ADDENDUM NO. 3

October 5, 2022

TIPPECANOE VALLEY HIGH SCHOOL ADDITIONS & RENOVATIONS
Akron, IN 46910

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated September 9, 2022 by Fanning Howey Associates, Inc. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of pages ADD 3-1 through ADD 3-2 and attached Addendum No. 3 from Fanning Howey Associates, Inc. dated October 4, 2022 and consisting of 4 pages, revised Specification Section 23 34 23 - HVAC Power Ventilators, Specification Section 27 51 16 - Public Address and Mass Notification Systems, and 7 drawings.

A. SPECIFICATION SECTION 00 20 00 - INFORMATION AVAILABLE TO BIDDERS

E. Pre-Award Meetings on October 12, 2022 via Microsoft TEAMS. Meeting Invite to be distributed at a later date. All times are Eastern.

08:00 AM - 01:SITEWORK/UTILITIES
08:30 AM - 03:MASONRY
09:00 AM - 04:STRUCTURAL STEEL
09:30 AM - 05:ROOFING
10:00 AM - 06:ALUMINUM STOREFRONTS/GLAZING
10:30 AM - 07:METAL STUDS/DRYWALL/CEILINGS
11:00 AM - 08:PAINTING
11:15 AM - 09:FLOORING
11:45 AM - 10:CASEWORK
01:00 PM - 02:GENERAL TRADES
01:45 PM - 11:FIRE PROTECTION
02:15 PM - 12:PLUMBING
02:45 PM - 13:MECHANICAL
03:30 PM - 14:ELECTRICAL/TECHNOLOGY

B. SPECIFICATION SECTION 01 12 00 - MULTIPLE CONTRACT SUMMARY

1. BID CATEGORY NO. 2 - GENERAL TRADES

a. **Revise:**

Clarification No. 2:
The **Bid Category No. 2 Contractor** is to include in this bid, sweeping compound and 100 man-hours for general building (or other work) to be performed by a skilled laborer at the direction of the Construction Manager throughout the duration of the project. At the end of the project, unused hours will be converted into a dollar amount and returned to the Owner as a deduct Change Order.

Clarification No. 3:
The **Bid Category No. 2 Contractor** is to include $30,000 in their bid for costs associated with the submittal website and document management subscription. Any unused amount will be credited back to the Owner as a deduct Change Order.

Clarification No. 4:
The **Bid Category No. 2 Contractor** shall provide secure temporary enclosures for window openings and overhead door openings. Provide hinged plywood at door openings to maintain temperatures necessary to perform the work and provide security. Provide Ten (10) Construction grade padlocks keyed alike with freeze protection for gates/doors with a minimum of Ten (10) keys for distribution to designated contractors and the Construction Manager.

2. BID CATEGORY NO. 3 - MASONRY

a. **Add:**

Specification Section 07 21 00 Thermal Insulation (As Applicable)

b. **Replace:**

Clarification No. 5:
Reference Specification Section No. 07 21 00 Thermal Insulation; the **Bid Category No. 3 Contractor** shall provide Spray Foam Insulation at the top of masonry walls and at intersections of exterior CMU walls and deck as indicated on contract documents. The **Bid Category No. 7 Contractor** is responsible to provide all remaining items under this section as indicated on contract documents.

3. BID CATEGORY NO. 7 - METAL STUDS/DRYWALL/CEILINGS

a. **Revise:**

Specification Section 07 21 00 Thermal Insulation (As Applicable)

b. **Add:**

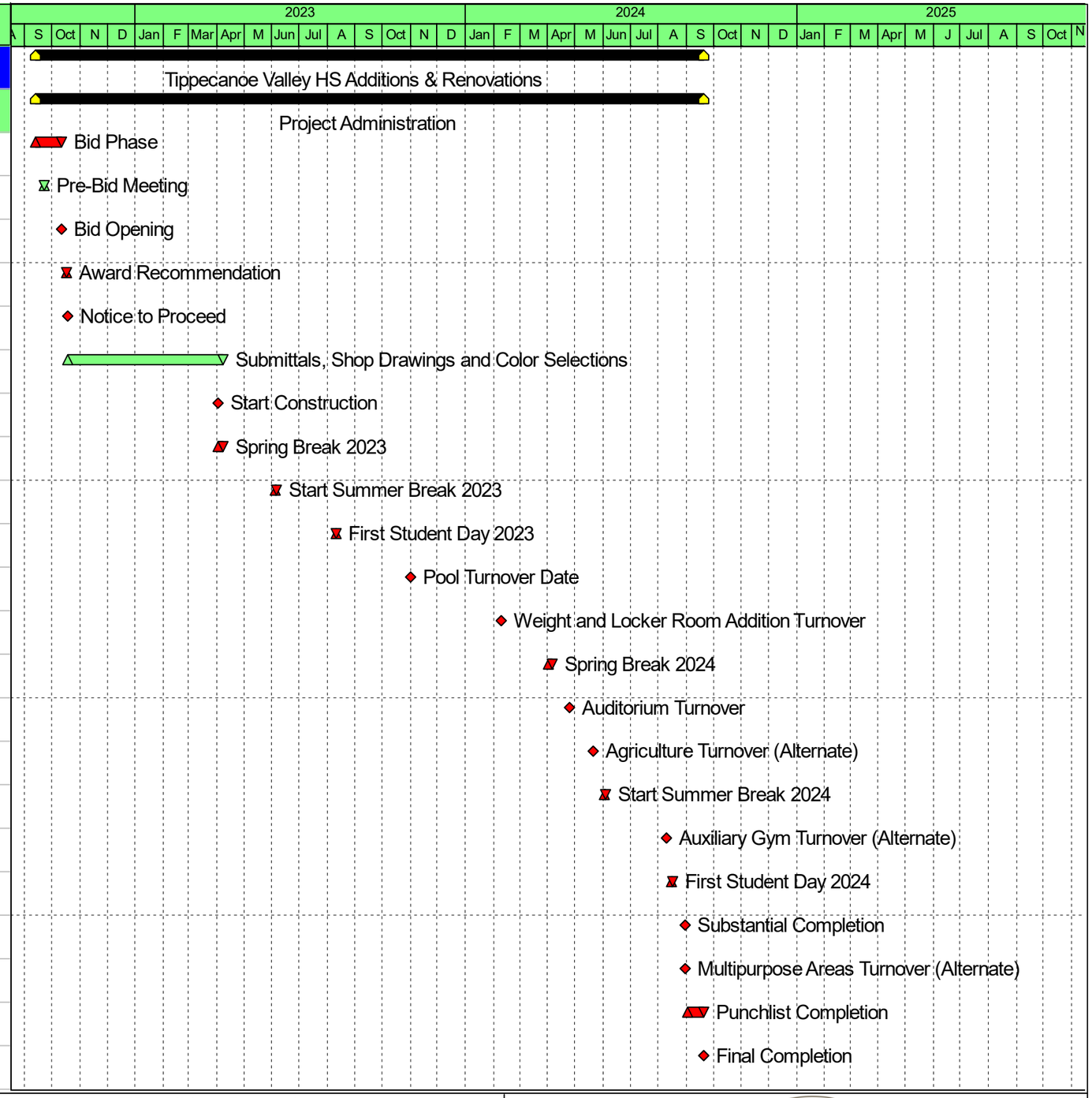
Clarification No. 4:
Reference Specification Section No. 07 21 00 Thermal Insulation; the **Bid Category No. 3 Contractor** shall provide Spray Foam Insulation at the top of masonry walls and at intersections of exterior CMU walls and deck as indicated on contract documents. The **Bid Category No. 7 Contractor** is responsible to provide all remaining items under this section as indicated on contract documents.

C. SPECIFICATION SECTION 01 32 00 - SCHEDULES AND REPORTS

1. Replace:

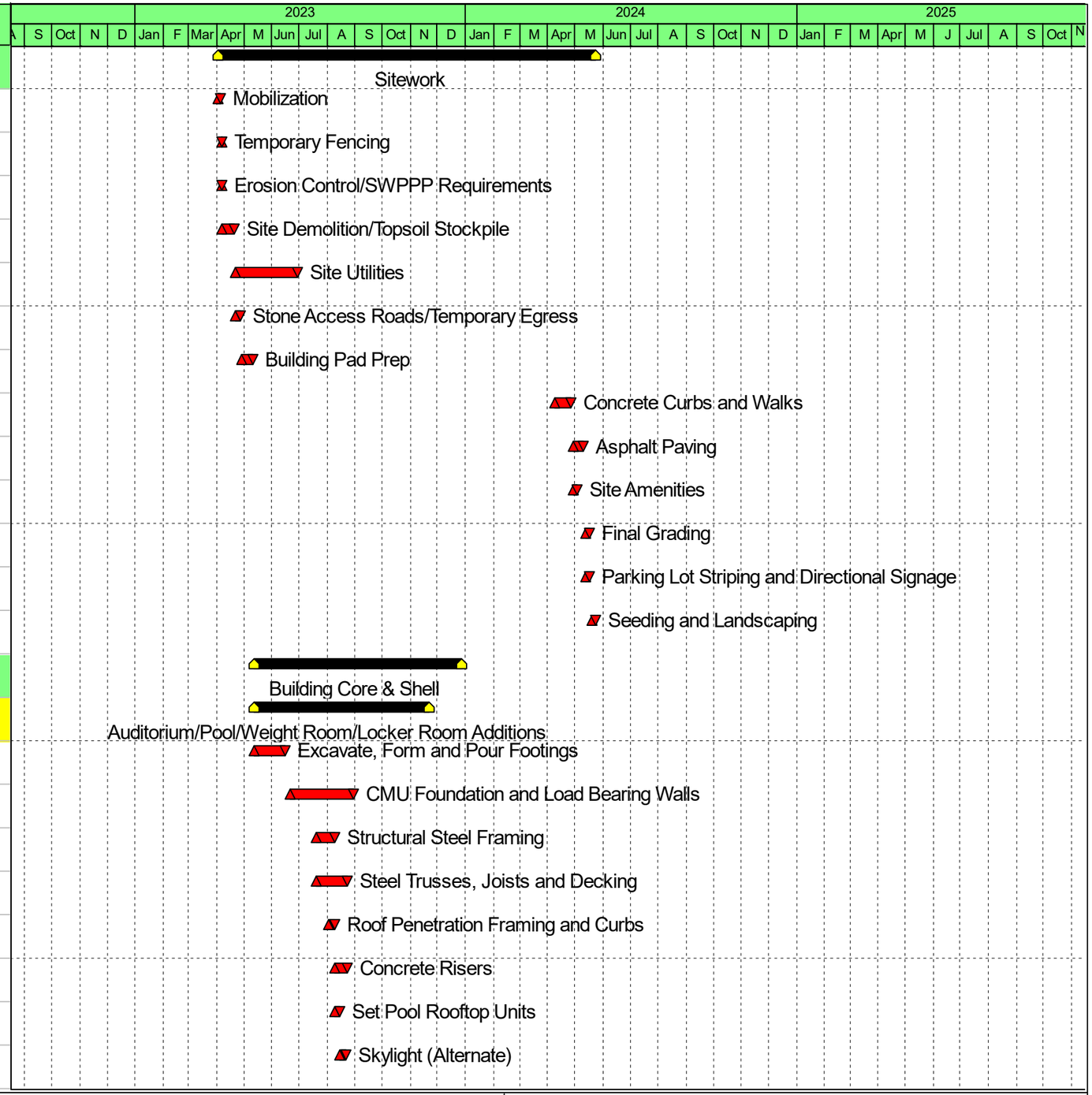
The Guideline Schedule and Phasing Plan in their entirety with the attached revised Guideline Schedule and Phasing Plan.

Activity Name	Original Duration	Start	Finish
Tippecanoe Valley HS Additions & Renovations	525	Sep-12-2022	Sep-20-2024
Project Administration	525	Sep-12-2022	Sep-20-2024
Bid Phase	22	Sep-12-2022	Oct-11-2022
Pre-Bid Meeting	1	Sep-22-2022	Sep-22-2022
Bid Opening	0		Oct-11-2022
Award Recommendation	1	Oct-17-2022	Oct-17-2022
Notice to Proceed	0	Oct-18-2022	
Submittals, Shop Drawings and Color Selections	120	Oct-18-2022	Apr-07-2023
Start Construction	0	Apr-03-2023	
Spring Break 2023	5	Apr-03-2023*	Apr-07-2023
Start Summer Break 2023	1	Jun-05-2023*	Jun-05-2023
First Student Day 2023	1	Aug-11-2023*	Aug-11-2023
Pool Turnover Date	0		Nov-01-2023
Weight and Locker Room Addition Turnover	0		Feb-09-2024
Spring Break 2024	5	Apr-01-2024*	Apr-05-2024
Auditorium Turnover	0		Apr-24-2024
Agriculture Turnover (Alternate)	0		May-20-2024
Start Summer Break 2024	1	Jun-03-2024*	Jun-03-2024
Auxiliary Gym Turnover (Alternate)	0		Aug-09-2024
First Student Day 2024	1	Aug-16-2024*	Aug-16-2024
Substantial Completion	0		Aug-30-2024
Multipurpose Areas Turnover (Alternate)	0		Aug-30-2024
Punchlist Completion	15	Sep-02-2024	Sep-20-2024
Final Completion	0		Sep-20-2024



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Activity Name	Original Duration	Start	Finish
Sitework	299	Apr-03-2023	May-24-2024
Mobilization	3	Apr-03-2023	Apr-05-2023
Temporary Fencing	1	Apr-06-2023	Apr-06-2023
Erosion Control/SWPPP Requirements	1	Apr-06-2023	Apr-06-2023
Site Demolition/Topsoil Stockpile	10	Apr-07-2023	Apr-20-2023
Site Utilities	50	Apr-21-2023	Jun-29-2023
Stone Access Roads/Temporary Egress	5	Apr-21-2023	Apr-27-2023
Building Pad Prep	10	Apr-28-2023	May-11-2023
Concrete Curbs and Walks	15	Apr-08-2024*	Apr-26-2024
Asphalt Paving	10	Apr-29-2024	May-10-2024
Site Amenities	5	Apr-29-2024	May-03-2024
Final Grading	5	May-13-2024	May-17-2024
Parking Lot Striping and Directional Signage	5	May-13-2024	May-17-2024
Seeding and Landscaping	5	May-20-2024	May-24-2024
Building Core & Shell	163	May-12-2023	Dec-27-2023
Auditorium/Pool/Weight Room/Locker Room Additions	138	May-12-2023	Nov-22-2023
Excavate, Form and Pour Footings	25	May-12-2023	Jun-15-2023
CMU Foundation and Load Bearing Walls	50	Jun-21-2023	Aug-30-2023
Structural Steel Framing	15	Jul-20-2023	Aug-09-2023
Steel Trusses, Joists and Decking	25	Jul-20-2023	Aug-23-2023
Roof Penetration Framing and Curbs	5	Aug-03-2023	Aug-09-2023
Concrete Risers	10	Aug-10-2023	Aug-23-2023
Set Pool Rooftop Units	3	Aug-10-2023	Aug-14-2023
Skylight (Alternate)	5	Aug-15-2023	Aug-21-2023



Actual Work
Remaining Work
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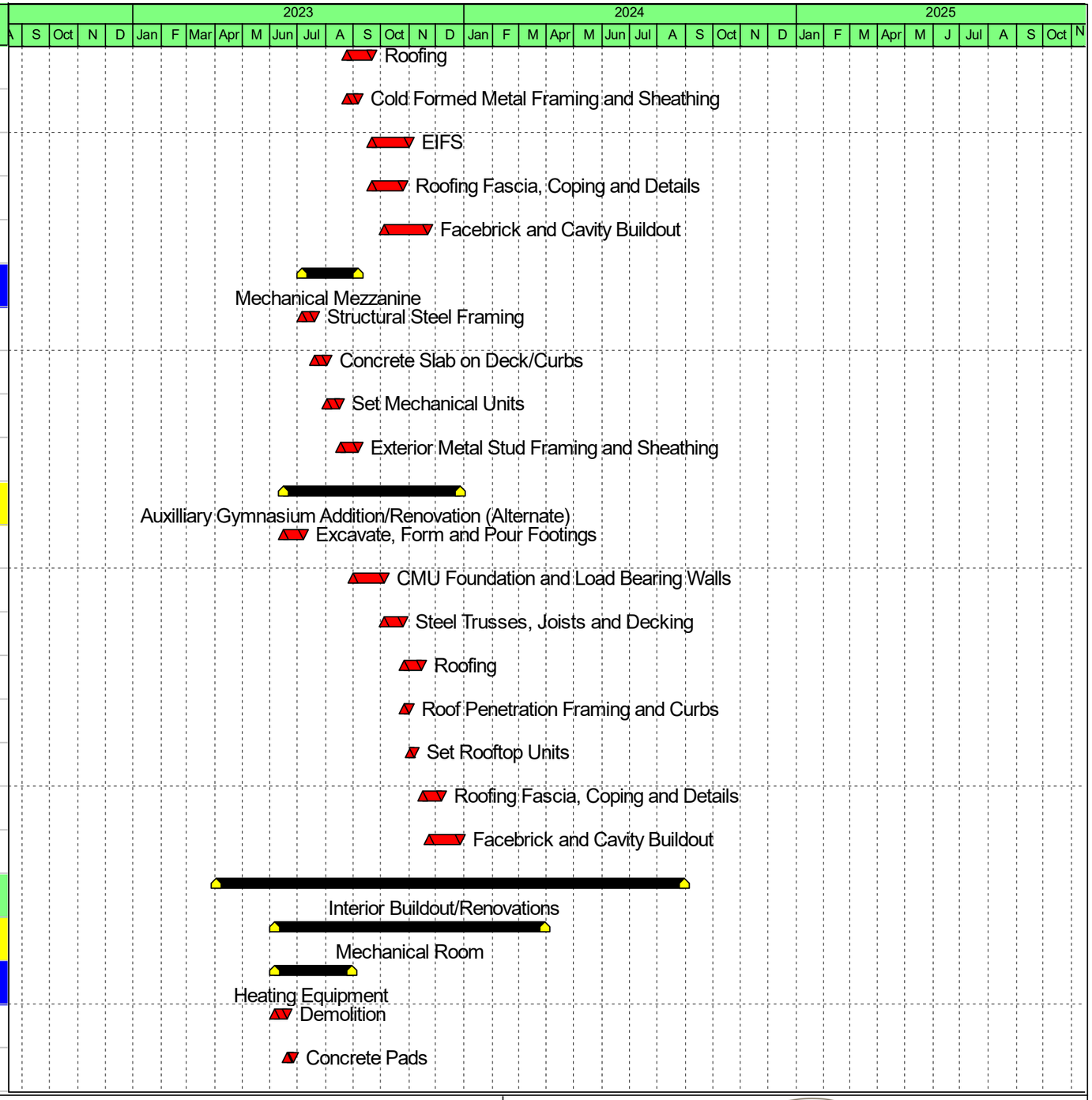
Activity Name	Original Duration	Start	Finish
Roofing	20	Aug-24-2023	Sep-20-2023
Cold Formed Metal Framing and Sheathing	10	Aug-24-2023	Sep-06-2023
EIFS	30	Sep-21-2023	Nov-01-2023
Roofing Fascia, Coping and Details	25	Sep-21-2023	Oct-25-2023
Facebrick and Cavity Buildout	35	Oct-05-2023	Nov-22-2023
Mechanical Mezzanine	45	Jul-06-2023	Sep-06-2023
Structural Steel Framing	10	Jul-06-2023	Jul-19-2023
Concrete Slab on Deck/Curbs	10	Jul-20-2023	Aug-02-2023
Set Mechanical Units	10	Aug-03-2023	Aug-16-2023
Exterior Metal Stud Framing and Sheathing	15	Aug-17-2023	Sep-06-2023
Auxilliary Gymnasium Addition/Renovation (Alternate)	138	Jun-16-2023	Dec-27-2023
Excavate, Form and Pour Footings	15	Jun-16-2023	Jul-07-2023
CMU Foundation and Load Bearing Walls	25	Aug-31-2023	Oct-04-2023
Steel Trusses, Joists and Decking	15	Oct-05-2023	Oct-25-2023
Roofing	15	Oct-26-2023	Nov-15-2023
Roof Penetration Framing and Curbs	5	Oct-26-2023	Nov-01-2023
Set Rooftop Units	3	Nov-02-2023	Nov-06-2023
Roofing Fascia, Coping and Details	15	Nov-16-2023	Dec-06-2023
Facebrick and Cavity Buildout	25	Nov-23-2023	Dec-27-2023
Interior Buildout/Renovations	369	Apr-03-2023	Aug-30-2024
Mechanical Room	213	Jun-06-2023	Mar-29-2024
Heating Equipment	60	Jun-06-2023	Aug-29-2023
Demolition	10	Jun-06-2023	Jun-19-2023
Concrete Pads	5	Jun-20-2023	Jun-26-2023



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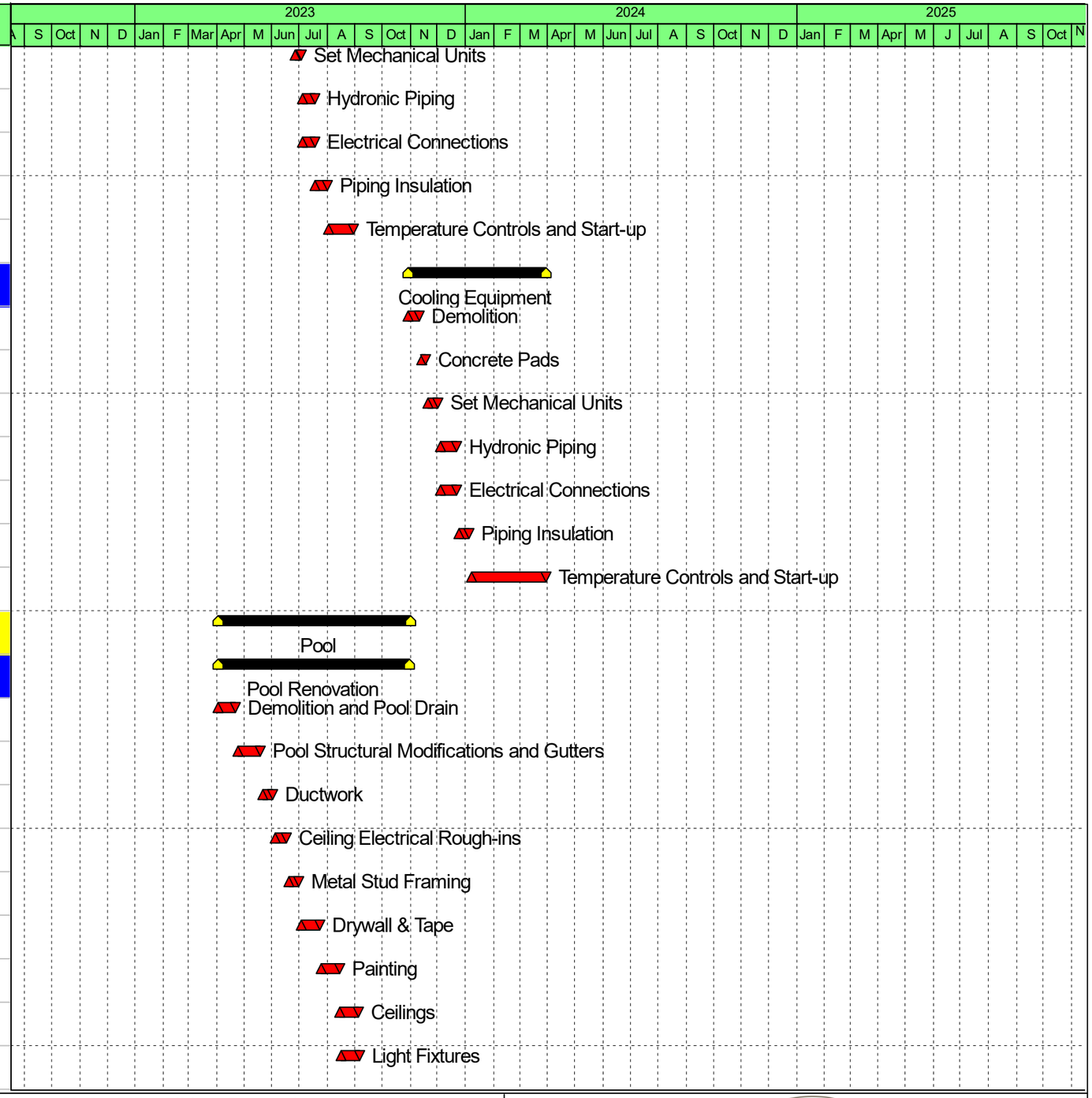
Activity Name	Original Duration	Start	Finish
Set Mechanical Units	5	Jun-27-2023	Jul-03-2023
Hydronic Piping	10	Jul-05-2023	Jul-18-2023
Electrical Connections	10	Jul-05-2023	Jul-18-2023
Piping Insulation	10	Jul-19-2023	Aug-01-2023
Temperature Controls and Start-up	20	Aug-02-2023	Aug-29-2023
Cooling Equipment	110	Oct-30-2023	Mar-29-2024
Demolition	10	Oct-30-2023*	Nov-10-2023
Concrete Pads	5	Nov-13-2023	Nov-17-2023
Set Mechanical Units	10	Nov-20-2023	Dec-01-2023
Hydronic Piping	15	Dec-04-2023	Dec-22-2023
Electrical Connections	15	Dec-04-2023	Dec-22-2023
Piping Insulation	10	Dec-25-2023	Jan-05-2024
Temperature Controls and Start-up	60	Jan-08-2024	Mar-29-2024
Pool	152	Apr-03-2023	Nov-01-2023
Pool Renovation	151	Apr-03-2023	Oct-31-2023
Demolition and Pool Drain	15	Apr-03-2023	Apr-21-2023
Pool Structural Modifications and Gutters	20	Apr-24-2023	May-19-2023
Ductwork	10	May-22-2023	Jun-02-2023
Ceiling Electrical Rough-ins	10	Jun-05-2023	Jun-16-2023
Metal Stud Framing	10	Jun-19-2023	Jun-30-2023
Drywall & Tape	15	Jul-03-2023	Jul-24-2023
Painting	15	Jul-25-2023	Aug-14-2023
Ceilings	15	Aug-15-2023	Sep-04-2023
Light Fixtures	15	Aug-16-2023	Sep-05-2023



Actual Work
Remaining Work
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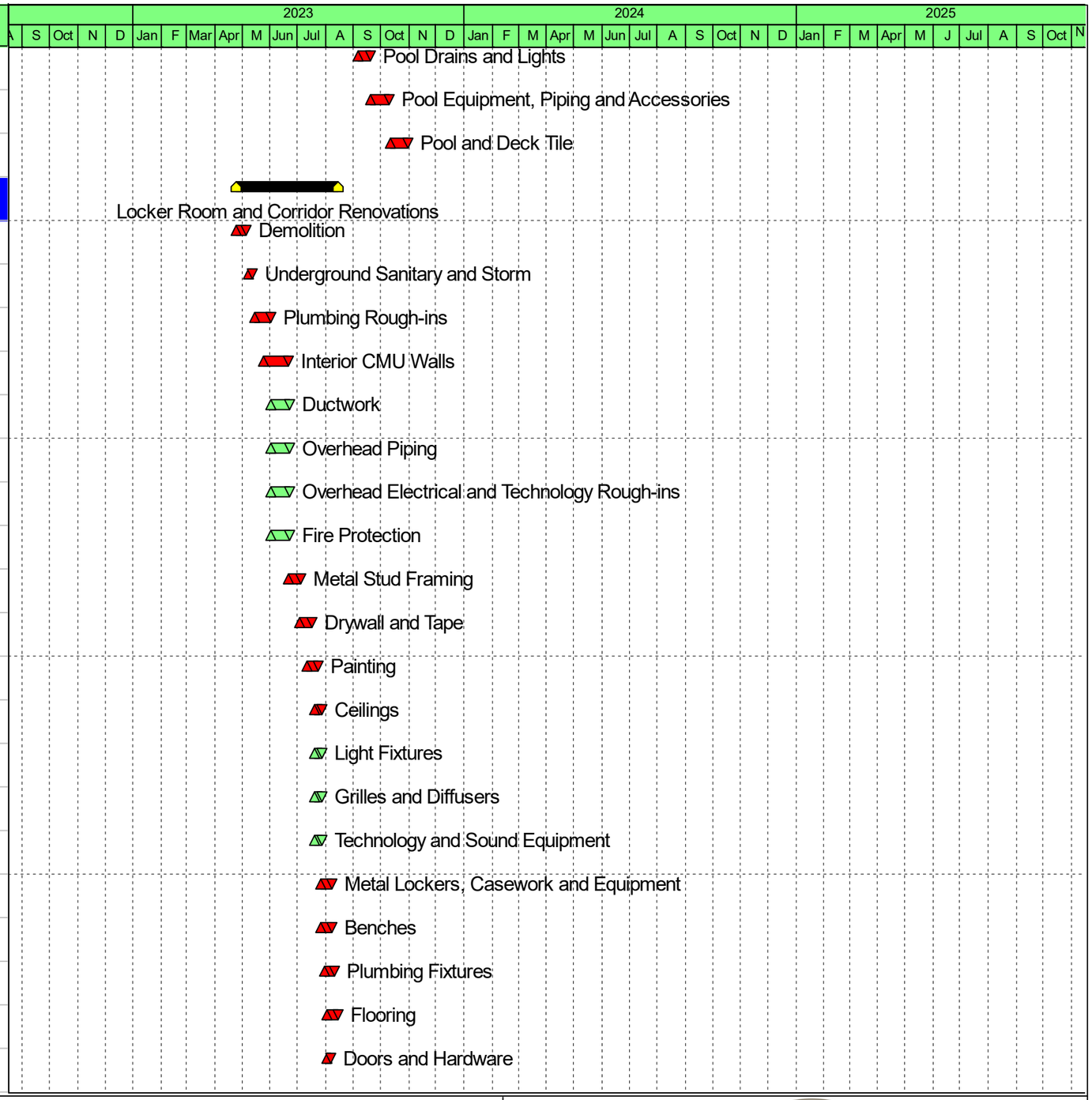
Activity Name	Original Duration	Start	Finish
Pool Drains and Lights	10	Sep-06-2023	Sep-19-2023
Pool Equipment, Piping and Accessories	15	Sep-20-2023	Oct-10-2023
Pool and Deck Tile	15	Oct-11-2023	Oct-31-2023
Locker Room and Corridor Renovations	81	Apr-24-2023	Aug-15-2023
Demolition	10	Apr-24-2023	May-05-2023
Underground Sanitary and Storm	5	May-08-2023	May-12-2023
Plumbing Rough-ins	15	May-15-2023	Jun-02-2023
Interior CMU Walls	20	May-24-2023	Jun-20-2023
Ductwork	15	Jun-02-2023	Jun-22-2023
Overhead Piping	15	Jun-02-2023	Jun-22-2023
Overhead Electrical and Technology Rough-ins	15	Jun-02-2023	Jun-22-2023
Fire Protection	15	Jun-02-2023	Jun-22-2023
Metal Stud Framing	10	Jun-21-2023	Jul-05-2023
Drywall and Tape	10	Jul-03-2023	Jul-17-2023
Painting	10	Jul-11-2023	Jul-24-2023
Ceilings	7	Jul-20-2023	Jul-28-2023
Light Fixtures	7	Jul-20-2023	Jul-28-2023
Grilles and Diffusers	7	Jul-20-2023	Jul-28-2023
Technology and Sound Equipment	7	Jul-20-2023	Jul-28-2023
Metal Lockers, Casework and Equipment	10	Jul-26-2023	Aug-08-2023
Benches	10	Jul-26-2023	Aug-08-2023
Plumbing Fixtures	10	Jul-31-2023	Aug-11-2023
Flooring	10	Aug-02-2023	Aug-15-2023
Doors and Hardware	4	Aug-02-2023	Aug-07-2023



Actual Work
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Activity Name	Original Duration	Start	Finish
Pool Addition	85	Jul-06-2023	Nov-01-2023
Demolition	5	Jul-06-2023	Jul-12-2023
Concrete Foundation Wall	5	Jul-13-2023	Jul-19-2023
Backfill for Addition Slab	5	Jul-20-2023	Jul-26-2023
Concrete Slab on Grade and Ramp	5	Jul-27-2023	Aug-02-2023
Ductwork	10	Aug-10-2023	Aug-23-2023
Fire Protection	10	Aug-10-2023	Aug-23-2023
Ceiling Electrical Rough-ins	10	Aug-10-2023	Aug-23-2023
Metal Stud Framing	5	Aug-17-2023	Aug-23-2023
Drywall & Tape	10	Aug-24-2023	Sep-06-2023
Painting	10	Sep-07-2023	Sep-20-2023
Light Fixtures	5	Sep-21-2023	Sep-27-2023
Ceilings	5	Sep-21-2023	Sep-27-2023
Railings	5	Sep-28-2023	Oct-04-2023
Flooring	5	Oct-05-2023	Oct-11-2023
Bleachers	15	Oct-12-2023	Nov-01-2023
Auditorium	190	Aug-03-2023	Apr-24-2024
Catwalk Steel, Ladders, Stairs and Accessories	5	Aug-03-2023	Aug-09-2023
Foundation CMU Block and Brick	10	Aug-24-2023	Sep-06-2023
Underfloor Electrical Rough-ins	10	Sep-07-2023	Sep-20-2023
Concrete Slab on Grade	10	Sep-21-2023	Oct-04-2023
Interior CMU Block	20	Oct-05-2023	Nov-01-2023
Facebrick	20	Nov-02-2023	Nov-29-2023
Ductwork	20	Nov-02-2023	Nov-29-2023

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Activity Name	Original Duration	Start	Finish
Fire Protection	20	Nov-02-2023	Nov-29-2023
Electrical Ceiling Rough-ins	15	Nov-02-2023	Nov-22-2023
Metal Stud Framing	10	Nov-30-2023	Dec-13-2023
Electrical Wall Rough-ins	10	Nov-30-2023	Dec-13-2023
Drywall and Tape	20	Dec-07-2023	Jan-03-2024
Painting	15	Jan-04-2024	Jan-24-2024
Acoustical Wall Panels	10	Jan-25-2024	Feb-07-2024
Light Fixtures	20	Jan-25-2024	Feb-21-2024
Ceilings	20	Jan-25-2024	Feb-21-2024
Wood Trim	25	Jan-25-2024	Feb-28-2024
Theatrical Lighting and Sound System	15	Feb-22-2024	Mar-13-2024
Railings	10	Feb-29-2024	Mar-13-2024
Floor Sealer	5	Mar-14-2024	Mar-20-2024
Auditorium Seating	10	Mar-21-2024	Apr-03-2024
Flooring	15	Apr-04-2024	Apr-24-2024
Doors and Hardware	10	Apr-04-2024	Apr-17-2024
Theatrical Control Room	125	Oct-05-2023	Mar-27-2024
CMU Block	5	Oct-05-2023	Oct-11-2023
Concrete Slab and Stairs	5	Oct-12-2023	Oct-18-2023
Metal Stud Framing	5	Dec-14-2023	Dec-20-2023
Drywall and Tape	10	Jan-04-2024	Jan-17-2024
Interior Windows and Glazing	5	Jan-18-2024	Jan-24-2024
Painting	10	Jan-25-2024	Feb-07-2024
Ceilings	5	Feb-22-2024	Feb-28-2024

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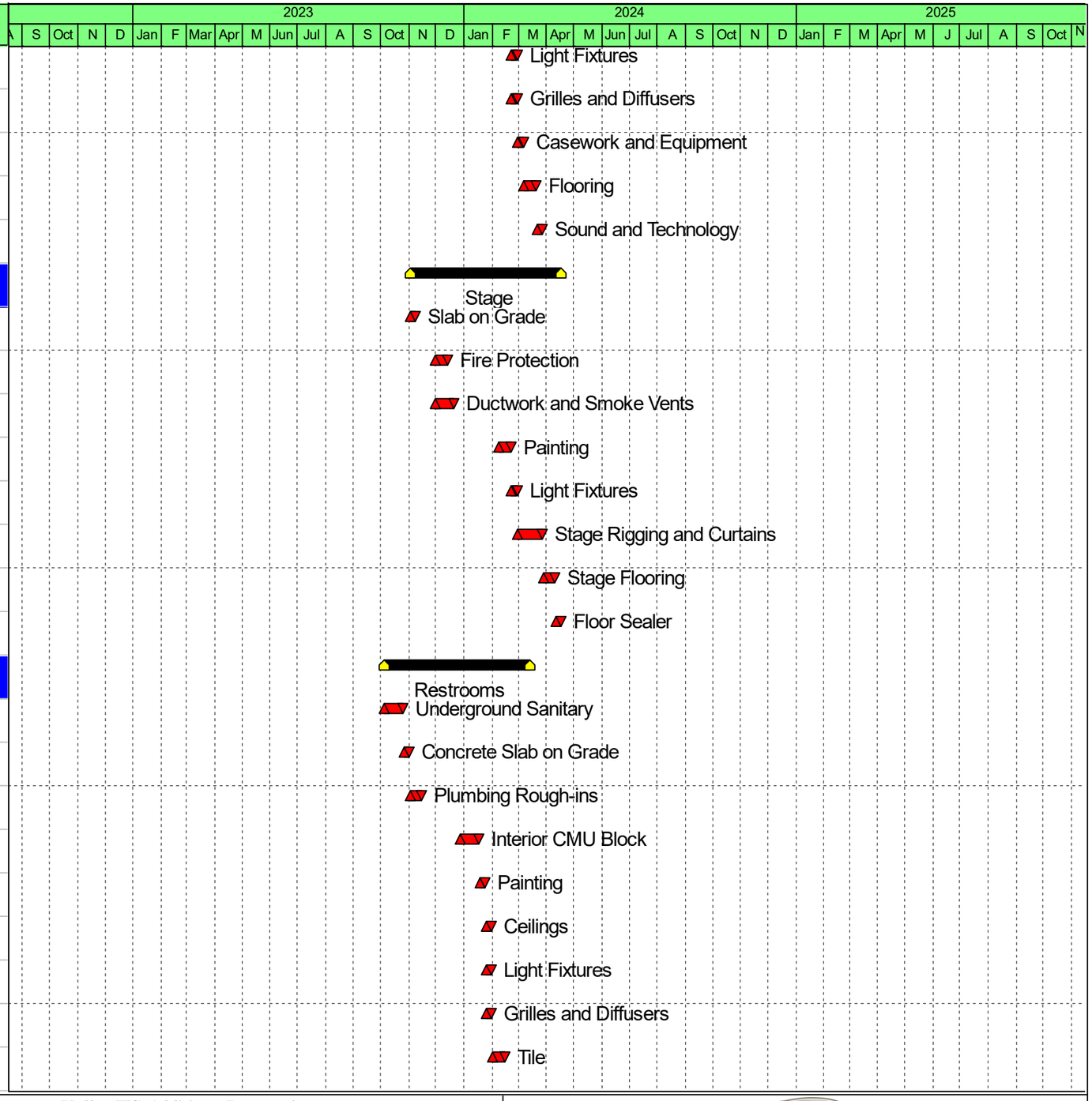
Activity Name	Original Duration	Start	Finish
Light Fixtures	5	Feb-22-2024	Feb-28-2024
Grilles and Diffusers	5	Feb-22-2024	Feb-28-2024
Casework and Equipment	5	Feb-29-2024	Mar-06-2024
Flooring	10	Mar-07-2024	Mar-20-2024
Sound and Technology	5	Mar-21-2024	Mar-27-2024
Stage	120	Nov-02-2023	Apr-17-2024
Slab on Grade	5	Nov-02-2023	Nov-08-2023
Fire Protection	10	Nov-30-2023	Dec-13-2023
Ductwork and Smoke Vents	15	Nov-30-2023	Dec-20-2023
Painting	10	Feb-08-2024	Feb-21-2024
Light Fixtures	5	Feb-22-2024	Feb-28-2024
Stage Rigging and Curtains	20	Feb-29-2024	Mar-27-2024
Stage Flooring	10	Mar-28-2024	Apr-10-2024
Floor Sealer	5	Apr-11-2024	Apr-17-2024
Restrooms	115	Oct-05-2023	Mar-13-2024
Underground Sanitary	15	Oct-05-2023	Oct-25-2023
Concrete Slab on Grade	5	Oct-26-2023	Nov-01-2023
Plumbing Rough-ins	10	Nov-02-2023	Nov-15-2023
Interior CMU Block	15	Dec-28-2023	Jan-17-2024
Painting	5	Jan-18-2024	Jan-24-2024
Ceilings	5	Jan-25-2024	Jan-31-2024
Light Fixtures	5	Jan-25-2024	Jan-31-2024
Grilles and Diffusers	5	Jan-25-2024	Jan-31-2024
Tile	10	Feb-01-2024	Feb-14-2024



Actual Work
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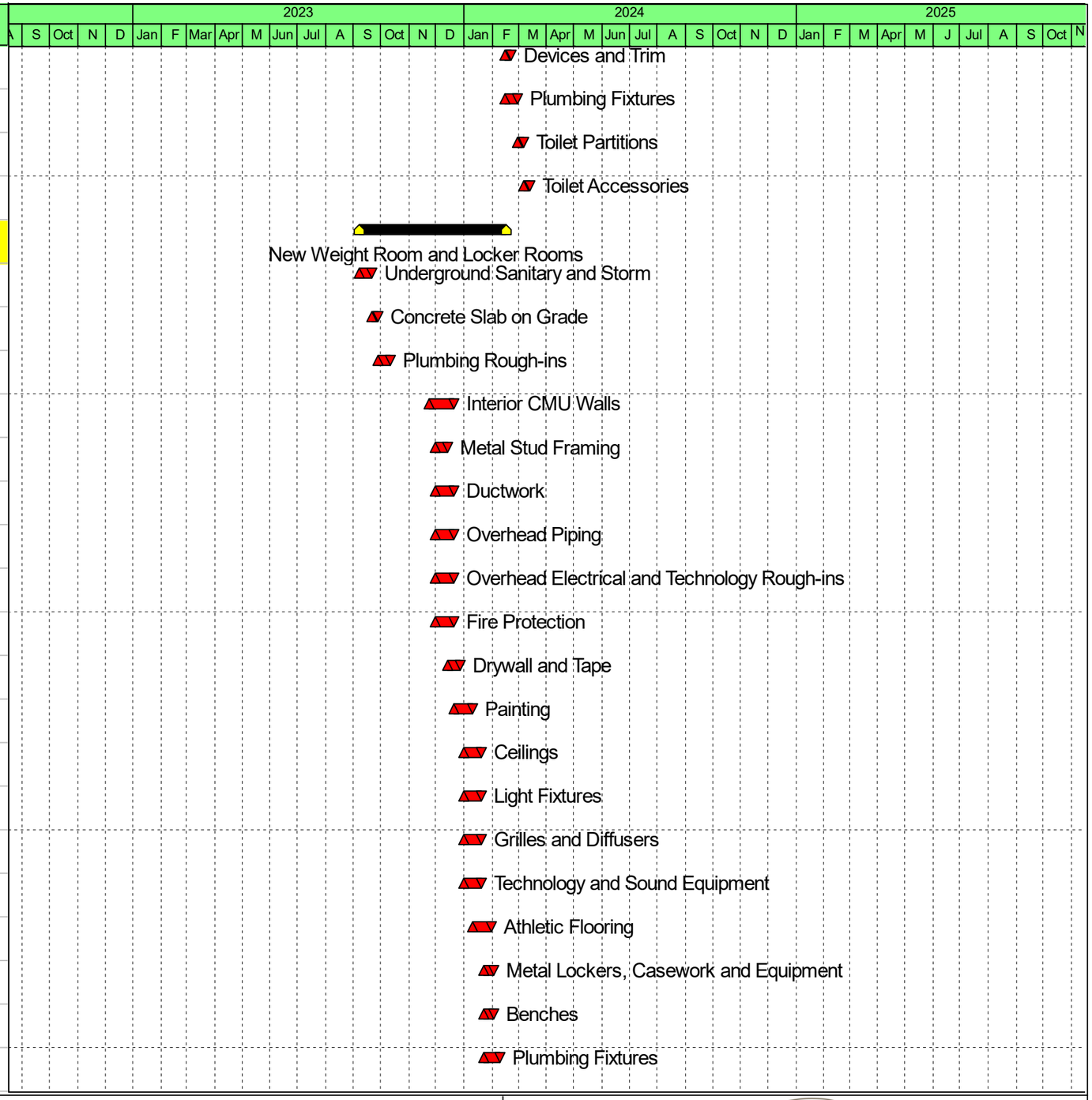
Activity Name	Original Duration	Start	Finish
Devices and Trim	5	Feb-15-2024	Feb-21-2024
Plumbing Fixtures	10	Feb-15-2024	Feb-28-2024
Toilet Partitions	5	Feb-29-2024	Mar-06-2024
Toilet Accessories	5	Mar-07-2024	Mar-13-2024
New Weight Room and Locker Rooms	117	Sep-07-2023	Feb-16-2024
Underground Sanitary and Storm	10	Sep-07-2023	Sep-20-2023
Concrete Slab on Grade	5	Sep-21-2023	Sep-27-2023
Plumbing Rough-ins	10	Sep-28-2023	Oct-11-2023
Interior CMU Walls	20	Nov-23-2023	Dec-20-2023
Metal Stud Framing	10	Nov-30-2023	Dec-13-2023
Ductwork	15	Nov-30-2023	Dec-20-2023
Overhead Piping	15	Nov-30-2023	Dec-20-2023
Overhead Electrical and Technology Rough-ins	15	Nov-30-2023	Dec-20-2023
Fire Protection	15	Nov-30-2023	Dec-20-2023
Drywall and Tape	10	Dec-14-2023	Dec-27-2023
Painting	15	Dec-21-2023	Jan-10-2024
Ceilings	15	Jan-01-2024	Jan-19-2024
Light Fixtures	15	Jan-01-2024	Jan-19-2024
Grilles and Diffusers	15	Jan-01-2024	Jan-19-2024
Technology and Sound Equipment	15	Jan-01-2024	Jan-19-2024
Athletic Flooring	15	Jan-10-2024	Jan-30-2024
Metal Lockers, Casework and Equipment	10	Jan-22-2024	Feb-02-2024
Benches	10	Jan-22-2024	Feb-02-2024
Plumbing Fixtures	15	Jan-22-2024	Feb-09-2024



Actual Work
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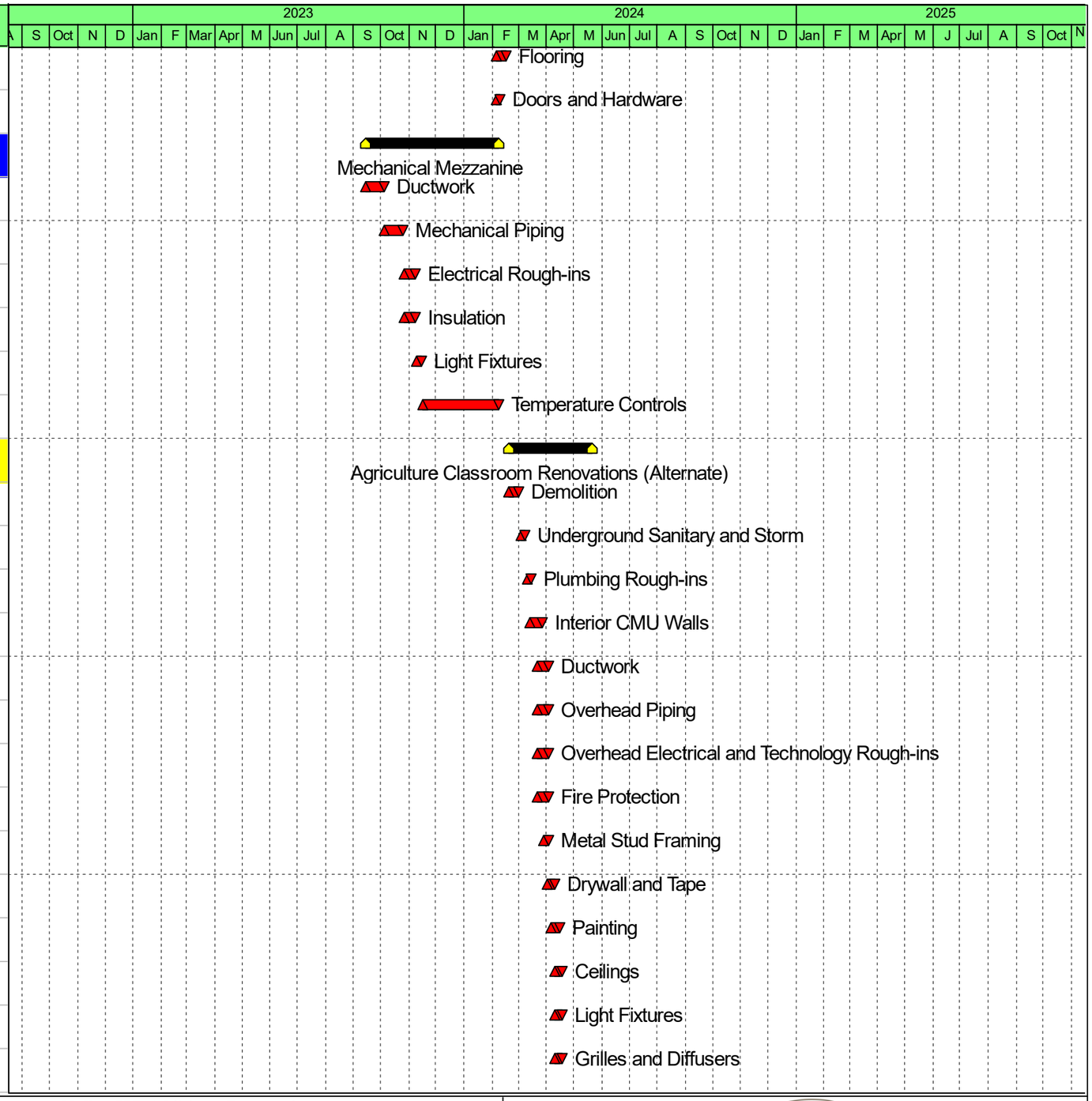
Activity Name	Original Duration	Start	Finish
Flooring	10	Feb-05-2024	Feb-16-2024
Doors and Hardware	5	Feb-05-2024	Feb-09-2024
Mechanical Mezzanine	105	Sep-14-2023	Feb-07-2024
Ductwork	15	Sep-14-2023	Oct-04-2023
Mechanical Piping	15	Oct-05-2023	Oct-25-2023
Electrical Rough-ins	10	Oct-26-2023	Nov-08-2023
Insulation	10	Oct-26-2023	Nov-08-2023
Light Fixtures	5	Nov-09-2023	Nov-15-2023
Temperature Controls	60	Nov-16-2023	Feb-07-2024
Agriculture Classroom Renovations (Alternate)	66	Feb-19-2024	May-20-2024
Demolition	10	Feb-19-2024	Mar-01-2024
Underground Sanitary and Storm	5	Mar-04-2024	Mar-08-2024
Plumbing Rough-ins	5	Mar-11-2024	Mar-15-2024
Interior CMU Walls	10	Mar-14-2024	Mar-27-2024
Ductwork	10	Mar-21-2024	Apr-03-2024
Overhead Piping	10	Mar-21-2024	Apr-03-2024
Overhead Electrical and Technology Rough-ins	10	Mar-21-2024	Apr-03-2024
Fire Protection	10	Mar-21-2024	Apr-03-2024
Metal Stud Framing	5	Mar-28-2024	Apr-03-2024
Drywall and Tape	7	Apr-02-2024	Apr-10-2024
Painting	7	Apr-05-2024	Apr-15-2024
Ceilings	7	Apr-10-2024	Apr-18-2024
Light Fixtures	7	Apr-10-2024	Apr-18-2024
Grilles and Diffusers	7	Apr-10-2024	Apr-18-2024



Actual Work
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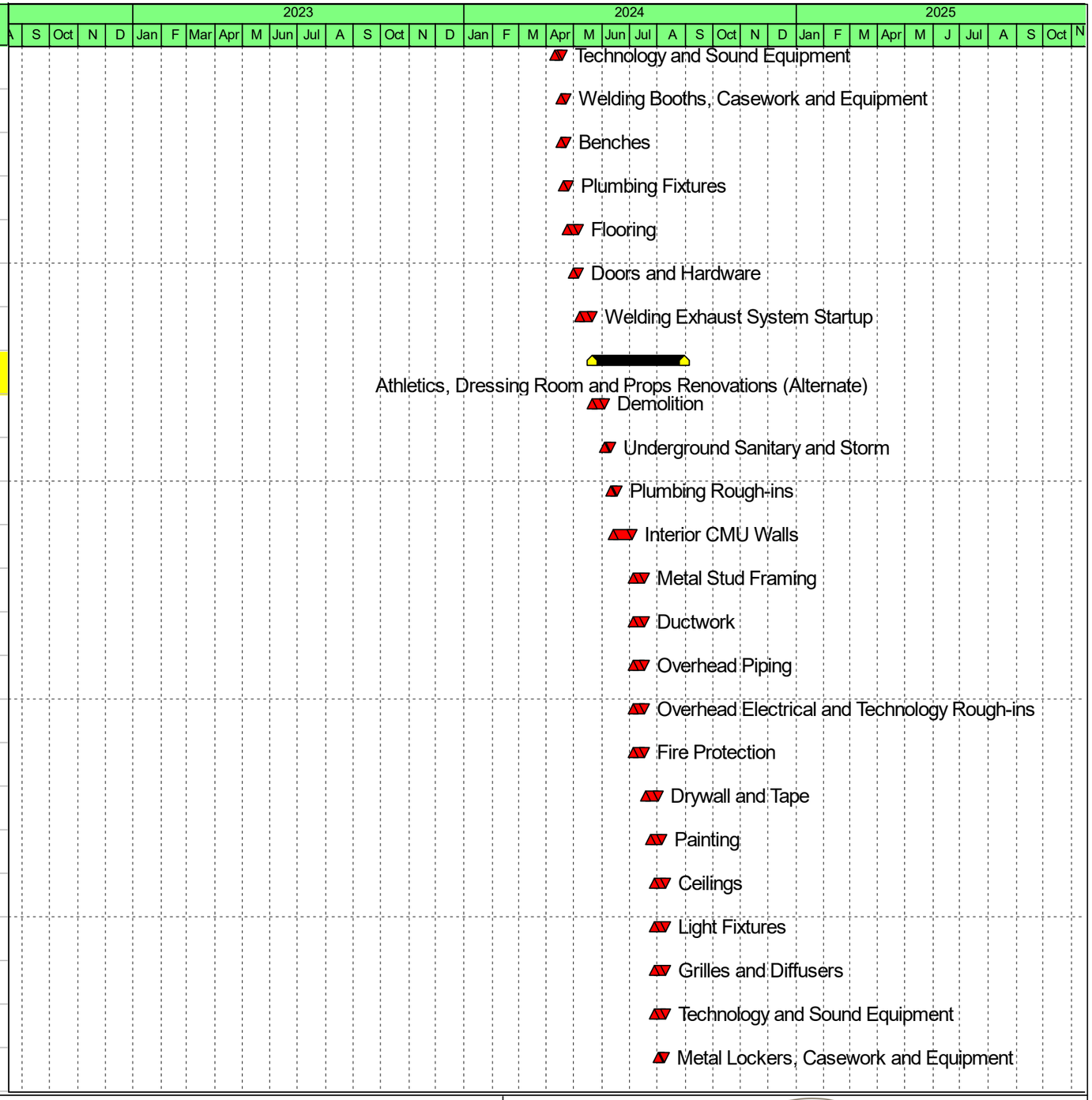
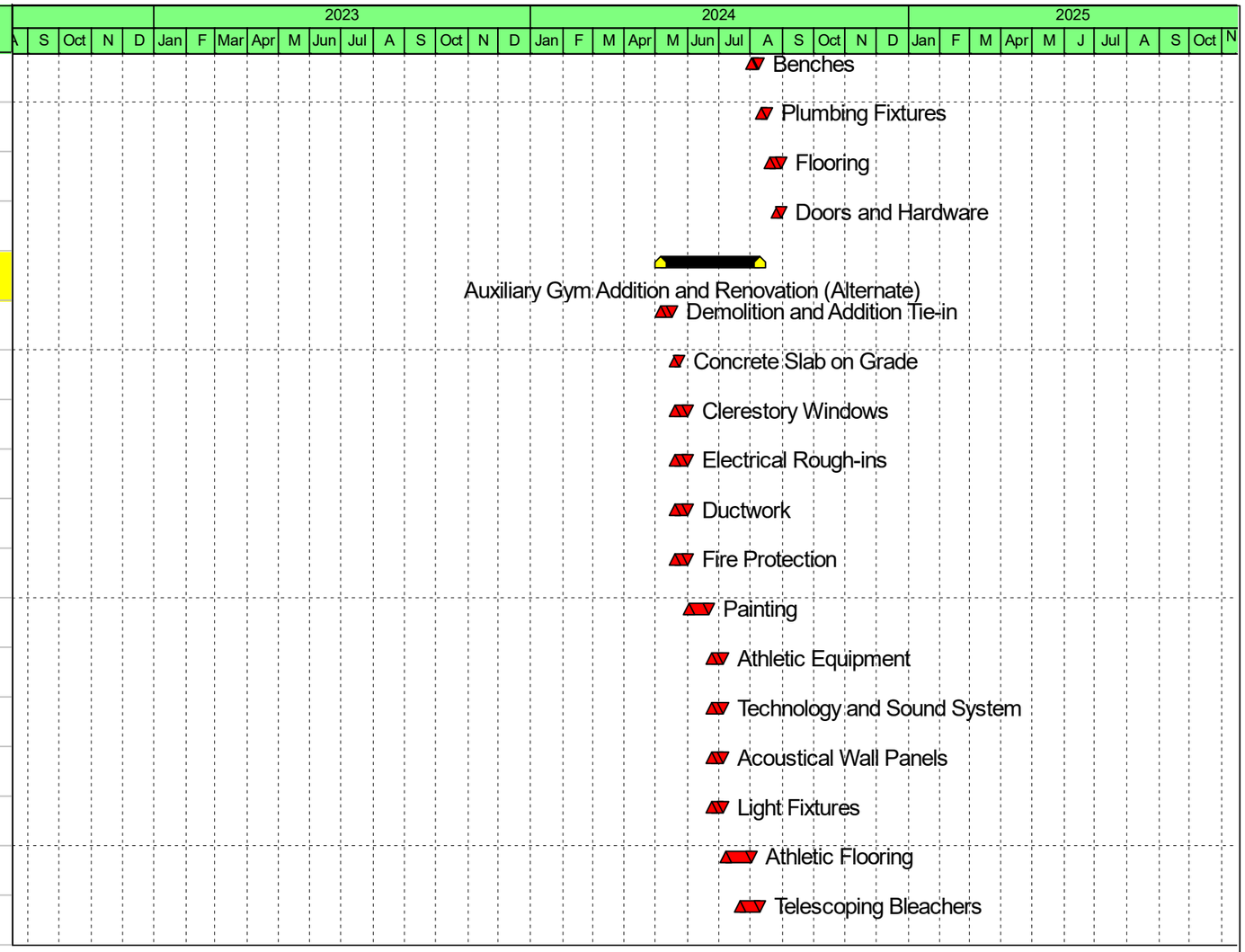
SKILLMAN

Activity Name	Original Duration	Start	Finish
Technology and Sound Equipment	7	Apr-10-2024	Apr-18-2024
Welding Booths, Casework and Equipment	5	Apr-16-2024	Apr-22-2024
Benches	5	Apr-16-2024	Apr-22-2024
Plumbing Fixtures	5	Apr-19-2024	Apr-25-2024
Flooring	10	Apr-23-2024	May-06-2024
Doors and Hardware	5	Apr-30-2024	May-06-2024
Welding Exhaust System Startup	10	May-07-2024	May-20-2024
Athletics, Dressing Room and Props Renovations (Alternate)	74	May-21-2024	Aug-30-2024
Demolition	10	May-21-2024	Jun-03-2024
Underground Sanitary and Storm	5	Jun-04-2024	Jun-10-2024
Plumbing Rough-ins	5	Jun-11-2024	Jun-17-2024
Interior CMU Walls	15	Jun-14-2024	Jul-04-2024
Metal Stud Framing	10	Jul-05-2024	Jul-18-2024
Ductwork	10	Jul-05-2024	Jul-18-2024
Overhead Piping	10	Jul-05-2024	Jul-18-2024
Overhead Electrical and Technology Rough-ins	10	Jul-05-2024	Jul-18-2024
Fire Protection	10	Jul-05-2024	Jul-18-2024
Drywall and Tape	10	Jul-19-2024	Aug-01-2024
Painting	10	Jul-24-2024	Aug-06-2024
Ceilings	10	Jul-29-2024	Aug-09-2024
Light Fixtures	10	Jul-29-2024	Aug-09-2024
Grilles and Diffusers	10	Jul-29-2024	Aug-09-2024
Technology and Sound Equipment	10	Jul-29-2024	Aug-09-2024
Metal Lockers, Casework and Equipment	5	Aug-02-2024	Aug-08-2024



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Activity Name	Original Duration	Start	Finish
Benches	5	Aug-02-2024	Aug-08-2024
Plumbing Fixtures	5	Aug-12-2024	Aug-16-2024
Flooring	10	Aug-19-2024	Aug-30-2024
Doors and Hardware	5	Aug-26-2024	Aug-30-2024
Auxiliary Gym Addition and Renovation (Alternate)	70	May-06-2024	Aug-09-2024
Demolition and Addition Tie-in	10	May-06-2024*	May-17-2024
Concrete Slab on Grade	5	May-20-2024	May-24-2024
Clerestory Windows	10	May-20-2024	May-31-2024
Electrical Rough-ins	10	May-20-2024	May-31-2024
Ductwork	10	May-20-2024	May-31-2024
Fire Protection	10	May-20-2024	May-31-2024
Painting	15	Jun-03-2024	Jun-21-2024
Athletic Equipment	10	Jun-24-2024	Jul-05-2024
Technology and Sound System	10	Jun-24-2024	Jul-05-2024
Acoustical Wall Panels	10	Jun-24-2024	Jul-05-2024
Light Fixtures	10	Jun-24-2024	Jul-05-2024
Athletic Flooring	20	Jul-08-2024	Aug-02-2024
Telescoping Bleachers	15	Jul-22-2024	Aug-09-2024



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

220220 Tippecanoe Valley HS Additions Renovations

Revised Guideline Schedule Sep-30-2022

SKILLMAN

Weight Room and Locker Room Addition

April 2023 - Feb. 2024

Auditorium Addition

April 2023 - April 2024

Renovations for Athletics and Auditorium (ALTERNATE)

May 2024 - Aug. 2024

Auxiliary Gym Addition (ALTERNATE)

June 2023 - Aug. 2024

Auxiliary Gym Renovation (ALTERNATE)

May 2024 - Aug. 2024

Pool Addition and Renovation

April 2023 - Nov. 2023

Locker Room Renovation

May 2023 - August 2023

Agriculture Renovation (ALTERNATE)

Feb. 2024 - May 2024

PHASING PLAN

A D D E N D U M N O. 3

Tippecanoe Valley High School Additions and Renovations

Project No. 220158.00

Tippecanoe Valley School Corporation
Akron, Indiana

Index of Contents

Addendum No. 3, 26 items, 4 pages
Revised Project Manual Sections: 23 34 23 - HVAC Power Ventilators and 27 51 16 Public Address
Revised Drawing Sheets – Addendum No. 1: FP.02, and FP.03
Revised Drawing Sheets: A6S.01, A7.10, E4.7, E5.7, and E8.1

Date: October 4, 2022

FANNING/HOWEY ASSOCIATES, INC.
ARCHITECTS/ENGINEERS/CONSULTANTS

William E. Payne, AIA
Indiana Registration No. 4169

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 3 to Drawings and Project Manual, dated September 6, 2022 for Tippecanoe Valley High School Additions and Renovations for Tippecanoe Valley School Corporation, 8343 South State Road 19, Akron, Indiana 46910; as prepared by Fanning/Howey Associates, Inc., Indianapolis, Indiana.
This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. REVISED PROJECT MANUAL SECTIONS

A. Sections 23 34 23 - HVAC Power Ventilators and 27 51 16 Public Address have been revised, dated 10/4//22, and are included with and hereby made a part of this Addendum.

ITEM NO. 2. PROJECT MANUAL, SECTION 04 20 00 – UNIT MASONRY

A. Add 2.6, B., 6., c., 1), as follows:

"1) Size: Norman"

ITEM NO. 3. PROJECT MANUAL, SECTION 23 80 61 – FUME COLLECTION SYSTEM

A. Delete 2.2, E., in its entirety.

B. Delete 2.2, I., in its entirety.

C. Article 2.4, C.: Change "8 inch diameter" to "6 inch diameter" within paragraph.

ITEM NO. 4. PROJECT MANUAL, SECTION 27 15 15 COMMUNICATIONS COPPER CABLING CATEGORY 6

A. Paragraph 2.8, rename as "VIDEO PROJECTOR LOCATIONS".

ITEM NO. 5. PROJECT MANUAL, SECTION 27 15 17 COMMUNICATIONS COPPER CABLING CATEGORY 6A

A. Paragraph 2.11, rename as "WIRELESS ACCESS POINTS".

ITEM NO. 6. ACCEPTABLE MANUFACTURERS

The following manufacturers are to be considered acceptable manufacturers (suppliers and fabricators) for the Sections of the Specifications listed. Listed manufacturers are required to bid on products equal in type and design, size, function, and quality to that originally specified. Final decision as to equality of products specified versus those proposed shall be made by the Architect.

Section 03 30 00 – Cast-In-Place Concrete
- SpecChem LLC, Kansas City, Missouri (Articles 2.3, F., 2.10, A., 2.11, A., 2.11, B., 2.13, A., 2.13, B., 2.13, C.)

Section 08 91 19 – Fixed Louvers
- Pottorff

Section 23 37 23 – HVAC Gravity Ventilators
- ACME

Section 23 80 61 – Fume collection system
- Collectors and Filters, Inc. (2.1, A. and 2.2, A.)
- Donaldson Torit (2.3, A)
- Blender Products (2.5, A)

ITEM NO. 7. REVISED DRAWING SHEETS – ADDENDUM NO. 1

A. Drawing Sheets: FP.02 and FP.03 have been revised, dated 10/4/22 and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

ITEM NO. 8. REVISED DRAWING SHEETS

A. Drawing Sheets: A6S.01, A7.10, E4.7, E5.7, and E8.1 have been revised, dated 10/4/22 and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

ITEM NO. 9. DRAWING SHEET NO. A1.21

A. Detail 3: Change size of Exterior Wall Mock-up to "6'-0" wide x 4'-0" high" and change the accent brick from "Quaker Velor" to "Stark White Glaze" .

ITEM NO. 10. DRAWING SHEETS A5.01 thru A5.13

A. General Note E.: Delete the wording "OR SEALANT".

ITEM NO. 11. DRAWING SHEET NO. A6.3

A. Details H8 and H13: Delete note "Closed cell, medium density, polyurethane spray foam air barrier" from detail in its entirety.

Note: Provide cavity wall insulation to match other details, wall sections and specifications.

ITEM NO. 12. DRAWING SHEET NO. A6.4

A. Details J8, J10, and J13: Delete note “Closed cell, medium density, polyurethane spray foam air barrier” from detail in its entirety.

Note: Provide cavity wall insulation to match other details, wall sections and specifications.

ITEM NO. 13. DRAWING SHEET NO. A8.04

A. Rooms D105, D106, D107, D108, D113 and D201 Ceiling material shall be “ACT-7”.

ITEM NO. 14. DRAWING SHEET NO. A8.05

A. Auditorium E116: Ceiling material shall read as follows “C: PES-2 / ACT-6,8 / GWB”.

ITEM NO. 15. DRAWING SHEET NO. A8S.01

A. Ceiling Materials, Acoustical Ceiling Tile: ACT-2 change product number from “#302” to “#301”.

B. Ceiling Materials, Acoustical Ceiling Tile: Change ACT-6 to the following:

“ACT-6 Armstrong/ School Zone Fine Fissured High NRC #1755, White, 24”x24”, Square Edge”.

ITEM NO. 16. DRAWING SHEET NO. E3.01 – UNIT A – FIRST FLOOR TECHNOLOGY ROUGH-IN PLAN

A. Room A101 – remove one speaker rough-in at each court from center point of court, total of two speaker rough-ins removed this sheet.

ITEM NO. 17. DRAWING SHEET NO. E3.02 – UNIT B – FIRST FLOOR TECHNOLOGY ROUGH-IN PLAN

A. Room B112 - remove one speaker rough-in at each court from center point of court, total of two speaker rough-ins removed this sheet.

ITEM NO. 18. DRAWING SHEET NO. E3.05 – UNIT E – FIRST FLOOR TECHNOLOGY ROUGH-IN PLAN

A. Room E117 - remove one stage monitor speaker jack rough-in at center point of stage.

B. Remove and replace technology plan note 20 as follows: “PROVIDE MONITOR SPEAKER JACK ROUGH-INS AT FLOOR POCKET. COORDINATE WITH TL SERIES DRAWINGS FOR EACH LOCATION. SEE DETAILS ON T1.04 FOR CABLING REQUIREMENTS.”

ITEM NO. 19. DRAWING SHEET NO. E3.06 – UNIT F – FIRST FLOOR TECHNOLOGY ROUGH-IN PLAN

A. Rooms F131, 134, 135 – provide rough-in for wall mounted speak station for production intercom, exact locations as directed by Architect.

ITEM NO. 20. DRAWING SHEET NO. T1.01 –TECHNOLOGY DETAILS

A. Symbols legend – wiring detail references. Ignore wiring detail references that are not included in the contract document set and provide as specified or otherwise required per manufacturer’s instructions for a complete and functional system.

ITEM NO. 21. DRAWING SHEET NO. T1.02 –TECHNOLOGY DETAILS

A. Speaker connection detail – courts A thru D - remove sixth speaker at each court, for a total of four speakers deleted. Each channel to connect to five speakers, and speakers to have 70V transformers.

ITEM NO. 22. DRAWING SHEET NO. T1.04 –TECHNOLOGY DETAILS

A. Remove “16” and replace with “32” channel mixer at auditorium.

ITEM NO. 23. DRAWING SHEET NO. T3.01 – UNIT A – FIRST FLOOR TECHNOLOGY PLAN

A. Room A101 – remove one speaker at each court from center point of court, total of two speakers removed this sheet.

ITEM NO. 24. DRAWING SHEET NO. T3.02 – UNIT B – FIRST FLOOR TECHNOLOGY PLAN

A. Room B112 - remove one speaker at each court from center point of court, total of two speakers removed this sheet.

ITEM NO. 25. DRAWING SHEET NO. T3.05 – UNIT E – FIRST FLOOR TECHNOLOGY PLAN

A. Room E117 - remove stage monitor speaker jack at center point of stage.

ITEM NO. 26. DRAWING SHEET NO. T3.06 – UNIT F – FIRST FLOOR TECHNOLOGY PLAN

A. Rooms F131, 134, 135 – provide wall mounted speak station for production intercom, exact locations as directed by Architect.

END OF ADDENDUM

SECTION 23 34 23 - HVAC POWER VENTILATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Centrifugal roof ventilators.
   2. In-line centrifugal fans.
   3. Ceiling-mounting ventilators.
   4. High volume low speed fans

1.3 PERFORMANCE REQUIREMENTS

A. Project Altitude: Base fan-performance ratings on actual Project site elevations.

B. Operating Limits: Classify according to AMCA 99.

1.4 ACTION SUBMITTALS

A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated and include the following:
   1. Certified fan performance curves with system operating conditions indicated.
   2. Certified fan sound-power ratings.
   3. Motor ratings and electrical characteristics, plus motor and electrical accessories.
   4. Material thickness and finishes, including color charts.
   5. Dampers, including housings, linkages, and operators.
   6. Roof curbs.
   7. Fan speed controllers.

B. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
   1. Roof framing and support members relative to duct penetrations.
   2. Ceiling suspension assembly members.
   3. Size and location of initial access modules for acoustical tile.
   4. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

1.5 CLOSEOUT DOCUMENTS

A. General: Closeout Submittals are to be submitted with O and M Manuals only. Do not submit with other ACTION and INFORMATIONAL Submittals:
   1. Operation and Maintenance Data: For power ventilators to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. AMCA Compliance: Products shall comply with performance requirements and shall be licensed to use the AMCA-Certified Ratings Seal.

C. NEMA Compliance: Motors and electrical accessories shall comply with NEMA standards.

D. UL Standard: Power ventilators shall comply with UL 705.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver fans as factory-assembled unit, to the extent allowable by shipping limitations, with protective crating and covering.

B. Disassemble and reassemble units, as required for moving to final location, according to manufacturer's written instructions.

C. Lift and support units with manufacturer's designated lifting or supporting points.

1.8 COORDINATION

A. Coordinate size and location of structural-steel support members.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 07 Section "Roof Accessories."

PART 2 - PRODUCTS

2.1 CENTRIFUGAL ROOF VENTILATORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Greenheck
2. Loren Cook Company.
3. Carnes Company HVAC.
4. Delhi Industries Inc.
5. NuTone Inc.
6. Penn Ventilation.

B. Description: Direct-driven centrifugal fans consisting of housing, wheel, fan shaft, bearings, motor and disconnect switch, drive assembly, curb base, and accessories.

C. Housing: Removable, spun-aluminum, dome top and outlet baffle; square, one-piece, aluminum base with venturi inlet cone.
1. Upblast Units: Provide spun-aluminum discharge baffle to direct discharge air upward, with rain and snow drains and grease collector.
2. Hinged Subbase: Galvanized-steel hinged arrangement permitting service and maintenance.

D. Fan Wheels: Aluminum hub and wheel with backward-inclined blades.

E. Accessories:
1. Variable-Speed Controller: Solid-state control to reduce speed from 100 to less than 50 percent. Speed controller is to be factory mounted and wired.
2. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through an internal aluminum conduit.
3. Bird Screens: Removable, 1/2-inch mesh, aluminum or brass wire.
4. Dampers: Counterbalanced, parallel-blade, backdraft dampers mounted in curb base; factory set to close when fan stops.

F. Roof Curbs: Galvanized steel; mitered and welded corners; 1-1/2-inch thick, rigid, fiberglass insulation adhered to inside walls; and 1-1/2-inch wood nailer. Size as required to suit roof opening and fan base.
   1. Configuration: Self-flashing without a cant strip, with mounting flange.
   2. Overall Height: 12 inches.
   3. Pitch Mounting: Manufacture curb for roof slope.

G. Finish
   1. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil for topcoat and an overall minimum dry film thickness of 2 mils.
      a. Color and Gloss: Custom color shall be provided from manufacturer's full range of colors for selection by A/E.

2.2 IN-LINE CENTRIFUGAL FANS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Greenheck
   2. Loren Cook Company.
   3. Carnes Company HVAC.
   4. Delhi Industries Inc.
   5. NuTone Inc.
   6. Penn Ventilation.

B. Description: In-line, direct-driven centrifugal fans consisting of housing, wheel, outlet guide vanes, fan shaft, bearings, motor and disconnect switch, drive assembly, mounting brackets, and accessories.

C. Housing: Split, spun aluminum with aluminum straightening vanes, inlet and outlet flanges, and support bracket adaptable to floor, side wall, or ceiling mounting.

D. Direct-Driven Units: Motor mounted in airstream, factory wired to disconnect switch located on outside of fan housing.

E. Fan Wheels: Aluminum, airfoil blades welded to aluminum hub.

F. Accessories:
   1. Variable-Speed Controller: Solid-state control to reduce speed from 100 to less than 50 percent.
   2. Companion Flanges: For inlet and outlet duct connections.
   3. Disconnect switch, non-fusible type, with thermal overload protection.

2.3 MOTORS

A. Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."

B. Enclosure Type: Totally enclosed, fan cooled.

2.4 SOURCE QUALITY CONTROL

A. Sound-Power Level Ratings: Comply with AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.

B. Fan Performance Ratings: Establish flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests and ratings according to AMCA 210, "Laboratory Methods of Testing Fans for Rating."

2.5 CEILING-MOUNTING VENTILATORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Greenheck
   2. Loren Cook Company.
   3. Broan Mfg. Co., Inc.
   4. Carnes Company HVAC.
   5. Delhi Industries Inc.
   6. NuTone Inc.
   7. Penn Ventilation.

B. Description: Centrifugal fans designed for installing in ceiling or wall or for concealed in-line applications.

C. Housing: Steel, lined with acoustical insulation.

D. Fan Wheel: Centrifugal wheels directly mounted on motor shaft. Fan shrouds, motor, and fan wheel shall be removable for service.

E. Grille: Plastic or aluminum, louvered grille with flange on intake and thumbscrew attachment to fan housing. Color shall be white, unless noted otherwise.

F. Electrical Requirements: Junction box for electrical connection on housing and receptacle for motor plug-in.

G. Accessories:
   1. Variable-Speed Controller: Solid-state control to reduce speed from 100 to less than 50 percent.
   2. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through internal aluminum conduit.
   3. Bird Screens: Removable, 1/2-inch mesh, aluminum or brass wire.
   4. Wall Grille: Ring type for flush mounting.
   5. Dampers: Counterbalanced, parallel-blade, backdraft dampers mounted in wall sleeve; factory set to close when fan stops.

2.6 HIGH VOLUME LOW SPEED FANS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Big Ass Fans
   2. Macro Air
   3. Rite-Hite
   4. Skyblade

B. Description: The fan shall be designed to move high volumes of air at low speed for de-stratification in a large, high ceiling application. The sound levels from the fan operating at maximum speed shall not exceed 55 dBA measured 20 feet below the blades and 20 fee horizontally from the center of the fan. The fan shall be ETL certified and built pursuant to construction guidelines set forth by UL standard 507 and CSA standard 22.2.

C. Airfoil Fan Blades: The fan shall be equipped with six high volume, low speed airfoils of precision extruded aluminum alloy. The airfoils shall be connected by means of two high strength locking bolts per airfoil. The airfoils shall be connected to the hub and interlocked with zinc plated steel retainers. Airfoils shall be powder coated with the color selected by the architect during submission review.

D. Winglets: The fan shall be equipped with six winglets designed to redirect outward airflow into downward airflow, thereby enhancing the efficiency and effectiveness of the fan. The winglets shall be molded of high density polypropylene. A winglet shall be attached at the tip of each airfoil by means of a barrel screw. Winglets color shall be selected by the architect during submission review.

E. Fan hub: The fan hub shall be aluminum for high strength and light weight. The hub shall be secured to the output shaft of the gearbox by means of a steel coupling interface. Both hub and flange shall be precision machined to achieve a well balanced and solid rotating assembly. The hub shall incorporate a minimum of six safety retaining clips made of 1/4" thick steel that shall restrain the hub/airfoil assembly in case of gearbox output shaft failure.

F. Motor: The fan motor shall be an AC induction type inverter rated at 1725 RPM, 230/460 VAC, 3 φ and 60 Hz. The motor shall be totally enclosed, fan cooled (TEFC) with an IP56 NEMA classification. NEMA standard frames 56C/143TC/145TC shall be provided for ease of service. The motor shall be manufactured with a double baked Class F insulation and be capable of continuous operation in -30^{o}F to 122^{o}F ambient conditions.

G. The gearbox shall be a helical gear reducer, precision machined from hardened steel for low noise and long service life with double lip seals to retain oil and prevent contamination. The gearbox shall be lubricated for life. The gear reducer shall have a standard backlash of less than 25 ARC minutes and be equipped with a 17-4 stainless steel shaft of 1-1/4 inch diameter.

H. Mounting System: The fan mounting system shall be designed for quick and secure installation on a variety of structural supports. All components in the mounting system shall be of welded construction using low carbon steel no less than 3/16" thick and be powder coated for appearance and resistance to corrosion. All mounting bolts shall be SAE Grade 8 or equivalent and rated with a minimum tensile strength of 150,000 psi. Mounting components color shall be selected by the architect during submission review.

I. Safety Cable: The fan shall be equipped with a safety cable that provides an additional means of securing the fan assembly to the building structure. The safety cable shall be at least 1/4 inch diameter and fabricated out of 7 by 19 galvanized steel cable. The loops shall be secured with swaged Nicopress fittings, pre-loaded and tested to 3,200 lbf.

J. Variable Frequency Drive and Controller
   1. Variable frequency drive shall be provided by the manufacturer. VFD shall be a NEMA 4X that is factory programmed to minimize starting and breaking torques. VFD shall have touchpad controls and an LED display for controlling the fan's direction, operation, speed and programming. The VFD shall be mounted on the fan motor frame.
   2. Provide a wall mounted remote keypad equipped with touchpad controls and a LED display for controlling the fan's direction, operation, speed, and programming. The remote keypad shall be equipped with a simple diagnostic program to identify faults in the system.

2.7 MOTORS

A. Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."

B. Enclosure Type: Totally enclosed, fan cooled.

2.8 SOURCE QUALITY CONTROL

A. Sound-Power Level Ratings: Comply with AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.

B. Fan Performance Ratings: Establish flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests and ratings according to AMCA 210, "Laboratory Methods of Testing Fans for Rating."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install power ventilators level and plumb.

B. Support in-line units using restrained spring isolators having a static deflection of 1 inch. Vibration-control devices are specified in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment."

C. Secure roof-mounting fans to roof curbs with cadmium-plated hardware. Refer to Division 07 Section "Roof Accessories" for installation of roof curbs.

D. Support suspended units from structure using threaded steel rods and elastomeric hangers or spring hangers having a static deflection of 1 inch. Vibration-control devices are specified in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment."

E. Install units with clearances for service and maintenance.

F. Label units according to requirements specified in Division 23 Section "Identification for HVAC Piping and Equipment."

3.2 CONNECTIONS

A. Duct installation and connection requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors. Flexible connectors are specified in Division 23 Section "Air Duct Accessories."

B. Install ducts adjacent to power ventilators to allow service and maintenance.

C. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

D. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:
   1. Verify that shipping, blocking, and bracing are removed.
   2. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
   3. Verify that cleaning and adjusting are complete.
   4. Disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
   5. Adjust belt tension.
   6. Adjust damper linkages for proper damper operation.
   7. Verify lubrication for bearings and other moving parts.
   8. Verify that manual and automatic volume control and fire and smoke dampers in connected ductwork systems are in fully open position.
   9. Disable automatic temperature-control operators, energize motor and adjust fan to indicated rpm, and measure and record motor voltage and amperage.
   10. Shut unit down and reconnect automatic temperature-control operators.

11. Remove and replace malfunctioning units and retest as specified above.

B. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

A. Adjust damper linkages for proper damper operation.

B. Refer to Division 23 Section "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing procedures.

C. Replace fan and motor pulleys as required to achieve design airflow.

D. Lubricate bearings.

END OF SECTION 23 34 23

SECTION 27 51 16 - PUBLIC ADDRESS AND MASS NOTIFICATION SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes but is not limited to the following:
1. Loud speakers.
2. Line Array Column Speakers
3. Ceiling speakers.
4. Subwoofer.
5. Program sources and recorders.
6. Power amplifiers.
7. Audio signal processors.
8. Mic/line mixers.
9. Automatic mic/line mixers.
10. Mixing consoles.
11. Wired microphones
12. Wireless microphones.
13. Assistive listening systems.
14. Sound system equipment cabinets and its accessories.
15. Production intercommunications (Cue Com)
16. Miscellaneous sound equipment, cables, hardware, etc.

B. Related section includes the following:
1. Division 01 – General Requirements
2. Division 26 – Electrical
3. Division 27 – Communications Sections.
4. Division 28 – Electronic Safety and Security

1.3 SECTION DEFINITIONS

A. CD: Compact disc.

B. HF: High frequency.

C. IR: Infrared.

D. LAN: Local area network.

E. LF: Low frequency.

F. SPL: Sound Pressure Level.

G. VU: Volume unit.

H. Channels: Separate parallel signal paths, from sources to loudspeakers or loudspeaker zones, with separate amplification and switching that permit selection between paths for speaker alternative program signals.

I. Zone: Separate group of loudspeakers and associated supply wiring that may be arranged for selective switching between different channels.

1.4 SUBMITTALS

A. Shop Drawings: Signed and sealed by a qualified sound system engineer.
   1. Design Calculations: Calculate requirements for selecting seismic restraints for central control cabinets.
   2. Equipment Details: Detail equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, and location of each field connection.
   3. Console layouts.
   4. Control panels.
   5. Rack arrangements.
   6. Wiring Diagrams: Power, signal, and control wiring. Include the following:
      a). Identify terminals to facilitate installation, operation, and maintenance.
      b). Single-line diagram showing interconnection of components.
      c). Cabling diagram showing cable routing.
   7. Loudspeakers mounting details.
   8. Loudspeakers locations and aiming details.

B. Quality Assurance/Control Submittals:
   1. Product Data: For each item specified.
   2. Calculations: For sizing backup battery.
   3. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
      a). Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

C. Closeout Submittals:
   1. Operation and Maintenance Data: For public address and music equipment to include in emergency, operation, and maintenance manuals.
   2. Extra Materials: Receipt for extra materials.
   3. Loose Equipment: Receipt for loose materials not fastened in place.

D. See Common Work Results For Communications section 270500 for more submittal requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
   1. Maintenance Proximity: Not more than 2 hours' normal travel time from Installer's place of business to Project site.
   2. Cable installer must have on staff a registered communication distribution designer certified by Building Industry Consulting Service International.
   3. Installation shall be by personnel certified by National Institute for Certification in Engineering Technologies as audio systems Level III technician.

B. Source Limitations: Obtain public address and music equipment through a single source authorized by manufacturer to distribute each product.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with NFPA 70 – National Electrical Code.

E. Comply with UL 50.

F. TIA/EIA-607 Telecommunications grounding.

G. Latest edition of BISCI – TDMM – manual

H. Americans with Disabilities Act (ADA)

I. Federal Communications Commission, Part 15

J. Sound System Engineering (Davis and Patronics) 3rd Edition 2006.

K. NSCA – Certified Systems Installer, C-SI

L. InfoComm International – Certified Technology Specialist, CTS.

M. Provide labeling per ANSI/EIA/TIA-606 requirement and in accordance with the Owner and Technology Consultant.

1.6 COORDINATION

A. Coordinate layout and installation of system components and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.7 WARRANTY

A. The public address and mass notifications system shall carry a warranty as specified in Section "Demonstration and Training of Communications Systems".

1.8 TRAINING

A. Provide training per Section "Demonstration and Training of Communications Systems".

1.9 RECORD DRAWINGS/OPERATION AND MAINTENANCE MANUALS

A. Provide record drawings and operation and maintenance manuals as described in Sections "Operation and Maintenance of Communications" and "Common Works Results for Communication Systems".

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers' and their products are approved products to be used, shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. AKG Acoustics; A Harman International Company (AKG).
2. AMK
3. Allen & Heath Limited (A&H).
4. Ashly Audio, Inc. (Ashly).
5. Atlas Soundolier; Atlas Sound (Atlas).
6. Audio Technica, U.S., Inc.
7. Bogen Communications International, Inc. (Bogen)
8. Crown Audio, Inc.; A Harman International Company (Crown).
9. D & M Professional; Denon Professional products (Denon).
10. D & M Professional; Marantz Professional products (Marantz).
11. Eastern Acoustic Works (EAW).
12. Electro-Voice, Inc.; Telex Communications, Inc. (EV).
13. Gentner ALS; A Starin Company (Gentner).
14. Intelix, LLC (Intelix).
15. JBL Professional; A Harman International Company (JBL).
16. Lab Gruppen
17. Listen Technologies Corporation.
18. LOUD Technologies, Inc.; Mackie products (Mackie).
19. Lowell Manufacturing Company (Lowell).

20. Meyer Sound Laboratories Inc. (Meyer).
21. Midas
22. Music Tribe
23. Peavey Electronics Corporation; Architectural Acoustics by Peavey products. (Peavey).
24. ONE Systems
25. QSC Audio Products, Inc. (QSC).
26. Quam Nichols Company (Quam).
27. Rane Corporation (Rane).
28. Rauland-Borg Corporation (Rauland).
29. Renkus-Heinz, Inc.
30. Sennheiser Electronic Corporation.
31. Shure Incorporated (Shure).
32. Soundcraft; A Harman International Company (Soundcraft).
33. Symetrix, Inc. (Symetrix).
34. TASCAM; a division of TEAC America, Inc. (TASCAM).
35. Telex Communications, Inc. (Telex).
36. TOA Electronics, Inc. (TOA).
37. Yamaha Corporation of America (Yamaha).

2.2 EQUIPMENT AND MATERIALS

A. Coordinate features to form an integrated system. Match components and interconnections for optimum performance of specified functions.

B. Equipment: Modular type using solid-state components, fully rated for continuous duty, unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz.

C. Waterproof Equipment: Listed and labeled for outdoor use.

2.3 LOUDSPEAKER SYSTEMS

A. Type 1 Loudspeaker
1. Provide a minimum 150 watt, 2-way full range loudspeakers as follows:
   a). LF Transducer: 8 inch cone
   b). HF Transducer: 1 inch exit, titanium-diaphragm compression driver.
   c). Coverage pattern (HxV): Minimum 100 deg by 80 deg.
   d). Axial Sensitivity: Minimum 92 dB.
   e). Frequency Response: 48 to 20,000 Hz, -10dB
   f). Input Impedance: 8 ohms with available 70V transformer,
   g). Power Handling: Minimum 150 W continuous; 300 W peak.
   h). Maximum SPL: 123 dB.
   i). Finish: Black
   j). Grille: Powder-coated, galvanized steel.
   k). Housing: ABS resin, High impact polymer
2. Accessories:
   a). Provide mounting hardware.
3. Approved Manufacturer:
   a). EV Model Zx1i.
   b). JBL Control 29 AV-1
   c). Soundtube SM890i

B. 15/18-Inch Subwoofer Loudspeakers.
1. Provide a 15 or 18 inch subwoofer loudspeaker in rectangular enclosure, as follows:
   a). Frequency Response: 35 to 220 Hz, plus or minus 3 dB; 32 to 200 Hz, plus or minus 10 dB.
   b). Axial Sensitivity: 95 dB SPL
   c). Input Impedance: 8 ohms.
   d). Power Rating: 800 W Continuous, 1600 W Program, 3200 W Peak
   e). Calculated Axial Output Limit: 133 dB, peak; 131 dB, long term.

f). Recommended High Pass Frequency: 25 Hz, 24 dB per octave.
g). Finish: Black or white as selected by Architect.
h). Grille: Perforated steel.
i). Housing: Baltic birch plywood.
j). Input connector: Neutrik Speakon NL-4 (X2)

2. Provide mounting hardware for mounting above the steel joist.
3. Provide wire guard
4. Approved Manufacturer:
   a). EAW model SB250ZP series.
   b). Electro-Voice, Inc., Sb122- series
   c). JBL Professional SRX718S- series.
   d). QSC Audio Products, Inc., KW – series
   e). TOA FB-120x- series
   f). Renkus-Heinz, Inc.

2.4 TWO WAY LINE ARRAY COLUMN SPEAKERS

A. 2-Way Line of Array Column Speakers with Asymmetrical Vertical Coverage.
1. Approved Manufacturer:
   a). Community ENTASYS full/low frequencies
   b). JBL CBT Series full/low frequencies
   c). TOA SR series full/low frequencies.
2. Provide 2-way line array column speakers as follows:
   a). Full range frequency response: 200 Hz to 20 KHz full range.
   b). Full range frequency response: 200 Hz to 1.6 KHz low range.
   c). Crossover frequencies: Mid frequency 1 KHz, High frequency 7 KHz.
   d). Crossover frequencies: 1.6 KHz low pass, High frequency 7 KHz.
   e). Sensitivity: 93 dB at Full range.
   f). Sensitivity: 90 dB at low range.
   g). Rated impedance: 8 ohms.
   h). Max SLP: 120 dB at full range.
   i). Max SLP: 116 dB at low range
   j). Finish: Black or white as selected by Architect.
   k). Grille: Foam-backed, powder-coated, perforated steel.
   l). Housing: Baltic birch plywood.
3. Provide universal bracket and mounting hardware.

2.5 POWER AMPLIFIERS

A. Approved Manufacturers:
1. Crown Audio, Inc. Ct or Cdi- series.
2. Electro-Voice, Inc. Q- series
3. Peavey Electronics Corporation IPA Series.
4. QSC Audio Products, Inc., CX- series
5. TOA Electronics, Inc. 900-series
6. Crest Audio, Pro- series

B. Provide power amplifiers, as shown, that meets to the following requirements:
1. Comply with TIA/EIA SE-101-A.
2. Mounting: TIA/EIA-310-D, standard 19-inch rack mounted.
3. Output Power: As indicated on the system riser diagram, balanced lines (minimum 120 watts).
4. Frequency Response: 20 – 20KHz +1dB / -3dB
5. Minimum Signal-to-Noise Ratio: 60 dB, at rated output.
6. Total Harmonic Distortion: Less than 3 percent at rated power output from 50 to 12,000 Hz.
7. Output Regulation: Less than 2 dB from full to no load.
8. Controls: On/off, input levels, and low-cut filter.
9. Outputs: 8 ohms at 25 / 70V balanced

10. Input Sensitivity: Matched to preamplifier and providing full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on speaker microphone or handset transmitter.

C. Accessories
1. Rack-mount kit
2. Power cable

D. Rack Spaces
1. Up to 1200 watt – 2U

2.6 DIGITAL SIGNAL PROCESSORS (DSP)

A. Minimum 4-Input, 6-Output digital signal processor with Feedback Reduction.
1. Provide a minimum 4 input, 6 output audio processor with feedback reduction, as follows:
a). Supplied Windows software displays interaction between dynamics processes.
b). 5-, 10-, and 16-filter, automatic, adaptive, feedback filters in single-channel and stereo modules
c). Parametric and graphic EQ.
d). 20ms of delay.
e). Mono and stereo compressors and limiters.
f). Gate/downward expander.
g). Ducker.
h). Automatic gain control.
i). 2 to 5-way crossovers.
j). Route any of 2 inputs to any of 6 outputs in any combination.
k). Adjust signal levels at crosspoints.
l). 128 presets.
m). Frequency response: 20 – 20kHz ±1.0dB, -3dB loss
2. Accessories
a). External control options:
1) Provide a wall mounted volume and selection control interface. Interface must be programmed for volume control functions in addition to zone selection settings (Example: Combined Gym/Cafeteria, etc.). Coordinate zone settings with owner.
2) Provide a mobile tablet app interface. Software app interface must be programmed for volume control functions. Coordinate settings with owner.
3) Logic Outputs: Provide indication of preset changes and mutes.
b). Rack-Mount Bracket: TIA/EIA-310-D, standard 19-inch.
3. Approved Manufacturer
a). Ashly NE4800
b). Symetrix Solus 8
c). DBX DriveRack 4820
d). BSS Audio Soundweb London BLU-100

2.7 8-INPUT AUTOMATIC MIC/LINE MIXER

A. Approved Manufacturer:
1. Shure Incorporated, SCM810 series
2. Peavey Electronics Automix-Control8-series.
3. Rane Corporation AM2 series

B. Provide 8 channel automatic mic/line mixer, as follows:
1. 8-channel automatic, mic/line mixer.
2. Automatic gain control
3. Standard, Last-Mic-On, or First-Come-First Served modes of automatic operation
4. Filibuster override.
5. Low-cut filter.

6. Balanced inputs and outputs.
7. 48 V phantom powers.
8. RS232 controlled.
9. 10/100 Ethernet port.
10. Frequency: 20 – 20kHz
11. Accessories
    a). Rack-Mount Bracket: TIA/EIA-310-D, standard 19-inch. (3U rack space)
12. Provide all required patch cables.

2.8 8- INPUT STEREO MIC/LINE MIXER

A. Approved Manufacturer:
1. Rane Corporation., MLM82S series
2. Biamp 801i series
3. Bogen CAM8-PRO

B. Provide 8-input, stereo mic/line mixer, as follows:
1. 8 input stereo mic/line mixer
2. Balanced left and right ¼ inch stereo outputs.
3. Independent mono outputs.
4. Two auxiliary sends and returns.
5. Balanced inputs and outputs.
6. 48 V phantom power.
7. 1/4-inch TRS headphone jack.
8. Transformer balanced XLR Mono output.
9. 20dB Microphone pad switch.
10. Stereo aux input control.
11. Aux master output control.
12. Frequency: 20 – 20kHz
13. Accessories
    a). Rack-Mount Bracket: TIA/EIA-310-D, standard 19-inch (3U rack space)
14. Provide all required patch cables.

2.9 32-INPUT CHANNEL DIGITAL MIXING CONSOLE

A. Approved Manufacturer:
1. Midas M32
2. Yamaha TF5
3. Allen & Heath SQ-5
4. Soundcraft; SI Impact
5. Behringer Wing

B. Provide 32-input, 12 bus, large self-contained mixing console, as follows:
1. 28 mono input channels, balanced XLR-type microphone inputs and balanced/unbalanced TRS-type line inputs.
2. Insert send/return path points for each mono input channel.
3. 4-band equalization on each input channel.
4. 48 V phantom power switchable in 4 input groups.
5. 2/4 stereo input channels.
6. 4 group/aux sends.
7. 6 aux sends.
8. 100-mm faders.
9. Pre-fader listens and channel on switches.
10. 10 mono mix busses, 1 stereo mix bus.
11. Stereo aux returns and bus sends.
12. Two matrix mixes.
13. Peak reading level meters.
14. Record and tape input/output.
15. 4 Pin XLR lamp sockets
16. Link cable
17. Hard shell, foam lined storage case.
18. Dust cover.

C. Provide all required patch cables.

2.10 PROGRAM SOURCES AND RECORDERS

A. CD/MP3/Bluetooth
1. Approved Manufacturer:
a). TASCAM CD-200BT.
b). Denon DN-500CB
c). Marantz PMD-526C
2. Provide as follows:
a). Rack mountable.
b). Connect up to 8 Bluetooth devices simultaneously
c). Play CD, CD-R, CD-RW, WAV, MP2, MP3, Data CD
d). Multiple playback modes, continuous, single, programmed, random
e). Shock/skip prevention memory buffer.
f). Pitch control.
g). ¼ inch stereo headphone output.
h). Wireless remote control.
3. Accessories
a). Rack-Mount Bracket: TIA/EIA-310-D, standard 19-inch.

2.11 WIRED MICROPHONES

A. Ensemble Microphone
1. Approved Manufacturer:
a). Shure Model SM81 series.
b). AKG Acoustics C1000S-series.
c). Electro-Voice, Inc. RE510 series
d). Sennheiser Electronic Corporation.
e). Audio-Technicam AE5100 series
2. Provide ensemble microphone, as follows:
a). Unidirectional condenser microphone.
b). Steel construction with stainless steel hardware.
c). Balanced, transformer coupled, male XLR-type connector.
d). Frequency Response: 20 to 20,000 Hz.
e). Rated Impedance: 150 ohms.
f). Signal-to-Noise Ration: 78 dB at 98 dB SPL.
g). Sensitivity at 1000 Hz: Minus 45 dBV per Pascal.
h). Clipping Level at 1000 Hz: Minus 4 dBV into 800 ohm load.
i). Total Harmonic Distortion: Less than 0.5 percent (131 dB SPL at 250 Hz into 800 ohm load.)
j). Storage case.
3. Accessories
a). Windscreen
b). Cable
c). Snap in stand clamp.
d). Floor stand with boom arm

B. Vocal Microphone
1. Approved Manufacturer:
a). Shure Model SM58S series
b). AKG Acoustics D5-series.
c). Electro-Voice, Inc. RE410-series.
d). Sennheiser Electronic Corporation, MD431 II.
e). Audio-Technica – AE6100 or 822 series
2. Provide vocal microphone, as follows:
a). Unidirectional, cardioids, dynamic microphone.
b). On/Off Switch
c). Steel construction with stainless steel hardware.
d). Balanced, transformer coupled, male XLR-type connector.

e). Frequency Response: 50 to 15,000 Hz.
f). Rated Impedance: 150 ohms.
g). Sensitivity at 1000 Hz: Minus 54.5 dBV per Pascal.
h). Storage case.

3. Accessories
a). Windscreen
b). Desk stands with push-to-talk switch.
c). Cable
d). Snap in stand clamp.
e). Floor stand with boom arm

C. Stereo Microphone

1. Approved Manufactures
a). AKG Acoustics C214-series.
b). Audio-Technica U.S., Inc., AT822 series
c). Electro-Voice, Inc. N/D967-series.
d). Sennheiser Electronic Corporation, e865 series
e). Shure Model VP88 series.

2. Provide stereo microphone, as follows:
a). Stereo microphone combining two condenser cartridges in single housing.
b). Steel or aluminum construction with stainless steel hardware.
c). Balanced, transformer coupled, male XLR-type connector.
d). Frequency Response: 40 to 20,000 Hz.
e). Rated Impedance: 150 ohms.
f). Signal-to-Noise Ration: 70 dB at 94 dB SPL.
g). Sensitivity at 1000 Hz: Minus 66 dBV (mid) per Pascal.
h). Clipping Level at 1000 Hz: Minus 12 dBV (mid), minus 10 dBV (side) into 800 watt load.
i). Total Harmonic Distortion: Less than 0.5 percent (131 dB SPL at 250 Hz into 800 ohm load.)
j). Windscreen.
k). Storage case.

3. Accessories
a). Windscreen
b). Cable
c). Snap-in stand clamp
d). Floor stand with boom arm

2.12 WIRELESS MICROPHONES

A. Approved Manufacturer:

1. Shure Model BLX series
2. Audio Technica, 3000 series
3. Sennheiser Electronic Corporation, G4 Series

B. Provide combination wireless systems as follows:

1. Professional wireless receivers.
2. Wireless body pack transmitter.
3. Cardioids microphone.
4. Lavaliere condenser microphone.
5. Provide one receiver and transmitter for each microphone.
6. Systems in the 600 MHz service band are not acceptable.

C. Wireless headset microphone:

1. Approved manufacturer:
a). Country Man H6
b). Shure
c). EV

d). Crown CM-312A
e). Sennheiser
f). Audio technical AT-889cW

2. Provide wireless microphones, as follows:
   a). Head worn condenser microphone, 3 foot plug-in cable, battery belt pack.
   b). Electrets condenser
   c). Freq. response: 50 Hz to 17,000Hz
   d). Impedance: 75 ohm balanced
   e). Load impedance: 1,000 ohms or greater
   f). Signal to noise ratio: 63 dB at 94 dB SPL
3. Provide UHF wireless, as follows:
   a). UHF wireless frequency agile, diversity microphone system
   b). Handheld transmitter
   c). Rack mounted receiver
   d). Body pack transmitter
   e). Omni-directional lapel microphone
   f). Two (2) 1/4-wave rack mounted antennas
   g). UHF Antenna distribution system
4. Provide water resistant microphones, as follows:
   a). Water resistant head-worn microphone
   b). Aerobic sports pouch for housing bodypack transmitter.
5. Approved Manufacturers:
   a). Shure model WH30TQG and custom pouch.
   b). Sennheiser Electronic Corporation.
   c). Telex models WPHS-746 and WP-23.
   d). Audio-Technica U.S., Inc. model AT889cW and custom pouch.

2.13 ASSISTIVE LISTENING SYSTEMS

A. Approved Manufacturer:
1. Gentner model TX-37A transmitter and model Digital-1 receivers.
2. Listen Technologies Corporation, LS-O3 /LT803 series
3. Telex Communications, Inc.; Sound Mate products SM-2 series
4. Sennheiser Electronic Corporation.
5. Williams Sound, PPA 375 series

B. Provide rack mounted assistive listening transmitter, remote mounted 1/2-wave antenna, ear bud receivers, tele coils, and wall plaque, as follows:
1. Provide hard shell, foam lined storage case to house receivers.
2. Provide one complete set and one spare set of batteries.
3. Provide rack mount
4. Provide universal antenna mounting kit.
5. Provide receivers with ear speaker.
6. Provide hearing aid compatible receivers (minimum of one per four receivers).
7. Provide one set which includes the following:
   a). Antenna and mount
   b). Coax cable
   c). Charger
   d). Rack-mounted transmitter
   e). Body pack style receivers (4)
   f). Storage case

C. Each system within the building shall be on a separate frequency and each receiver shall be able to tune to any frequency inside the building.

D. Provide extra body style receivers, (51-200,2 plus 1 per 25 seat over 50 seat; 201-500, 2 plus 1 per 25 seats over 50 seats; 501-1,000, 20 plus 1 per 33 seats over 500; 1,001-2,000, 35 plus 1 per 50 seats over 1,000 seats).

2.14 FREE STANDING SOUND EQUIPMENT CABINETS

A. All sound equipment shall be housed in free-standing steel protective cabinets.

B. The equipment cabinets shall have solid sides and vented back panels and lockable and latching front and back doors. Units to have front vented hinged door. (All locks shall be keyed alike).

C. The sound system equipment cabinets shall be 22 inches wide by 25 inches deep and 83-1/8 inches high with leveling feet/or casters.

D. The equipment cabinets shall be made of steel construction and fully welded corners.

E. The equipment cabinets shall have powder coat finish, finish shall be black.

F. Provide integrated quiet fan with 150-250 CFM in each equipment cabinet with fan guards (external and internal), fan shall have less than 47 - 49 dBA noise rating.

G. Provide vertical power strip with 20 amp receptacles for each cabinet.

H. At each equipment cabinet provide plastic wire holding clips.

I. Provide copper bus bar.

J. Provide 100 spare mounting screws for each equipment cabinet.

K. Provide mounting rails.

L. Provide vented panels between sound equipment as needed.

M. Provide blank panels between sound equipment as needed.

N. Provide adjustable vented shelves, shelf shall adjust from 23 to 32 inches, with a weight capacity of 200 Lbs, steel with black powder finish.

O. Provide telescoping full depth heavy duty vented shelves ,shelf shall adjust from 16 to 44 inches, with a weight capacity of 500 Lbs, 16 GA steel with durable black powder finish.

P. Provide heavy duty sliding shelf , full 14 " extension, heavy gauge steel with black powder finis, weight capacity of 50 Lbs.

Q. Equipment cabinet shall be UL listed.

R. Provide 2 U drawers.

S. Approved Manufacturer:
   1. Middle Atlantic ERK-series (22"W x 25"D)
   2. CPI C-series.
   3. Hoffman EER-series type I
   4. B Line V-Line series.

2.15 PORTABLE SOUND EQUIPMENT CABINETS

A. All sound equipment shall be housed in free-standing steel protective cabinets.

B. The equipment cabinets for shall have solid sides and vented back panels and lockable and latching front and back doors. Units to have front plexi-glass hinged door. (All locks shall be keyed alike for all provided cabinets).

C. The sound system equipment cabinets shall be 23 inches wide by 26 inches deep and 30/42/52 inches high (as needed) with casters as required.

D. The equipment cabinets shall be made of steel construction and fully welded corners.

E. The equipment cabinets shall have powder coat finish, finish shall be black.

F. Provide vertical power strip with 20 amp receptacles for each cabinet.

G. At each equipment cabinet provide plastic wire holding clips.

H. Provide copper bus bar.

I. Provide 100 spare mounting screws for each equipment cabinet.

J. Provide mounting rails.

K. Provide vented panels between sound equipment as needed.

L. Provide blank panels between sound equipment as needed.

M. Equipment cabinet shall be UL listed.

N. Provide 1U space for future equipment w/ blank cover.

O. Approved Manufacturer:
1. Middle Atlantic ERK OR PTRK -series (23"W x 26"D)
2. CPI C-series.
3. Hoffman EER-series Type I series.
4. B Line V-Line series.
5. Lowell LPR-series.

2.16 MISCELLANEOUS COMPONENTS

A. Monitor Panel: Mounted above amplifiers.
1. Equip with VU or dB meter, speaker with volume control, and multiple-position rotary selector switch.
2. Connect selector switch and volume control to permit selective monitoring of output of each separate power amplifier via VU or dB meter and speaker.

B. Volume Attenuator Station: Wall-plate-mounted autotransformer type with paging priority feature.
1. Wattage Rating: 10 W, unless otherwise indicated.
2. Attenuation per Step: 3 dB, with positive off position.
3. Insertion Loss: 0.4 dB maximum.
4. Attenuation Bypass Relay: Single pole, double throw. Connected to operate and bypass attenuation when all-call, paging, program signal, or prerecorded message features are used. Relay returns to normal position at end of priority transmission.
5. Label: "PA Volume."

C. Provide microphone outlet, as follows:
1. Three-pole, polarized, locking-type, microphone receptacles in single-gang boxes.
2. Provide wall outlets with brushed stainless-steel device plates.
3. Provide floor outlets with gray tapered rubber or plastic cable nozzles and fixed outlet covers.

D. Conductors and Cables: Jacketed, twisted pair and twisted multi-pair, untinned solid copper.
1. Insulation for Wire in Conduit: Thermoplastic, not less than 1/32 inch thick.
2. Microphone Cables: Neoprene jacketed, not less than 2/64 inch thick, over shield with filled interstices. Shield No. 34 AWG tinned, soft-copper strands formed into a braid or approved equivalent foil. Shielding coverage on conductors is not less than 60 percent.

3. Plenum Cable: Listed and labeled for plenum installation.

E. Provide portable equipment case to house a mixer, CD/PM3/iPod, wireless microphone, antenna and power strip as follows (see drawings for more info):
1. Black molded polyethylene design
2. 19-inch rack-able depth
3. Full-sized front and rear lids
4. Molded-in, ergonomic side carry handles
5. Recessed steel twist latches
6. Made from recycled materials
7. Rack, rails, and screws
8. Dimensions:
   a). 21.50" L x 21.25" W x (size to fit equipment) H
9. Approved manufacturers:
   a). Gator G-PRO,
   b). SKB Roto Shock Mount,
   c). Hardigg Blackbox Rack Mount

2.17 UNIVERSAL POWER SEQUENCE/POWER MODULAR GROUNDING OUTLETS

A. Unit shall be rack mounted.

B. Unit shall operate on 120 volt AC, 60Hz.

C. Unit shall LED indicator.

D. Unit shall have on/off master switch.

E. Provide modular raceway system.

F. Unit shall be connected to 20 amp circuits for 6.20 amp circuits.

G. Approved manufacturers:
1. Middle Atlantic USC-6R universal sequence with MPR6-R-20 (quantity of 6) modular raceway system.

2.18 PRODUCTION INTERCOMMUNICATIONS (CUE COM)

A. General description:
1. Manufacturers:
   a). Clear-com.
   b). Audiocom.
   c). Production Intercom.

B. Master Station: Clear-Com model MS-702, 2-channel main rack mounted, supports belt packs, speaker stations and wall plates

C. Beltpacks: Clear-Com model RS-602, dual channel with 6-pin female and male XLR, 4-pin male XLR head set connector, 2.5 mm AUX headset connector and an RS-232 data connector. Includes rechargeable batteries and charger.

D. Wall Mount Speak Stations: Clear-Com model KB-702, 2-channel 3 gang flush mounted unit. (see drawings for locations)

E. Headsets: Clear-Com model CC-95 single muff headset, with 5.5 feet cord with 4-pin female XLR connector.(provide one for each wall speaker and wall plate with two spares)

F. Intercom Outlet Wall Plates: Clear-Com model WP-6, 6 pin male XLR connector in one gang flush mount. (See drawings for locations.)

2.19 POWER STRIPS

A. Provide vertical power strip in each sound system cabinet, as follows:
1. 12 – 20 amp receptacles, 120 volts.
2. Cord with NEMA 5 – 20P plug.
3. 50 to 60 inches long.
4. Single circuit.
5. UL listed 1363.

B. Provide horizontal power strip in each sound system cabinet.
1. 6 – 20 amp receptacles
2. Cord with NEMA 5 – 20 plug
3. Single circuit
4. UL listed 1419

C. Unit shall be rack or cabinet mounted.

D. Approved manufacturers:
1. Middle Atlantic PD-2020C-NS (Vertical).
2. Hubbell PR20620 (Vertical)
3. Panduit CMRPSVD20 (Vertical)
4. Middle Atlantic PDS-620R (Horizontal).
5. Hubbell PR1020 (Horizontal)
6. Panduit CMRPSHD20 (Horizontal)

2.20 POWER DISTRIBUTION

A. Illuminated Power Distribution Unit: Horizontally rack-mounted power distribution unit consisting of power conditioner with 15-amp circuit breaker and 8 rear-mounted 15-amp receptacles, master power switch, retractable LED rack lights with on/off/dimmer control. Back panel connector for gooseneck lamp with front panel switch. Unit shall fit in one rack unit and supplied with 10 foot heavy duty power cord.
1. Approved Manufacturers:
a). Middle Atlantic: PDLT-815RV-RN
b). Atlas Sound: ACRL-291 series
c). Furman: PL-8 series.
2. Arrange unit at top of rack.

B. Power Distribution Unit: Horizontally rack mount power distribution unit consisting of power conditioner with 15-amp circuit breaker and 8 rear mounted 15-amp receptacles. Unit shall fit in one rack unit and supplied with 10 foot heavy duty power cord.
1. Approved Manufacturers:
a). Middle Atlantic: PDS-615R.
b). Atlas Sound: ACRL 191B series
c). Furman: M-8 series
2. Arrange unit at top of rack.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Wiring Method: Install wiring in raceways unless otherwise noted.

B. Wiring Method: Install wiring in raceways except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces where cable wiring method may be used. Use plenum cable in environmental air spaces including plenum ceilings.

C. Install exposed cables in finished areas parallel and perpendicular to surfaces or exposed structural members, and follow surface contours. Secure and support cables by straps, staples, or similar fittings so designed and installed to avoid damage to cables. Secure

cable at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, or fittings.

D. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess. Use lacing bars in cabinets.

E. Control-Circuit Wiring: Install number and size of conductors as recommended by system manufacturer for control functions indicated.

F. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches for speaker microphones and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturer.

G. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

H. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.

I. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.

J. Wall-Mounting Outlets: Flush mounted.

K. Floor-Mounting Outlets: Conceal in floor and install cable nozzles through outlet covers. Secure outlet covers in place. Trim with carpet in carpeted areas.

L. Conductor Sizing: Unless otherwise indicated, size speaker circuit conductors from racks to loudspeaker outlets not smaller than No. 18 AWG and conductors from microphone receptacles to amplifiers not smaller than No. 22 AWG.

M. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.

N. Speaker-Line Matching Transformer Connections: Make initial connections using tap settings indicated on Drawings.

O. Connect wiring according to local and national codes.

3.2 GROUNDING

A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.

C. Install grounding electrodes as specified in Division 26 Section "Grounding and Bonding for Electrical Systems."

3.3 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:
   1. Schedule tests with at least seven days' advance notice of test performance.
   2. After installing public address and music equipment and after electrical circuitry has been energized, test for compliance with requirements.

3. Operational Test: Perform tests that include originating program and page messages at microphone outlets, preamplifier program inputs, and other inputs. Verify proper routing and volume levels and that system is free of noise and distortion.
4. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
   a). Disconnect microphone at connector or jack closest to it and replace it in the circuit with a signal generator using a 1000-Hz signal. Replace all other microphones at corresponding connectors with dummy loads, each equal in impedance to microphone it replaces. Measure signal-to-noise ratio.
   b). Repeat test for each separately controlled zone of loudspeakers.
   c). Minimum acceptance ratio is 50 dB.
5. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 50, 200, 400, 1000, 3000, 8000, and 12,000 Hz into each preamplifier channel. For each frequency, measure distortion in the paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is 3 percent total harmonics.
6. Acoustic Coverage Test: Feed pink noise into system using octaves centered at 500 and 4000 Hz. Use sound-level meter with octave-band filters to measure level at five locations in each zone. For spaces with seated audiences, maximum permissible variation in level is plus or minus 2 dB. In addition, the levels between locations in the same zone and between locations in adjacent zones must not vary more than plus or minus 3 dB.
7. Power Output Test: Measure electrical power output of each power amplifier at normal gain settings of 50, 1000, and 12,000 Hz. Maximum variation in power output at these frequencies must not exceed plus or minus 1 dB.
8. Signal Ground Test: Measure and report ground resistance at public address equipment signal ground. Comply with testing requirements specified in Division 26 Section "Grounding and Bonding for Electrical Systems."

B. Retesting: Correct deficiencies, revising tap settings of speaker-line matching transformers where necessary to optimize volume and uniformity of sound levels, and retest. Prepare a written record of tests.

C. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging speaker-line matching transformers.

3.4 STARTUP SERVICE

A. Complete installation and startup checks according to manufacturer's written instructions.

B. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.

C. Engage a factory-authorized service representative to perform on-site startup service. On-site startup service is to include but is not limited to:

1. Acoustically tune all aspects of the system to the space
2. Physically position all speakers, horns, speaker elements for optimal output patterns
3. Reposition installed microphones to correct position for application
4. Full program of all Digital Signal processor(s)
5. Program and tune all feedback attenuator(s)
6. Coordinate with room controller contractor to interface room controller(s) with system to meet all occupancy conditions

7. Adjust sound levels, transformer taps, and controls to meet occupancy conditions

3.5 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this purpose, without additional cost.

3.6 FIELDHOUSE SCHEDULE

A. Provide the following:
1. Type 1 loudspeakers as shown on the drawings.
2. Equipment Cabinet : Freestanding equipment cabinet to house the following:
a). Amplifiers.
b). Digital Signal Processors.
c). Mic/Line Mixers.
d). Wireless Microphones Combo System: Quantity of two (2) complete systems.
e). Remote Antennas distribution systems: Quantity of two (2).
f). Wireless Head Set Microphones: Quantity of two (2).
g). Transmitter and receiver for each wireless microphone.
h). Assistive Listening System.
i). CD/MP3/BT Player.
j). All mounting hardware, shelves, vented panels, blanks etc.
k). Power strips and illuminated power distribution unit.
l). All patch cords and connectors, and label each end.
m). Volume control.
3. Provide one (1) portable equipment case to house the following:
a). Mic/Line Mixer.
b). Wireless Microphones Combo Systems: Quantity of one (1) complete system.
c). Transmitter and receiver for each wireless microphone.
d). Wireless Head Set Microphones: Quantity of one (1).
e). CD/MP3/BT Player.
f). All mounting hardware, shelves, vented panels, blanks etc.
g). All miscellaneous patch cables, connectors, etc.
h). Power strips and universal power sequence unit.
i). Provide all patch cords and connectors, and label each end.

3.7 AUDITORIUM SCHEDULE

A. Provide the following:
1. Loudspeakers, types and quantity as shown on the drawings.
2. 32 channel mixing console
3. Equipment Cabinet : Freestanding equipment cabinet to house the following:
a). Amplifiers.
b). Digital Signal Processors.
c). Automatic Mic/Line Mixers.
d). Wireless Microphone Combo Systems: Quantity as indicated on drawings.
e). Transmitter and receiver for each wireless microphone.
f). Remote Antennas distribution system.
g). Wireless Head Set Microphones: Quantity of two (2).
h). Assistive Listening System.
i). CD/MP3/BTPlayer.
j). All mounting hardware, shelves, vented panels, blanks etc.
k). Power strips and power distribution unit.

l). All patch cords and connectors, and label each end.
m). Volume control.

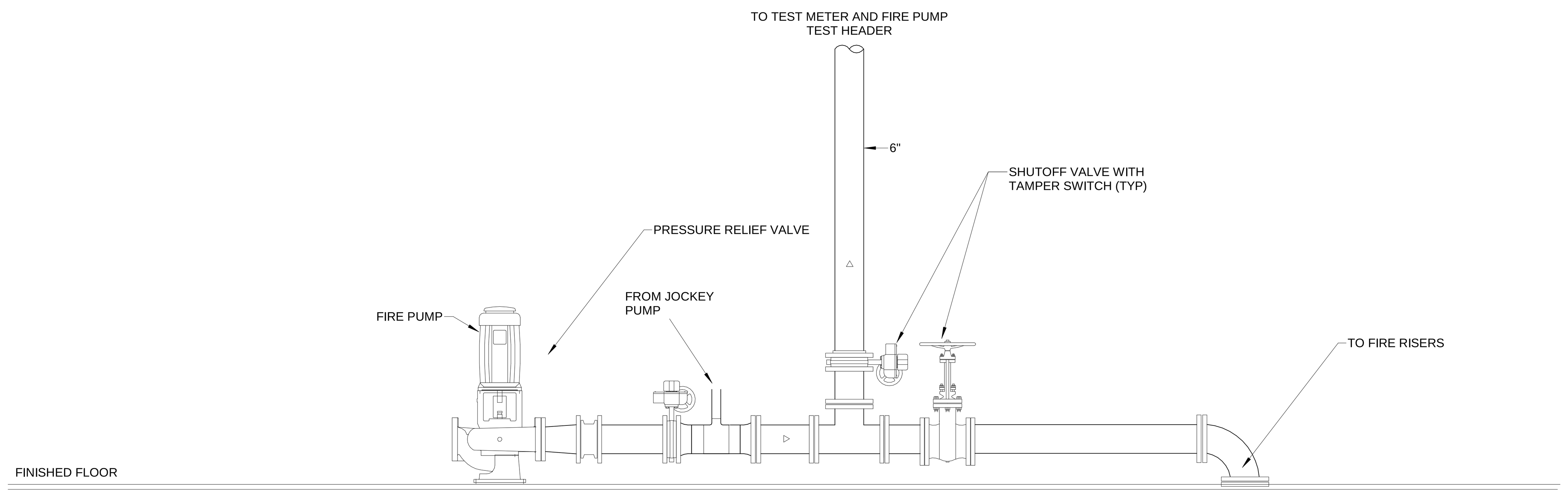
4. Wired Microphones with miscellaneous items:
   a). Ensemble microphone: Quantity of one (1).
   b). Vocal Microphones: Quantity of two (2).
   c). Wireless headset microphones: Quantity of one (1).
   d). Floor Stand: Quantity of four (4).
   e). 25-Foot microphone cable: Quantity of four (4).
   f). 50-Foot microphone cable: Quantity of two (2).
5. Assistive Listening Receivers (hearing aid compatible): Quantity per code.

3.8 WEIGHT ROOM SCHEDULE

A. Provide the following:

1. Eight inch coaxial loudspeakers as shown on the drawings – basis of design – JBL Control 29AV.
2. Twelve inch ceiling subwoofer, basis of design – JBL Control 312CS with 3 cubic foot backbox and 12” square ceiling grille.
3. Equipment Cabinet : Freestanding equipment cabinet to house the following:
   a). Amplifiers.
   b). Digital Signal Processors.
   c). Mic/Line Mixers.
   d). Wireless Microphone Combo Systems: Quantity as indicated on drawings.
   e). Transmitter and receiver for each wireless microphone.
   f). Remote Antennas distribution system.
   g). Wireless Microphones: Quantity of one (1) handheld, one (1) headset style.
   h). Assistive Listening System.
   i). CD/MP3/BT Player.
   j). All mounting hardware, shelves, vented panels, blanks etc.
   k). Power strips and power distribution unit.
   l). All patch cords and connectors, and label each end.
   m). Volume control.

END OF SECTION



FIRE PROTECTION EQUIPMENT SCHEDULE					
ITEM	MAKE & MODEL NUMBER (OR APPROVED EQUAL)	DESCRIPTION	CAPACITY	ELECTRICAL CHARACTERISTICS	NOTES
FIRE PUMP (FP-1)	ARMSTRONG 8 X 12 M VTF - 100 HP	CONSTANT SPEED DRIVE W/SOFT START CONTROLLER (SKID MOUNTED) VERTICAL TURBINE	750 GPM AT 150 PSI RISE	100 HP 460V/3PH	-
JOCKEY PUMP (JP-1)	ARMSTRONG VMS-01:16B	MULTISTAGE VERTICAL TURBINE	7.5 GPM AT 160 PSI RISE	2 HP 480V 3 PH	-
					-

2

2 **FIRE PUMP ASSEMBLY DETAIL - BASE BID**

N.T.S.

PLAN NOTES

1 CONNECT TO EXISTING 4" WATER SERVICE PIPING DOWN STREAM OF SERVICE BACKFLOW, EXTEND THROUGH REDUCED PRESSURE ZONE DETECTOR ASSEMBLY, THROUGH AUTOMATIC FILL CONTROL VALVE, BELOW FLOOR SLAB AND THROUGH EXTERIOR BUILDING WALL TO FILL CONNECTION AT FIRE SUPPRESSION STORAGE TANK. SLEEVE PIPE PENETRATION ACROSS FOOTER AND ALL REQUIRED BEDDING, BACKFILL AND SURFACE RESTORATION.

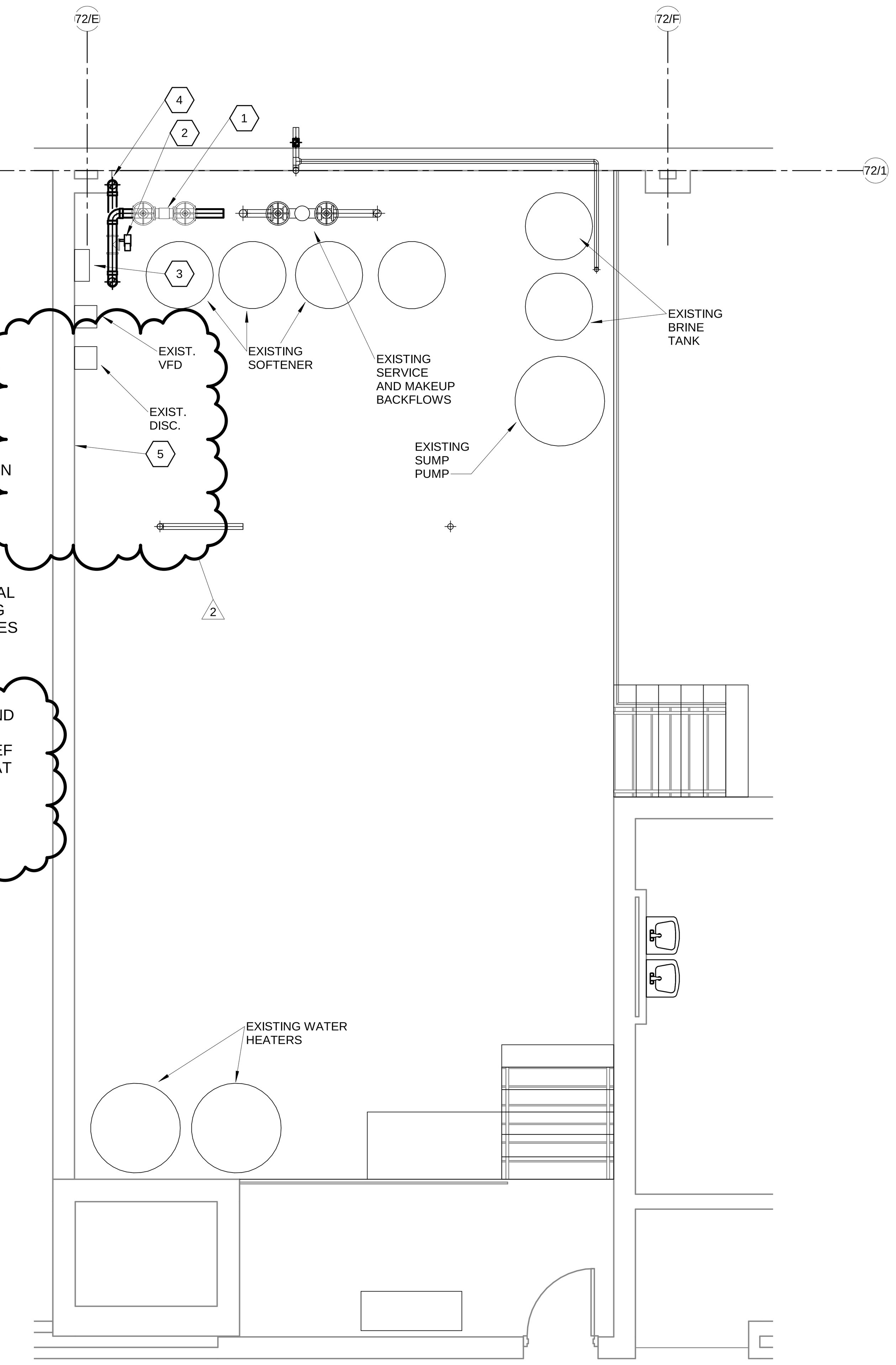
2 4" UL/FM AUTOMATIC CONTROL AND FILL VALVE. WIRE ACTUATOR TO TANK MONITORING AND CONTROL PANEL ON WALL. PROVIDE 4" MANUAL SUPERVISED FILL BYPASS VALVE. AUTOMATIC CONTROL VALVE EQUAL TO WATTS LF930GC. AUTOMATIC CONTROL VALVE SOLENOID SHALL BE 120 VAC OR 24 V, COMPATIBLE WITH TANK LEVEL MONITOR AND CONTROL PANEL OUTPUT CAPABILITIES. SOLENOID SHALL BE POWERED-OPEN, NORMALLY CLOSED. VALVE ASSEMBLY SHALL INCLUDE VISIBLE POSITION INDICATOR AND DRY CONTACT LIMIT SWITCH TO NOTIFY VALVE POSITION TO THE FIRE ALARM SYSTEM.

3 TANK LEVEL MONITORING AND CONTROL PANEL. EXTEND CONTROL WIRING TO FILL CONTROL VALVE. EXTEND LEVEL MONITORING WIRING AND CONDUIT TO EXTERIOR BELOW GRADE FIRE SUPPRESSION TANK LEVEL MONITORS. REFER TO DETAILS, SHEET FP.03 AND SPECS FOR ADDITIONAL REQUIREMENTS. BASIS OF DESIGN TANK LEVEL MONITORING PANEL IS PRECISION DIGITAL "CONSOLIDATOR" PD9000 SERIES OR FLOWLINE "COMMANDER MULTITANK CONTROLLER".

4 FILL PIPING DROPS BELOW GRADE.

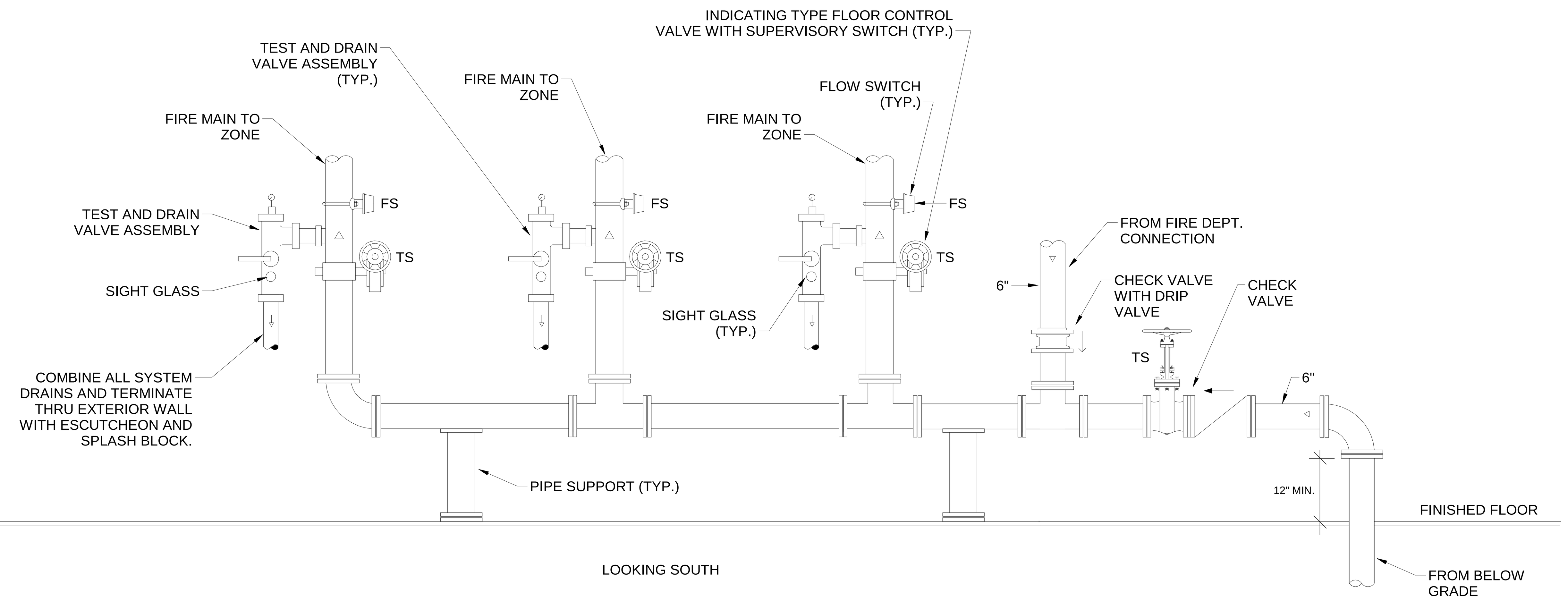
5 FIRE PUMP DISCHARGE HEAT TRACING CONTROLLER. EXTEND CIRCUIT THROUGH BUILDING WALL TO HEAT TRACING AT FIRE PUMP AND EXPOSED DISCHARGE PIPING AND AIR RELIEF VALVE. BASIS OF DESIGN, RAYCHEM NVENT 465 SERIES. HEAT TRACING SYSTEM EQUAL TO XL-TRACE. PROVIDE 10 WATT PER FOOT CIRCUIT. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. BASIS OF DESIGN POWER REQUIREMENT 277V 20A.

2



01-FIRE SUPPRESSION - FIRST FLOOR MECHANICAL ROOM

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

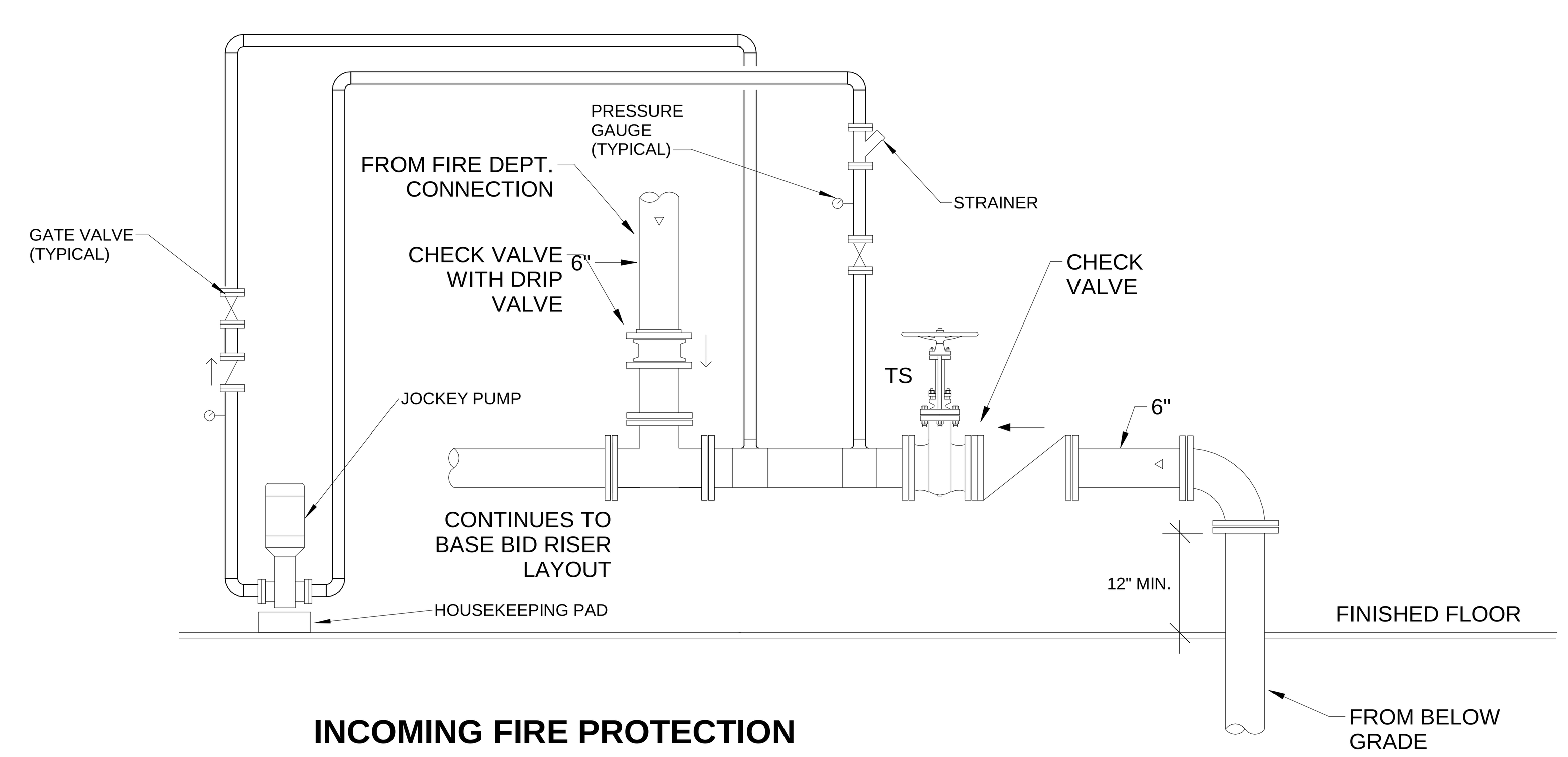


3 **INCOMING FIRE PROTECTION SERVICE DETAIL - BASE BID**

N.T.S.

FIRE PROTECTION ALTERNATE EQUIPMENT SCHEDULE					
ITEM	MAKE & MODEL NUMBER (OR APPROVED EQUAL)	DESCRIPTION	CAPACITY	ELECTRICAL CHARACTERISTICS	NOTES
FIRE PUMP (FP-1)	ARMSTRONG 8 X 12 M VTF - 100 HP TEFC WEATHERPROOF	CONSTANT SPEED DRIVE W/SOFT START CONTROLLER (SKID MOUNTED) VERTICAL TURBINE	750 GPM AT 150 PSI RISE	100 HP 460V/3PH	REFER TO SPECIFICATIONS, FIRE PUMP CONTROL PANEL FOR ALTERNATE NEMA 4X WITH STAINLESS STEEL BRUSHED FINISH
JOCKEY PUMP (JP-1)	ARMSTRONG VMS-01:16B	MULTISTAGE VERTICAL TURBINE	7.5 GPM AT 160 PSI RISE	2 HP 208V 3 PH	-
					-

2



5 **INCOMING FIRE PROTECTION SERVICE DETAIL - ALTERNATE**

N.T.S.

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

TIPPECANOE VALLEY HIGH SCHOOL A & R

8345 STATE ROUTE 19, AKRON, IN 46910

TIPPECANOE VALLEY SCHOOL CORPORATION

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM

350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

KEY PLAN

A B C D E F

PLAN NORTH

CONSTRUCTION DOCUMENTS

MARK Z. HOPF REGISTERED No. PE 11000601 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT MANAGER: MKS

DRAWN BY: CSS

PROJECT NUMBER: 220158.00

PROJECT ISSUE DATE: 9/6/2022

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM #2	9/27/2022
2	ADDENDUM #3	10/4/2022

FIRE SUPPRESSION DETAILS AND NOTES

FP.02

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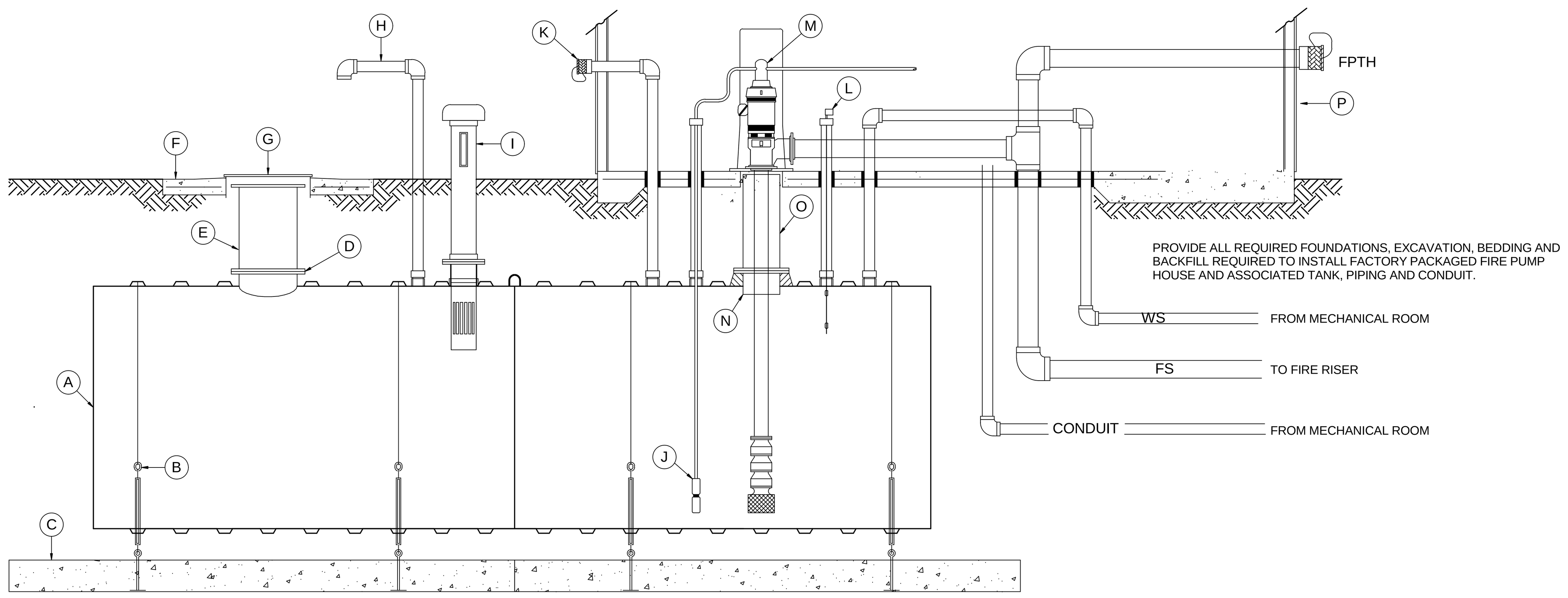
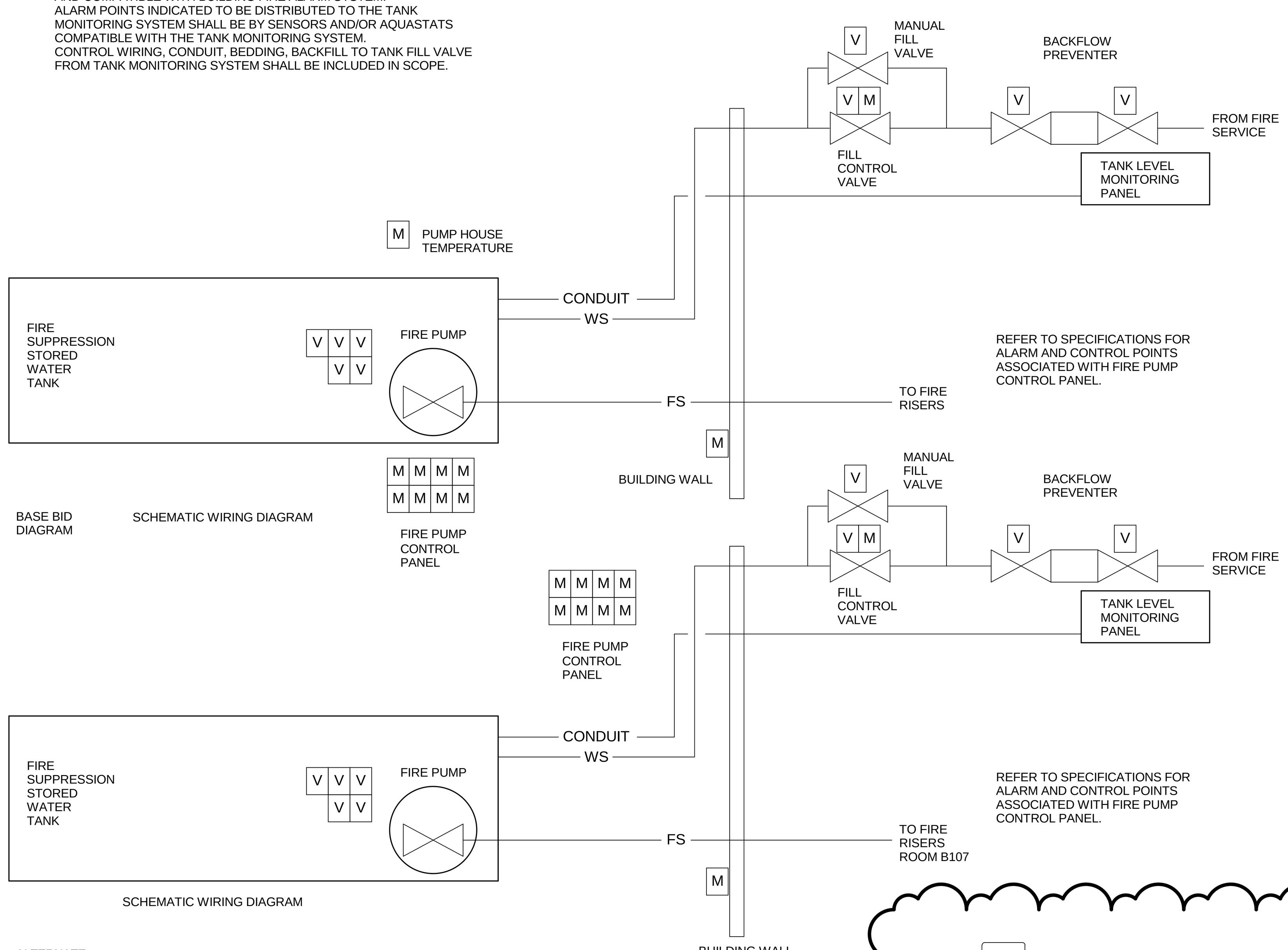
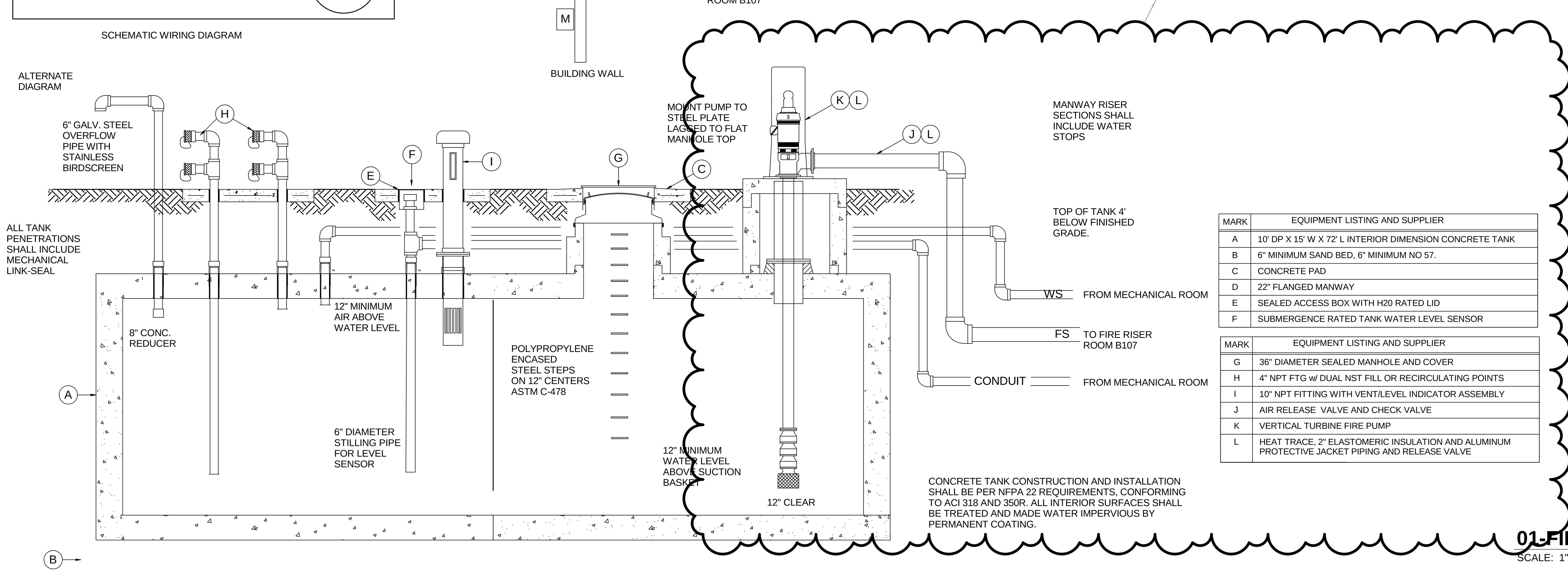
MARK		MARK	
A	50,000 GALLON FIRE SUPPRESSION WATER STORAGE TANK	I	10" NPT FITTING WITH VENT/LEVEL INDICATOR ASSEMBLY
B	HOLD DOWN STRAP & TURNBUCKLE ASSEMBLY	J	4" NPT FTG w/JOCKEY PUMP & GALVANIZED THREADED LINE
C	PRECAST DEADMAN ANCHOR WITH EYEBOLTS	K	4" NPT FTG w/ NST REMOTE FILL OR RECIRCULATING POINT
D	FLANGED MANWAY	L	4" NPT FTG w/ FLOAT SWITCH FOR HIGH/LOW WATER ALARM
E	MANWAY EXTENSION	M	VERTICAL PUMP w/ DISCHARGE HEAD AND MULTI STAGE BOWL
F	H-20 AXLE LOAD CONCRETE APRON	N	14" FLANGED NOZZLE
G	36" DIAMETER MANHOLE AND COVER	O	14" FLANGED NOZZLE EXTENSION
H	6" TANK VENT	P	FACTORY ASSEMBLED PUMP BUILDING



QTY	TANK MONITORING AND CONTROL POINTS	FA	FA & TANK	TANK MONITORING	NOTES
2	TANK WATER LEVEL RESTORED (ELEV. SETPOINT) - CLOSE FILL VALVE		X		
1	TANK WATER LEVEL 6" BELOW SETPOINT - ACTUATE FILL VALVE			X	
2	TANK WATER LEVEL 12" BELOW SETPOINT		X		
1	PUMP HOUSE TEMPERATURE BELOW 40 DEGREE F.		X		
2	TANK OUTLET SHUT OFF VALVE SUPERVISION		X		
2	MANUAL TANK FILL BYPASS SHUT OFF VALVE SUPERVISION		X		

GENERAL NOTES
ALARM POINTS INDICATED TO BE DISTRIBUTED TO THE FIRE ALARM SYSTEM SHALL BE BY MODULE/RELAY ATTACHMENT THAT IS LISTED AND COMPATIBLE WITH BUILDING FIRE ALARM SYSTEM.
ALARM POINTS INDICATED TO BE DISTRIBUTED TO THE TANK MONITORING SYSTEM SHALL BE BY SENSORS AND/OR AQUASTATS COMPATIBLE WITH THE TANK MONITORING SYSTEM.
CONTROL WIRING, CONDUIT, BEDDING, BACKFILL TO TANK FILL VALVE FROM TANK MONITORING SYSTEM SHALL BE INCLUDED IN SCOPE.

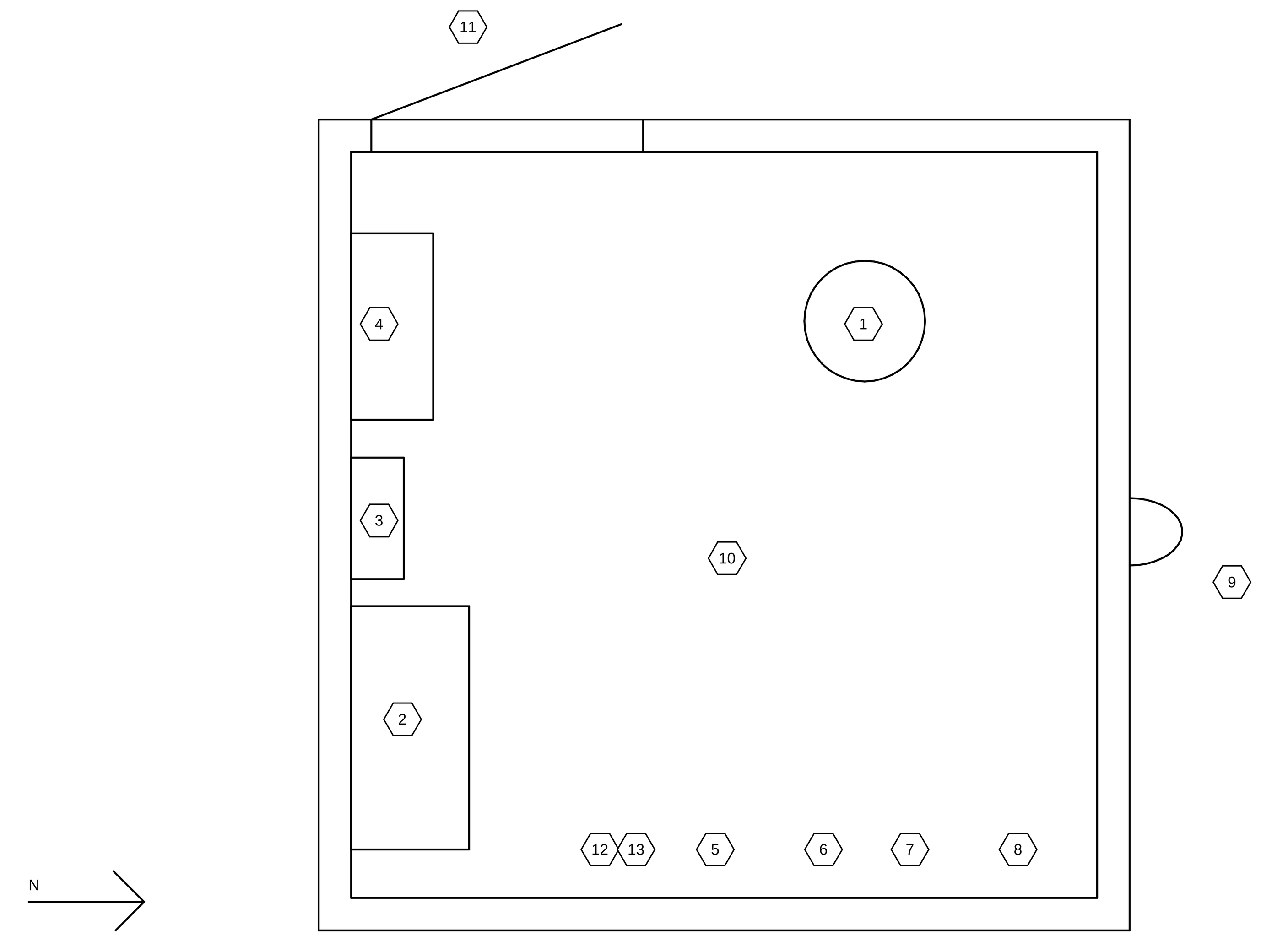




MARK	EQUIPMENT LISTING AND SUPPLIER
A	10' DP X 15' W X 72' L INTERIOR DIMENSION CONCRETE TANK
B	6" MINIMUM SAND BED, 6" MINIMUM NO 57.
C	CONCRETE PAD
D	22" FLANGED MANWAY
E	SEALED ACCESS BOX WITH H20 RATED LID
F	SUBMERGENCE RATED TANK WATER LEVEL SENSOR

MARK	EQUIPMENT LISTING AND SUPPLIER
G	36" DIAMETER SEALED MANHOLE AND COVER
H	4" NPT FTG w/ DUAL NST FILL OR RECIRCULATING POINTS
I	10" NPT FITTING WITH VENT/LEVEL INDICATOR ASSEMBLY
J	AIR RELEASE VALVE AND CHECK VALVE
K	VERTICAL TURBINE FIRE PUMP
L	HEAT TRACE, 2" ELASTOMERIC INSULATION AND ALUMINUM PROTECTIVE JACKET PIPING AND RELEASE VALVE

CONCRETE TANK CONSTRUCTION AND INSTALLATION SHALL BE PER NFPA 22 REQUIREMENTS, CONFORMING TO ACI 318 AND 350R. ALL INTERIOR SURFACES SHALL BE TREATED AND MADE WATER IMPERVIOUS BY PERMANENT COATING.



2 FIRE PUMP HOUSE ASSEMBLY PLAN
N.T.S.

PUMP HOUSE NOTES

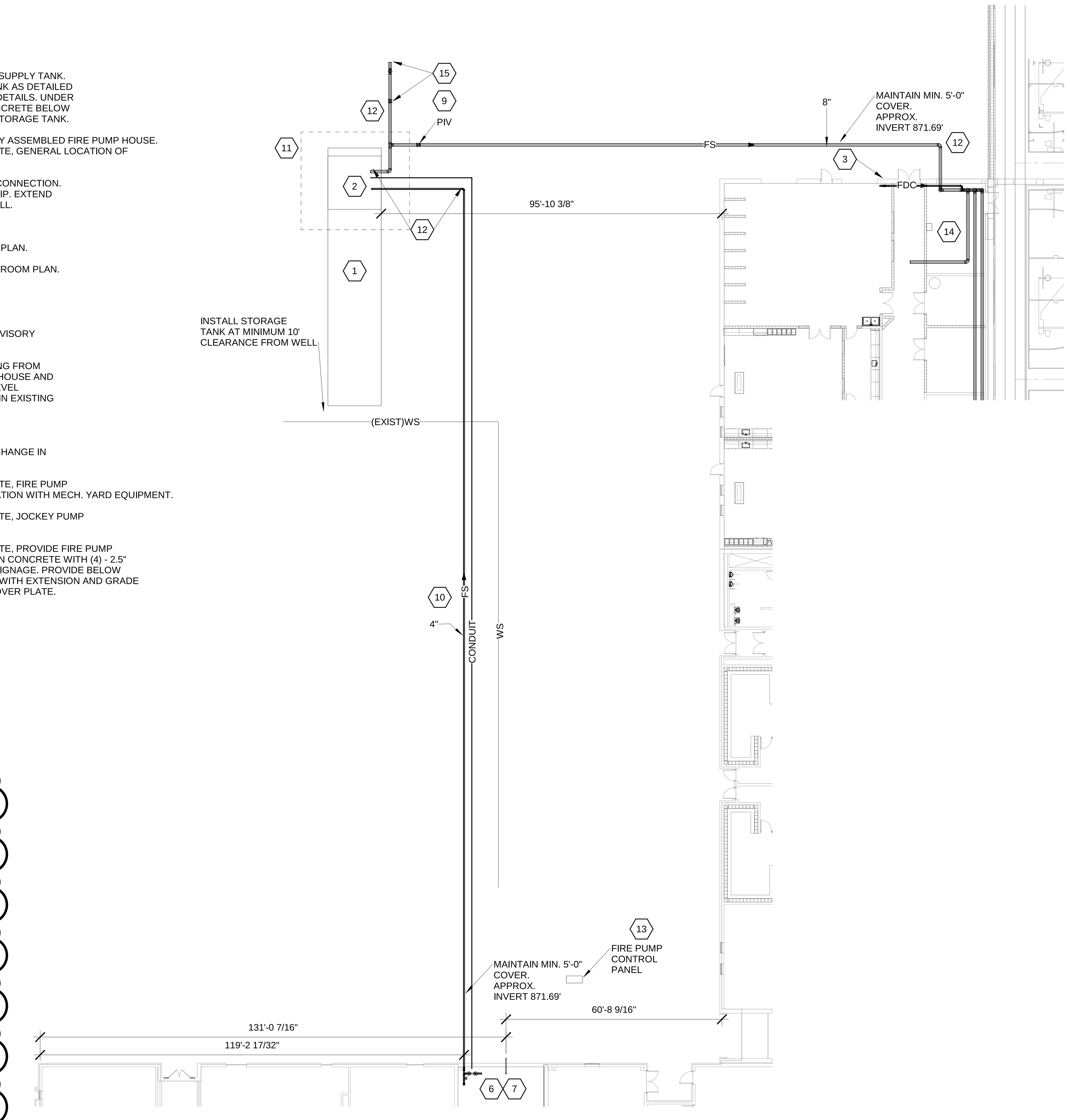
1. VERTICAL TURBINE FIRE PUMP.
2. FIRE PUMP CONTROL PANEL AND ATS.
3. JOCKEY PUMP CONTROL PANEL.
4. PUMP HOUSE ELECTRICAL PANEL.
5. FIRE PUMP DISCHARGE TO FIRE RISER.
6. WATER SERVICE AND TANK FILL PIPE.
7. TANK LEVEL SENSOR CONDUIT ENTRY.
8. WATER TANK DRAFT CONNECTION.
9. FIRE PUMP TEST HEADER.
10. FIRE PUMP TEST METER BYPASS.
11. ENTRY DOOR.
12. UNIT HEATER.
13. EXHAUST FAN.

PUMP HOUSE GENERAL NOTES

LOCATION OF COMPONENTS INDICATED ON PLAN FOR GENERAL REFERENCE AND BIDDING PURPOSES ONLY. COORDINATE ALL SERVICE AND UTILITY CONNECTIONS WITH FINAL EQUIPMENT SUPPLIER DOCUMENTS. CONTRACTOR SCOPE INCLUDES COMPLETE AND FUNCTIONAL ASSEMBLY AS INDICATED IN THE DRAWINGS. COMPONENTS, ELEMENTS, AND SERVICES EXCLUDED FROM FACTORY ASSEMBLY SHALL BE INCLUDED IN THE FIELD FURNISHED AND INSTALLED PROJECT SCOPE.

PLAN NOTES

1. FIRE SUPPRESSION STORED WATER SUPPLY TANK. UNDER BASE BID, COATED STEEL TANK AS DETAILED PER BASE BID SPECIFICATIONS AND DETAILS. UNDER FIRE SUPPRESSION ALTERNATE, CONCRETE BELOW GRADE FIRE SUPPRESSION WATER STORAGE TANK.
2. UNDER BASE BID, EXTERIOR FACTORY ASSEMBLED FIRE PUMP HOUSE. UNDER FIRE SUPPRESSION ALTERNATE, GENERAL LOCATION OF RISER MOUNTED FIRE PUMP.
3. WALL MOUNTED FIRE DEPARTMENT CONNECTION. PROVIDE CHECK VALVE AND BALL DRIP. EXTEND BALL DRIP DISCHARGE THROUGH WALL.
4. REFER TO ENGLARGED PLAN.
5. SCOPE CONTINUED ON FIRST FLOOR PLAN.
6. SCOPE CONTINUED ON MECHANICAL ROOM PLAN.
7. TANK FILL CONTROL VALVE.
8. FIRE RISERS.
9. POST INDICATOR VALVE WITH SUPERVISORY ATTACHMENT.
10. PROVIDE CONDUIT AND SIGNAL WIRING FROM TANK LEVEL MONITOR IN FIRE PUMP HOUSE AND EXTEND TO CONNECTION AT TANK LEVEL MONITORING PANEL AND FILL VALVE IN EXISTING MECHANICAL ROOM.
11. REFER TO ENLARGED SCALE PLAN.
12. PROVIDE THRUST BLOCK AT PIPING CHANGE IN DIRECTION.
13. UNDER FIRE SUPPRESSION ALTERNATE, FIRE PUMP CONTROL PANEL. COORDINATE LOCATION WITH MECH. YARD EQUIPMENT.
14. UNDER FIRE SUPPRESSION ALTERNATE, JOCKEY PUMP CONTROL PANEL.
15. UNDER FIRE SUPPRESSION ALTERNATE, PROVIDE FIRE PUMP TEST HEADER, FREESTANDING, SET IN CONCRETE WITH (4) - 2.5" OUTLETS WITH CHAINED CAPS AND SIGNAGE. PROVIDE BELOW GRADE GATE TYPE SHUT OFF VALVE WITH EXTENSION AND GRADE LEVEL CURB STOP WITH FINISHED COVER PLATE.



01-FIRE SUPPRESSION - SITE PLAN
SCALE: 1" = 20'-0"

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

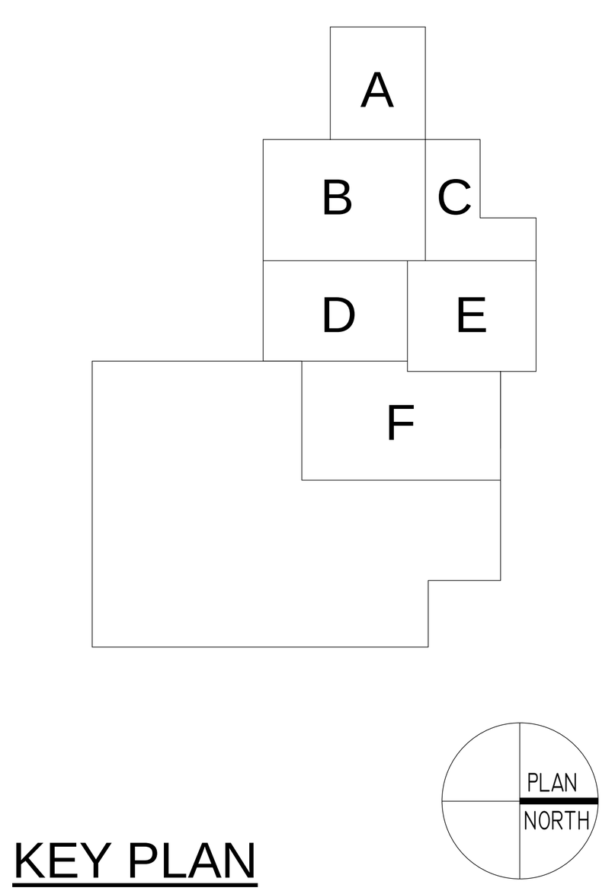
SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

TIPPECANOE VALLEY HIGH SCHOOL A & R

8345 STATE ROUTE 19, AKRON, IN 46910

TIPPECANOE VALLEY SCHOOL CORPORATION

ARCHITECT
FANNING HOWEY
317-848-0966 WWW.FHAI.COM
350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204



KEY PLAN

CONSTRUCTION DOCUMENTS

MARK Z. HOPF REGISTERED No. PE 12000601 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT MANAGER: MKS
DRAWN BY: CSS
PROJECT NUMBER: 220158.00
PROJECT ISSUE DATE: 9/6/2022

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM #2	9/27/2022
2	ADDENDUM #3	10/4/2022

FIRE SUPPRESSION SITE PLAN AND DETAILS

FP.03

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ALTERNATE NO. 3

ALTERNATE NO. 1

ALTERNATE NO. 2

DOOR AND FRAME SCHEDULE

DOOR NUMBER	DOORS: DOOR SIZE (WxH)	DOORS: DOOR TYPE	FRAME: FRAME MATERIAL	FRAME: FRAME ELEVATION	FRAME: JAMB DEPTH	FRAME DETAILS: HEAD	FRAME DETAILS: JAMB	FRAME DETAILS: SILL	FIRE RATING IN MINS.	HARDWARE: SET NO.	HARDWARE: Keyside Room Number	STC RATING	REMARKS
F112B	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			05	F104		
F113	3'-0" x 7'-2"	F WD	HM	F4	8 3/4"	H1	J1	S2		10	F112		
F114	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			19	F112		
F116	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			19	F115		
F118	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H3 SIM	J3 SIM			33	E110		
F119A	3'-0" x 7'-2"	F WD	HM	F4	8 3/4"	H1	J1	S2		17	F104		
F119B	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
F119C	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
F120A	PR 3'-0" x 7'-2"	N WD	HM	F2 SIM	8 3/4"	H1	J1			04	F104		DOUBLE EGRESS
F120B	3'-0" x 7'-2"	N WD	HM	F5	8 3/4"	H17	H17 SIM	S2		38	F120		
F120C	PR 3'-0" x 7'-2"	F WD	HM	F2	1'-0 3/4"	H3 SIM	J3 SIM			45			
F121A	3'-0" x 7'-2"	FG2 WD	HM	F1	8 3/4"	H1	J1			17	F120		
F121B	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
F122	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			22	F120		
F124	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			05	F123		
F127	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			25	F120		
F128	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			25	F120		
F129A	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H1	J1			44	F120		
F129B	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H1	J1			30	E110		
F129C	3'-0" x 7'-2"	F FRP	AL	A1	4 1/2"	EXIST	EXIST			43	EXT		
F129D	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
F129E	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
F130	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H1	J1			32	F120		
F132	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			25	E110		
F133	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			07	E110		
F134	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			08	E110		
F135	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			08	E110		
F136	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			07	E110		

DOOR AND FRAME SCHEDULE

DOOR NUMBER	DOORS: DOOR SIZE (WxH)	DOORS: DOOR TYPE	FRAME: FRAME MATERIAL	FRAME: FRAME ELEVATION	FRAME: JAMB DEPTH	FRAME DETAILS: HEAD	FRAME DETAILS: JAMB	FRAME DETAILS: SILL	FIRE RATING IN MINS.	HARDWARE: SET NO.	HARDWARE: Keyside Room Number	STC RATING	REMARKS
A101A	3'-0" x 7'-2"	N FRP	AL	A8	4 1/2"	H2	J2	T1		42	EXT		
A101B	3'-0" x 7'-2"	N FRP	AL	A8	4 1/2"	H2	J2	T1		43	EXT		
A101C	3'-0" x 7'-2"	N FRP	AL	A8	4 1/2"	H2	J2	T1		36	EXT		CARD READER
A101D	3'-0" x 7'-2"	N FRP	AL	A8	4 1/2"	H2	J2	T1		42	EXT		
B101A	3'-0" x 7'-2"	FGAL2	AL	A8	4 1/2"	H6	J6	T1		41	EXT		
B101B	3'-0" x 7'-2"	FGAL2	AL	A8	4 1/2"	H6	J6	T1		35	EXT		CARD READER
B102A	10'-0" x 10'-0"	SOGD	STL	A10	2 1/8"	H13	J13	T13		52	EXT		MOTORIZED; SAFETY EDGE PUSH BUTTON; EXTERIOR MOUNT
B102B	3'-0" x 7'-2"	G FRP	AL	A1	4 1/2"	EXIST	EXIST			43	EXT		
B102C	10'-0" x 10'-0"	SOGD	STL	A10	2 1/8"	EXIST	EXIST	T13		52	EXT		MOTORIZED; SAFETY EDGE PUSH BUTTON; EXTERIOR MOUNT
B102D	PR 3'-0" x 7'-2"	N HM	HM	F2	8 3/4"	H1	J1			44	B101		
B102E	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
B102F	6'-0" x 7'-4"		HM	F13	8 3/4"	H1	J1	S2			-		
B103A	3'-0" x 7'-2"	G FRP	AL	A5	4 1/2"	H6	J6	T1		43	EXT		
B103C	PR 3'-0" x 7'-2"	G WD	HM	F12	8 3/4"	H1	J1			15			
B104A	3'-0" x 7'-0"	F WD	HM	F4	8 3/4"	H7	J7	S2		19	B102		
B104B	4'-0" x 4'-0"		HM	F11	8 3/8"	H4	J4	S4			-		
B104C	4'-0" x 4'-0"		HM	F11	8 3/8"	H4	J4	S4			-		
B104D	3'-0" x 7'-2"	F WD	HM	F4	8 3/8"	H4	J4	S2		19	B103		
B105A	3'-0" x 7'-2"	G FRP	AL	A5	4 1/2"	H6	J6	T1		43	EXT		
B105B	3'-0" x 7'-2"	N WD	HM	F1	8 3/8"	H4	J4			13	B105 / B103		KEY FROM BOTH SIDES.
B106A	3'-0" x 7'-2"	F WD	HM	F4	8 3/8"	H4	J4	S2		19	B103		
B106B	4'-0" x 4'-0"		HM	F11	8 3/8"	H4	J4	S4			-		
B106C	4'-0" x 4'-0"		HM	F11	8 3/8"	H4	J4	S4			-		
B106D	3'-0" x 7'-2"	F HM	HM	F4	8 3/8"	H4	J4	S2		19	B105		
B108A	PR 3'-0" x 7'-2"	F HM	HM	F2	8 3/4"	H1	J1			29	B101		
B109A	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H1	J1			29	B101		
B112A	12'-0" x 6'-5"		AL	A9	4 1/2"	H3	J3	S5			-		
B112B	12'-0" x 6'-5"		AL	A9	4 1/2"	H3	J3	S5			-		
B112D	12'-0" x 9'-1"	SOGD	STL	A11	2 1/8"	H5 SIM	J5 SIM	T8		51	B112		MANUAL; INTERIOR MOUNT
B112E	PR 3'-0" x 7'-2"	FG2 WD	AL	A14	4 1/2"	H3	J3			45	E106		
B112F	PR 3'-0" x 7'-2"	FG2 WD	AL	A14	4 1/2"	H3	J3			45	E106		
C101A	3'-0" x 7'-2"	FGAL2	AL	A6	4 1/2"	1-A5.04	J2/J17	T1/T10		35	EXT		CARD READER
C101B	3'-0" x 7'-2"	FGAL2	AL	A6	4 1/2"	1-A5.04	J2/J17	T1/T10		41	EXT		
C102A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			39	C101		
C102B	3'-0" x 7'-2"	F FRP	AL	A1	4 1/2"	H2	J2	T1		36	EXT		CARD READER
C104	3'-0" x 7'-2"	F WD	HM	F6	8 3/4"	H1	J1	S1		10	C101		
C105A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			10	C101		
C105B	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			10	C102		
C106	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			06	C105		
C107A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			10	C101		
C107B	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			10	C110		
C108	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			06	C107		
C109	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			22	C101		
C110A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			39	C101		
C110B	3'-0" x 7'-2"	F FRP	AL	A1	4 1/2"	H2	J2	T1			EXT		
C112	3'-0" x 7'-2"	FG2 WD	HM	F7	8 3/4"	H1	J1	S1		21	C101		CARD READER
C113	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			22	C101		
C114A	PR 3'-0" x 7'-2"	FGAL2	AL	A7	4 1/2"	H2	J2	T1		46	EXT		REMOVABLE MULLION
C114B	8'-8" x 6'-5"		HM	F14	8 3/4"	H1	J1	S1			-		
C114C	8'-8" x 6'-5"		HM	F14	8 3/4"	H1	J1	S1			-		
C114D	8'-8" x 6'-5"		HM	F14	8 3/4"	H1	J1	S1			-		
C114E	PR 3'-0" x 7'-2"	FG2 WD	HM	F15	8 3/4"	H1	J1			44	E102		
C114F	12'-0" x 9'-1"	SOGD	STL	A11	2 1/8"	H12	J12	T8		51	C114		MANUAL; INTERIOR MOUNT
C114G	12'-0" x 9'-1"	SOGD	STL	A11	2 1/8"	H12	J12	T8		51	C114		
C115A	3'-0" x 7'-2"	FG2 WD	HM	F4	8 3/4"	H1	J1	S1		09	C114		
C115B	8'-0" x 4'-0"		HM	F10	8 3/4"	H1	J1	S1			-		
C201	PR 3'-0" x 7'-2"	F FRP	AL	A3	4 1/2"	16/A6.03	19/A6.04	3/A6.05		34			
D102A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			09	D101		
D102B	6'-0" x 4'-8"	CCD	STL	-	2"	H12 SIM	J12 SIM			51	D102		
D103	PR 3'-0" x 7'-2"	FGAL2	AL	A3	4 1/2"	H15	J16			49	E106		
D104	PR 3'-0" x 7'-2"	F FRP	AL	A2	4 1/2"	H15	J16			28	D103		
D108	PR 3'-0" x 7'-2"	FGAL2	AL	A4	4 1/2"	H15	J16			49	E106		
D110	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			07	D109		
D111	3'-0" x 7'-2"	F WD	HM	F1	5 3/4"	H2	J2			18	D112		
D112	3'-0" x 7'-0"	FRP1	AL	F4 SIM	9 1/8"	H15 SIM	J16 SIM			11	D105		
D114	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			10	D101		
D115	3'-0" x 7'-2"	F FRP	AL	A1	8 3/4"	H15	J16			20	D109		
E101A	3'-0" x 7'-2"	FGAL2	AL	A12	4 1/2"	H2	J2	T1		35	EXT		CARD READER
E101B	3'-0" x 7'-2"	FGAL2	AL	A12	4 1/2"	H2	J2	T1		41	EXT		
E101C	3'-0" x 7'-2"	FGAL2	AL	A12	4 1/2"	H2	J2	T1		41	EXT		
E101D	3'-0" x 7'-2"	FGAL2	AL	A13	4 1/2"	H11	J17	-		01			
E101E	PR 3'-0" x 7'-2"	FGAL2	AL	A13	4 1/2"	H11	J17	-		03			
E103	3'-0" x 7'-2"	F WD	HM	F1	1'-0 3/4"	H14	J14			24	E106		SOUND GASKETING
E107A	3'-0" x 7'-2"	F WD	HM	F1	1'-0"	H14	J14			12	E106		
E107B	6'-0" x 4'-8"	CCD	STL	-	2"	H12	J15	S8		51	E107		MANUAL
E107C	6'-0" x 4'-8"	CCD	STL	-	2"	H12	J15	S8		51	E107		MANUAL
E108	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			19	E107		
E109	PR 3'-0" x 7'-2"	F WD	HM	F2	1'-0 3/4"	H1	J1			31	E110		
E110	PR 3'-0" x 7'-2"	N WD	HM	F2 SIM	10 3/4"	H1	J1			04	E106		DOUBLE EGRESS
E110A	3'-0" x 7'-2"	FGAL2	AL	A6	4 1/2"	H2	9-A1.21	T1		35	EXT		CARD READER
E110B	3'-0" x 7'-2"	FGAL2	AL	A6	4 1/2"	H2	9-A1.21	T1		41	EXT		
E111	3'-0" x 7'-2"	F WD	HM	F1	1'-0 3/4"	H1	J1			23	E110		SOUND GASKETING
E113A	10'-0" x 9'-4"	OHCD	STL	-	2"	H8	J8	T13 SIM		51	EXT		
E113B	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H1	J1			31	E110		
E113C	3'-0" x 7'-2"	F WD	HM	F1	1'-0 3/4"	H1	J1		20	14	E113		
E113D	10'-0" x 9'-4"	OHCD	STL	-	2"	H9	J9		20	51	E113		
E113E	3'-0" x 7'-2"	F FRP	AL	A1	4 1/2"	H2	J2	T1		26	EXT		
E114A	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H18	J18			50	E106		SOUND GASKETING
E114B	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H18	J18			02	E114		SOUND GASKETING
E115A	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H18	J18			50	E106		SOUND GASKETING
E115B	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H18	J18			02	E115		SOUND GASKETING
E116A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H14	J14			40	E102	40	SOUND GASKETING
E116B	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H14	J14			40	E110	40	SOUND GASKETING
E117A	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H14 SIM	J14 SIM		20	47	E116		
E117B	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H14 SIM	J14 SIM		20	47	E116		
E117C	3'-0" x 7'-2"	F WD	HM	F1	1'-0 3/4"	H1	J1		20	48	E113	40	SOUND GASKETING
E201A	3'-0" x 7'-2"	F WD	HM	F1	8 3/8"	H4	J4			16	E116		
E201B	3'-0" x 7'-2"	F WD	HM	F1	8 3/8"	H4	J4			16	E116		
F101	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	EXIST	EXIST			33	POOL		
F103	PR 3'-0" x 7'-2"	F WD	HM	F2	8 3/4"	H1	J1			27	GYM		
F104A	6'-0" x 7'-4"		HM	F13	8 3/4"	EXIST	EXIST	S2			-		
F105A	3'-0" x 7'-2"	F FRP	AL	A1	4 1/2"	H15	J16			05	D106		
F105B	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			05	F104		
F106	3'-0" x 7'-2"	F WD	HM	F4	8 3/4"	H1	J1	S2		10	F105		
F107	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			19	F105		
F109	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			19	F108		
F111	3'-0" x 7'-2"	F WD	HM	F1	8 3/4"	H1	J1			37	F104		
F112A	3'-0" x 7'-2"	F FRP	AL	A1	4 1/2"	H15	J16			05	D106		

TIPPECANOE VALLEY HIGH SCHOOL A&R

8345 STATE ROUTE 19, AKRON, IN 46910

TIPPECANOE VALLEY SCHOOL CORPORATION

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM

350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

CONSTRUCTION DOCUMENTS

WILLIAM E. PAYNE
REGISTERED
No.
4169
STATE OF
INDIANA
ARCHITECT

PROJECT MANAGER: MKS

DRAWN BY: CLO

PROJECT NUMBER: 220158.00

PROJECT ISSUE DATE: 9/6/2022

REV. NO.	DESCRIPTION	DATE
3	ADDENDUM #3	10/04/2022

DOOR AND FRAME SCHEDULE

A6S.01

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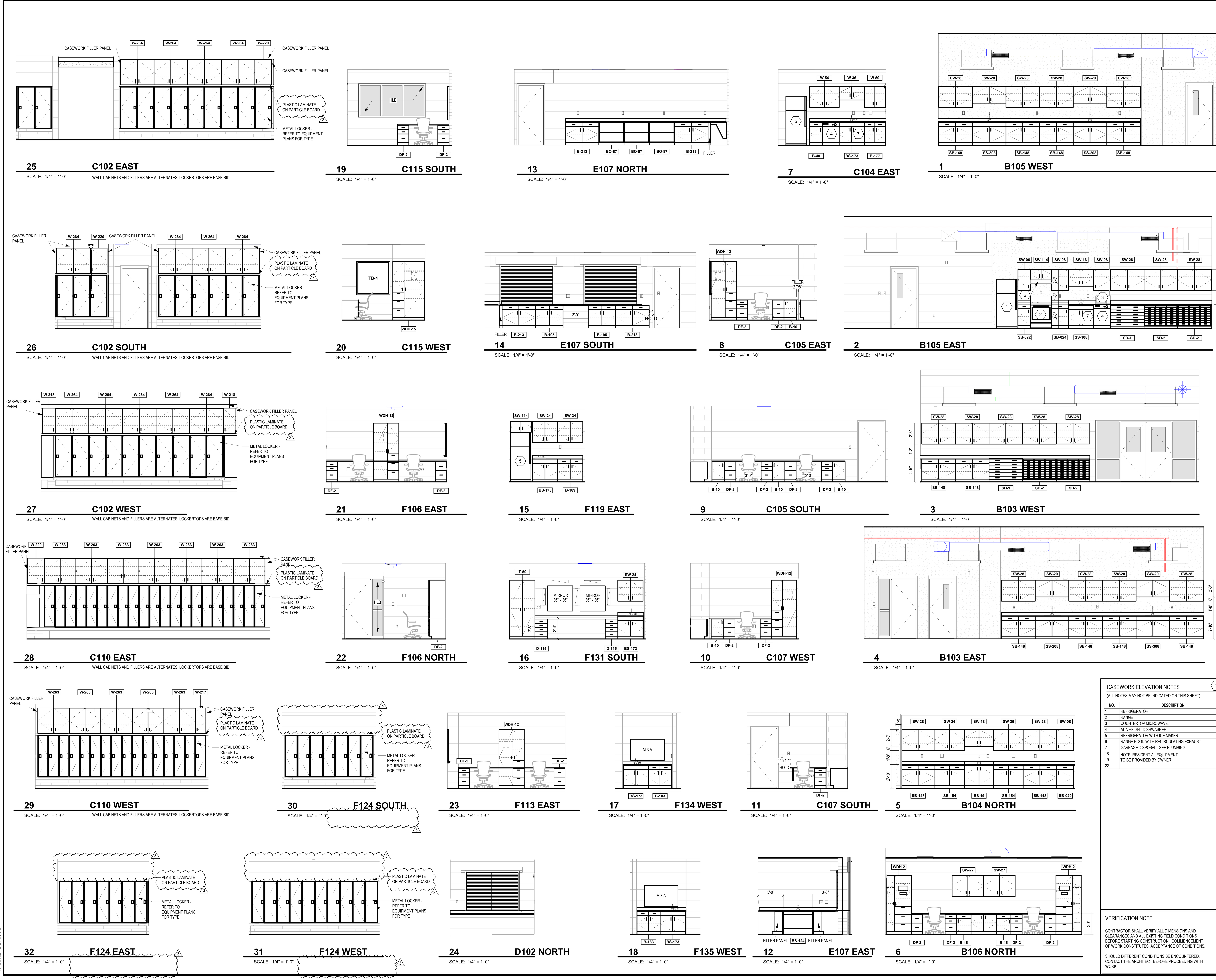

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CASEWORK ELEVATION NOTES

(ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

NO.	DESCRIPTION
1	REFRIGERATOR
2	RANGE
3	COUNTERTOP MICROWAVE.
4	ADA HEIGHT DISHWASHER.
5	REFRIGERATOR WITH ICE MAKER.
6	RANGE HOOD WITH RECIRCULATING EXHAUST
7	GARBAGE DISPOSAL - SEE PLUMBING.
18	NOTE: RESIDENTIAL EQUIPMENT
19	TO BE PROVIDED BY OWNER
22	

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.

TIPPECANOE VALLEY HIGH SCHOOL A&R

8345 STATE ROUTE 19, AKRON, IN 46910

TIPPECANOE VALLEY SCHOOL CORPORATION

ARCHITECT

FANNING HOWEY

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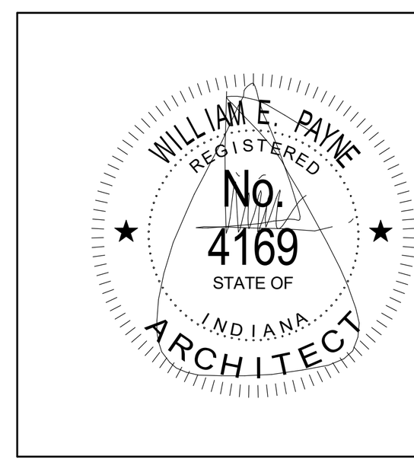
350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

CONSTRUCTION DOCUMENTS



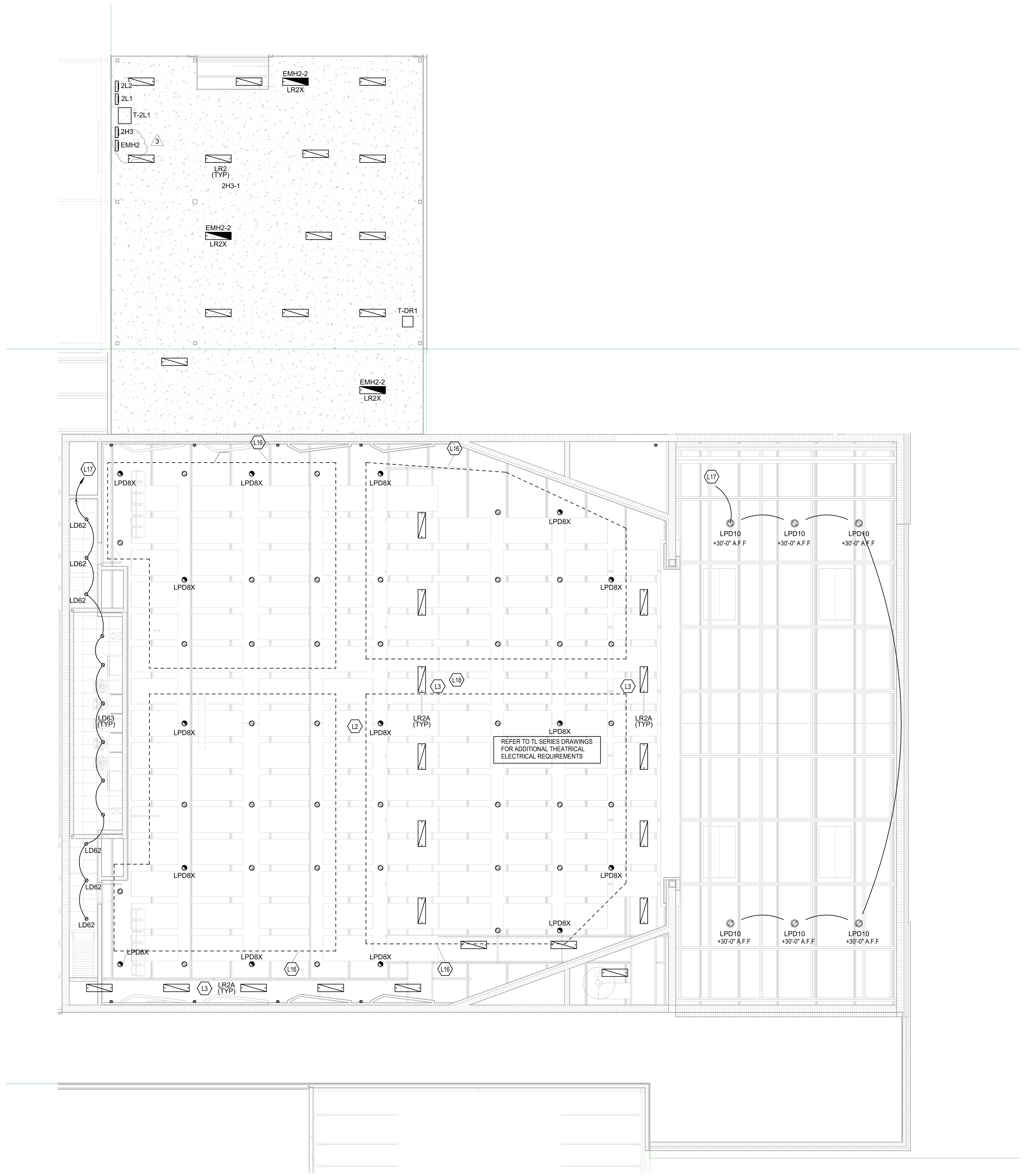
PROJECT MANAGER: MKS
DRAWN BY: CLO
PROJECT NUMBER: 220158.00
PROJECT ISSUE DATE: 9/6/2022

REV. NO.	DESCRIPTION	DATE
3	ADDENDUM #3	10/04/2022

CASEWORK ELEVATIONS

A7.10

ROOM LEGEND - SECOND FLOOR UNIT E		
ROOM NO.	ROOM NAME	AREA (SF)
E201	THEATRICAL CONTROL ROOM	299 SF
E202	AUDITORIUM	10087 SF
E203	CATWALK ACCESS	130 SF



UNIT E - SECOND FLOOR LIGHTING CEILING PLAN

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

GENERAL NOTES - LIGHTING

1. GENERATOR TRANSFER DEVICE TO TAKE FIXTURE TO 100% IN EMERGENCY CONDITION.
2. FINALCONNECTION TO RECESSED LUMINAIRES SHALL BE WITH FLEXIBLE METALLIC CONDUIT, MC CABLE OR MANUFACTURED WIRING SYSTEM.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATION OF LUMINAIRES. COORDINATE LOCATION OF LUMINAIRES, LOUDSPEAKERS, DIFFUSERS, GRILLES, AND OTHER CEILING INSTALLED ELEMENTS WITH THEIR RESPECTIVE INSTALLERS.
4. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND ROOM FINISH SCHEDULE TO DETERMINE PROPER TYPE OF LUMINAIRE TRIM REQUIRED FOR CEILING TYPE PRIOR TO ORDERING LUMINAIRES. PROVIDE LUMINAIRES COMPATIBLE WITH CEILING TYPE.
5. RECESSED LUMINAIRE IN GRID CEILING SYSTEMS SHALL BE PROVIDED WITH SEISMIC CLIPS OR PROVIDE ATTACHMENT TO CEILING GRID SYSTEM AND SUPPORTED PER PROJECT MANUAL AND DETAIL **"3/E1.2"**.
6. WHERE TWO SWITCHES ARE SHOWN ON PLAN CONNECTED TO THE SAME LIGHT FIXTURE, CONTRACTOR SHALL WIRE TO PROVIDE MULTI-LEVEL LIGHTING. ONE SWITCH SHALL ENERGIZE THE INBOARD LAMPS AND ONE SWITCH SHALL ENERGIZE THE OUTBOARD LAMPS. ALL ROOMS SHALL BE WIRED THE SAME.
7. LUMINAIRE TYPE IS SHOWN ONLY ONCE, AS "TYP." IN EVERY ROOM. PROVIDE SAME TYPE OF LUMINAIRE THROUGH-OUT SAME ROOM UNLESS OTHERWISE INDICATED.
8. PROVIDE NO. 10 AWG, MINIMUM, CONDUCTORS FOR EXIT SIGNS AND SECURITY LIGHT CIRCUITS.
9. REPLACE EXISTING TO REMAIN LIGHT SWITCHES WITH NEW SWITCHES AND FACEPLATES.

KEYNOTES	
L2	MOUNT AUDITORIUM LIGHTS EVEN WITH THE CLOUDS AT THE CLOUD OPENINGS.
L3	MOUNT CATWALK LR2A LIGHT FIXTURES +7'-0" ABOVE THE CATWALKS. CONNECT ALL CATWALK FIXTURES TO THE DIMMING RACK DR1 PER TL SERIES DRAWINGS.
L16	CIRCUIT LIGHTS TO CIRCUIT IN DIMMER RACK DR1 PER TL SERIES DRAWINGS.
L17	CIRCUIT LIGHTS TO CIRCUIT IN DIMMER RACK DR1 PER TL SERIES DRAWINGS. CONNECT CIRCUIT THROUGH EMERGENCY INVERTER.
L18	CONNECT LPD8X LIGHT FIXTURES TOGETHER TO CIRCUIT IN DIMMER RACK DR1 PER TL SERIES DRAWINGS. CONNECT CIRCUIT THROUGH EMERGENCY INVERTER.

TIPPECANOE VALLEY HIGH SCHOOL A&R

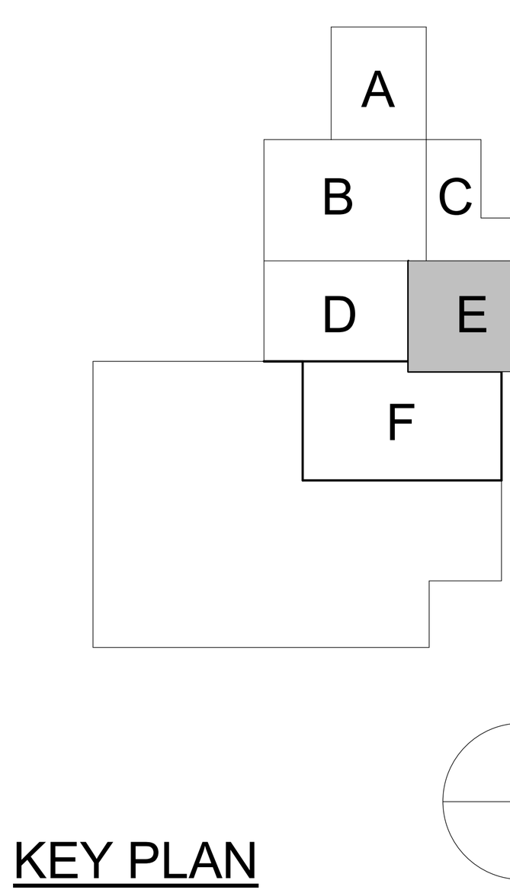
8345 STATE ROUTE 19, AKRON, IN 46910

TIPPECANOE VALLEY SCHOOL CORPORATION

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM
350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204



KEY PLAN

CONSTRUCTION DOCUMENTS

BRIAN W. BUTLER REGISTERED No. PE 11600305 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT MANAGER: MKS
DRAWN BY: AMN
PROJECT NUMBER: 220158.00
PROJECT ISSUE DATE: 09/06/2022

REV. NO.	DESCRIPTION	DATE
3	ADDENDUM 3	10/4/2022

UNIT E - SECOND FLOOR LIGHTING PLAN

E4.7

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ROOM LEGEND - SECOND FLOOR UNIT E		
ROOM NO.	ROOM NAME	AREA (SF)
E201	THEATRICAL CONTROL ROOM	299 SF
E202	AUDITORIUM	10087 SF
E203	CATWALK ACCESS	130 SF

GENERAL NOTES - POWER

1. PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR EACH PANELBOARD ADDED OR MODIFIED DURING CONSTRUCTION. FIELD VERIFY EXISTING CIRCUIT INFORMATION WITH OWNER'S ASSISTANCE TO ENSURE FINAL DIRECTORY IS ACCURATE. UNUSED SPARE BREAKERS SHALL BE IN THE OFF POSITION.
2. VIDEO PROJECTOR RECEPTACLE TO BE MOUNTED ABOVE WALL MOUNTED PROJECTOR BRACKET, 96" A.F.F. UNO.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.
4. LABEL EACH RECEPTACLE WITH THE PANEL NAME AND CIRCUIT NUMBER ON THE FACE OF EACH COVER PLATE WITH A TYPED LAMINATED LABEL.
5. PROVIDE "GFCI PROTECTED" LABEL ON COVER PLATE FOR ANY GFCI PROTECTED DEVICE.
6. CONTRACTOR SHALL INCREASE CIRCUIT CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP DUE TO EXCESSIVE CIRCUIT LENGTHS. IN NO CASE SHALL VOLTAGE DROP EXCEED NFPA 70 (N.E.C.) REQUIREMENTS.
7. REFER TO MECHANICAL PLANS FOR LOCATION OF MECHANICAL EQUIPMENT. LOCATE DISCONNECT SWITCHES PER NEC.
8. REFER TO "CONTROL SCHEMATICS" MECHANICAL DRAWINGS FOR ADDITIONAL CONTROL WIRING AND CONTROL CONNECTIONS.
9. ALL DEVICES, EQUIPMENT, FIXTURES, AND THE LIKE, SHALL BE BONDED WITH A PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTOR. MAINTAIN MECHANICAL/ELECTRICAL BONDS OF METALLIC RACEWAY SYSTEM.
10. REPLACE EXISTING TO REMAIN RECEPTACLES WITH NEW DEVICES AND FACEPLATES.

KEYNOTES	
P13	MOUNT WEATHER RESISTANT RECEPTACLE ON STRUT AT DOAS UNIT.
P31	VERIFY EXACT LOCATION OF PROJECTOR/PROJECTION SCREEN IN THE FIELD.

UNIT E - SECOND FLOOR POWER PLAN

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

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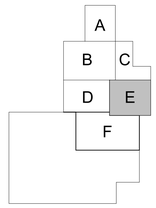

KEY PLAN

PLAN NORTH

CONSTRUCTION DOCUMENTS

PROJECT MANAGER: MKS

DRAWN BY: AMN

PROJECT NUMBER: 220158.00

PROJECT ISSUE DATE: 09/06/2022

REV. NO.	DESCRIPTION	DATE
3	ADDENDUM 3	10/4/2022

UNIT E - SECOND FLOOR POWER PLAN

E5.7

Branch Panel: 2H3

Location: MECHANICAL MEZZANINE... **Volts:** 480/277 Wye **A.I.C. Rating:**
Supply From: SB2 **Phases:** 3 **Mains Type:** M.C.B
Mounting: Surface **Wires:** 4 **Mains Rating:** 400 A
Enclosure: Type 1 **MCB Rating:** 400 A

Notes: INTEGRAL SURGE PROTECTION

CKT	Circuit Description	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Circuit Description	CKT
1	Lighting - Unit E second floor	20 A	1	351	1732					1	20 A	Lighting - Rm. D105	2
3	Lighting Room 363, 412, 431, 168, 539, 538, 371...	20 A	1			1578	3977			1	20 A	Lighting - Unit C	4
5	Spare	20 A	1					0	2165	1	20 A	Lighting - Rm. D105	6
7	Lighting - Unit E	20 A	1	2263	2598					1	20 A	Lighting - Rm. D105	8
9	Air Handling Unit AHU-01C - Mezzanine (NOTE 3)	40 A	3			5817	2598			1	20 A	Lighting - Rm. D105	10
11	--	--	--					5817	2165	1	20 A	Lighting - Rm. D105	12
13	--	--	--	5817	2105					3	20 A	Air Handling Unit AHU-02C - Mezzanine (NOTE 1)	14
15	DOAS-01E - POOL OUTSIDE AIR UNIT (NOTE 4)	60 A	3			10415	2105			--	--	--	16
17	--	--	--					10415	2105	--	--	--	18
19	--	--	--	10415	23046					3	125 A	AHU-01E - POOL DEHUMID UNIT (NOTE 5)	20
21	Air Handling Unit AHU-03C - Mezzanine (NOTE 2)	25 A	3			3878	23046			--	--	--	22
23	--	--	--					3878	23046	--	--	--	24
25	--	--	--	3878	2105					3	20 A	Air Handling Unit AHU-04C - Mezzanine (NOTE 1)	26
27	Lighting - Rm. D105	20 A	1			1732	2105			--	--	--	28
29	Pool Pump (NOTE 3)	40 A	3					5817	2105	--	--	--	30
31	--	--	--	5817	0					1	20 A	Spare	32
33	--	--	--			5817	0			1	20 A	Spare	34
35	Spare	20 A	1					0	0	1	20 A	Spare	36
37	Spare	20 A	1	0	0					1	20 A	Spare	38
39	Spare	20 A	1			0	0			1	20 A	Spare	40
41	Spare	20 A	1					0	0	1	20 A	Spare	42
		Total Load:		60128 VA		63069 VA		57514 VA					
		Total Amps:		219 A		229 A		208 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	21159 VA	100.00%	21159 VA		
Motor	159552 VA	110.83%	176837 VA	**Total Conn. Load:**	180711 VA
				Total Est. Demand:	197996 VA
				Total Conn.:	217 A
				Total Est. Demand:	238 A

Notes:
NOTE 1: CONNECT WITH 3#12, #12G IN 3/4"C.
NOTE 2: CONNECT WITH 3#10, #10G IN 3/4"C.
NOTE 3: CONNECT WITH 3#8, #10G IN 3/4"C.
NOTE 4: CONNECT WITH 3#6, #10G IN 1"C. NOTE 5: CONNECT WITH 3#1, #6G IN 2"C.

Branch Panel: 2L1

Location: MECHANICAL MEZZANINE... **Volts:** 208/120 Wye **A.I.C. Rating:**
Supply From: T-2L1 **Phases:** 3 **Mains Type:** M.C.B
Mounting: Surface **Wires:** 4 **Mains Rating:** 200 A
Enclosure: Type 1 **MCB Rating:** 200 A

Notes: INTEGRAL SURGE PROTECTION

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle # 4 - RM E107	20 A	1	180	360					1	20 A	Quad Receptacle #1 - Rm. E107	2
3	Door Access Rm. B101, E102, E110	20 A	1			200	1127			1	20 A	Bleachers RM D105	4
5	Proscenium Receptacles	20 A	1					360	600	1	20 A	Water Cooler Rm. C101 (NOTE 1)	6
7	Receptacle Rm. E102, E103, EXT.	20 A	1	640	1200					1	20 A	Dishwasher - Rm. C104	8
9	Monitors - East Wall RM C114	20 A	1			1350	1690			1	20 A	Video Projectors - RM C102 & C110	10
11	Monitors - West Wall RM C114	20 A	1					900	1080	1	20 A	Receptacle - Rm. E116	12
13	Spare	20 A	1	0	180					1	20 A	Receptacle Treadmill - Rm. C112	14
15	Receptacle Treadmill - Rm. C112	20 A	1			180	180			1	20 A	Receptacle #2 - RM E107	16
17	Auditorium Control Booth	20 A	1					1440	180	1	20 A	Receptacle Treadmill - Rm. C112	18
19	Receptacle #1 - RM E107	20 A	1	180	360					1	20 A	Quad Receptacle #2 - Rm. E107	20
21	Quad Receptacle #3 - Rm. E107	20 A	1			360	540			1	20 A	Receptacle Rm. C112	22
23	Receptacle #3 - RM E107	20 A	1					180	360	1	20 A	Receptacles - Stage E106	24
25	Auditorium 2nd Floor Receptacles	20 A	1	540	600					1	20 A	Water Cooler Rm. C102 (NOTE 1)	26
27	Water Cooler Rm. C110 (NOTE 1)	20 A	1			600	720			1	20 A	Receptacle Rm. E104, E105, E114, E115	28
29	Receptacle Rm. E108, E109	20 A	1					540	600	1	20 A	Water Cooler Rm. E102 (NOTE 1)	30
31	Receptacle Rm. C115	20 A	1	720	720					1	20 A	Receptacle Rm. C105	32
33	Receptacle Rm. C112	20 A	1			720	720			1	20 A	Receptacle Rm. C104	34
35	Receptacles Rm. C101, C113, CUH-01C,...	20 A	1					720	720	1	20 A	Receptacle Rm. C114	36
37	Receptacle Rm. D105, D108, D110	20 A	1	720	720					1	20 A	Mechanical Mezzanine Receptacles	38
39	Receptacle - Rm. E106	20 A	1			720	900			1	20 A	Receptacle Rm. C107	40
41	Receptacle Rm. C105	20 A	1					720	720	1	20 A	Receptacle - Rm. E113	42
43	Receptacle - Rm. E106, E110, EXT.	20 A	1	900	1080					1	20 A	Receptacle - Rm. E117	44
45	Receptacle Rm. C107-C111, CUH-04C	20 A	1			1080	1260			1	20 A	Receptacle Rm. C102, C03, C106	46
47	Receptacle Space 430	20 A	1					900	1080	1	20 A	Receptacle Rm. D102 - D104, OHD - Rm. D102	48
49	Receptacle - Rm. E116	20 A	1	1260	0					1	20 A	Spare	50
51	Spare	20 A	1			0	0			1	20 A	Spare	52
53	Receptacle Rm. C114	20 A	1					1260	0	1	20 A	Spare	54
55	Spare	20 A	1	0	0					1	20 A	Spare	56
57	Spare	20 A	1			0	0			1	20 A	Spare	58
59	Spare	20 A	1					0	0	1	20 A	Spare	60
		Total Load:		10360 VA		12347 VA		12360 VA					
		Total Amps:		86 A		105 A		106 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	1817 VA	115.51%	2099 VA		
Other	300 VA	100.00%	300 VA	**Total Conn. Load:**	35067 VA
Receptacle	32950 VA	65.17%	21475 VA	**Total Est. Demand:**	23874 VA
				Total Conn.:	97 A
				Total Est. Demand:	66 A

Notes:
NOTE 1: PROVIDE WITH 5mA GFCI BREAKER.
NOTE 2: CONNECT WITH 2#10, #10G IN 3/4"C.

Branch Panel: AGL1

Location: Space 408 **Volts:** 208/120 Wye **A.I.C. Rating:**
Supply From: T-AGL1 **Phases:** 3 **Mains Type:** M.C.B
Mounting: Recessed **Wires:** 4 **Mains Rating:** 400 A
Enclosure: Type 1 **MCB Rating:** 400 A

Notes: INTEGRAL SURGE PROTECTION
SHUNT TRIP MAIN BREAKER CONNECTED TO SHOP EMERGENCY STOP BUTTON

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Air Compressor - RM B108	20 A	1	180	180					1	20 A	Outdoor Receptacle #1	2
3	Cord Reel #1 - RM B102	20 A	1			360	1127			1	20 A	Overhead Door #1 - Rm. B102	4
5	Receptacle #5 - RM B102	20 A	1					180	180	1	20 A	Receptacle #2 - RM B102	6
7	Door Access Rm. B101, B102, B103, B105	20 A	1	400	1840					1	20 A	CF-1 - Rm. B102	8
9	Overhead Door #2 - Rm. B102	20 A	1			1127	4160			2	50 A	208V Receptacle - East Wall (NOTE 1)	10
11	208V Receptacle - North Wall (NOTE 1)	50 A	2					4160	4160	--	--	--	12
13	--	--	--	4160	180					1	20 A	Receptacle #3 - RM B102	14
15	Receptacle #4 - RM B102	20 A	1			180	180			1	20 A	Receptacle #1 - RM B102	16
17	Welding Fume Collector Control Power	20 A	1					360	360	1	20 A	Welder Duplex 3 & 4	18
19	Outdoor Receptacle #2	20 A	1	180	360					1	20 A	Welder Duplex 5 & 6	20
21	Welder Duplex 7 & 8	20 A	1			360	360			1	20 A	Welder Duplex 1 & 2	22
23	Cord Reel #7 - RM B102	20 A	1					360	360	1	20 A	Cord Reel #4 - RM B102	24
25	Cord Reel #8 - RM B102	20 A	1	360	360					1	20 A	Cord Reel #5 - RM B102	26
27	Cord Reel #6 - RM B102	20 A	1			360	360			1	20 A	Cord Reel #3 - RM B102	28
29	Spare	20 A	1					0	0	1	20 A	Spare	30
31	Cord Reel #2 - RM B102	20 A	1	360	4160					2	50 A	Receptacle - Welding (NOTE 1)	32
33	Receptacle - Welding (NOTE 1)	50 A	2			4160	4160			--	--	--	34
35	--	--	--					4160	4160	2	50 A	Receptacle - Welding (NOTE 1)	36
37	Receptacle - Welding (NOTE 1)	50 A	2	4160	4160					--	--	--	38
39	--	--	--			4160	4160			2	50 A	Receptacle - Welding (NOTE 1)	40
41	Receptacle - Welding (NOTE 1)	50 A	2					4160	4160	--	--	--	42
43	--	--	--	4160	4160					2	50 A	Outdoor 208V Receptacle (NOTE 1)	44
45	Receptacle - Welding (NOTE 1)	50 A	2			4160	4160			--	--	--	46
47	--	--	--					4160	4160	2	50 A	Receptacle - Welding (NOTE 1)	48
49	Welding Fume Collector - WFC-01	90 A	3	5817	4160					--	--	--	50
51	--	--	--			5817	0			1	20 A	Spare	52
53	--	--	--					5817	0	1	20 A	Spare	54
55	Spare	20 A	1	0	0					1	20 A	Spare	56
57	Spare	20 A	1			0	0			1	20 A	Spare	58
59	Spare	20 A	1					0	0	1	20 A	Spare	60
		Total Load:		39337 VA		39351 VA		40897 VA					
		Total Amps:		328 A		328 A		341 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	21545 VA	120.25%	25908 VA		
Other	400 VA	100.00%	400 VA	**Total Conn. Load:**	119585 VA
Receptacle	6120 VA	100.00%	6120 VA	**Total Est. Demand:**	87340 VA
Receptacle - Welding	91520 VA	60.00%	54912 VA	**Total Conn.:**	332 A
				Total Est. Demand:	242 A

Notes:
NOTE 1: CONNECT WITH 3#6, #10G IN 1"C.

Branch Panel: 2L2

Location: MECHANICAL MEZZANINE... **Volts:** 208/120 Wye **A.I.C. Rating:**
Supply From: **Phases:** 3 **Mains Type:** M.C.B
Mounting: Surface **Wires:** 4 **Mains Rating:** 200 A
Enclosure: Type 1 **MCB Rating:** 200 A

Notes: INTEGRAL SURGE PROTECTION

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	TEMPERATURE CONTROL PANELS -...	20 A	1	750	750					1	20 A	TEMPERATURE CONTROL PANELS -...	2
3	Pool Controllers	20 A	1			500	874			1	20 A	Propeller Unit Heaters - PUH-01C, 02C -...	4
5	Unit E AHU Lights & Recepts	20 A	1					1080	345	1	20 A	EF-01E - Theater	6
7	Cab Heater - CUH-01C - RM C102	20 A	1	1800	1800					1	20 A	Cab Heater - CUH-02C - RM C102	8
9	EF-01C Rm. C111	20 A	1			1840	1800			1	20 A	Cab Heater - CUH-03C - RM C110	10
11	EF-02C (C114) & EF-03C	20 A	1					1955	1978	1	20 A	EF-01D - EF-03D - UNIT E	12
13	CUH-01E, PUH-01E - Rm. E110, E113	20 A	1	120	400					1	20 A	Door Access Rm. C101, C102, C110, C114	14
15	Garbage Disposer - RM C104	20 A	1			1587	1000			1	20 A	Refrigerator Rm. C104	16
17	Cooler #2 - RM E108	20 A	1					1000	1000	1	20 A	Cooler #1 - RM E108	18
19	Overhead Doors - Rm. E113	20 A	1	2254	1500					2	20 A	Other Space 432	20
21	Auditorium Projector	20 A	1			500	1500			--	--	--	22
23	Pool Scoreboard South #1	20 A	1					96	96	1	20 A	Pool Scoreboard South #2	24
25	Tech Receptacle #1 - Mezzanine	20 A	1	1000	1000					1	20 A	Tech Receptacle #2 - Mezzanine	26
27	Auditorium Projection Screen	20 A	1			500	1000			1	20 A	Tech Receptacle #1 - Theater Booth	28
29	Tech Receptacle #2 - Theater Booth	20 A	1					1000	1000	1	20 A	Tech Receptacle #3 - Theater Booth	30
31	Spare	20 A	1	0	0					1	20 A	Spare	32
33	Spare	20 A	1			0	0			1	20 A	Spare	34
35	Spare	20 A	1					0	0	1	20 A	Spare	36
37	Spare	20 A	1	0	0					1	20 A	Spare	38
39	Spare	20 A	1			0	0			1	20 A	Spare	40
41	Spare	20 A	1					0	0	1	20 A	Spare	42
		Total Load:		11374 VA		11101 VA		9550 VA					
		Total Amps:		97 A		94 A		80 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	10953 VA	104.20%	11413 VA		
Other	5400 VA	100.00%	5400 VA	**Total Conn. Load:**	32025 VA
Electric Heat	5400 VA	90.00%	4860 VA	**Total Est. Demand:**	31809 VA
Receptacle	10272 VA	98.68%	10136 VA	**Total Conn.:**	89 A
				Total Est. Demand:	88 A

Notes:

Branch Panel: BL1

Location: Space 381 **Volts:** 208/120 Wye **A.I.C. Rating:**
Supply From: T-AGL1 **Phases:** 3 **Mains Type:** M.C.B
Mounting: Recessed **Wires:** 4 **Mains Rating:** 200 A
Enclosure: Type 1 **MCB Rating:** 200 A

Notes: INTEGRAL SURGE PROTECTION

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Tech Receptacle #1 - Rm. B107	20 A	1	1000	900					1	20 A	Receptacle Rm. B106	2
3	DOOR ACCESS - Rm. A101	20 A	1			200	500			1	20 A	Projector - RM B103	4
5	GUH-01B, GUH-02B, CUH-01B - Rm. B102, B10...	20 A	1					720	540	1	20 A	Receptacle Rm. B105	6
7	Range Hood - RM B105	20 A	1	360	720					1	20 A	Cord Reels - Rm. B105 (NOTE 2)	8
9	Projector - RM B105	20 A	1			500	1000			1	20 A	Refrigerator Rm. B105	10
11	Range - Rm. B105 (NOTE 1)	50 A	2					5000	720	1	20 A	TECH CAB Receptacle Rm. B106	12
13	--	--	--	5000	720					1	20 A	Cord Reels - Rm. B103 (NOTE 2)	14
15	Receptacle - RM B101, B107-B110	20 A	1			1080	1200			1	20 A	Dishwasher - Rm. B105	16
17	Receptacle - Rm. B104	20 A	1					720	720	1	20 A	Cord Reels - Rm. B105 (NOTE 2)	18
19	EF-02B & EF-05B - RM B103	20 A	1	1334	0					1	20 A	Spare	20
21	Garbage Disposer - RM B105	20 A	1			1587	540			1	20 A	Receptacle - Rm. B105	22
23	EF-04B (B108) & EF-01B (B102)	20 A	1					1334	1000	1	20 A	Tech Receptacle #2 - Rm. B107	24
25	Spare	20 A	1	0	1000					1	20 A	Tech Receptacle #3 - Rm. B107	26
27	Receptacle - Rm. B103	20 A	1			720	720			1	20 A	Cord Reels - Rm. B103 (NOTE 2)	28
29	Spare	20 A	1					0	900	3	20 A	Jockey Pump (Fire Pump Alternate)	30
31	Spare	20 A	1	0	900					--	--	--	32
33	EF-03B & EF-06B - RM B105	20 A	1			1334	900			--	--	--	34
35	Spare	20 A	1					0	360	1	20 A	Fire Pump Receptacle (Fire Pump Alternate)	36
37	Spare	20 A	1	0	0					1	20 A	Spare	38
39	Spare	20 A	1			0	0			1	20 A	Spare	40
41	Spare	20 A	1					0	0	1	20 A	Spare	42
		Total Load:		11934 VA		10281 VA		12014 VA					
		Total Amps:		102 A		86 A		102 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	9009 VA	107.49%	9684 VA		
Other	200 VA	100.00%	200 VA	**Total Conn. Load:**	34229 VA
Receptacle	25020 VA	69.98%	17510 VA	**Total Est. Demand:**	27394 VA
				Total Conn.:	95 A
				Total Est. Demand:	76 A

Notes:
NOTE 1: CONNECT WITH 3#6, #10G IN 1"C.
NOTE 2: PROVIDE WITH 5mA GFCI BREAKER.
NOTE 3: CONNECT WITH 2#10, #10G IN 3/4"C.

Branch Panel: FPL1 (BY OTHERS)

Location: **Volts:** 208/120 Wye **A.I.C. Rating:**
Supply From: T-FPL1 **Phases:** 3 **Mains Type:** M.C.B
Mounting: Surface **Wires:** 4 **Mains Rating:** 60 A
Enclosure: Type 1 **MCB Rating:** 60 A

Notes: INTEGRAL SURGE PROTECTION

CKT	Circuit Description	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Circuit Description	CKT
1	Jockey Pump	20 A	1	1127	720					1	20 A	Receptacles	2
3	Electric Heater (NOTE 1)	20 A	2			1500							4
5	--	--	--					1500					6
7													8
9													10
11													12
		Total Load:		1847 VA		1500 VA		1500 VA					
		Total Amps:		15 A		13 A		13 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	1127 VA	125.00%	1409 VA		
Electric Heat	3000 VA	90.00%	2700 VA	**Total Conn. Load:**	4847 VA
Receptacle	720 VA	100.00%	720 VA	**Total Est. Demand:**	4829 VA
				Total Conn.:	13 A
				Total Est. Demand:	13 A

Notes:
NOTE 1: CONNECT WITH 2#12, #12G IN 3/4"C.

Branch Panel: EMH2

3

Location: MECHANICAL MEZZANINE... **Volts:** 480/277 Wye **A.I.C. Rating:**
Supply From: SB2 **Phases:** 3 **Mains Type:** M.C.B
Mounting: Surface **Wires:** 4 **Mains Rating:** 100 A
Enclosure: Type 1 **MCB Rating:** 100 A

Notes: INTEGRAL SURGE PROTECTION

CKT	Circuit Description	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Circuit Description	CKT
1	Lighting - Unit C	20 A	1	967	896					1	20 A	Lighting - Unit E	2
3	EMERGENCY LIGHTS - UNIT D FIRST FLOOR	20 A	1			451	1260			1	20 A	Lighting - UNIT F FIRST FLOOR	4
5	Lighting - Unit A & B	20 A	1					2880	2165	1	20 A	Pool South Emergency Lights	6
7	Pool North Emergency Lights	20 A	1	2165	0					1	20 A	Spare	8
9	Spare	20 A	1			0	0			1	20 A	Spare	10
11	Spare	20 A	1					0	0	1	20 A	Spare	12
13	Spare	20 A	1	0	0					1	20 A	Spare	14
15	Spare	20 A	1			0	0			1	20 A	Spare	16
17	Spare	20 A	1					0	0	1	20 A	Spare	18
		Total Load:		4028 VA		1711 VA		5045 VA					
		Total Amps:		16 A		6 A		20 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	10437 VA	100.00%	10437 VA		
Other	347 VA	100.00%	347 VA	**Total Conn. Load:**	10784 VA
				Total Est. Demand:	10784 VA
				Total Conn.:	13 A
				Total Est. Demand:	13 A

Notes:

TIPPECANOE VALLEY HIGH SCHOOL A&R

8345 STATE ROUTE 19, AKRON, IN 46910

TIPPECANOE VALLEY SCHOOL CORPORATION

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM

350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

CONSTRUCTION DOCUMENTS

BRIAN W. BUTLER REGISTERED No. PE10000 STATE OF PROFESSIONAL ENGINEER

PROJECT MANAGER: MKS

DRAWN BY: AMN

PROJECT NUMBER: 220158.00

PROJECT ISSUE DATE: 09/06/2022

REV. NO.	DESCRIPTION	DATE
2	ADDENDUM 2	9/27/2022
3	ADDENDUM 3	10/4/2022

PANELBOARD SCHEDULES

E8.1