION SENSOR
D	SECURITY SYSTEM DOOR MAGNETIC LOCK
	SECURITY SYSTEM CAMERA
CR	SECURITY SYSTEM CARD READER
IC	INTERCOM
B	GLASS BREAK DETECTOR
J	SECURITY SYSTEM JUNCTION BOX
	SECURITY SYSTEM DOOR CONTACT
	DOORBELL/PUSHBUTTON
	BELL

NOT ALL SYMBOLS USED

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MAY 8, 2019

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GENERAL NOTES & LEGEND

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LIGHTING FIXTURE SCHEDULE

Type	Description	Manufacturer	Model	Lamp	Voltage	Wattage	MOUNTING	Comments
A	CANOPY LIGHTING	NULITE	R66SM-D-FF-10-L40-1C-UNV-D-W-4	LED, 4000K	UNV	32 VA	SURFACE	1,3,4,6,7
AE	CANOPY LIGHTING	NULITE	R66SM-D-FF-10-L40-1C-UNV-D-W-4	LED, 4000K	UNV	32 VA	SURFACE	1,3,4,6,7,8
B	1X4 LED TROFFER	METALUX	14CZ2-44-UNV-L840-CD1-U	LED, 4000K	UNV	38 VA	RECESSED	1,3,4
BE	1X4 LED TROFFER EMERGENCY	METALUX	14CZ2-44-UNV-L840-CD1-U	LED, 4000K	UNV	38 VA	RECESSED	1,3,4,8
C	2x4 LED TROFFER DIMMABLE	METALUX	24CZ2-55-UNV-L840-CD1-U	LED, 4000K	UNV	50 VA	RECESSED	1,3,4
CE	2x4 LED TROFFER DIMMABLE EMERGENCY	METALUX	24CZ2-55-UNV-L840-CD1-U	LED, 4000K	UNV	50 VA	RECESSED	1,3,4,8
D	LED HIGH BAY GYMNASIUM FIXTURE WITH MOTION SENSOR	METALUX	HBLED-LD5-30HE-W-CLWG-UNV-L840-CD2-MS-U	LED, 4000K	UNV	180 VA	SURFACE	1,3,5,7,9,10
DE	LED HIGH BAY GYMNASIUM FIXTURE EMERGENCY	METALUX	HBLED-LD5-30HE-W-CLWG-UNV-L840-CD2-U	LED, 4000K	UNV	180 VA	SURFACE	1,3,5,7,8,9,10
F	1X4 INDUSTRIAL LIGHT	METALUX	4SNLED-LD5-47SL-LW-UNV-L840-CD1-U	LED, 4000K	UNV	43 VA	SURFACE / SUSPENDED	1,2,3,4,7
FE	1X4 INDUSTRIAL LIGHT EMERGENCY	METALUX	4SNLED-LD5-47SL-LW-UNV-L840-CD1-U	LED, 4000K	UNV	43 VA	SURFACE / SUSPENDED	1,2,3,4,7,8
G	4 INCH LED INTERIOR DOWNLIGHT	PORTFOLIO	LD4B15D010-EU4B10208040-4LBWLI1-GSKET	LED, 4000K	UNV	14 VA	RECESSED	1,3,6
GE	4 INCH LED EXTERIOR EMERGENCY DOWNLIGHT	PORTFOLIO	LD4B15D010-EU4B10208040-4LBWLI1-GSKET	LED, 4000K	UNV	14 VA	RECESSED	1,3,6,8
H	1X4 LED TROFFER IN LOCKER ROOMS	NULITE	R66RF-D-FF-10-L40-1C-UNV-D-W-4	LED, 4000K	UNV	32 VA	RECESSED	1,3,4
HE	1X4 LED TROFFER IN LOCKER ROOMS EMERGENCY	NULITE	R66RF-D-FF-10-L40-1C-UNV-D-W-4	LED, 4000K	UNV	32 VA	RECESSED	1,3,4,8
S1	LED, POLE MOUNTED, SINGLE FIXTURE	MCGRAW-EDISON	GLEON-AF-06-LED-480-SWQ	LED, 4000K	480V	370 VA	POLE	6,7,11
S2	LED, POLE MOUNTED, DUAL FIXTURE	MCGRAW-EDISON	GLEON-AF-04-LED-480-SL4	LED, 4000K	480V	250 VA	POLE	6,7,11
W1	EXTERIOR LED WALLPACK	INVUE	ENC-E02-LED-E1-BL4	LED, 4000K	UNV	55 VA	WALL	1,3,6
W(E)	EXTERIOR 1X4 TO BE DEMO'D	EXISTING	EXISTING			0 VA	SURFACE	
X	EXIT SIGN	SURE-LITES	LPX7SD	LED	UNV	2 VA	SURFACE	1,3
X1	EXIT SIGN IN GYM	SURE-LITES	LPX7SD	LED	UNV	2 VA		1,3,10

1. VERIFY MOUNTING TYPE AND LOCATION WITH ARCHITECT'S DRAWINGS.
2. VERIFY MOUNTING HEIGHT AND FIXTURE SUSPENSION LENGTH WITH ARCHITECT.
3. ARCHITECT TO SELECT COLOR AND FINISH.
4. PROVIDE CEILING MOUNTING TYPE AS REQUIRED FOR CEILING INSTALLED. REFER TO ARCHITECT'S DRAWINGS FOR ADDITIONAL INFORMATION.
5. PROVIDE WITH WIRE GUARD AND SAFETY CABLE, REFER TO MOUNTING DETAILS.
6. WEATHERPROFF CONSTRUCTION.
7. PROVIDE WITH OPTIONAL MOUNTING HARDWARE.
8. PROVIDE FIXTURE WITH MANUFACTURER INSTALLED EMERGENCY BATTERY PACK.
9. PROVIDE FIXTURE WITH INTEGRAL WAVELINX ENABLED WITH SVPD3 DEVICE.
10. PROVIDE PROTECTIVE WIRE GUARDS.
11. PROVIDE WITH 8" SQUARE STEEL POE, 25' HEIGHT, WITH HAND HOLE.

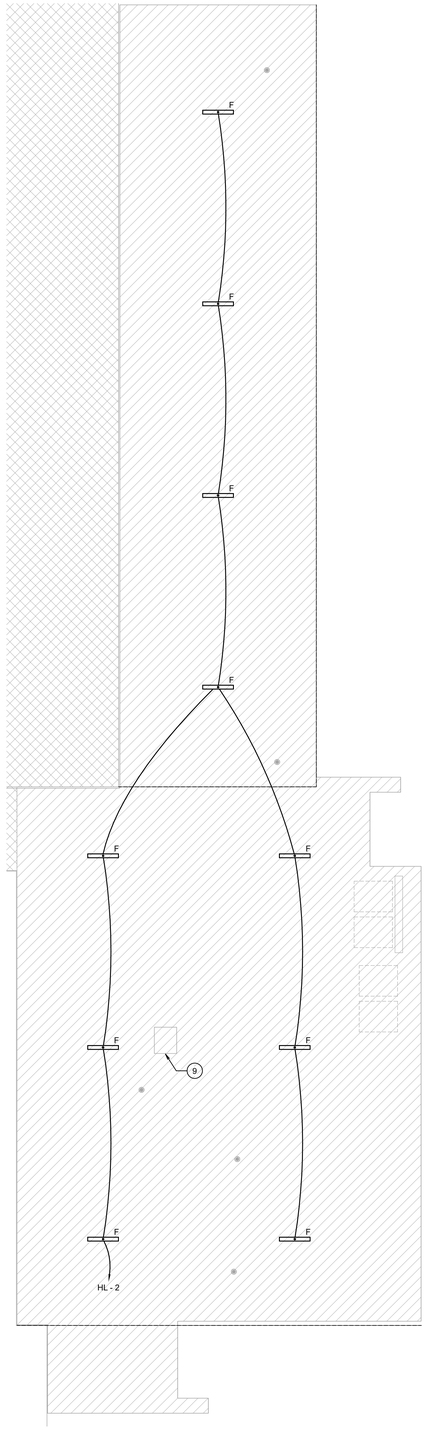
NOTES BY SYMBOL: "◯"

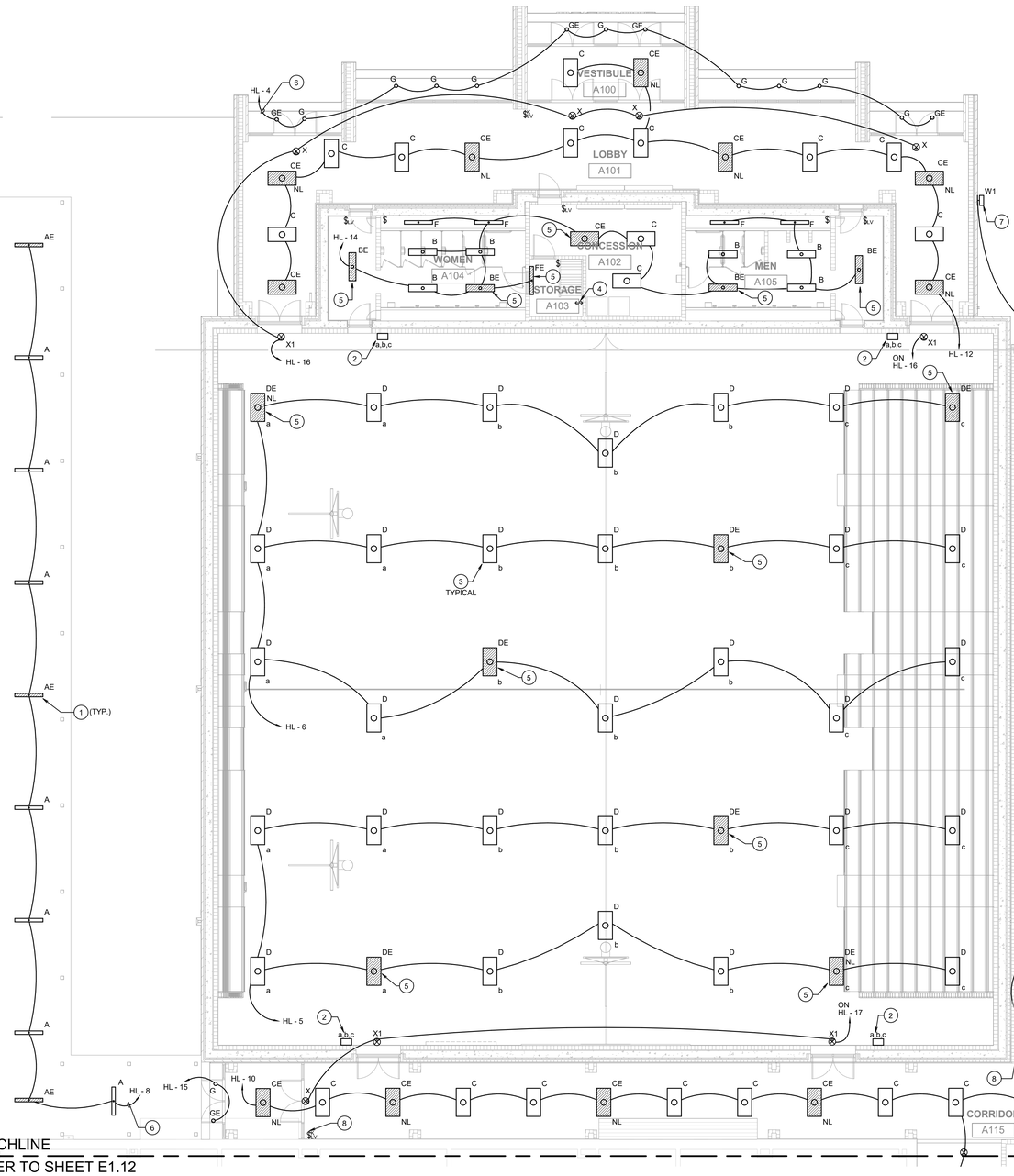
1. CANOPY LIGHTING SURFACE MOUNTED TO BOTTOM OF CANOPY. ATTACH TO HIGH RIB OF CANOPY PER MANUFACTURER RECOMMENDATIONS.
2. LIGHTING CONTROL STATION EQUAL TO EATON W6S-S3D-W WITH 6-BUTTONS TO CONTROL ALL LIGHTING CONTROL ZONES INCLUDING DIMMING.
3. LIGHT FIXTURE MOUNTED AT 25' AFF, CONFIRM HEIGHT WITH ARCHITECT. COORDINATE EXACT LOCATION WITH GOAL MOUNTING AND DUCTWORK. REFER TO DETAIL 03/E6.01.
4. LIGHT SWITCH FOR EQUIPMENT PLATFORM LIGHTS. REFER TO SHEET E4.01.
5. CIRCUIT THIS FIXTURE THROUGH INVERTER LOCATED ON EQUIPMENT PLATFORM. REFER TO SHEET E4.01 FOR LOCATION OF INVERTER.
6. CONTROL VIA CONTACTORTHROUGH BUILDING EMS SYSTEM.
7. VERIFY MOUNTING HEIGHT WITH ARCHITECT.
8. SWITCH FOR CONTROL OF CORRIDOR LIGHTS.
9. SWITCH LOCATED ON FIRST FLOOR FOR CONTROL OF CRAWLSPACE LIGHTS. COORDINATE EXACT LOCATION WITH ARCHITECT.

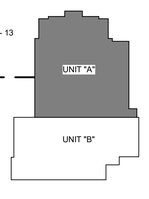
SHELTER EMERGENCY STANDBY LIGHTING & POWER LOAD CALCULATION

LIGHT FIXTURES - 4 CIRCUITS	QUANTITY	WATTS	WATTS/HOUR	KW @ 2-HOURS
TYPE				
DE	7	180	1260	2520
CE	1	50	50	100
BE	4	38.3	153.2	306.4
FE	2	42.8	85.6	171.2
MISC. POWER - 2 CIRCUITS				
RELIEF FANS - 1 HP	2	1745	3490	6980
			TOTAL	10077.6
			KW RQD. FROM STANDBY SYSTEM	10.07
			KW AVAILABLE FROM STANDBY SYSTEM	11.81

STANDBY POWER SYSTEM:
EVENLITE
LITEMINDER LM-15750
480-480V INPUT / OUTPUT
Power rated (kVA) 15.75 @ 90 MINUTES.
Power rated (kVA) 11.8 @ 120 MINUTES.
Weight 3,380 lbs. WITH BATTERIES FOR REQ. 120 MINUTE STANDBY LOAD







KEY PLAN

PLAN NORTH / TRUE NORTH
2 LIGHTING - FLOOR PLAN - CRAWLSPACE
SCALE: 1/8" = 1'-0"

PLAN NORTH / TRUE NORTH
1 LIGHTING - REFLECTED CEILING PLAN - UNIT A
SCALE: 1/8" = 1'-0"

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS DAVID M. BOON 95600 REGISTERED PROFESSIONAL ENGINEER 2019-05-08

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SHEET TITLE
FLOOR PLAN - UNIT A - LIGHTING

SHEET NO.
E1.11

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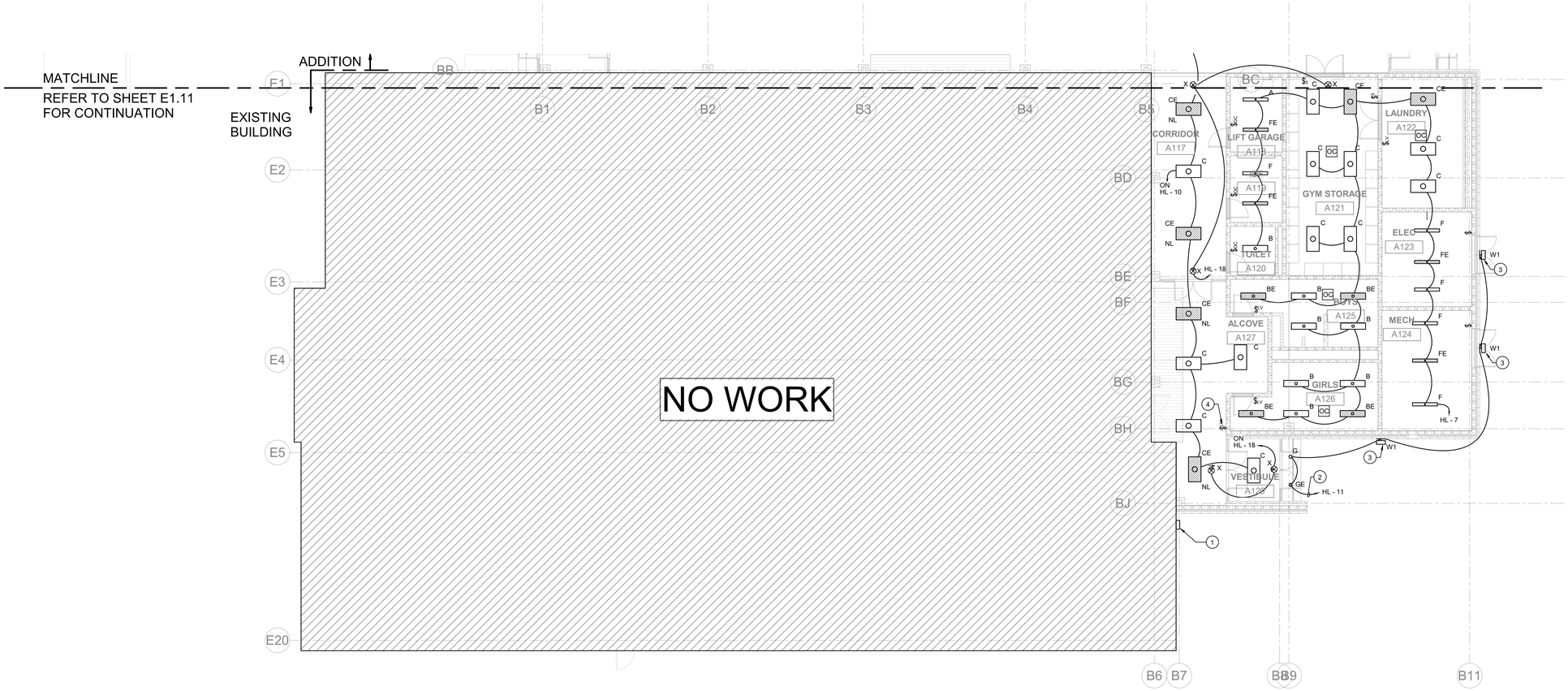
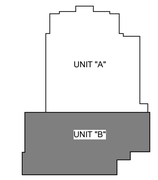
NOTES BY SYMBOL: "◯"

1. EXISTING LIGHT FIXTURE TO REMAIN. CIRCUIT TO NEAREST EXISTING EXTERIOR 277V LIGHTING CIRCUIT. TIE-IN CONTROLS TO EXISTING BUILDING EXTERIOR LIGHTING CONTROLS.
2. CONTROL VIA CONTACTOR THROUGH BUILDING EMS SYSTEM.
3. VERIFY MOUNTING HEIGHT WITH ARCHITECT.
4. SWITCH FOR CONTROL OF CORRIDOR LIGHTS



PLAN NORTH / TRUE NORTH

1 LIGHTING - REFLECTED CEILING PLAN - UNIT B
SCALE: 1/8" = 1'-0"



KEY PLAN

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FLOOR PLAN - UNIT B - LIGHTING

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E1.12

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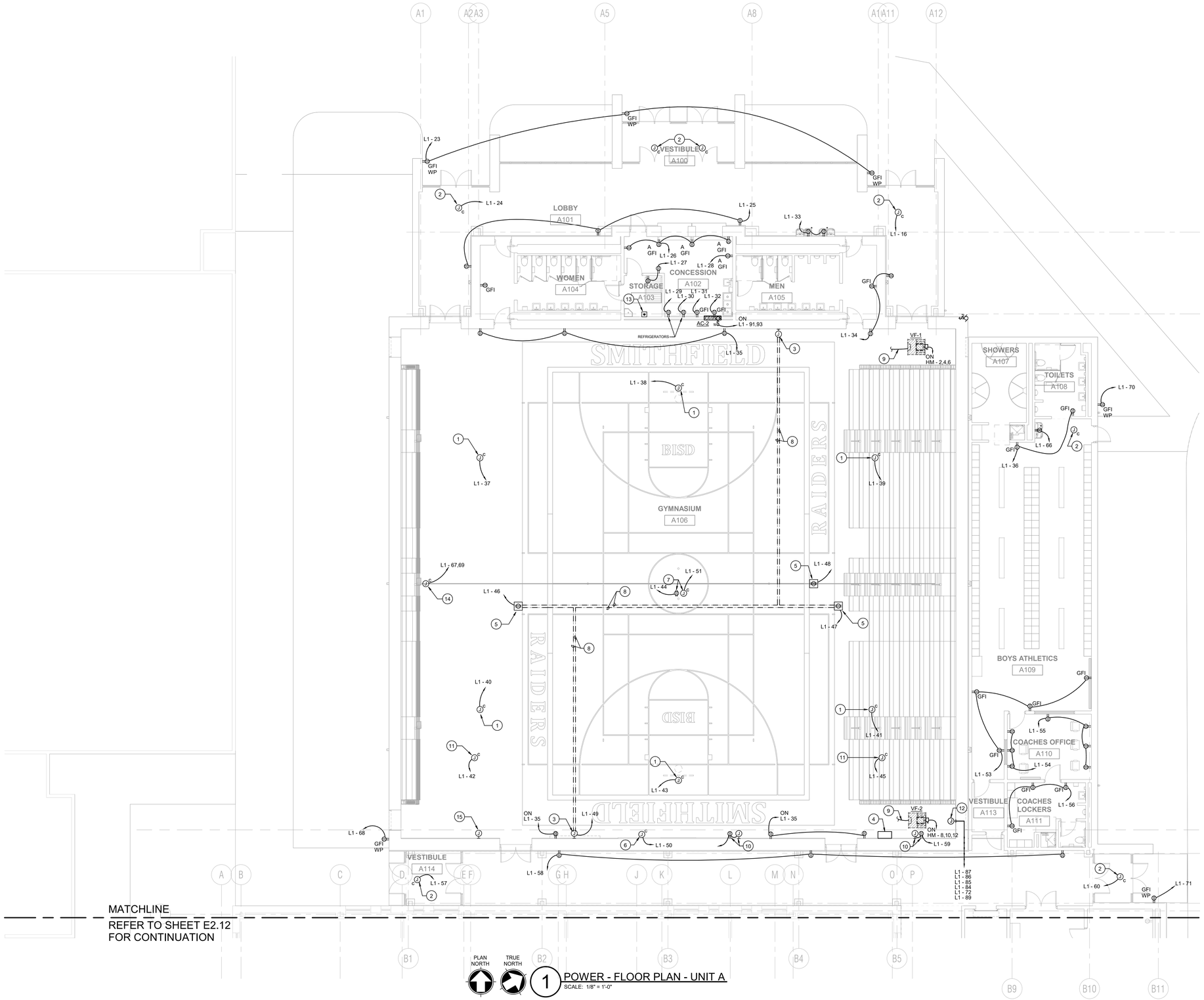

MATCHLINE
REFER TO SHEET E2.12
FOR CONTINUATION

PLAN NORTH / TRUE NORTH

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

NOTES BY SYMBOL: "◯"

1. 120V WITH POWER FOR MOTORIZED FOLDING GOALS. COORDINATE LOCATION WITH ARCHITECTS PLANS. COORD ALL REQUIREMENTS WITH MANUFACTURER. VERIFY EXACT LOCATION OF CONTROLS WITH ARCHITECT.
2. PROVIDE DEDICATED 120V, 20A CIRCUIT IN J-BOX ABOVE CEILING FOR ACCESS CONTROL DOOR HARDWARE POWER SUPPLY AND DOOR CONTACTS. COORDINATE ELECTRICAL REQUIREMENTS WITH POWER SUPPLY USED. ALL RACEWAY TO BE ROUTED CONCEALED WHERE POSSIBLE. WHERE NOT POSSIBLE PROVIDE PAINTED STEEL SURFACE RACEWAY SYSTEM, COLOR AS SLECTED BY ARCHITECT.
3. RECEPTACLE MOUNTED AT 14'-–0" AFF FOR SCOREBOARD POWER. VERIFY LOCATION WITH ARCHITECT, VERIFY VOLTAGE, PHASE, AND BREAKER REQUIREMENTS WITH SCOREBOARD MANUFACTURER PRIOR TO INSTALLATION. VERIFY MOUNTING HEIGHT WITH ARCHITECT.
4. APPROXIMATE LOCATION FOR FOLDING BASKETBALL GOAL CONTROLS & ENCLOSURE. REFER TO AV DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS. COORDINATE ALL REQUIREMENTS WITH BACK STOP MANUFACTURER.
5. RECESSED FLOOR BOX BY AV SYSTEMS INSTALLER. PROVIDE WITH INTERIOR MOUNTED DUPLEX RECEPTACLE AS INDICATED. COORDIANTE HARDWARE REQUIREMENTS WITH AV SYSTEMS INSTALLER. REFER TO AV DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION. REFER TO SPECIFICATIONS FOR MORE INFORMATION. COORDINATE ALL CONDUIT REQUIREMENTS WITH DATA CABLING INSTALLER AND AV SYSTEMS INSTALLER.
6. POWER FOR MOTORIZED PROJECTION SCREEN. VERIFY EXACT POWER REQUIREMENTS WITH EQUIPMENT MANUFACTURER. REFER TO AV DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS.
7. POWER FOR MOTORIZED PROJECTOR PLATFORM AND PROJECTOR. VERIFY EXACT POWER REQUIREMENTS WITH EQUIPMENT MANUFACTURER. REFER TO AV DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS.
8. EXTEND (1) CONDUIT BELOW FLOOR FOR POWER, SIZER PER NEC AND (1) 1" CONDUIT FOR DATA. TURN CONDUIT UP IN WALL TO ABOVE CEILING TO SCOREBOARD FROM FLOOR BOX.
9. CONNECTED TO VFD LOCATED IN EQUIPMENT STORAGE ROOM LOCATED ABOVE CONCESSION A102, CIRCUIT VIA INVERTER.
10. DUPLEX RECEPTACLE ADJACENT TO 2-GANG AV INPUT PLATE. REFER TO AV DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS.
11. POWER FOR GAME CLOCK CONNECTION PLATE. REFER TO AV DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS.
12. JUNCTION BOX WITH (6) DEDICATED 110V CIRCUITS FOR SOUND SYSTEM RACK. REFER TO AV DRAWINGS FOR ADDITIONAL INFORMATION. EXTEND CIRCUIT TO SOUND SYSTEM EQUIPMENT AND MAKE FINAL CONNECTION. REFER TO AV DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE INSTALLATION AND EXACT LOCATION WITH AV SYSTEM INSTALLER.
13. PROVIDE PUSH BUTTON WITH PUSH TO RUN, TURN TO RESET OPERATION OF SHELTER VENTILATION FANS. PROVIDE RELAYS IN ENCLOSURE ABOVE THE CEILING TO INTERLOCK THE FAN OPERATION WITH THE DAMPER ACTUATORS. CONTROL WIRING SHALL BE INTERLOCKED WITH THE FAN VFD'S FOR COLLECTIVE OPERATION OF ALL FANS SIMULTANEOUSLY. PUSH BUTTON TO BE STOPPER STATION, MODEL SS2279ZA-EN, YELLOW COLOR, TWO-LINE LETTERING: "SHELTER FANS". PROVIDE WITH ALL REQUIRED RELAYS, CONTROLS, TRANSFORMERS, AND WIRING REQUIRED FOR INDICATED OPERATION OF THE FANS AND DAMPER ACTUATORS. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR.
14. POWER FOR GYM DIVIDER WINCH. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH EQUIPMENT USED.
15. CONTROLS MOUNTED AT 42"AFF FOR MOTORIZED GYM DIVIDER. COORDINATE EXACT LOCATION WITH ARCHITECT.

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REVISIONS

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Director JFK	Drawn By Author
Designer CMD	Quality Control
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
FLOOR PLAN - UNIT A - POWER

SHEET NO.
E2.11

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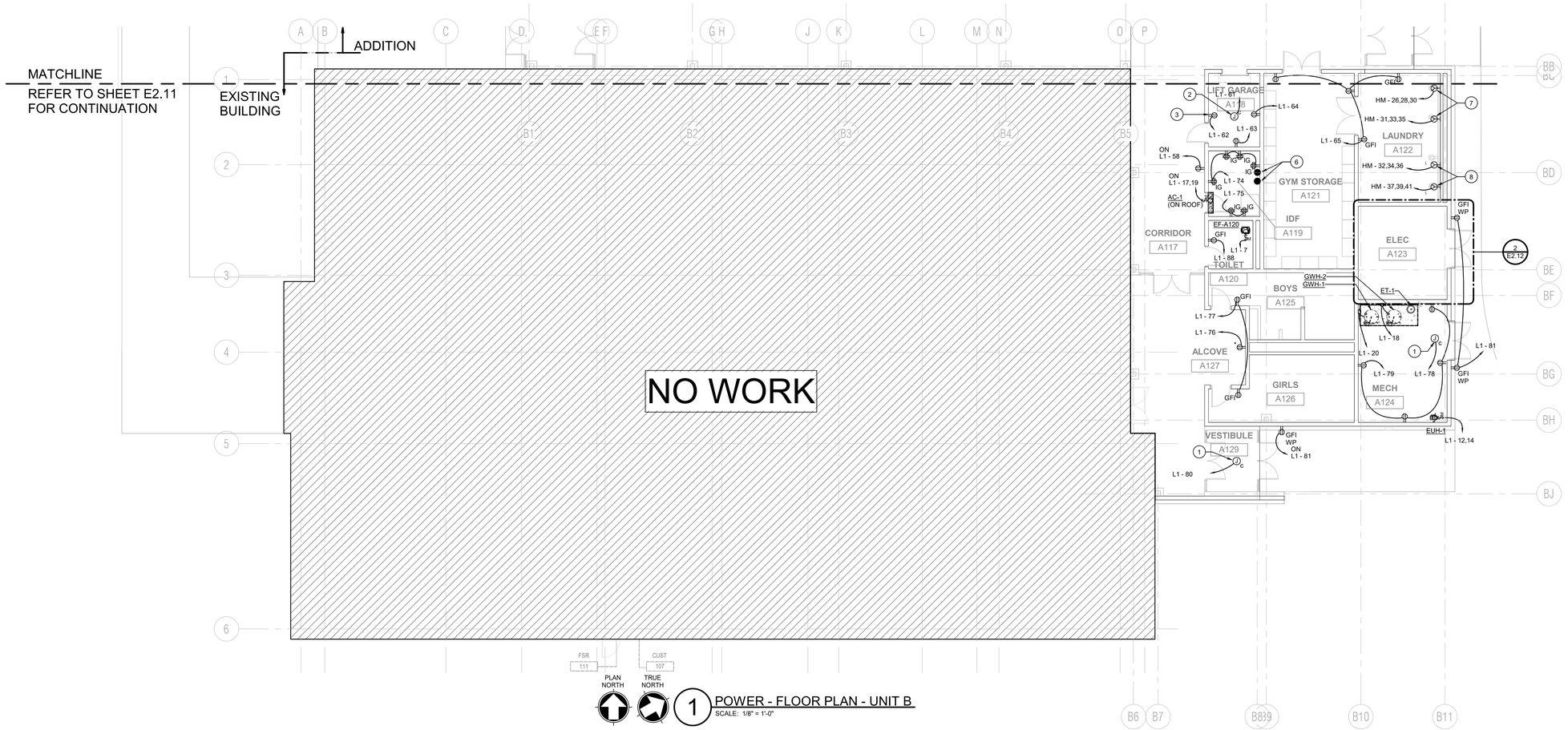
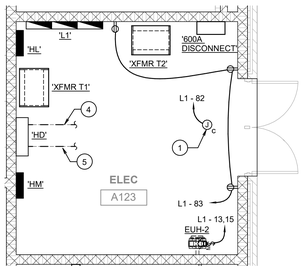


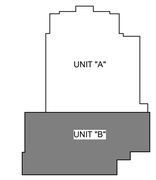
1 POWER - FLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"



2 POWER - ENLARGED FLOOR PLAN - IDF ROOM
SCALE: 1/4" = 1'-0"

NOTES BY SYMBOL: "◯"

1. 120V, 20A CIRCUIT IN J-BOX ABOVE CEILING FOR ACCESS CONTROL DOOR HARDWARE POWER SUPPLY AND DOOR CONTACTS. COORDINATE ELECTRICAL REQUIREMENTS WITH POWER SUPPLY USED. ALL RACEWAY TO BE ROUTED CONCEALED WHERE POSSIBLE. WHERE NOT POSSIBLE PROVIDE PAINTED STEEL SURFACE RACEWAY SYSTEM, COLOR AS SLECTED BY ARCHITECT.
2. 120V 20A/1P CORD REEL TO CHARGE MOTORIZED LIFT. PROVIDE HUBBELL HBL4512R220 OR EQUAL. COORDINATE EXACT ELECTRICAL REQUIREMENTS WITH REEL MANUFACTURER. REFER TO DETAIL 3/E5.03.
3. CHARGING OUTLET FOR MOTORIZED BLEACHER TRACTOR, VERIFY REQUIREMENTS WITH MANUFACTURER.
4. INCOMING ELECTRICAL SERVICE, REFER TO MPE1.01.
5. NEW FEEDERS TO EXISTING BUILDING, REFER TO MPE1.01.
6. STUB UP LOCATION FOR CONDUIT RUNS FROM EXISTING IDF ROOM. REFER TO SHEET MPE1.01 FOR CONDUIT ROUTING PATH.
7. POWER FOR INDUSTRIAL WASHER. VERIFY ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER. PROVIDE FINAL CONNECTION TO EQUIPMENT.
8. POWER FOR INDUSTRIAL DRYER. VERIFY ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER. PROVIDE FINAL CONNECTION TO EQUIPMENT.



KEY PLAN

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MAY 8, 2019

REVISIONS
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Director	Drawn By
JFK	Author
Designer	Quality Control
CMD	
Proj. Arch.	
JD	

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1887.00

SHEET TITLE
FLOOR PLAN - UNIT B - POWER

SHEET NO.
E2.12

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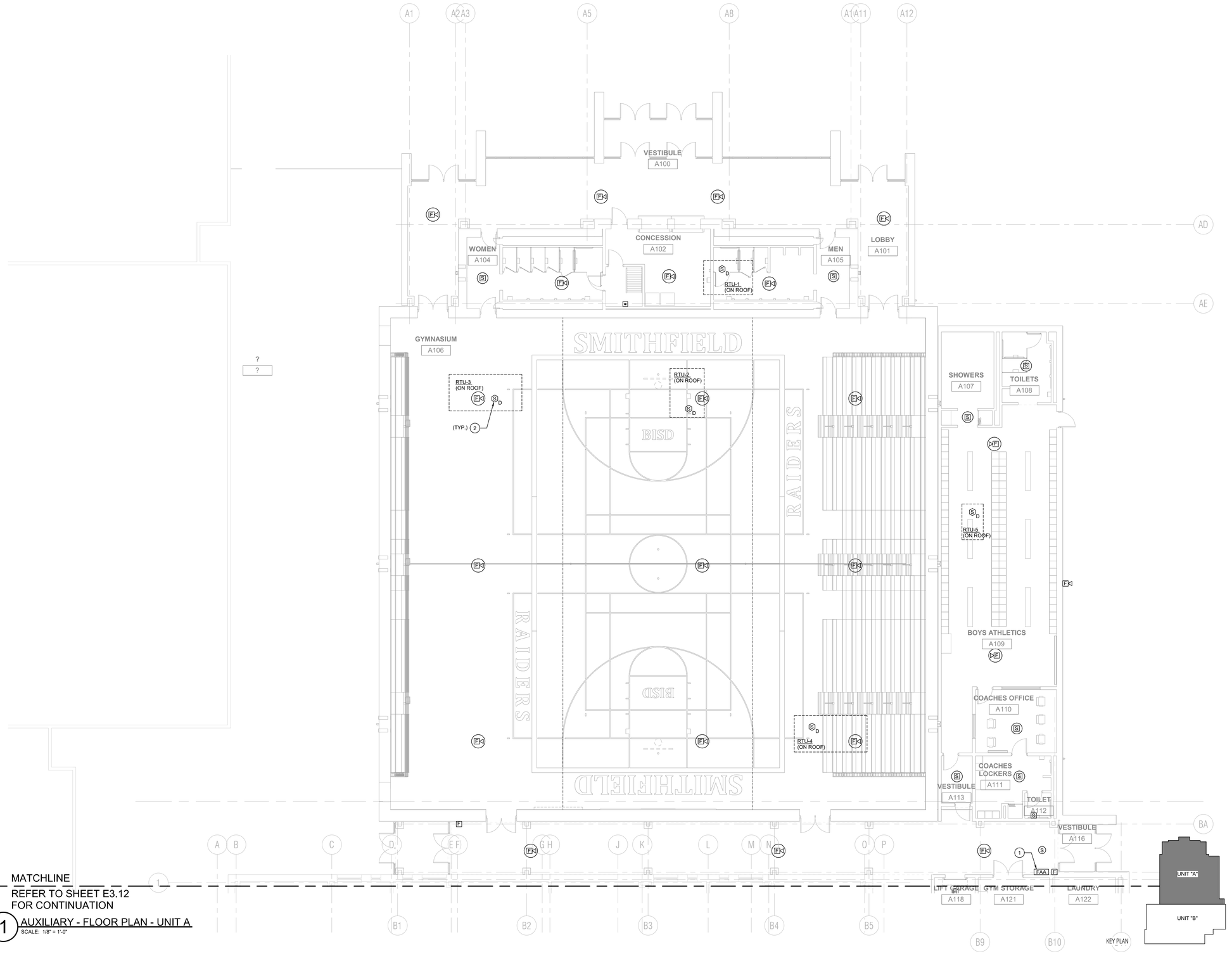
PLOT SCALE:As indicated

NOTES BY SYMBOL: "◯"

1. NEW FIRE ALARM REMOTE ANNUNCIATOR, VERIFY APPROVED LOCATION WITH LOCAL FIRE MARSHALL.
2. DUCT DETECTION MOUNTED IN HVAC UNIT. COORDINATE WITH EQUIPMENT MANUFACTURER AND MECHANICAL CONTRACTOR.



MATCHLINE
REFER TO SHEET E3.12
FOR CONTINUATION

PLAN NORTH / TRUE NORTH

1 AUXILIARY - FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

FILE PATH:
DATE/TIME:5/8/2019 4:18:06 PM
PLOT SCALE: 1/8" = 1'-0"

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Revision No.

Director JFK	Drawn By Author
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SHEET TITLE
FLOOR PLAN - UNIT A - AUXILIARY

SHEET NO.
E3.11

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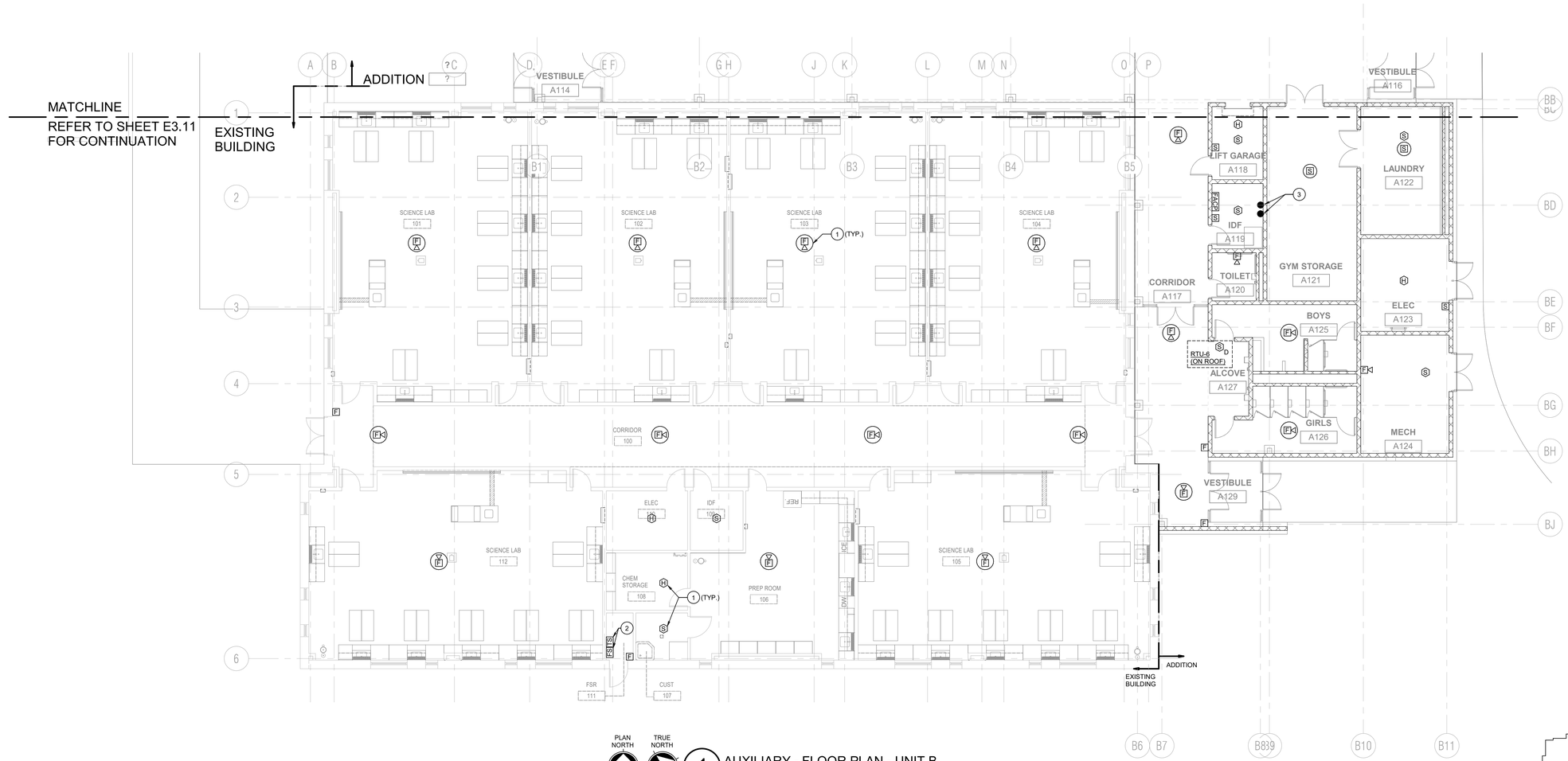
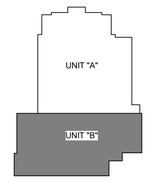
NOTES BY SYMBOL: "◯"

1. NEW FIRE ALARM DEVICE MOUNTED ON CEILING.
2. PROVIDE NEW FLOW/TAMPER SWITCHES ON EXISTING FIRE SPRINKLER RISER.
3. STUB UP LOCATION FOR CONDUIT RUNS FROM EXISTING IDF ROOM. REFER TO SHEET MPE1.01 FOR CONDUIT ROUTING PATH.



PLAN NORTH / TRUE NORTH

1 AUXILIARY - FLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"



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SHEET TITLE
FLOOR PLAN - UNIT B - AUXILIARY

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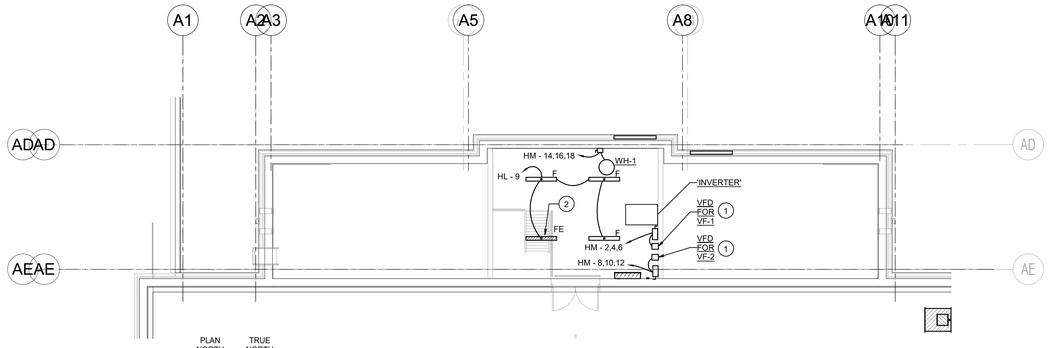

PLAN NORTH

TRUE NORTH

1 ELECTRICAL - ENLARGED FLOOR PLAN - EQUIPMENT PLATFORM

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

NOTES BY SYMBOL: "◯"

1. VFD FOR SHELTER RELIEF FAN. INTERLOCK SHELTER VENTILATION DAMPERSWITCH TO OPEN DAMPERS WHEN FANS ARE ACTIVATED. FAN OPERATION TO BE ENGAGED BY THE SHELTER FAN PUSH BUTTON CONTROLLER. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR.
2. CIRCUIT THROUGH INVERTER.

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REVISIONS

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Director	Drawn By
Approver	Author
Designer	Quality Control
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Proj. Arch.	
Checker	

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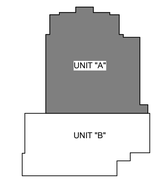
ENLARGED FLOOR PLANS - ELECTRICAL

SHEET NO.

E4.01



KEY PLAN

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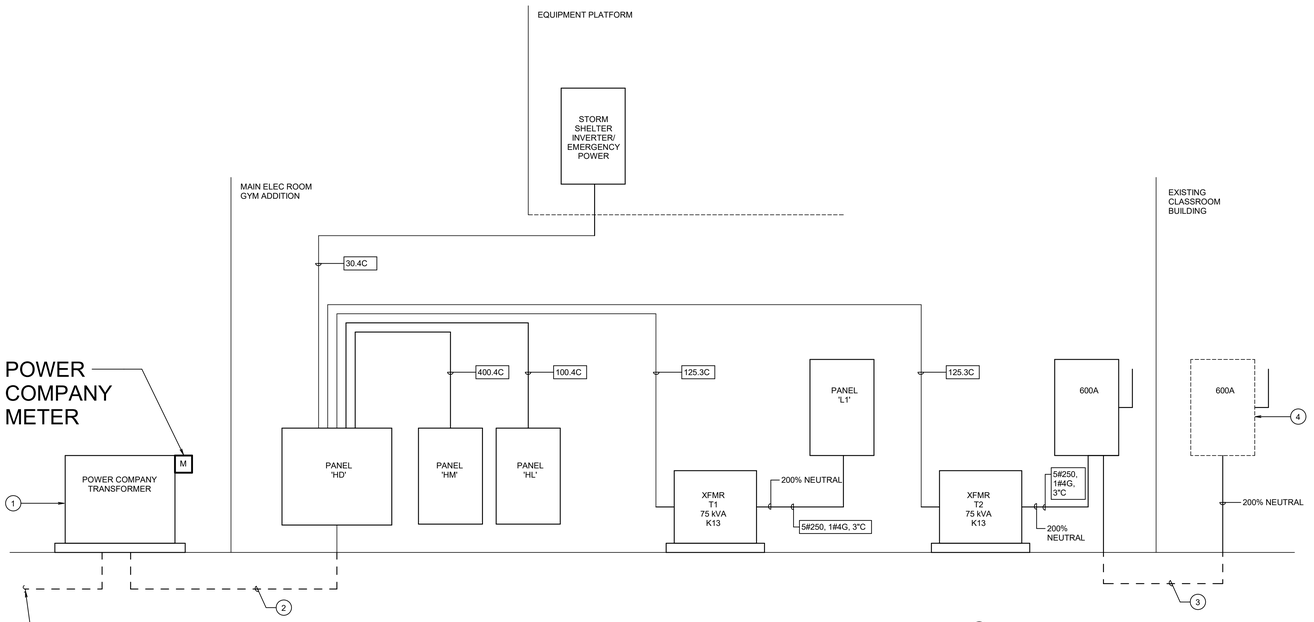

1 Electrical Riser Diagram
NO SCALE

NOTES BY SYMBOL " ◯ ":

1. POWER COMPANY TRANSFORMER, PAD MOUNTED, VERIFY ALL INSTALLATION REQUIREMENTS WITH ONCOR.
2. UNDERGROUND SERVICE ENTRANCE, REFER TO MPE1.01. PROVIDE 2 SETS OF 4-350 AND NO GROUND IN 3"C.
3. NEW FEED TO EXISTING CLASSROOM BUILDING SERVICE DISCONNECT. PROVIDE 2 SETS OF 5-350. 1#1G, IN (2) 3"C.
4. EXISTING CLASSROOM BUILDING SERVICE DISCONNECT ON EXTERIOR WALL OF EXISTING BUILDING.

FEEDER SCHEDULE - COPPER

TAG	DESCRIPTION	TAG	DESCRIPTION
15.3C	3#12, #12G, 3/4"C	15.4C	4#12, #12G, 3/4"C
20.3C	3#12, #12G, 3/4"C	20.4C	4#12, #12G, 3/4"C
25.3C	3#10, #10G, 3/4"C	25.4C	4#10, #10G, 3/4"C
30.3C	3#10, #10G, 3/4"C	30.4C	4#10, #10G, 3/4"C
35.3C	3#8, #10G, 3/4"C	35.4C	4#8, #10G, 1"C
40.3C	3#8, #10G, 3/4"C	40.4C	4#8, #10G, 1"C
45.3C	3#6, #10G, 3/4"C	45.4C	4#6, #10G, 1"C
50.3C	3#6, #10G, 3/4"C	50.4C	4#6, #10G, 1"C
60.3C	3#4, #10G, 1"C	60.4C	4#4, #10G, 1 1/4"C
70.3C	3#4, #8G, 1"C	70.4C	4#4, #8G, 1 1/4"C
80.3C	3#3, #8G, 1"C	80.4C	4#3, #8G, 1 1/4"C
90.3C	3#2, #8G, 1 1/4"C	90.4C	4#2, #8G, 1 1/2"C
100.3C	3#2, #8G, 1 1/4"C	100.4C	4#2, #8G, 1 1/2"C
110.3C	3#1, #6G, 1 1/2"C	110.4C	4#1, #6G, 1 1/2"C
125.3C	3#1, #6G, 1 1/2"C	125.4C	4#1, #6G, 1 1/2"C
150.3C	3#1/0, #6G, 1 1/2"C	150.4C	4#1/0, #6G, 2"C
175.3C	3#2/0, #6G, 2"C	175.4C	4#2/0, #6G, 2"C
200.3C	3#3/0, #6G, 2"C	200.4C	4#3/0, #6G, 2"C
225.3C	3#4/0, #4G, 2"C	225.4C	4#4/0, #4G, 2 1/2"C
250.3C	3-250, #4G, 2 1/2"C	250.4C	4-250, #4G, 2"C
300.3C	3-350, #4G, 2 1/2"C	300.4C	4-350, #4G, 3"C
350.3C	3-500, #3G, 3"C	350.4C	4-500, #3G, 3 1/2"C
400.3C	3-500, #3G, 3"C 2 SETS OF 3#3/0, #3G, 2"C	400.4C	4-500, #3G, 3 1/2"C 2 SETS OF 4#3/0, #3G, 2 1/2"C
450.3C	2 SETS OF 3#4/0, #2G, 2"C	450.4C	2 SETS OF 4#4/0, #2G, 2 1/2"C
500.3C	2 SETS OF 3-250, #2G, 2 1/2"C	500.4C	2 SETS OF 4-250, #2G, 3"C
600.3C	2 SETS OF 3-350, #1G, 2 1/2"C	600.4C	2 SETS OF 4-350, #1G, 3"C
700.3C	2 SETS OF 3-500, #1/0G, 3"C	700.4C	2 SETS OF 4-500, #1/0G, 3 1/2"C
800.3C	3 SETS OF 3-300, #1/0G, 2 1/2"C	800.4C	3 SETS OF 4-300, #1/0G, 3"C
1000.3C	4 SETS OF 3-250, #2/0G, 2 1/2"C	1000.4C	4 SETS OF 4-250, #2/0G, 3"C
1200.3C	4 SETS OF 3-350, #3/0G, 3"C	1200.4C	4 SETS OF 4-350, #3/0G, 3"C
1600.3C	5 SETS OF 3-400, #4/0G, 3"C	1600.4C	5 SETS OF 4-400, #4/0G, 3 1/2"C
2000.3C	6 SETS OF 3-400, 250G, 3"C	2000.4C	6 SETS OF 4-400, 250G, 3 1/2"C
2500.3C	7 SETS OF 3-500, 350G, 3 1/2"C	2500.4C	7 SETS OF 4-500, 350G, 3 1/2"C
3000.3C	8 SETS OF 3-500, 400G, 3 1/2"C	3000.4C	8 SETS OF 4-500, 400G, 3 1/2"C
4000.3C	12 SETS OF 3-400, 500G, 3"C	4000.4C	12 SETS OF 4-400, 500G, 3 1/2"C

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MAY 8, 2019

REVISIONS

Revision No.

Director JFK
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PROJECT NO.
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SHEET TITLE
ELECTRICAL RISER DIAGRAM

SHEET NO.
E5.01

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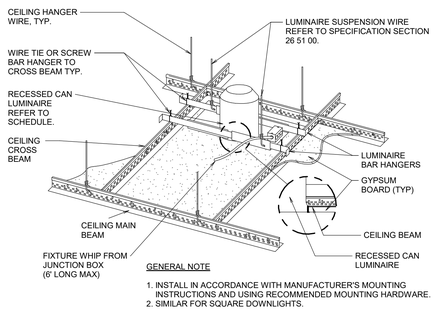
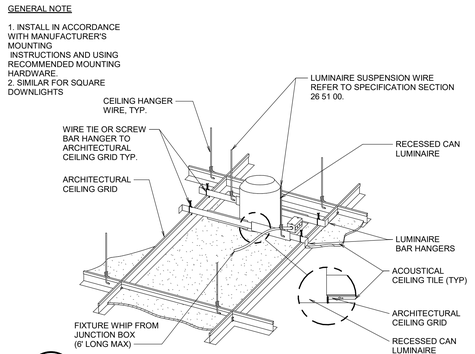


1 DOWNLIGHT MOUNTING - GYBOARD CEILING DETAIL
NO SCALE



2 DOWNLIGHT MOUNTING - LAY-IN CEILING DETAIL
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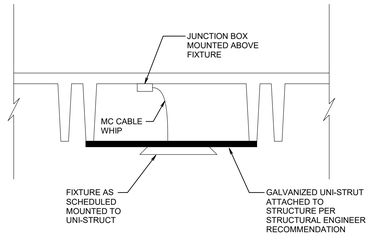

3 GYM LIGHT FIXTURE SUPPORT DETAIL
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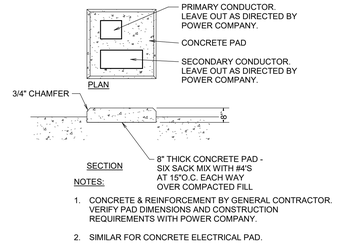

4 TRANSFORMER PAD DETAIL
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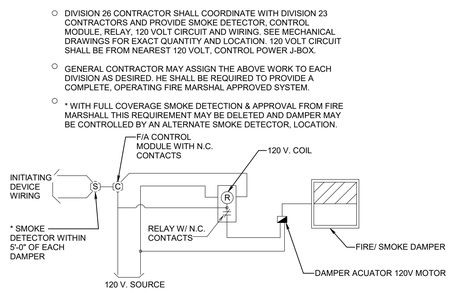
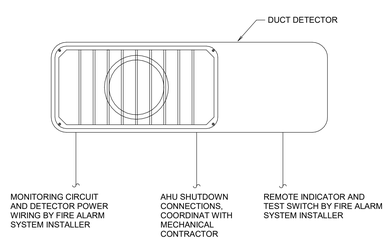
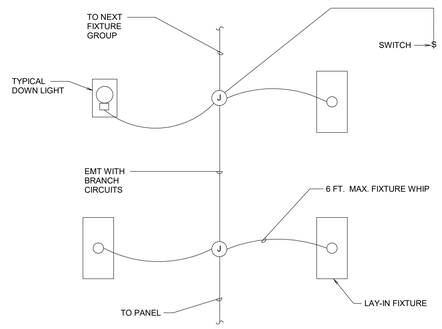


5 FIRE/SMOKE DAMPER WIRING DETAIL
NO SCALE



6 DUCT SMOKE DETECTOR CONNECTION DIAGRAM
NO SCALE



7 FIXTURE WIRING DETAIL
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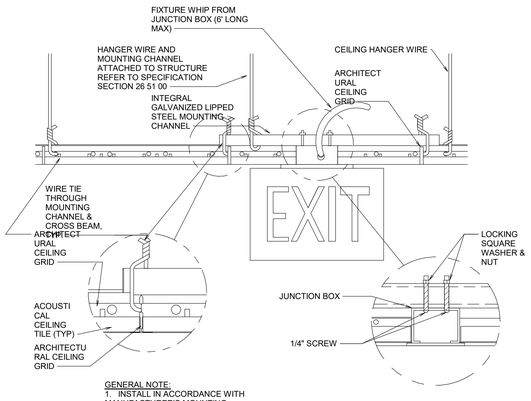
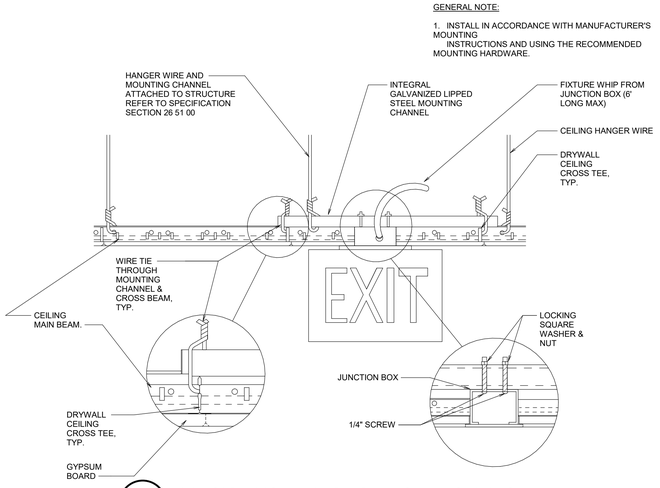


EXIT SIGN MOUNTING - LAY-IN CEILING DETAIL

8 EXIT SIGN MOUNTING - LAY-IN CEILING DETAIL
NO SCALE



9 EXIT SIGN MOUNTING - GYPBOARD CEILING
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SHEET TITLE
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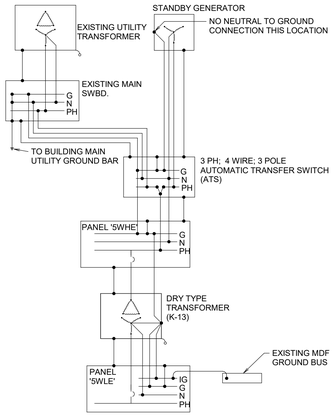
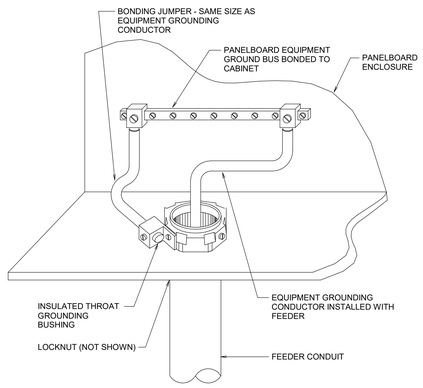
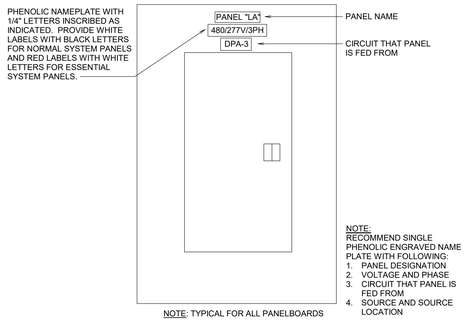
RWB PROJECT #18154-00



1 GROUNDING DETAIL
NO SCALE

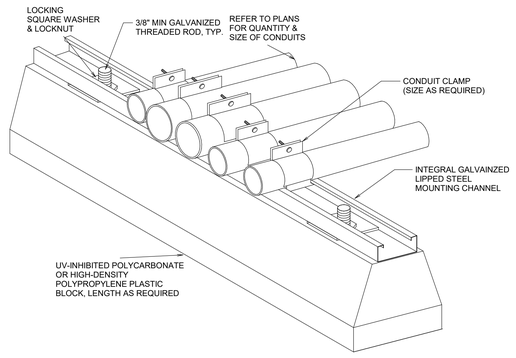


2 PANELBOARD BONDING DETAIL
NO SCALE



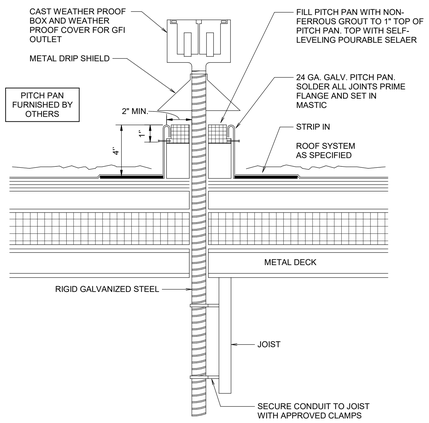
NOTE: TYPICAL FOR ALL PANELBOARDS

3 PANELBOARD IDENTIFICATION DETAIL
NO SCALE

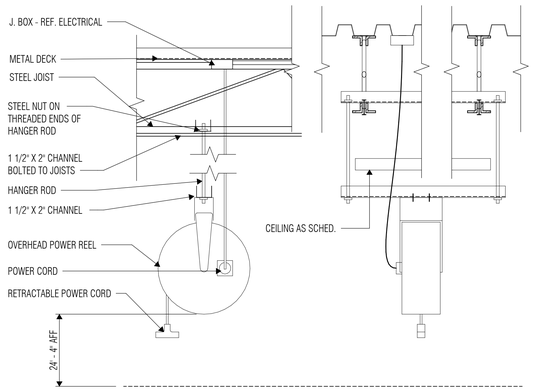


ROOF CONDUIT SUPPORT DETAIL

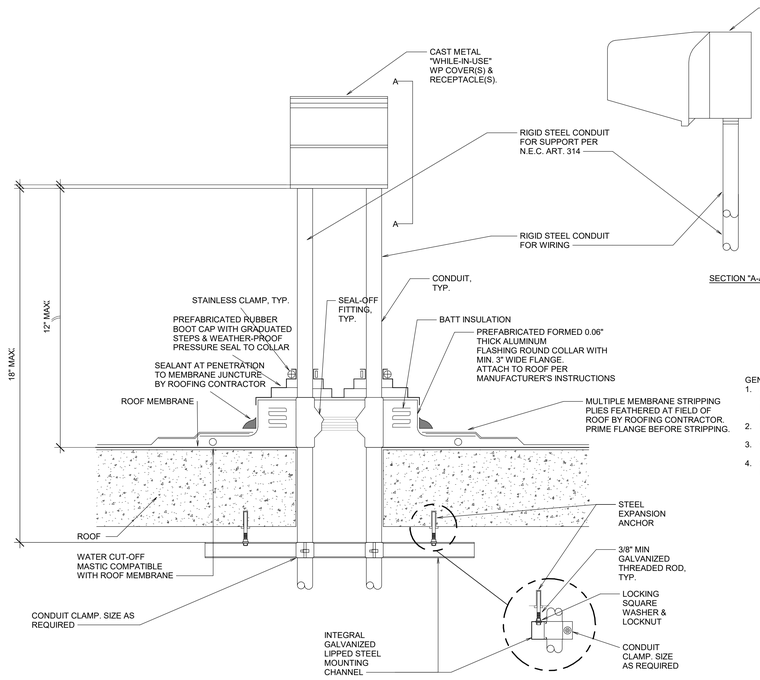
4 WIRING DIAGRAM TEMPLATE
NO SCALE



5 ROOF MOUNTED RECEPTACLE DETAIL
NO SCALE



6 CORD REEL DETAIL
NO SCALE



ROOF PENETRATION & CONDUIT SUPPORT DETAIL

7 WIRING DIAGRAM TEMPLATE
NO SCALE

GENERAL NOTES:
1. MAINTAIN A MINIMUM CLEARANCE OF 12" ON ALL SIDES OF ROOF PENETRATION FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING.
2. FLANGES OF ADJACENT FLASHINGS SHALL NOT BE CUT OR OVERLAPPED.
3. VERIFY ROOF & STRUCTURAL SYSTEM WITH ARCHITECT.
4. COORDINATE FLASHING INSTALLATION WITH ROOFING CONTRACTOR TO ENSURE PROPER METHODS & MATERIALS ARE USED TO MAINTAIN ROOF WARRANTY.

FILE PATH:
DATE/TIME:5/8/2019 4:18:15 PM
PLOT SCALE:As indicated

VLK | ARCHITECTS

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SMITHFIELD MS - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
DAVID M. BOOH
95000
REGISTERED
PROFESSIONAL
ENGINEER
2019-05-08

MAY 8, 2019

REVISIONS
Revision No.

Director JFK	Drawn By Author
Designer CMD	Quality Control
Proj. Arch. JD	

PROJECT NO.
1887.00

SHEET TITLE
ELECTRICAL DETAILS

SHEET NO.
E6.02

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Switchboard: HD

Location: Space A123 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 30,000 AIC
Supply From: NEW UTILITY XFMR | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 600.0 A
Enclosure: NEMA 1 | **MCB Rating:** 600.0 A

CKT	Circuit Description	Poles	Frame Size	Trip Rating	Load	Wire Size	Remarks
1	PANEL HM	3	400.0 A	400.0 A	250,928 VA	REFER TO RISER DIAGRAM	
2	XFMR T1	3	125.0 A	125.0 A	45,570 VA	REFER TO RISER DIAGRAM	
3	PANEL HL	3	100.0 A	100.0 A	13,982 VA	REFER TO RISER DIAGRAM	
4	XFMR T2	3	125.0 A	125.0 A	56,000 VA	REFER TO RISER DIAGRAM	
5	INVERTER	3	30.0 A	30.0 A	10,077 VA	REFER TO RISER DIAGRAM	
6	Space	--	--	--	0 VA	--	--
7	Space	--	--	--	0 VA	--	--
8	Space	--	--	--	0 VA	--	--
9	Space	--	--	--	0 VA	--	--
10	Space	--	--	--	0 VA	--	--
11	Space	--	--	--	0 VA	--	--
12	Space	--	--	--	0 VA	--	--
					Total Conn. Load:	376,550 VA	
					Total Amps:	452.9 A	

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	1,725 VA	125.00%	2,156 VA		
Motor	267,858 VA	105.86%	283,551 VA	**Total Conn. Load:**	376,550 VA
Other	12,318 VA	100.00%	12,318 VA	**Total Est. Demand:**	350,298 VA
Receptacle	94,717 VA	55.28%	52,359 VA	**Total Conn. Current:**	452.9 A
				Total Est. Demand Current:	421.3 A
				Non-Coincident Heating/Cooling:	0.0 A
				Total Est. Deman - NC:	421.3 A

Notes:

PANEL: HM

Location: Space A123 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 22,000 AIC
Supply From: HD | **Phases:** 3 | **Mains Type:** MLO
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 400.0 A
Enclosure: NEMA 1 | **Sections:** 1

CKT	Load Name	BKR	Poles	Wire Size	A	B	C	Wire Size	Poles	BKR	Load Name	CKT
1					9699 582							2
3	RTU-1	45	3	50.3C		9699 582		30.3C	3	30	RF-1	4
5							9699 582					6
7					9699 582							8
9	RTU-2	45	3	50.3C		9699 582		30.3C	3	30	RF-2	10
11							9699 582					12
13					20923 4000							14
15	RTU-3	90	3	90.3C		20923 4000		40.3C	3	40	WH-1	16
17							20923 4000					18
19					6097 20923							20
21	RTU-5	25	3	30.3C		6097 20923		90.3C	3	90	RTU-4	22
23							6097 20923					24
25					5543 1966							26
27	RTU-6	25	3	30.3C		5543 1966		20.3C	3	10	WASHER	28
29							5543 1966					30
31					1966 831							32
33	WASHER	10	3	20.3C		1966 831		20.3C	3	10	DRYER	34
35							1966 831					36
37					831 0			--	--	--	Space	38
39	DRYER	10	3	20.3C		831 0		--	--	--	Space	40
41							831 0	--	--	--	Space	42
				Total Load:	83,643 VA	83,643 VA	83,643 VA					
				Total Amps:	302.0 A	302.0 A	302.0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	250,928 VA	106.25%	266,621 VA		
				Total Conn. Load:	250,928 VA
				Total Est. Demand:	266,621 VA
				Total Conn. Current:	301.8 A
				Total Est. Demand Current:	320.7 A
				Non-Coincident Heating/Cooling:	0.0 A
				Total Est. Deman - NC:	320.7 A

General Notes:
1. ALL ONE POLE CIRCUITS SHALL HAVE DEDICATED NEUTRAL WIRES
2. * DENOTES TO PROVIDE GFI BREAKER
3. ALL WIRE AND CONDUIT SHALL BE 2#12, 1#12G, 3/4"C. UNLESS OTHERWISE NOTED
4. VERIFY CIRCUIT BREAKER REQUIREMENTS FOR EQUIPMENT WITH MANUFACTURER.

Other:

PANEL: HL

Location: Space A123 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 22,000 AIC
Supply From: HD | **Phases:** 3 | **Mains Type:** MLO
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 100.0 A
Enclosure: NEMA 1 | **Sections:** 1

CKT	Load Name	BKR	Poles	Wire Size	A	B	C	Wire Size	Poles	BKR	Load Name	CKT
1	Parking Lot Pole Lights	20	2	2#12, 1#12G, 3/4"C	555 428			2#12, 1#12G, 3/4"C	1	20	Crawlspace LTG	2
3						555 186		2#12, 1#12G, 3/4"C	1	20	Canopy Lighting	4
5	Gym 2 LTG	20	1	2#12, 1#12G, 3/4"C			2520 3780	2#12, 1#12G, 3/4"C	1	20	Gym 1 LTG	6
7	UNIT B LTG	20	1	2#12, 1#12G, 3/4"C	1288 315			2#12, 1#12G, 3/4"C	1	20	Exterior Canopy LTG	8
9	EQUIP PLATFORM LTG	20	1	2#12, 1#12G, 3/4"C		171 1250		2#12, 1#12G, 3/4"C	1	20	CORRIDOR LITG	10
11	Lighting-Wallpacks	20	1	2#12, 1#12G, 3/4"C			194 800	2#12, 1#12G, 3/4"C	1	20	Lights-Corridor	12
13	Lighting-Wallpacks	20	1	2#12, 1#12G, 3/4"C	249 747			2#12, 1#12G, 3/4"C	1	20	Lights-Concessions/RR	14
15	West Exit Canopy LTG	20	1	2#12, 1#12G, 3/4"C		14 14		2#12, 1#12G, 3/4"C	1	20	UNIT A EXITS	16
17	UNIT A EXITS	20	1	2#12, 1#12G, 3/4"C			12 10	2#12, 1#12G, 3/4"C	1	20	UNIT B EXITS	18
19	Spare	20	1	--	0 0			--	1	20	Spare	20
21	Spare	20	1	--		0 0		--	1	20	Spare	22
23	Spare	20	1	--			0 0	--	1	20	Spare	24
25	Spare	20	1	--	0 0			--	1	20	Spare	26
27	Spare	20	1	--		0 0		--	1	20	Spare	28
29	Spare	20	1	--			0 0	--	1	20	Spare	30
31	Space	--	--	--	0 0			--	--	--	Space	32
33	Space	--	--	--		0 0		--	--	--	Space	34
35	Space	--	--	--			0 0	--	--	--	Space	36
37	Space	--	--	--	0 0			--	--	--	Space	38
39	Space	--	--	--		0 0		--	--	--	Space	40
41	Space	--	--	--			0					42
				Total Load:	3,534 VA	2,149 VA	8,313 VA					
				Total Amps:	13.5 A	7.8 A	30.8 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	1,725 VA	125.00%	2,156 VA		
Other	12,318 VA	100.00%	12,318 VA	**Total Conn. Load:**	13,982 VA
				Total Est. Demand:	14,401 VA
				Total Conn. Current:	16.8 A
				Total Est. Demand Current:	17.3 A
				Non-Coincident Heating/Cooling:	0.0 A
				Total Est. Deman - NC:	17.3 A

General Notes:
1. ALL ONE POLE CIRCUITS SHALL HAVE DEDICATED NEUTRAL WIRES
2. * DENOTES TO PROVIDE GFI BREAKER
3. ALL WIRE AND CONDUIT SHALL BE 2#12, 1#12G, 3/4"C. UNLESS OTHERWISE NOTED

Other:

PANEL: L1

Location: Space A123 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000 AIC
Supply From: XFMR T1 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 250.0 A
Enclosure: NEMA 1 | **Sections:** 3

CKT	Load Name	BKR	Poles	Wire Size	A	B	C	Wire Size	Poles	BKR	Load Name	CKT
1	EF-A109A	25	1	30.3C	84 696			2#12, 1#12G, 3/4"C	1	20	EF-A105	2
3	EF-A104	20	1	2#12, 1#12G, 3/4"C		696 696		2#12, 1#12G, 3/4"C	1	20	EF-A109B	4
5	EF-A111	20	1	2#12, 1#12G, 3/4"C			696 696	2#12, 1#12G, 3/4"C	1	20	EF-A119	6
7	EF-A120	20	1	2#12, 1#12G, 3/4"C	27 696			2#12, 1#12G, 3/4"C	1	20	Motor LAUNDRY A122	8
9	EF-A123	20	1	2#12, 1#12G, 3/4"C		696 696		2#12, 1#12G, 3/4"C	1	20	Motor BOYS A125	10
11	EF-CS	20	1	2#12, 1#12G, 3/4"C			696 1500	2#12, 1#12G, 3/4"C	2	20	EUH-1	12
13	EUH-2	20	2	2#12, 1#12G, 3/4"C	0 1500							14
15						0 500		2#12, 1#12G, 3/4"C	1	20	DOOR J-BOX	16
17	AC/CU 1	20	2	2#12, 1#12G, 3/4"C			1589 600	2#12, 1#12G, 3/4"C	1	20	GWH-2	18
19					1589 600			2#12, 1#12G, 3/4"C	1	20	GWH-1	20
21	ROOF RECEPTACLES	20	1	2#12, 1#12G, 3/4"C		540 360		2#12, 1#12G, 3/4"C	1	20	ROOF RECEPTACLES	22
23	EXTERIOR RECEPTACLES	20	1	2#12, 1#12G, 3/4"C			540 500	2#12, 1#12G, 3/4"C	1	20	DOOR J-BOX	24
25	LOBBY RECEPTACLES	20	1	2#12, 1#12G, 3/4"C	540 720			2#12, 1#12G, 3/4"C	1	20	CONCESSIONS REC	26
27	CONCESSIONS REC	20	1	2#12, 1#12G, 3/4"C		360 180		2#12, 1#12G, 3/4"C	1	20	CONCESSIONS REC	28
29	CONCESSIONS REC	20	1	2#12, 1#12G, 3/4"C			180 180	2#12, 1#12G, 3/4"C	1	20	CONCESSIONS REC	30
31	CONCESSIONS REC	20	1	2#12, 1#12G, 3/4"C	180 180			2#12, 1#12G, 3/4"C	1	20	CONCESSIONS REC	32
33	WATER FOUNTAIN REC	20	1	2#12, 1#12G, 3/4"C		360 540		2#12, 1#12G, 3/4"C	1	20	LOBBY, RR, GYM REC	34
35	GYM RECEPTACLES	20	1	2#12, 1#12G, 3/4"C			1080 360	2#12, 1#12G, 3/4"C	1	20	LOCKER ROOM REC	36
37	MOTORIZED GOAL J-BOX	20	1	2#12, 1#12G, 3/4"C	500 500			2#12, 1#12G, 3/4"C	1	20	MOTORIZED GOAL J-BOX	38
39	MOTORIZED GOAL J-BOX	20	1	2#12, 1#12G, 3/4"C		500 500		2#12, 1#12G, 3/4"C	1	20	MOTORIZED GOAL J-BOX	40
41	MOTORIZED GOAL J-BOX	20	1	2#12, 1#12G, 3/4"C			500 500	2#12, 1#12G, 3/4"C	1	20	MOTORIZED GOAL J-BOX	42
43	MOTORIZED GOAL J-BOX	20	1	2#12, 1#12G, 3/4"C	500 180			2#12, 1#12G, 3/4"C	1	20	PROJECTOR RECEPTACLE	44
45	GAME CLOCK JBOX	20	1	2#12, 1#12G, 3/4"C		500 180		2#12, 1#12G, 3/4"C	1	20	FLOOR POCKET BOX	46
47	FLOOR POCKET BOX	20	1	2#12, 1#12G, 3/4"C			180 180	2#12, 1#12G, 3/4"C	1	20	FLOOR BOX - CURTAIN	48
49	SCOREBOARD	20	1	2#12, 1#12G, 3/4"C	500 500			2#12, 1#12G, 3/4"C	1	20	PROJECTION SCREEN	50
51	PROJECTOR J-BOX	20	1	2#12, 1#12G, 3/4"C		500 680		2#12, 1#12G, 3/4"C	1	20	AV INPUT PLATE POWER	52
53	LOCKER ROOM REC	20	1	2#12, 1#12G, 3/4"C			720 540	2#12, 1#12G, 3/4"C	1	20	COACHES OFFICE RECE	54
55	COACHES OFFICE REC	20	1	2#12, 1#12G, 3/4"C	720 540			2#12, 1#12G, 3/4"C	1	20	COACHES LOCKERS REC	56
57	DOOR J-BOX	20	1	2#12, 1#12G, 3/4"C		500 720		2#12, 1#12G, 3/4"C	1	20	CORRIDOR RECEPTACLES	58
59	AV INPUT PLATE POWER	20	1	2#12, 1#12G, 3/4"C			680 500	2#12, 1#12G, 3/4"C	1	20	DOOR J-BOX	60
61	LIFT CHARGER	20	1	2#12, 1#12G, 3/4"C	500 180			2#12, 1#12G, 3/4"C	1	20	TRACTOR CHARGER	62
63	LIFT RECEPTACLES	20	1	2#12, 1#12G, 3/4"C		180 180		2#12, 1#12G, 3/4"C	1	20	LIFT RECEPTACLES	64
65	STORAGE/ LAUNDRY REC	20	1	2#12, 1#12G, 3/4"C			720 180	2#12, 1#12G, 3/4"C	1	20	Receptacle	66
67	Motorized Gym Divider	20	2	2#12, 1#12G, 3/4"C	250 180			2#12, 1#12G, 3/4"C	1	20	Outdoor Receptacle	68
69						250 180		2#12, 1#12G, 3/4"C	1	20	Outdoor Receptacle	70
71	Outdoor Receptacle	20	1	2#12, 1#12G, 3/4"C			180 0	2#12, 1#12G, 3/4"C	1	20	Receptacle	72
73	Receptacle - A128, A119	20	1	2#12, 1#12G, 3/4"C	360 1440			2#12, 1#12G, 3/4"C	1	20	IDF RECEPTACLES	74
75	IDF RECEPTACLES	20	1	2#12, 1#12G, 3/4"C		720 180		2#12, 1#12G, 3/4"C	1	20	WATER FOUNTAIN REC	76
77	RR RECEPTACLES	20	1	2#12, 1#12G, 3/4"C			360 500	2#12, 1#12G, 3/4"C	1	20	DOOR J-BOX	78
79	MECH RECEPTACLES	20	1	2#12, 1#12G, 3/4"C	720 500			2#12, 1#12G, 3/4"C	1	20	DOOR J-BOX	80
81	EXTERIOR RECEPTACLES	20	1	2#12, 1#12G, 3/4"C		540 500		2#12, 1#12G, 3/4"C	1	20	DOOR J-BOX	82
83	ELECTRICAL ROOM REC	20	1	2#12, 1#12G, 3/4"C			540 0	2#12, 1#12G, 3/4"C	1	20	Receptacle	84
85	Receptacle	20	1	2#12, 1#12G, 3/4"C	0 0			2#12, 1#12G, 3/4"C	1	20	Receptacle	86
87	Receptacle	20	1	2#12, 1#12G, 3/4"C		0 180		2#12, 1#12G, 3/4"C	1	20	IDF RECEPTACLES	88
89	Receptacle	20	1	2#12, 1#12G, 3/4"C			0 0	--	1	20	Spare	90
91	AC/CU 2	20	2	2#12, 1#12G, 3/4"C	1589 0			--	1	20	Spare	92
93						1589 0		--	1	20	Spare	94
95	Spare	20	1	--			0 0	--	1	20	Spare	96
97	Spare	20	1	--	0 0			--	1	20	Spare	98
99	Spare	20	1	--		0 0		--	1	20	Spare	100
101	Spare	20	1	--			0 0	--	1	20	Spare	102
103	Spare	20	1	--	0 0			--	1	20	Spare	104
105	Spare	20	1	--		0 0		--	1	20	Spare	106
107	Spare	20	1	--			0 0	--	1	20	Spare	108
109	Spare	20	1	--	0 0			--	1	20	Spare	110
111	Spare	20	1	--		0 0		--	1	20	Spare	112
113	Spare	20	1	--			0 0	--	1	20	Spare	114
115	Spare	20	1	--	0 0			--	1	20	Spare	116
117	Spare	20	1	--		0 0		--	1	20	Spare	118
119	Spare	20	1	--			0 0	--	1	20	Spare	120
121	Spare	20	1	--	0 0			--	1	20	Spare	122
123	Spare	20	1	--		0 0		--	1	20	Spare	124
125	Spare	20	1	--			0 0	--	1	20	Spare	126
				Total Load:	16,470 VA	14,203 VA	14,897 VA					
				Total Amps:	138.1 A	118.4 A	125.0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	16,930 VA	104.61%	17,710 VA		
Receptacle	28,640 VA	67.46%	19,320 VA	**Total Conn. Load:**	45,570 VA
				Total Est. Demand:	37,030 VA
				Total Conn. Current:	126.5 A
				Total Est. Demand Current:	102.8 A
				Non-Coincident Heating/Cooling:	0.0 A
				Total Est. Deman - NC:	102.8 A

General Notes:
1. ALL ONE POLE CIRCUITS SHALL HAVE DEDICATED NEUTRAL WIRES
2. * DENOTES TO PROVIDE GFI BREAKER
3. ALL WIRE AND CONDUIT SHALL BE 2#12, 1#12IG, 1#12G, 3/4"C. UNLESS OTHERWISE NOTED
4. PROVIDE ISOLATED GROUND BUS. 200% NEUTRAL BUS, BUILT IN TVSS

Other:
1. PROVIDE FULLY RATED FEED-THRU LUGS.

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RWB PROJECT #18154-00

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SMITHFIELD MS - GYMNASIUM ADDITION

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ELECTRICAL SCHEDULES

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GENERAL ABBREVIATIONS

@	AT
3DC	3D CONTROLLER
A/C	AIR CONDITIONING
ABV	ABOVE
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT, ARCHITECTURAL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BFC	BELOW FINISHED CEILING
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BOH	BACK OF HOUSE
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
C	CONDUIT
CAT	CATEGORY CABLE
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CTRL	CONTROL
D	DEPTH, DEEP
DC	DIRECT CURRENT
DC	DOWNSTAGE CENTER
DEG	DEGREES
DEMO	DEMOLITION
DFP	DIRECTOR'S FLOOR POCKET
DIA	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DS	DOWNSTAGE
DSL	DOWNSTAGE LEFT
DSR	DOWNSTAGE RIGHT
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EQUIPMENT RACK
ESW	ETHERNET SWITCH
EXIST	EXISTING
FA	FIRE ALARM
FB	FLOOR BOX
FLEX	FLEXIBLE
FLR	FLOOR
FO	FINISHED OPENING
FOH	FRONT OF HOUSE
FPB	FIBER OPTIC PATCHBAY
FPM	FEET PER MINUTE
FT	FOOT, FEET
FV	FIELD VERIFY
GND	GROUND
GA	GAUGE
H	HEIGHT
HL	HOUSE LEFT
HMP	HOUSE MANAGER POSITION
HOR	HORIZONTAL
HP	HORSEPOWER
HR	HOUSE RIGHT
HZ	HERTZ
I/O	INPUT/OUTPUT
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
ISO	ISOLATED
JB	JUNCTION BOX
JBD	JUNCTION BOX - DATA
JP	JUNCTION BOX - SYSTEM POWER
KPD	KEYPAD
KW	KILOWATT
L	LENGTH, LEFT
L/R	LEFT/RIGHT
LAN	LOCAL AREA NETWORK
LB	POUNDS
LF	LINEAR FEET
LTG	LIGHTING
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MIN	MINIMUM
MMFO	MULTIMODE FIBER OPTIC CABLE
MTD	MOUNTED
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC. NETWORK
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OFOI	OWNER FURNISHED OWNER INSTALLED
P	PRIMARY
P/O	PART OF
PC	PERSONAL COMPUTER
PDU	POWER DISTRIBUTION UNIT
PGM	PROGRAM
PH	PHASE
PNL	PANEL
PROC	PROCESSOR
PRH	PROJECT RECEPTACLE HEIGHT
PRX	PROXIMITY SENSOR
PS	POWER SUPPLY
PSF	POUNDS PER SQUARE FOOT
PSH	PROJECT SWITCH HEIGHT
PSI	POUNDS PER SQUARE INCH
PT	PASS THROUGH
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
R	RIGHT
RCP	REFLECTED CEILING PLAN
REF	REFERENCE, REFER
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION, REVISE
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
S	SURFACE, SECONDARY
SQFT	SQUARE FEET
SIM	SIMILAR
SL	STAGE LEFT
SMFO	SINGLE MODE FIBER OPTIC CABLE
SMP	STAGE MANAGER POSITION
SPEC	SPECIFICATION
SQ	SQUARE
SR	STAGE RIGHT
STD	STANDARD
STP	SHIELD TWISTED PAIR
SURF	SURFACE
SUSP	SUSPEND
TBD	TO BE DETERMINED
THRU	THROUGH
TYP	TYPICAL
UC	UPSTAGE CENTER
UL	UNDERWRITERS LABORATORIES, INC.
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
US	UPSTAGE
USL	UPSTAGE LEFT
USR	UPSTAGE RIGHT
USB	UNIVERSAL SERIAL BUS
UTP	UNSHIELED TWISTED PAIR
V	VOLT
VA	VOLT-AMPRE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WT	WEIGHT

AUDIO VISUAL ABBREVIATIONS

ADA	AUDIO DISTRIBUTION AMPLIFIER
AES	AUDIO ENGINEERING SOCIETY
ALS	ASSISTED LISTENING SYSTEM
AMP	AMPLIFIER, AMPRES
ANT	ANTENNAE
ANT DA	ANTENNA DISTRIBUTION AMPLIFIER
APB	AUDIO PATCH BAY
AV	AUDIO VIDEO
AVS	AUDIO VIDEO SWITCHER
BR	BLU-RAY DISC PLAYER
BDR	BLU-RAY DISC RECORDER
BGM	BACKGROUND MUSIC PLAYER
CAM	CAMERA
CATV	CABLE TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CCU	CAMERA CONTROL UNIT
CDP	COMPACT DISC PLAYER
CG	CHARACTER GENERATOR
CONV	CONVERTER
CU	COLLABORATION UNIT
DA	DISTRIBUTION AMPLIFIER
DAN	DIGITAL AUDIO NETWORK
DM	DIGITAL MEDIA
DM-MTX	DIGITAL MEDIA MATRIX
DMP	DIGITAL MEDIA PLAYER
DMPS	DIGITAL MEDIA PRESENTATION SWITCHER
DMR	DIGITAL MEDIA RECORDER
DMRX	DIGITAL MEDIA RECEIVER / DECODER
DMTX	DIGITAL MEDIA TRANSMITER / ENCODER
DMU	DIGITAL MESSAGE UNIT
DOC CAM	DOCUMENT CAMERA
DP	DISPLAY PORT
DPDT	DOUBLE-POLE, DOUBLE-THROW
DPST	DOUBLE-POLE, SINGLE-THROW
DSP	DIGITAL SIGNAL PROCESSOR
DVE	DIGITAL VIDEO EFFECTS
DVR	DIGITAL VIDEO RECORDER
EBU	EUROPEAN BROADCASTING UNION
EQ	EQUALIZER
FC	FORMAT CONVERTER
FPM	FLAT PANEL MONITOR
FORX	FIBER OPTIC RECEIVER
FOTX	FIBER OPTIC TRANSMITTER
HDMI	HIGH DEFINITION MULTIMEDIA INTERFACE
HDRX	HDMI RECEIVER
HDSDI	HD SERIAL DIGITAL INTERFACE
HDTX	HDMI TRANSMITTER
ICOM	INTERCOM
IFB	INTERRUPTED FOLDBACK
IPTV	INTERNET PROTOCOL TELEVISION
JBA	JUNCTION BOX - AUDIO
JBC	JUNCTION BOX - CONTROL
JBE	JUNCTION BOX - ENG TRUCKS
JBL	JUNCTION BOX - AUDIO LINE LEVEL
JBM	JUNCTION BOX - AUDIO MIC LEVEL
JBR	JUNCTION BOX - RADIO
JBS	JUNCTION BOX - SPEAKER
JBT	JUNCTION BOX - BROADCAST
JBV	JUNCTION BOX - VIDEO
KVM	KEYBOARD VIDEO MOUSE
LA	LINE AMPLIFIER
LIM	LIMITER
LL	LINE LEVEL
MATV	MASTER ANTENNA TELEVISION
MIC	MICROPHONE
MICPRE	MICROPHONE PREAMP
MIX	MIXER
ML	MICROPHONE LEVEL
MOD	MODULATOR
MON	MONITOR / VIDEO DISPLAY
MTR	MULTITRACK PLAYER/RECORDER
MTX	MATRIX
NG	NOISE GENERATOR
PA	PUBLIC ADDRESS
PAD	AUDIO ATTENUATOR
PEQ	PARAMETRIC EQUALIZER
PSP	POWERED SPEAKER
PTZ	PAN/TILT/ZOOM
REC	RECORDER
SATRX	SATELLITE RECEIVER
SB	SCOREBOARD
SC	SCAN CONVERTER
SDI	SERIAL DIGITAL INTERFACE
SPDT	SINGLE POLE DOUBLE THROW
SPG	SYNC PULSE GENERATOR
SPL	SPLITTER
SPK	SPEAKER
SPLIT	MICROPHONE SPLITTER
SPST	SINGLE POLE SINGLE THROW
STREAM	DIGITAL VIDEO STREAMING
SUM	AUDIO SUMMING DEVICE
SW	SWITCHER
TD	THROW DISTANCE
TP	TOUCHPANEL
TV	TELEVISION
VBS	VIDEO BURST SYNC
VC	VOLUME CONTROL
VCA	VOLTAGE CONTROLLED AMPLIFIER
VDA	VIDEO DISTRIBUTION AMPLIFIER
VGA	VIDEO GRAPHICS ARRAY
VP	VIDEO PROJECTOR
VPB	VIDEO PATCH BAY
VS	VECTOR SCOPE
VSG	VIDEO SYNC GENERATOR
VSR	VIDEO SERVER
VSW	VIDEO SWITCH
VTC	VIDEO TELECONFERENCING SYSTEM
VWP	VIDEO WALL PROCESSOR
WFM	WAVEFORM MONITOR
WMS	WIRELESS MICROPHONE SYSTEM
WTX	WIRELESS TRANSMITTER
XFMR	TRANSFORMER
XOVR	CROSSOVER

ROUGH-IN BOX SCHEDULE

TYPE 1 — RECESSED: 1-GANG BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 2 — RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 2-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 2-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 3 — RECESSED: 3-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 3-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 3-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 4 — RECESSED: 4-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 4-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 4-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 5 — RECESSED: 5" SQUARE BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

TYPE 12 — RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE A — JUNCTION BOX (HxWxD) WITH SCREW COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

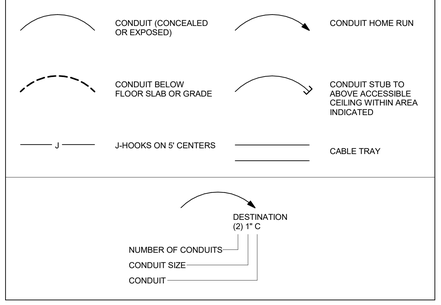
TYPE B — JUNCTION BOX (HxWxD) WITH HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

TYPE C — JUNCTION BOX (HxWxD) WITH LOCKING HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS

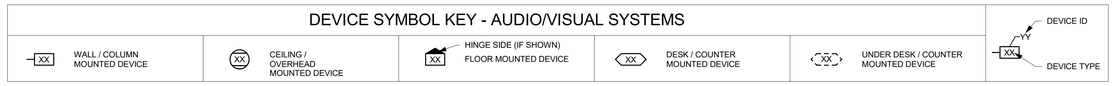
CONDUIT AND PATHWAY NOTES

1. COORDINATE LOCATION OF EQUIPMENT, JUNCTION BOXES, OUTLETS, CONDUIT, ETC. ACCORDING TO THE PROJECT GENERAL CONDITIONS.
2. PROVIDE A COMPLETE RACEWAY SYSTEM TO CONSIST OF METALLIC CONDUIT (EXCLUDING INGROUND PATHWAY), JUNCTION BOXES, DEVICE BACK BOXES, AND FITTINGS UNLESS NOTED OTHERWISE.
3. THE DRAWINGS INDICATE ONE ROUTING METHOD OF THE CABLING PATHWAY. CHANGES MAY BE MADE TO THE PATHWAY SYSTEM ROUTING TO ACCOMMODATE SITE CONDITIONS OR TO SIMPLIFY INSTALLATION PROVIDING THAT NOTED CONDUIT SIZE OR LARGER IS MAINTAINED AND DISTANCE LIMITATIONS LISTED BELOW ARE NOT EXCEEDED.
4. CONDUIT STUBS FROM DEVICES TO THE NEAREST CABLE TRAY, ACCESSIBLE CEILING, OR OTHER DESTINATIONS SHALL BE CONTINUOUS.
5. UNLESS NOTED OTHERWISE, CONDUIT IS 3/4 INCH TRADE SIZE.
6. SHOULD ROUGH-IN BOX DEVICE EXIST WITH NO CONDUIT INDICATED TO OR FROM, PROVIDE ¾ INCH TRADE SIZE CONDUIT FROM DEVICE TO ACCESSIBLE CEILING.
7. CONDUIT BODIES (LB'S) ARE NOT PERMITTED.
8. CONDUITS SHALL BE REAMED TO ELIMINATE SHARP EDGES. METALLIC CONDUITS SHALL BE TERMINATED WITH AN INSULATED BUSHING. PULL STRINGS WITH A MINIMUM PULL RATING OF 400 POUNDS SHALL BE PROVIDED.
9. FOR CONDUIT WITH AN INTERNAL DIAMETER GREATER THAN 2 INCHES, MAINTAIN A BEND RADIUS OF AT LEAST 10 TIMES THE INTERNAL CONDUIT DIAMETER.
10. BENDS IN THE CONDUIT SHALL NOT CONTAIN ANY KINKS OR OTHER DISCONTINUITIES. FLEX IS NOT PERMITTED UNLESS NOTED OTHERWISE.
11. NO SECTION OF CONDUIT SHALL EXCEED 100 FEET. RUNS IN EXCESS OF 100 FEET REQUIRE A PULL BOX / HANDHOLE / VAULT.
12. NO SECTION OF CONDUIT SHALL CONTAIN MORE THAN TWO 90 DEGREE BENDS, OR EQUIVALENT 180 DEGREES, BETWEEN PULL BOXES.
13. PULL BOX SHALL NOT BE USED IN LIEU OF A BEND. CONDUITS MUST RUN STRAIGHT THROUGH A PULL BOX WITH THE BEND LOCATED EITHER BEFORE OR AFTER THE PULL BOX.
14. PULL BOX LENGTH TO BE NO LESS THAN 8 TIMES THE DIAMETER OF THE LARGEST TERMINATING CONDUIT. PULL BOX WIDTH TO BE NO LESS ¼ THE LENGTH.
15. PROVIDE COVERS WITH LABELING FOR JUNCTION BOXES, BACK BOXES AND PULL BOXES WITHOUT FACEPLATES. LABELING MATCHES DEVICE NAME AS INDICATED ON DRAWINGS, FOR EXAMPLE "AV1". "ML".
16. ALL CONDUITS ENTERING OR EXITING EQUIPMENT RACKS TO BE ISOLATED WITH A NON-METALLIC SPACER OR FITTING.
17. PROVIDE CONDUIT TO CROSS INACCESSIBLE CEILINGS OR IN AREAS WITHOUT CEILINGS UNLESS NOTED OTHERWISE.
18. PROVIDE CONDUIT IN EXPOSED AREAS, MECHANICAL SPACES, FOOD SERVICES AREAS, AND ELEVATOR CONTROL ROOMS.
19. REGARDLESS OF PATHWAY TYPE, ALL CABLING SHALL BE SUPPORTED AT 5 FEET MAXIMUM INTERVALS. CABLES SHALL NOT BE LAID DIRECTLY ON THE CEILING TILE OR RAILS OR STRAPPED TO CONDUIT.
20. ROUTE CONDUIT WITH OTHER BUILDING SERVICES AND CONCEAL WHENEVER POSSIBLE. GROUP AND RUN PARALLEL ALONG A SINGLE BUILDING COLUMN LINE, HOLD TIGHT TO STRUCTURE AND PAINT AS DIRECTED BY THE ARCHITECT.
21. IF AV AND POWER CONDUITS MUST CROSS, CROSS AT RIGHT ANGLES.
22. FOR IN-SLAB OR UNDERGROUND CONDUIT ENTERING A BUILDING, TRANSITION BACK TO METALLIC CONDUIT WITHIN 3 FEET OF THE ENTRY POINT.
23. REFER TO PROJECT MANUAL FOR FIRE STOPPING REQUIREMENTS.
24. REFER TO ELECTRICAL DRAWINGS AND PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.

PATHWAY DISTRIBUTION



DEVICE SYMBOL KEY - AUDIO/VISUAL SYSTEMS



SYMBOL LEGEND - AUDIO/VISUAL SYSTEMS

SIZES, DIMENSIONS AND NOTES DESCRIBE TYPICAL REQUIREMENTS. IF APPLICABLE, VARIATIONS AND/OR ADDITIONAL REQUIREMENTS WILL BE NOTED ON THE DRAWINGS.
UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE TO CENTER OF ROUGH-IN BOX.

TYPE	DEVICE	ROUGH-IN BOX (H"xW"xD")	DEVICE COVER SIZE	MOUNTING HEIGHT			DEVICE NOTES	CONDUIT NOTES
				WALL/COLUMN	CEILING/OVERHEAD	FLOOR		
ANT	ANTENNA PLATE	TYPE 2	2-GANG	REF ELEVATIONS	--	--	REF DETAILS IN AV11 SERIES.	REF PLANS
AV2	AV PLATE	TYPE 2	2-GANG	BUILDING OUTLET HEIGHT	--	--	REF DETAILS IN AV11 SERIES.	REF PLANS
AV3	AV PLATE	TYPE 3	3-GANG	BUILDING OUTLET HEIGHT	--	--	REF DETAILS IN AV11 SERIES.	REF PLANS
FPG	FLOOR POCKET - GYMNASIUM	CUSTOM	--	--	--	INSTALL BACKBOX SUCH THAT LID IS FLUSH WITH FINISHED FLOOR	REF DETAILS IN AV11-32. PROVIDE FSR FL-500P-8, COORDINATE FLOOR POCKET COVER WITH ARCHITECT.	REF PLANS
GC	GAME CLOCK	TYPE 1	--	9'-0" AFF	1' 0" BELOW CEILING	--	NOTE 2. REFER TO AV13-20. PLATE PROVIDED BY SCOREBOARD CONTRACTOR.	REF PLANS
GCP	GYM CONTROL PANEL	TYPE C (16"x16"x6")	--	4'-0" AFF TO TOP OF BOX.	--	--	FLUSH-MOUNT. REF DETAILS IN AV11 SERIES.	REF PLANS
JBR	JUNCTION BOX - RACK	TYPE A (12"x12"x4")	--	REF ELEVATIONS/DETAILS	--	--	--	REF PLANS
PS	PROJECTION SCREEN	TYPE 1	1-GANG	REF ELEVATIONS/DETAILS	FLUSH IN CEILING	--	--	REF PLANS
SB	SCOREBOARD JUNCTION BOX	TYPE 2	2-GANG	REF ARCHITECTURAL DRAWINGS	REF ARCHITECTURAL DRAWINGS	--	PLATE PROVIDED BY SCOREBOARD CONTRACTOR.	REF PLANS
VPL	VIDEO PROJECTOR LIFT	--	--	--	FLUSH IN CEILNG	--	REF DETAILS IN AV11 SERIES	REF PLANS

DEVICE SYMBOL KEY - SPEAKER SYSTEMS

SYMBOL LEGEND - SPEAKER SYSTEMS

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UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE TO CENTER OF ROUGH-IN BOX.

TYPE	DEVICE	ROUGH-IN BOX (H"xW"xD")	DEVICE COVER SIZE	MOUNTING HEIGHT			DEVICE NOTES	CONDUIT NOTES
				WALL/COLUMN	CEILING/OVERHEAD	FLOOR		
1	SPEAKER	TYPE 2	--	--	SURFACE MOUNT TO STRUCTURE OVERHEAD.	--	LEGEND NOTE 1	REF PLANS
2	SPEAKER	TYPE 2	--	--	SURFACE MOUNT TO STRUCTURE OVERHEAD.	--	LEGEND NOTE 1	REF PLANS

LEGEND NOTES - SPEAKER SYSTEMS

1 MOUNT BOX TIGHT TO STRUCTURE.

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

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Approver	Author
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Proj. Coord.	
Checker	

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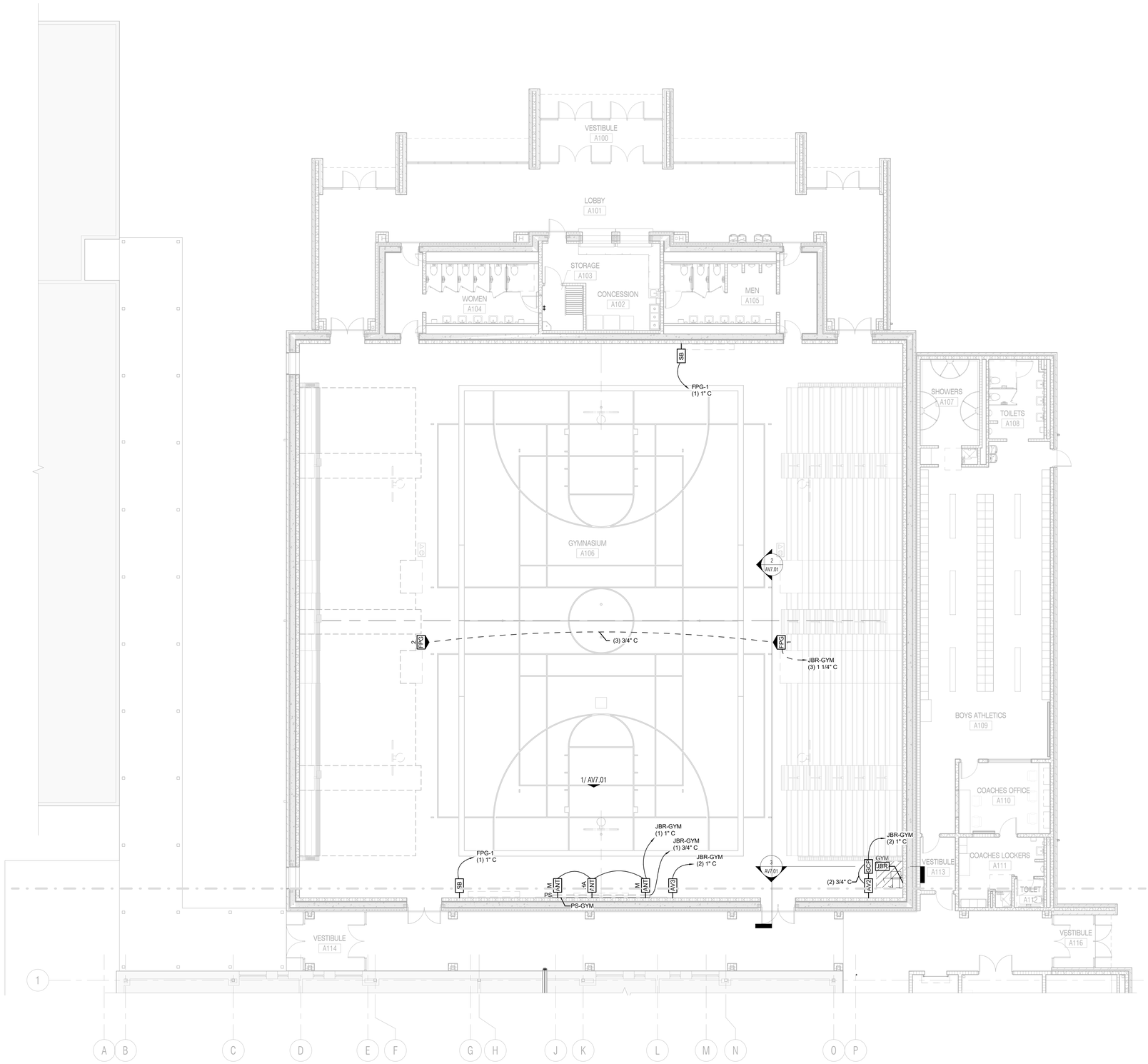
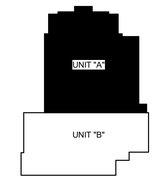
KEYNOTES



1 AV FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

KEY PLAN



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Proj. Coord.	
Checker	

PROJECT NO.
1887.00

SHEET TITLE
FLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.
AV2.11

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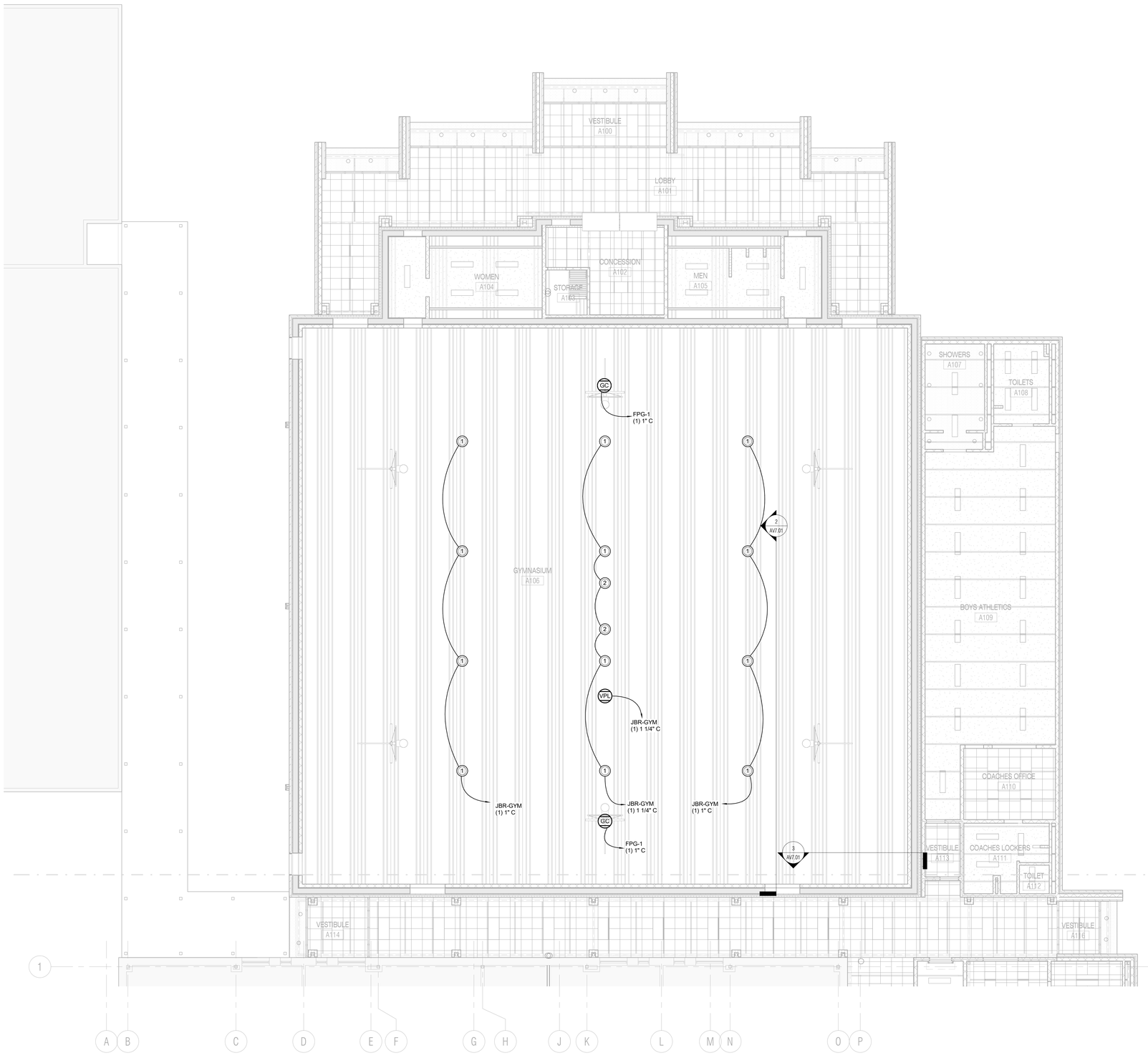
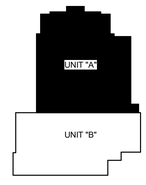
KEYNOTES



1 AV MAIN LEVEL - UNIT A - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

N
PLAN NORTH TRUE NORTH

KEY PLAN



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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS

Revision No.

Director
Approver
Designer
Designer
Proj. Coord.
Checker

Drawn By
Author
Quality Control

PROJECT NO.

1887.00

SHEET TITLE

REFLECTED CEILING PLAN - UNIT A

SHEET NO.

AV6.01

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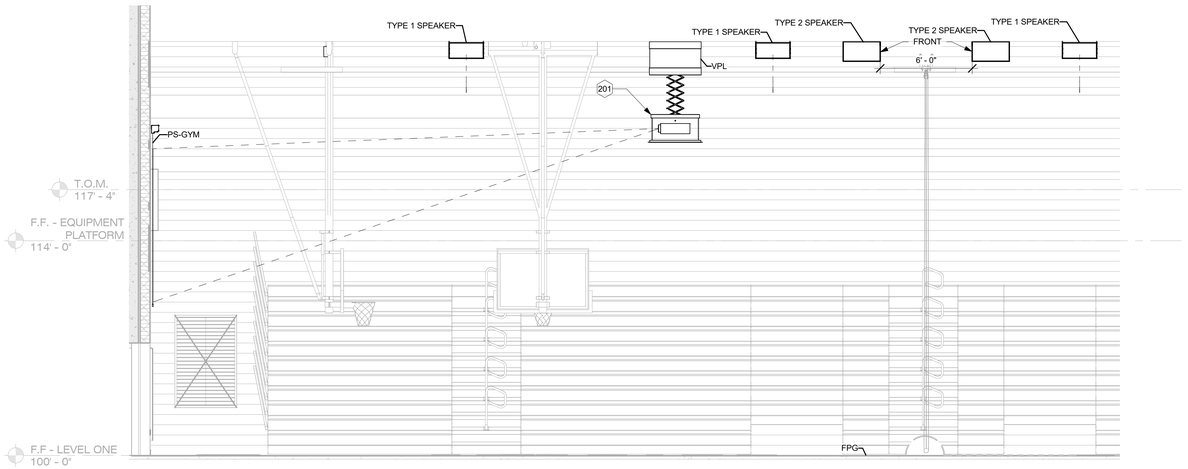
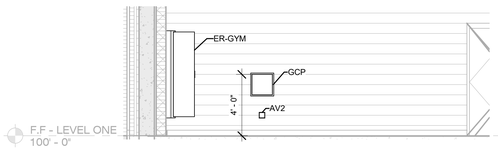
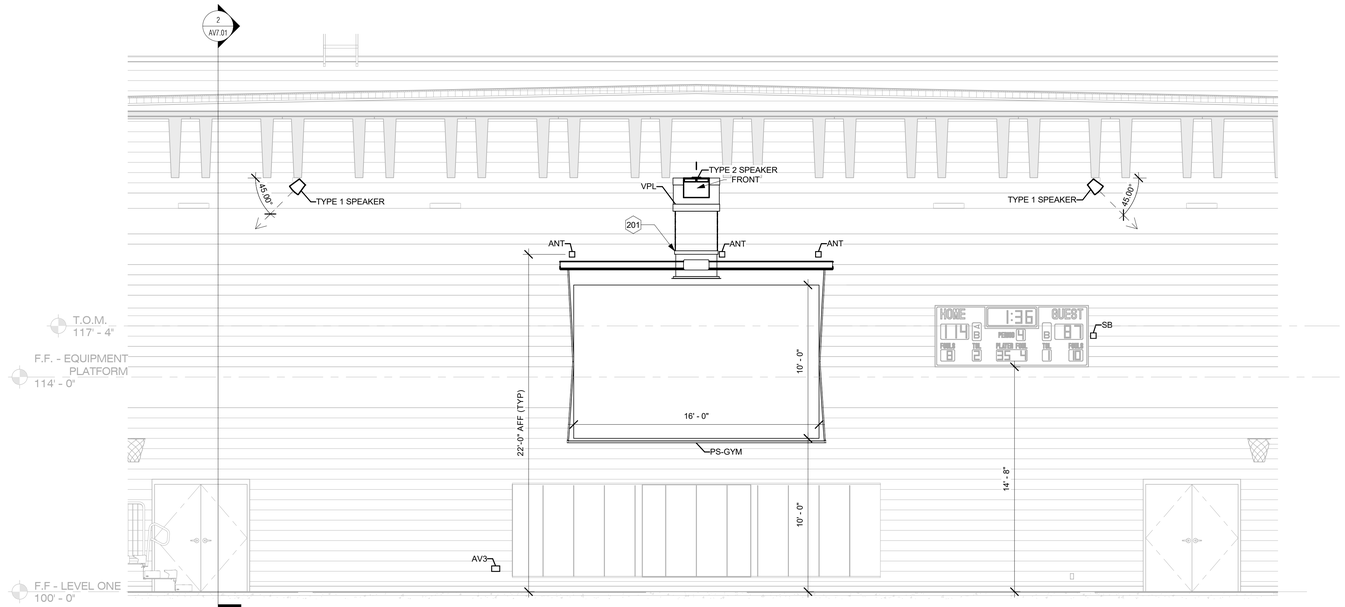
KEYNOTES	
201	UTILIZE LENS SHIFT TO POSITION PROJECTOR AT MAXIMUM ELEVATION



2 GYM PROJECTION SECTION
SCALE: 1/4" = 1'-0"



3 GYM EQUIPMENT RACK SECTION
SCALE: 1/4" = 1'-0"



1 GYM SOUTH - ELEVATION
SCALE: 1/4" = 1'-0"

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SHEET TITLE

GYM SECTIONS AND ELEVATIONS

SHEET NO.

AV7.01

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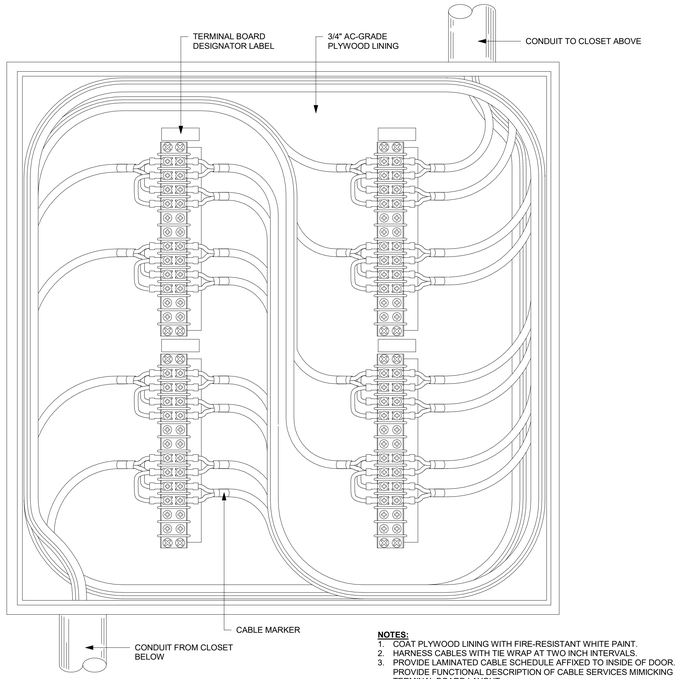
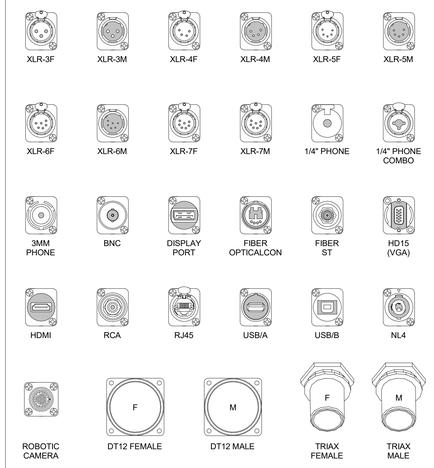
SPEAKER JUNCTION BOX TERMINATION DETAILS

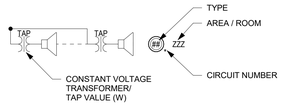


NOTES:
1. COAT PLYWOOD LINING WITH FIRE-RESISTANT WHITE PAINT.
2. HARNESS CABLES WITH TIE WRAP AT TWO INCH INTERVALS.
3. PROVIDE LAMINATED CABLE SCHEDULE AFFIXED TO INSIDE OF DOOR. PROVIDE FUNCTIONAL DESCRIPTION OF CABLE SERVICES MIMICKING TERMINAL BOARD LAYOUT.

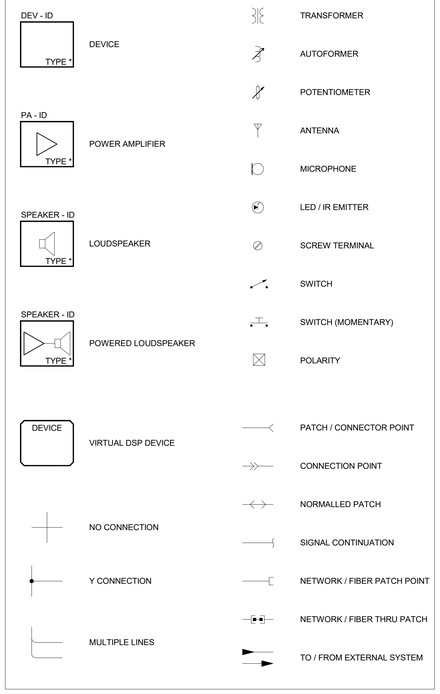
PANEL SYMBOL LEGEND



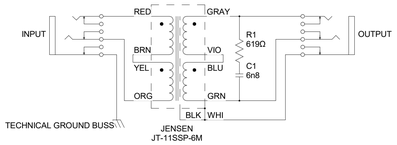
PARALLELED SPEAKERS DETAIL



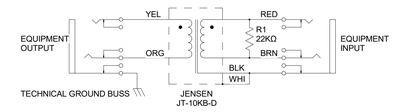
FUNCTIONAL SYMBOL LEGEND



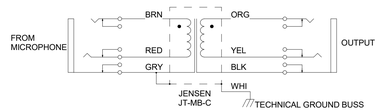
AUDIO TRANSFORMER WIRING



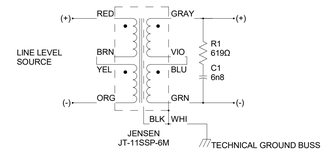
1:1 LINE INPUT TRANSFORMER AND LINE BRIDGING TRANSFORMER



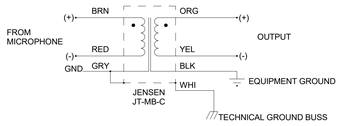
4:1 LINE INPUT TRANSFORMER (PRO TO CONSUMER EQUIPMENT)



MICROPHONE TRANSFORMER

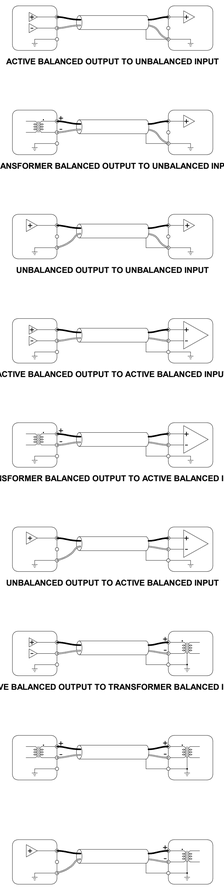


ISOLATION TRANSFORMER



MICROPHONE LEVEL BRIDGING TRANSFORMER

AUDIO SHIELD CONNECTIONS



ACTIVE BALANCED OUTPUT TO UNBALANCED INPUT

TRANSFORMER BALANCED OUTPUT TO UNBALANCED INPUT

UNBALANCED OUTPUT TO UNBALANCED INPUT

ACTIVE BALANCED OUTPUT TO ACTIVE BALANCED INPUT

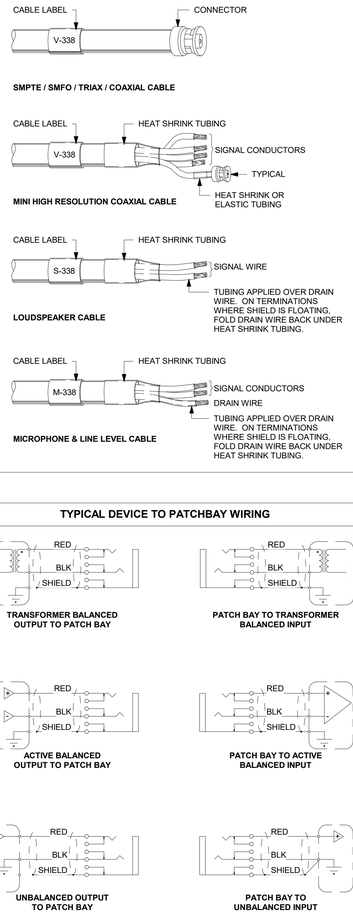
TRANSFORMER BALANCED OUTPUT TO ACTIVE BALANCED INPUT

UNBALANCED OUTPUT TO ACTIVE BALANCED INPUT

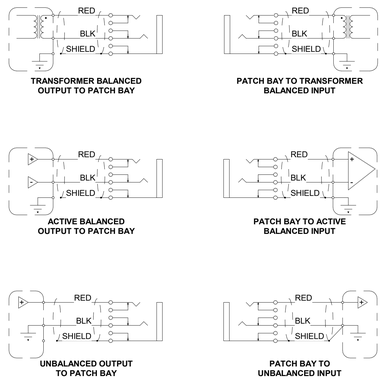
ACTIVE BALANCED OUTPUT TO TRANSFORMER BALANCED INPUT

UNBALANCED OUTPUT TO TRANSFORMER BALANCED INPUT

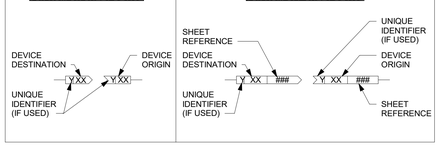
AV CABLE PREPARATION DETAILS



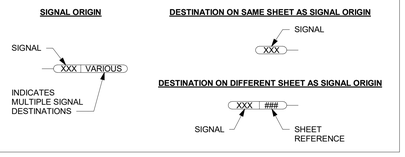
TYPICAL DEVICE TO PATCHBAY WIRING



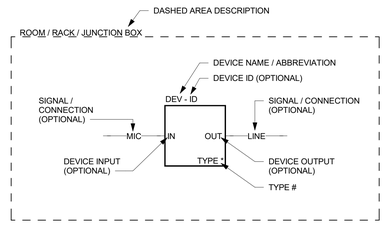
SIGNAL TO/FROM PHYSICAL DEVICE



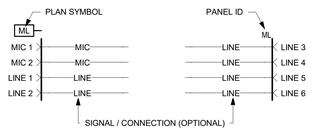
SIGNAL TO/FROM VIRTUAL DEVICE



DEVICE SIGNAL FLOW DETAIL



PLATE/PANEL SIGNAL FLOW DETAIL



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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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Revision No.

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

1887.00

SHEET TITLE

AUDIO-VIDEO FUNCTIONAL LEGEND AND STANDARD DETAILS

SHEET NO.

AV11.00

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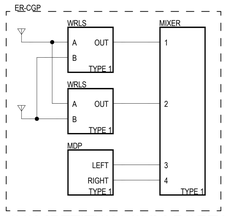
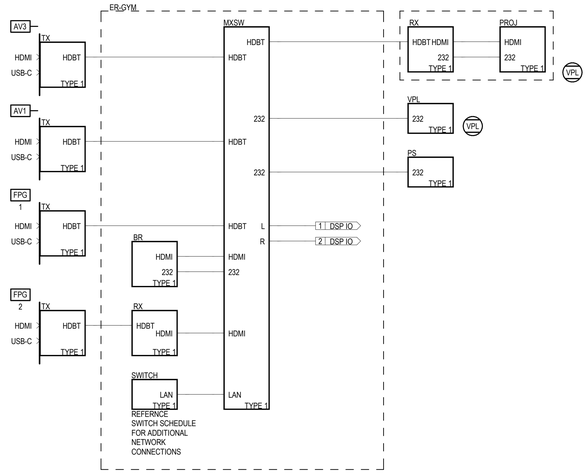
SWITCH SCHEDULE			
SHEET	FROM	TO	COMMENTS
AV11.31	AMPLIFIER	SWITCH	
AV11.31	AMPLIFIER	SWITCH	
AV11.31	DSP-GYM	SWITCH	
AV11.31	DSP-GYM	SWITCH	
AV11.31	FPG-1	SWITCH	
AV11.31	SWITCH	DMPS	
AV11.31	SWITCH	DMPS	
AV11.31	SWITCH	DMPS	
AV11.31	SWITCH	DMPS	
AV11.31	TP	SWITCH	POE

SYSTEM PORT COUNT: 10

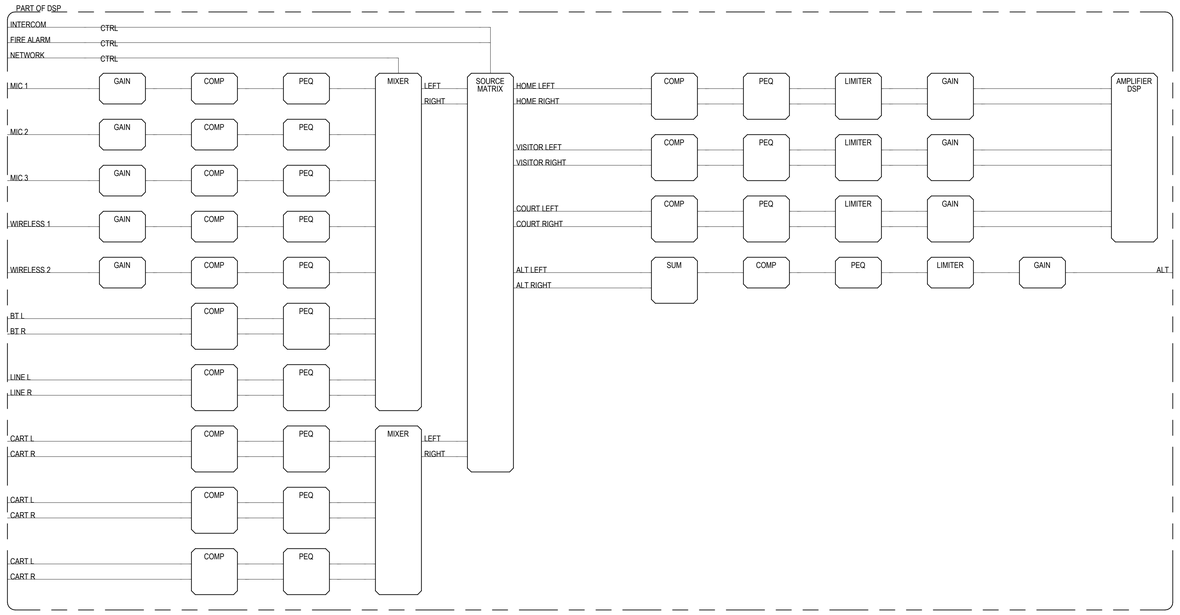
LOOSE EQUIPMENT -GYM (REFERENCE SPECIFICATION 27 41 16)			
QUANTITY	DESCRIPTION	TYPE	NOTES
6	ALS RECEIVER	1	--
4	HANDHELD WIRELESS MICROPHONE	1	--
4	BATTERY CHARGER	1	--
6	VOCAL MICROPHONE	1	--
1	MICROPHONE SWITCH	1	--
2	MONO DI BOX	1	--
2	STEREO DI BOX	1	--
2	SPEAKER	3	--
4	MICROPHONE STAND	1	--
4	MICROPHONE STAND	3	--
1	MICROPHONE STAND	5	--
8	MICROPHONE CABLE	06	--
8	MICROPHONE CABLE	25	--
8	MICROPHONE CABLE	50	--
4	MICROPHONE CABLE	100	--
1	MICROPHONE SNAKE	1	--
2	POWER EXTENSION CABLE	25	--
2	POWER EXTENSION CABLE	50	--
4	POWER EXTENSION CABLE	100	--
2	SPEAKER STAND	1	--
1	HEADPHONES	1	--
1	PORTABLE EQUIPMENT RACK	1	(ER-CGP)



4 COMPETITION GYM PORTABLE EQUIPMENT RACK FUNCTIONAL DIAGRAM
SCALE: NTS



2 COMPETITION GYM AV FUNCTIONAL DIAGRAM
SCALE: NTS



3 COMPETITION GYM DSP FUNCTIONAL DIAGRAM
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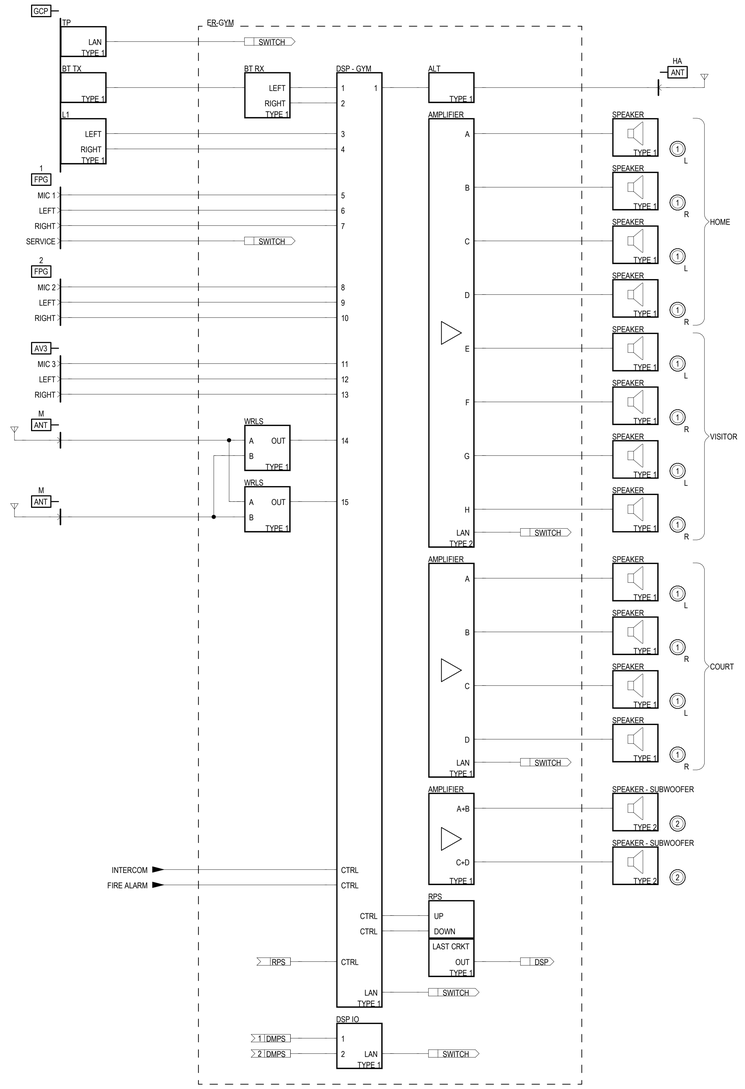

1 COMPETITION GYM AUDIO SYSTEM FUNCTIONAL DIAGRAM
SCALE: NTS

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Approver
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Author
Quality Control

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SHEET TITLE
COMPETITION GYM AV FUNCTIONAL DETAILS

SHEET NO.
AV11.31

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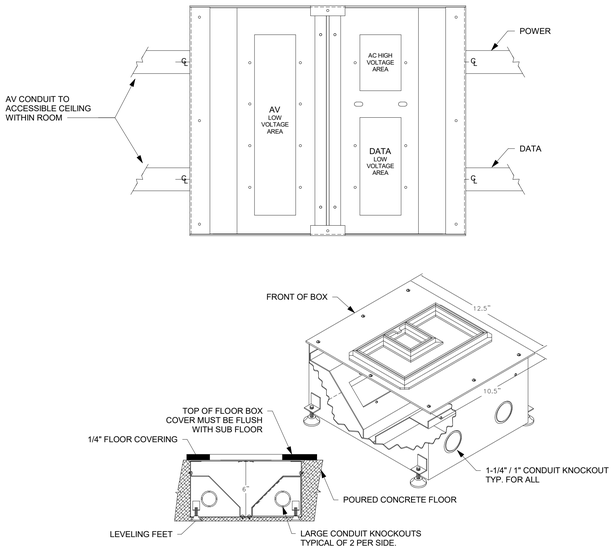
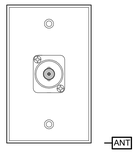
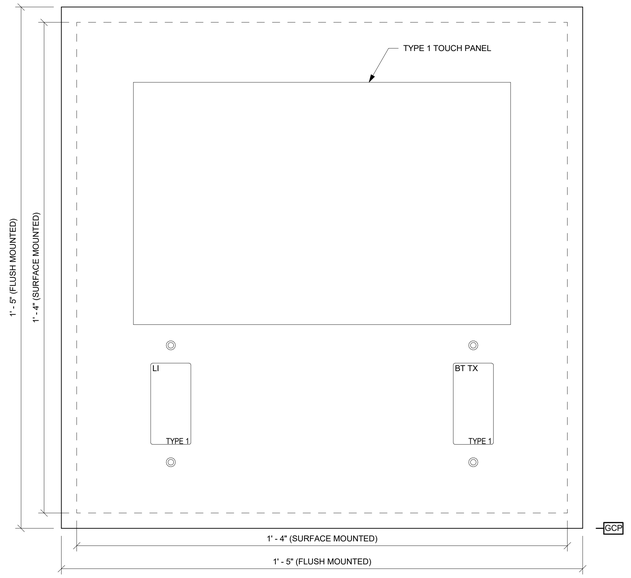


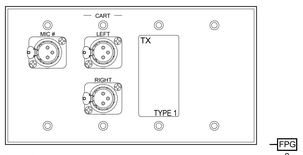
9 FLOOR BOX DETAIL
SCALE: NTS



6 ANTENNA PLATE DETAIL
SCALE: 6" = 1'-0"

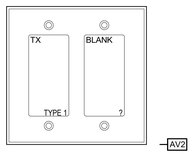


3 GYM CONTROL PANEL DETAIL
SCALE: 6" = 1'-0"

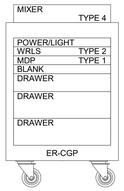


NOTES:
1. REFERENCE FUNCTIONAL DIAGRAMS FOR CONNECTOR LABELS

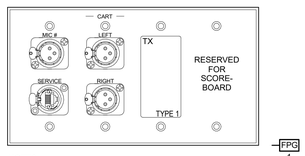
8 GYM FLOOR POCKET FPG-2 DETAIL
SCALE: NTS



5 AV2 PLATE DETAILS
SCALE: 6" = 1'-0"

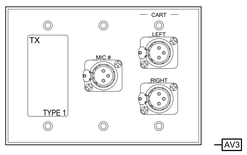


2 GYM PORTABLE EQUIPMENT RACK ELEVATION
SCALE: NTS



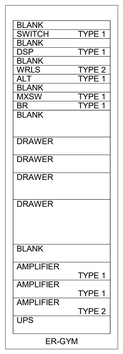
NOTES:
1. REFERENCE FUNCTIONAL DIAGRAMS FOR CONNECTOR LABELS

7 GYM FLOOR POCKET FPG-1 DETAIL
SCALE: 6" = 1'-0"



NOTES:
1. REFERENCE FUNCTIONAL DIAGRAMS FOR CONNECTOR LABELS

4 AV3 PLATE DETAILS
SCALE: 6" = 1'-0"



1 COMPETITION GYM EQUIPMENT RACK ELEVATION
SCALE: NTS

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SHEET TITLE
COMPETITION GYM PLATE AND PANEL DETAILS

SHEET NO.
AV11.32

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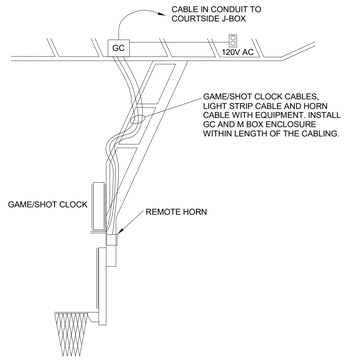
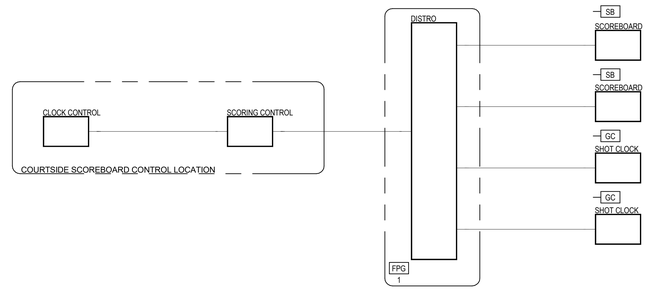


3 RETRACTABLE BASKETBALL HOOP DETAILS

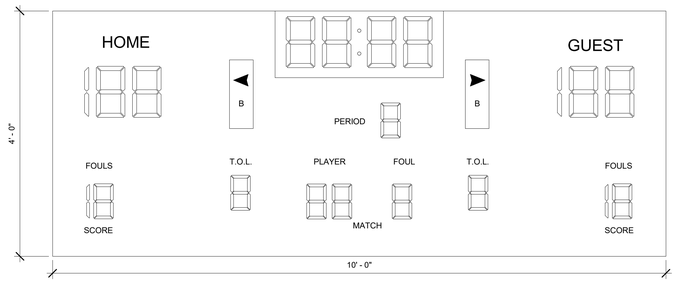
SCALE: NTS

1. TYPICAL OF NORTH AND SOUTH GOAL LOCATIONS
2. REFER TO FLOOR PLANS FOR LOCATIONS
3. REFER TO ARCHITECTURAL PLANS FOR MOUNTING DETAILS.



2 CLOCK SCORING FUNCTIONAL

SCALE: NTS



1 COURT SCOREBOARD DETAIL

SCALE: NTS

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SCOREBOARD DETAILS

SHEET NO.

AV13.20

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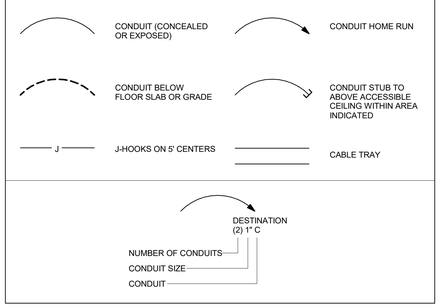
GENERAL ABBREVIATIONS

@	AT
3DC	3D CONTROLLER
A/C	AIR CONDITIONING
ABV	ABOVE
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT, ARCHITECTURAL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BFC	BELOW FINISHED CEILING
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BOH	BACK OF HOUSE
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
C	CONDUIT
CAT	CATEGORY CABLE
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CTRL	CONTROL
D	DEPTH, DEEP
DC	DIRECT CURRENT
DC	DOWNSTAGE CENTER
DEG	DEGREES
DEMO	DEMOLITION
DFP	DIRECTOR'S FLOOR POCKET
DIA	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DS	DOWNSTAGE
DSL	DOWNSTAGE LEFT
DSR	DOWNSTAGE RIGHT
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EQUIPMENT RACK
ESW	ETHERNET SWITCH
EXIST	EXISTING
FA	FIRE ALARM
FB	FLOOR BOX
FLEX	FLEXIBLE
FLR	FLOOR
FO	FINISHED OPENING
FOH	FRONT OF HOUSE
FPB	FIBER OPTIC PATCHBAY
FPM	FEET PER MINUTE
FT	FOOT, FEET
FV	FIELD VERIFY
GND	GROUND
GA	GAUGE
H	HEIGHT
HL	HOUSE LEFT
HMP	HOUSE MANAGER POSITION
HOR	HORIZONTAL
HP	HORSEPOWER
HR	HOUSE RIGHT
HZ	HERTZ
I/O	INPUT/OUTPUT
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
ISO	ISOLATED
JB	JUNCTION BOX
JBD	JUNCTION BOX - DATA
JP	JUNCTION BOX - SYSTEM POWER
KPD	KEYPAD
KW	KILOWATT
L	LENGTH, LEFT
L/R	LEFT/RIGHT
LAN	LOCAL AREA NETWORK
LB	POUNDS
LF	LINEAR FEET
LTG	LIGHTING
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MIN	MINIMUM
MMFO	MULTIMODE FIBER OPTIC CABLE
MTD	MOUNTED
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC. NETWORK
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OFOI	OWNER FURNISHED OWNER INSTALLED
P	PRIMARY
P/O	PART OF
PC	PERSONAL COMPUTER
PDU	POWER DISTRIBUTION UNIT
PGM	PROGRAM
PH	PHASE
PNL	PANEL
PROC	PROCESSOR
PRH	PROJECT RECEPTACLE HEIGHT
PRX	PROXIMITY SENSOR
PS	POWER SUPPLY
PSF	POUNDS PER SQUARE FOOT
PSH	PROJECT SWITCH HEIGHT
PSI	POUNDS PER SQUARE INCH
PT	PASS THROUGH
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
R	RIGHT
RCP	REFLECTED CEILING PLAN
REF	REFERENCE, REFER
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION, REVISE
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
S	SURFACE, SECONDARY
SQFT	SQUARE FEET
SIM	SIMILAR
SL	STAGE LEFT
SMFO	SINGLE MODE FIBER OPTIC CABLE
SMP	STAGE MANAGER POSITION
SPEC	SPECIFICATION
SQ	SQUARE
SR	STAGE RIGHT
STD	STANDARD
STP	SHIELED TWISTED PAIR
SURF	SURFACE
SUSP	SUSPEND
TBD	TO BE DETERMINED
THRU	THROUGH
TYP	TYPICAL
UC	UPSTAGE CENTER
UL	UNDERWRITERS LABORATORIES, INC.
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
US	UPSTAGE
USL	UPSTAGE LEFT
USR	UPSTAGE RIGHT
USB	UNIVERSAL SERIAL BUS
UTP	UNSHIELED TWISTED PAIR
V	VOLT
VA	VOLT-AMPRE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WT	WEIGHT

PATHWAY DISTRIBUTION



ROUGH-IN BOX SCHEDULE

TYPE 1 RECESSED: 1-GANG BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 2 RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 2-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 2-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 3 RECESSED: 3-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 3-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 3-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 4 RECESSED: 4-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 4-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 4-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 5 RECESSED: 5" SQUARE BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

TYPE 12 RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE A JUNCTION BOX (HxWxD) WITH SCREW COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

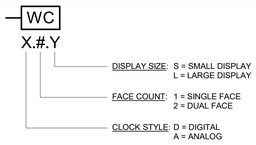
TYPE B JUNCTION BOX (HxWxD) WITH HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

TYPE C JUNCTION BOX (HxWxD) WITH LOCKING HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS

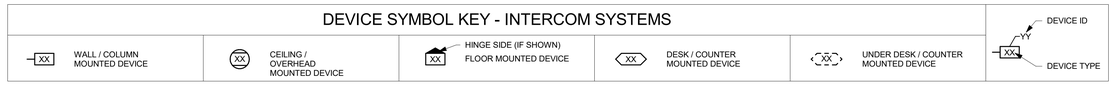
CONDUIT AND PATHWAY NOTES

1. COORDINATE LOCATION OF EQUIPMENT, JUNCTION BOXES, OUTLETS, CONDUIT, ETC. ACCORDING TO THE PROJECT GENERAL CONDITIONS.
2. PROVIDE A COMPLETE RACEWAY SYSTEM TO CONSIST OF METALLIC CONDUIT (EXCLUDING INGROUND PATHWAY), JUNCTION BOXES, DEVICE BACK BOXES, AND FITTINGS UNLESS NOTED OTHERWISE.
3. THE DRAWINGS INDICATE ONE ROUTING METHOD OF THE CABLING PATHWAY. CHANGES MAY BE MADE TO THE PATHWAY SYSTEM ROUTING TO ACCOMMODATE SITE CONDITIONS OR TO SIMPLIFY INSTALLATION PROVIDING THAT NOTED CONDUIT SIZE OR LARGER IS MAINTAINED AND DISTANCE LIMITATIONS LISTED BELOW ARE NOT EXCEEDED.
4. CONDUIT STUBS FROM DEVICES TO THE NEAREST CABLE TRAY, ACCESSIBLE CEILING, OR OTHER DESTINATIONS SHALL BE CONTINUOUS.
5. UNLESS NOTED OTHERWISE, CONDUIT IS 3/4 INCH TRADE SIZE.
6. SHOULD ROUGH-IN BOX DEVICE EXIST WITH NO CONDUIT INDICATED TO OR FROM, PROVIDE ¾ INCH TRADE SIZE CONDUIT FROM DEVICE TO ACCESSIBLE CEILING.
7. CONDUIT BODIES (LB'S) ARE NOT PERMITTED.
8. CONDUITS SHALL BE REAMED TO ELIMINATE SHARP EDGES. METALLIC CONDUITS SHALL BE TERMINATED WITH AN INSULATED BUSHING. PULL STRINGS WITH A MINIMUM PULL RATING OF 400 POUNDS SHALL BE PROVIDED.
9. FOR CONDUIT WITH AN INTERNAL DIAMETER GREATER THAN 2 INCHES, MAINTAIN A BEND RADIUS OF AT LEAST 10 TIMES THE INTERNAL CONDUIT DIAMETER.
10. BENDS IN THE CONDUIT SHALL NOT CONTAIN ANY KINKS OR OTHER DISCONTINUITIES. FLEX IS NOT PERMITTED UNLESS NOTED OTHERWISE.
11. NO SECTION OF CONDUIT SHALL EXCEED 100 FEET. RUNS IN EXCESS OF 100 FEET REQUIRE A PULL BOX / HANDHOLE / VAULT.
12. NO SECTION OF CONDUIT SHALL CONTAIN MORE THAN TWO 90 DEGREE BENDS, OR EQUIVALENT 180 DEGREES, BETWEEN PULL BOXES.
13. PULL BOX SHALL NOT BE USED IN LIEU OF A BEND. CONDUITS MUST RUN STRAIGHT THROUGH A PULL BOX WITH THE BEND LOCATED EITHER BEFORE OR AFTER THE PULL BOX.
14. PULL BOX LENGTH TO BE NO LESS THAN 8 TIMES THE DIAMETER OF THE LARGEST TERMINATING CONDUIT. PULL BOX WIDTH TO BE NO LESS ¼ THE LENGTH.
15. PROVIDE COVERS WITH LABELING FOR JUNCTION BOXES. BACK BOXES AND PULL BOXES WITHOUT FACEPLATES. LABELING MATCHES DEVICE NAME AS INDICATED ON DRAWINGS, FOR EXAMPLE "AV1", "ML".
16. ALL CONDUITS ENTERING OR EXITING EQUIPMENT RACKS TO BE ISOLATED WITH A NON-METALLIC SPACER OR FITTING.
17. PROVIDE CONDUIT TO CROSS INACCESSIBLE CEILINGS OR IN AREAS WITHOUT CEILINGS UNLESS NOTED OTHERWISE.
18. PROVIDE CONDUIT IN EXPOSED AREAS, MECHANICAL SPACES, FOOD SERVICES AREAS, AND ELEVATOR CONTROL ROOMS.
19. REGARDLESS OF PATHWAY TYPE, ALL CABLING SHALL BE SUPPORTED AT 5 FEET MAXIMUM INTERVALS. CABLES SHALL NOT BE LAID DIRECTLY ON THE CEILING TILE OR RAILS OR STRAPPED TO CONDUIT.
20. ROUTE CONDUIT WITH OTHER BUILDING SERVICES AND CONCEAL WHENEVER POSSIBLE. GROUP AND RUN PARALLEL ALONG A SINGLE BUILDING COLUMN LINE, HOLD TIGHT TO STRUCTURE AND PAINT AS DIRECTED BY THE ARCHITECT.
21. IF AV AND POWER CONDUITS MUST CROSS, CROSS AT RIGHT ANGLES.
22. FOR IN-SLAB OR UNDERGROUND CONDUIT ENTERING A BUILDING, TRANSITION BACK TO METALLIC CONDUIT WITHIN 3 FEET OF THE ENTRY POINT.
23. REFER TO PROJECT MANUAL FOR FIRE STOPPING REQUIREMENTS.
24. REFER TO ELECTRICAL DRAWINGS AND PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.

WIRELESS CLOCK (WC) LEGEND



DEVICE SYMBOL KEY - INTERCOM SYSTEMS



SYMBOL LEGEND - INTERCOM SYSTEMS

SIZES, DIMENSIONS AND NOTES DESCRIBE TYPICAL REQUIREMENTS. IF APPLICABLE, VARIATIONS AND/OR ADDITIONAL REQUIREMENTS WILL BE NOTED ON THE DRAWINGS. UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE TO CENTER OF ROUGH-IN BOX.

TYPE	DEVICE	ROUGH-IN BOX (H"xW"xD")	DEVICE COVER SIZE	MOUNTING HEIGHT			DEVICE NOTES	CONDUIT NOTES
				WALL/COLUMN	CEILING/OVERHEAD	FLOOR		
S1	SPEAKER	TYPE 2	--	--	--	--	--	REF PLANS
S2	SPEAKER	TYPE 2	--	--	--	--	--	REF PLANS
S3	SPEAKER	TYPE 2	--	--	--	--	--	REF PLANS
S4	SPEAKER	TYPE 2	--	--	--	--	--	REF PLANS
S5	SPEAKER	TYPE 2	--	--	--	--	--	REF PLANS
STI-2	EMERGENCY CALL BUTTON PLATE	TYPE 1	1-GANG	BUILDING SWITCH HEIGHT	--	--	--	REF PLANS

LEGEND NOTES - INTERCOM SYSTEMS

1 NOTE 1

2 NOTE 2

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GENERAL NOTES AND LEGENDS

SHEET NO.

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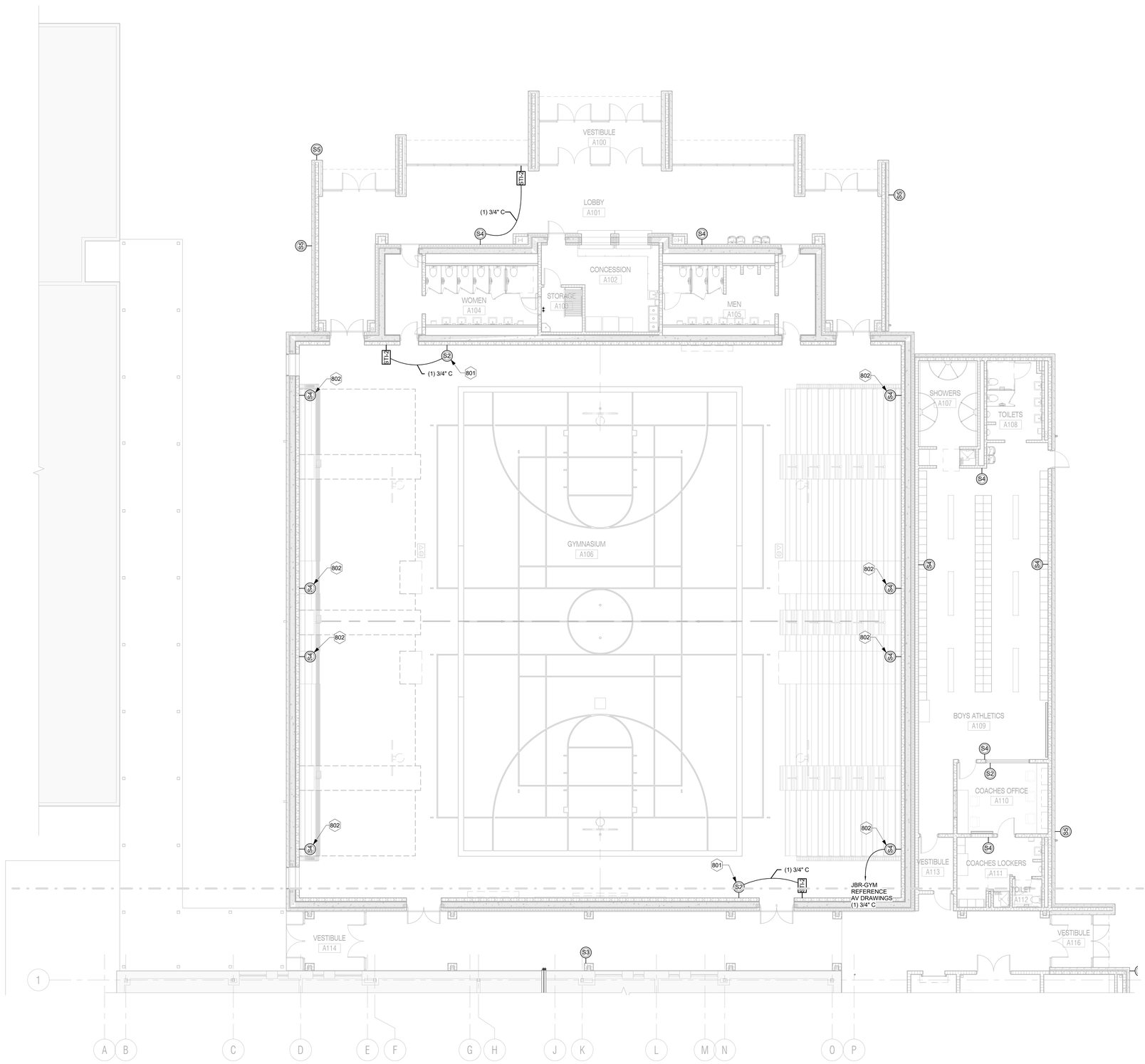
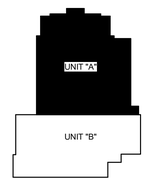
KEYNOTES	
801	PROVIDE TYPE 1 WIRE GUARD.
802	MOUNT AT 18'-0" AFF.



1 IC FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

N
PLAN NORTH TRUE NORTH

KEY PLAN



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FLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.

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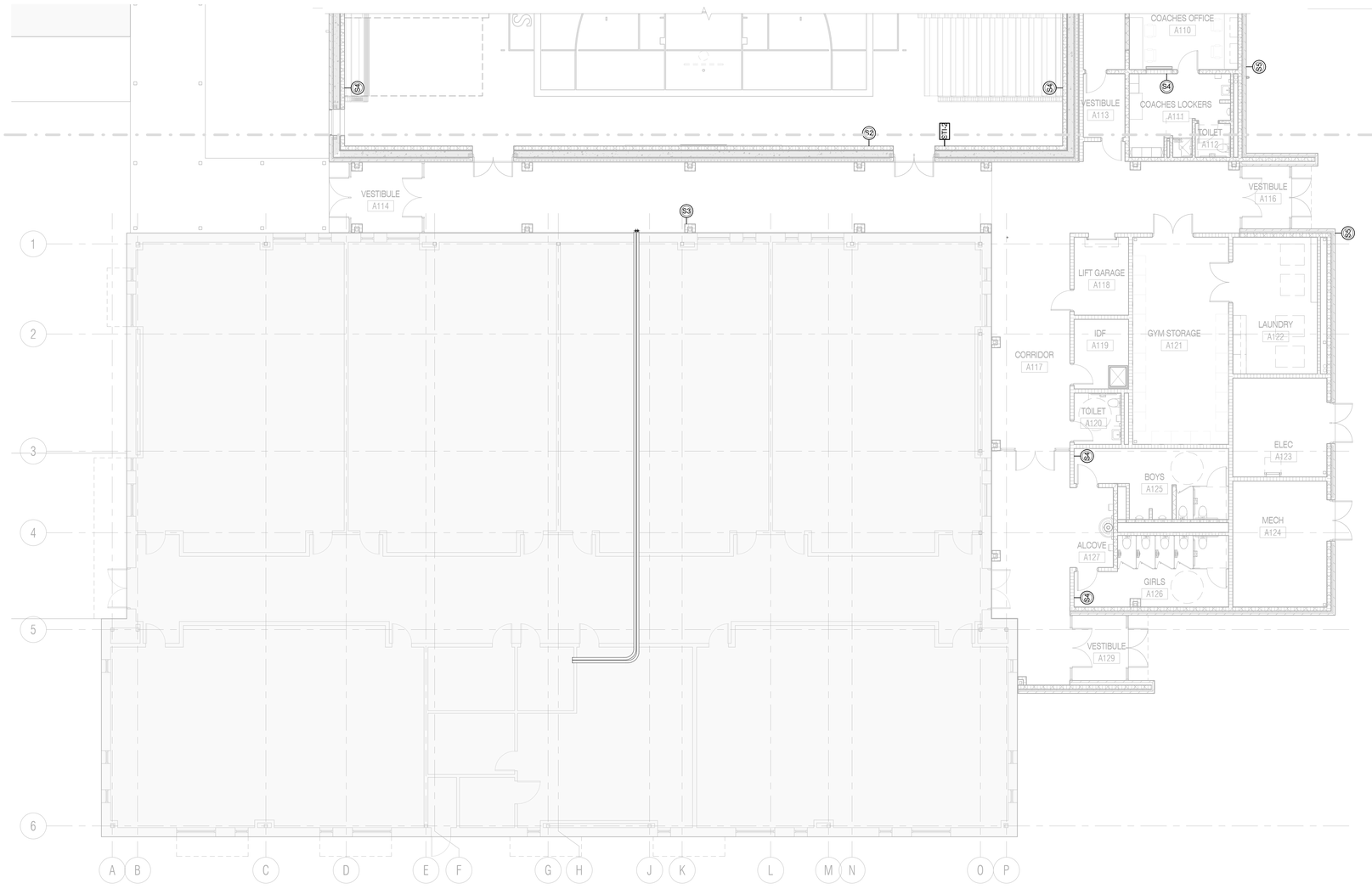
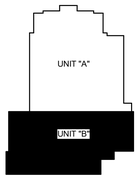
KEYNOTES



1 IC FLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"



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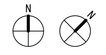

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS

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Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

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1887.00

SHEET TITLE

FLOOR PLAN MAIN LEVEL - UNIT B

SHEET NO.

IC2.12

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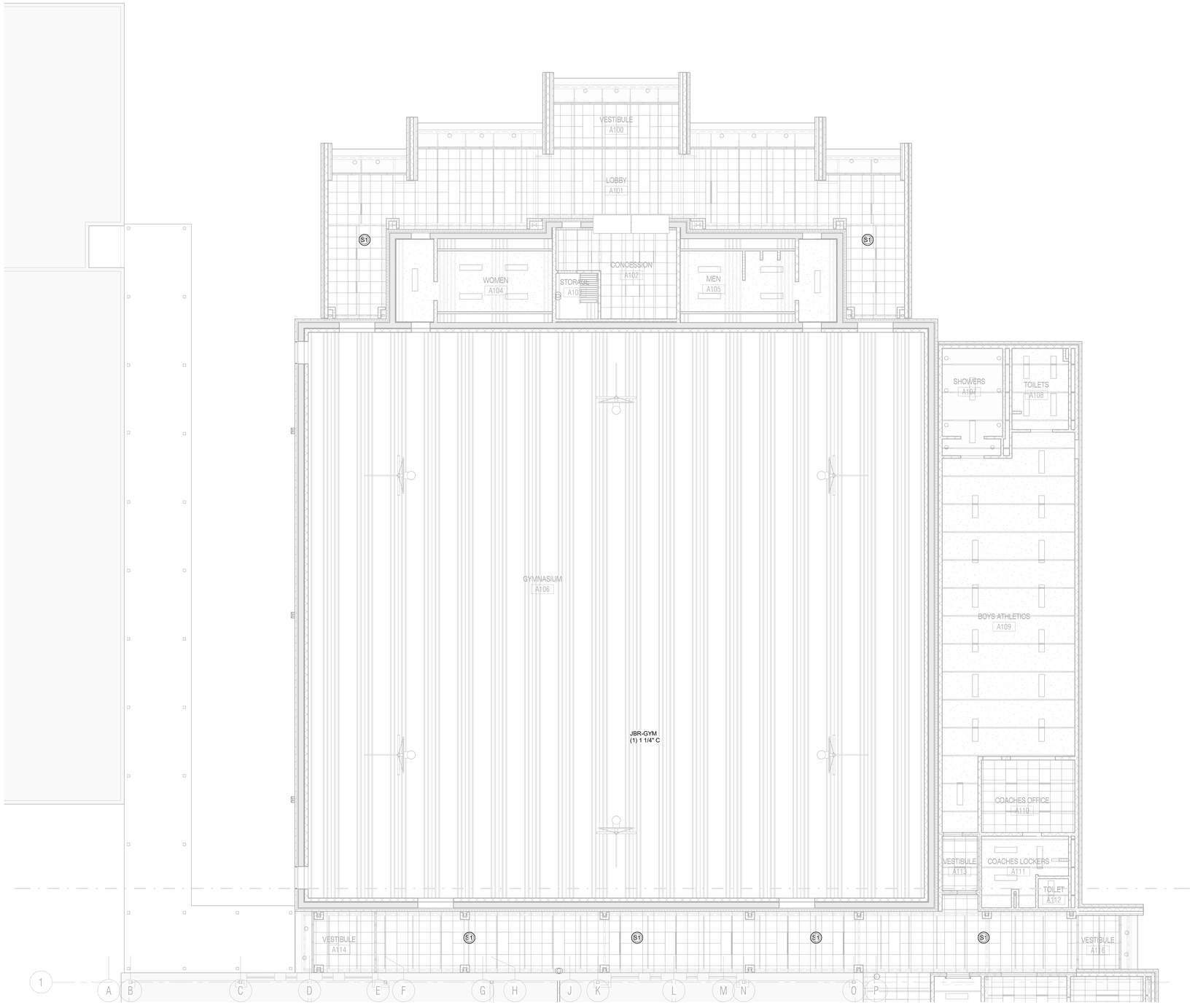
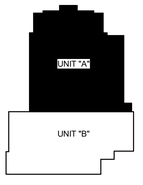


1 IC MAIN LEVEL - UNIT A - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN

N
PLAN NORTH
TRUE NORTH

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SHEET TITLE

REFLECTED CEILING PLAN - UNIT A

SHEET NO.

IC6.01

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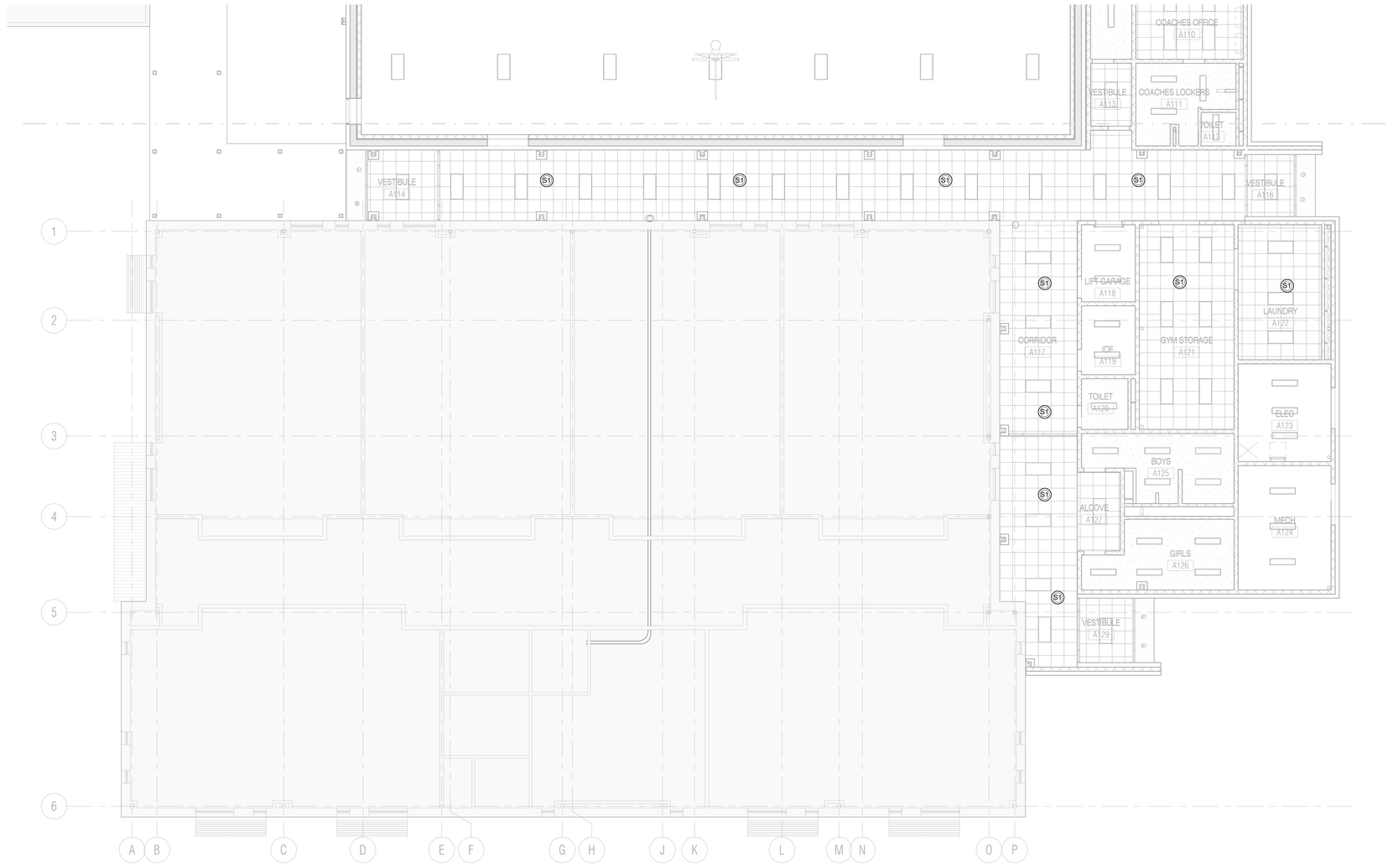
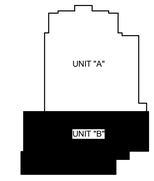
KEYNOTES



1 IC MAIN LEVEL - UNIT B - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

N
PLAN NORTH TRUE NORTH

KEY PLAN



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SHEET TITLE

REFLECTED CEILING PLAN - UNIT B

SHEET NO.

IC6.02

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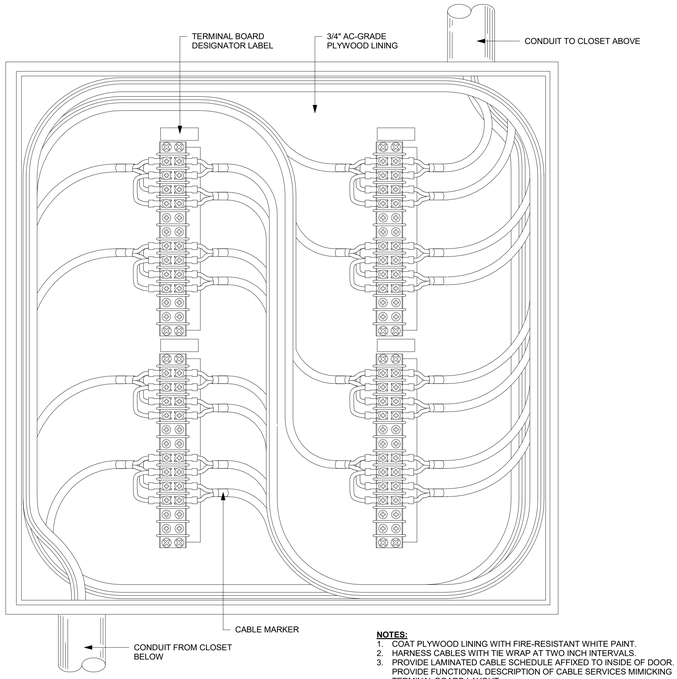
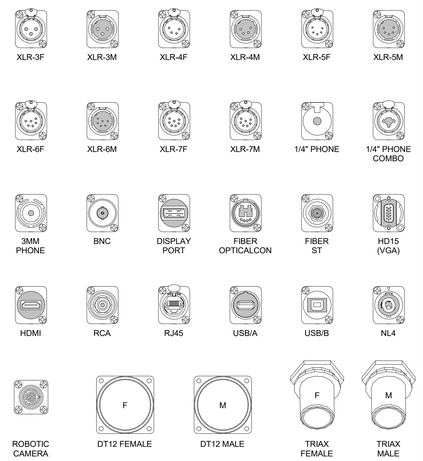
SPEAKER JUNCTION BOX TERMINATION DETAILS

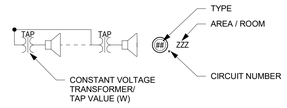


NOTES:
1. COAT PLYWOOD LINING WITH FIRE-RESISTANT WHITE PAINT.
2. HARNESS CABLES WITH TIE WRAP AT TWO INCH INTERVALS.
3. PROVIDE LAMINATED CABLE SCHEDULE AFFIXED TO INSIDE OF DOOR. PROVIDE FUNCTIONAL DESCRIPTION OF CABLE SERVICES MIMICKING TERMINAL BOARD LAYOUT.

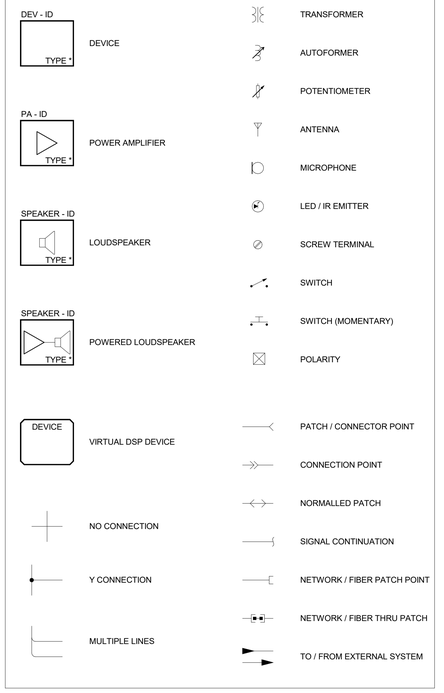
PANEL SYMBOL LEGEND



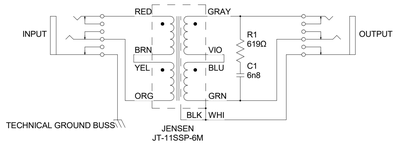
PARALLELED SPEAKERS DETAIL



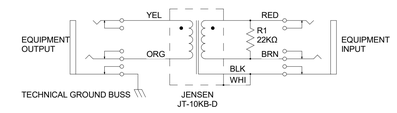
FUNCTIONAL SYMBOL LEGEND



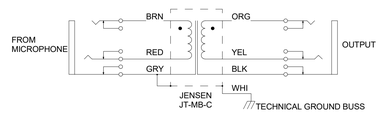
AUDIO TRANSFORMER WIRING



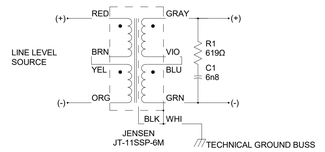
1:1 LINE INPUT TRANSFORMER AND LINE BRIDGING TRANSFORMER



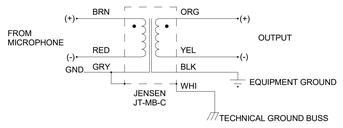
4:1 LINE INPUT TRANSFORMER (PRO TO CONSUMER EQUIPMENT)



MICROPHONE TRANSFORMER

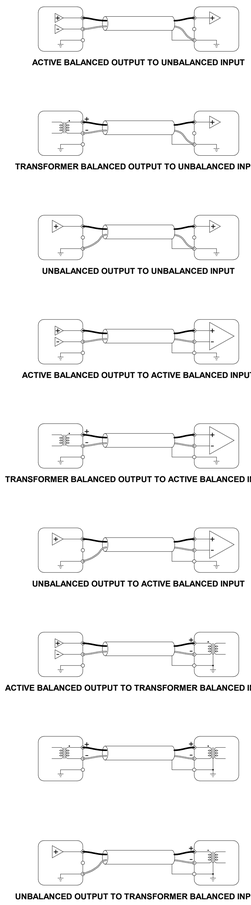


ISOLATION TRANSFORMER



MICROPHONE LEVEL BRIDGING TRANSFORMER

AUDIO SHIELD CONNECTIONS



ACTIVE BALANCED OUTPUT TO UNBALANCED INPUT

TRANSFORMER BALANCED OUTPUT TO UNBALANCED INPUT

UNBALANCED OUTPUT TO UNBALANCED INPUT

ACTIVE BALANCED OUTPUT TO ACTIVE BALANCED INPUT

TRANSFORMER BALANCED OUTPUT TO ACTIVE BALANCED INPUT

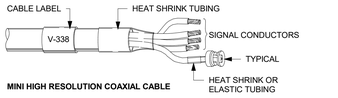
UNBALANCED OUTPUT TO ACTIVE BALANCED INPUT

ACTIVE BALANCED OUTPUT TO TRANSFORMER BALANCED INPUT

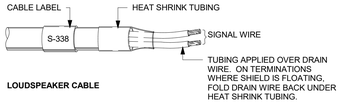
UNBALANCED OUTPUT TO TRANSFORMER BALANCED INPUT

AV CABLE PREPARATION DETAILS

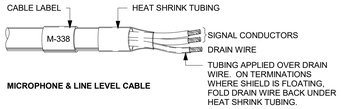
SMPTE / SMFO / TRIAX / COAXIAL CABLE



MINI HIGH RESOLUTION COAXIAL CABLE

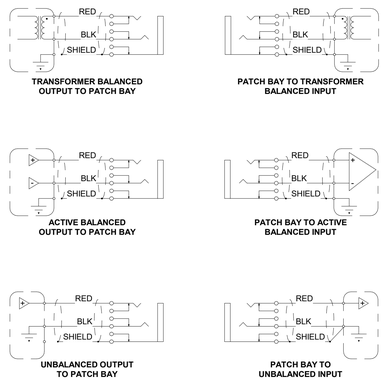


LOUDSPEAKER CABLE

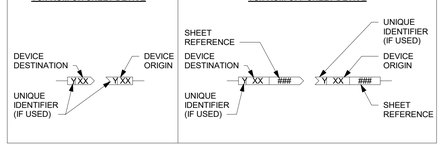


MICROPHONE & LINE LEVEL CABLE

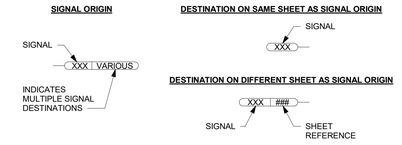
TYPICAL DEVICE TO PATCHBAY WIRING



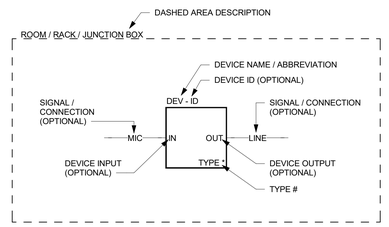
SIGNAL TO/FROM PHYSICAL DEVICE



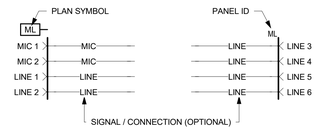
SIGNAL TO/FROM VIRTUAL DEVICE



DEVICE SIGNAL FLOW DETAIL



PLATE/PANEL SIGNAL FLOW DETAIL



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Approver	Author
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SHEET TITLE

INTERCOM FUNCTIONAL LEGEND AND STANDARD DETAILS

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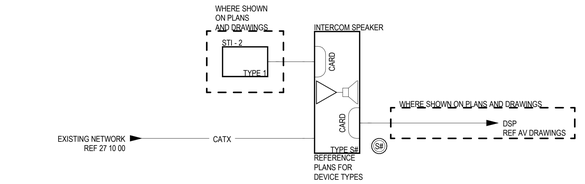

1 IP INTERCOM FUNCTIONAL DIAGRAM
SCALE: NTS

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IP INTERCOM SYSTEM FUNCTIONAL DIAGRAMS

SHEET NO.

IC11.11

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GENERAL ABBREVIATIONS

@	AT
3DC	3D CONTROLLER
A/C	AIR CONDITIONING
ABV	ABOVE
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT, ARCHITECTURAL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BFC	BELOW FINISHED CEILING
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BOH	BACK OF HOUSE
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
C	CONDUIT
CAT	CATEGORY CABLE
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CTRL	CONTROL
D	DEPTH, DEEP
DC	DIRECT CURRENT
DC	DOWNSTAGE CENTER
DEG	DEGREES
DEMO	DEMOLITION
DFP	DIRECTOR'S FLOOR POCKET
DIA	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DS	DOWNSTAGE
DSL	DOWNSTAGE LEFT
DSR	DOWNSTAGE RIGHT
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EQUIPMENT RACK
ESW	ETHERNET SWITCH
EXIST	EXISTING
FA	FIRE ALARM
FB	FLOOR BOX
FLEX	FLEXIBLE
FLR	FLOOR
FO	FINISHED OPENING
FOH	FRONT OF HOUSE
FPB	FIBER OPTIC PATCHBAY
FPM	FEET PER MINUTE
FT	FOOT, FEET
FV	FIELD VERIFY
GND	GROUND
GA	GAUGE
H	HEIGHT
HL	HOUSE LEFT
HMP	HOUSE MANAGER POSITION
HOR	HORIZONTAL
HP	HORSEPOWER
HR	HOUSE RIGHT
HZ	HERTZ
I/O	INPUT/OUTPUT
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
ISO	ISOLATED
JB	JUNCTION BOX
JBD	JUNCTION BOX - DATA
JP	JUNCTION BOX - SYSTEM POWER
KPD	KEYPAD
KW	KILOWATT
L	LENGTH, LEFT
L/R	LEFT/RIGHT
LAN	LOCAL AREA NETWORK
LB	POUNDS
LF	LINEAR FEET
LTG	LIGHTING
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MIN	MINIMUM
MMFO	MULTIMODE FIBER OPTIC CABLE
MTD	MOUNTED
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC. NETWORK
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OFOI	OWNER FURNISHED OWNER INSTALLED
P	PRIMARY
P/O	PART OF
PC	PERSONAL COMPUTER
PDU	POWER DISTRIBUTION UNIT
PGM	PROGRAM
PH	PHASE
PNL	PANEL
PROC	PROCESSOR
PRH	PROJECT RECEPTACLE HEIGHT
PRX	PROXIMITY SENSOR
PS	POWER SUPPLY
PSF	POUNDS PER SQUARE FOOT
PSH	PROJECT SWITCH HEIGHT
PSI	POUNDS PER SQUARE INCH
PT	PASS THROUGH
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
R	RIGHT
RCP	REFLECTED CEILING PLAN
REF	REFERENCE, REFER
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION, REVISE
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
S	SURFACE, SECONDARY
SQFT	SQUARE FEET
SIM	SIMILAR
SL	STAGE LEFT
SMFO	SINGLE MODE FIBER OPTIC CABLE
SMP	STAGE MANAGER POSITION
SPEC	SPECIFICATION
SQ	SQUARE
SR	STAGE RIGHT
STD	STANDARD
STP	SHIELED TWISTED PAIR
SURF	SURFACE
SUSP	SUSPEND
TBD	TO BE DETERMINED
THRU	THROUGH
TYP	TYPICAL
UC	UPSTAGE CENTER
UL	UNDERWRITERS LABORATORIES, INC.
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
US	UPSTAGE
USL	UPSTAGE LEFT
USR	UPSTAGE RIGHT
USB	UNIVERSAL SERIAL BUS
UTP	UNSHIELED TWISTED PAIR
V	VOLT
VA	VOLT-AMPRE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WT	WEIGHT

CABLE TYPE LEGEND

TYPE	DESCRIPTION	NOTES
A	18AWG, 6 CONDUCTOR, STRANDED, OVERALL SHIELD	REFERENCE SPECIFICATION 28 05 13
B	18AWG, 4 CONDUCTOR, STRANDED, UNSHIELDED	REFERENCE SPECIFICATION 28 05 13
C	16AWG, 2 CONDUCTOR, STRANDED, UNSHIELDED	REFERENCE SPECIFICATION 28 05 13
D	NETWORK COMMUNICATION CABLE	REFERENCE SPECIFICATION 27 10 00
E	18AWG, 2 CONDUCTOR, STRANDED, SHIELDED WITH DRAIN	REFERENCE SPECIFICATION 28 05 13
F	COMPOSITE ACCESS CONTROLLED DOOR CABLE	REFERENCE SPECIFICATION 28 05 13
G	NETWORK COMMUNICATION CABLE	REFERENCE SPECIFICATION 27 10 00
H	NETWORK COMMUNICATION CABLE	REFERENCE SPECIFICATION 27 10 00
I	NETWORK COMMUNICATION CABLE	REFERENCE SPECIFICATION 27 10 00
J	COMPOSITE COPPER FIBER	REFERENCE SPECIFICATION 27 05 013

NOTES:
1. CABLES COME DEFAUT WHITE IN COLOR AND PLENUM, UNLESS OTHERWISE NOTED.COORDINATE EXACT COLOR WITH OWNER/ ENGINEER PRIOR TO ORDERING CABLE.
2. PROVIDE CABLE RATED FOR ENVIRONMENTAL AIR TYPE PLENUM WHERE REQUIRED.
3. PROVIDE CABLE RATED FOR WET APPLICATIONS FOR USE IN PATHWAYS BELOW GRADE AND FOR USE IN PATHWAYS IN SLAB ON GRADE.

CAMERA TYPES

TYPE	DESCRIPTION
1	1 MP MINI DOME WITH IR
2	2 MP MINI DOME WITH IR
3	3 MP MINI DOME WITH IR
5	5 MP MINI DOME WITH IR
8	4K FIXED CAMERA
10	12 MP 180 MULTI-IMAGER PANORAMIC
11	9 MP 180 DOME FISHEYE
20	12 MP 360 DOME MULTI-IMAGER
21	9 MP 360 DOME FISHEYE
30	12 MP 270 DOME MULTI-IMAGER
40	ROOF PTZ CAMERA
41	PTZ CAMERA
50	BOWL CAMERA 10 MP BOX 25 - 135mm LENS (ARECONT)
51	BOWL CAMERA 10 MP BOX 35mm (BOSCH)
52	BOWL CAMERA 10 MP BOX 50mm (BOSCH)
IN	INFRASTRUCTURE ONLY CAMERA

NOTE:

ROUGH-IN BOX SCHEDULE

TYPE 1 RECESSED: 1-GANG BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 2 RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 2-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 2-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 3 RECESSED: 3-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 3-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 3-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 4 RECESSED: 4-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 4-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 4-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 5 RECESSED: 5" SQUARE BOX. 2 1/2" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/RING EDGE TO BE FLUSH WITH FINISHED WALL.

TYPE 12 RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED: 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE A JUNCTION BOX (HxWxD) WITH SCREW COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

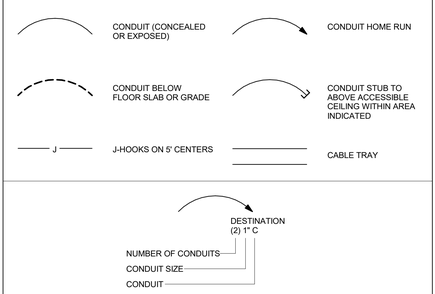
TYPE B JUNCTION BOX (HxWxD) WITH HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

TYPE C JUNCTION BOX (HxWxD) WITH LOCKING HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS

CONDUIT AND PATHWAY NOTES

1. COORDINATE LOCATION OF EQUIPMENT, JUNCTION BOXES, OUTLETS, CONDUIT, ETC. ACCORDING TO THE PROJECT GENERAL CONDITIONS.
2. PROVIDE A COMPLETE RACEWAY SYSTEM TO CONSIST OF METALLIC CONDUIT (EXCLUDING INGROUND PATHWAY), JUNCTION BOXES, DEVICE BACK BOXES, AND FITTINGS UNLESS NOTED OTHERWISE.
3. THE DRAWINGS INDICATE ONE ROUTING METHOD OF THE CABLING PATHWAY. CHANGES MAY BE MADE TO THE PATHWAY SYSTEM ROUTING TO ACCOMMODATE SITE CONDITIONS OR TO SIMPLIFY INSTALLATION PROVIDING THAT NOTED CONDUIT SIZE OR LARGER IS MAINTAINED AND DISTANCE LIMITATIONS LISTED BELOW ARE NOT EXCEEDED.
4. CONDUIT STUBS FROM DEVICES TO THE NEAREST CABLE TRAY, ACCESSIBLE CEILING, OR OTHER DESTINATIONS SHALL BE CONTINUOUS.
5. UNLESS NOTED OTHERWISE, CONDUIT IS 3/4 INCH TRADE SIZE.
6. SHOULD ROUGH-IN BOX DEVICE EXIST WITH NO CONDUIT INDICATED TO OR FROM, PROVIDE ¾ INCH TRADE SIZE CONDUIT FROM DEVICE TO ACCESSIBLE CEILING.
7. CONDUIT BODIES (LB'S) ARE NOT PERMITTED.
8. CONDUITS SHALL BE REAMED TO ELIMINATE SHARP EDGES. METALLIC CONDUITS SHALL BE TERMINATED WITH AN INSULATED BUSHING. PULL STRINGS WITH A MINIMUM PULL RATING OF 400 POUNDS SHALL BE PROVIDED.
9. FOR CONDUIT WITH AN INTERNAL DIAMETER GREATER THAN 2 INCHES, MAINTAIN A BEND RADIUS OF AT LEAST 10 TIMES THE INTERNAL CONDUIT DIAMETER.
10. BENDS IN THE CONDUIT SHALL NOT CONTAIN ANY KINKS OR OTHER DISCONTINUITIES. FLEX IS NOT PERMITTED UNLESS NOTED OTHERWISE.
11. NO SECTION OF CONDUIT SHALL EXCEED 100 FEET. RUNS IN EXCESS OF 100 FEET REQUIRE A PULL BOX / HANDHOLE / VAULT.
12. NO SECTION OF CONDUIT SHALL CONTAIN MORE THAN TWO 90 DEGREE BENDS, OR EQUIVALENT 180 DEGREES, BETWEEN PULL BOXES.
13. PULL BOX SHALL NOT BE USED IN LIEU OF A BEND. CONDUITS MUST RUN STRAIGHT THROUGH A PULL BOX WITH THE BEND LOCATED EITHER BEFORE OR AFTER THE PULL BOX.
14. PULL BOX LENGTH TO BE NO LESS THAN 8 TIMES THE DIAMETER OF THE LARGEST TERMINATING CONDUIT. PULL BOX WIDTH TO BE NO LESS ¼ THE LENGTH.
15. PROVIDE COVERS WITH LABELING FOR JUNCTION BOXES, BACK BOXES AND PULL BOXES WITHOUT FACEPLATES. LABELING MATCHES DEVICE NAME AS INDICATED ON DRAWINGS, FOR EXAMPLE "AV1", "ML".
16. ALL CONDUITS ENTERING OR EXITING EQUIPMENT RACKS TO BE ISOLATED WITH A NON-METALLIC SPACER OR FITTING.
17. PROVIDE CONDUIT TO CROSS INACCESSIBLE CEILINGS OR IN AREAS WITHOUT CEILINGS UNLESS NOTED OTHERWISE.
18. PROVIDE CONDUIT IN EXPOSED AREAS, MECHANICAL SPACES, FOOD SERVICES AREAS, AND ELEVATOR CONTROL ROOMS.
19. REGARDLESS OF PATHWAY TYPE, ALL CABLING SHALL BE SUPPORTED AT 5 FEET MAXIMUM INTERVALS. CABLES SHALL NOT BE LAID DIRECTLY ON THE CEILING TILE OR RAILS OR STRAPPED TO CONDUIT.
20. ROUTE CONDUIT WITH OTHER BUILDING SERVICES AND CONCEAL WHENEVER POSSIBLE. GROUP AND RUN PARALLEL ALONG A SINGLE BUILDING COLUMN LINE, HOLD TIGHT TO STRUCTURE AND PAINT AS DIRECTED BY THE ARCHITECT.
21. IF AV AND POWER CONDUITS MUST CROSS, CROSS AT RIGHT ANGLES.
22. FOR IN-SLAB OR UNDERGROUND CONDUIT ENTERING A BUILDING, TRANSITION BACK TO METALLIC CONDUIT WITHIN 3 FEET OF THE ENTRY POINT.
23. REFER TO PROJECT MANUAL FOR FIRE STOPPING REQUIREMENTS.
24. REFER TO ELECTRICAL DRAWINGS AND PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.

PATHWAY DISTRIBUTION



DEVICE SYMBOL KEY - SECURITY SYSTEMS

XX WALL / COLUMN MOUNTED DEVICE	XX CEILING / OVERHEAD MOUNTED DEVICE	XX FLOOR MOUNTED DEVICE	XX DESK / COUNTER MOUNTED DEVICE	XX UNDER DESK / COUNTER MOUNTED DEVICE

YY DEVICE ID
XX DEVICE TYPE

SYMBOL LEGEND - SECURITY SYSTEMS

SIZES, DIMENSIONS AND NOTES DESCRIBE TYPICAL REQUIREMENTS. IF APPLICABLE, VARIATIONS AND/OR ADDITIONAL REQUIREMENTS WILL BE NOTED ON THE DRAWINGS.
UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE TO CENTER OF ROUGH-IN BOX.

TYPE	DEVICE	ROUGH-IN BOX (H"xW"xD")	DEVICE COVER SIZE	MOUNTING HEIGHT			CABLE (QTY) TYPE	DEVICE NOTES	CONDUIT NOTES
				WALL/COLUMN	CEILING/OVERHEAD	FLOOR			
CRS	CARD READER SYSTEM	REF DETAIL	REF DETAIL	REF DETAIL	--	--	(1)F	SYSTEM INCLUDES MULTIPLE DEVICES; REF DETAIL	REF DETAIL
DC	DOOR CONTACT	--	--	--	--	--	(1)B	INCLUDES A DOOR CONTACT MOUNTED DIRECTLY IN LINE WITH THE DOOR APPROXIMATELY 6" FROM THE STRIKE SIDE DOOR EDGE	REF DETAIL

LEGEND NOTES - SECURITY SYSTEMS

1 CATEGORY CABLING PROVIDED BY DIVISION 27.

2 PROVIDE QTY. (2) ADDITIOINAL 18/6 CABLES FROM ACP TO ACCESS CONTROLLED AUTO DOOR LOCATIONS FORINTERFACE TO AUTO DOOR MOTOR. COORDINATE TERMINATIONS WITH DIVISION 08.

3 REFERENCE SCHEDULES FOR ADDITIONAL INFORMATION.

4 REFERENCE DIVISION 26 FOR ALL 120VAC POWER AND CONDUIT.

DEVICE SYMBOL KEY - VIDEO SURVEILLANCE SYSTEMS

XX WALL / COLUMN MOUNTED CAMERA	XX CEILING / OVERHEAD MOUNTED CAMERA	XX ROOF MOUNTED CAMERA	XX PARAPET MOUNTED CAMERA

YY CAMERA ID
XX CAMERA MOUNT TYPE
CAMERA TYPE

SYMBOL LEGEND - VIDEO SURVEILLANCE SYSTEMS

SIZES, DIMENSIONS AND NOTES DESCRIBE TYPICAL REQUIREMENTS. IF APPLICABLE, VARIATIONS AND/OR ADDITIONAL REQUIREMENTS WILL BE NOTED ON THE DRAWINGS.
UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE TO CENTER OF ROUGH-IN BOX.

TYPE	DEVICE	ROUGH-IN BOX (H"xW"xD")	DEVICE COVER SIZE	MOUNTING HEIGHT			CABLE (QTY) TYPE	DEVICE NOTES	CONDUIT NOTES
				WALL/COLUMN	CEILING/OVERHEAD	FLOOR			
R	RECESSED / FLUSH MOUNTED CAMERA	TYPE 2	2-GANG	REF DETAIL	REF DETAIL	REF DETAIL	(1)D	--	REF DETAIL
S	SURFACE MOUNTED CAMERA	TYPE 2		REF DETAIL	REF DETAIL	REF DETAIL	(1)D	--	REF DETAIL

LEGEND NOTES - VIDEO SURVEILLANCE SYSTEMS

1 CATEGORY CABLING PROVIDED BY DIVISION 27.

2 REFERENCE SCHEDULES FOR ADDITIONAL INFORMATION.

3 COORDINATE COMPOSITE FIBER/COPPER CABLE LOCATIONS WITH DIVISION 27. COMPOSITE FIBER CABLING REQUIRED FOR VIDEO SURVEILLANCE CAMERAS LOCATED ON SITE LIGHTING POLES AND AT LOCATIONS EXCEEDING 100 METERS FROM IDF/TELECOM ROOMS.

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CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS

Revision No.

Director Approver
Designer Designer
Proj. Coord. Checker
Drawn By Author
Quality Control

PROJECT NO.
1887.00

SHEET TITLE
GENERAL NOTES AND LEGENDS

SHEET NO.
ES0.00

BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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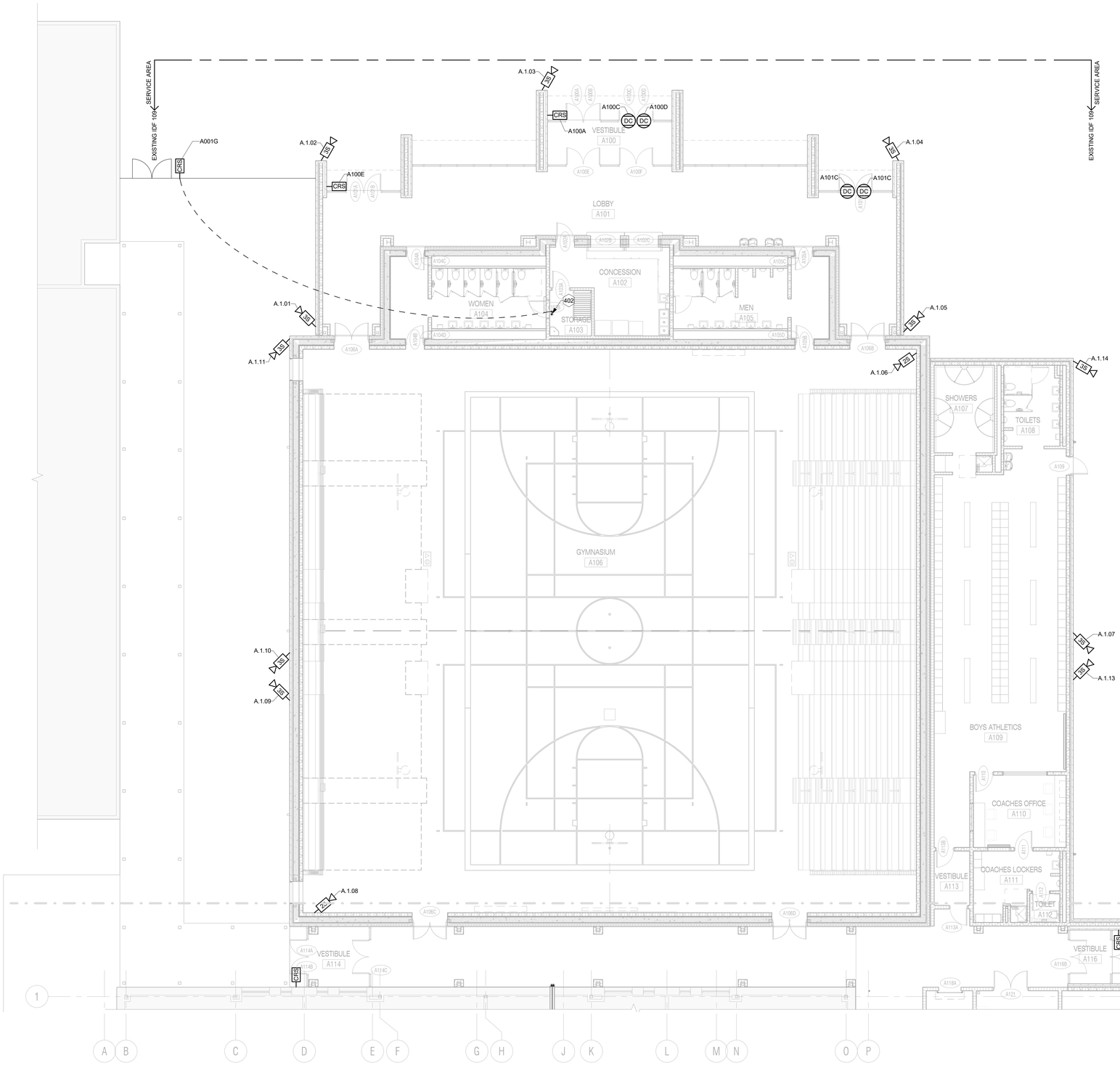
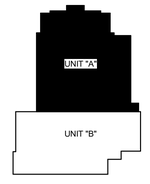
KEYNOTES	
402	TRANSITION OSP RATED PHYSICAL SECURITY SYSTEM CABLING TO PLENUM RATED CABLE WITHIN DIVISION 27 SPECIFIED JUNCTION BOX. COORDINATE PLACEMENT OF DIN RAIL TERMINAL STRIPS WITHIN JUNCTION BOX. REFER TO T DRAWINGS FOR JUNCTION BOX DETAILS AND LOCATION.



1 ES FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

KEY PLAN



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Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

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SHEET TITLE

FLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.

ES2.11

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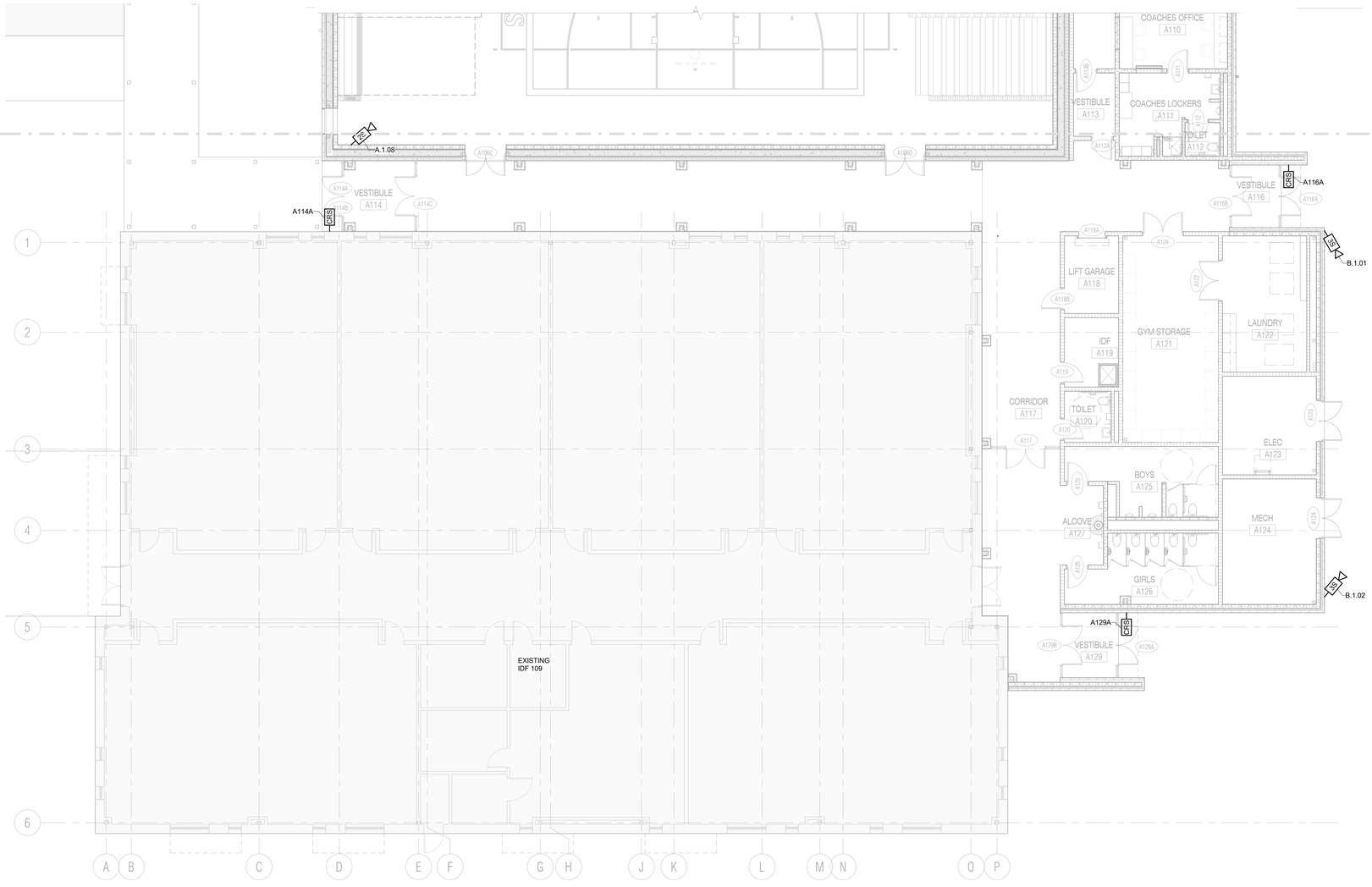
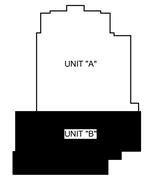
KEYNOTES



1 ES FLOOR PLAN - UNIT B
SCALE: 1/8" = 1'-0"

N PLAN NORTH / TRUE NORTH

KEY PLAN



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SHEET TITLE
FLOOR PLAN MAIN LEVEL - UNIT B

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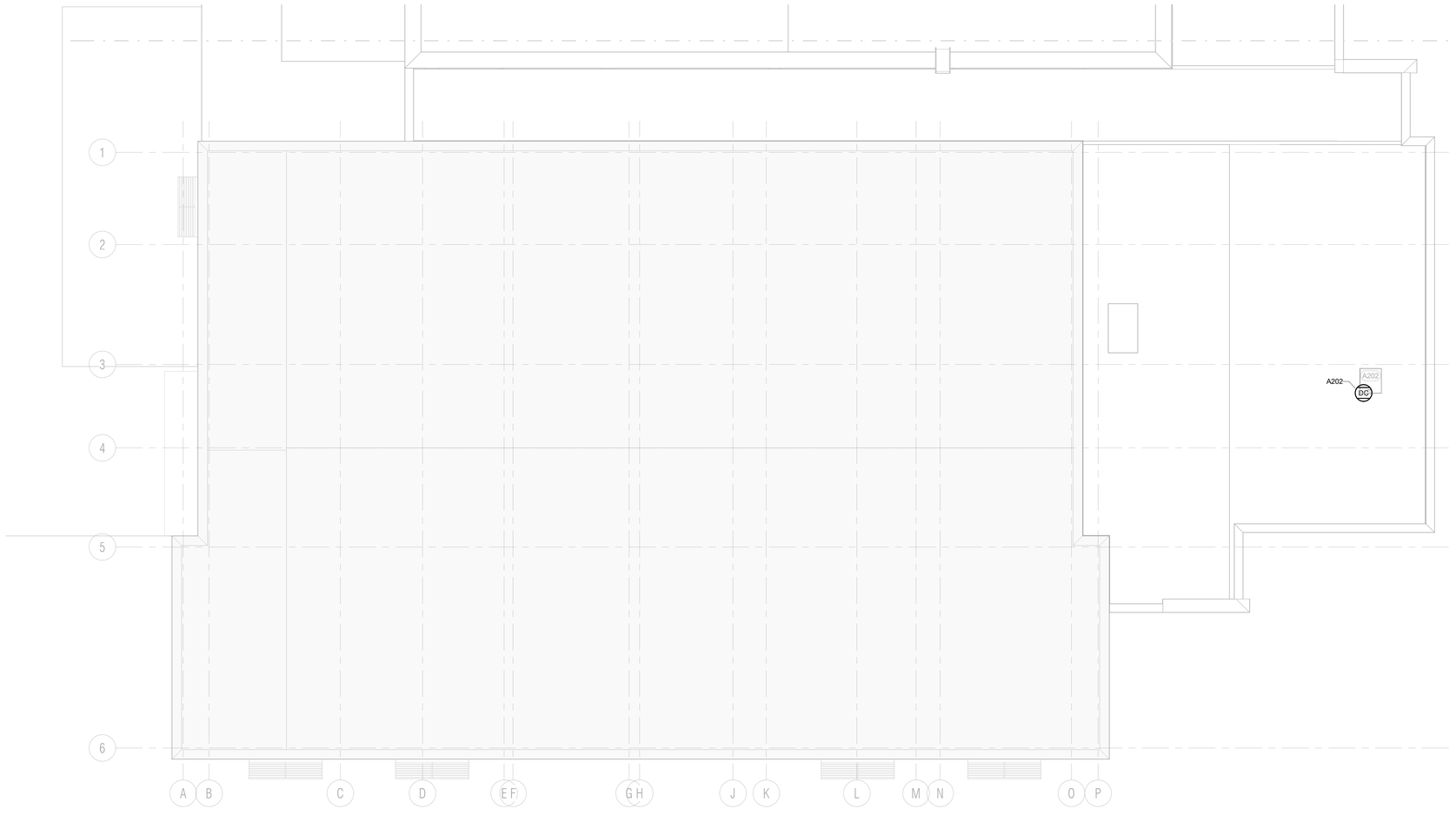

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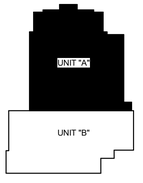
SCALE: 1/8" = 1'-0"



KEY PLAN

N
PLAN NORTH TRUE NORTH

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

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SHEET TITLE
ROOF PLAN - UNIT B

SHEET NO.
ES5.01

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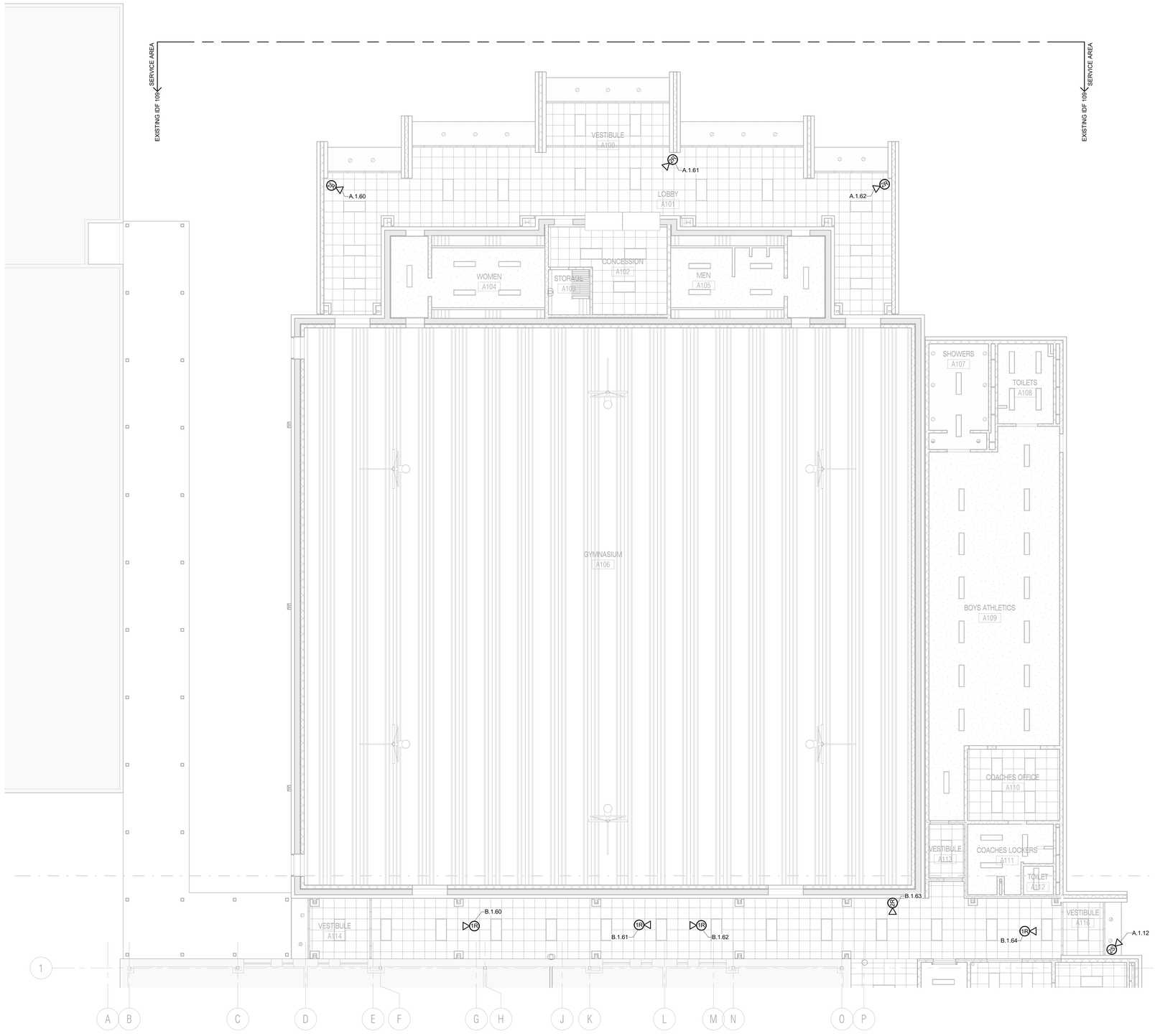
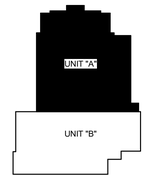
KEYNOTES



1 ES MAIN LEVEL - UNIT A - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

N
PLAN NORTH TRUE NORTH

KEY PLAN



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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS
Revision No.

Director
Approver
Designer
Designer
Proj. Coord.
Checker

Drawn By
Author
Quality Control

PROJECT NO.
1887.00

SHEET TITLE
REFLECTED CEILING PLAN - UNIT A

SHEET NO.
ES6.01

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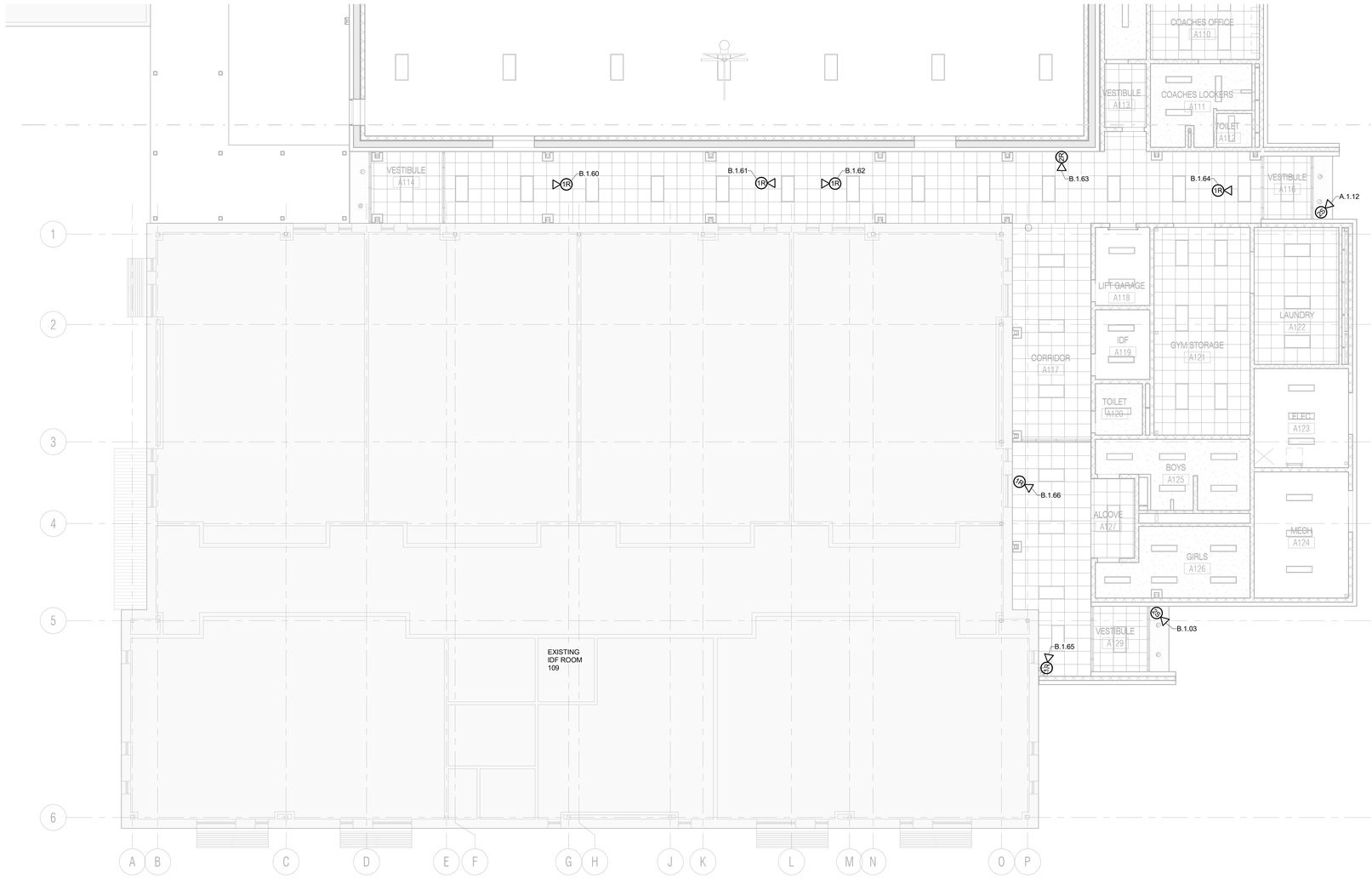
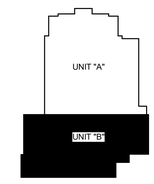
KEYNOTES



1 ES MAIN LEVEL - UNIT B - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN

N
PLAN NORTH
TRUE NORTH

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SHEET TITLE
REFLECTED CEILING PLAN - UNIT B

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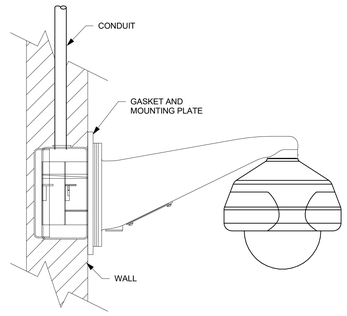
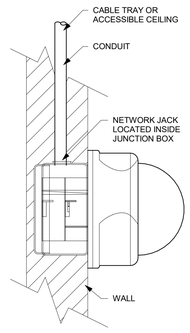
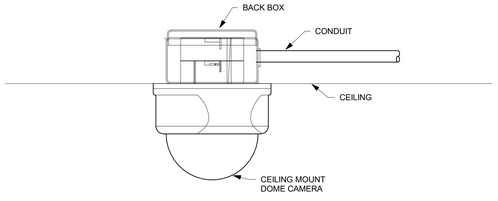


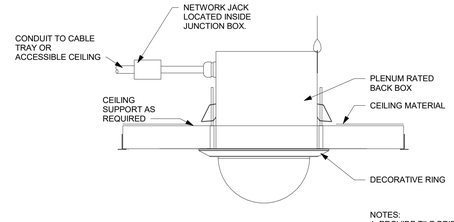
3 FIXED WALL MOUNT - ADAPTER
SCALE: 3" = 1'-0"



2 FIXED WALL MOUNT
SCALE: 3" = 1'-0"



4 FIXED CEILING MOUNT
SCALE: 3" = 1'-0"



NOTES:
1. PROVIDE TILE BRIDGE TO PREVENT CEILING SAG WHEN INSTALLED IN DROP CEILING TILE.
2. PROVIDE SUPPORT AS REQUIRED WHEN MOUNTED IN SOLID CEILING.

1 FIXED RECESSED MOUNT
SCALE: 3" = 1'-0"

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1887.00

SHEET TITLE
SURVEILLANCE SECURITY DETAILS

SHEET NO.
ES9.01

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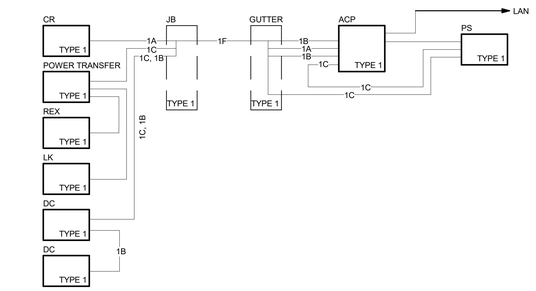
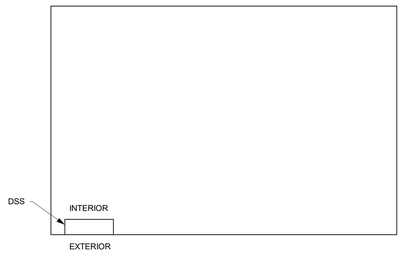
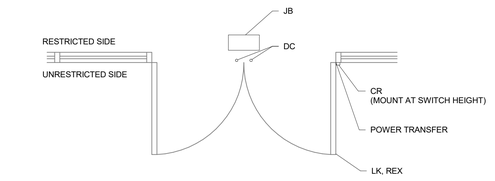
KEYNOTES

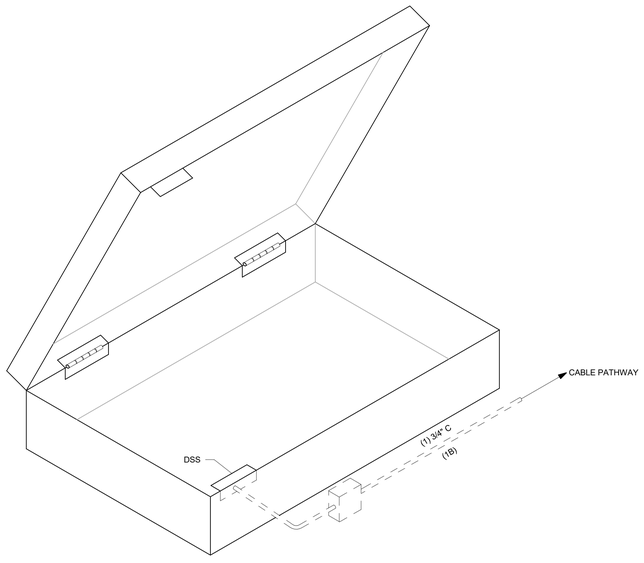
SEQUENCE OF OPERATION:

1. VALID CARD READ FROM PUBLIC SIDE RELEASES THE DOOR FOR ENTRY AND SHUNTS THE DOOR CONTACT.
2. EGRESS FROM THE PRIVATE SIDE ACTIVATES THE REQUEST TO EXIT IN HARDWARE AND SHUNTS THE DOOR CONTACT.

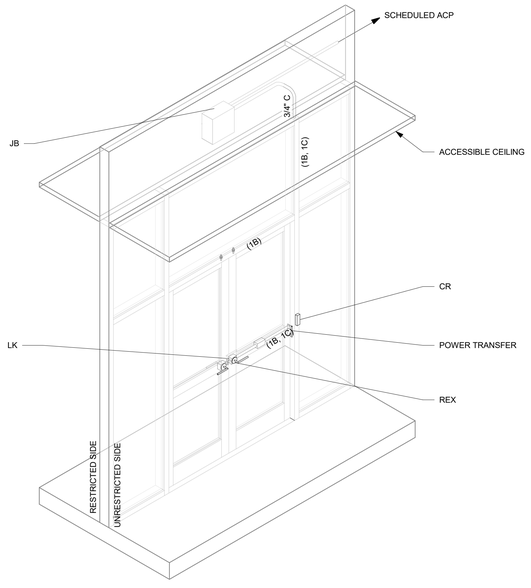








2 ROOF HATCH
SCALE: 1/2" = 1'-0"



1 STOREFRONT CARD READER - DOUBLE DOOR
SCALE: 1/2" = 1'-0"

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Approver	WJHW
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Proj. Coord.	
DVV	

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SHEET TITLE

ACCESS CONTROL SECURITY DETAILS

SHEET NO.

ES9.02

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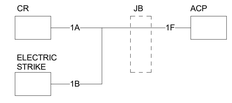
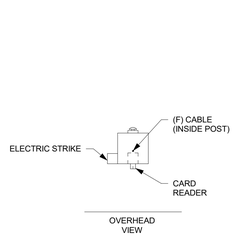
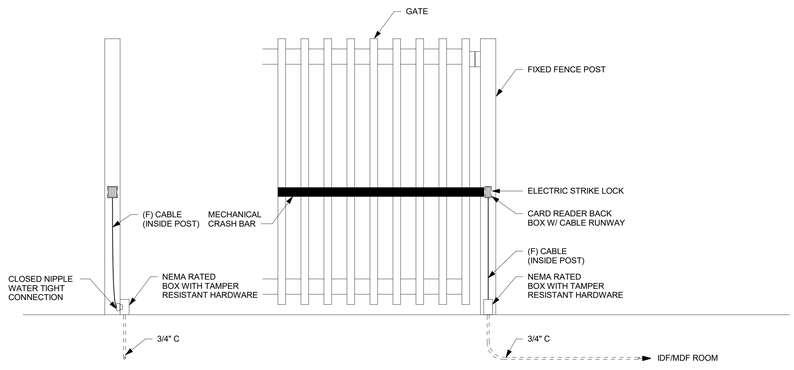
SEQUENCE OF OPERATION

1. VALID CARD READ RELEASES ELECTRIFIED STRIKE ALLOWING GATE TO BE PUSH/PULLED OPEN.







1 DOOR INTERCONNECT AND CONDUITS - TYPE 1 - GATE

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

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SHEET TITLE

PHYSICAL SECURITY AND GATE DETAIL

SHEET NO.

ES9.03

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SC ACCESS CONTROL SCHEDULE

DESIGNATOR	TYPE	NAME	DETAIL	PANEL LOCATION	COMMENTS
F.F - LEVEL ONE					
A001G	CRS	SIDE LOBBY	3/ES9.02	EXISTING IDF/MDF	
A100A	CRS	MAIN LOBBY	3/ES9.02	EXISTING IDF/MDF	
A100E	CRS	SIDE LOBBY	3/ES9.02	EXISTING IDF/MDF	
A114A	CRS	VESTIBULE 114	3/ES9.02	EXISTING IDF/MDF	
A116A	CRS	VESTIBULE 116	3/ES9.02	EXISTING IDF/MDF	
A129A	CRS	VESTIBULE 129	3/ES9.02	EXISTING IDF/MDF	

SC INTRUSION DETECTION SCHEDULE

DESIGNATOR	TYPE	NAME	DETAIL	PANEL LOCATION	COMMENTS
F.F - LEVEL ONE					
A100C	DC	VESTIBULE 100	2/ES19.70	EXISTING IDF/MDF	
A100D	DC	VESTIBULE 100	2/ES19.70	EXISTING IDF/MDF	
A101C	DC	SIDE LOBBY	2/ES19.70	EXISTING IDF/MDF	
A101C	DC	SIDE LOBBY	2/ES19.70	EXISTING IDF/MDF	
A109	DC	BOYS ATHLETICS SIDE DOOR	1/ES19.70	EXISTING IDF/MDF	
T.O.M.					
A202	DC	ROOF HATCH	2/ES9.02		

SC VIDEO SURVEILLANCE SCHEDULE

DESIGNATOR	TYPE		DEVICE MOUNTING DETAIL	MOUNTING HEIGHT	PANEL LOCATION	COMMENTS
A.1.01	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.02	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.03	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.04	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.05	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.06	2	S	2/ES9.01	12'-0"	EXISTING IDF/MDF	
A.1.07	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.08	2	S	2/ES9.01	12'-0"	EXISTING IDF/MDF	
A.1.09	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.10	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.11	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.12	2	S	4/ES9.01	CEILING	EXISTING IDF/MDF	
A.1.13	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.14	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
A.1.60	2	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
A.1.61	2	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
A.1.62	2	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.01	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
B.1.02	3	S	3/ES9.01	10'-0"	EXISTING IDF/MDF	
B.1.03	2	S	4/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.60	1	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.61	1	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.62	1	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.63	2	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.64	1	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.65	1	R	1/ES9.01	CEILING	EXISTING IDF/MDF	
B.1.66	1	R	1/ES9.01	CEILING	EXISTING IDF/MDF	

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SHEET TITLE

SCHEDULES

SHEET NO.

ES19.10

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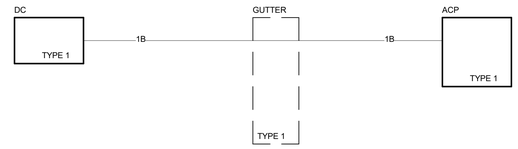
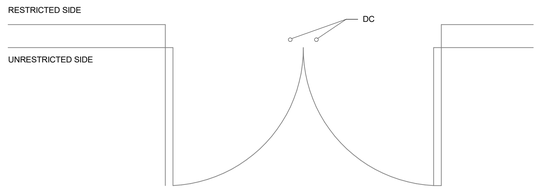
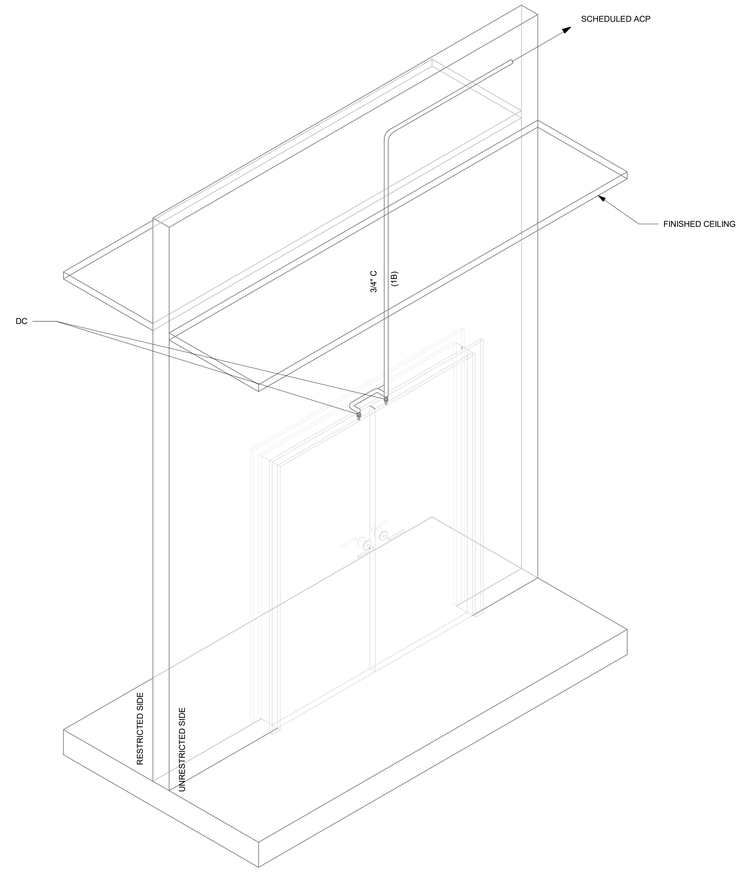
SEQUENCE OF OPERATION:

1. THE DOOR TRIGGERS THE INPUT ON THE ACS WHEN OPENED.
2. NORMAL IN CLOSED STATE.



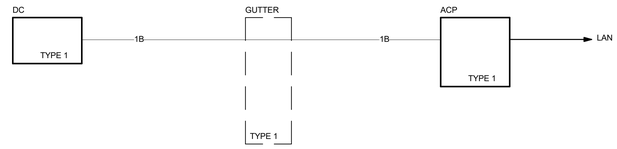


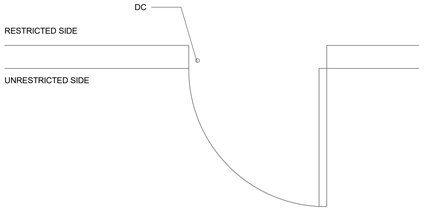


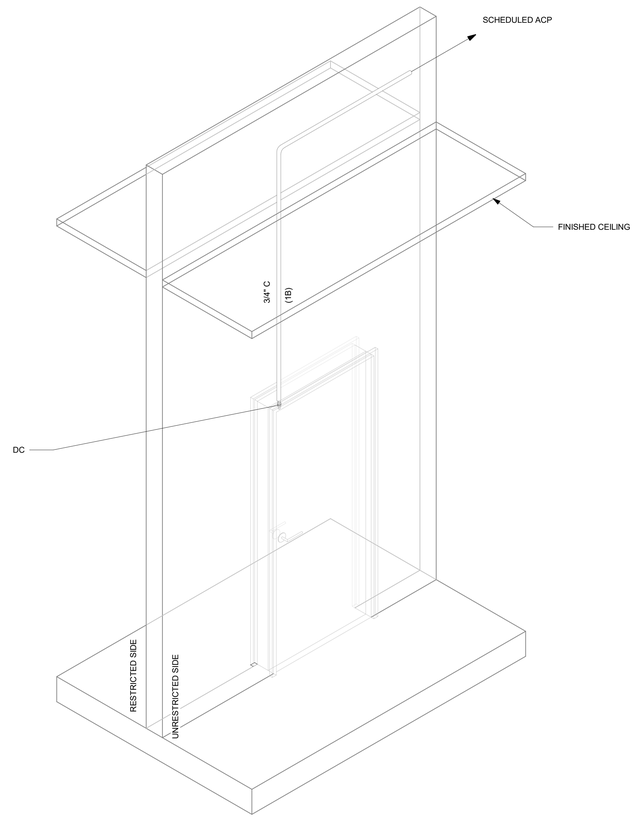
2 DOOR CONTACT ONLY - ACS DOUBLE DOOR
SCALE: 3/4" = 1'-0"

SEQUENCE OF OPERATION:

1. THE DOOR TRIGGERS THE INPUT ON THE ACS WHEN OPENED.
2. NORMAL IN CLOSED STATE.







1 DOOR CONTACT ONLY - ACS SINGLE DOOR
SCALE: 3/4" = 1'-0"

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NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS

Revision No.

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

1887.00

SHEET TITLE

ACCESS CONTROL DETAILS

SHEET NO.

ES19.70

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GENERAL ABBREVIATIONS

@	AT	L	LENGTH, LEFT
		L/R	LEFT/RIGHT
3DC	3D CONTROLLER	LAN	LOCAL AREA NETWORK
		LB	POUNDS
A/C	AIR CONDITIONING	LF	LINEAR FEET
ABV	ABOVE	LTG	LIGHTING
AC	ALTERNATING CURRENT		
ADA	AMERICANS WITH DISABILITIES ACT	MAX	MAXIMUM
ADJ	ADJUSTABLE	MDF	MAIN DISTRIBUTION FRAME
AFC	ABOVE FINISHED CEILING	MECH	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MMFO	MULTIMODE FIBER OPTIC CABLE
AHJ	AUTHORITY HAVING JURISDICTION	MTD	MOUNTED
ALT	ALTERNATE		
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	NA	NOT APPLICABLE
ARCH	ARCHITECT, ARCHITECTURAL	NC	NORMALLY CLOSED
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	NEC	NATIONAL ELECTRICAL CODE
AUX	AUXILIARY	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
AWG	AMERICAN WIRE GAUGE		NETWORK
		NIC	NOT IN CONTRACT
BFC	BELOW FINISHED CEILING	NO	NORMALLY OPEN
BFF	BELOW FINISHED FLOOR	NTS	NOT TO SCALE
BLDG	BUILDING		
BOH	BACK OF HOUSE	OC	ON CENTER
BOP	BOTTOM OF PIPE	OD	OUTSIDE DIAMETER
BOS	BOTTOM OF STRUCTURE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
		OFE	OWNER FURNISHED EQUIPMENT
C	CONDUIT	OFOI	OWNER FURNISHED OWNER INSTALLED
CAT	CATEGORY CABLE		
CKT	CIRCUIT	P	PRIMARY
CL	CENTER LINE	P/O	PART OF
CLG	CEILING	PC	PERSONAL COMPUTER
CMU	CONCRETE MASONRY UNIT	PDU	POWER DISTRIBUTION UNIT
COL	COLUMN	PGM	PROGRAM
CTRL	CONTROL	PH	PHASE
		PNL	PANEL
D	DEPTH, DEEP	PROC	PROCESSOR
DC	DIRECT CURRENT	PRH	PROJECT RECEPTACLE HEIGHT
DC	DOWNSTAGE CENTER	PRX	PROXIMITY SENSOR
DEG	DEGREES	PS	POWER SUPPLY
DEMO	DEMOLITION	PSF	POUNDS PER SQUARE FOOT
DFP	DIRECTOR'S FLOOR POCKET	PSH	PROJECT SWITCH HEIGHT
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DIM	DIMENSION	PT	PASS THROUGH
DIV	DIVISION	PVC	POLYVINYL CHLORIDE
DS	DOWNSTAGE	PWR	POWER
DSL	DOWNSTAGE LEFT		
DSR	DOWNSTAGE RIGHT	QTY	QUANTITY
DWG	DRAWING		
		R	RIGHT
EA	EACH	RCP	REFLECTED CEILING PLAN
EC	ELECTRICAL CONTRACTOR	REF	REFERENCE, REFER
EL	ELEVATION	REINF	REINFORCING
ELEC	ELECTRICAL	REQD	REQUIRED
ENCL	ENCLOSURE	REV	REVISION, REVISE
EQ	EQUAL	RM	ROOM
EQUIP	EQUIPMENT	RO	ROUGH OPENING
ER	EQUIPMENT RACK	RPM	REVOLUTIONS PER MINUTE
ESW	ETHERNET SWITCH		
EXIST	EXISTING	S	SURFACE, SECONDARY
		SQFT	SQUARE FEET
FA	FIRE ALARM	SIM	SIMILAR
FB	FLOOR BOX	SL	STAGE LEFT
FLEX	FLEXIBLE	SMFO	SINGLE MODE FIBER OPTIC CABLE
FLR	FLOOR	SMP	STAGE MANAGER POSITION
FO	FINISHED OPENING	SPEC	SPECIFICATION
FOH	FRONT OF HOUSE	SQ	SQUARE
FPB	FIBER OPTIC PATCHBAY	SR	STAGE RIGHT
FPM	FEET PER MINUTE	STD	STANDARD
FT	FOOT, FEET	STP	SHIELED TWISTED PAIR
FV	FIELD VERIFY	SURF	SURFACE
		SUSP	SUSPEND
GND	GROUND		
GA	GAUGE	TBD	TO BE DETERMINED
		THRU	THROUGH
H	HEIGHT	TYP	TYPICAL
HL	HOUSE LEFT		
HMP	HOUSE MANAGER POSITION	UC	UPSTAGE CENTER
HOR	HORIZONTAL	UL	UNDERWRITERS LABORATORIES, INC.
HP	HORSEPOWER	UNO	UNLESS NOTED OTHERWISE
HR	HOUSE RIGHT	UPS	UNINTERRUPTIBLE POWER SUPPLY
HZ	HERTZ	US	UPSTAGE
		USL	UPSTAGE LEFT
I/O	INPUT/OUTPUT	USR	UPSTAGE RIGHT
ID	INSIDE DIAMETER	USB	UNIVERSAL SERIAL BUS
IDF	INTERMEDIATE DISTRIBUTION FRAME	UTP	UNSHIELED TWISTED PAIR
IG	ISOLATED GROUND		
ISO	ISOLATED	V	VOLT
		VA	VOLT-AMPRE
JB	JUNCTION BOX	VERT	VERTICAL
JBD	JUNCTION BOX - DATA		
JP	JUNCTION BOX - SYSTEM POWER	W/	WITH
		W/O	WITHOUT
KPD	KEYPAD	WP	WEATHERPROOF
KW	KILOWATT	WT	WEIGHT

STRUCTURED CABLING ABBREVIATIONS

DAS	DISTRIBUTED ANTENNA SYSTEM
ER	EQUIPMENT ROOM
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM

CABLE TYPE LEGEND

TYPE	DESCRIPTION	NOTES
N	CATEGORY 6, BLUE	REFERENCE DIVISION 27

NOTES:
1. PROVIDE CABLE RATED FOR ENVIRONMENTAL AIR TYPE PLENUM WHERE REQUIRED.
2. PROVIDE CABLE RATED FOR WET APPLICATIONS FOR USE IN PATHWAYS BELOW GRADE AND FOR USE IN PATHWAYS IN SLAB ON GRADE.

SYMBOL LEGEND - STRUCTURED CABLING SYSTEMS

SIZES, DIMENSIONS AND NOTES DESCRIBE TYPICAL REQUIREMENTS. IF APPLICABLE, VARIATIONS AND/OR ADDITIONAL REQUIREMENTS WILL BE NOTED ON THE DRAWINGS.
UNLESS NOTED OTHERWISE, MOUNTING HEIGHTS ARE TO CENTER OF ROUGH-IN BOX.

TYPE	DEVICE	ROUGH-IN BOX (H"xW"xD")	DEVICE COVER SIZE	MOUNTING HEIGHT			CABLE (QTY) TYPE	DEVICE NOTES	CONDUIT NOTES	
				WALL/COLUMN	CEILING/OVERHEAD	FLOOR				
(#)	COMMUNICATIONS WALL OUTLET	TYPE 10	REFER TO DETAILS	BUILDING OUTLET HEIGHT	--	--	(#)N	SEE NOTE 4	(1) 1 " C WITH PULL LINE	. .
(#)	COMMUNICATIONS FLOOR OUTLET	SEE NOTE 2	--	--	--	COORDINATE WITH ELECTRICAL REQUIREMENTS	(#)N	REF ARCHITECTURAL FOR EXACT LOCATION. SEE NOTE 2	(1) 1 1/4" C WITH PULL LINE	. .
(#)	COMMUNICATIONS CEILING OUTLET, WIRELESS ACCESS POINT	TYPE 10	REFER TO DETAILS	--	FLUSH WITH CEILING (UNLESS IN ACCESSIBLE CEILING)	--	(#)N	ACCESS POINT DEVICE TO BE OWNER FUNISHED, CONTRACTOR INSTALLED. SEE NOTE 5	(1) 1" C WITH PULL LINE	. .
(#) AP	COMMUNICATIONS CEILING OUTLET, WIRELESS ACCESS POINT	TYPE 10	REFER TO DETAILS	--	FLUSH WITH CEILING (UNLESS IN ACCESSIBLE CEILING)	--	(#)N	ACCESS POINT DEVICE TO BE OWNER FUNISHED, CONTRACTOR INSTALLED. SEE NOTE 5	(1) 1" C WITH PULL LINE	. .
(#) AV2	COMMUNICATIONS WALL OUTLET, AV PLATE	TYPE 10	REFER TO DETAILS	BUILDING OUTLET HEIGHT	--	--	(1)N	COORDINATE ROUGH-IN BOX AND DEVICE COVER MOUNTING WITH AV. SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) AV3	COMMUNICATIONS WALL OUTLET, AV PLATE	TYPE 10	REFER TO DETAILS	BUILDING OUTLET HEIGHT	--	--	(1)N	COORDINATE ROUGH-IN BOX AND DEVICE COVER MOUNTING WITH AV. SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) CAM	COMMMUNICATIONS CEILING OUTLET, SECURITY CAMERA	--	REFER TO DETAILS	--	REFER TO ES DRAWINGS	--	(1)N	SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) JB-A	JUNCTION BOX, SURFACE MOUNT	TYPE A	--	MIN. 6" A.F.C	--	--	--	--	REF PLANS/SECTIONS	. .
(#) JB-B	JUNCTION BOX, SURFACE MOUNT	TYPE B	--	AS NOTED	--	--	--	--	AS NOTED	. .
(#) S1	FLUSH WITH CEILING (UNLESS IN ACCESSIBLE CEILING)	TYPE 10	REFER TO DETAILS	--	REFER TO IC DRAWINGS	--	(1)N	REFER TO IC DRAWINGS DEVICE DETAILS. SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) S2	COMMUNICATIONS WALL OUTLET, IP SPEAKER (S2)	TYPE 10	REFER TO DETAILS	REFER TO IC DRAWINGS	--	--	(1)N	REFER TO IC DRAWINGS FOR DEVICE DETAILS. SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) S3	COMMUNICATIONS WALL OUTLET, IP SPEAKER (S3)	TYPE 10	REFER TO DETAILS	REFER TO IC DRAWINGS	--	--	(1)N	REFER TO IC DRAWINGS FOR DEVICE DETAILS. SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) S4	COMMUNICATIONS WALL OUTLET, IP SPEAKER (S4)	TYPE 10	REFER TO DETAILS	REFER TO IC DRAWINGS	--	--	(1)N	REFER TO IC DRAWINGS FOR DEVICE DETAILS. SEE NOTE 4	(1) 1" C WITH PULL LINE	. .
(#) S5	COMMUNICATIONS WALL OUTLET, IP SPEAKER (S5)	TYPE 10	REFER TO DETAILS	REFER TO IC DRAWINGS	--	--	(1)N	REFER TO IC DRAWINGS FOR DEVICE DETAILS	(1) 1" C WITH PULL LINE	. .
(#) SC	COMMUNICATIONS WALL OUTLET, SECURITY CAMERA	TYPE 10	REFER TO DETAILS	REFER TO ES DRAWINGS	--	--	(1)N	SEE NOTE 4	(1) 1" C WITH PULL LINE	. .

LEGEND NOTES - STRUCTURED CABLING SYSTEMS

1 (#) REPRESENTS THE NUMBER OF CABLES FOR THAT LOCATION. IF NO NUMBER SHOWN, PROVIDE (1).

2 PROVIDE THE FLOOR OUTLET SYSTEM AND NECESSARY ADAPTER, BEZELS, OR MODULES TO ACCOMODATE THE STRUCTURED CABLING SYSTEM WITH THE FLOOR OUTLET SYSTEM. REFERENCE ELECTRICAL DRAWING FOR FLOOR BOX INFORMATION.

3 PROVIDE NECESSARY ADAPTER, BEZELS, OR MODULES TO ACCOMODATE THE STRUCTURED CABLING SYSTEM WITH THE RACEWAY SYSTEM. REFERENCE ELECTRICAL DRAWING FOR RACEWAY INFORMATION.

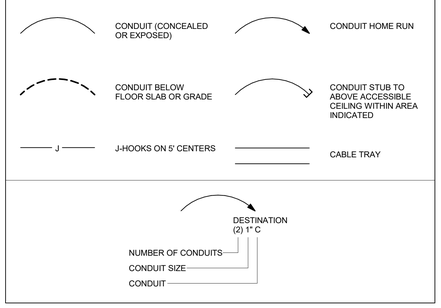
4 PROVIDE A 3'-0" SERVICE LOOP FOR WORKSTATSION/POS/SECURITY CAMERA/IP SPEAKERS DATA OUTLETS, STAGED ABOVE ACCESSIBLE CEILING AND SUPPORTED BY A J-HOOK. SERVICE LOOPS SHALL NOT VIOLATE CABLE BEND RADIUS STANDARD.

5 PROVIDE A 15'-0" SERVICE LOOP FOR ACCESS POINT DATA OUTLETS, STAGED ABOVE ACCESSIBLE CEILING AND SUPPORTED BY A J-HOOK. SERVICE LOOPS SHALL NOT VIOLATE CABLE BEND RADIUS STANDARD.

CONDUIT AND PATHWAY NOTES

1. COORDINATE LOCATION OF EQUIPMENT, JUNCTION BOXES, OUTLETS, CONDUIT, ETC. ACCORDING TO THE PROJECT GENERAL CONDITIONS.
2. PROVIDE A COMPLETE RACEWAY SYSTEM TO CONSIST OF METALLIC CONDUIT (EXCLUDING INGROUND PATHWAY), JUNCTION BOXES, DEVICE BACK BOXES, AND FITTINGS UNLESS NOTED OTHERWISE.
3. THE DRAWINGS INDICATE ONE ROUTING METHOD OF THE CABLING PATHWAY. CHANGES MAY BE MADE TO THE PATHWAY SYSTEM ROUTING TO ACCOMMODATE SITE CONDITIONS OR TO SIMPLIFY INSTALLATION PROVIDING THAT NOTED CONDUIT SIZE OR LARGER IS MAINTAINED AND DISTANCE LIMITATIONS LISTED BELOW ARE NOT EXCEEDED.
4. CONDUIT STUBS FROM DEVICES TO THE ACCESSIBLE CEILING OR NEAREST CABLE TRAY.
5. USE OF J-HOOKS AS A PRIMARY/SECONDARY PATHWAY ABOVE ACCESSIBLE CEILING IS ACCEPTABLE. MAXIMUM OF 48 CABLES IN A BUNDLE. MULTIPLE BUNDLES CAN NOT SHARE A J-HOOK. PRIMARY PATHWAYS SHALL BE ROUTED IN CORRIDORS.
6. USE OF NYLON CABLE TIES, BRIDLE RINGS AND D-RINGS IS NOT ACCEPTABLE.
7. UNLESS NOTED OTHERWISE, CONDUIT IS 1 INCH TRADE SIZE.
8. CONDUIT BODIES (LB'S) ARE NOT PERMITTED.
9. CONDUITS SHALL BE REAMED TO ELIMINATE SHARP EDGES. METALLIC CONDUITS SHALL BE TERMINATED WITH AN INSULATED BUSHING. PULL STRINGS WITH A MINIMUM PULL RATING OF 400 POUNDS SHALL BE PROVIDED.
10. MAINTAIN PROPER CONDUIT BEND RADIUS. FOR CONDUIT WITH AN INTERNAL DIAMETER OF 2" OR LESS, MAINTAIN A BEND RADIUS OF AT LEAST SIX (6) TIMES THE INTERNAL CONDUIT DIAMETER. FOR CONDUIT WITH AN INTERNAL DIAMETER GREATER THAN 2", MAINTAIN A BEND RADIUS OF AT LEAST TEN (10) TIMES THE INTERNAL CONDUIT DIAMETER.
11. BENDS IN THE CONDUIT SHALL NOT CONTAIN ANY KINKS OR OTHER DISCONTINUITIES. FLEX IS NOT PERMITTED UNLESS NOTED OTHERWISE.
12. NO SECTION OF CONDUIT SHALL EXCEED 100 FEET. RUNS IN EXCESS OF 100 FEET REQUIRE A PULL BOX / HANDHOLE / VAULT.
13. NO SECTION OF CONDUIT SHALL CONTAIN MORE THAN TWO 90 DEGREE BENDS, OR EQUIVALENT 180 DEGREES, BETWEEN PULL BOXES.
14. PULL BOX SHALL NOT BE USED IN LIEU OF A BEND. CONDUITS MUST RUN STRAIGHT THROUGH A PULL BOX WITH THE BEND LOCATED EITHER BEFORE OR AFTER THE PULL BOX.
15. PULL BOX LENGTH TO BE NO LESS THAN 8 TIMES THE DIAMETER OF THE LARGEST TERMINATING CONDUIT. PULL BOX WIDTH TO BE NO LESS ¼ THE LENGTH.
16. PROVIDE COVERS WITH LABELING FOR JUNCTION BOXES, BACK BOXES AND PULL BOXES WITHOUT FACEPLATES. LABELING MATCHES DEVICE NAME AS INDICATED ON DRAWINGS, FOR EXAMPLE "SCS1", "HC1".
17. ALL CONDUITS ENTERING OR EXITING EQUIPMENT RACKS TO BE ISOLATED WITH A NON-METALLIC SPACER OR FITTING.
18. PROVIDE CONDUIT TO CROSS INACCESSIBLE CEILINGS OR IN AREAS WITHOUT CEILINGS UNLESS NOTED OTHERWISE.
19. PROVIDE CONDUIT IN EXPOSED AREAS, MECHANICAL SPACES, FOOD SERVICES AREAS, AND ELEVATOR CONTROL ROOMS.
20. REGARDLESS OF PATHWAY TYPE, ALL CABLING SHALL BE SUPPORTED AT 5 FEET MAXIMUM INTERVALS. CABLES SHALL NOT BE LAID DIRECTLY ON THE CEILING TILE OR RAILS OR STRAPPED TO CONDUIT.
21. ROUTE CONDUIT WITH OTHER BUILDING SERVICES AND CONCEAL WHENEVER POSSIBLE. GROUP AND RUN PARALLEL ALONG A SINGLE BUILDING COLUMN LINE, HOLD TIGHT TO STRUCTURE AND PAINT AS DIRECTED BY THE ARCHITECT.
22. IF SCS AND POWER CONDUITS MUST CROSS, CROSS AT RIGHT ANGLES.
23. FOR IN-SLAB OR UNDERGROUND CONDUIT ENTERING A BUILDING, TRANSITION BACK TO METALLIC CONDUIT WITHIN 3 FEET OF THE ENTRY POINT.
24. REFER TO PROJECT MANUAL FOR FIRE STOPPING REQUIREMENTS.
25. REFER TO ELECTRICAL DRAWINGS AND PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.

PATHWAY DISTRIBUTION



ROUGH-IN BOX SCHEDULE

TYPE 10 RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 2-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED (INDOOR): 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE.

SURFACE MOUNTED (OUTDOOR / WEATHER PROOF): 2-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 11 RECESSED: 5" SQUARE BOX. 2 7/8" DEEP. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 2-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED (INDOOR): 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE.

SURFACE MOUNTED (OUTDOOR / WEATHER PROOF): 2-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE 12 RECESSED: 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE. DEVICE COVER/ RING EDGE TO BE FLUSH WITH FINISHED WALL.

MASONRY: 1-GANG BOX. 2 1/2" DEEP WITH KNOCKOUTS IN 4" CMU/BRICK/CONCRETE; 3 1/2" DEEP WITH KNOCKOUTS IN 6" OR 8" CMU/CONCRETE. COVER EDGE TO BE FLUSH WITH FINISHED WALL.

SURFACE MOUNTED (INDOOR): 4 11/16" SQUARE BOX. 2 1/8" DEEP WITH KNOCKOUTS. PROVIDE DEVICE EXTENSION AS REQUIRED TO ACCOMMODATE DEVICE COVER SIZE.

SURFACE MOUNTED (OUTDOOR / WEATHER PROOF): 1-GANG DIE CAST BOX. 2 5/8" DEEP WITH THREADED OUTLETS.

TYPE A JUNCTION BOX (24"x24"x10") WITH SCREW COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

TYPE B JUNCTION BOX (8"x10"x4") WITH SCREW COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS.

TYPE C JUNCTION BOX (HxWxD) WITH LOCKING HINGED COVER. PROVIDE NEMA TYPE 1 AT INDOOR LOCATIONS; PROVIDE NEMA TYPE 3R AT OUTDOOR LOCATIONS. PAINTED AT EXPOSED LOCATIONS

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

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Author
Quality Control

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SHEET TITLE
GENERAL NOTES AND LEGENDS

SHEET NO.
T0.00

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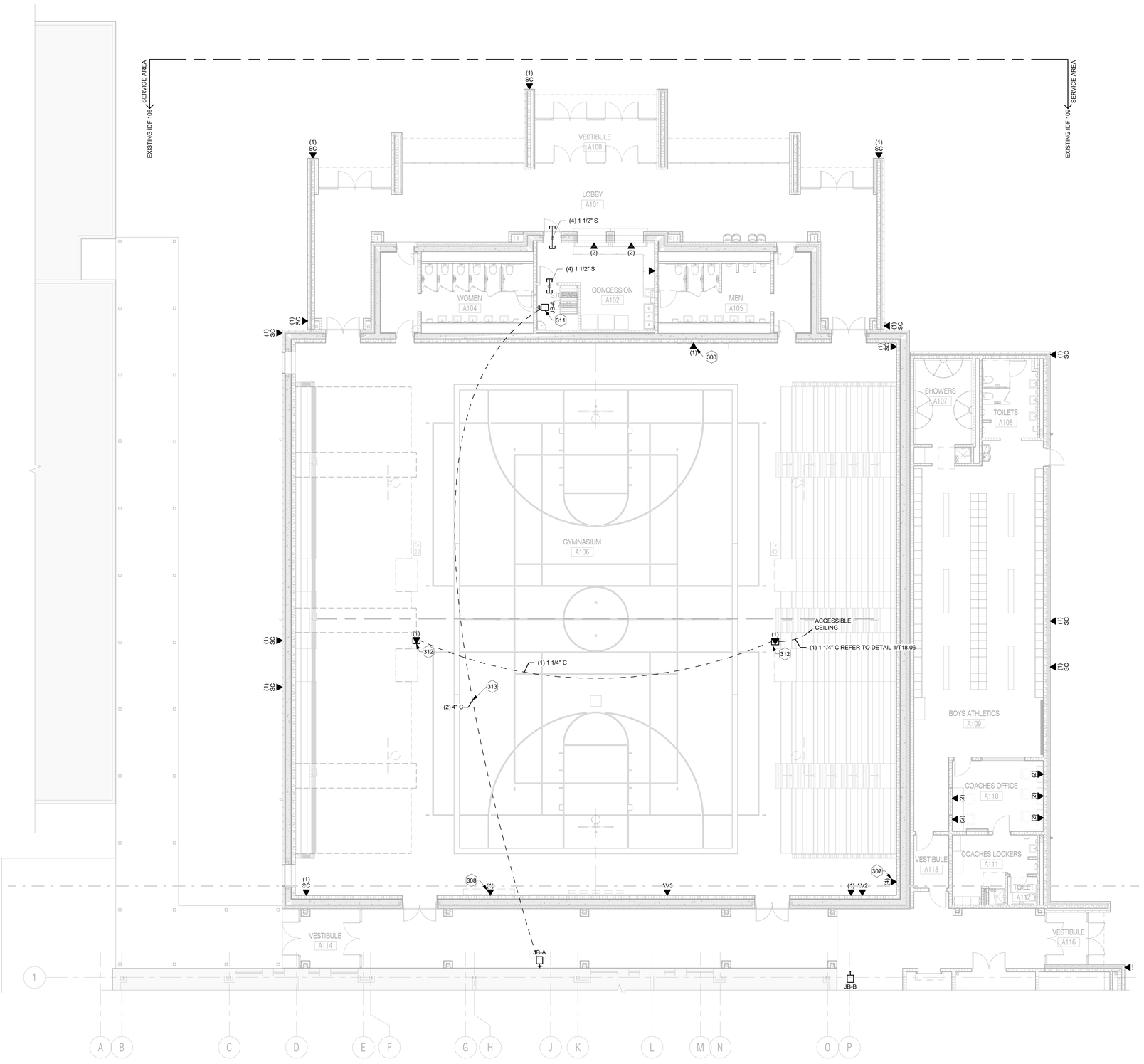
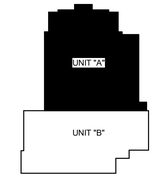
GENERAL NOTES
1. WALL PENETRATION FOR COMMUNICATORS PATHWAYS THROUGH THE GYM STORM SHELTER RATED WALLS CAN BE NO LARGER THAN A 1 1/2" CONDUIT.

KEYNOTES	
307	PLACE DATA OUTLET IN AV EQUIPMENT RACK ON SURFACE MOUNT CONNECTING HARDWARE. REFER TO AV DRAWING FOR AV EQUIPMENT RACK DETAILS.
308	COORDINATE PLACEMENT OF OUTLET WITH SCOREBOARD, REFER TO AV DRAWINGS
311	PLACE WALL MOUNT JUNCTION BOX A MINIMUM OF 0'-6" A.F.C. FROM BOTTOM OF BOX. PROVIDE JUNCTION BOX WITH PLYWOOD BACK PANEL TO MOUNT 110 STYLE TERMINATION BLOCK. TRANSITION OSP RATED HORIZONTAL LINKS TO PLENUM RATE AT 110 STYLE TERMINATION FIELD, DIRECTLY TERMINATE PLENUM RATED CABLE ON BLOCK TO OSP RATED CABLE. REFER TO S/T18-06
312	PROVIDE 1-PORT INDUSTRIAL FACEPLATE IN FLOOR BOX FOR DATA OUTLET. LABEL FACEPLATE - SCREW CAP BACK IN
313	FOR EACH CONDUIT PROVIDE (3) PACKS OF MAXCELL MXC3456 FABRIC INNERDUCT, ONE WITH RED, ONE GREEN AND ONE YELLOW THREAD. INSTALL FOLLOWING MANUFACTURER GUIDELINES. "



1 T FLOOR PLAN - UNIT A
SCALE: 1/8" = 1'-0"



KEY PLAN

PLAN NORTH TRUE NORTH

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SHEET TITLE
FLOOR PLAN MAIN LEVEL - UNIT A

SHEET NO.
T2.11

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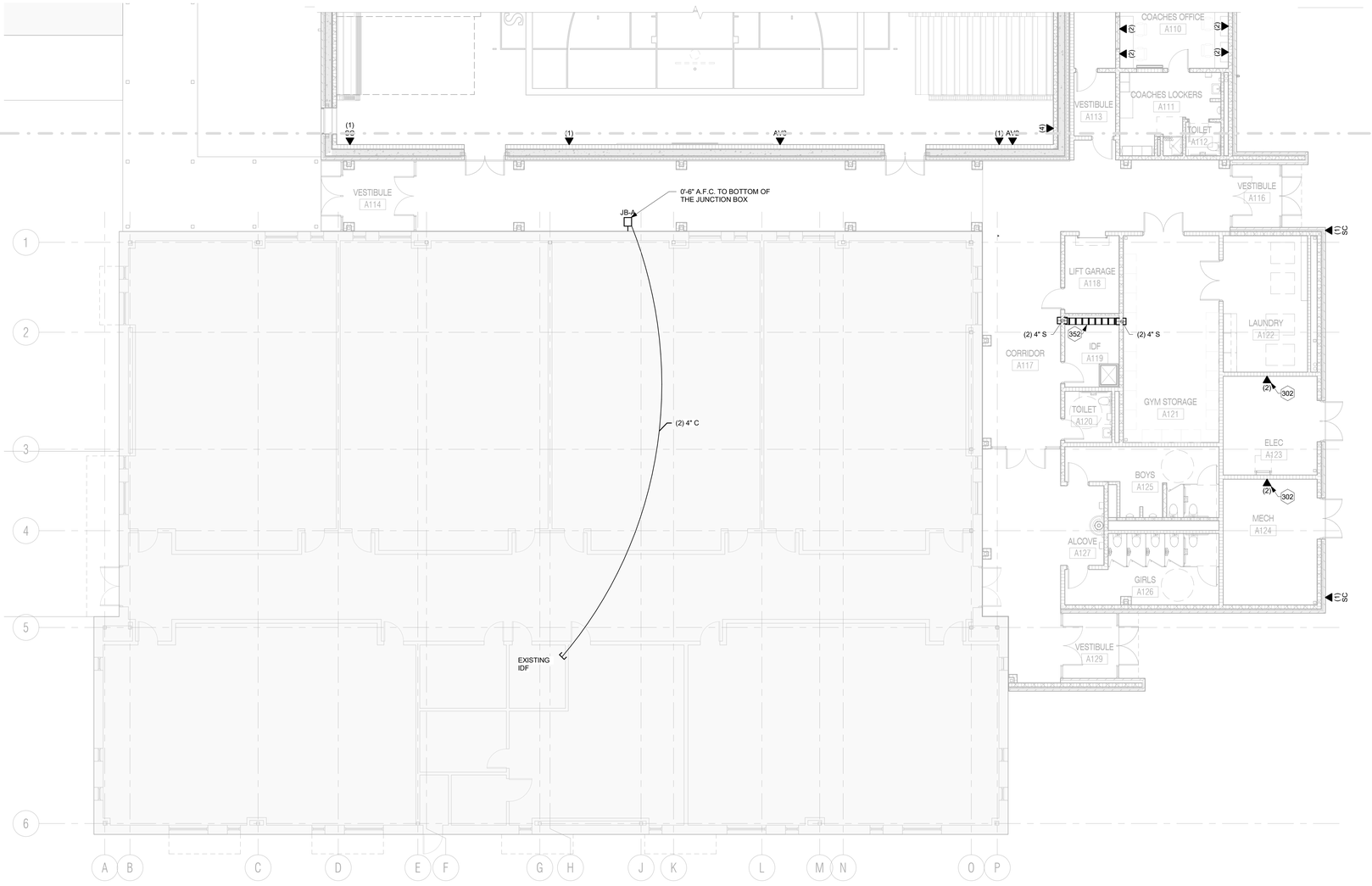
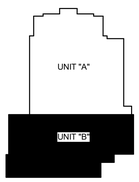
KEYNOTES	
302	PLACE DATA OUTLET AT BUILDING AUTOMATION PANEL
352	12" CABLE RUNWAY, 7'-6" AFF



1 T FLOOR PLAN - UNIT B

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



KEY PLAN

PLAN NORTH TRUE NORTH

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS

Revision No.

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

1887.00

SHEET TITLE

FLOOR PLAN MAIN LEVEL - UNIT B

SHEET NO.

T2.12

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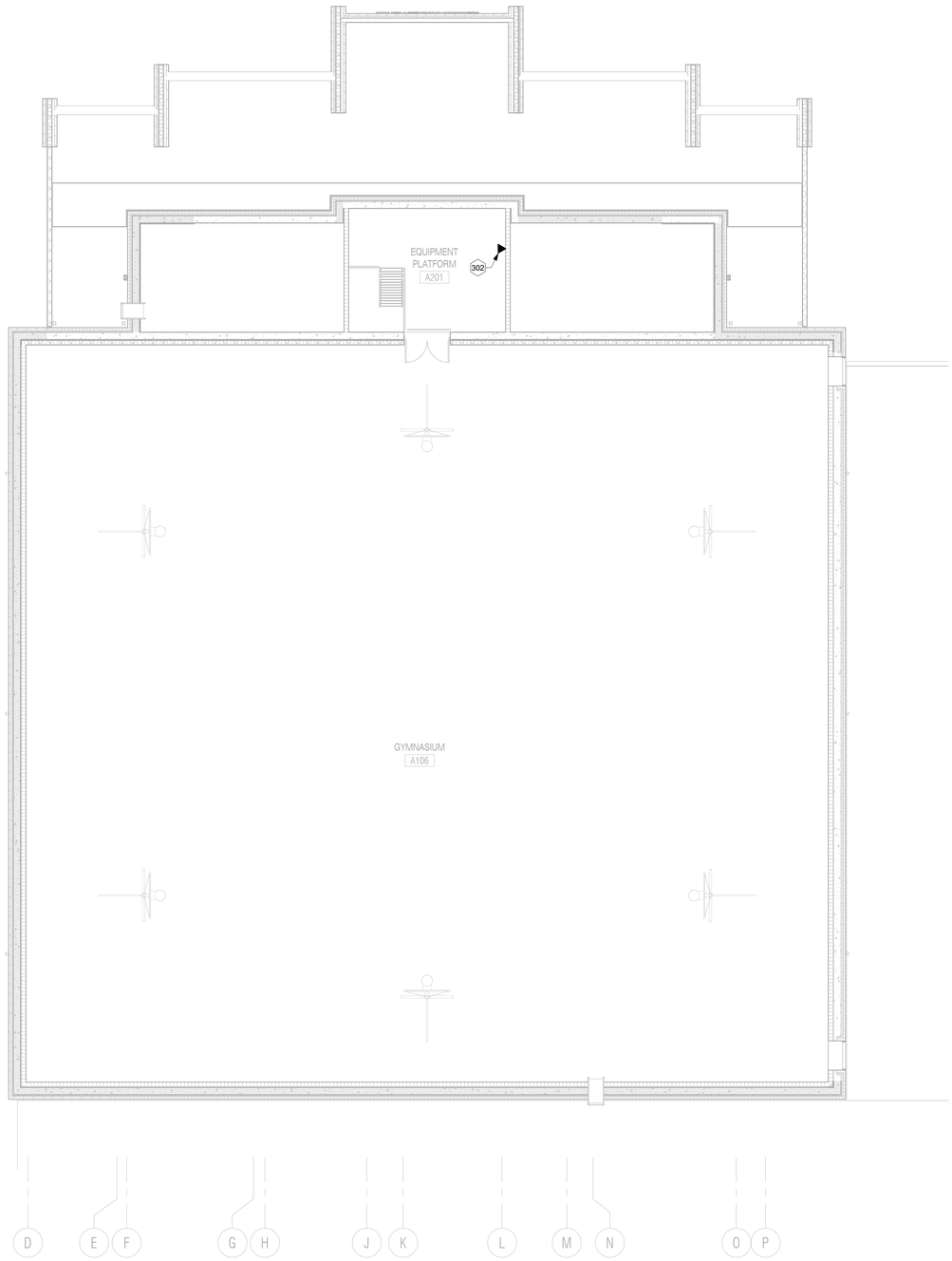
KEYNOTES	
302	PLACE DATA OUTLET AT BUILDING AUTOMATION PANEL



1 T FLOOR PLAN - EQUIPMENT PLATFORM
SCALE: 1/8" = 1'-0"

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SHEET TITLE

EQUIPMENT LEVEL FLOOR PLAN

SHEET NO.

T2.13

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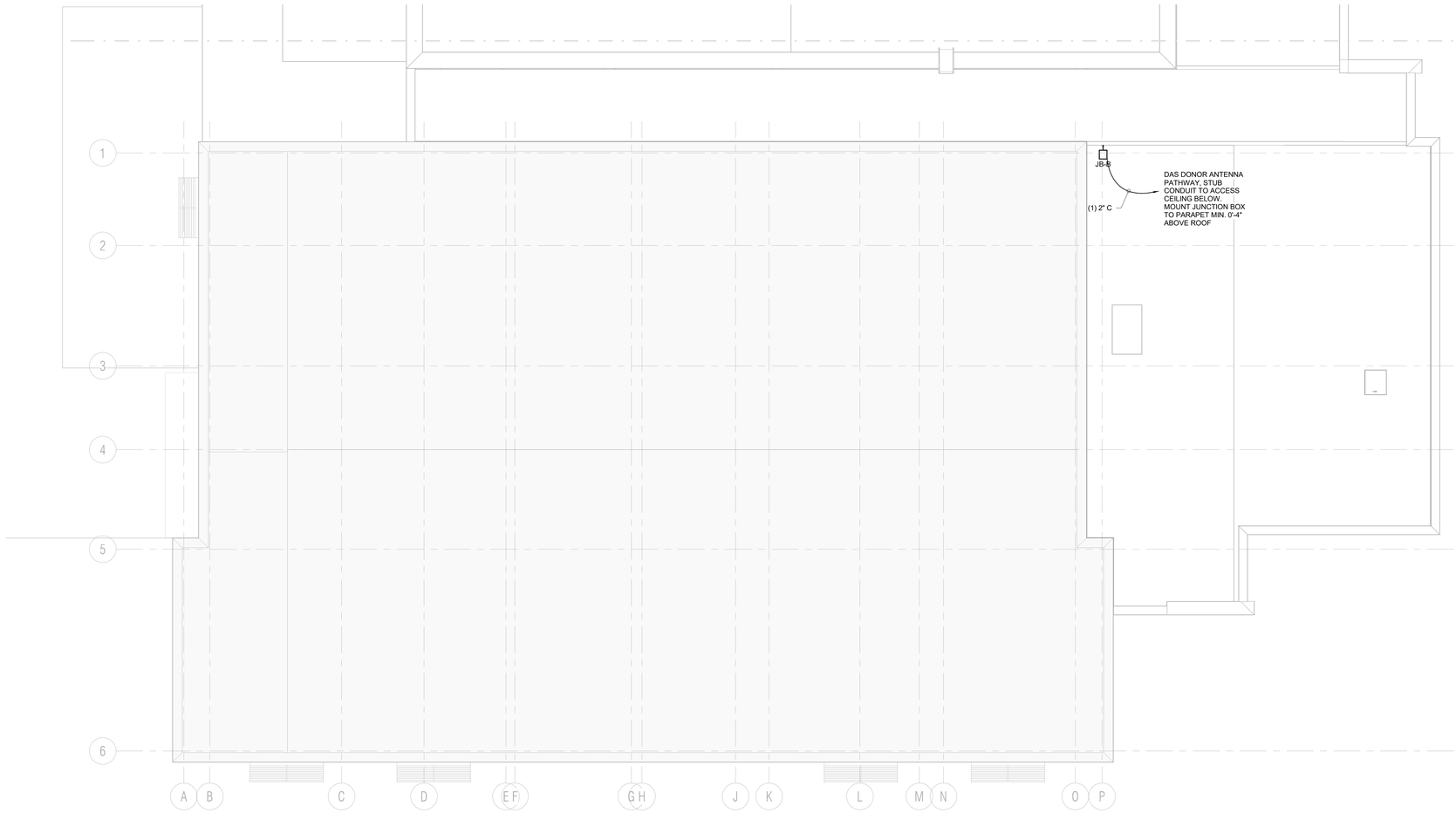
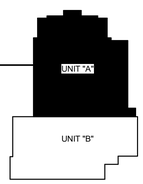
KEYNOTES



1 T ROOF PLAN - UNIT B
SCALE: 1/8" = 1'-0"



KEY PLAN

N
PLAN NORTH TRUE NORTH

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SHEET TITLE

ROOF PLAN - UNIT B

SHEET NO.

T5.01

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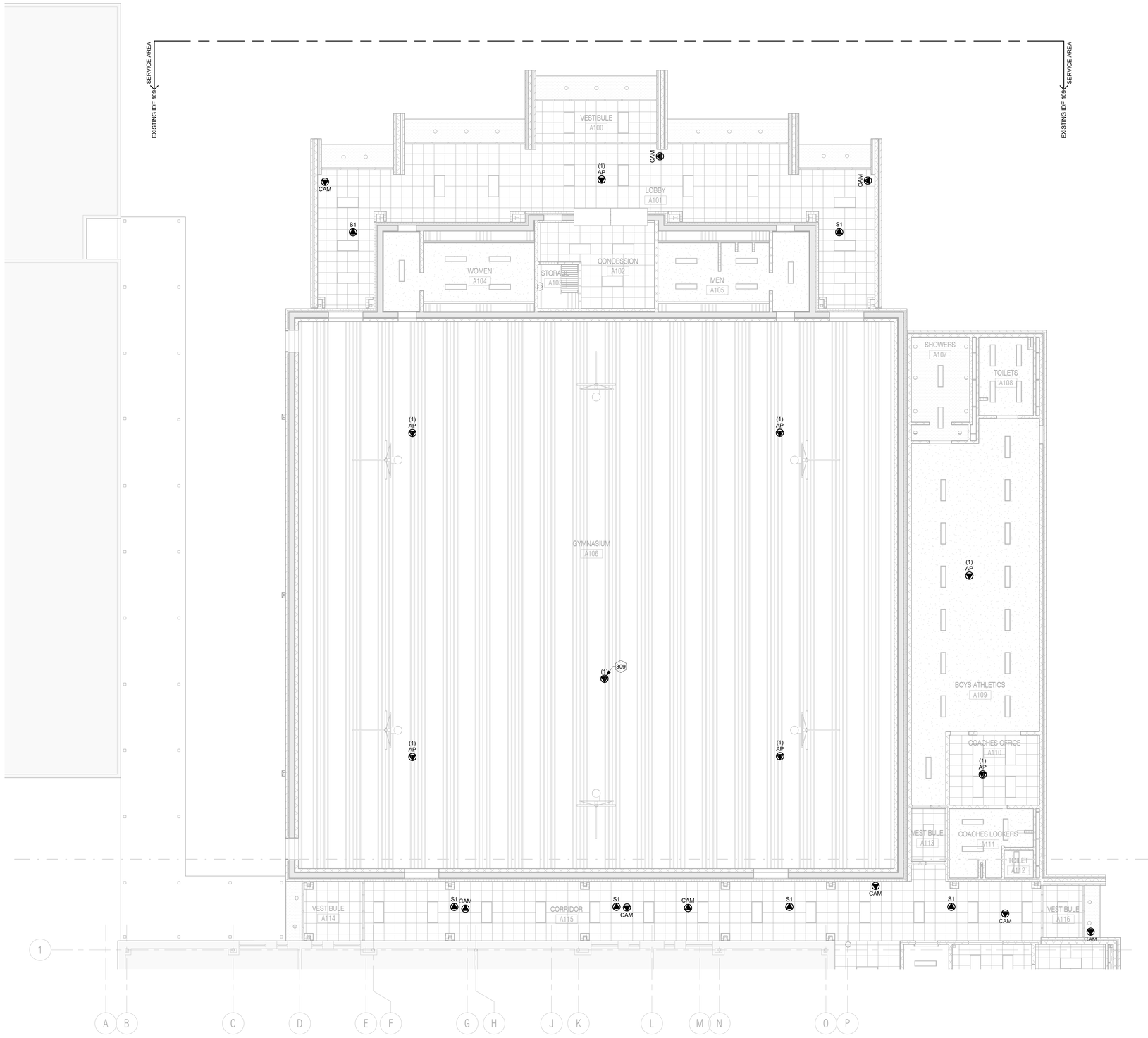
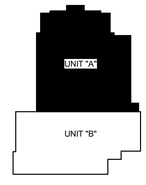
GENERAL NOTES	KEYNOTES	
1. WALL PENETRATION FOR COMMUNICATORS PATHWAYS THROUGH THE GYM STORM SHELTER RATED WALLS CAN BE NO LARGER THAN A 1 1/2" CONDUIT.	309	COORDINATE PLACEMENT OF OUTLET WITH VIDEO PROJECTOR, REFER TO AV DRAWINGS



1 T MAIN LEVEL - UNIT A - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

N
PLAN NORTH TRUE NORTH

KEY PLAN



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SHEET TITLE
REFLECTED CEILING PLAN - UNIT A

SHEET NO.
T6.01

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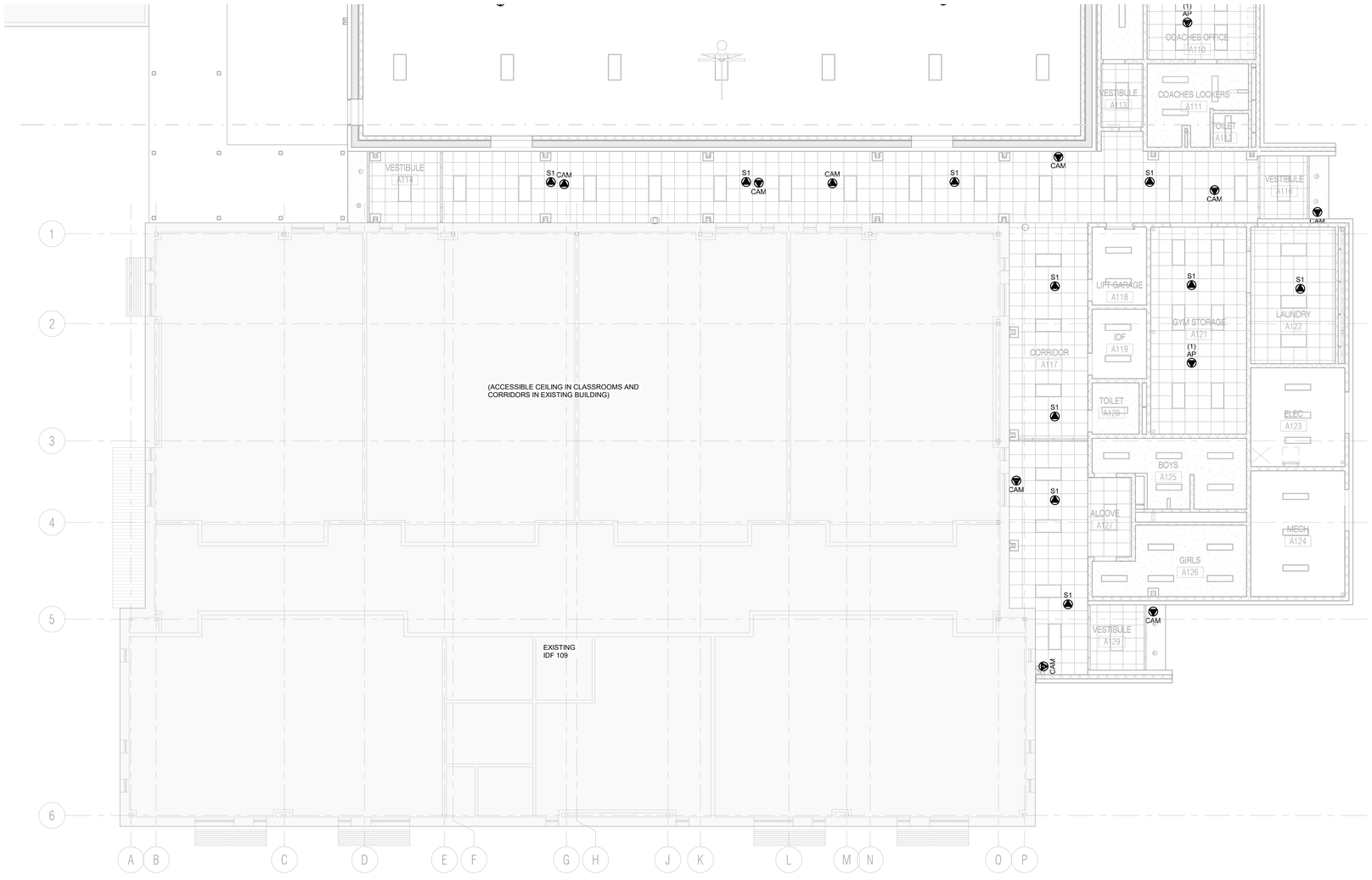
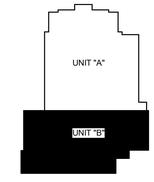
KEYNOTES



1 T MAIN LEVEL - UNIT B - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

KEY PLAN



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REFLECTED CEILING PLAN - UNIT B

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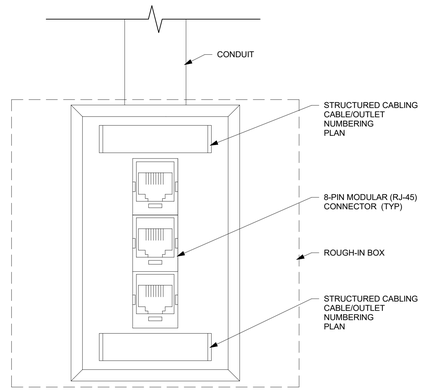
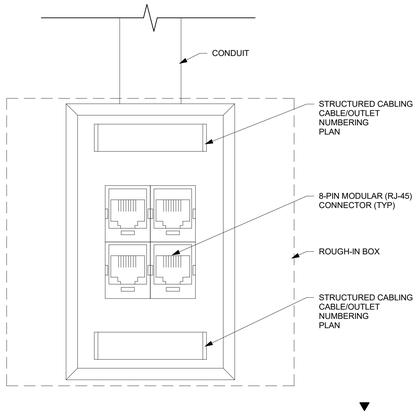
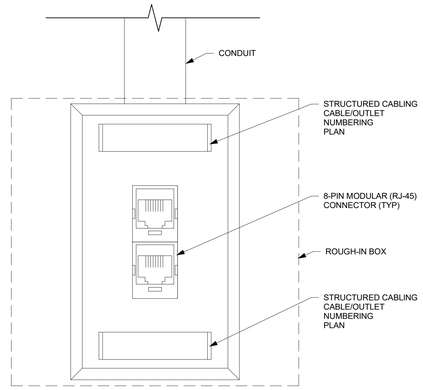
6 STRUCTURED CABLING CABLE/OUTLET NUMBERING PLAN
SCALE: NTS



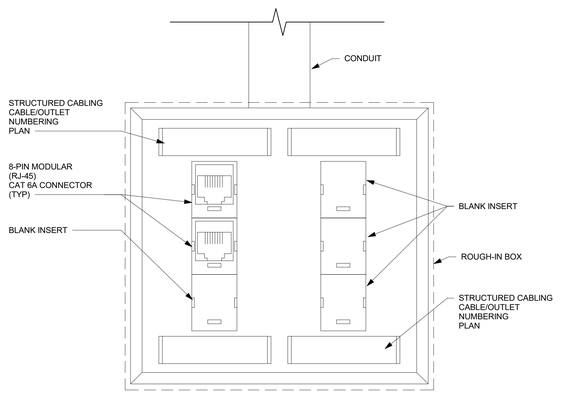
3 TYPICAL THREE-PORT OUTLET
SCALE: NTS



5 TYPICAL FOUR-PORT OUTLET.
SCALE: NTS

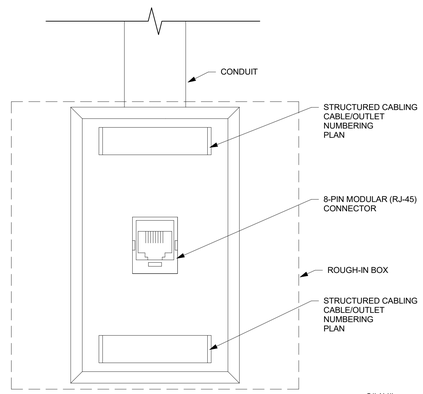


2 TYPICAL TWO-PORT OUTLET
SCALE: NTS



NOTES:
1. LOAD PORTS STARTING AT THE TOP LEFT TO MATCH ARRANGEMENT OF SINGLE GANG FACEPLATES. LEAVE BOTTOM (2) PORTS OPEN FOR FOUR PORT LCATIONS.
2. PROVIDED IN-USE COVER FOR OUTDOOR LOCATIONS.

4 MASONRY WALL OR OUTDOOR SURFACE MOUNT LOCATIONS
SCALE: NTS



1 TYPICAL ONE-PORT OUTLET
SCALE: NTS

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SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS
Revision No.

Director
Approver
Designer
Designer
Proj. Coord.
Checker

Drawn By
Author
Quality Control

PROJECT NO.
1887.00

SHEET TITLE
STRUCTURED CABLING PLATE DETAILS

SHEET NO.
T18.01

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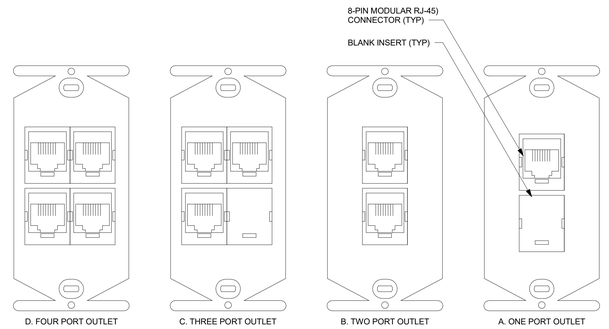
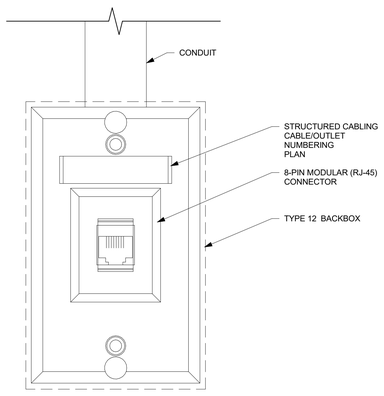
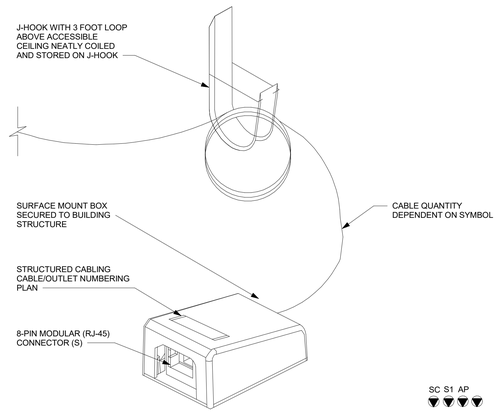


NOTES:
1. USE IN FLOOR BOXES, POKE THROUGHS, AND RACEWAYS.
2. LABEL USING STRUCTURED CABLING CABLE/OUTLET NUMBERING PLAN

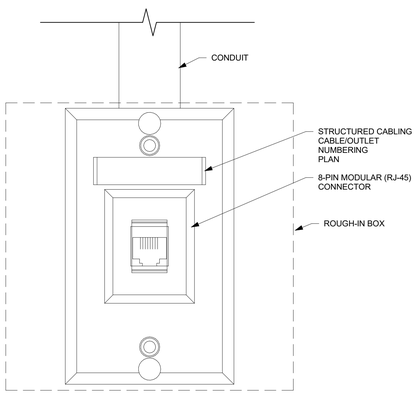
3 TYPICAL 106/DECORA FRAME OUTLET
SCALE: NTS



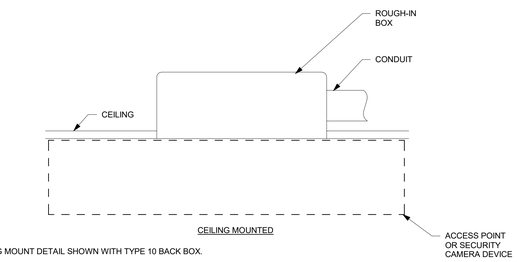
5 MASONRY WALL PHONE FACEPLATE
SCALE: NTS



2 CEILING OUTLET IN ACCESSIBLE CEILING
SCALE: NTS



4 TYPICAL WALL PHONE OUTLET
SCALE: NTS



NOTES:
1. CEILING MOUNT DETAIL SHOWN WITH TYPE 10 BACK BOX.

1 INACCESSIBLE CEILING, TYP.
SCALE: NTS

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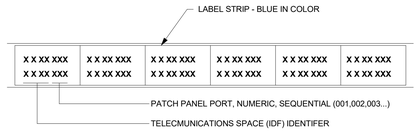
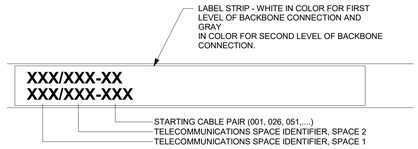


DETAIL B

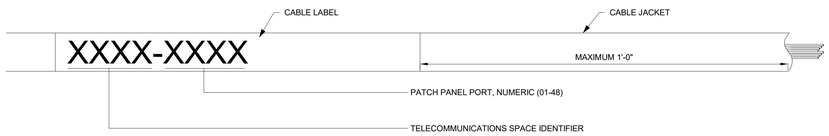


DETAIL A

NOTES:
1. DETAIL "A" REPRESENTS A 110 STYLE TERMINATION BLOCK LABEL STRIP FOR USE WITH HORIZONTAL LINK CABLE TERMINATIONS.
2. DETAIL "B" REPRESENTS A 110 STYLE TERMINATION BLOCK LABEL FOR 25 PAIR EXTENSION TO RACK MOUNT PATCH PANELS.

3 TWISTED PAIR TERMINATION BLOCK LABLE DETAIL

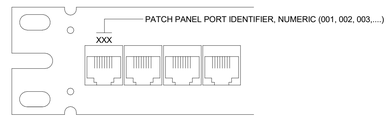
SCALE: NTS



NOTES:
1. DETAIL SHOWN REPRESENTS A 4-PAIR HORIZONTAL LINK TERMINATING IN A TELECOMMUNICATIONS SPACE ON A RACK MOUNT PATCH PANEL OR AT THE WORKSTATION.

2 HORIZONTAL LINK CABLE LABEL DETAIL

SCALE: NTS



NOTES:
1. DETAIL SHOWN REPRESENTS A SINGLE RACK SPACE PATCH PANEL TERMINATING HORIZONTAL LINK CABLING IN A TELECOMMUNICATIONS SPACE.

1 PATCH PANEL LABEL DETAIL

SCALE: NTS

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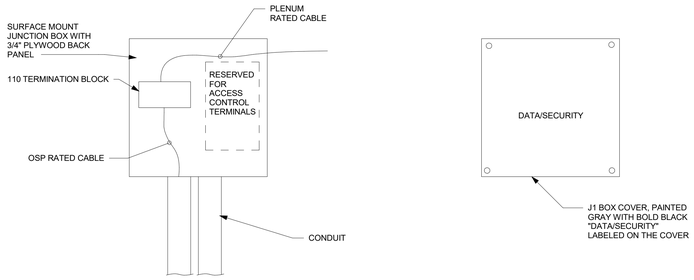
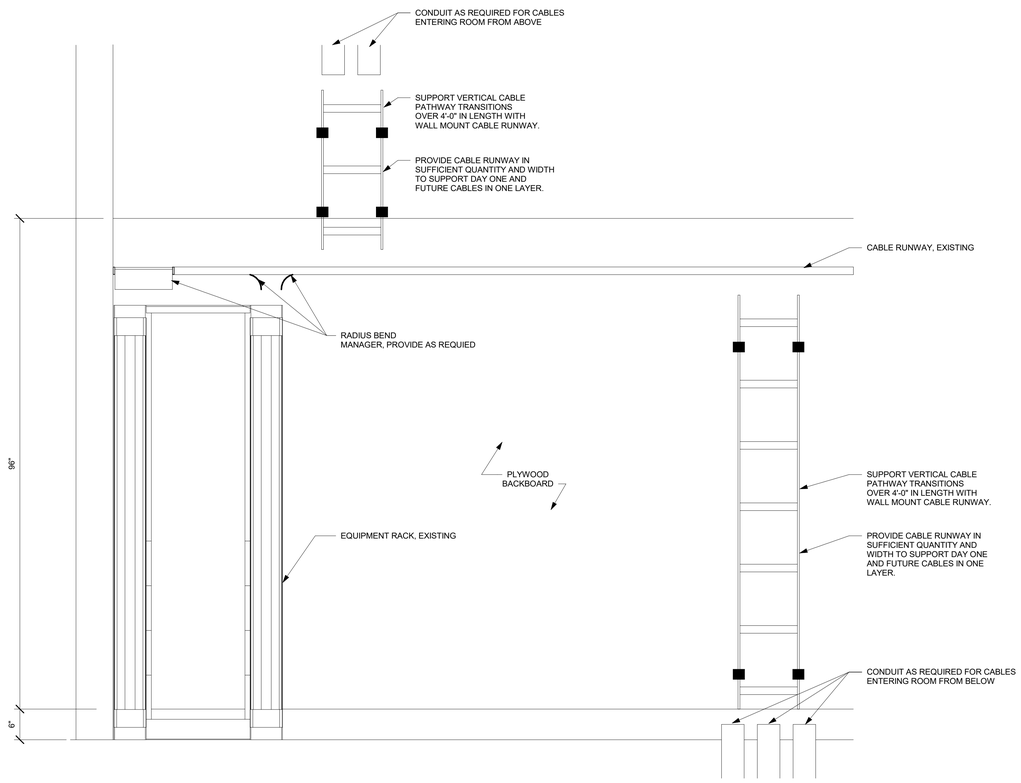


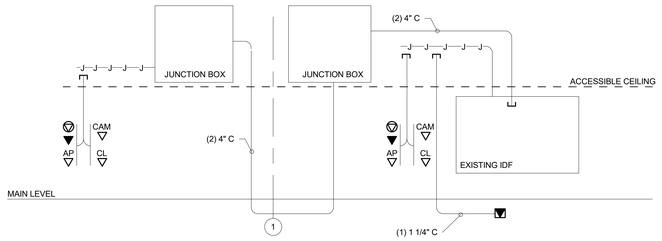
5 JUNTION BOX (JB) DETAIL - STORAGE A103

SCALE: NTS



4 IT CLOSET VERTICAL PATHWAYS, TYPICAL

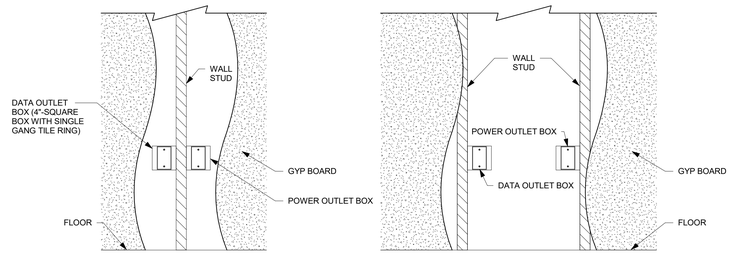
SCALE: 1" = 1'-0"



NOTES:
1. PROVIDE 36" HORIZONTAL LINK CABLE SERVICE LOOP IN ACCESSIBLE CEILING NEAR DEVICE OUTLET
2. PROVIDE 10'-0" HORIZONTAL LINK CABLE SERVICE LOOP IN IDF/TE

3 STRUCTURED CABLING SYSTEM PATHWAY DETAIL

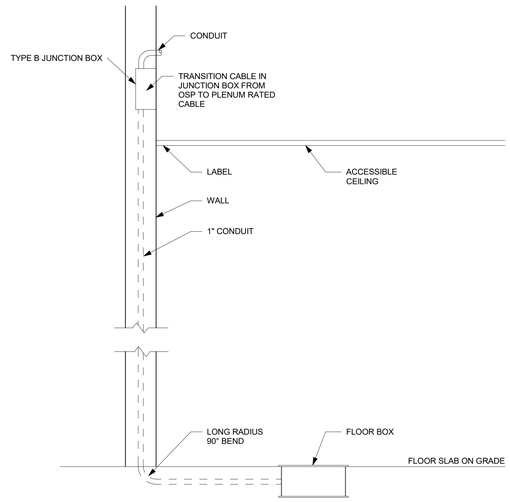
SCALE: NTS



NOTES:
1. ALL DATA OUTLETS REQUIRE AN ADJACENT POWER OUTLET TO SUPPORT DATA EQUIPMENT.
2. INSTALL POWER AND DATA OUTLETS ON THE SAME WALL WITH A MAXIMUM OF 3 FEET BETWEEN THEM.

2 TYPICAL POWER WALL OUTLET REQUIRMENTS TO SUPPORT DATA EQUIPMENT

SCALE: NTS



NOTES:
1. FOR INACCESSIBLE CEILING AN ACCESS PANEL IS REQUIRED TO PROVIDE ACCESS TO J1 BOX.
2. PROVIDE LABEL WITH 1/2" LETTERS ON CEILING GRID WITH OUTLET OR FIRST PORT NUMBER.

1 CABLE TRANSITION FOR FLOOR BOXES IN SLAB ON GRADE INSTALLATIONS (TYP)

SCALE: NTS

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BIRDVILLE ISD
NORTH RICHLAND HILLS, TEXAS

SMITHFIELD MIDDLE SCHOOL - GYMNASIUM ADDITION

CONSTRUCTION DOCUMENTS

ISSUED: MAY 8TH, 2019

REVISIONS

Revision No.

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

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SHEET TITLE

STRUCTURED CABLING DETAILS

SHEET NO.

T18.06

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