ADDENDUM NO. 1 February 27, 2026

RE: ADDITION AND REMODELING OF HORACE HIGH SCHOOL
WEST FARGO SCHOOLS
HORACE, NORTH DAKOTA
PROJECT NO. 202501-9

FROM: YHR PARTNERS, Ltd.
420 Main Avenue
Moorhead, MN 56560

TO: ALL BIDDERS

This Addendum forms part of the Contract Documents and modifies the original Bidding Documents as noted below. Acknowledge receipt of this Addendum in the space provided on Bid Form. Failure to do so may subject Bidder to disqualification.

CERTIFICATION: I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Regt. No. 1970

I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of North Dakota.

Regt. No. 6864

I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of North Dakota.

Regt. No. 6694

I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of North Dakota.

Regt. No. 28898

I hereby certify that this Addendum was prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of North Dakota.

Regt. No. 4438

CLARIFICATIONS

- Keynote 09 65 00.07 REVISED to “Rubber Stair Management System”
- Keynote 09 65 00.11 REVISED to “Rubber Tile-2 – Match floor as required for new construction.”
- Existing Fire Sprinkler O&Ms are provided for your review.

CHANGES TO SPECIFICATIONS

SECTION 00 01 05

1. REPLACE this Section in its entirety with the attached Section.

BID PACKAGES

See attached revised bid packages:

1. Bid Package 4 – Masonry
2. Bid Package 6A – General Work and Labor
3. Bid Package 6B – Millwork – Materials
4. Bid Package 6C – Science Millwork & Tops
5. Bid Package 9F – Athletic Flooring
6. Bid Package 22 – Plumbing
7. Bid Package 23 – HVAC and Temp Controls

SECTION 09 30 00 – TILING

1. Page 3, Paragraph 2.02, 3. C. REMOVE “DILEX-AHK” and REPLACE WITH “DILEX-AHKA”

SECTION 09 51 00 – ACOUSTICAL CEILINGS

1. REPLACE this Section in its entirety with the attached Section.

SECTION 09 62 00 – SPECIALTY FLOORING

1. Page 1, Paragraph 1.01, DELETE “B. Pad and Poured Athletic Flooring” and “D. Pole Vault Box.”
2. Page 2, Paragraph 2.02, I. Finishes, 1. Sealer, DELETE “Oil Based Urethane.” and REPLACE WITH “Water-based polyurethane”
3. Page 2, Paragraph 2.02, I. Finishes, 2. Finishes, DELETE “Oil Based Urethane.” and REPLACE WITH “Water-based polyurethane”
4. Page 3, Paragraph 2.03, ADD “RUBBER TILE-1”
5. Page 3, Paragraph 2.03, E. Formats, DELETE “In tiles that are 36” x 36” and REPLACE WITH “Rolled Sheet Good”

SECTION 09 64 00 – WOOD FLOORING

1. REPLACE this Section in its entirety with the attached Section.

SECTION 09 65 00 – RESILIENT FLOORING

1. REPLACE this Section in its entirety with the attached Section.

SECTION 09 68 13 – TILE CARPETING

1. Page 3, paragraph 2.03, C. CPT-3, DELETE “3. Collection: Catwalk II Walk-off Modular 7268.”
2. Page 4, paragraph 2.03, H. CPT-8, ADD “1A. Style: Incognito 7069” and 4. Color DELETE “ready-to-wear 1422” and REPLACE WITH “1837 Operative.”

SECTION 09 84 00 – ACOUSTICAL ROOM COMPONENTS

1. REPLACE this Section in its entirety with the attached Section.

SECTION 11 66 00 – ATHLETIC EQUIPMENT

1. REPLACE this Section in its entirety with the attached Section.

SECTION 31 23 00 – EXCAVATION & FILL

1. ADD this Section.

SECTION 32 31 10 – SIGNING

1. ADD this Section.

APPROVAL OF SUBSTITUTIONS:

Section	Product	Manufacturer/System
06 40 00	Cabinet Drawer Slides	Knape and Vogt
08 80 00	Insulated Glass Units Sunguard SN 68	Oldcastle
09 62 00	Gym Floor	Robbins Sports Surfaces
09 84 00	Acoustical Room Components (Type-1)	Golterman & Sabo Acousti-Panel and Acousti-Tack
09 84 00	Acoustical Room Components (Type-2)	Golterman & Sabo Acousti-Panel Custom Acoustic Products
09 84 00	Acoustical Room Components (Type-3)	Custom Acoustic Products
11 66 00	Pole Vault Box	Aluminum Athletic Equipment

CHANGES TO DRAWINGS

SHEET A001 - ROOM FINISH SCHEDULE AND WALL TYPES

1. Room Finish Schedule
   a. B101C, S-1, S-2, S-3: REMOVE “Rubber Floor-1” and REPLACE WITH “Rubber Tile-1”
   b. C147, REMOVE “CPT-9” and REPLACE WITH “CPT-8”
   c. F218 and F219, REMOVE CPT-5 and REPLACE WITH CPT-4
   d. ADD Room F128 Classroom
   e. REMOVE Room B112 Toilet

SHEET A007 – OPENING DETAILS

1. A13/A007 ADD keynote 07 20 00.04 batt insulation

SHEET A101 – DEMOLITION PLAN – FIRST FLOOR

1. A5: ADD “02 40 00.08” at existing vestibule.

SHEET A122 – FIRST FLOOR F-WING

1. A11: ADD “09 68 13.08”

SHEET A124 – FIRST FLOOR – PARTIAL PLANS

1. A9: REMOVE “Cpt-1 and existing carpet” in existing vestibule

SHEET A131 – FLOOR FINISH PLANS- ATHLETICS

1. ADD picture of existing gym floor clarifying the floor runs east to west.

SHEET A134 – ENLARGED FLOOR PLANS – ALTERNATES

1. L5: ADD “09 65 00.14” and “09 68 13.07”
2. G14: ADD “09 65 00.10”

SHEET A255 – STAIR PLANS AND SECTIONS

1. E8, E13, H4: Keynotes REVISED to “09 65 00.07”

SHEET A600 – INTERIOR ELEVATIONS

1. A8 and A10: REVISE leg layout for student and teacher desks.
2. B5, B10, F5, F10: Science Cabinets glass REVISED to “08 80 00.17 - 1/8” Tempered Glass”
3. B5 and F5 REVISED height of tile.

SHEET A603 – INTERIOR ELEVATIONS

1. F7 AND F18
    a. REMOVE and ADJUST size of acoustic panels.

SHEET A604 – INTERIOR ELEVATIONS – MAIN GYM

1. ADD acoustical panel key for clarification.

SHEET L100 – LANDSCAPE PLAN

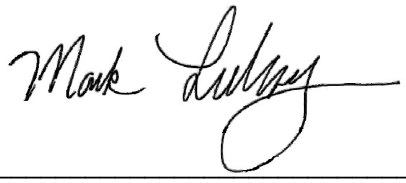
1. REPLACE new plant count

SHEET PH-1 – FIRST FLOOR PHASING

1. ADD scheduling note.

END OF ARCHITECTURAL ADDENDUM
SEE ATTACHED PAGES FOR ELECTRICAL.

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect or Professional Engineer under the laws of the state of the State in which the Project is located.



MARK LUNDBERG — Registration No. 1970
ARCHITECT — Date: 2026

2.01

Steven Vondal — Registration No. 6694
STRUCTURAL ENGINEER — Date: 2026

Tony Eukel — Registration No. 6864
CIVIL ENGINEER — Date: 2026

Mathew Krueger — Registration No. 28898
MECHANICAL ENGINEER — Date: 2026

Michael Berger — Registration No. 4438
ELECTRICAL ENGINEER — Date: 2026

END OF SECTION

Bid Package 4 – Masonry

1.00 BID PACKAGE SUMMARY

A. Comply with all specification sections as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 04 0500 – Masonry Mortar and Grout
   5. 04 2000 – Unit Masonry
   6. 07 2000 – Thermal Insulation (as applicable)
   7. 07 6000 – Flashing and Sheet Metal (as applicable)

1.01 INSTALLATION AND COORDINATION

A. Provide and install all Masonry as shown on the plans.
B. Supply and install CMU Block, mortar, rebar, core fill, grout, masonry accessories, anchors and ties, water repellants, flashing, weeps for a complete installation
C. Installation of supplied structural embed items and lintels as shown on the plans.
D. Supply and install brick veneer, mortar, and insulation as detailed (colored mortar as applicable)
E. Contractor to install angles at existing CMU to tie new CMU to existing, and to install angles at top of non-bearing walls. Welding angle to joists will be by Bid Package 5B.
F. Contractor is responsible for washing and burnished block and brick veneer.
G. Provide and install cast stone, anchors, pins, dowels, and any other anchoring devices.
H. Supply and install reinforcing as shown on the plans.
I. Provide and install thermal insulation as noted.
J. Rub and patch all masonry walls prior to painting.
K. Coordinate joist pockets with the Construction Manager and Bid Package 5B.
L. Coordinate all wood blocking at openings with Construction Manager.
M. Coordinate through wall scupper locations with Bid Package 7A and Construction Manager.
N. Coordinate plumbing rough-in and overflow rain leader locations with the Construction Manager and Bid Package 22.
O. Coordinate electrical rough-in with the Construction Manager and Bid Package 26.
P. Contractor to clean up and remove **ALL** masonry debris from the site.
Q. Coordinate all onsite storage and mortar mixing station with the Construction Manager.
R. Provide sample masonry panel as specified.
S. All field measurements and layout work necessary for the completion of this contractor's work.
T. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.
U. See allowances, unit prices, and alternates as applicable.
V. Cooperate with other trades on site in the completion of their work. Cooperation with the owners Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.
B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.
C. Construction cleaning shall be performed daily for debris generated by this contractor.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.
B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.
C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
A. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
B. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services "Site Specific Safety Plan".
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services' Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.

B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.
D. Contractors are required to provide secondary spill containment for their mortar mix site. The containment must include an impermeable liner and berm design to contain and not allow to discharge powder, liquid and solid waste generated by masonry activity. Good housekeeping measures shall be implemented routinely to prevent leaching and/or runoff of liquids and proper disposal of solids.

Bid Package 6A – General Work and Labor

1.00 BID PACKAGE SUMMARY

A. Comply with all specification sections as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 06 1000 – Rough Carpentry
   5. 06 2000 – Finish Carpentry
   6. 06 4000 – Architectural Woodwork
   7. 06 6000 – Plastic Fabrications
   8. 07 2000 – Thermal Insulation
   9. 07 2500 – Weather Barriers
   10. 08 1200 – Metal Frames (Install)
   11. 08 1300 – Metal Doors (Install)
   12. 08 1400 – Wood Doors (Install)
   13. 08 3100 – Access Doors and Panels
   14. 08 7100 – Door Hardware (Install)
   15. 09 7750 – Sanitary Wall Surfaces
   16. 10 1100 – Visual Display Surfaces
   17. 10 1200 – Display Cases
   18. 10 1400 – Signage
   19. 10 1405 – Special Signage
   20. 10 2600 – Wall and Corner Guards
   21. 10 2800 – Toilet, Bath and Laundry Accessories
   22. 10 4400 – Fire Protection Specialties
   23. 10 5100 – Lockers
   24. 11 5200 – Audio-Visual Equipment
   25. 12 2000 – Window Treatments

1.01 INSTALLATION AND COORDINATION

A. Provide and install all wood roof and window blocking, install 2X blocking for mechanical curbs, plywood as noted at over steel studs at overhangs, 2x blocking for roof control joints (see roof plan).

B. Provide and install Composite Plywood Insulated Panel Systems and Insulated Panel Systems with hat channel as shown on the plans and noted in the specifications. Hat channels over plywood or steel studs for metal panels will be provided and installed by Bid Package 7E.

C. Contractor to supply and install all non-liquid applied weather barriers.

D. Provide all specified preservative and fire-retardant treatment of the above-mentioned items.

E. Provide and install butyl flashing at corner transitions.

F. Coordination with other trades in the placement of blocking and backing to be used by others for the completion of their work (roof blocking and window blocking).

G. All window openings to be secured with reinforced poly once wood blocking/window wrap is completed. Contractor to temporarily enclose the building for cold weather/winter work, and to remove and dispose of temporary sheltering once permanent openings are installed.

H. Provide and install wood backing for all wall mounted items installed by this contract for owner. Install wood blocking for misc. metals handrails and roof access ladders.
I. Provide all specified preservative and fire-retardant treatment of the above-mentioned items.
J. Installation of all hollow metal window and door frames.
K. Install all pre-finished wood doors, hollow metal doors, and finish door hardware.
    a. Coordinate with BP 26 for installation of electrified door hardware.
    b. Install wood doors and hardware installed in aluminum frames
    c. This contractor to receive and store all door hardware in an organized manner to prevent lost or stolen materials.
L. Provide and install signage for fire partitions, fire walls, and barriers as noted.
M. All building demo as noted on the demo plan unless otherwise noted. Precast demolition is the responsibility of Bid Package 3C/3D. Concrete floor demolition and replacement is the responsibility of the Bid Package 3A.
N. Contractor to remove, salvage, and reinstall lockers and bases as shown on the plans. Contractor to remove, salvage, and turn over extra lockers to the owner. Contractor to remove, salvage/store on site, and reinstall uniform storage lockers as shown on the plans.
O. Contractor to install the following owner supplied items from the plans and in the specifications (soap dispensers, toilet paper holders, paper towel holders, sanitary napkin holders, TV mounts, and TV's). Coordinate TV installation with the Construction Manager and Tricorne Audio.
P. Furnish and install all fire protection specialties, toilet accessories, toilet partitions, shower seats, grab bars, wall and corner guards, lockers, bench seats and brackets, visual display boards, mop holders, projection screens, knox box, privacy curtains, shower curtains and rods, access panels, etc.
Q. Provide and install all exterior signage and signage for fire walls, electrical rooms, mechanical rooms, etc. as shown on the plans and noted in the specifications.
R. Provide and install all FRP panel and accessories.
S. Install all finished wood components, casework and related countertops, solid surface sills, build-up strips, filler panels, support brackets, shelving, standards, and brackets, and grommet as shown and specified.
T. Contractor is responsible for backing for and installing all cabinets in the science classrooms. Bid Package 6C is responsible for providing and install all Epoxy Resin countertops, backsplashes, faucets, gas turrets, drying racks and drain boards, specialty equipment, fume hood and fume hood base cabinet. Bid Package 6A is responsible for installing backing for the drying racks installed by Bid Package 6C.
U. Furnish and install all stone countertops. Contractor is responsible for all templating, field measurements, verifying all sizes, shapes, and rough openings of cut in fixtures and/or appliances.
V. Furnish and install acoustic spray insulation on deck and beams. Contractor is responsible for all masking and cleaning from installation of the acoustic spray insulation.
W. Contractor to move HUDL Camera in the main gym, and to supply and install all metal support from the roof joists. HUDL Camera needs to be 30'-35' from the sideline, 32'-33' above the court, and can not be more than 5' left or right from the center court mounted above the south bleachers.
X. Contractor to include 50 labor hours and (5) rolls of 20' x 100' of poly to cover bleachers, score boards, sound panels, and other equipment in the gym for resurfacing the existing gym floor. Contractor will remove the poly after resurfacing has been completed.

Y. Contractor to demo openings through existing block walls and install lintels where required. See Mechanical & Structural drawings for locations.
Z. Contractor to install the support bracket provided by the owner for the swing in the SPED Rooms.
AA. Contractor to install plywood behind sheetrock on interior steel stud walls based on the wall types. Plywood must be fire treated.
BB. Contractor will be responsible for installing roof access ladders. Contractor to install backing for roof access ladders, and make sur fasteners are sealed and watertight.
CC. This contractor will coordinate field dimensions for millwork. (Coordinate with CM)
DD. Contractor is responsible for filling all nail holes created from installing finished woodwork.
EE. Contractor is responsible for off-loading all material supplied by others but installed by this contractor. Contractor takes responsibility of material once they have unloaded it from the supplier.
FF. Provide and install window treatments.
GG. Provide and install steel plates and break metal at coiling counter doors, overhead doors, and large masonry openings as shown on the plans.
HH. Provide all adhesives, anchors, nails, bolts and screws for installation of the contractors' work.
II. Contractor to provide 1000 square feet of temp wall framing and removal. Temp walls should be figured to be 10'-0" tall and will be 2x4 framing with OSB on both sides with insulation in the stud cavity.
JJ. This contractor is responsible for (10) temporary doors with self-closing door and hasp. Lock will be provided by CM.
KK. Contractor to include in their proposal a price for (25) sheets of ½" plywood to be used by all contractors for work in the existing gym to protect the wood flooring. This contractor will stack the sheets in the gym and will remove them from the gym. Contractor should figure providing and removing summer of 2026 and 2027.
LL. This contractor will verify all field dimensions for supplied materials.
MM. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.
NN. See allowances, unit prices, and alternates as applicable.
OO. Cooperate with other trades on site in the completion of their work. Cooperation with the owners' Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.
B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.
C. Construction cleaning shall be performed daily for debris generated by this contractor.
D. See Spec for other items.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.

B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.
C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
D. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
E. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services "Site Specific Safety Plan".
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services' Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.
B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.

Bid Package 6B – Millwork - Materials

1.00 BID PACKAGE SUMMARY

A. Comply with all specification section as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 06 1000 – Rough Carpentry (as applicable)
   5. 06 2000 – Finish Carpentry (as applicable)
   6. 06 4000 – Architectural Woodwork
   7. 06 6000 – Plastic Fabrications
   8. 09 9000 – Painting and Coating (as applicable)

1.01 INSTALLATION AND COORDINATION

A. Furnish all finished wood components, casework and related countertops, solid surface sills, build up strips, filler panels, support brackets, shelving and brackets, hardware, and grommet as shown and specified. Contractor is responsible for providing all cabinets, wood legs at Student Desks, glass doors, hardware, locks, for the science classrooms. Bid package 6C will provide all Epoxy Resin countertops, backsplashes, integral sinks, fixtures, gas turrets, drying racks and drain boards, specialty equipment, fume hood and fume hood base cabinet.

B. Provide seam filler as needed for solid surface sills.

C. Contractor will supply touch-up kits and will include matching touch-up products: stain pen and/or filler stick, and nail putty.

D. Contractor is responsible for all material deliveries and assisting the contractor with unloading. Contractor should not assume everything will be delivered in 1 or two trips.

E. All sets of cabinetries must include a clearly labeled and dimensioned set of installation instruction shop drawings.

F. Cabinets will come pre-drilled for door pulls.

G. All field measurements and layout work necessary for the completion of this contractor's work.

H. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.

I. See allowances, unit prices, and alternates as applicable.

J. Cooperate with other trades on site in the completion of their work. Cooperation with the owner's Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.

B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.

C. Construction cleaning shall be performed daily for debris generated by this contractor.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.
B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.
C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
D. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
E. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services "Site Specific Safety Plan".
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services' Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.
B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.

Bid Package 6C – Science Millwork and Tops

1.00 BID PACKAGE SUMMARY

A. Comply with all specification section as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 06 2000 – Finish Carpentry (as applicable)
   5. 06 4000 – Architectural Woodwork
   6. 11 5300 – Laboratory Equipment

1.01 INSTALLATION AND COORDINATION

A. Furnish and install Epoxy Resin countertops with integral sinks, backsplashes, fixture, gas turrets, drying racks and drain boards, specialty equipment, fume hood and fume hood base cabinet, and hardware. Coordinate connections with mechanical and electrical.
B. Contractor will supply touch-up kits and will include matching touch-up products: stain pen and/or filler stick, and nail putty.
C. Contractor will touch-up countertops as needed with stain pen and/or filler stick materials.
D. Contractor is responsible for all material deliveries, unloading, staging, and installing materials.
E. Contractor is responsible for verifying all cutouts for sinks, faucets, or any holdout, and are responsible for all grommet holes and grommets.
F. Contractor will supply touch-up kits and will include matching touch-up products: stain pen and/or filler stick, and nail putty.
G. All field measurements and layout work necessary for the completion of this contractor's work. Contractor is responsible for all templating, field measurements, verifying all sizes, shapes, and rough openings of cut in fixtures and/or appliances.
H. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.
I. See allowances, unit prices, and alternates as applicable.
J. Cooperate with other trades on site in the completion of their work. Cooperation with the owners Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.
B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.
C. Construction cleaning shall be performed daily for debris generated by this contractor.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.
B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.

C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
A. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
B. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services "Site Specific Safety Plan".
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services' Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.
B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.

Bid Package 9F – Athletic Flooring

1.00 BID PACKAGE SUMMARY

A. Comply with all specification section as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 09 6200 – Specialty Flooring
   5. 09 6400 – Wood Flooring (as applicable)
   6. 09 9960 – Gym Floor Refinishing

1.01 INSTALLATION AND COORDINATION

A. Furnish and install all wood athletic flooring, transitions, and vented base as shown on the plans and noted in the specifications.
B. Contractor to strip sealer on existing wood floor, tie-in the new wood floor to the existing wood floor, retape new lines on the existing and new wood floors per the plans. Contractor to remove and reinstall vented base in existing gym as needed for striping the existing wood floor.
C. Contractor will need to allow for 2 mobilizations for installation, one for the extension of the main gym and one for the Auxiliary gym.
D. Contractor to install wood floor around electrical floor box, volleyball sleeves, and around/over the pole vault box. Contractor will install wood removable cover over the pole vault box, with a system for the owner to remove the wood cover as needed.
E. Contractor to provide an allowance for providing and installing a vapor barrier system to meet 95% relative humidity in the concrete slab.
F. Install covers for athletic equipment sleeves provided by Bid Package 11B.
G. Floor preparation, floor filling and minor grinding as required, and accessories as shown and specified.
H. Furnish owner stock material as specified.
I. All field measurements and layout work necessary for the completion of this contractor's work.
J. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.
K. See allowances, unit prices, and alternates as applicable.
L. Cooperate with other trades on site in the completion of their work. Cooperation with the owners Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.
B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.
C. Construction cleaning shall be performed daily for debris generated by this contractor.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.
B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.
C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
D. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
E. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services "Site Specific Safety Plan".
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services' Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.
B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.

Bid Package 22 – Plumbing

1.00 BID PACKAGE SUMMARY

A. Comply with all specification sections as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 07 8400 – Firestopping (as applicable)
   5. 22 0500 – Basic Plumbing Requirements
   6. 22 0519 – Meters and Gages for Plumbing Piping
   7. 22 0553 – Identification for Plumbing Piping and Equipment
   8. 22 0719 – Plumbing Piping Insulation
   9. 22 1005 – Plumbing Piping
   10. 22 1006 – Plumbing Piping Specialties
   11. 22 4000 – Plumbing Fixtures
   12. 31 2300 – Excavation & Fill (as applicable)
   13. 31 2316.13 – Trenching
   14. 31 2323 – Fill & Backfill

1.01 INSTALLATION AND COORDINATION

A. Furnish and install all building domestic water distribution systems, natural gas piping, storm sewer piping, and waste and vent piping as shown, detailed, and specified.
B. Provide and install pipe insulation and labeling.
C. Provide connection to site utilities. (Site utilities are within 5-0 of the building.)
D. Include rough-ins and connections to all owner supplied equipment as shown.
E. Include rough-ins and final connections of all food service equipment as shown and specified.
F. Coordinate installation of the gas meter with the local utility.
G. Provide and install the new water meter. Coordinate with the local utility.
H. Provide and coordinate all plumbing inspections.
I. Coordinate with Electrical and Mechanical contractors to ensure proper installation.
J. Acoustical and fire sealant at all penetrations through walls and floors.
K. Contractor to provide final connections to all owners supplied appliances.
L. Contractor to provide all rough-ins and angle stops for equipment supplied by the Food Service Supplier. Food Service Supplier to make all final connections and install all fixtures.
M. Contractor responsible for demolition of all plumbing items as shown on the plans.
N. Contractor is responsible for removal of exterior grade storm and sanitary piping and replacing with interior grade storm and sanitary piping. This will need to be completed right after school is out for the summer to limit down time.
O. Contractor is responsible for core drilling through foundation walls for plumbing underground.
P. Contractor is responsible for all mechanical curbs required for the mechanical contractor's equipment.
Q. Contractor shall backfill all trenches with specified materials to within .10 of finish grade after underground rough-in is completed. (Fine grading by others) Contractor is responsible for furnishing the

backfill materials needed to complete their work. Removal of excess spoils is the responsibility of this contractor.

R. Contractor is responsible for installing gas turrets and faucets supplied by Bid Package 6C, and making all connections to their supplied materials. Hook-up materials for the sinks, faucets, and gas turrets are by this contractor.
S. Responsible for calling in all locates for the completion of this contractor's work.
T. Responsible for coordinating private locates with the Construction Manager and the foreman for Bid Package 26.
U. Provide fire stopping systems to the owners Construction Manager once awarded a contract.
V. All field measurements and layout work necessary for the completion of this contractor's work.
W. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.
X. See allowances, unit prices, and alternates as applicable.
Y. Cooperate with other trades on site in the completion of their work. Cooperation with the owners Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.
B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.
C. Construction cleaning shall be performed daily for debris generated by this contractor.
D. Provide and maintain all sump pumps as required for completion of this contractor's work.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.
B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.
C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Accurate set of as-built drawings at the completion of the project.
E. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
D. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
E. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services “Site Specific Safety Plan”.
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services’ Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker’s health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.
B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.

Bid Package 23 – HVAC and Temp Controls

1.00 BID PACKAGE SUMMARY

A. Comply with all specification sections as contained in the project manual including but not limited to:
   1. Division 00 – Procurement and Contracting Requirements
   2. Division 01 – General Requirements
   3. Division 02 – Existing Conditions (as applicable)
   4. 07 8400 – Firestopping (as applicable)
   5. 08 9000 – Louvers and Vents (as applicable)
   6. 23 0500 – Basic HVAC Requirements
   7. 23 0519 – Meters and Gauges for HVAC Piping
   8. 23 0553 – Identification for HVAC Piping and Equipment
   9. 23 0593 – Testing, Adjusting, and Balancing for HVAC
   10. 23 0713 – Dust Insulation
   11. 23 0719 – HVAC Piping Insulation
   12. 23 0913 – Instrumentation and Control Devices for HVAC
   13. 23 0923 – Direct-Digital Control System for HVAC
   14. 23 0934 – Variable-Frequency Motor Controllers for HVAC
   15. 23 1123 – Facility Natural-Gas Piping
   16. 23 2113 – Hydronic Piping
   17. 23 2114 – Hydronic Specialties
   18. 23 2500 – HVAC Water Treatment
   19. 23 3100 – HVAC Ducts and Casings
   20. 23 3300 – Air Duct Accessories
   21. 23 3423 – HVAC Power Ventilators
   22. 23 3600 – Air Terminal Units
   23. 23 3700 – Air Outlets and Inlets
   24. 23 3813 – Commercial-Kitchen Hoods
   25. 23 7313 – Modular Central-Station Air-Handler Units
   26. 23 8126.13 – Small-Capacity Slit-System Air Conditioners
   27. 23 8200 – Convection Heating and Cooling Units

1.01 INSTALLATION AND COORDINATION

A. Demo all items as noted on the plans for the remodeled and tie-in areas inside and outside the building and for ties to existing mechanical systems.

B. Furnish and install HVAC systems, kitchen hoods, stainless steel panels, insulation, etc. as shown on the plans, detailed, and specified.

C. Furnish and install louvers and vents as specified.

D. Contractor shall backfill all trenches with specified materials to within .10 of finish grade after underground rough-in is completed. (Fine grading by others) Contractor is responsible for furnishing the backfill materials needed to complete their work. Removal of excess spoils is the responsibility of this contractor.

E. Furnish and install all temperature control systems, including controllers, programming software, thermostats, sensors, all accessories, all testing, adjusting, and balancing for complete and operating system as shown and specified. Stats in the gym will need to have a cover for protection.

F. Contractor is responsible for all mechanical curbs required for the mechanical contractor's equipment.
G. Provide all permits and inspections needed throughout construction.
H. Supply, install, operate, and maintain temporary heating units sufficient to maintain 50 degrees during the framing of the building and 70 degrees during the finishing stages of construction.
    a. Heating units must be a dry heat type system.
    b. See spec for additional information. Section 01 5000 – Temporary Facilities and Controls.
I. Contractor is responsible for connecting ductwork to the fume hood supplied by Bid Package 6C.
J. Acoustical and fire sealant at all penetrations through walls and floors.
K. Provide all permitting as needed for the mechanical systems.
L. Coordinate with Electrical and Plumbing contractors to ensure proper installation.
M. Contractor is responsible for all gas piping shown on the plans and noted in the specifications. Provide rough-in connections for food service equipment. Food Service Equipment supplier will connect to gas rough-ins to their equipment. Contractor will install and hook-up gas to the gas turrets provided by Bid Package 6C in the science labs.
N. Contractor to provide final connections to all owners supplied appliances.
O. Contractor to provide filter media and replacement filters for the RTU that supplies the existing gym for the summer of 2027 while the existing gym floor is being resurfaced. Contractor to remove the filter media and replace the filters once resurfacing has been completed.
P. Provide fire stopping systems to the owners Construction Manager once awarded a contract.
Q. All field measurements and layout work necessary for the completion of this contractor's work.
R. See building and parking lot/site phasing plan sheets included in the Architectural Plans for project phasing.
S. See allowances, unit prices, and alternates as applicable.
T. Cooperate with other trades on site in the completion of their work. Cooperation with the owners Construction Manager in the use and management of the site, and in the coordination of work with other trades.

1.02 SITE CLEANING AND MAINTANENCE

A. Debris tracked or carried off site into traffic lanes must be cleaned up immediately. If tracking continues, the Contractor shall provide continuous cleaning operations during activities of their work.
B. Mandatory cleaning every Thursday from 2:00-4:00, see section 01 7000.
C. Construction cleaning shall be performed daily for debris generated by this contractor.
D. Provide and maintain all sump pumps as required for completion of this contractor's work.

1.03 SUBMITALS

A. Provide timely submission of shop drawings, submittals, product data, and samples as noted in the specification.
B. Submittals will be uploaded to Procore or emailed to the Construction Manager running the project.
C. Provide phased and accelerated submittals and shop drawings for all items needed to achieve start dates and meet the project schedule.
D. Accurate set of as-built drawings at the completion of the project.
E. Provide warranties, maintenance, manuals, and training as specified.

1.04 MATERIAL HANDLING AND STORAGE

A. All equipment necessary to complete this contractor's work including but not limited to scaffold, hoists, forklifts, pumps, etc.
B. Housekeeping and final cleanup must be completed before leaving the site weekly. Final payment will not be authorized unless site is clean.
C. All freight and delivery charges for the delivery of material shall be paid for by this contractor.
D. Contractor is responsible for coordinating, receiving, and off-loading of materials installed by this contractor.
E. Storage of onsite materials shall be approved by the Construction manager and coordinated with the other trades.

1.05 SAFETY

A. Comply with all federal, state, and local safety guidelines.
B. Comply with Gehrtz Construction Services "Site Specific Safety Plan".
C. Every contractor needs to have a safety plan and competent person on site while the contractor is performing work.
D. Thoroughly plan all work activities and operations so they are performed safely, as well as efficiently.
E. Effectively communicate the health and safety requirements of Gehrtz Construction Services' Site-Specific Safety Plan to all contractors and their workers through open communications, comprehensive training, assessments, and workplace inspections.
F. Develop an understanding, among those in leadership on this project, of their responsibilities and accountability for providing a safe and healthy workplace.
G. Plan and coordinate work operations and activities to minimize or eliminate situations which may jeopardize worker's health and safety due to conflicting or simultaneous work operations or activities.
H. Communicate to all workers that safety is their responsibility, and they will be held responsible, accountable, and assigned the appropriate authority for their individual safety and the safety of their co-workers.

1.06 SWPPP

A. Dewatering must follow the SWPPP and Erosion and Sediment Control guidelines.
B. Sweep city streets and site roads as needed during excavation, hauling, backfilling, utility work, foundation work, paving, or when contractor vehicles track out of the site. (Minimum of once per week).
C. Concrete and grout trucks either need to wash out in a designated concrete washout pit, or into their hopper, coordinate with the Construction Manager. Details must be communicated to all persons involved in activity.

SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Acoustical Material.

B. Suspension Systems.

1.02 RELATED WORK

A. Section 01 35 50 - Special Environmental Procedures

B. Section 05 20 00 - Metal Joists.

C. Section 05 31 00 - Steel Deck.

D. Section 09 21 16 - Gypsum Board Assemblies: Metal studs, ceiling framing and gypsum board.

E. Section 11 52 00 - Audio-Visual Equipment: Projector Mounts and Screens.

F. Division 23 - Heating, Ventilating and Air Conditioning: Mechanical equipment set in ceiling.

G. Division 26 - Electrical: Electrical equipment set in ceiling.

H. Division 27 - Communications: Communications equipment set in ceiling.

I. Division 28 - Electronic Safety and Security: Safety and security equipment set in ceiling.

1.03 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

C. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.

1.04 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Product Data: Furnish manufacturer’s descriptive literature of ceiling board(s) and grid system(s). Include documentation of products interior surface reflection from manufacturer's literature and/ or manufacturer's reflectance chart.

C. Product Data: Furnish manufacturer's descriptive literature for adhesives and acoustical board products indicating compliance with Indoor Air Quality Section of California Section 01350 as specified in Quality Assurance below.

1.05 QUALITY ASSURANCE

A. Furnishing and installing any products which are not "asbestos-free" is strictly prohibited. "Asbestos-free" is defined under current EPA Guidelines as a material containing not more than 1% asbestos.

1.06 OPERATION AND MAINTENANCE DATA

A. Furnish in accordance with Section 01 78 00.

B. Make copies of approved submittals for inclusion in maintenance manual.

C. Furnish description of types and quantities furnished for inclusion in maintenance manual in accordance with Section 01 78 00.

1.07 EXTRA STOCK MATERIALS

A. Furnish in accordance with Section 01 78 46.

PART 2 PRODUCTS

2.01 ACOUSTICAL MATERIAL

A. General: ASTM E1264.

B. Type-1 Acoustical Board (TYPICAL): 24" x 24" x 3/4", SLT edge in USG DX grid lay-in panels, USG MARS panels by United States Gypsum Company; Color - white.

C. Type-2 Acoustical Board (CULINARY ARTS): 24" x 24" x 1/2", standard and USG DX lay-in, USG CEILINGS KITCHEN LAY-IN PANEL by United States Gypsum Company; Color - Flat white 050.

2.02 SUSPENSION SYSTEMS

A. General: ASTM C635/C635M. Designed and suspended to prevent deflection in excess of 1/360 of span of any member under weight of system, acoustical material, light fixtures, mechanical items and all other items attached to and suspended from system, in accordance with recommendations published by Acoustical and Insulating Materials Associations.

B. Galvanized Wire: Fed. QQ-W-461: pre-stretched, annealed steel with Class 1 zinc coating.

C. Stainless Steel and Nickel-Copper-Alloy Wire

1. FS QQ-W-4236 composition FS 302 and FS 304, condition A (annealed) for stainless steel and FS QQ-N-281b, Class A (annealed for nickel-copper-alloy). Use gauge size less than specified for galvanized wire in recommendations published by Acoustical and Insulating Materials Association.

D. Furring Channels: 1-1/2 inch cold-roll formed from 16-gauge steel with protective coating of paint

E. Grid System for Acoustical Board Type 1 and for Acoustical Board Type 2: Donn Brand DX System by USG or approved equal complete with heavy duty main runners, structural weight cross tees and factory-formed inside and outside corner caps. Standard white finish.

F. Accessories: All required accessories, trim, caps, and suspension system components as required for a complete system.

2.03 PYRAMIDAL CEILING DIFFUSERS

A. Manufactuers: Wenger http://performeance.wengercorp.com/product/acoustic/panels/pyramid-diffuser-panels/#fndtn-overview ; Sound Concepts http://wwwsoundconceptscan.com/docs/lit/interact_pyramid_diffusers.pdf ; Golterman & Sabo https://gsacoustics.com/product/ceiling-sound-diffusers-cd

B. Style: 4'x4' diffusers placed in a ceiling grid.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's recommendations and ASTM C636/C636M to produce finished ceiling true to lines and levels and free from warped, soiled or damaged grid or acoustical material.

B. Install ceiling system in manner capable of supporting all superimposed loads, with maximum deflection of 1/360 of span and maximum deviation of 1/8 inch in 10 feet in any direction.

C. Install after major above-ceiling Work is complete. Coordinate location of hanger wires with other Work.

D. Provide trapeze support arrangement of hanger wires and furring channels if large obstacles interrupt normal spacing.

E. Hang independently of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of longitudinal axis of face plane of adjacent members.

F. Do not support fixtures from or on main runners or cross runners if weight of fixture causes total dead load to exceed deflection capability. In such cases, support fixture loads by

supplementary hangers located within 6 inches of each corner, or support fixtures independently.

G. Do not install so fixtures will eccentrically load runners.

H. Install edge moldings at intersection of ceiling and vertical surfaces using maximum lengths, straight, true to line and level. Miter corners. Provide edge moldings at junctions with other ceiling finishes. Where bullnose corners occur provide closers to match edge molding.

I. Fit acoustical materials in place free from damaged edges or other defects detrimental to appearance and function. Install level, in uniform plane and free from twist, warp and dents.

J. Bridging Tees: Anchor securely to grid.

END OF SECTION

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SECTION 09 64 00
WOOD FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Stage Flooring.

1.02 RELATED WORK

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. MFMA (SPEC) - Guide Specifications for Maple Flooring Systems.

C. NWFA (IG) - Installation Guidelines.

1.04 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Shop Drawings: Accurately portray flooring system proposed, edge and transition details, and installation and coordination details.

C. Product Data: Include documentation of products interior surface reflection from manufacturer's literature and/ or manufacturer's reflectance chart.

D. Product Data: Furnish manufacturer’s written, comprehensive instructions covering cleaning and refinishing, a listing of specific products used when finishing floor (generic and brand names) and listing of other brand names of compatible generic products from which Owner can select future purchases. See Section 01 78 00.

E. Sample: Submit a 6 inch by 6 inch sample that illustrates floor finish, color and sheen.

1.05 QUALITY ASSURANCE

A. Installer shall be approved by the manufacturer of the flooring system and certification of such shall be furnished to Architect.

1.06 ENVIRONMENTAL CONDITIONS

A. Work space shall be maintained at 65 degrees F. or above for a minimum of seven days prior to installation of flooring system. Mechanical ventilation shall be provided as needed to prevent excessive humidity. Finish flooring shall be stored in the Work space or adjacent space with same atmospheric conditions as Work space for seven days minimum in order to acclimate it to the prevailing conditions before installation.

1.07 OPERATIONS AND MAINTENANCE DATA

A. Prior to Final Inspection, instruct Owner's designated personnel on proper care, cleaning and refinishing of floor including recommended precautions to be observed over summer months and other extended periods when facility is not in use relating to temperature, humidity and ventilation tolerances to be maintained. Furnish copy of manufacturer’s care and maintenance instructions in accordance with Section 01 78 00.

PART 2 PRODUCTS

2.01 STAGE FLOORING ~~(OPTION - 1)~~

A. Manufacturers: O'Mara Sprung Floors; phone (810)743-8281

B. Style: Build Your Own Sprung Floor - Maple Sprung Floor

C. Panel: Michigan Hard Maple
   1. Sizes:
      a. 4'x4' Standard
      b. 4'x2' Standard
   2. Panel :
      a. 9-Ply 18mm 0.078” + 0.010” thick veneer panel ~ 0.082" thick ply

b. Glue: Formaldehyde free; CARB Phase 2 Certifiedfor formaldehyde emissions
c. ASTM D2394 Coefficient of Friction; Static 0.7-0.8

3. Finish:
   a. Ceramic Base, Aluminum Oxide
      1) Top : 8 coats UV application process; UV-PU Flexible Sealer Insulation, UV Filler, Durable UV-PU Sealer, Durable UV-PU Sealer, UV-PU Sand Sealer, UV-PU Sand Sealer, UV Top Coat WearResistant, UV Top Coat Wear Resistant
      2) Bottom: 3 coats UV cured sealer; UV-PU Sealer & Insulation, UV-PU Sand Sealer, UV-PU Sand Sealer
      3) Edges: 0.750” edge of panel, (1) coat of waterbased commercial urethane, pressure applied
4. SHOCK ABSORPTION MATERIAL: (16 per panel
   a. 3/4" thick foam suspension blocks, 2 lb, closed cell, cross-linked polyethylene foam blocks
5. TONGUE & GROOVE SYSTEM
   a. integrated 0.375” diameter tongue
6. TRANSITIONS RAMPS
   a. 6" Standard Ramp
   b. 15" ADA Ramp
7. Cleats (curbs)
   a. Golden Hard Solid Maple Trim = 1 - 7/16" x 2” x 95”
8. Standard Carts for moving and storage:
   a. Capacity 18 panels
   b. 1-1/2" 14 ga. Square Tubing with casters

D. Vinyl Specifications (Options)
1. Mezzafloor
   a. .07874 - Thick, 4.89 pounds per foot, heavy duty dance vinyl.
2. Studiofloor
   a. .1" - Thick, 3.7 pounds per foot, multipuropose dance floor
3. Duofloor
   a. .0629" Thick, 2.75 pounds per foot, reversible dance floor.

2.02 ~~STAGE FLOORING (OPTION - 2)~~

A. ~~Manufacturers: Robbins’ Performing Arts Surfaces~~
B. ~~Style: Le Lena A - Forever Marley~~
C. ~~Panel: Sprung Floor: Floating~~
D. ~~Floor Surface: Forever Marley~~
E. ~~FLOOR SYSTEM THICKNESS: 2”~~
1. ~~Seamless polyurethane dance surface.~~
2. ~~High Grade Semi-Flexible Upper Load Distribution Sheathing Layer.~~
3. ~~Semi-Flexible Lower Load Distribution Sheathing Layer.~~
4. ~~Dual Density, Recycled, Open Celled Resilient Polyurethane Pad layer.~~
5. ~~Recycled, Open Celled Resilient Polyurethane Pad layer.~~
6. ~~6 mil Polyethylene vapor retarder.~~

PART 3 EXECUTION

3.01 STAGE FLOORING

A. Install in accordance with reviewed Shop Drawings, and manufacturer's recommendations and MFMA (SPEC) approved procedures. Install flooring so that all butt joints occur above sleepers.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient Flooring.

B. Base.

C. Accessories.

1.02 RELATED WORK

A. Section 01 35 50 - Special Environmental Procedures.

B. Section 09 30 00 - Tiling.

C. Section 09 62 00 - Specialty Flooring.

D. Section 09 64 00 - Wood Flooring.

E. Section 09 68 13 - Tile Carpeting.

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. ASTM F1700 - Standard Specification for Solid Vinyl Floor in Modular Format such as Tile(s) or Plank(s).

C. ASTM F1861 - Standard Specification for Resilient Wall Base.

D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

F. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

G. FCAMC - Floor Covering Adhesive Manufacturers Committee of the National Association of Floor Covering Distributors.

H. ICC A117.1 - Accessible and Usable Buildings and Facilities.

I. Resilient Floor Covering Institute - Recommended Installation Practices.

1.04 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Product Lists and Samples: Submit to Architect list of manufacturers of products with names of manufacturer, identifying name, pattern and/or color along with actual sample of tile(s).

C. Product Data: Include documentation of products interior surface reflection from manufacturer's literature and/ or manufacturer's reflectance chart.

1.05 ENVIRONMENTAL CONDITIONS

A. Ensure minimum of 70 degrees F. and maximum of 90 degrees F., 48 hours before installation, during installation and 48 hours after installation and minimum of 55 degrees F. thereafter. Ensure humidity levels and dew point at time of installation are within the ranges recommended by flooring and adhesive manufacturers.

1.06 MAINTENANCE MATERIALS

A. Furnish description of types, colors and quantities furnished for inclusion in maintenance manual in accordance with Section 01 78 00.

1.07 CARE AND MAINTENANCE DATA

A. Furnish manufacturer's recommendations for care and maintenance of flooring in accordance with Section 01 78 00.

1.08 EXTRA STOCK MATERIALS

A. Furnish in accordance with Section 01 78 46.

1.09 QUALITY ASSURANCE

A. Review product data for curing and sealing compounds furnished by Section 03 30 00.01 to ensure compatibility with adhesives, primers and floor leveling underlayments. Furnish to Section 03 30 00.01 written approval of curing and sealing compounds proposed. Furnish copy of approval to Architect.

B. Furnishing and installing any products which are not "asbestos-free" is strictly prohibited. "Asbestos-free" is defined under current EPA Guidelines as a material containing not more than 1% asbestos.

PART 2 PRODUCTS

2.01 GENERAL

A. Perfect materials from same run which are uniform in thickness and size, have edges cut accurately and square and are uniform in color with minimum variation in variegated patterns.

2.02 RESILIENT FLOORING

A. Luxury Vinyl Tile (LVT)
   1. Manufacturer; Patcraft
   2. Style: CMYK
   3. Type: ASTM F1700, Class III, Type B, solid vinyl tile.
   4. Wear Layer: 20 mil.
   5. Overall Thickness: 0.098-inches thick.
   6. Size: 12-inches by 24-inches, square edge.
   7. Finish: ExoGuard+
   8. Colors:
      a. LVT-1 (field): Smoke 00530.
      b. LVT-2 (accent): Slate 00570.
      c. LVT-3 (accent): Roma 00850.
      d. LVT-4 (accent): Brocade V-2 00880.
      e. LVT-5 (accent): Sapphire 00450.
      f. LVT-6 (accent): Sky 00410.

RUBBER TILE

A. STAIRWELL MANAGEMENT SYSTEM (SM)
   1. Manufacturer; Johnsonite (Tarkett, Inc.) Phone: (800) 899-8916
   2. Style: Angle Fit Rubber Stair Treads with Integrated Riser
   3. Tread Type: Raised Round Surface with Visually Impaired Tape
   4. Type:ASTM F216, Class II, Type TS, solid vinyl tile.
   5. Wear Layer: Impaired Grit Tape Insert -VIRNRDTR
   6. Tape Insert Color: Tan
   7. Riser Type: Rubber
   8. Overall Thickness: 0.098-inches thick.
   9. Stairs:#63 Burnt Umber.

B. Rubber Tile -1 (Stair Landings)
   1. Manufacturer: Johnsonite (Tarkett, Inc.)
   2. System: Color Splash Rubber Floor Tiles
   3. Color: Gorge Area WG VF5
   4. Surface Texture: Hammered
   5. Formats: Tile 24” x 24” (0.08” thickness)

C. Rubber Tile – 2 (Patch at Existing Weight Room B122)
   1. Manufacturer: Mondo Luxembourg S.A.: Z.I. Foetz - Rue de l'Industrie, L-3895 Foetz, Luxembourg.
   2. System: Artigo Collection - Zeus
   3. Color: Z638
   4. Surface Texture: Hammered.
   5. Formats: In tiles that are 36" x 36"
   6. Adhesive: certified by Manufacturer: Mondo PU 105 or Mondo PU300, for installations over concrete and wood substrates.

2.03 BASE

A. Rubber Base
   1. Manufacturers: Johnsonite is specified with Roppe Corporation, Armstrong World Industries, Inc., VPI, LLC, and Burke Mercer also acceptable.
   2. Type: ASTM F1861 Type TP, Group 1, Style B; 4" high x 1/8" thick.
   3. Color: Approximately match color No. 20 Charcoal WG.

2.04 ACCESSORIES

A. Vinyl Transition Strips
   1. Manufacturer: Johnsonite is specified with Roppe Corporation also acceptable.
   2. Models At:
      a. Ceramic Tile to Carpet: MT-00-A/CE-XX-C.
      b. Carpet to Concrete: CTA-XX-JL.
      c. LVT to Concrete: RRS-XX-D.
      d. Carpet to Carpet: SLN-XX-A (at Learning Stair)
   3. Color: To be selected by Architect from manufacturer's standard colors.

B. Adhesives, Primers, and Floor Leveling Underlayments: Type and brand recommended by manufacturer of product for installation conditions.

PART 3 EXECUTION

3.01 DO NOT START UNTIL OTHER WORK HAS BEEN SUBSTANTIALLY COMPLETED.

3.02 INSPECTION OF SUBSTRATE

A. General: ASTM F710.

B. Examine substrate for excessive moisture content and unevenness that would prevent execution and quality of herein specified materials.

C. Do not proceed with installation until defects have been corrected under appropriate substrate Section except where correction is indicated hereinafter under preparation.

3.03 PREPARATION OF SUBSTRATE

A. Remove remaining adhesive, dust, dirt, solvents, oil, grease, paint, plaster and other substances detrimental to proper performance of adhesives and flooring. Allow substrate to dry thoroughly prior to beginning installation.

B. Prime if recommended by floor covering manufacturer.

C. USE FOR NEW FLOORS
   1. Concrete Underfloor: Perform moisture tests in accordance ASTM F1869. Perform alkali and bond test in accordance with ASTM F710. The relative humidity test, ASTM F2170, will not be accepted as criteria for refusing to install or refusing to warranty installation of resilient flooring regardless of manufacturer's requirements. Moisture content in concrete floor cannot be guaranteed and if not acceptable to flooring manufacturer or installer, then installer shall, at his cost, take necessary measures to meet manufacturer's recommendations.
   2. Ensure floors are level, true and uniform, with maximum surface variation of 1/8 inch in 10 feet in any direction, non-cumulative.
   3. Fill cracks 1/16-inch wide or more, depressions of more than 1/8-inch in any direction, and

other minor defects in floors which will adversely affect flooring installation, with Floor Leveling Underlayment in accordance with underlayment manufacturer’s instructions.

D. USE FOR EXISTING FLOORS
   1. Perform necessary Work as recommended by flooring manufacturer to put existing substrate in acceptable condition for installation of flooring.
   2. The existing substrate may require significant amounts of Underlayment due to its’ age and previous flooring applications.
   3. Concrete Underfloor: Perform moisture tests in accordance ASTM F1869. Perform alkali and bond test in accordance with ASTM F710. The relative humidity test, ASTM F2170, will not be accepted as criteria for refusing to install or refusing to warrant installation of resilient flooring regardless of manufacturer’s requirements. Moisture content in concrete floor cannot be guaranteed and if not acceptable to flooring manufacturer or installer, then installer shall, at his cost, take necessary measures to meet manufacturer’s recommendations.
   4. Provide Floor Leveling Underlayment as required to ensure floor levelness of not more than 1/8-inch variation in 10 feet in any direction, to fill cracks 1/16-inch wide or more, and to repair other minor defects, in accordance with underlayment manufacturer’s instructions.
   5. Contract sum shall not be increased as a result of under-estimating amount of Underlayment required.

3.04 INSTALLATION

A. General: Comply with manufacturer's instructions. Install in maximum size possible. Firmly cement to substrate with adhesive, butt joints tight and scribe to abutting surfaces.

B. Base Installation
   1. Verify that all walls to receive base are complete to floor. Do not begin installation if gaps of more than 1/2-inch exist between bottom of wall material and floor.
   2. Install in accordance with manufacturer’s recommendations.
   3. Ensure complete bond to wall.
   4. Press toe of coved base with straight edge to ensure complete bond of base and straight line along toe. Remove any excessive adhesive immediately.

3.05 FINISHING RUBBER TREADS AND RISERS, STRINGERS, AND LANDING MATERIAL

A. Finish surfaces in accordance with manufacturer’s recommendations.

3.06 PROTECTION

A. Keep traffic off completed flooring and properly protect where use of floors is necessary.

3.07 CLEANING AND WAXING

A. No sooner than two days prior to final inspection, clean all surfaces in accordance with manufacturer's instruction and minimum amount of water. After dry, buff to smooth finish.

B. Waxing will be done by Owner.

END OF SECTION

SECTION 09 84 00
ACOUSTICAL ROOM COMPONENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Acoustical Wall Systems.

B. Fabric-Covered Acoustical Wall Panels.

C. Acoustical Panels.

1.02 RELATED WORK

A. Section 01 35 50 - Special Environmental Procedures.

B. Section 04 20 00 - Unit Masonry.

C. Section 09 21 16 - Gypsum Board Assemblies: Gypsum board partitions.

D. Section 09 90 00 - Painting and Coating: Painting of Acoustical Panels.

1.03 REFERENCE STANDARDS

A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

D. ICC (IBC) - International Building Code.

E. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Shop Drawings: Clearly indicate pertinent detail and dimensions and installation requirements.

C. Product Data: Furnish manufacturer's descriptive literature and installation instructions.

1.05 CARE AND MAINTENANCE DATA

A. Furnish in accordance with Section 01 78 00.

B. Furnish manufacturer’s recommendations for care and cleaning.

C. Make copies of approved submittals for inclusion in maintenance manual.

1.06 PERFORMANCE REQUIREMENTS

A. Fire Hazard Classification: ASTM E84 or UL 723, Class A; flame spread less than 25; smoke development less than 450; or NFPA 286 acceptance criteria meeting ICC (IBC).

PART 2 PRODUCTS

2.01 FABRIC-COVERED ACOUSTICAL PANELS: TYPE-1, TYPICAL EXCEPT AS NOTED OTHERWISE

A. Manufacturers: Conwed Designscape is specified with Armstorng World Industries, Inc., Panel Solutions, Inc., Sound Reduction Corp., Standard Acoustical Concepts, EchoStopper, Acoustech, and Commercial Interior Acoustical Wall Panels also acceptable.

B. Model: Conwed Wall Panel | Fabric | A, Non-Impact - High Walls.

C. Model: Conwed Wall Panel | Fabric | IR, Impact Resistant -Low Wall Panels.

D. Core Material: 6 lbs./cu. ft. resilient glass fiber core with reinforced edge protection.

E. NRC: 1.10 (ASTM C423).

F. Edge: Square edges.

G. Thickness: 2-inches.

H. Anchorage Device: Manufacturer's standard mechanical system appropriate to this application.

I. Fabric Covering
   1. Manufacturers: ~~[Zintra]~~Guildford of Maine is specified or approved equal.
      a. ~~Style-1: .~~
      b. Color-1: ~~Pewter ZTR4705~~. Silver Papier 538

      c. ~~Style-2: .~~
      d. Color-2: ~~Smoke ZTR704~~. Medium Grey 298

      e. ~~Color-3: Tar ZTR4701.~~
      f. ~~Color-4: tbd.~~
      g. ~~Color-5: color to be selected by Architect.~~

FABRIC-COVERED ACOUSTICAL PANELS: TYPE-2 (CHOIR ROOM)

A. Manufacturers: kineticsnoise.com, sales@kineticsnoise.com

B. Model: HardSide / Acoustical Wall Panels

C. Core Material: panel is a 6-7 PCF fiberglass board

D. Edge: Square edges

E. Thickness: 2-inches.

F. Frabic: Guilford of Main recommended.

2.02 ACOUSTICAL PANELS: TYPE-3

A. Manufacturers: Sound Conepts is specified, Conwed, Colterman and Sabo, or approved equal local rep: Jim Tegan 763-475-1340.

B. Type: ~~[HIR 1]~~HIR 1.

C. Material: Fabric Wrapped, impact resistant fiberglass panel 6-7 lbs.density, with a 1/8" high density glass fiber substrate.

D. NRC: 0.9 - 1.0 (ASTM C423).

E. Edge: Square ends.

F. Thickness: 2-1/8".

G. Anchorage: Mounting style "C-40" . Provide all fasteners, furring strips, and insulation for a complete single source installation.

H. Fabric: Guildord of Main reccomended.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive work of this section. Do not begin until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's instructions and reviewed Shop Drawings and Product Data.

B. Set units plumb, level and true to line without warp or rack.

C. Anchor units securely to adjacent construction.

END OF SECTION

SECTION 11 66 00
ATHLETIC EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Scoreboards

B. Basketball Backstops.

C. Volleyball Standards.

D. Wall Padding.

1.02 RELATED WORK

A. Section 03 30 00.01 - Cast-In-Place Concrete: Concrete slab-on-grade.

B. Section 04 20 00 - Unit Masonry.

C. Section 05 10 00 - Structural Metal Framing.

D. Section 05 20 00 - Metal Joists.

E. Section 05 50 00 - Metal Fabrications.

F. Section 09 21 16 - Gypsum Board Assemblies.

G. Division 26 - Electrical: Electrical power and switch rough-in and hookup for gymnasium divider curtain.

H. Section 32 31 20 - Athletic Field Equipment: Exterior athletic equipment.

1.03 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Shop Drawings: Clearly indicate pertinent dimensions, general construction, component connections and details, method of anchorage/mounting and installation details.

C. Product Data: Furnish manufacturer's descriptive literature and installation instructions.

D. Submit samples of wall padding to give selection of available colors.

1.04 OPERATION AND MAINTENANCE DATA

A. Furnish manufacturer's recommendations for operation and maintenance in accordance with Section 01 78 00.

B. Make copies of approved submittals for inclusion in maintenance manual.

PART 2 PRODUCTS

NOTE: GARED/ PSS BASE SPECIFICATION IS REQUIRED AT EXISTING MAIN GYM.

2.01 EQUIPMENT CONTROL

A. Manufacturers: Gared/ PSS is specified with Porter Equipment Company, Aalco Manufacturing Company; American Athletic, Inc.; Institutional Products, Inc.; and Jaypro Sports Equipment also acceptable. All equipment controls, basketball and divider curtain products furnished by this Section shall be from a single manufacturer.

B. Model: 12700 Powr-Touch 4 Touchscreen Equipment Control System for control of retractable athletic equipment.

C. **Model #TSC1500XL-WIFI** advanced electronic control system with Wi-Fi. This is the existing control panel in the main gym. It will need to be modified/re-programmed to add additional basketball backstops and gym divider curtains. Current display on the touch screen doesn’t match orientation of the gym, this will need to modified so display matches gym equipment layout.

D. Description: System shall consist of a minimum of one seven inch touchscreen display and a minimum of one relay panel. Wall-mounted system shall be designed to operate athletic

equipment. Control shall be capable of operating up to 128 gymnasium apparatuses and 32 auxiliary units. Operation shall require constant pressure on the "MOVE EQUIPMENT" button.

E. Touchscreen: Touchscreen shall have a graphic user interface on a touch-sensitive 7.0-inch backlit WVGA LCD display with 800x480 resolution. Touchscreen shall be mounted in enclosure by Division 26.

F. Control System:
   1. Control system shall incorporate a four-digit programmable security code to prevent usage by unauthorized personnel. A secondary four-digit code shall be required to change the access code or to access the programming mode. Touchscreen shall revert to a locked state if no buttons are pressed within a thirty-second time period. Control system shall be capable of linking up to 7 total display screens on one system. Each screen may be programmed independently to control only certain equipment or a program defined on one screen may be saved to USB and copied onto additional screens or used as a back-up to restore the system.
   2. During set-up, the authorized user can name devices for easy reference. Device names may be changed at any time in the administrator access mode. Device names and system settings can be saved externally to USB. The user shall be able to access all
   3. System shall offer simultaneous multiple operation of up to 64 pieces of equipment and auxiliaries at one time. Each relay panel provides simultaneous operation of up to four apparatuses. Up to 18 "Quick Courts" of multiple operations may be programmed and saved to be able to operate a list of up to 64 pieces of equipment in just a few strokes. Quick courts must include selections for equipment directions.

G. Electric Relay Panel: Each Powr-Touch 4 system shall include a minimum of one relay panel and no more than sixteen relay panels on a single network. Each relay panel shall contain two banks of eight (sixteen total) 30 amp load-rated relays for operating eight momentary-controlled type (up and down) 120 volt (or low voltage) pieces of equipment. Each eight-relay (four pieces of equipment) bank shall be independently powered by a dedicated 120V, 30A line. Each panel shall also include two additional maintained 30A relays for auxiliary power control. Touchscreen shall be within 150 feet of relay panel.

H. Wiring of all electrical components shall be in accordance with local codes and manufactures instructions. All conduit, wiring, junction boxes, and components not specified herein shall be furnished and installed by the Division 26 Electrical Contractor.

2.02 BASKETBALL BACKSTOPS

A. Manufacturers: Gared/ PSS is specified with (Auxilary gym) allowing Porter Equipment Company, Aalco Manufacturing Company; American Athletic, Inc.; IPI by Bison; and Jaypro Sports Equipment also acceptable. All basketball products furnished by this Section shall be from a single manufacturer.

B. Type 1 (Main Court)
   1. MODEL: 1171 - ELECTRIC HEIGHT ADJUSTER - ADJUST-A-GOAL SERIES
   2. MODEL 3106HD - Clamped Single Post, Front Braced, Front Folding, Basketball Backstop.
   3. Supporting Structure: Pipe assembly anchored to roof structure with heavy formed steel support members and including height adjustment mechanism to permit backstop to be raised and lowered in height from 8' to 10'.
   4. Backboards: Model : AFRG42 Rectangular Glass Backboard with MODEL 2500 TOURNAMENT POSITIVE LOCK BREAK-AWAY GOAL and heavy duty white cord net.
   5. MODEL: PMCE - PRO MOLD CUSHION EDGE - 2" thick urethane foam padding
   6. Operation: ELECTRIC BACKSTOP HOIST - MODEL 1194 - 3/4 HP, 9.5 Amp with key switch
   7. Accessories
      a. Model 1100 - Backstop Safety Catch.

C. Basketball Goal #2 (Side Courts)

1. MODEL: 1171 - ELECTRIC HEIGHT ADJUSTER - ADJUST-A-GOAL SERIES
2. MODEL 3108 - Clamped Single Post, Side Braced, Side Folding, Basketball Backstop.
3. Supporting Structure: Pipe assembly anchored to roof structure with heavy formed steel support members and including height adjustment mechanism to permit backstop to be raised and lowered in height from 8' to 10'.
4. Backboards: Model : AFRG42 Rectangular Glass Backboard with MODEL 2500 TOURNAMENT POSITIVE LOCK BREAK-AWAY GOAL and heavy duty white cord net.
5. MODEL: PMCE - PRO MOLD CUSHION EDGE - 2" thick urethane foam padding
6. Operation: ELECTRIC BACKSTOP HOIST - MODEL 1194 - 3/4 HP, 9.5 Amp with key switch
7. Accessories
   a. Model 1100 - Backstop Safety Catch.

2.03 GYMNASIUM DIVIDER CURTAIN

A. Manufacturers: Gared/ PSS is specified .

B. Model: 4030 Roll up Divider Curtain complete with all components for complete motor-driven operation assembly.

C. Supporting Structure: Pipe assembly anchored to roof framing members.

D. Curtain: Lower section (10' high) vinyl laminated 100% polyester reinforced fabric; upper section vinyl coated polyester mesh. Color - To be selected by Architect from manufacturer's standard colors.

E. Motor and Switch: Model 4102 Curtain Operator; 1-hp, 120 volt motor. Division 26 to Provide locked control box and toggle switc.

2.04 VOLLEYBALL STANDARDS

A. Manufactuer: Bison Inc. is specified.

B. Model: VB1100NS CENTERLINE ALUMINUM EZ COMPLETE SYSTEM
   1. VB23 Floor Sleeve
   2. Kevlar Net
   3. Post pads
   4. VB13 Net Antennas
   5. VB13 Boundary Markers

2.05 POLE VAULT PIT

A. Manufacturer: JAYPRO SPORTS, LLC, www.jaypro.com, (800) 243-0533, 976 Hartford Turnpike, Waterford, CT 06385

B. Model: TFP-CA - POLE VAULT BOX CAST ALUMINUM

C. Model: TFP-CAL - POLE VAULT BOX CAST ALUMINUM LID

2.06 WALL PADDING

A. Type-1:
   1. Manufacturers: Porter Equipment Company is specified with Aalco Manufacturing Company, American Athletic, Inc., Draper, Institutional Products, Inc., PSS and Jaypro Sports Equipment also acceptable.
   2. Model: No. 90350-3; 2-inch Urethane Filler Wall Padding complete with vinyl coated nylon covering and plywood backing.
   3. Mounting: Clip mounted, Style A and C.
   4. Color of Vinyl Covering: To be selected by Architect from manufacturer’s standard colors.

2.07 SCOREBOARDS (AUXILARY GYM)

A. Manufacturer: Daktronics or equal.

B. Model: BB-2101 Tuff Sport® UniView® LED Basketball scoreboard; with microprocessor control panel; built in horn; grounded power cord; 120-volt AC; minimum 200 Watts, 1.7 Amps;

scoreboard color to be selected by Architect from manufacturer's standard colors to match sample furnished by Owner; caption color to be selected by Architect from manufacturer's color standard colors to match color sample furnished by Owner; white border stripe color; with school logo (furnished by Owner) in upper left-hand corner and school name (furnished by Owner) in upper right-hand corner.

C. Size: Min. 48 inches high by 96 inches wide by 6 inches deep.

D. Control Console: All Sport® 5010 Control Console Kit.

E. Options and Accessories:
   1. 2.4 GHZ Radio transmitter and receiver.
   2. Hard-sided carrying case for control console.
   3. Mounting brackets.
   4. Vinyl Team Name in place of HOME captions; Name to be determined by Owner.
   5. Two 17-inch by 21-inch wide aluminum panels in upper corners with vinyl logo/ sponsor decoration.

2.08 EQUIPMENT CONTROL (AUXILARY GYM)

A. Manufacturers: Porter Equipment Company is specified with Aalco Manufacturing Company; American Athletic, Inc.; Institutional Products, Inc.; Draper Inc; Gared Performance Sports Systems; and Jaypro Sports Equipment also acceptable. All equipment controls, basketball and divider curtain products furnished by this Section shall be from a single manufacturer.

B. Model: 12700 Powr-Touch 4 Touchscreen Equipment Control System for control of retractable athletic equipment.

C. Description: System shall consist of a minimum of one seven inch touchscreen display and a minimum of one relay panel. Wall-mounted system shall be designed to operate athletic equipment. Control shall be capable of operating up to 128 gymnasium apparatuses and 32 auxiliary units. Operation shall require constant pressure on the "MOVE EQUIPMENT" button.

D. Touchscreen: Touchscreen shall have a graphic user interface on a touch-sensitive 7.0-inch backlit WVGA LCD display with 800x480 resolution. Touchscreen shall be mounted in enclosure by Division 26.

E. Control System:
   1. Control system shall incorporate a four-digit programmable security code to prevent usage by unauthorized personnel. A secondary four-digit code shall be required to change the access code or to access the programming mode. Touchscreen shall revert to a locked state if no buttons are pressed within a thirty-second time period. Control system shall be capable of linking up to 7 total display screens on one system. Each screen may be programmed independently to control only certain equipment or a program defined on one screen may be saved to USB and copied onto additional screens or used as a back-up to restore the system.
   2. During set-up, the authorized user can name devices for easy reference. Device names may be changed at any time in the administrator access mode. Device names and system settings can be saved externally to USB. The user shall be able to access all programming features from the touchscreen without the use of tools.
   3. System shall offer simultaneous multiple operation of up to 64 pieces of equipment and auxiliaries at one time. Each relay panel provides simultaneous operation of up to four apparatuses. Up to 18 "Quick Courts" of multiple operations may be programmed and saved to be able to operate a list of up to 64 pieces of equipment in just a few strokes. Quick courts must include selections

F. Electric Relay Panel: Each Powr-Touch 4 system shall include a minimum of one relay panel and no more than sixteen relay panels on a single network. Each relay panel shall contain two banks of eight (sixteen total) 30 amp load-rated relays for operating eight momentary-controlled type (up and down) 120 volt (or low voltage) pieces of equipment. Each eight-relay (four pieces of equipment) bank shall be independently powered by a dedicated 120V, 30A line. Each

panel shall also include two additional maintained 30A relays for auxiliary power control. Touchscreen shall be within 150 feet of relay panel.

G. Wiring of all electrical components shall be in accordance with local codes and manufactures instructions. All conduit, wiring, junction boxes, and components not specified herein shall be furnished and installed by the Division 26 Electrical Contractor.

PART 3 EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's Shop Drawings and reviewed Product Data.

B. Set components plumb, level and true to line without warp or rack.

C. Coordinate with Section 03 30 00 and Division 26.

D. Anchor securely to surrounding construction.

E. Adjust for proper operation.

F. Install wall padding with bottom at 4-inches above finish floor.

END OF SECTION

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SECTION 31 23 00
EXCAVATION & FILL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This Section includes all excavation and fill required to construction the new building. For excavation and fill required for site work and other site structures see Sections 31 22 00, 31 23 16.13, 31 23 23, and 32 11 23.

1.02 RELATED WORK

A. Section 00 31 32 - Geotechnical Data: Report of Soil Investigation.

B. Section 01 40 00 - Quality Requirements.

C. Section 01 45 30 - Special Inspections.

D. Section 01 57 13 - Erosion Control.

E. Section 02 41 00 - Site Demolition.

F. Section 07 13 00 - Below-Grade Membrane Waterproofing.

G. Section 07 20 00 - Thermal Insulation: Foundation perimeter insulation.

H. Section 31 22 00 - Grading: Rough and finish grading.

I. Section 31 23 16.13 - Trenching.

J. Section 31 23 23 - Fill & Backfill.

K. Section 32 11 23 - Aggregate Base Course.

L. Division 22 - Plumbing: Trenching and backfill inside building for plumbing Work.

M. Division 26 - Electrical: Trenching and backfill inside building for Electrical Work.

N. Division 32 - Exterior Improvements.

O. Division 33 - Utilities: Trenching and backfill outside building.

1.03 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Product Data: Furnish manufacturer's descriptive literature of slurry concrete to clearly indicate it meets Specifications and manufacturer's application instructions.

1.04 QUALITY ASSURANCE

A. Special Inspections: By Section 01 45 30.
   1. Determine field compaction densities are as specified by furnishing at trenches one test per 100 lineal feet per 2 ft. of fill thickness and furnishing elsewhere one test per 2,000 sf of fill per 1 ft. of fill thickness. Report test results.

B. Testing Laboratory Inspection and Testing by Section 01 40 00:
   1. Approved Testing Laboratory (This Section only): Company who provided report for Section 00 31 32.
   2. Observe removal of previous fill and engineered fill operations.
   3. Observe removal of previous fill and special compaction operations.
   4. Observe cut and fill operations.
   5. Report test results.

1.05 PROTECTION

A. Property Corner Monument Perpetuation: Protect existing corner monuments as indicated on Drawings.

B. Provide adequate protective structures without disturbing monument. Notify Architect prior to beginning Work if any indicated monument is not in place. If destroyed or disturbed, inadvertently or by new construction requirements, have re-monumented by Registered Land

Surveyor and furnish copy of surveyor's drawing and certification of placement to Owner and to Architect.

C. Protect excavations by preventing surface water from flowing into excavations.

D. Protect bottom of excavation from desiccation.

E. Protection of Persons and Property
   1. Barricade open excavations and post with warning lights.
   2. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
   3. Inspect roadways and sidewalks used for temporary routing and record by drawing or photograph the condition of surfaces prior to use.
   4. Repair existing surfaces that are damaged to no less than original condition.

F. Maintaining Traffic
   1. Provide temporary passage as required by ICC (IBC) Chapter 33, Safeguards During Construction.
   2. Ensure minimum interference with roads, streets, driveways, sidewalks and adjacent facilities.
   3. Do not close or obstruct streets, sidewalks, alleys or passageways without permission from Owner and other authorities having jurisdiction.
   4. If required by governing authorities, Provide adequately signed alternate routes around closed or obstructed traffic ways.

G. Support and Protective Systems
   1. Support Systems
      a. Defined as structure which provides support to adjacent structure, underground installations or sides of an excavations.
      b. Includes underpinning, bracing, shoring, sheet piling, soldeir piling and lagging or other similar system.
   2. Protective Systems
      a. Defined as method of protecting empoloyees from cave-ins, from materials that could fall or roll from an excavation face or into an excavation, or from collapse of adjacent structures.
      b. Protective systems include support systems, sloping and benching systems, and other systems that provide necessary protection.
   3. Design of supoort and protecdtive systems (including sloping and benching) shall:
      a. Comply with OSHA.
      b. Be performed by a licensed design engineer retained by the Contractor subject to general performance specifications prepared by the A/E. Such engineer shall have experience communsurate with design duties. Design work shall be sealed by the design engineer.
   4. Design engineer shall perform OSHA specified duties including inspection of the Work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Subsoil Material: Soil materials free of debris, waste, frozen matter, vegetable and other deleterious matter; excavated or off-site material; as acceptable to testing laboratory.

B. Engineered Fill Material: Granular soil such as pit run sand and gravel as acceptable to testing laboratory, tempered such that the moisture content at the time of placement is within 3 percent of the optimum content.

PART 3 EXECUTION

3.01 LAYOUT OF WORK

A. Correctly align new Work on site by running of axis lines locating Work, establishment and marking of correct datum points and maintenance of each line and point to insure accuracy.

B. Use registered civil engineer or registered land surveyor to accomplish layout. Contractor responsible for costs associated with layout.

C. Take measurements and verify dimensions of existing Work that affects new Work.

D. Take full responsibility for correctness of measurements and for verification of grades, lines, levels, elevations or dimensions shown on Drawings.

3.02 EXISTING UNDERGROUND UTILITIES

A. Indicated locations are approximate. Determine exact locations before commencing Work.

B. Notify utility companies to remove and relocate lines that are in the way of excavation.

C. Maintain, reroute or extend as required, existing utility lines to remain which pass through Work area.

D. Pay costs for this Work, except those covered by utility companies.

E. Protect utility services uncovered by excavation. Repair active utilities that are inadvertently damaged.

F. Remove abandoned utility service lines from areas of excavation. Cap, plug or seal such lines and identify at grade.

G. Accurately locate and record abandoned and active utility lines rerouted or extended on Project Record Documents and give information to Architect.

3.03 REMOVAL OF PREVIOUS FILL AND REPLACEMENT WITH ENGINEERED FILL MATERIAL

A. Remove from confines of new building construction material classified as previous fill, topsoil, desicated clay, rocks and any other soft materials to expose sandy clay (glacial till).

B. Clean surface of foreign material.

C. Replace with engineered fill material to within 6 inches of underside of concrete slabs. Place and compact in continuous layers not exceeding 9-inches loose depth when self-propelled compaction equipment is used or 6-inches when hand-guided equipment is used. Compact to 98 percent maximum density per ASTM D698. Section 01 45 30 to Provide field density tests of compacted engineered fill in number determined by soils engineer.

D. Only then shall excavation for new footings and foundations begin.

3.04 EXCAVATION

A. Excavate subsoil in accordance with lines and levels required for construction of the Work, including space for forms, bracing and shoring, foundation drainage system, applying waterproofing and insulation and to permit inspection.

B. After placement of controlled engineered fill material, excavate for footings and other subsurface construction.

C. Machine slope banks.

D. Hand trim excavations and leave free from loose or organic matter.

E. When complete, verify soil bearing capacities, depths and dimensions.

F. Correct unauthorized excavation as directed, at no cost to Owner.

G. Excavations are not to interfere with normal 45-degree bearing splay of any foundation.

H. Stockpile excavated subsoil for reuse. Coordinate placement of stockpile with other site Work. Allow acceptable material, not required for backfilling, to be used by Section 31 22 00 for rough grading.

3.05 DEWATERING

A. Dewater excavations as required to prevent accumulation of standing water.

3.06 FILL TYPES AND COMPACTION

A. General: Control backfill compaction during construction providing minimum percentage of density relationship determined in accordance with ASTM D698, Standard Proctor. Compact by mechanical means not by flooding or water inundation.

B. Section 01 45 30 to Provide field density tests of fill in number determined by soils engineer.

C. Exterior Side of Foundation Walls: Use subsoil material. Compact each layer to 90 percent maximum density except at drives or walks compact final two feet to 98 percent maximum density, per ASTM ASTM D698.

D. Interior Side of Foundation Walls, Under Building Slabs and Steps: Use Engineered Fill material. Compact each layer to 98 percent maximum density per ASTM D698.

3.07 FILLING INSIDE FOUNDATIONS & BACKFILLING OUTSIDE FOUNDATIONS

A. Coordinate with Section 07 13 00 to permit placement of Below-Grade Membrane Waterproofing. Foundation wall waterproofing shall be backfilled within 3 days of placements. The toe of the excavations shall be at least 3 feet from foundation walls and footings to be waterproofed.

B. Coordinate with Section 07 20 00 to permit placement of perimeter insulation.

C. Do not backfill against foundation walls until they have attained sufficient strength to withstand lateral pressure.

D. Ensure areas are free from debris, snow, ice and water, and that ground surfaces are not in a frozen condition.

E. Do not fill over existing subgrade surfaces that are porous, wet or spongy.

F. Compact existing subgrade surfaces if densities are not equal to that required for gravel or subsoil materials.

G. Place Engineered Fill material inside foundations from bottom of stripping or excavations to within 6 inches of underside of concrete slabs. Provide 6 inches minimum thickness. Place and compact in continuous layers not exceeding 9-inches loose depth when self-propelled compaction equipment is used or 6-inches loose depth when hand-guided equipment is used.

H. Place subsoil material outside foundations to grades, contours, level and elevations indicated on Drawings allowing for 8 inches of topsoil at areas to receive grass, 18 inches of topsoil at areas to received plantings, or to underside of gravel fill for paving or surfacing. Place and compact in continuous layers not exceeding 9-inches loose depth when self-propelled compaction equipment is used or 6-inches loose depth when hand-guided equipment is used.

I. Use methods so as not to disturb or damage perimeter insulation.

J. Maintain optimum moisture content of gravel and subsoil materials to attain required compaction density.

3.08 EXCESS EXCAVATED SUBSOIL

A. Remove excess or unsuitable material from site.

END OF SECTION

SECTION 32 31 10
SIGNING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Signs.

B. Posts.

C. Hardware.

1.02 RELATED REQUIREMENTS

A. All site signage will meet the current edition of the Manual of Uniform Traffic Control Devices, published by the FHWA.

B. All sign faces shall be according to detail drawings and the alphabets shown in the MUTCD, Standard Highway signs, and Standard Alphabets, published by FHWA.

C. Section 01 30 00 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.

D. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Project Record Documents: Record actual locations of site signage installed.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MATERIALS

A. Flat Sheet Aluminum:
   1. ASTM B 209 Alloy 6061 T6 or 5052-H38 with mill finish.
      a. Thickness
         1) equal to or less than 24" width: 80 guage.
         2) greater than 24" width: 100 gauge.
         3) 30" Stop Signs: 80 Gauge.
   2. Mounting Holes: 3/8" diameter to fit 3/8" bolt.

B. Hardware, Fittings and Posts:
   1. All Steel bolts, nuts, U-bolts, lock washers and washers shall be galvanizes tell meeting ASTM A153.
      a. Bolts: 3/8" diameter steel panel bolts, machine bolts, etc., shall meet SAE J429 Grade 5 or ASTM A449.
      b. Nuts: Steel hex nuts shall meet SAE J995 Grade 5 or ASTM A563.
      c. Washers: Steel flat washers shall be fabricated of steel meeting ASTM F844.
   2. Posts:
      a. Telespar 12 gauge brand.
      b. Vertical Clearance (ground to bottom of sign)
         1) Single Sign: 7 feet
         2) Double Sign: 6 feet
      c. Anchor Posts:

1) Length: 4 feet.

3. Post Sleeves:
   a. 18" Omni-Directional Sleeve or approved equal.

C. Light Standard Mounting Hardware:
1. Bolts:
   a. Stainless Steel hex bolts, 1/4" diameter.
2. Self-Tapping Screws:
   a. 1/4" Selft Tapping Screws with hex head and locking flange.
3. Washers:
   a. Steel flat washers shall be fabricated of steel meeting ASTM F844. Plastic washers shall be fabricated to the sheeting manufacturer's specificaitons.

PART 3 EXECUTION

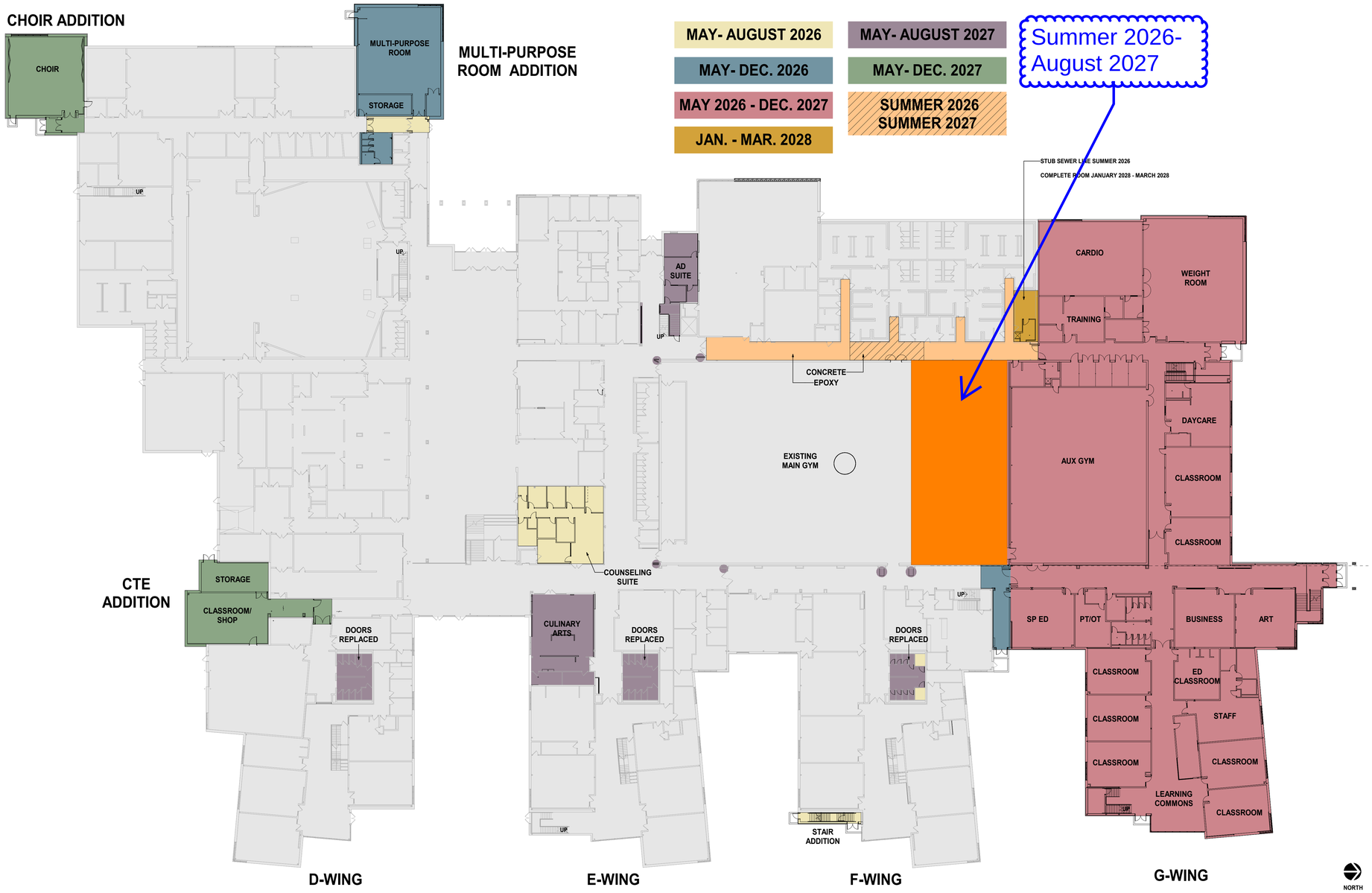
3.01 INSTALLATION

A. Each sign shall be located according to the plans or adjusted with the Engineer's approval. Installed signs will be inspected at night for maximum effect. If any sign is ineffective at night, the sign shall be replaced at the Contractor's expense.

B. All sign fabrication, packaging, labeling, handling, and shipping shall follow the latest version of the MNDOT Standard Specifications for Construction.

C. Anchors and Anchor Sleeves for telescoping perforated tube supports shall be driven. The perforated tube anchor and sleeve shall be driven to a height of 5-6 inches above the ground. Anchors and sleeves shall be installed per the detail.

END OF SECTION



HORACE HIGH SCHOOL - FIRST FLOOR - PHASING PLAN

1 PH-1 FIRST FLOOR OVERALL - CONSTRUCTION PHASING
1" = 25'-0"

ADDITION & REMODEL
HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

GENERAL NOTES

KEYPLAN

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

FIRST FLOOR PHASING

PH-1

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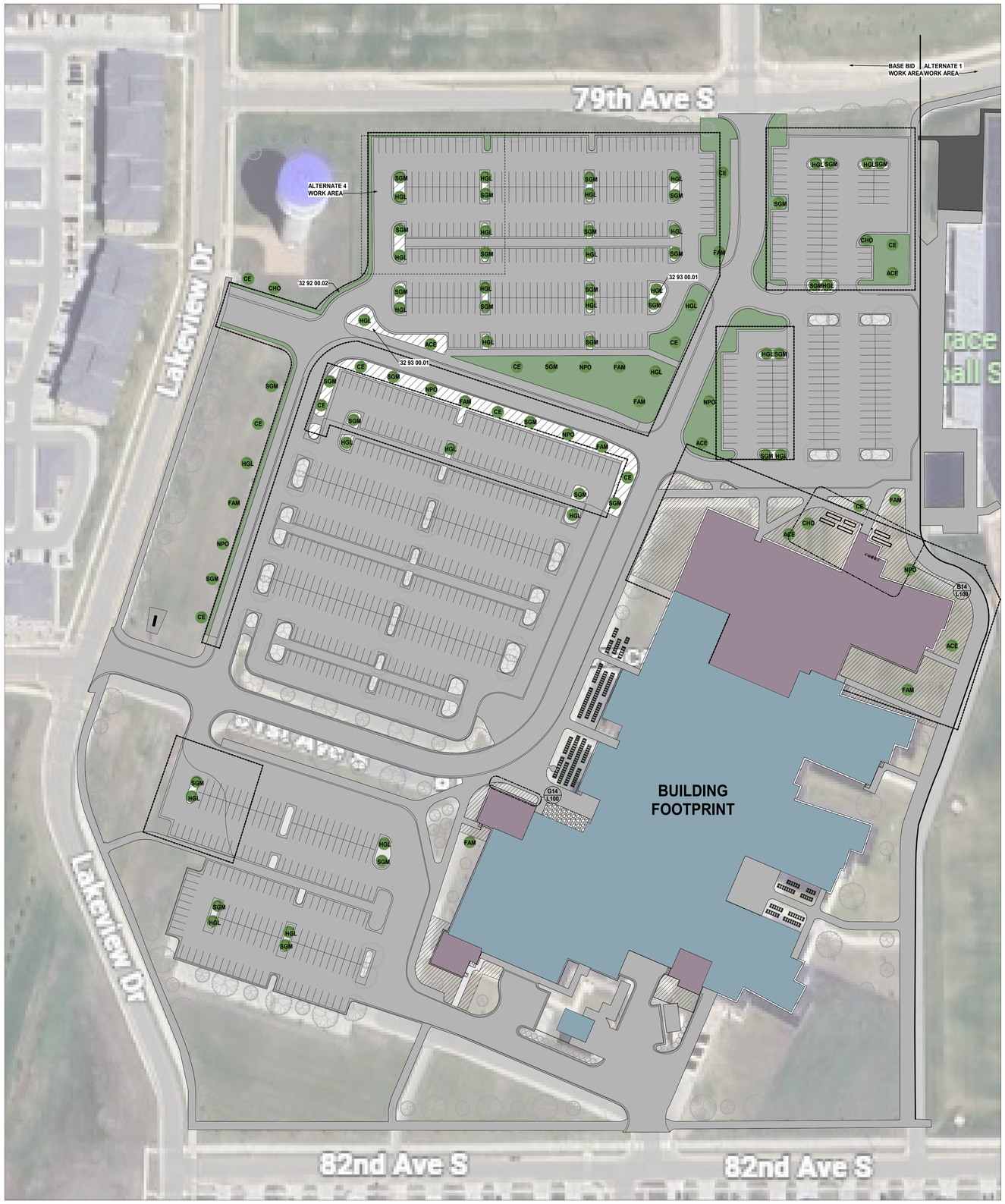


1 L100 **SITE PLAN - OVERALL CLEAN Copy 1**
1" = 60'-0"

PLANTING SCHEDULE			
TYPICAL - PROVIDE 5'-0" DIAMETER MULCH BED AT ALL TREES			
PLANT TYPE		PLANT SIZE	PLANT COUNT
TREES	DECIDUOUS	SIZE / ROOT	SEE PLANS
HGL	HARVEST GOLD LINDEN	1 1/2 CAL. / BB	
SGM	SIENNA GLEN MAPLE	1 1/2 CAL. / BB	
NPO	NORTHERN PIN OAK	1 1/2 CAL. / BB	
CE	CATHEDRAL ELM	1 1/2 CAL. / BB	
FAM	FLAME AMUR MAPLE	1 1/2 CAL. / BB	
ACE	ACCOLADE ELM	1 1/2 CAL. / BB	
CHO	COMMON HACKBERRY	1 1/2 CAL. / BB	
PERENNIALS			
KLF	KARL FORESTER GRASS	#2 CONT.	

PLANT UNIT COUNT

BUILDING AREA: 204,886 SF
PAVED AREAS = 656,699 SF
GREEN FIELDS = 446,976 SF

TOTAL WORKABLE AREA (WITHIN PROPERTY LINES) = 1,258,892

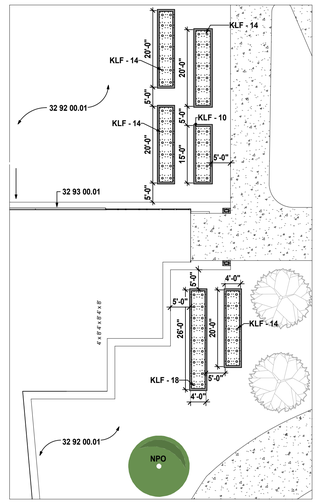
1,258,892 / 43560 = 28.90 ACRES

AREA NEEDING PLANTINGS:
1,258,892 X 4 / 1000 = 5035 PLANT UNITS REQUIRED

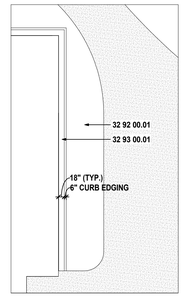
EXISTING PLANT UNITS ON SITE
TREES: 217 X 10 = 2170
SHRUBS: 754 X 5 = 3770
TOTAL = 5,940

NEW PLANT UNIT COUNT
TREES: 96 X 10 = 960
SHRUBS: 84 X 5 = 420
TOTAL = 800

1 K14 L100 **TREE COUNT DIAGRAM**
1" = 20'-0"



B14 L100 **NORTH ENTRY PLANTING**
1/16" = 1'-0"



G14 L100 **TYP. MOW STRIP**
1/16" = 1'-0"

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

32 92 00.01	SOD
32 92 00.02	HYDROSEED
32 93 00.01	MULCH AND EDGING TYPE-1 (GRANITE ROCK MULCH)

NOTE 1 - PAVING & PARKING SHOWN FOR REFERENCE ONLY - SEE CIVIL FOR EXACT SPECIFICATIONS

NOTE - 2 NEW TREES SHOWN IN GREEN AND LABELED

NOTE - 3 TYP. MOW STRIP SEE G14 / L100

SOD - 32 92 00.01
SEED 32 92 00.02
ROCK MULCH - 32 93 00.01
PAVEMENT
EXISTING FOOTPRINT
ADDITION FOOTPRINT
PAVING CONSTRUCTION AREA

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

KEYPLAN

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

LANDSCAPE PLAN

L100

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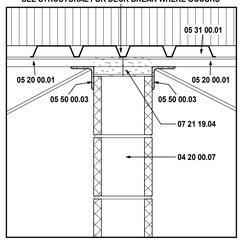
ROOM FINISH SCHEDULE

#	NAME	EXISTING	FLOOR	BASE	WALLS				COMMENTS	#
					NORTH	EAST	SOUTH	WEST		
D100	HALLWAY		LVT-1	RUBBER	-	-	VVC-1	-	PAINT TO MATCH EXISTING HALLWAY	D100
G100	HALLWAY		LVT-1, 2, 3, 4	RUBBER	--	BURN.CMU-1, 3	BURN CMU-1	BURN.CMU-1	SEE INT ELEVATIONS FOR WALL FINISHES, SEE FLOORING PLANS FOR LVT PATTERN	G100
A128	STORAGE		EXIST.	RUBBER	-	-	-	PT-1	PATCH LVT-1 AT NEW DOOR A128	A128
A132	OFFICE		CPT-7	RUBBER	--	--	--	--		A132
A133	RECEPT		CPT-7	RUBBER	VWC-3	VWC-1	VVC-1	VWC-1		A133
A133A	MEETING ROOM		CPT-7	RUBBER	VWC-1	VWC-3	VVC-1	VWC-1		A133A
A133B	OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133B
A133C	OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133C
A133D	OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133D
A133E	CALM		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133E
A133F	FILE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133F
A133G	OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133G
A133H	OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133H
A133J	OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		A133J
A133K	STOR.		CPT-7	RUBBER	PT-1	PT-1	PT-1	PT-1		A133K
B101A	STORAGE		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		B101A
B101C	LEARNING STAIR		CPT-6, RUBBER TREADS, RUBBER TILE-1 @ LANDING	CPT-6	-	-	-	-	SEE DETAIL PLAN FOR FINISH NOTES, ALTERNATE #5	B101C
B111	RECEPT		CPT-7	RUBBER	VWC-1	VWC-1	-	VWC-1		B111
B111A	AD OFFICE		CPT-7	RUBBER	VWC-1	VWC-1	-	-		B111A
B111B	STOR.		CPT-7	RUBBER	-	--	PT-1	PT-1		B111B
B111C	MTG RM		CPT-7	RUBBER	VWC-1	VWC-1	--	VWC-1		B111C
B111D	TICKET BOOTH		CPT-7	RUBBER	PT-1	PT-1	PT-1	PT-1		B111D
B112	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	B112
B115	MAIN GYM		WOOD GYM FLOOR	RUBBER	PT-1, PT-4	PT-1, PT-4	PT-1, PT-4	PT-1, PT-4	SEE INT ELEVATIONS FOR WALL FINISHES	B115
B115A	STORAGE		WOOD GYM FLOOR	RUBBER	PT-1	PT-1	PT-1	PT-1		B115A
B125	TEAM MTG		CPT-7	RUBBER	--	--	--	--	REMOVE EXISTING RUBBER BASE, ALTERNATE #5	B125
B126	HALLWAY		EPOXY	RUBBER	PT-1	PT-6	PT-1	PT-1		B126
B126A	HALLWAY		EPOXY	RUBBER	PT-1	PT-6	PT-1	PT-1		B126A
B126B	HALLWAY		LVT-1, 2, 3	RUBBER	PT-1, PT-2	PT-1	PT--6	-	SEE INT. ELEVATIONS FOR PAINT LOCATIONS	B126B
B140	MENS COACHES		LVT-1	RUBBER	--	--	--	--		B140
B172	TOILET		EPOXY	4" FAF	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	B172
B173	TRAINING		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-6		B173
B173A	STORAGE		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		B173A
B174	OFFICE		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		B174
B175	CARDIO		RUBBER FLR-1	RUBBER	PT-6	PT-1	PT-1	PT-1	SEE FLOOR PLAN FOR FLOORING	B175
B176	OFFICE		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		B176
B177	WEIGHTS		RUBBER FLR-1	RUBBER	PT-1	PT-1, PT-4, PT-6	PT-4	PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	B177
B178	STORAGE		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		B178
B179	WOMEN COACHES		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		B179
B180	TOILET		EPOXY	4" FAF	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	B180
B181	STORAGE		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		B181
B182	AUX GYM		WOOD GYM FLOOR	RUBBER	PT-1, PT-5	PT-1, PT-5	PT-1, PT-5	PT-1, PT-5	SEE INT. ELEVATIONS FOR PAINT LOCATIONS	B182
B183	STORAGE		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		B183
B184	VEST		CPT-8	RUBBER	PT-1	PT-1	PT-1	PT-1		B184
B185	CHILD CARE		CPT-2, LVT-2	RUBBER	VWC-1	VWC-1	VWC-1/PT-1,4,6 TILE 3,4	VWC-1, PT-5	SEE INT ELEVATIONS FOR WALL FINISHES, SEE FLOORING PLANS FOR LVT PATTERN	B185
B185A	STORAGE		CPT-2	RUBBER	PT-1	PT-1	PT-1	PT-1		B185A
B185B	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	B185B
B186	CLASSROOM		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-2		B186
B187	CLASSROOM		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	WC-1		B187
C100R	EXISTING VESTIBULE		CPT-8	RUBBER	-	--	VVC-1	VWC-1	NEW CPT-7 & VWC-1 AT NEW CONST. ONLY	C100R
C100S	HALLWAY		CPT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		C100S
C126	TOILETS		TILE-1, TILE-2	TILE-3,4	TILE-1	TILE-1	TILE-1	TILE-1	SEE INT. ELEVATIONS FOR TILE PATTERN	C126
C126A	TOILET		TILE-1	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	C126A
C126B	TOILET		TILE-1	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	C126B
C126C	TOILET		TILE-1	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	C126C
C126D	TOILET		TILE-1	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	C126D
C127	EXISTING MUSIC CORRIDOR		CPT-1	RUBBER	PT-1	PT-1	PT-1	-	NEW CPT-1 & PT-1 @ NEW CONST. ONLY	C127
C127A	MULTI-PURPOSE ROOM		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1	*ALT. 2 STAGE FLOORING	C127A
C127B	STORAGE		LVT-1	RUBBER	PT-1	PT-1	PT-1	PT-1		C127B
C127C	STORAGE		CPT-6	RUBBER	PT-1	PT-1	PT-1	PT-1		C127C
C145	OFFICE		EXIST.	EXIST.	-	--	--	--	PATCH PAINT WALLS AS NEEDED	C145
C146	CHOIR		CPT-6	RUBBER	VWC-1	PT-1	PT-1	PT-1	SEE INT. ELEVATIONS FOR PAINT LOCATIONS	C146
C147	VEST.		CPT-8	RUBBER	PT-1	PT-1	PT-1	PT-1		C147
D102	CTE STORAGE		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		D102
D103	CTE CLASSROOM		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		D103
E102	CULINARY ARTS		EPOXY	6" COVED EPXY-1	FRP-1	FRP-1	FRP-1	FRP-1		E102
E103	DISHWASH AREA		EPOXY	6" COVED EPXY-1	FRP-1	FRP-1	FRP-1	FRP-1		E103
E104	FACS STORAGE		--	-	-	-	-	-		E104
E105	PANTRY		EPOXY	RUBBER	FRP-1	FRP-1	FRP-1	FRP-1	PROVIDE GYPSUM BOARD AS NEEDED BEHIND FRP	E105
F122	S.G.		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F122
F123	S.G.		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F123
F125	STAFF COLLAB		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F125
F126	CLASSROOM		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F126
F127	CLASSROOM		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F127
F128	CLASSROOM		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F128
F129	CLASSROOM		CPT-4	RUBBER	EXISTING	EXISTING	EXISTING	EXISTING	ALTERNATE #5	F129
F131A	STORAGE		CPT-5	RUBBER	PT-1	PT-1	PT-1	PT-1		F131A
G100	HALLWAY		LVT-1, 2, 3, 4	RUBBER	BURN CMU-1, 3	BURN.CMU-1, 3	BURN CMU-1	BURN.CMU-1	SEE INT ELEVATIONS FOR WALL FINISHES, SEE FLOORING PLANS FOR LVT PATTERN	G100
G101	VEST.		CPT-8	RUBBER	-	-	-	-		G101
G102	SP ED		CPT-2	RUBBER	VWC-2	VWC-1	VVC-1	BURN.CMU-1		G102
G103	PT/ OT		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		G103
G104	STOR.		CPT-2	RUBBER	PT-1	PT-1	PT-1	PT-1		G104
G105	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G105
G106	TOILET		TILE-1, TILE-2	TILE-1	TILE-1	TILE-3, 4	TILE-1	TILE-1	SEE INT. ELEVATIONS FOR TILE PATTERN	G106
G106A	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G106A
G106B	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G106B
G106C	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G106C

ROOM FINISH SCHEDULE

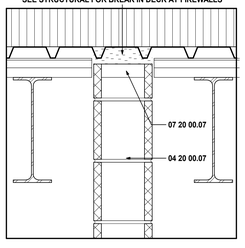
#	NAME	EXISTING	FLOOR	BASE	WALLS				COMMENTS	#
					NORTH	EAST	SOUTH	WEST		
G106D	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G106D
G107	TOILET		TILE-1, TILE-2	TILE-1	TILE-1	TILE-1	TILE-1	TILE-3, 4	SEE INT. ELEVATIONS FOR TILE PATTERN	G107
G107A	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G107A
G107B	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G107B
G107C	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G107C
G107D	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G107D
G107E	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G107E
G108	LANG ARTS		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		G108
G109	LANG ARTS		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		G109
G110	LANG ARTS		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-2		G110
G111	LEARNING COMMONS		CPT-3	RUBBER	VWC-1, 2	VWC-1	VWC-1, 2	VWC-1	SEE INT ELEVATIONS FOR WALL FINISHES	G111
G111A	STORAGE		CPT-3	RUBBER	PT-1	PT-1	PT-1	PT-1		G111A
G112	WORLD LANG		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-2		G112
G113	WORLD LANG		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-2		G113
G114	RESOURCE		CPT-2	RUBBER	VWC-2	VWC-1	VVC-1	VWC-1		G114
G115	STAFF COLLABORATION		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		G115
G115A	STORAGE		CPT-2	RUBBER	PT-1	PT-1	PT-1	PT-1		G115A
G116	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G116
G117	ELEC.		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		G117
G118	MTG. ROOM		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		G118
G119	ED CLASSROOM		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		G119
G119A	CALM		CPT-2	RUBBER	VWC-4	VWC-4	VWC-4	VWC-4		G119A
G119B	CALM		CPT-2	RUBBER	VWC-4	VWC-4	WC-4	VWC-4		G119B
G119C	CALM		CPT-2	RUBBER	WC-4	VWC-4	WC-4	VWC-4		G119C
G120	BUSINESS		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		G120
G121	ART		LVT-1	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		G121
S-1	STAIR-1		RUBBER TREAD, RISER, NOSING, RUBBER TILE-1 @ LANDING	RUBBER	PT-1, VWC-1	PT-1, VWC-1	-	VWC-1	PT-1 @ CMU, VWC-1 @ GYP. BD. WALLS	S-1
S-2	STAIR-2		RUBBER TREAD, RISER, NOSING, RUBBER TILE-1 @ LANDING	RUBBER	VWC-1	VWC-1	VWC-2	-		S-2
S-3	STAIR-3		RUBBER TREAD, RISER, NOSING, RUBBER TILE-1 @ LANDING	RUBBER	-	VWC-1	VWC-1	VWC-1	SEE FLOOR PLAN FOR FLOORING	S-3
B201	HALLWAY		LVT-1, 2, 3, 4	RUBBER	VWC-1, 2	-	PT-1	VWC-1	SEE INT ELEVATIONS FOR WALL FINISHES, SEE FLOORING PLANS FOR LVT PATTERN	B201
B202	MECH. MEZZ.		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		B202
B203	CLASSROOM		CPT-2	RUBBER	VWC-1	WC-1	VWC-1	VWC-2		B203
B203A	STORAGE		CPT-2	RUBBER	PT-1	PT-1	PT-1	PT-1		B203A
B204	CLASSROOM		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		B204
B205	CLASSROOM		CPT-2	RUBBER	VWC-1	VWC-1	VVC-1	VWC-2		B205
B206	CLASSROOM		CPT-2	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		B206
C127D	FUTURE MECH. MEZ		SEALED CONC.	EXIST.	PT-1	PT-1	PT-1	PT-1		C127D
C127D	MECH. MEZ		SEALED CONC.	EXIST.	PT-1	PT-1	PT-1	PT-1		C127D
E204	EXISTING SCIENCE LAB		-	RUBBER	VWC-1	-	-	VWC-1	NEW FINISHES AT NEW SHAFT WALLS IN NW CORNER ONLY	E204
F201	HALLWAY		CPT-5	RUBBER	VWC-1	-	VVC-1	VWC-1		F201
F207	IDF		--	-	-	PT-1	PT-1	PT-1		F207
F209	TOILETS		TILE-1, TILE-2	TILE-1, 3, 4	TILE-1, 3, 4	TILE-1, 3, 4	TILE-1, 3, 4	TILE-1, 3, 4	SEE INT. ELEVATIONS FOR TILE PATTERN	F209
F209A	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209A
F209B	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209B
F209C	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209C
F209D	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209D
F209E	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209E
F209F	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209F
F209G	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209G
F209H	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209H
F209J	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209J
F209K	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F209K
F210	CLASSROOM		CPT-4	RUBBER	VWC-1	VWC-1	VVC-1	*VWC-3	*EXISTING WALL TO BE PREPPED AS REQUIRED FOR VWC	F210
F211	MATH		CPT-4	RUBBER	VWC-1	VWC-1	VWC-1	VWC-3		F211
F212	CLASSROOM		CPT-4	RUBBER	VWC-1	VWC-3	VWC-1	VWC-1		F212
F213	LEARNING COMMONS		CPT-5	RUBBER	VWC-1, 3, 5	VWC-1	VWC-1	VWC-3	SEE INT ELEVATIONS FOR WALL FINISHES	F213
F214	SOCIAL SCIENCE		CPT-4	RUBBER	VWC-1	VWC-1	VWC-1	VWC-3		F214
F215	LANG ARTS		CPT-4	RUBBER	VWC-1	VWC-1	VVC-1	VWC-3		F215
F216	STAFF COLLABORATION		CPT-4	RUBBER	VWC-1	VWC-1	VWC-1	VWC-1		F216
F216A	STORAGE		CPT-4	RUBBER	PT-1	PT-1	PT-1	PT-1		F216A
F217	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	F217
F218	S.G.		CPT-4	RUBBER	VWC-1	VWC-1	VWC-1	VWC-1		F218
F219	S.G.		CPT-4	RUBBER	VWC-1	VWC-1	VWC-1	VWC-1		F219
F220	ELEC.		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		F220
G200	HALLWAY		LVT-1, 2, 3, 4	RUBBER	VWC-1	VWC-1, 2	VVC-1	VWC-1	SEE INT ELEVATIONS FOR WALL FINISHES, SEE FLOORING PLANS FOR LVT PATTERN	G200
G201	TOILETS		TILE-1, TILE-2	TILE-1	TILE-1, 3, 4	TILE-1	TILE-1, 3, 4	TILE-1	SEE INT. ELEVATIONS FOR TILE PATTERN	G201
G201A	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201A
G201B	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201B
G201C	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201C
G201D	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201D
G201E	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201E
G201F	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201F
G201G	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201G
G201H	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201H
G201J	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201J
G201K	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G201K
G202	SCIENCE CLASSROOM		LVT-1	RUBBER	VWC-1	VWC-1	VWC-2	VWC-1		G202
G202A	STORAGE		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		G202A
G203	SCIENCE LAB		LVT-1	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		G203
G204	PREP		LVT-1	RUBBER	VWC-1	VWC-1	VVC-1	VWC-1		G204
G205	SCIENCE CLASSROOM		LVT-1	RUBBER	VWC-1	VWC-2	VVC-1	VWC-1		G205
G206	MATH		CPT-2	RUBBER	VWC-1	VWC-1	VWC-1	VWC-2		G206
G207	MATH		CPT-2	RUBBER	VWC-1	VWC-2	VWC-1	VWC-1		G207
G208	LEARNING COMMONS		CPT-3	RUBBER	VWC-1, 2	VWC-1	VVC-1	VWC-1, 2	SEE INT ELEVATIONS FOR WALL FINISHES	G208
G209	SOCIAL SCIENCE		CPT-2	RUBBER	VWC-1	VWC-1	VWC-1	VWC-2		G209
G210	SOCIAL SCIENCE		CPT-2	RUBBER	VWC-1	WC-1	VWC-1	VWC-2		G210
G211	RESOURCE		CPT-2	RUBBER	VWC-2	VWC-1	VWC-1	VWC-1		G211
G212	STAFF COLLABORATION		CPT-2	RUBBER	VWC-1	VWC-1	VWC-1	VWC-1		G212
G212A	STOR.		CPT-2	RUBBER	PT-1	PT-1	PT-1	PT-1		G212A
G213	TOILET		TILE-1, TILE-2	TILE-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	TILE-1, PT-1	SEE INT ELEVATIONS FOR WALL FINISHES	G213
G214	IT		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		G214
G215	ELEC.		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		G215
G216	PREP		SEALED CONC.	RUBBER	PT-1	PT-1	PT-1	PT-1		G216
G217	SCIENCE LAB		LVT-1	RUBBER	VWC-2	VWC-1	VWC-1	VWC-1		G217
G218	SCIENCE CLASSROOM		LVT-1	RUBBER	VWC-1	VWC-1	VWC-2	VWC-1		G218
S-2	STAIR-2		RUBBER TREAD, RISER, NOSING, RUBBER TILE-1 @ LANDING	RUBBER	VWC-1	VWC-1	VWC-2	-	SEE FLOOR PLAN FOR FLOORING	S-2
S-3	STAIR-3		RUBBER TREAD, RISER, NOSING, RUBBER TILE-1 @ LANDING	RUBBER	-	VWC-1	VWC-1	VWC-1	SEE FLOOR PLAN FOR FLOORING	S-3
S-4	STAIR-4		RUBBER TREAD, RISER, NOSING, RUBBER TILE-1 @ LANDING	RUBBER	PT-1	PT-1	PT-1	PT-1		S-4

SEE STRCUTURAL FOR DECK BREAK WHERE OCCURS

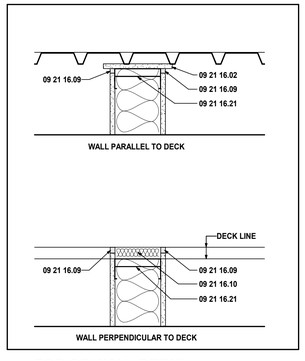


C1 / A001 **SLIP JOINT DETAIL**
1 1/2" = 1'-0"

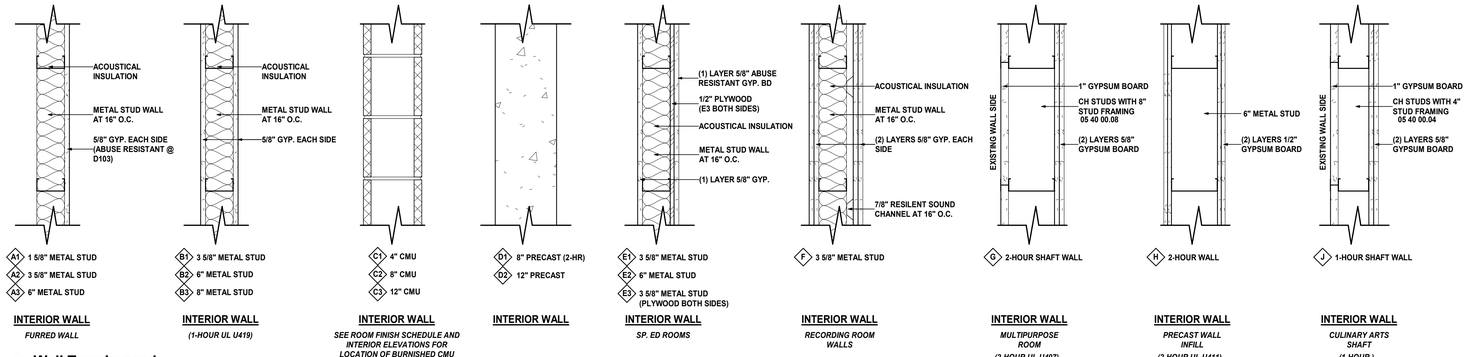
SEE STRUCTURAL FOR BREAK IN DECK AT FIREWALLS

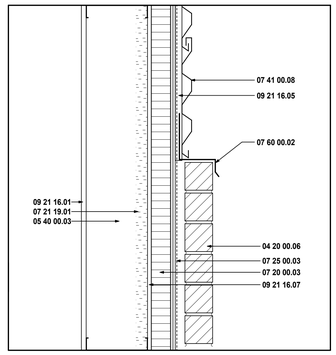


A1 / A001 **TOP OF WALL FIRE RATED**
1 1/2" = 1'-0"

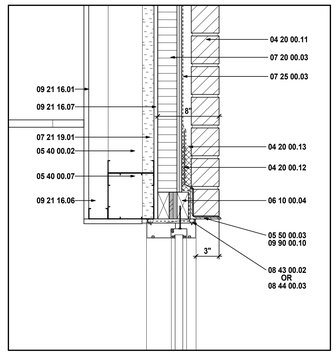


A3 / A001 **TOP OF WALL DETAIL**
1 1/2" = 1'-0"

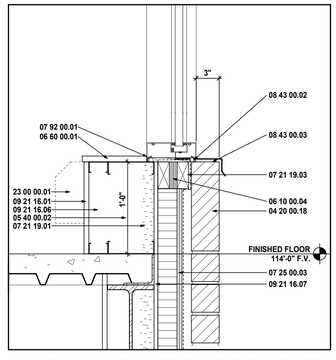

ACOUSTICAL INSULATION
METAL STUD WALL AT 16" O.C.
5/8" GYP. EACH SIDE (ABUSE RESISTANT @ D103)
A1 1 5/8" METAL STUD
A2 3 5/8" METAL STUD
A3 6" METAL STUD
INTERIOR WALL
FURRED WALL
ACOUSTICAL INSULATION
METAL STUD WALL AT 16" O.C.
5/8" GYP. EACH SIDE
B1 3 5/8" METAL STUD
B2 6" METAL STUD
B3 8" METAL STUD
INTERIOR WALL
(1-HOUR UL U419)
C1 4" CMU
C2 8" CMU
C3 12" CMU
INTERIOR WALL
SEE ROOM FINISH SCHEDULE AND INTERIOR ELEVATIONS FOR LOCATION OF BURNISHED CMU
D1 8" PRECAST (2-HR)
D2 12" PRECAST
INTERIOR WALL
(1) LAYER 5/8" ABUSE RESISTANT GYP. BD
1/2" PLYWOOD (E3 BOTH SIDES)
ACOUSTICAL INSULATION
METAL STUD WALL AT 16" O.C.
(1) LAYER 5/8" GYP.
E1 3 5/8" METAL STUD
E2 6" METAL STUD
E3 3 5/8" METAL STUD (PLYWOOD BOTH SIDES)
INTERIOR WALL
SP. ED ROOMS
ACOUSTICAL INSULATION
METAL STUD WALL AT 16" O.C.
(2) LAYERS 5/8" GYP. EACH SIDE
7/8" RESILENT SOUND CHANNEL AT 16" O.C.
F 3 5/8" METAL STUD
INTERIOR WALL
RECORDING ROOM WALLS
EXISTING WALL SIDE
1" GYPSUM BOARD
CH STUDS WITH 8" STUD FRAMING 05 40 00.08
(2) LAYERS 5/8" GYPSUM BOARD
G 2-HOUR SHAFT WALL
INTERIOR WALL
MULTIPURPOSE ROOM
(2-HOUR UL U497)
6" METAL STUD
(2) LAYERS 1/2" GYPSUM BOARD
H 2-HOUR WALL
INTERIOR WALL
PRECAST WALL INFILL
(2-HOUR UL U411)
EXISTING WALL SIDE
1" GYPSUM BOARD
CH STUDS WITH 4" STUD FRAMING 05 40 00.04
(2) LAYERS 5/8"



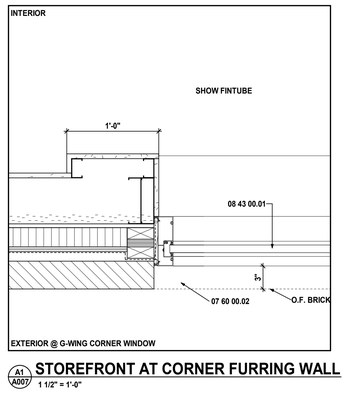
L1 / A007 **8" STUD BRICK SIDING TRANSITION**
1 1/2" = 1'-0"



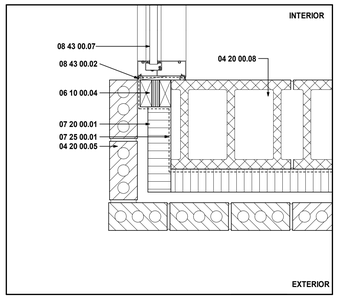
H1 / A007 **WDW. HEAD @ 6" STUD AND BRICK FURRING**
1 1/2" = 1'-0"



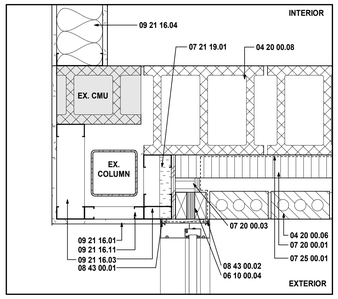
D1 / A007 **WDW. SILL @ 6" STUD AND BRICK FURRING**
1 1/2" = 1'-0" — FIRST AND SECOND LEVEL



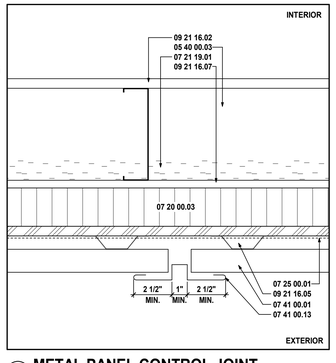
A1 / A007 **STOREFRONT AT CORNER FURRING WALL**
1 1/2" = 1'-0"



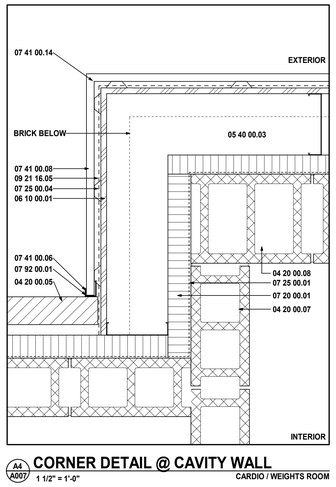
M4 / A007 **BRICK @ EX. STOREFRONT**
1 1/2" = 1'-0"



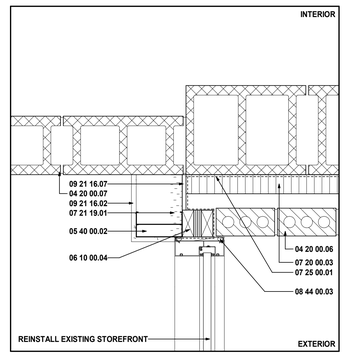
J4 / A007 **MULTI-PURPOSE RM - CORNER**
1 1/2" = 1'-0"



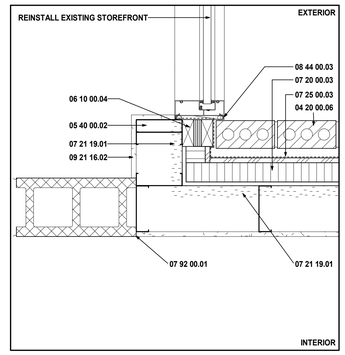
F4 / A007 **METAL PANEL CONTROL JOINT**
3" = 1'-0"



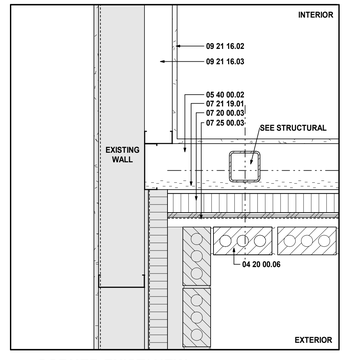
A4 / A007 **CORNER DETAIL @ CAVITY WALL**
1 1/2" = 1'-0" — CARDIO / WEIGHTS ROOM



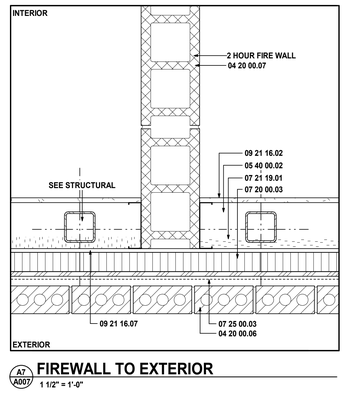
L7 / A007 **PLAN CORNER DETAIL @ CMU**
1 1/2" = 1'-0"



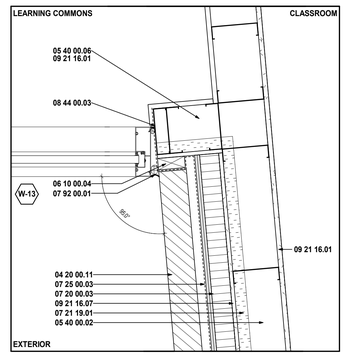
H7 / A007 **PLAN CORNER DETAIL**
1 1/2" = 1'-0"



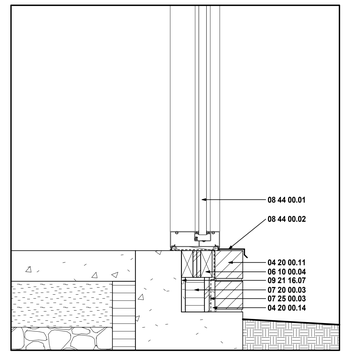
D7 / A007 **CORNER EXIST/ NEW**
1 1/2" = 1'-0"



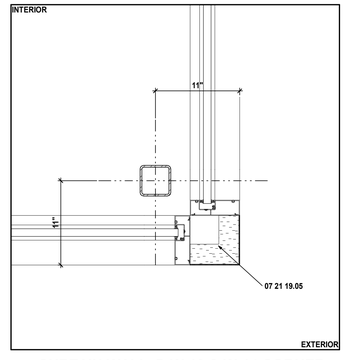
A7 / A007 **FIREWALL TO EXTERIOR**
1 1/2" = 1'-0"



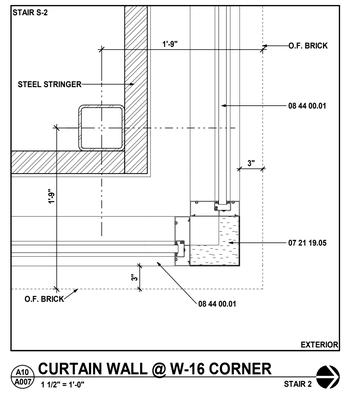
L10 / A007 **CURTAIN WALL JAMB AT BRICK - PLAN**
1 1/2" = 1'-0"



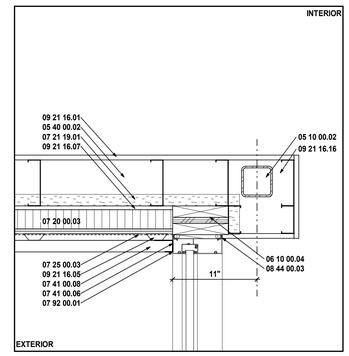
H10 / A007 **CURTAIN WALL SILL**
1 1/2" = 1'-0"



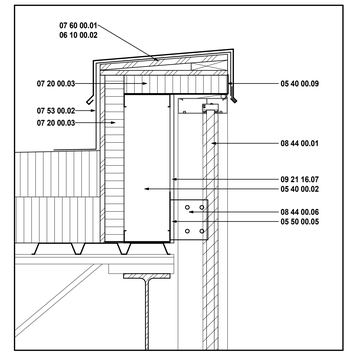
D10 / A007 **CURTAIN WALL @ W-13 & W-14 CORNER**
1 1/2" = 1'-0"



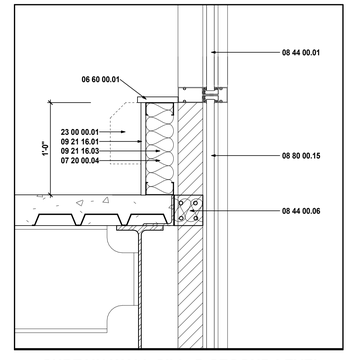
A10 / A007 **CURTAIN WALL @ W-16 CORNER**
1 1/2" = 1'-0" — STAIR 2



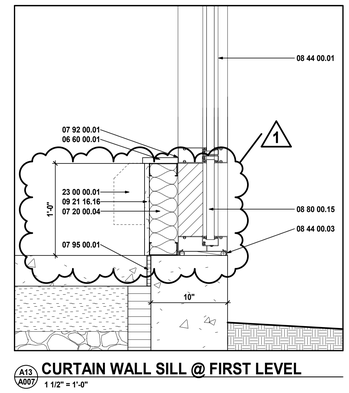
L13 / A007 **CURTAIN WALL JAMB @ SIDING - PLAN**
1 1/2" = 1'-0"



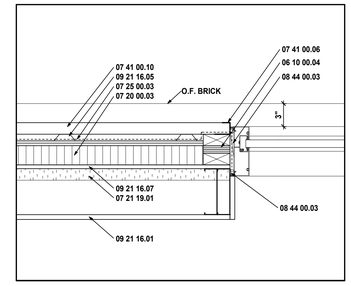
H13 / A007 **CURTAIN WALL HEAD**
1 1/2" = 1'-0"



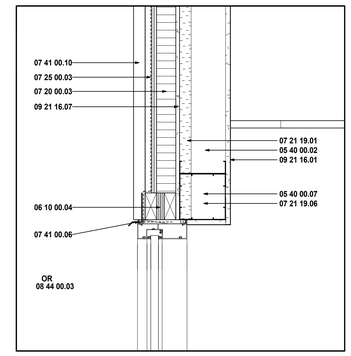
D13 / A007 **CURTAIN WALL SILL @ SECOND LEVEL**
1 1/2" = 1'-0"



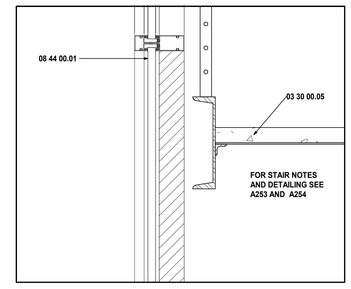
A13 / A007 **CURTAIN WALL SILL @ FIRST LEVEL**
1 1/2" = 1'-0"



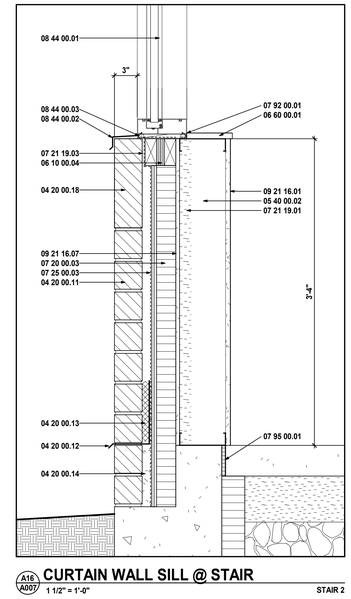
M16 / A007 **CURTAIN WALL JAMB @ STAIR**
1 1/2" = 1'-0" — STAIR 2



J16 / A007 **CURTAIN WALL HEAD @ STAIR**
1 1/2" = 1'-0" — STAIR 2



F16 / A007 **CURTAIN WALL @ STAIRWELL LANDING**
1 1/2" = 1'-0" — STAIR 2



A16 / A007 **CURTAIN WALL SILL @ STAIR**
1 1/2" = 1'-0" — STAIR 2

ADDITION & REMODEL
HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

04 20 00.05	BRICK-1 (SEA GRAY)
04 20 00.06	BRICK-2 (OPUS)
04 20 00.07	8" CMU
04 20 00.08	12" CMU
04 20 00.11	FACE BRICK - SEE ELEVATIONS FOR TYPE
04 20 00.12	THRU WALL FLASHING WITH WEEPS
04 20 00.13	MORTAR NET
04 20 00.14	GROUT SOLID
04 20 00.18	SOILDER COURSE SILL - MATCH EXISTING
05 10 00.02	STEEL COLUMN - SEE STRUCTURAL
05 40 00.02	6" STEEL STUD FRAMING
05 40 00.03	8" STEEL STUD FRAMING
05 40 00.06	STEEL STUD FRAMING
05 40 00.07	HEADER - SEE STRUCTURAL
05 40 00.09	BENT PLATE - ABOVE CURTAIN WALL ONLY
05 50 00.03	STEEL ANGLE - SEE STRUCTURAL
05 50 00.05	BENT PLATE - SEE STRUCTURAL
06 10 00.01	3/4" PLYWOOD
06 10 00.02	FIRE-RETARDANT WOOD PARAPET CAP (BLOCKING AND 3/4" PLYWOOD) - SLOPED FOR DRAINAGE - MATCH EXISTING PROFILE
06 10 00.04	WOOD BLOCKING / NAILERS
06 60 00.01	SOLID SURFACE SILL - MATCH EXISTING PROFILE
07 20 00.01	3" RIGID INSULATION - CAVITY WALL AT MASONRY
07 20 00.03	3 1/8" NAIL BASE INSULATION
07 20 00.04	BATT INSULATION
07 21 19.01	WALLS: 1-1/2" FOAMED-IN-PLACE INSULATION
07 21 19.03	APPLY FOAMED-IN-PLACE INSULATION TO FILL GAP BETWEEN WOOD BLOCKING AND MASONRY OR OTHER EXTERIOR FINISH
07 21 19.05	APPLY FOAMED-IN-PLACE INSULATION TO FILL CAVITY
07 21 19.06	FILL HEADERS WITH FOAMED-IN-PLACE INSULATION
07 25 00.01	FLUID-APPLIED AIR AND VAPOR BARRIER
07 25 00.03	FLUID APPLIED AIR BARRIER
07 25 00.04	BUILDING PAPER
07 41 00.01	METAL WALL PANEL 1 - HORIZONTAL SIENNA
07 41 00.06	METAL TRIM
07 41 00.08	METAL WALL PANEL - SEE ELEVATIONS FOR TYPE
07 41 00.10	METAL WALL PANEL - SEE ELEVATIONS FOR TYPE
07 41 00.13	VERTICAL REVEAL FLASHING
07 41 00.14	FACTORY MITERED CORNER
07 53 00.02	EPDM FLASHING - WRAP OVER PARAPET WHERE OCCURS
07 60 00.01	PREFINISHED METAL PARAPET FLASHING
07 60 00.02	PREFINISHED METAL FLASHING
07 92 00.01	SEALANT (WITH BACKER ROD WHERE NEEDED)
07 95 00.01	1/2" FELT BOND BREAK
08 43 00.01	ALUMINUM STOREFRONT
08 43 00.02	SEALANT
08 43 00.03	ALUMINUM STOREFRONT WITH SILL EXTENSION AS NEEDED
08 43 00.07	REINSTALL ALUMINUM STOREFRONT
08 44 00.01	CURTAIN WALL
08 44 00.02	SILL FLASHING
08 44 00.03	SEALANT
08 44 00.06	CURTAIN WALL CLIP
08 80 00.15	SPANDREL GLASS
09 21 16.01	5/8" PERIMETER WALL BOARD
09 21 16.02	5/8" GYPSPUM BOARD
09 21 16.03	3-5/8" STEEL STUDS
09 21 16.04	6" STEEL STUDS
09 21 16.05	7/8" EXTERIOR HAT CHANNEL
09 21 16.06	2 1/2" STEEL STUDS
09 21 16.07	1/2" EXTERIOR SHEATHING
09 21 16.11	1-5/8" STEEL STUDS
09 21 16.16	STEEL STUD FRAMING WITH 5/8" GYPSUM BOARD
~~09 90 00.10~~	~~PAINT - SEE ROOM FINISH SCHEDULE~~
23 00 00.01	FINTUBE - SEE MECHANICAL

GENERAL NOTES

1. ALL SHIM SPACES TO BE FILLED WITH SPRAY FOAM INSULATION.

KEYPLAN

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

OPENING DETAILS

A007

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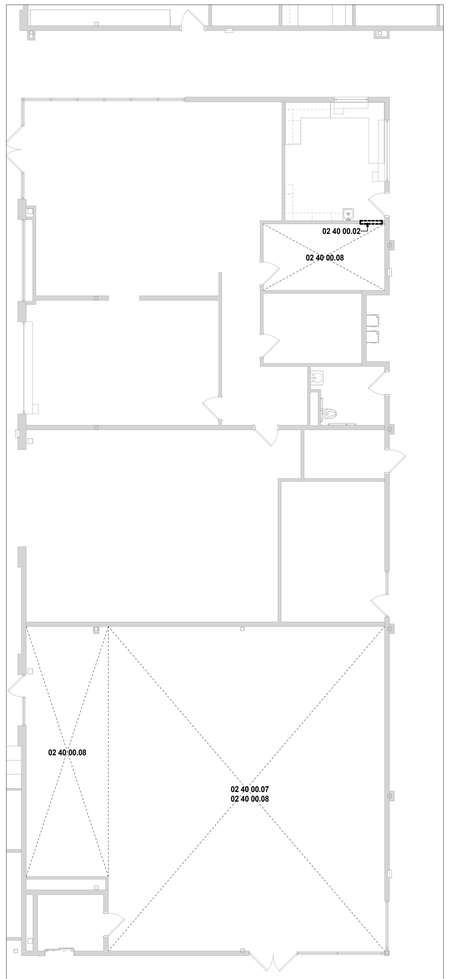
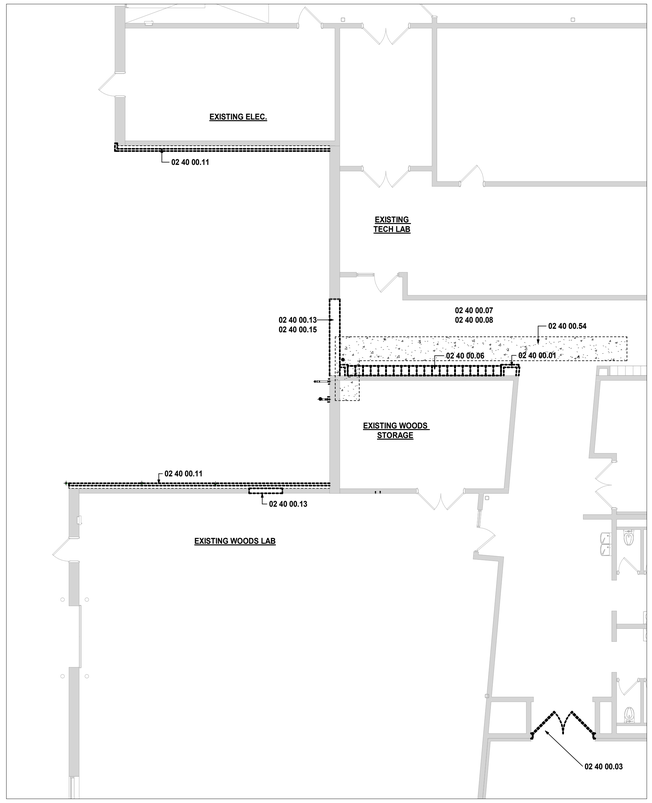
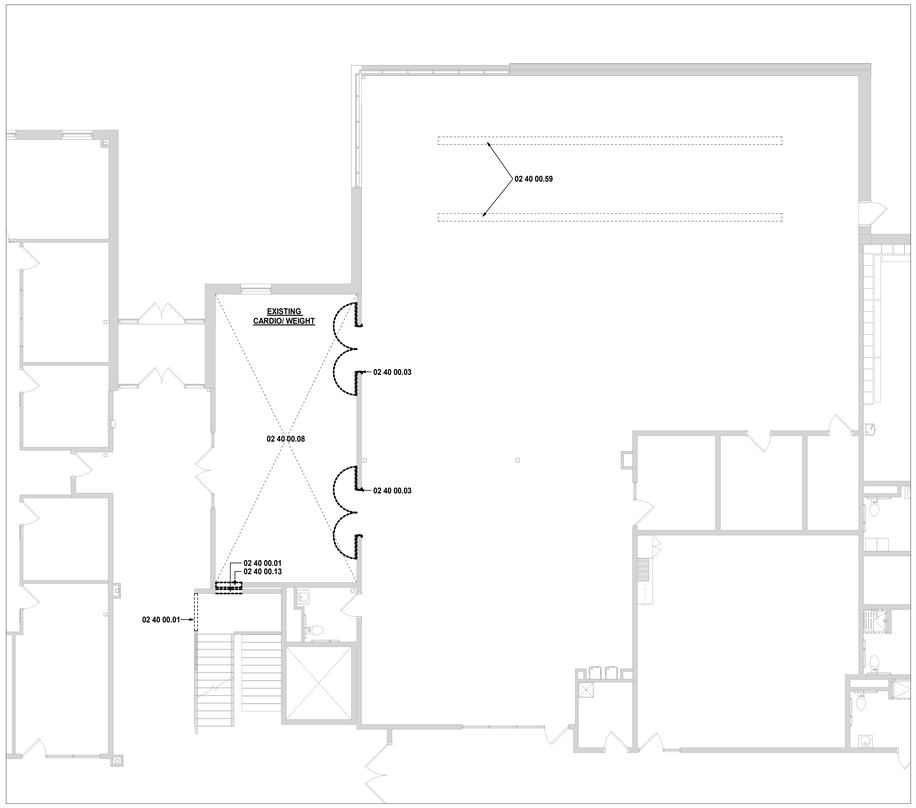




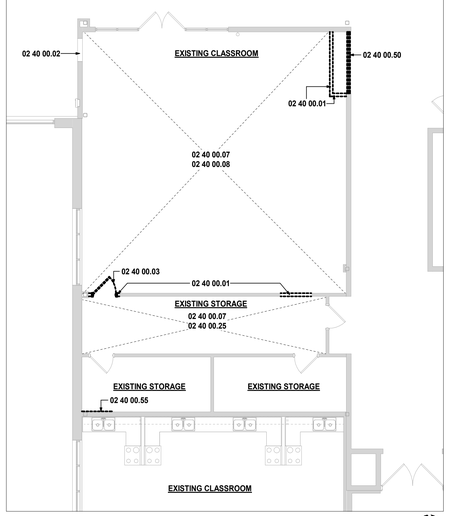


G 2 A101 **DEMOLITION PLAN - CTE**
1/8" = 1'-0"

NORTH

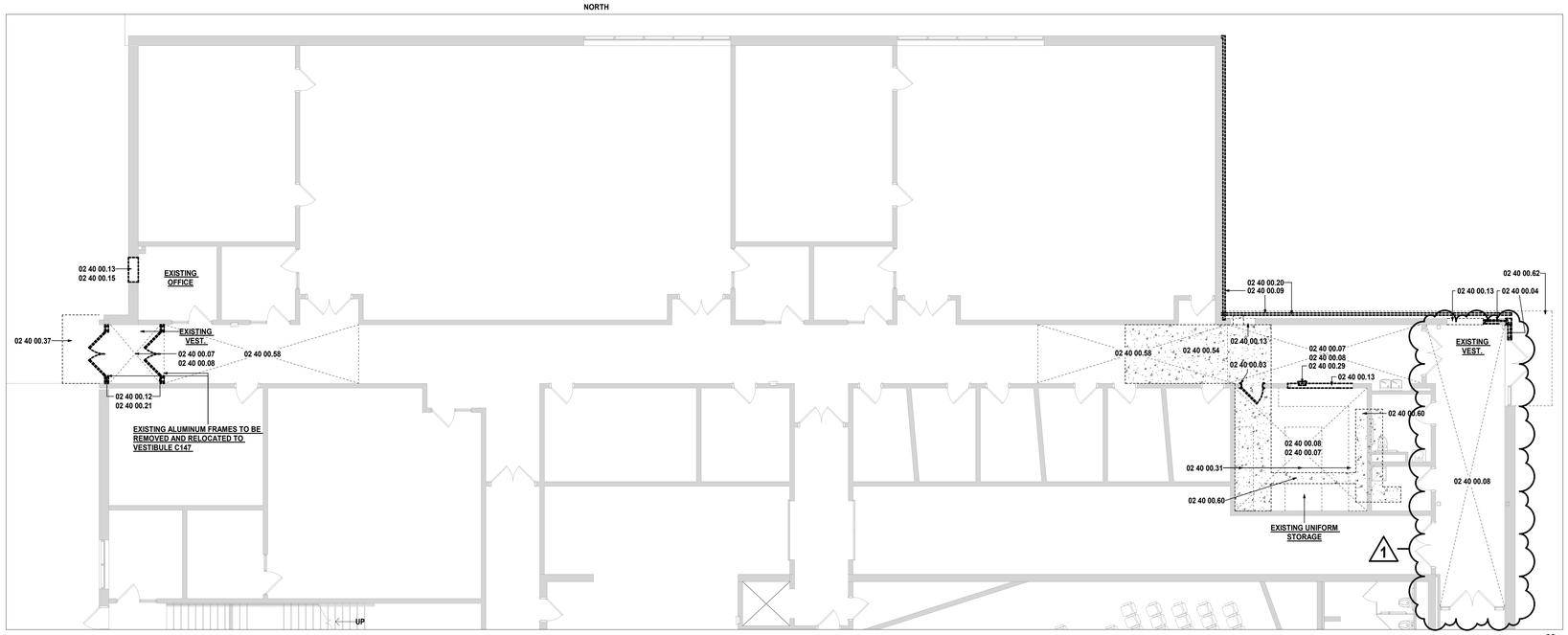
G 11 A101 **DEMOLITION - ATHLETIC OFFICE SUITE AND WEIGHT ROOM**
1/8" = 1'-0"

NORTH



A 1 A101 **DEMOLITION PLAN - CULINARY ARTS**
1/8" = 1'-0"

NORTH



A 5 A101 **DEMOLITION PLAN - MUSIC**
1/8" = 1'-0"

NORTH

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

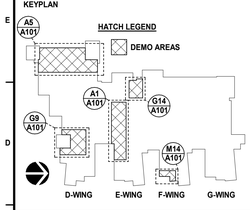
02 40 00.01	REMOVE METAL STUD WALL(S)
02 40 00.02	REMOVE WALLS AS NEEDED FOR NEW OPENING
02 40 00.03	REMOVE DOOR AND FRAME ASSEMBLY
02 40 00.04	REMOVE WINDOW ASSEMBLY
02 40 00.06	REMOVE LOCKERS AND BASE - SALVAGE FOR RE-INSTALLATION
02 40 00.07	REMOVE CEILING ASSEMBLY
02 40 00.08	REMOVE FLOORING AND BASE
02 40 00.09	REMOVE EXTERIOR FACE BRICK, RIGID INSULATION AND SHEATHING - EXISTING STUDS, BATT INSULATION AND INTERIOR GYPSUM BOARD TO REMAIN
02 40 00.11	REMOVE EXTERIOR FACE BRICK, RIGID INSULATION AND SHEATHING - EXISTING CMU TO REMAIN
02 40 00.12	REMOVE DOOR ASSEMBLY - SALVAGE FOR RE-INSTALLATION
02 40 00.13	REMOVE CMU WALL(S)
02 40 00.15	REMOVE FACE BRICK
02 40 00.20	REMOVE EXTERIOR METAL SIDING, RIGID INSULATION AND SHEATHING - EXISTING CMU TO REMAIN
02 40 00.21	REMOVE AUTOMATIC DOOR OPERATOR BUTTONS - SALVAGE & STORE FOR RE-INSTALLATION
02 40 00.25	REMOVE WALL BASE
02 40 00.29	REMOVE FIRE EXTINGUISHIER - SALVAGE FOR RE-INSTALLATION
02 40 00.31	REMOVE UNIFORM STORAGE - SALVAGE AND STORE FOR REINSTALLATION
02 40 00.37	REMOVE CONCRETE SLAB AND STOOP AS NEEDED FOR NEW CONSTRUCTION
02 40 00.50	REMOVE DISPLAY CASE - SALVAGE FOR RE-INSTALLATION
02 40 00.54	REMOVE CONCRETE FLOOR SLAB
02 40 00.55	REMOVE GYP AS NEEDED FOR NEW CONSTRUCTION
02 40 00.58	REMOVE CEILING AS REQUIRED FOR NEW CONSTRUCTION. LIGHTS TO BE SALVAGED AND REINSTALL
02 40 00.59	REMOVE TRENCHES
02 40 00.60	REMOVE FLOOR SLAB AS NEEDED FOR NEW MECHANICAL/ELECTRICAL
02 40 00.62	REMOVE STOOP AS REQUIRED FOR NEW CONSTRUCTION

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

1. DASHED LINES INDICATE DEMOLITION OF ITEM.
2. REMOVE ALL ITEMS AS NEEDED FOR NEW CONSTRUCTION.
3. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR THOSE ITEMS.
4. SHORE UP AS NEEDED FOR DEMOLITION AND NEW CONSTRUCTION.
5. SEE A122 FOR ADDITIONAL DEMO AT F-WING.
6. WHERE MASONRY TO BE REMOVED: ANY EXPOSED BLOCK OR BRICK REMOVAL NEEDS TO BE TOOTHED. ANY MASONRY NOT EXPOSED TO VIEW CAN BE FLUSH CUT

KEYPLAN



I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

DEMOLITION PLAN - FIRST FLOOR

A101

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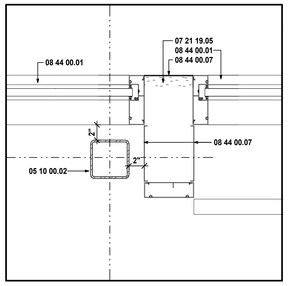
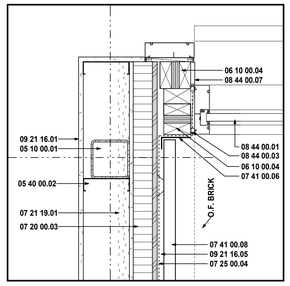
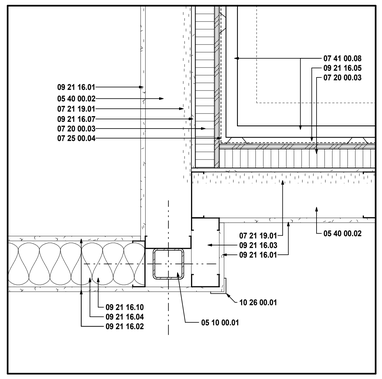


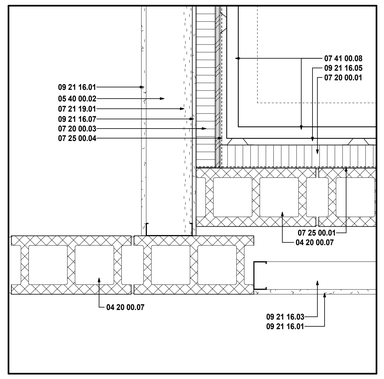
L4 A122 **ENTRY CORNER COLUMN**
1 1/2" = 1'-0"



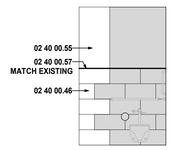
L6 A122 **G WING ENTRY**
1 1/2" = 1'-0"



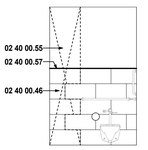
L9 A122 **CORNER DETAIL - SECOND FLOOR**
1 1/2" = 1'-0"



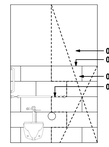
L12 A122 **CORNER DETAIL - FIRST FLOOR**
1 1/2" = 1'-0"



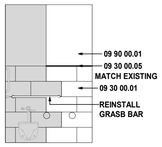
N15 A122 **EAST TLT**
1/4" = 1'-0"



N17 A122 **EAST TLT DEMO**
1/4" = 1'-0"



L16 A122 **WEST TLT DEMO**
1/4" = 1'-0"



L17 A122 **WEST TLT**
1/4" = 1'-0"

DEMO NOTES:
1. DASHED LINES INDICATE DEMOLITION OF ITEM.
2. REMOVE ALL ITEMS AS NEEDED FOR NEW CONSTRUCTION.
3. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR THOSE ITEMS.
4. SHORE UP AS NEEDED FOR DEMOLITION AND NEW CONSTRUCTION.
5. SEE A122 FOR ADDITIONAL DEMO AT F-WING.
6. WHERE MASONRY TO BE REMOVED: ANY EXPOSED BLOCK OR BRICK REMOVAL NEEDS TO BE TOOTHED. ANY MASONRY NOT EXPOSED TO VIEW CAN BE FLUSH CUT

A3 A122 **DEMOLITION PLAN - F-WING**
1/8" = 1'-0"

NORTH

F WING (BLUE)

A 11 A122 **FIRST FLOOR (F WING)**
1/8" = 1'-0"

NORTH

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

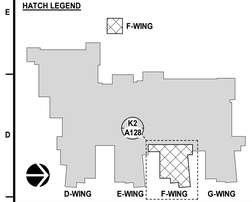
02 40 00.08	REMOVE FLOORING AND BASE
02 40 00.10	REMOVE EXTERIOR METAL SIDING, RIGID INSULATION AND SHEATHING - EXISTING STUDS, BATT INSULATION AND INTERIOR GYPSUM BOARD TO REMAIN
02 40 00.12	REMOVE DOOR ASSEMBLY - SALVAGE FOR RE-INSTALLATION
02 40 00.28	REMOVE VWC AS REQUIRED FOR NEW INSTALLATION
02 40 00.46	REMOVE WALL TILE
02 40 00.55	REMOVE GYP AS NEEDED FOR NEW CONSTRUCTION
02 40 00.56	REMOVE GRAB BARS - SALVAGE FOR REINSTALL
02 40 00.57	CUT AND REMOVE TILE TRIM AS NEEDED FOR NEW CONSTRUCTION
04 20 00.07	8" CMU
05 10 00.01	STEEL BEAM - SEE STRUCTURAL
05 10 00.02	STEEL COLUMN - SEE STRUCTURAL
05 40 00.02	6" STEEL STUD FRAMING
06 10 00.04	WOOD BLOCKING / NAILERS
07 20 00.01	2" RIGID INSULATION - CAVITY WALL AT MASONRY
07 20 00.03	3 1/8" NAIL BASE INSULATION
07 21 19.01	WALLS: 1-1/2" FOAMED-IN-PLACE INSULATION
07 21 19.05	APPLY FOAMED-IN-PLACE INSULATION TO FILL CAVITY
07 25 00.01	FLUID-APPLIED AIR AND VAPOR BARRIER
07 25 00.04	BUILDING PAPER
07 41 00.06	METAL TRIM
07 41 00.08	METAL WALL PANEL - SEE ELEVATIONS FOR TYPE
08 44 00.01	CURTAIN WALL
08 44 00.03	SEALANT
08 44 00.07	BREAK METAL
09 21 16.01	5/8" PERIMETER WALL BOARD
09 21 16.02	5/8" GYPSUM BOARD
09 21 16.03	3-5/8" STEEL STUDS
09 21 16.04	6" STEEL STUDS
09 21 16.05	7/8" EXTERIOR HAT CHANNEL
09 21 16.07	1/2" EXTERIOR SHEATHING
09 21 16.10	SOUND INSULATION
09 21 16.26	PATCH GYPSUM BOARD AS REQUIRED FOR NEW CONSTRUCTION
09 30 00.01	TILE-1 12X24 ADROCK
09 30 00.05	SCHLUTER TRIM; QUADEC
09 68 13.08	CARPET TILE-8 (WALK-OFF)
09 72 00.01	VINYL WALL COVERING-1 (FIELD)
09 90 00.01	PAINT-1 (FIELD WHITE)
10 26 00.01	CORNER GUARD TYPE-A (TYPICAL)

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

1. ALL DIMENSIONS ARE FACE OF STUD U.N.O.
2. ALL WALLS ARE TYPE B2 U.N.O.
3. SEE SHEET A001 FOR WALL TYPES.
4. SEE CODE SHEETS FOR FIREWALL LOCATIONS.
5. FIELD VERIFY COLUMN AND CROSS BRACING LOCATIONS AT BLEACHERS. MODIFY LAYOUT AS REQUIRED. BLEACHER LAYOUT VERIFIED TO MEET CODE REQUIREMENTS.
6. AT TV LOCATIONS, PROVIDE BLOCKING AS NEEDED FOR TV MOUNTING BRACKET.
7. WALLS CENTERED ON COLUMN LINES UNLESS OTHERWISE NOTED.
8. PROVIDE SOLID BLOCKING AT ALL WALL MOUNTED CABINETS AND SHELVED ACCESSIBLES.
9. SEE A1, A4/ A001 FOR TYPICAL TOP OF WALL DETAIL.
10. F-WING SECOND FLOOR, EXTERIOR WALLS, COLUMNS AND WINDOWS ARE EXISTING. INTERIOR OF EXTERIOR WALL WILL NEED TO BE FINISHED.
11. LOCATIONS OF ALL FLOOR ATHLETIC EQUIPMENT TO BE FIELD VERIFIED BEFORE INSTALLATION
12. SEE SHEET A131 FOR GYM FLOOR FINISH

KEYPLAN
HATCH LEGEND



I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

FIRST FLOOR - F WING

A122

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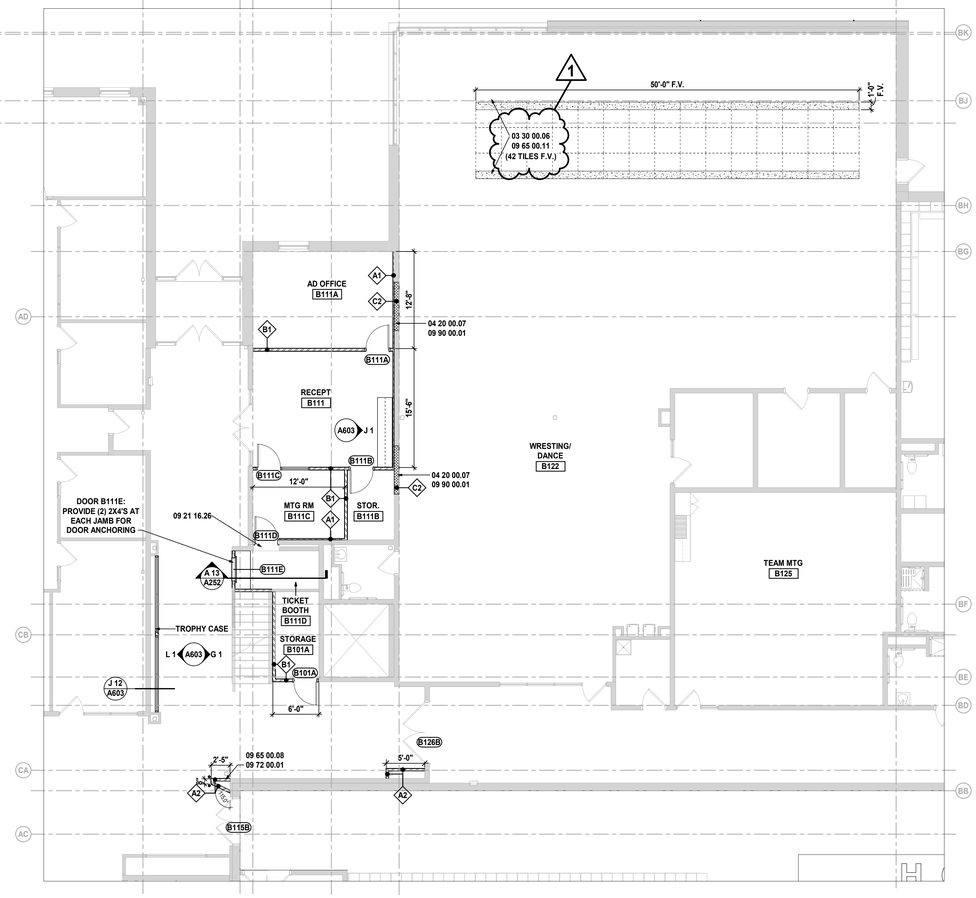


FIRST FLOOR - ATHLETIC OFFICE SUITE

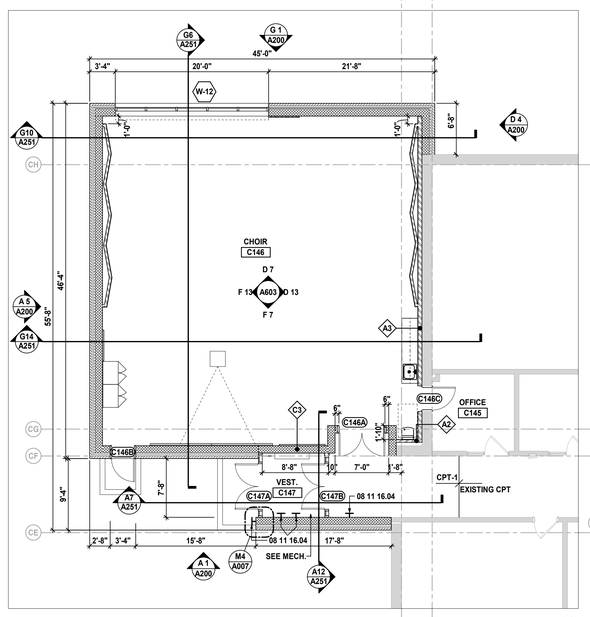
G 1 / A124 — 1/8" = 1'-0"

NORTH

FIRST FLOOR - CTE

A1 / A124 — 1/8" = 1'-0"

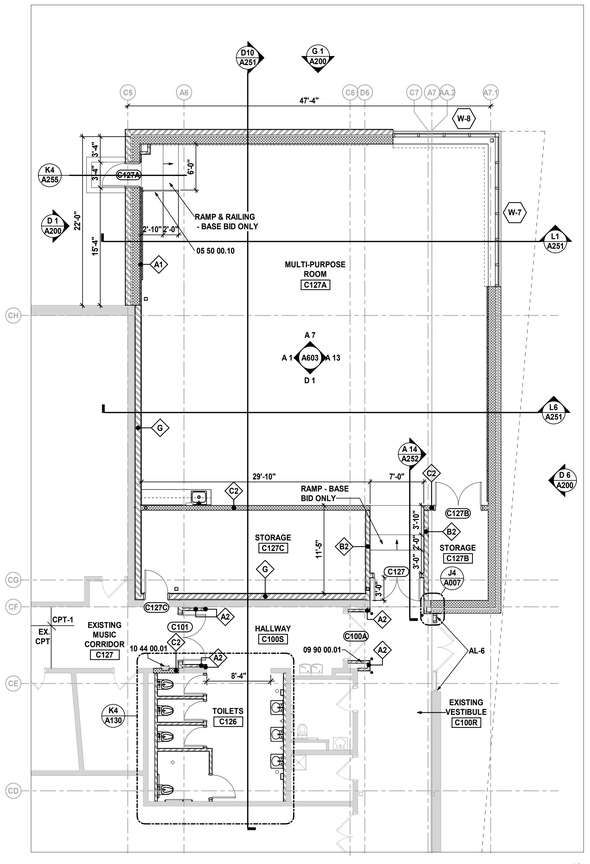
NORTH



FIRST FLOOR OVERALL - CHOIR

H 9 / A124 — 1/8" = 1'-0"

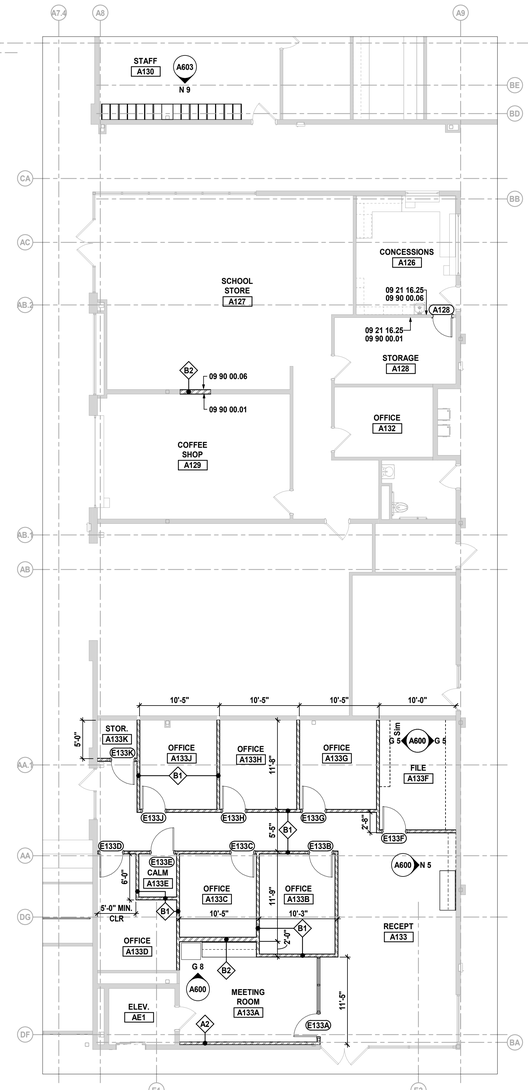
NORTH



FIRST FLOOR - MULTI-PURPOSE ROOM

A9 / A124 — 1/8" = 1'-0"

NORTH



FIRST FLOOR - COUNSELING AND CONCESSIONS

A14 / A124 — 1/8" = 1'-0"

NORTH

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

03 30 00.06	INFILL CONCRETE FLOOR AS REQUIRED FOR NEW CONSTRUCTION - F.V. DEPTH
04 20 00.07	8" CMU
05 50 00.10	STAINLESS STEEL HANDRAILING
08 11 16.04	AUTOMATIC OPERATOR - RE-INSTALL SALVAGED
09 21 16.25	PATCH AND PAINT TO MATCH EXISTING AS REQUIRED FOR NEW CONSTRUCTION
09 21 16.26	PATCH GYPSUM BOARD AS REQUIRED FOR NEW CONSTRUCTION
09 65 00.01	LVT-1 (FIELD)
09 65 00.08	RUBBER BASE
09 65 00.11	RUBBER TILE-2 - MATCH FLOOR AS REQUIRED FOR NEW CONSTRUCTION
09 72 00.01	VINYL WALL COVERING-1 (FIELD)
09 90 00.01	PAINT-1 (FIELD WHITE)
09 90 00.06	PAINT-6 (GOLD)
10 44 00.01	FIRE EXTINGUISHER WITH CABINET

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

1. ALL DIMENSIONS ARE FACE OF STUD U.N.O.
2. ALL WALLS ARE TYPE B2 U.N.O.
3. SEE SHEET A001 FOR WALL TYPES.
4. SEE CODE SHEETS FOR FIREWALL LOCATIONS.
5. FIELD VERIFY COLUMN AND CROSS BRACING LOCATIONS AT BLEACHERS. MODIFY LAYOUT AS REQUIRED. BLEACHER LAYOUT VERIFIED TO MEET CODE REQUIREMENTS.
6. AT TV LOCATIONS, PROVIDE BLOCKING AS NEEDED FOR TV MOUNTING BRACKET.
7. WALLS CENTERED ON COLUMN LINES UNLESS OTHERWISE NOTED.
8. PROVIDE SOLID BLOCKING AT ALL WALL MOUNTED CABINETS AND SHELVED ACCESSIBLES.
9. SEE A1, A4/ A001 FOR TYPICAL TOP OF WALL DETAIL.
10. F-WING SECOND FLOOR, EXTERIOR WALLS, COLUMNS AND WINDOWS ARE EXISTING. INTERIOR OF EXTERIOR WALL WILL NEED TO BE FINISHED.
11. LOCATIONS OF ALL FLOOR ATHLETIC EQUIPMENT TO BE FIELD VERIFIED BEFORE INSTALLATION
12. SEE SHEET A131 FOR GYM FLOOR FINISH

KEYPLAN

HATCH LEGEND

PARTIAL PLANS

D-WING E-WING F-WING G-WING

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS

ARCHITECTURE | PLANNING

420 Main Avenue

Moorhead, Minnesota 56560

Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

FIRST FLOOR - PARTIAL PLANS

A124

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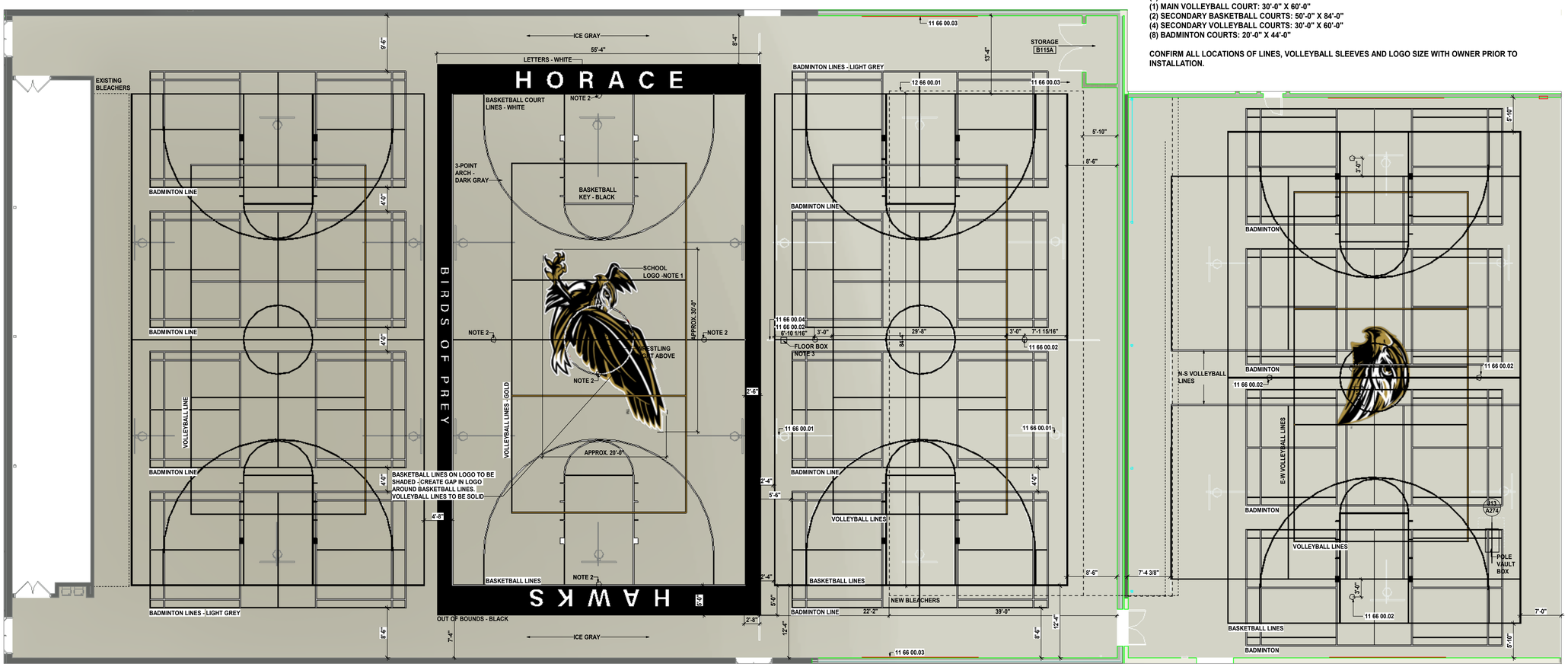


(1) MAIN BASKETBALL COURT: 50'-0" X 84'-0"
(1) MAIN VOLLEYBALL COURT: 30'-0" X 60'-0"
(2) SECONDARY BASKETBALL COURTS: 50'-0" X 84'-0"
(4) SECONDARY VOLLEYBALL COURTS: 30'-0" X 60'-0"
(8) BADMINTON COURTS: 20'-0" X 44'-0"

CONFIRM ALL LOCATIONS OF LINES, VOLLEYBALL SLEEVES AND LOGO SIZE WITH OWNER PRIOR TO INSTALLATION.

D/1 A131 ENLARGED GYM FLOOR FINISH PLAN

1/8" = 1'-0"

EXISTING GYM FLOOR RUNS EAST -WEST

1

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

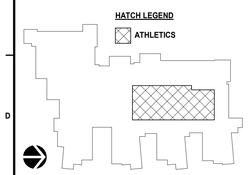
GENERAL NOTES

NOTE 1 - BASKETBALL LINES ON LOGO TO BE SHADED - CREATE GAP IN LOGO AROUND BASKETBALL LINES. VOLLEYBALL LINES TO BE SOLID

NOTE 2 - EXISTING VOLLEYBALL SLEEVES

NOTE 3 - COORDINATE FLOOR BOX LOCATION WITH OWNER PRIOR TO INSTALLATION.

KEYPLAN



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PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

FLOOR FINISH PLAN - ATHLETICS

A131

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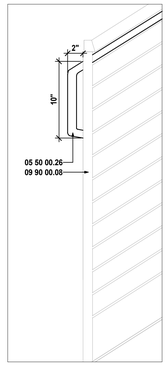
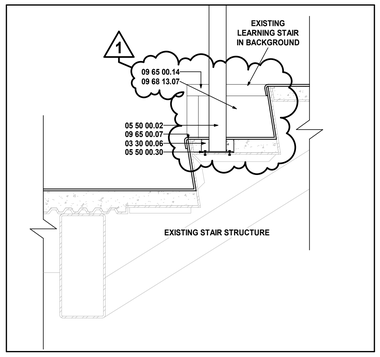
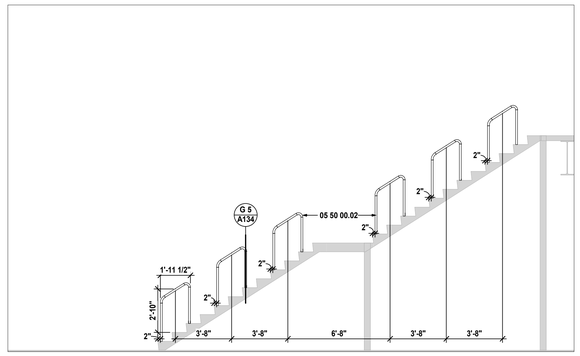


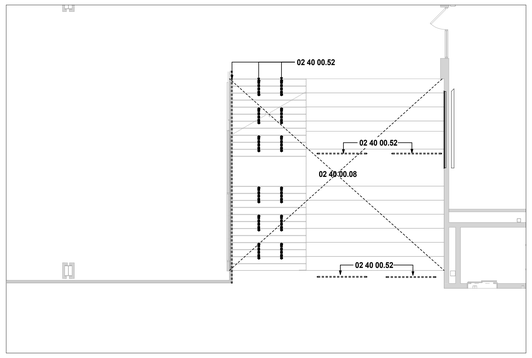
L 3 / A134 **HANDRAIL DETAIL**
1 1/2" = 1'-0"



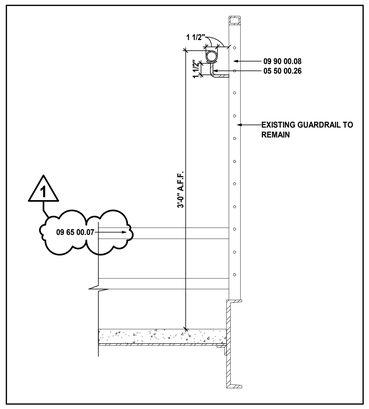
L 5 / A134 **STAIR LANDING DETAIL**
1 1/2" = 1'-0"



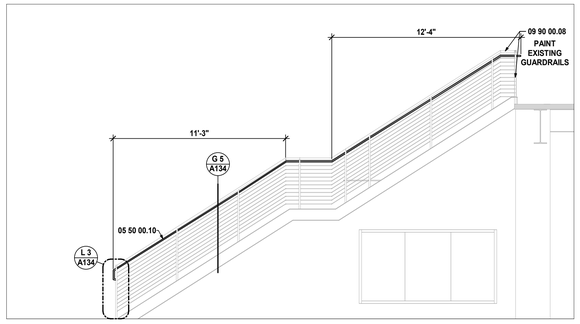
L 9 / A134 **LEARNING STAIR SECTION**
1/4" = 1'-0"



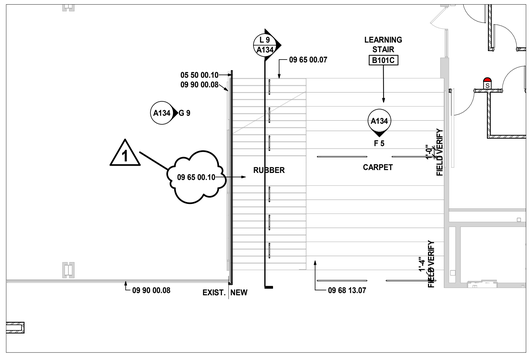
L 14 / A134 **DEMOLITION PLAN - LEARNING STAIR**
1/8" = 1'-0"



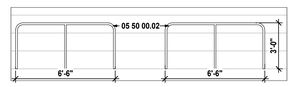
G 5 / A134 **CABLE RAIL DETAIL**
1 1/2" = 1'-0"



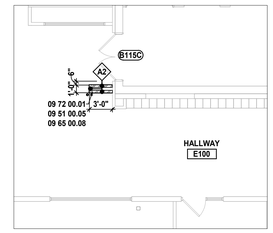
G 9 / A134 **LEARNING STAIR ELEVATION**
1/4" = 1'-0"



G 14 / A134 **PLAN - LEARNING STAIR**
1/8" = 1'-0"



F 5 / A134 **GUARD RAIL ELEVATION**
1/4" = 1'-0"



E 14 / A134 **FIRST FLOOR - E100 HALLWAY**
1/8" = 1'-0"

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

02 40 00.08	REMOVE FLOORING AND BASE
02 40 00.52	REMOVE HANDRAIL (GUARDRAIL & STAINLESS STEEL CABLE SYSTEM REMAINS)
03 30 00.06	INFILL CONCRETE FLOOR AS REQUIRED FOR NEW CONSTRUCTION - F.V. DEPTH
05 50 00.02	STEEL RAILING SYSTEM
05 50 00.10	STAINLESS STEEL HANDRAILING
05 50 00.26	1-1/2" DIAMETER STAINLESS STELL HANDRAIL WITH BRACKETS
05 50 00.30	COUNTERSUNK BOLT
09 91 00.05	MODIFY ACOUSTICAL CEILING AS REQUIRED FOR NEW WALLS
09 65 00.07	RUBBER STAIR MANAGEMENT SYSTEM
09 65 00.08	RUBBER BASE
09 65 00.10	RUBBER TILE-1
09 65 00.14	RUBBER STAIR NOSING
09 68 13.07	CARPET TILE-7 (ADMIN)
09 72 00.01	VINYL WALL COVERING-1 (FIELD)
09 90 00.08	PAINT-8 (ANDIRON)

1

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

KEYPLAN

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Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

ENLARGED FLOOR PLANS - ALTERNATES

A134

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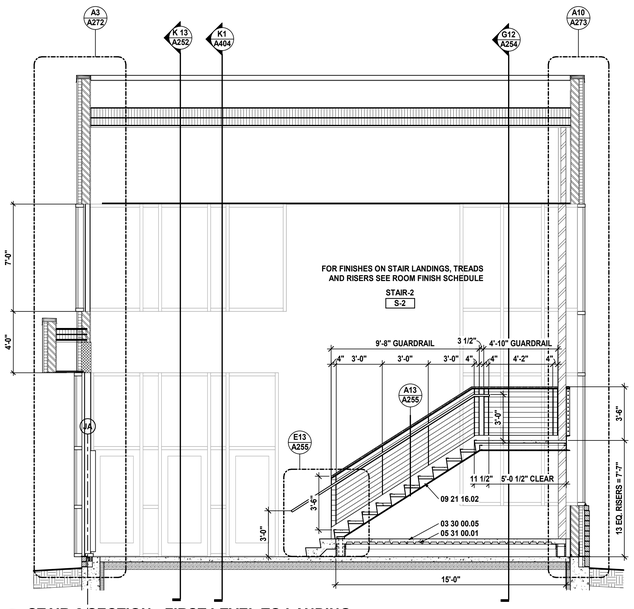
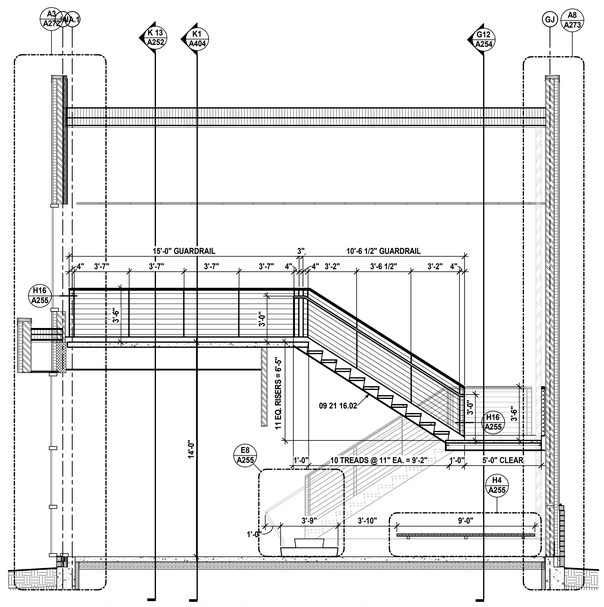
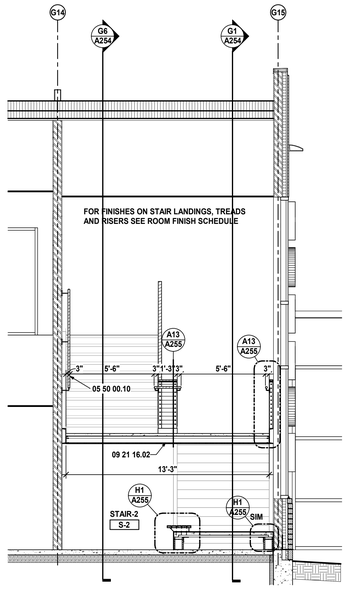


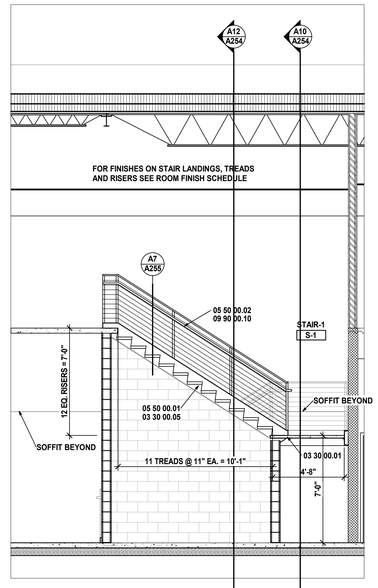
G1 A254 **STAIR-2 SECTION - FIRST LEVEL TO LANDING**
1/4" = 1'-0"



G6 A254 **STAIR-2 SECTION - LANDING TO SECOND LEVEL**
1/4" = 1'-0"

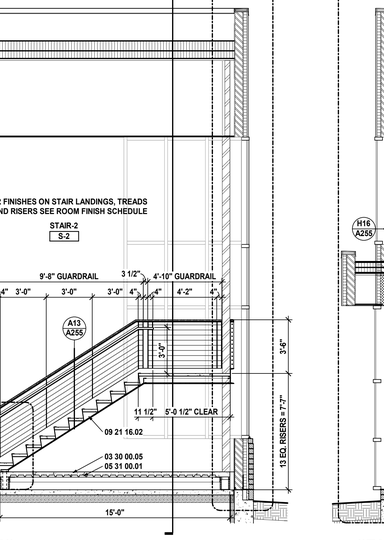


G12 A254 **STAIRS-2 SECTION AT LANDING**
1/4" = 1'-0"



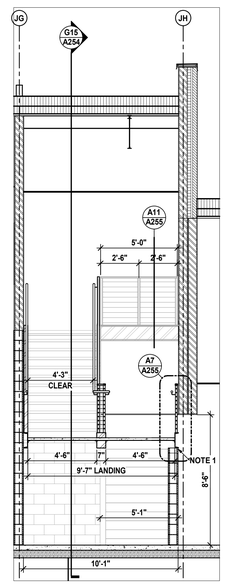
G15 A254 **STAIR-1 SECTION 2**
1/4" = 1'-0"

A1 A254 **STAIR-2 PLAN - FIRST LEVEL**
1/4" = 1'-0"

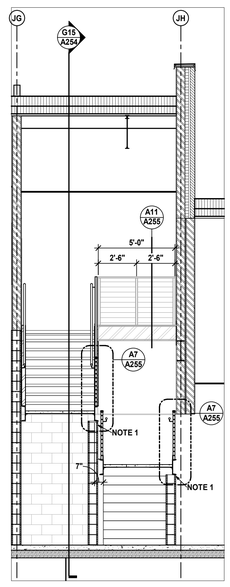


A4 A254 **STAIR-2 PLAN - AT LANDING**
1/4" = 1'-0"

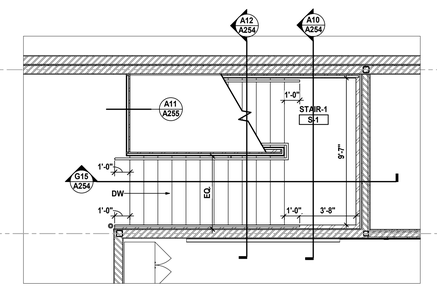
A7 A254 **STAIR-2 PLAN - AT SECOND LEVEL**
1/4" = 1'-0"



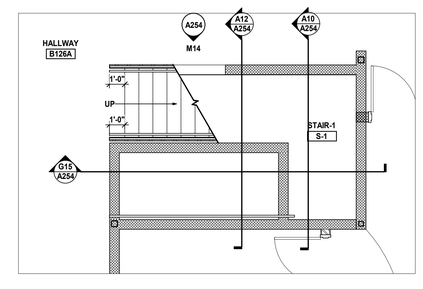
A10 A254 **STAIR -1 SECTION**
1/4" = 1'-0"



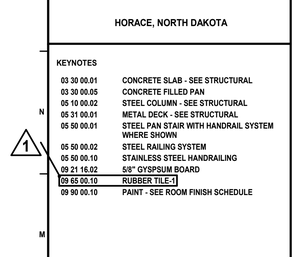
A12 A254 **STAIR -1 SECTION1**
1/4" = 1'-0"



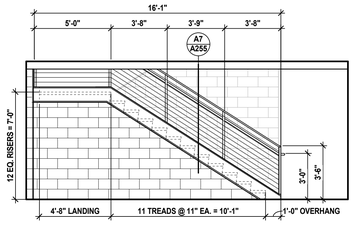
D15 A254 **STAIR-1 - SECOND FLOOR**
1/4" = 1'-0"



A15 A254 **STAIR-1 - FIRST FLOOR**
1/4" = 1'-0"



M12 A254 **LANDING - ELEVATION**
1/4" = 1'-0"



M15 A254 **STAIR 1 - NORTH ELEVATION**
1/4" = 1'-0"

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

03 30 00.01	CONCRETE SLAB - SEE STRUCTURAL
03 30 00.05	CONCRETE FILLED PAN
05 10 00.02	STEEL COLUMN - SEE STRUCTURAL
05 31 00.01	METAL DECK - SEE STRUCTURAL
05 50 00.01	STEEL PAN STAIR WITH HANDRAIL SYSTEM WHERE SHOWN
05 50 00.02	STEEL RAILING SYSTEM
05 50 00.10	STAINLESS STEEL HANDRAILING
09 21 16.02	5/8" GYPSPUM BOARD
09 65 00.10	RUBBER TILE-1
09 90 00.10	PAINT - SEE ROOM FINISH SCHEDULE

1

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

KEYPLAN

NOTE 1: CMU CUT TO FOLLOW ANGLE OF STRINGER.

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

STAIR PLANS AND SECTIONS

A254

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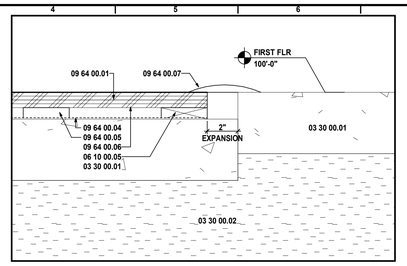
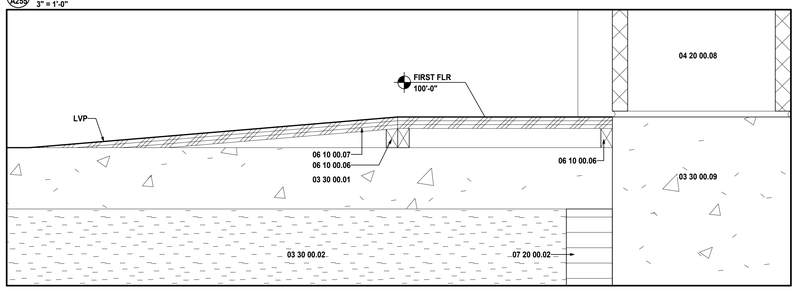
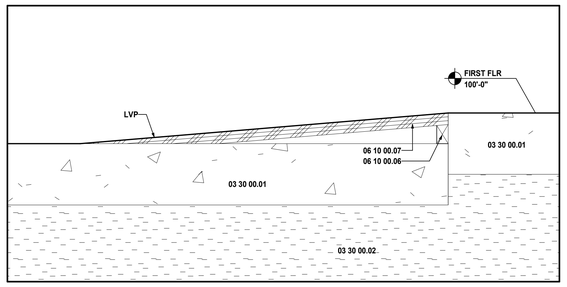


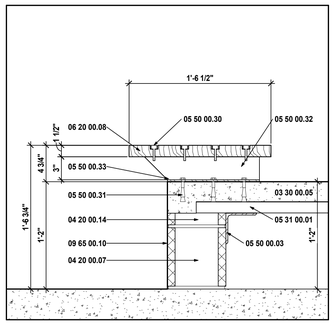
K4 / A255 **STAGE FLOORING - ALT. 2**
3" = 1'-0"



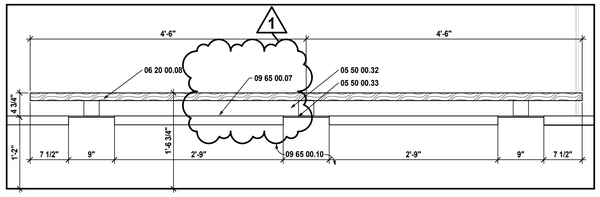
K4 / A255 **RAMP - MULTI-PURPOSE RM - BASE BID**
3" = 1'-0"



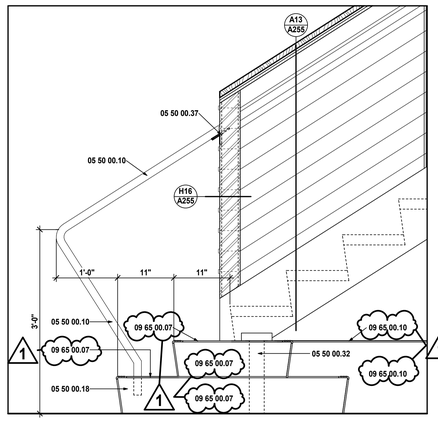
K14 / A255 **RAMP - MULTI-PURPOSE RM - BASE BID**
3" = 1'-0"



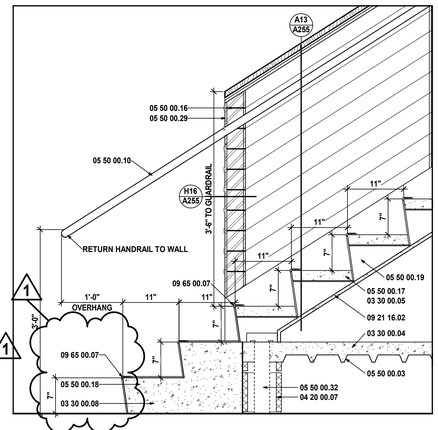
H1 / A255 **BENCH DETAIL**
1 1/2" = 1'-0"



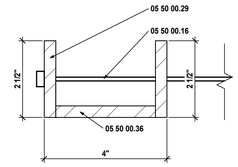
H4 / A255 **STAIR-2 BENCH ELEVATION**
1" = 1'-0"



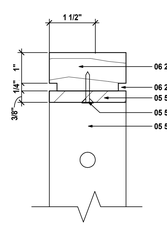
E8 / A255 **STAIR - ELEVATION DETAIL @ FIRST LEVEL**
1" = 1'-0"



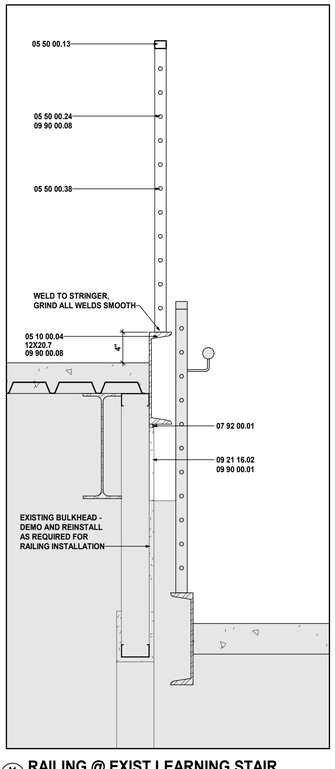
E13 / A255 **STAIR - SECTION DETAIL @ FIRST LEVEL**
1" = 1'-0"



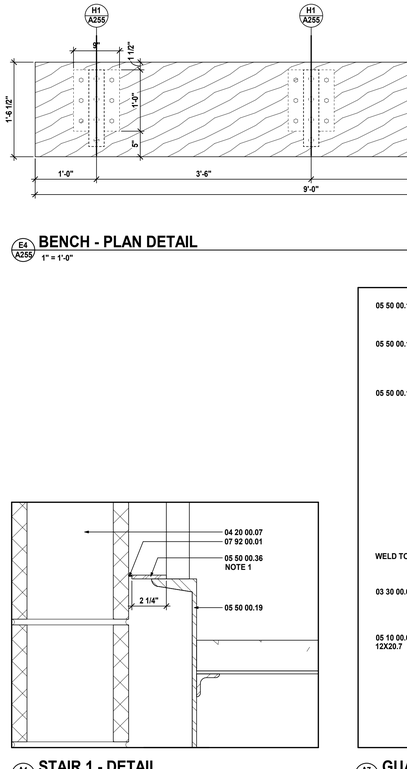
H16 / A255 **GUARDRAIL DETAIL - STAIR 2**
6" = 1'-0"



F16 / A255 **WOOD CAP - DETAIL - STAIR 2**
6" = 1'-0"

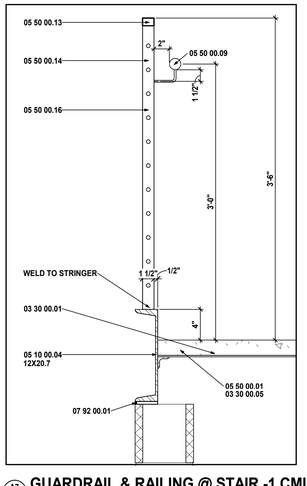


A1 / A255 **RAILING @ EXIST LEARNING STAIR**
1 1/2" = 1'-0"

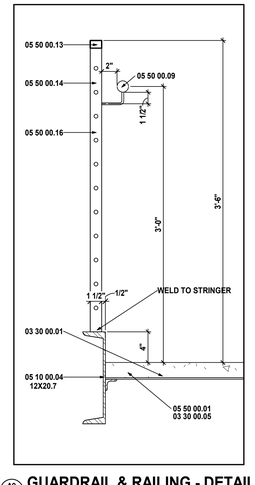


E4 / A255 **BENCH - PLAN DETAIL**
1" = 1'-0"

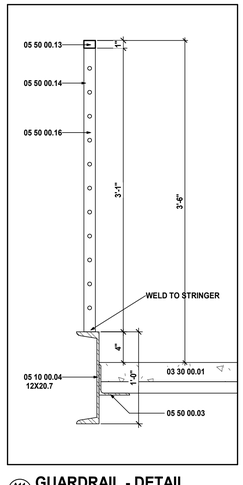
A4 / A255 **STAIR 1 - DETAIL**
3" = 1'-0"



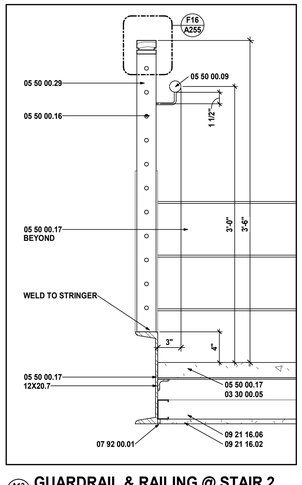
A7 / A255 **GUARDRAIL & RAILING @ STAIR -1 CMU**
1 1/2" = 1'-0"



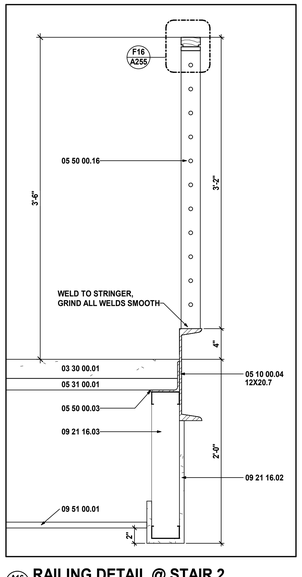
A9 / A255 **GUARDRAIL & RAILING - DETAIL**
1 1/2" = 1'-0"



A11 / A255 **GUARDRAIL - DETAIL**
1 1/2" = 1'-0"



A13 / A255 **GUARDRAIL & RAILING @ STAIR 2**
1 1/2" = 1'-0"



A16 / A255 **RAILING DETAIL @ STAIR 2**
1 1/2" = 1'-0"

03 30 00.01	CONCRETE SLAB - SEE STRUCTURAL
03 30 00.02	6" UNDERSLAB CUSHION
03 30 00.04	4" CONCRETE TOPPING - SEE STRUCTURAL
03 30 00.05	CONCRETE FILLED PAN
03 30 00.08	CONCRETE STAIRS
03 30 00.09	FOUNDATION WALL - SEE STRUCTURAL
04 20 00.07	8" CMU
04 20 00.08	12" CMU
04 20 00.14	GROUT SOLID
05 10 00.04	STEEL C-CHANNEL - SEE STRUCTURAL
05 31 00.01	METAL DECK - SEE STRUCTURAL
05 50 00.01	STEEL PAN STAIR WITH HANDRAIL SYSTEM WHERE SHOWN
05 50 00.03	STEEL ANGLE - SEE STRUCTURAL
05 50 00.09	1-1/2" DIAMETER STAINLESS STEEL HAND RAIL WITH BRACKETS WELDED TO EACH POST
05 50 00.10	STAINLESS STEEL HANDRAILING
05 50 00.13	1" X 1 1/2" TUBE
05 50 00.14	1 1/2" X 1 1/2" STEEL TUBE POST AT 4'-0" O.C. (PROVIDE HOLES FOR CABLE RAILING WHERE OCCURS)
05 50 00.16	STAINLESS STEEL CABLE RAILING AT 3 1/8" O.C.; PROVIDE DRILLED HOLES IN POST TO ACCOMODATE CABLE RAIL
05 50 00.17	STEEL PAN STAIR WITH STAINLESS STEEL MESH RISERS
05 50 00.18	HANDRAIL MOUNTING SLEEVE
05 50 00.19	12" STEEL CHANNEL STRINGER - SEE STRUCTURAL
05 50 00.24	INSTALL OWNER PROVIDED RAILING SYSTEM
05 50 00.29	3/8" X 2 1/2" STEEL POST AT 4'-6" O.C. (PROVIDE HOLES FOR CABLE RAILING WHERE OCCURS)
05 50 00.30	COUNTERSUNK BOLT
05 50 00.31	ADHESIVE ANCHORS
05 50 00.32	3" X 3" X 1/4" STEEL TUBE
05 50 00.33	1/4" X 12" STEEL PLATE
05 50 00.34	3/8" X 2 1/2" STEEL PLATE; ANCHOR WITH EPOXY ANCHOR
05 50 00.36	3/8" STEEL PLATE
05 50 00.37	STEEL BAR W/ RECEIVER PLATE
05 50 00.38	PROVIDE CABLE SYSTEM FOR EXISTING RAILINGS (MATCH EXISTING)
06 10 00.05	1X WOOD BLOCKING / NAILER
06 10 00.06	FIRE-RETARDANT WOOD BLOCKING / NAILERS
06 10 00.07	FIRE-RETARDANT 3/4" PLYWOOD
06 20 00.08	1 X HARDWOOD TRIM AT WALLS AND CEILING, PROFILE, LAYOUT AND CONFIGURATION TO MATCH EXISTING
06 20 00.09	2 1/2" x 1 1/4" HARDWOOD CAP ATTACHED W/ COUNTERSUNK SCREWS FROM BELOW
06 20 00.10	1/4" X 1/4" RABBIT REVEAL
07 20 00.02	3" PERIMETER INSULATION
07 92 00.01	SEALANT (WITH BACKER ROD WHERE NEEDED)
09 21 16.02	5/8" GYPSPUM BOARD
09 21 16.03	3-5/8" STEEL STUDS
09 21 16.06	2 1/2" STEEL STUDS
09 51 00.01	CEILING TILE - TYPE-1 (TYPICAL)
09 64 00.01	WOOD STAGE FLOOR
09 64 00.04	VAPOR BARRIER
09 64 00.05	3/4" FOAM BLOCKS
09 64 00.06	1/2" PLYWOOD
09 64 00.07	THRESHOLD
09 65 00.07	RUBBER STAIR MANAGEMENT SYSTEM
09 65 00.10	RUBBER TILE-1
09 90 00.01	PAINT-1 (FIELD WHITE)
09 90 00.08	PAINT-8 (ANDIRON)

1

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

KEYPLAN

NOTE 1 - STEEL PLATE TO FOLLOW SLOPE OF STAIR CHANNEL AND COVER THE GAP BETWEEN THE STEEL CHANNEL AND CMU WALL.

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

STAIR PLANS AND SECTIONS

A255

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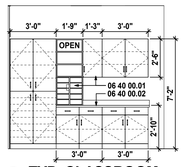
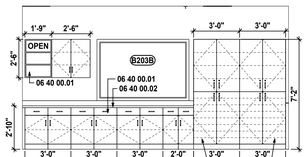
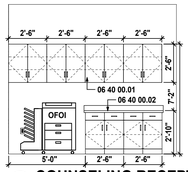


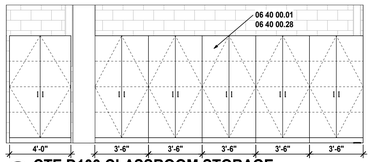
N 1 / A600 **TYP. CLASSROOM**
1/4" = 1'-0"



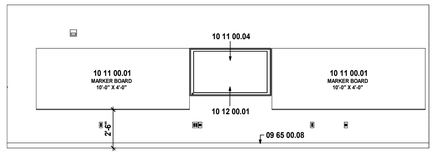
N 2 / A600 **PUBLICATIONS**
1/4" = 1'-0"



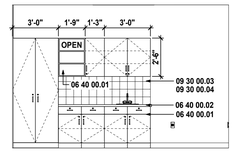
N 5 / A600 **COUNSELING RECEPT.**
1/4" = 1'-0"



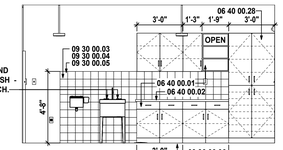
N 7 / A600 **CTE D103 CLASSROOM STORAGE**
1/4" = 1'-0"



N 10 / A600 **G102**
1/4" = 1'-0"



N 14 / A600 **PT/OT G103**
1/4" = 1'-0"



N 16 / A600 **CTE CLASSROOM D103**
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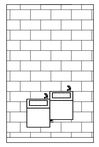
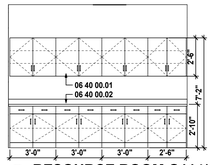
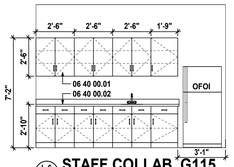


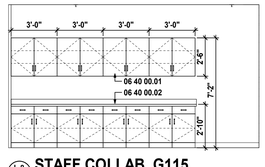
L 1 / A600 **G111 DRINKING FOUNTAIN**
1/4" = 1'-0"



L 3 / A600 **RESOURCE ROOM G114/ G211**
1/4" = 1'-0"



L 6 / A600 **STAFF COLLAB. G115**
1/4" = 1'-0"



L 8 / A600 **STAFF COLLAB. G115**
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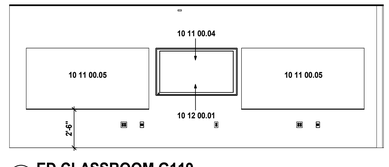

L 10 / A600 **ED CLASSROOM G119**
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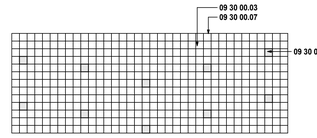
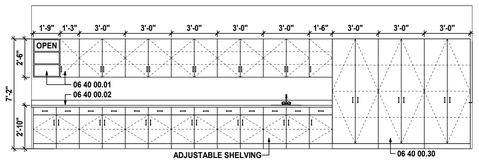
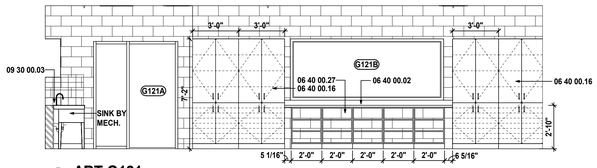


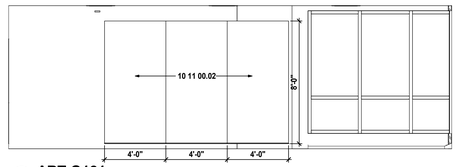
L 15 / A600 **TILE PATTERN - TYP. @ ALL 6x6 TILE**
1/4" = 1'-0"



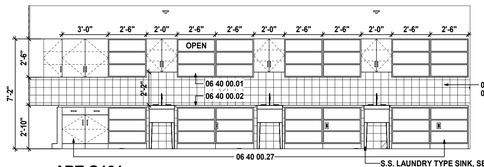
J 1 / A600 **BUSINESS G120**
1/4" = 1'-0"



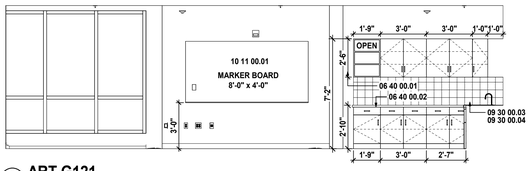
J 5 / A600 **ART G121**
1/4" = 1'-0"



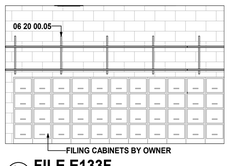
J 10 / A600 **ART G121**
1/4" = 1'-0"



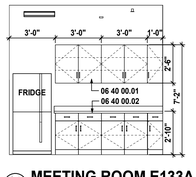
J 14 / A600 **ART G121**
1/4" = 1'-0"



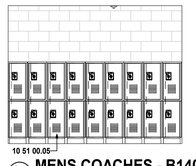
G 1 / A600 **ART G121**
1/4" = 1'-0"



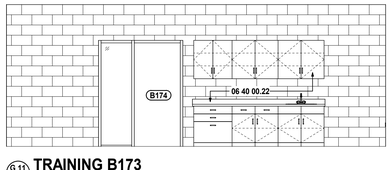
G 5 / A600 **FILE E133F**
1/4" = 1'-0"



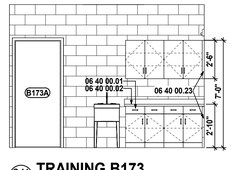
G 8 / A600 **MEETING ROOM E133A**
1/4" = 1'-0"



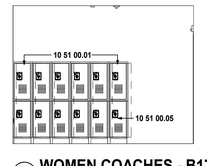
G 9 / A600 **MENS COACHES - B140**
1/4" = 1'-0"



G 11 / A600 **TRAINING B173**
1/4" = 1'-0"



G 14 / A600 **TRAINING B173**
1/4" = 1'-0"



G 16 / A600 **WOMEN COACHES - B179**
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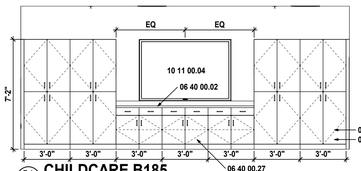
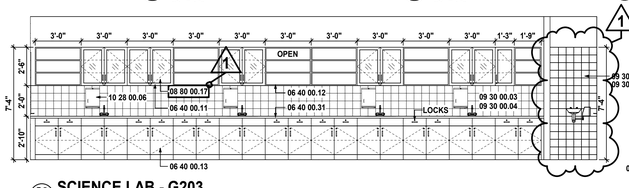
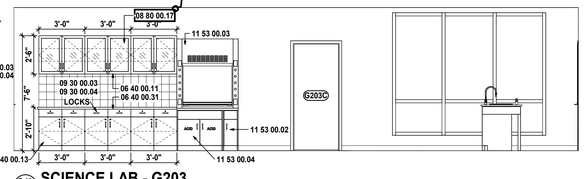


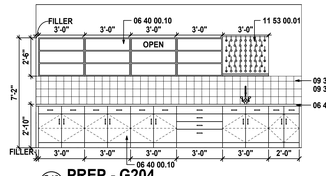
F 1 / A600 **CHILDCARE B185**
1/4" = 1'-0"



F 5 / A600 **SCIENCE LAB - G203**
1/4" = 1'-0"



F 10 / A600 **SCIENCE LAB - G203**
1/4" = 1'-0"



F 12 / A600 **PREP - G204**
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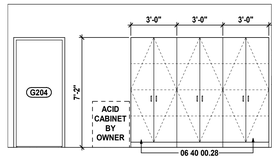

D 1 / A600 **PREP - G204**
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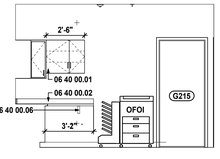
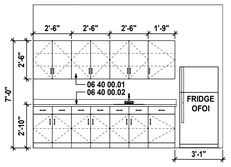
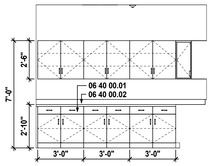


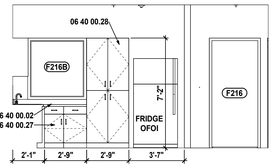
D 3 / A600 **STAFF COLAB. - G212**
1/4" = 1'-0"



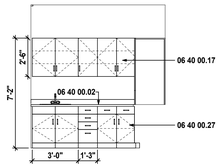
D 6 / A600 **STAFF COLLAB 212**
1/4" = 1'-0"



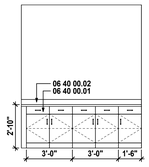
D 8 / A600 **STAFF COLLAB. G212**
1/4" = 1'-0"



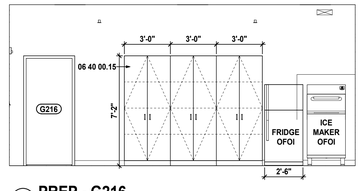
D 9 / A600 **STAFF COLLAB. - F216**
1/4" = 1'-0"



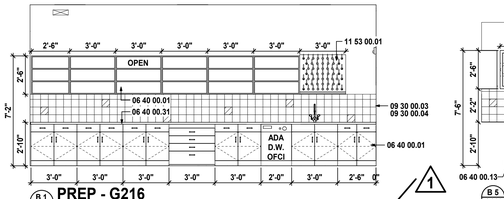
D 12 / A600 **STAFF COLLAB. - F216**
1/4" = 1'-0"



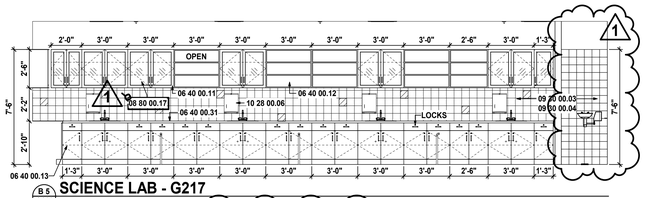
D 14 / A600 **STAFF COLLAB. - F216**
1/4" = 1'-0"



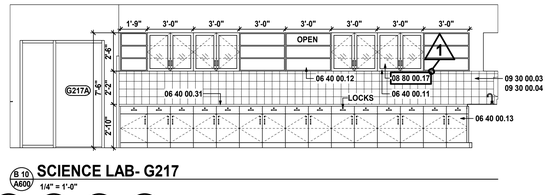
D 15 / A600 **PREP - G216**
1/4" = 1'-0"



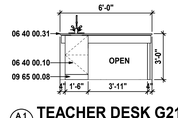
B 1 / A600 **PREP - G216**
1/4" = 1'-0"



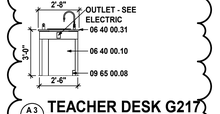
B 5 / A600 **SCIENCE LAB - G217**
1/4" = 1'-0"



B 10 / A600 **SCIENCE LAB- G217**
1/4" = 1'-0"



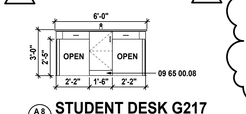
A 1 / A600 **TEACHER DESK G217**
1/4" = 1'-0"



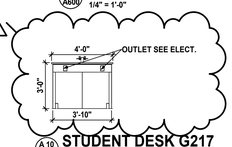
A 3 / A600 **TEACHER DESK G217**
1/4" = 1'-0"

A 4 / A600 **TEACHER DESK G217**
1/4" = 1'-0"

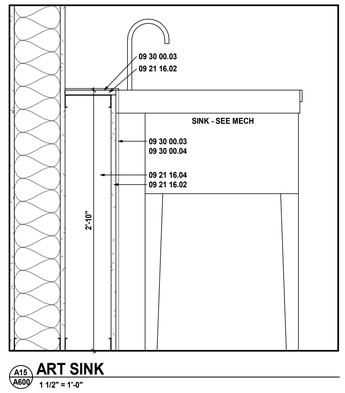
A 6 / A600 **TEACHER DESK G217**
1/4" = 1'-0"



A 8 / A600 **STUDENT DESK G217**
1/4" = 1'-0"



A 10 / A600 **STUDENT DESK G217**
1/4" = 1'-0"



A 15 / A600 **ART SINK**
1 1/2" = 1'-0"

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

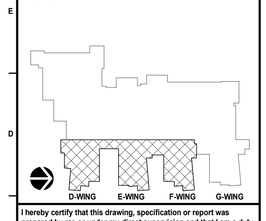
06 20 00.05	INDUSTRIAL DUTY ADJUSTABLE SHELF STANDARDS AND BRACKETS
06 40 00.01	PLASTIC LAMINATE #1 - VERTICAL
06 40 00.02	PLASTIC LAMINATE #2 - HORIZONTAL COUNTERTOPS AND BACKSPASHES
06 40 00.06	SUPPORT BRACKETS AT 4'-0" O.C. MAX
06 40 00.10	PLASTIC LAMINATE #4 (SCIENCE)
06 40 00.11	PLASTIC LAMINATE UPPER CABINET WITH ADJUSTABLE SHELVES AND GLASS DOORS
06 40 00.12	OPEN PLASTIC LAMINATE CABINET WITH ADJUSTABLE SHELVES
06 40 00.13	PLASTIC LAMINATE BASE CABINET WITH ADJUSTABLE SHELVES
06 40 00.15	PLASTIC LAMINATE TALL CABINET WITH ADJUSTABLE SHELVES
06 40 00.16	30" DEEP ART ROOM TALL CABINET WITH ADJUSTABLE SHELVES
06 40 00.17	14" DEEP UPPER CABINET
06 40 00.22	EXISTING RELOCATED MILLWORK
06 40 00.23	FILLER PANELS
06 40 00.27	PLASTIC LAMINATE BASE CABINET 24" DEEP
06 40 00.28	PLASTIC LAMINATE TALL CABINET 24" DEEP
06 40 00.30	PLASTIC LAMINATE TALL CABINET 30" DEEP
06 40 00.31	EXPOXY REIN COUNTERTOP WITH INTERGAL SINK WHERE SHOWN
08 80 00.17	1/8" TEMPERED GLASS
09 21 16.02	5/8" GYSPSUM BOARD
09 21 16.04	6" STEEL STUDS
09 30 00.03	TILE-3 6X6 WHITE MATTE
09 30 00.04	TILE-4 6X6 WHITE GLOSSY
09 30 00.05	SCHLUTER TRIM; QUADEC
09 30 00.06	SCHLUTER TRIM; DILEX-AHK
09 30 00.07	SCHLUTER TRIM; JOLLY
09 65 00.08	RUBBER BASE
10 11 00.01	MARKER BOARD - TYPE 1
10 11 00.02	MARKER BOARD - TYPE 3 (ART)
10 11 00.04	MONITOR AND MOUNTING BRACKET (O.F.C.I. TYP.)
10 11 00.05	MARKER BOARD - TYPE 4 (4X6 WITHOUT RAIL - SPED)
10 12 00.01	MONITOR ENCLOSURE
10 28 00.06	MANUAL PAPER TOWEL HOLDER - OFCI (TYP.)
10 51 00.01	ATHLETIC LOCKER
10 51 00.05	ADA ATHLETIC LOCKER
11 53 00.01	DRYING RACK
11 53 00.02	FUME HOOD BASE CABINETS
11 53 00.03	FUME HOOD
11 53 00.04	ACID BASE CABINET

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL WARDROBE CABINETS 30" DEEP WITH ADJUSTABLE SHELVES. SEE ELEVATIONS FOR NUMBER OF ADJUSTABLE SHELVES
2. UNLESS OTHERWISE NOTED, ALL UPPER CABINETS 14" DEEP WITH (2) ADJUSTABLE CABINETS
3. UNLESS OTHREWISE NOTED, ALL LOWER CABINETS 24" DEEP WITH (1) ADJUSTBALE SHELF
4. ALL BASE CABINETS IN ART ROOM TO BE 36" DEEP
5. UNLESS OTHERWISE NOTED, ALL WARDROBE CABINETS 30" DEEP WITH ADJUSTABLE SHELVES. SEE ELEVATIONS FOR NUMBER OF ADJUSTABLE SHELVES
6. INDICATES CABINET LOCKS
7. ALL COUNTERTOPS WITHOUT TILE BACKSPLASHES SHALL HAVE A 4" BACKSPLASH

KEYPLAN



I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

INTERIOR ELEVATIONS

A600

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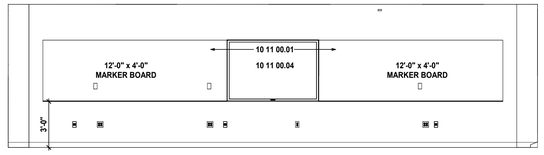
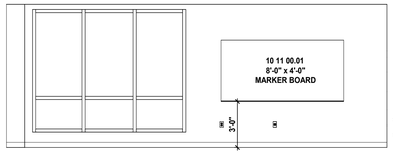
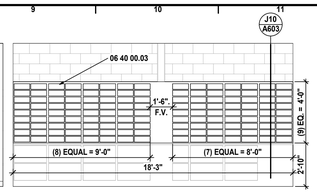


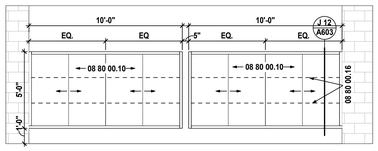
N 1 / A603 **CLASSROOM MARKER BOARDS**
1/4" = 1'-0"



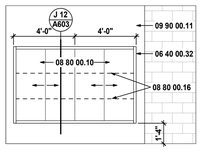
N 6 / A603 **CLASSROOM MARKER BOARDS**
1/4" = 1'-0"



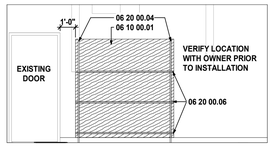
N 9 / A603 **MAILBOX**
1/4" = 1'-0"



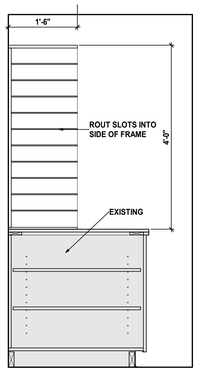
L 1 / A603 **B101 TROPHY CASE**
1/4" = 1'-0"



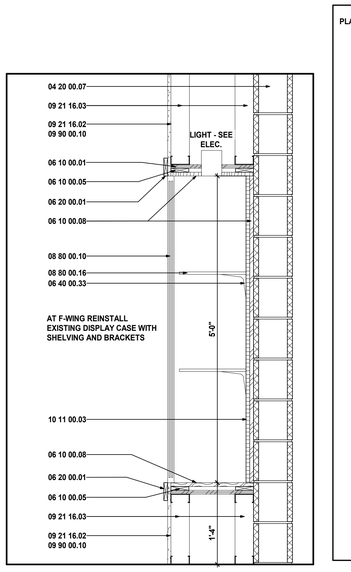
L 4 / A603 **DISPLAY CASE**
1/4" = 1'-0"



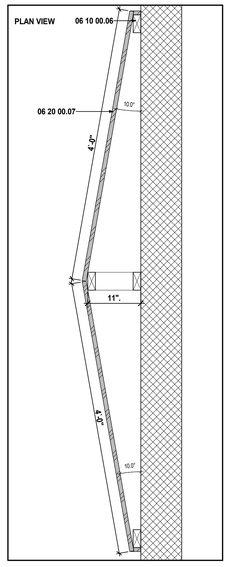
K 7 / A603 **D211 KILN**
1/4" = 1'-0"



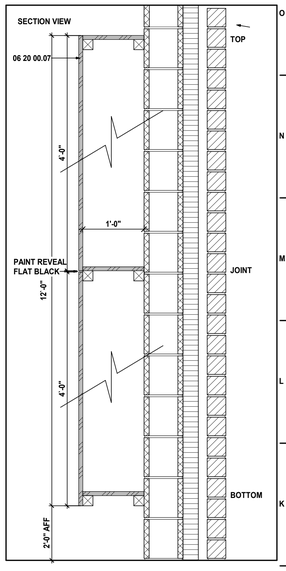
J 10 / A603 **MAILBOX DETAIL**
3/4" = 1'-0"

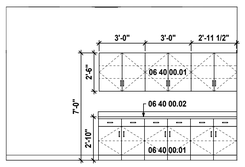


J 12 / A603 **DISPLAY CASE**
1" = 1'-0"

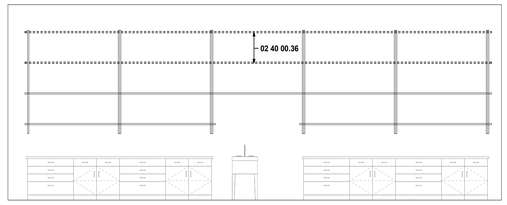


J 14 / A603 **HARDWOOD DETAIL CHOIR**
1" = 1'-0"





J 1 / A603 **B111 RECEPT**
1/4" = 1'-0"



J 3 / A603 **D202 DEMO ELEV.**
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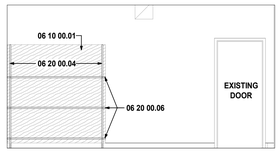
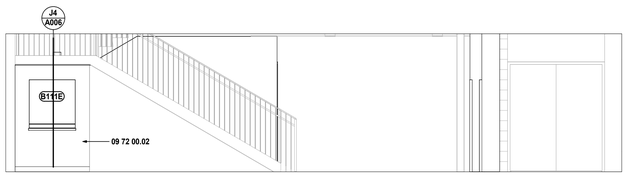
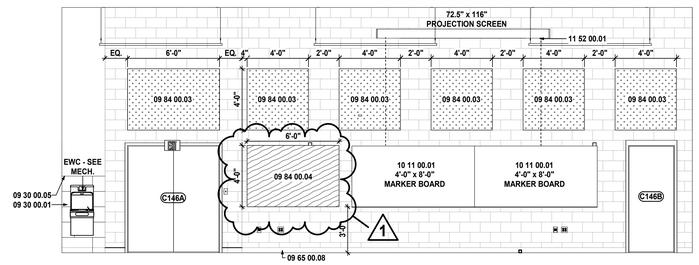


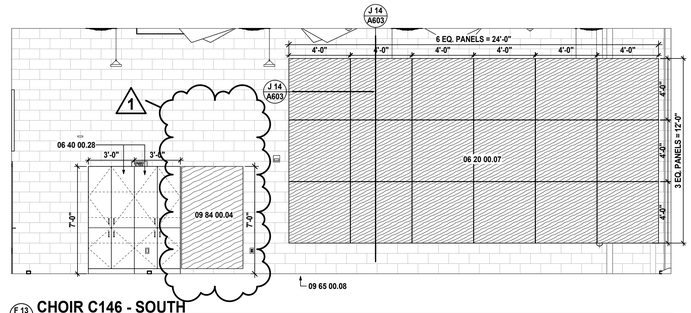
J 7 / A603 **D202 EXIST. SHLEVING**
1/4" = 1'-0"



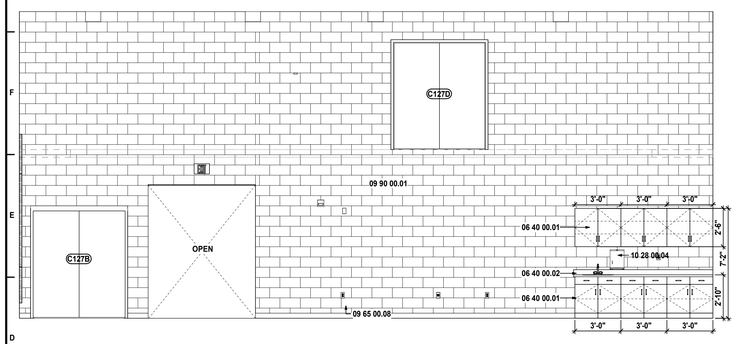
G 1 / A603 **B101 ATHLETIC LOBBY**
1/4" = 1'-0"



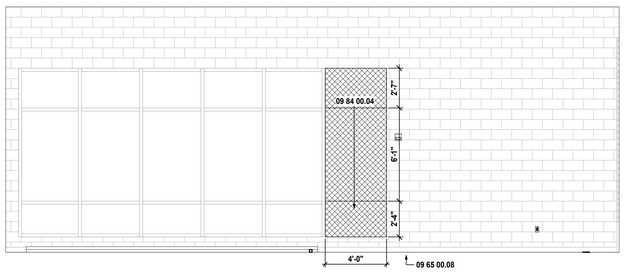
F 7 / A603 **CHOIR C146 - EAST**
1/4" = 1'-0"



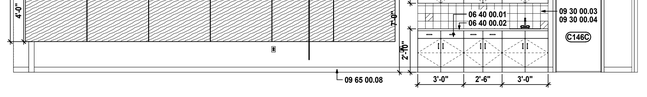
F 12 / A603 **CHOIR C146 - SOUTH**
1/4" = 1'-0"



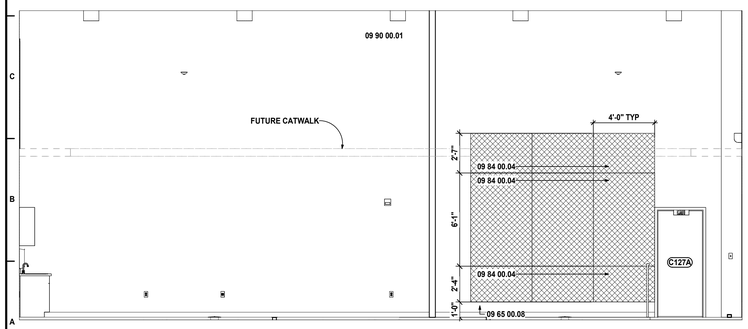
D 1 / A603 **MULTI-PURPOSE ROOM - EAST**
1/4" = 1'-0"



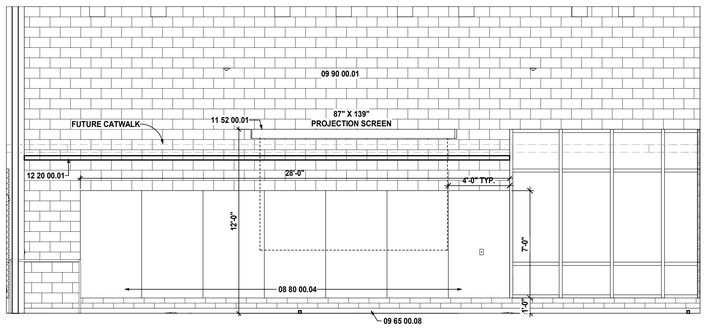
F 7 / A603 **CHOIR C146 - WEST**
1/4" = 1'-0"



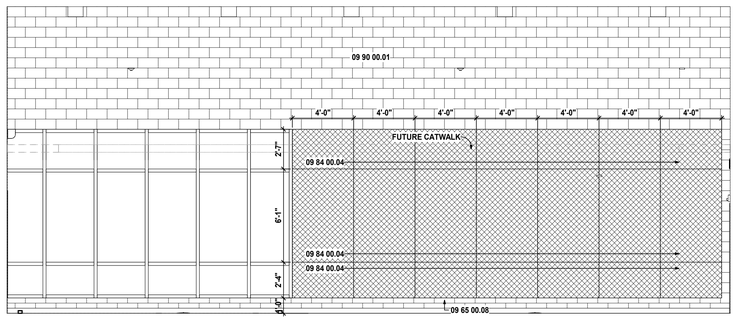
D 13 / A603 **CHOIR C146 - NORTH**
1/4" = 1'-0"



A 1 / A603 **MULTI-PURPOSE ROOM -SOUTH**
1/4" = 1'-0"



A 7 / A603 **MULTI-PURPOSE ROOM - WEST**
1/4" = 1'-0"



A 13 / A603 **MULTI-PURPOSE ROOM -NORTH**
1/4" = 1'-0"

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

02 40 00.36	REMOVE SHELVING - SALVAGE FOR RE-INSTALLATION
04 20 00.07	8" CMU
06 10 00.01	3/4" PLYWOOD
06 10 00.05	1X WOOD BLOCKING / NAILER
06 10 00.06	FIRE-RETARDANT WOOD BLOCKING / NAILERS
06 10 00.08	3/4" VENEER PLYWOOD
06 20 00.01	1 X 4 HARDWOOD TRIM
06 20 00.04	INDUSTRIAL DUTY ADJUSTABLE BRACKETS - MATCH EXISTING
06 20 00.06	RELOCATE EXISTING SHELVING
06 20 00.07	HARDWOOD VENEER PLYWOOD WITH HARDWOOD EDGES
06 40 00.01	PLASTIC LAMINATE #1 - VERTICAL
06 40 00.02	PLASTIC LAMINATE #2 - HORIZONTAL COUNTERTOPS AND BACKSPASHES
06 40 00.03	PLASTIC LAMINATE MAILBOXES - PLASTIC LAMINATE #1
06 40 00.28	PLASTIC LAMINATE TALL CABINET 24" DEEP
06 40 00.32	DISPLAY CASE - SEE DETAIL
06 40 00.33	SHELF STANDARDS AND BRACKETS AT 4'-0" O.C.
08 80 00.04	MIRROR - SEE ELEVATIONS FOR SIZE
08 80 00.10	SLIDING GLASS DOOR AND TRACK SYSTEM - USE 1/4" TEMPERED GLASS
08 80 00.16	1/4" GLASS SHELVES
09 21 16.02	5/8" GYPSUM BOARD
09 21 16.03	3-5/8" STEEL STUDS
09 30 00.01	TILE-1 12X24 ADROCK
09 30 00.03	TILE-3 6X6 WHITE MATTE
09 30 00.04	TILE-4 6X6 WHITE GLOSSY
09 30 00.05	SCHLUTER TRIM; QUADEC
09 65 00.08	RUBBER BASE
09 72 00.02	VINYL WALL COVERING-2 (ACCENT RED)
09 84 00.03	ACOUSTICAL WALL PANEL FABRIC COVERED TYPE-2 (CHOIR)
09 84 00.04	ACOUSTICAL WALL PANEL FABRIC COVERED TYPE-3 (CHOIR AND MULTI-PURPOSE RM)
09 90 00.01	PAINT-1 (FIELD WHITE)
09 90 00.10	PAINT - SEE ROOM FINISH SCHEDULE
09 90 00.11	PAINT-9 (ORANGE)
10 11 00.01	MARKER BOARD - TYPE 1
10 11 00.03	TACK BOARD
10 11 00.04	MONITOR AND MOUNTING BRACKET (O.F.C.I. TYP.)
10 28 00.04	TOILET PAPER HOLDER - OFCI (TYP.)
11 52 00.01	PROJECTION SCREEN
12 20 00.01	CURTAIN TRACK AND CURTAIN

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES
- SEE SHEET A000 FOR TYPICAL MOUNTING HEIGHTS

-PROVIDE BACKSPLASH AT ALL COUNTERTOPS THAT DO NOT HAVE A TILED BACKSPLASH

KEYPLAN

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

INTERIOR ELEVATIONS

A603

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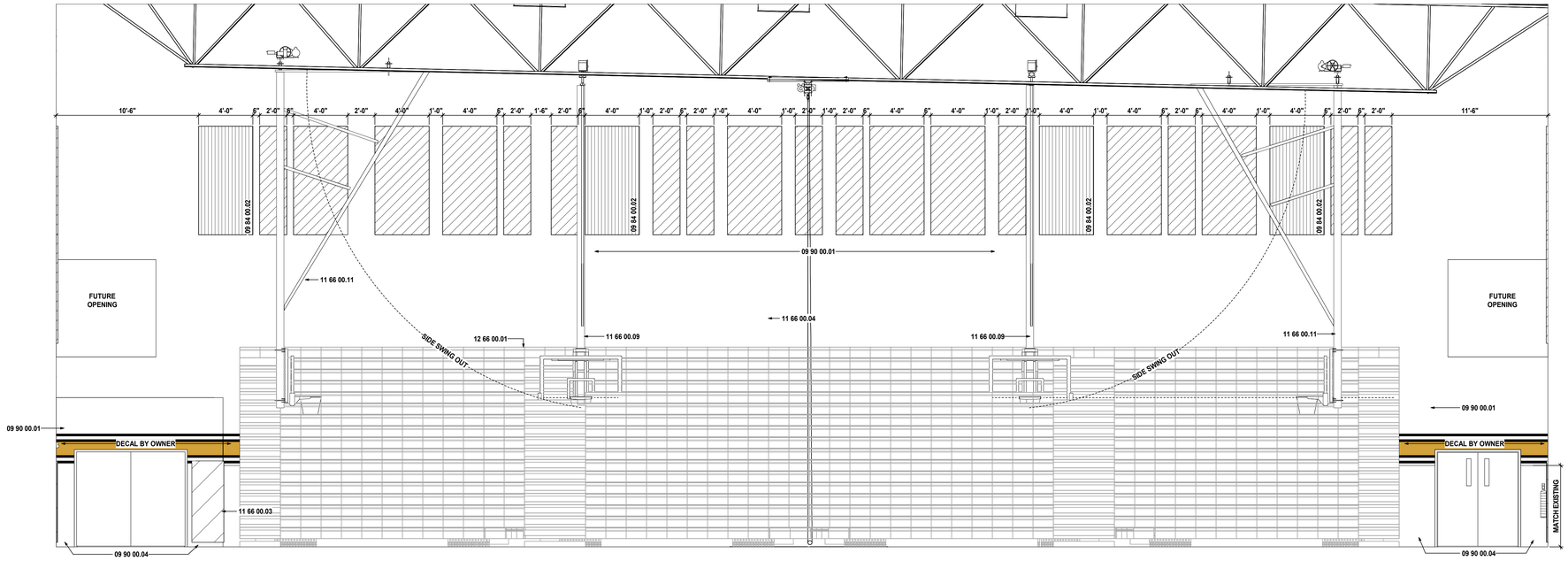
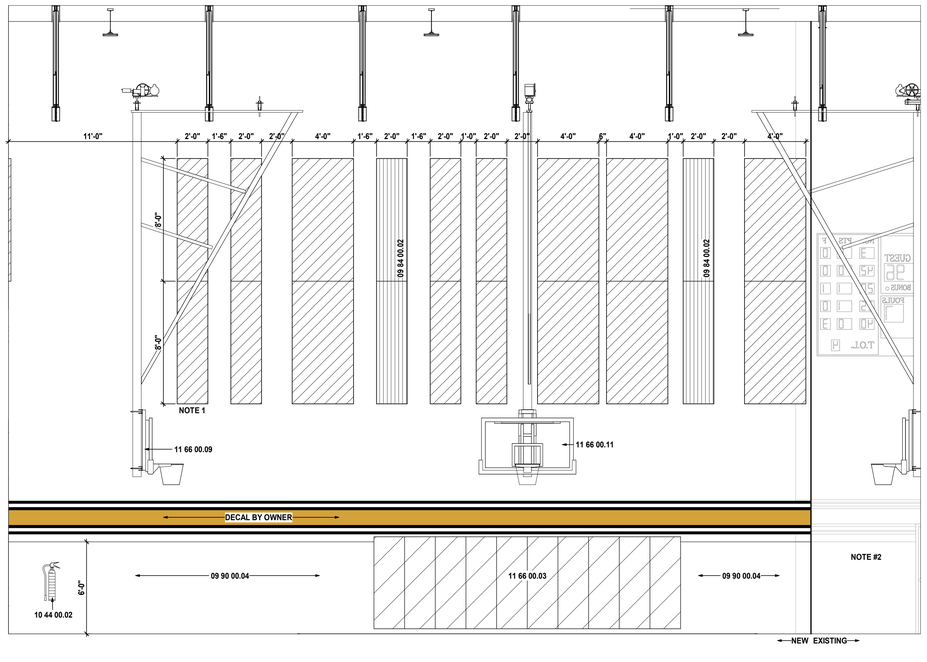
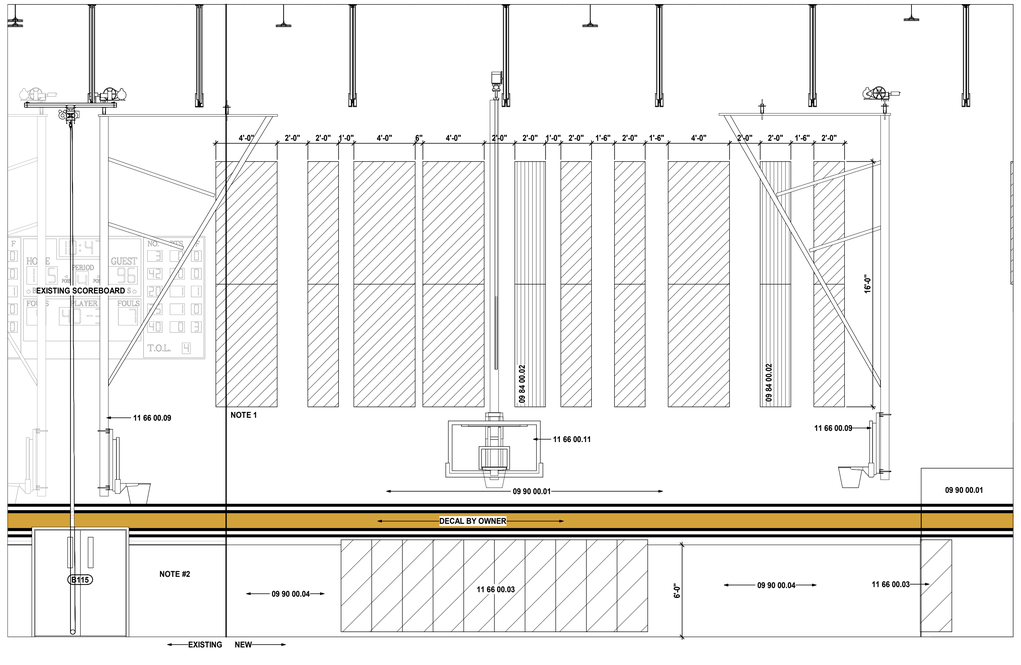


G 4 / A604 **MAIN GYM - NORTH**
1/4" = 1'-0"



A 1 / A604 **MAIN GYM - EAST**
1/4" = 1'-0"



A 10 / A604 **MAIN GYM - WEST**
1/4" = 1'-0"

ADDITION & REMODEL HORACE HIGH SCHOOL

WEST FARGO PUBLIC SCHOOLS

HORACE, NORTH DAKOTA

KEYNOTES

09 84 00.02	ACOUSTICAL WALL PANEL FABRIC COVERED TYPE-1 (COLOR 2- DARK GREY)
09 90 00.01	PAINT-1 (FIELD WHITE)
09 90 00.04	PAINT-4 (CITYSCAPE)
10 44 00.02	FIRE EXTINGUESHER ON BRACKET
11 66 00.03	ATHLETIC WALL PADDING
11 66 00.04	MORTORIZED DIVIDER CURTIAN
11 66 00.09	BASKETBALL GOAL (FRONT BRACED - SIDE SWING)
11 66 00.11	BASKETBALL GOAL (FRONT BRACED - FRONT SWING)
12 66 00.01	TELESCOPING MOTORIZED BLEACHERS - PROVIDE ACCESSIBLE SPACES AS NEEDED TO MEET CODE

#	DATE	DESCRIPTION
1	02/27/26	ADDENDUM #1

GENERAL NOTES

NOTE 1: ALL GYM ACCOUSTICAL PANELS ARE TO BE 09 84 00.01 (LIGHT GRAY) UNLESS OTHERWISE NOTED

NOTE 2: AT ALL EXISTING PRECAST JOINTS (EVERY 10'), REMOVE EXISTING CAULKING DOWN 10' FROM DECK AND REINSTALL NEW CAULKING. PAINT TO MATCH EXISTING WALL.

09 84 00.01

09 84 00.02

1

KEYPLAN

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of North Dakota.

Dated: FEBRUARY 2026 Regt. No. 1970

Signed:

YHR PARTNERS
ARCHITECTURE | PLANNING
420 Main Avenue
Moorhead, Minnesota 56560
Telephone: (218)233-4422

PROJECT NUMBER: 202501-9

CONSTRUCTION DOCUMENTS

INTERIOR ELEVATIONS - MAIN GYM

A604

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OBERNEL engineering

Submittal Review

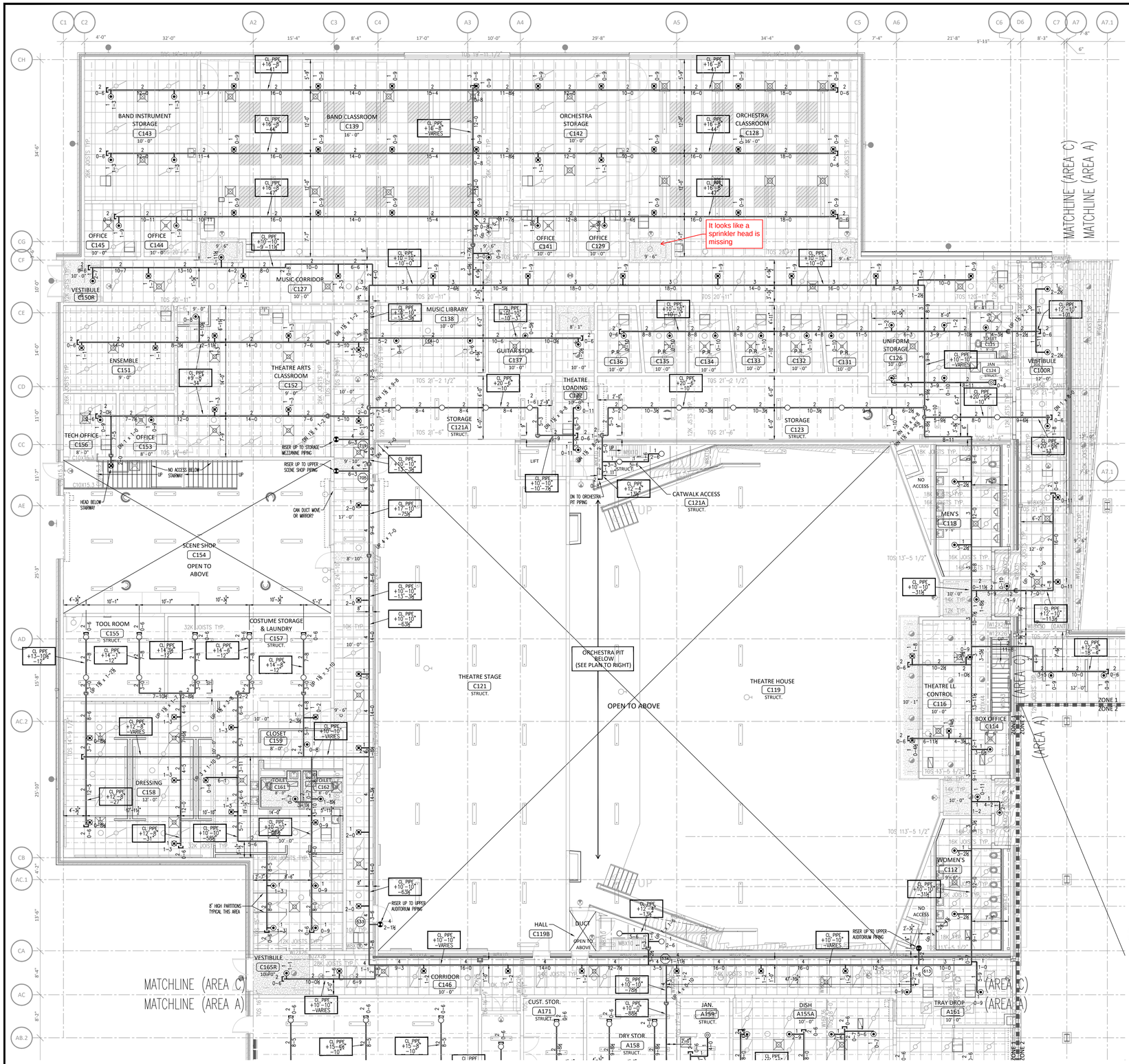
- ☐ No Exceptions Noted
- ☑ Make Corrections Noted
- ☐ Revise & Resubmit
- ☐ Rejected

OBERNEL engineering

Submittal review is to verify general conformance with the design concept of the Project and substantial compliance with the information provided in the Contract Documents. This review does not relieve the Contractor or suppliers of their responsibility to perform in accordance with the contract, the Drawings and Specifications, nor does it constitute an approval of any deviation from the Drawings and Specifications.

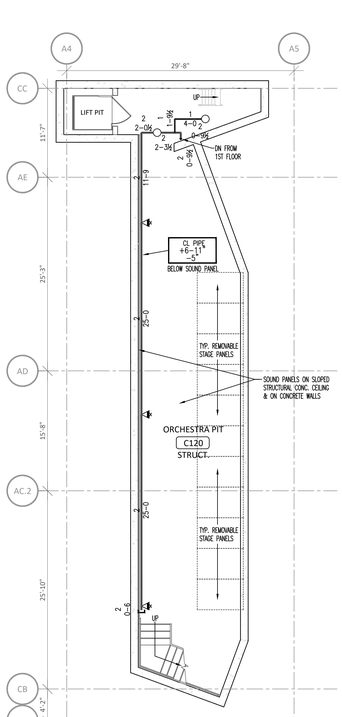
BY Phil Keller **DATE** 8/20/2020

1. Contractor should try to use the chase areas laid out during design for the sprinkler risers going to 2nd floor.
2. Verify all pipe sizes and quantity of sprinkler heads and parts.
3. Contractor shall install the fire suppression system to meet NFPA requirements.
4. Contractor to verify that sprinkler heads didn't get missed on some hard lid ceilings pointed out in the drawings.
5. Contractor shall sprinkle the elevator shafts per NFPA.



1 FIRST FLOOR PLAN (AREA C)

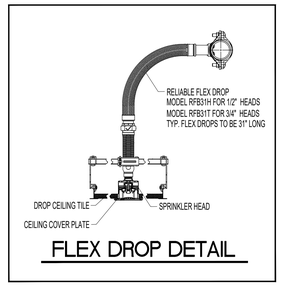
SCALE: 1/8" = 1'-0"



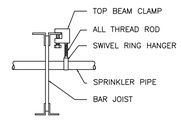
2 ORCHESTRA PIT (AREA C)

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

NORTH

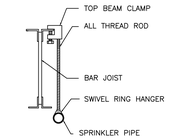


FLEX DROP DETAIL



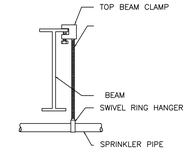
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



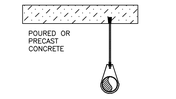
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



TYP. PIPE HANGER DETAIL

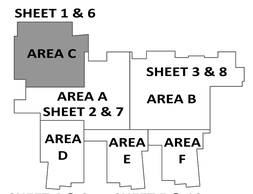
– NOT TO SCALE



TYPICAL HANGER 1"–4" PIPE

NO SCALE

1 -- CONCRETE SHORT DROP–IN ANCHOR (3/8" – 1" THROUGH 4" PIPE) (INSTALL WITH DROP–IN ANCHOR SETTING TOOL)
1 -- ALL THREAD ROD
1 -- ADJUSTABLE HANGER RING
"UL LISTED & FM APPROVED HANGER"



KEY PLAN

TRUE NORTH PLAN NORTH

CERTIFICATION: THESE PLANS AND ANY HYDRAULIC CALCUATIONS WERE PREPARED BY ME OR UNDER MY SUPERVISION. I AM CURRENTLY A N.I.C.E.T. LEVEL 4 SENIOR ENGINEERING TECHNICIAN IN THE FIELD OF FIRE PROTECTION ENGINEERING TECHNOLOGY / AUTOMATIC SPRINKLER SYSTEM LAYOUT.
CERTIFICATION NO. 70490 David P. Clark

SPRINKLER DESIGN NOTES

1. HORACE HIGH SCHOOL PROJECT IS NEW CONSTRUCTION, WITH A COMPLETE FIRE SPRINKLER SYSTEM DESIGNED TO NFPA 13 2010.
2. 4 NEW WET SYSTEM ZONES TO PROTECT ENTIRE BUILDING.
3. SEE SPECIAL HEAD SPACING BLOCKS FOR EXTENDED COVERAGE HEAD SPACING LIMITATIONS.
4. QR 5.6 CHROME PENDENTS IN OFFICE AREA MAX COVERAGE 15'X15' 7'–6" MAX OFF WALLS
5. QR 5.6 BRASS UPRIGHTS IN ORDINARY HAZARD ROOMS MAX COVERAGE 130 SQ. FT. & 7'–6" MAX OFF WALLS.
6. GROOVED SPRINKLER PIPING TO BE BLACK SCHEDULE 10. THREADED PIPE TO BE BLACK SCHEDULE 30.
6. GROOVED FITTINGS TO BE SHORT–TURN CAST IRON, GROOVED COUPLINGS TO BE VIC #009 OR EQUAL, THREADED FITTINGS TO BE BLACK DUCTILE IRON.
7. INSTALL HANGERS PER NFPA 13.
8. ALL CONTROL VALVES TO HAVE TAMPER SWITCHES
9. HEADS TO BE CENTERED IN CEILING TILES TYP. (UTILIZING FLEX–DROPS).
10. BRASS UPRIGHTS TO BE INSTALLED WITHIN 1" TO 12" WITHIN ROOF DECK, UNLESS IT IS AN AREA OF OBSTRUCTED CONSTRUCTION (22" MAX. DN FROM DECK).

HANGER NOTES

UP TO 4" PIPE USE 3/8" DIAMETER ROD
5", 6", AND 8" PIPE USE 1/2" DIAMETER ROD
10" AND 12" PIPE USE 5/8" DIAMETER ROD
ALL PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH NFPA 13 GUIDELINES

PIPE TYPE	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index

No.	Description
1	First Floor – Area C
2	First Floor – Area A
3	First Floor – Area B
4	First Floor – Area D, Site Plan
5	First Floor – Areas E & F
6	Second Floor – Area C
7	Second Floor – Area A
8	Second Floor – Area B
9	Second Floor – Area D
10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 160 — Total This Job: ----

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155'	BRASS	28
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155'	BRASS	1
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155'	CHROME	55
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155'	CHROME	72
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155'	BRASS	1
◁▷	RELIABLE DH80 QR EC RECESSED HSW	RA0362	8.0	3/4"	155'	CHROME	3

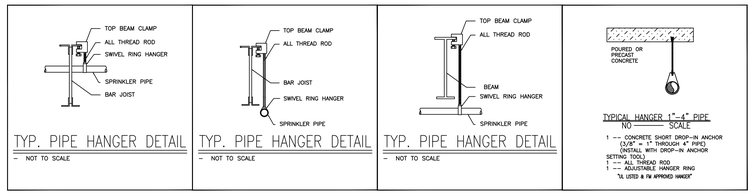
Drawing Title: 1ST FL AREA C
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020 (SUBMITTAL)
Approval By: STATE, A & E

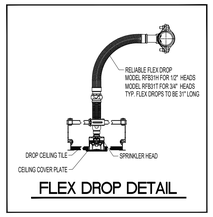
Revisions	Date

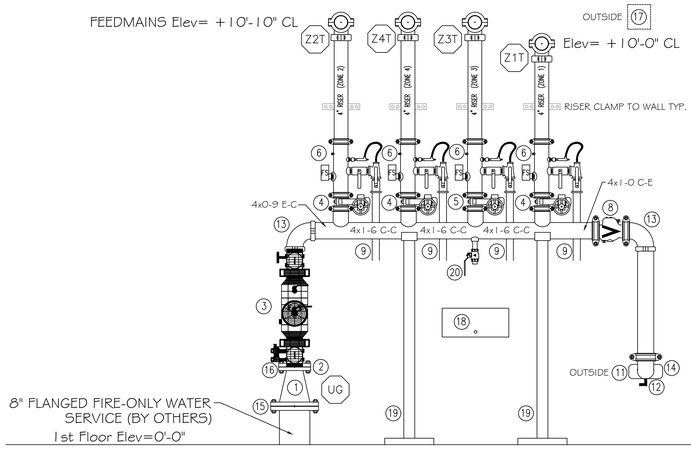
Job: **HORACE HIGH SCHOOL**
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1801 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #C065

SHEET 1 OF 10





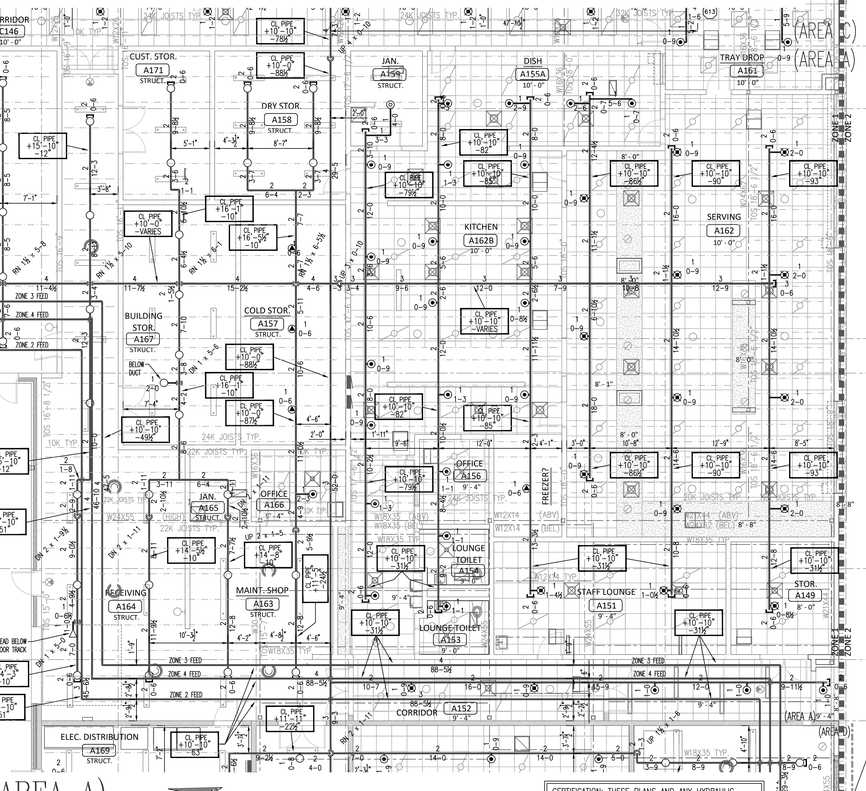


VALVE ASSEMBLY ITEM LIST

1. 8"x4" FLANGED CONC. REDUCER
2. 4" FLANGE x GROOVE ADAPTER
3. 4" DERRINGER MODEL 20 DOUBLE-CHECK ASSEMBLY W/ GRV. BFV & TAMPERS
4. 4" GRV BUTTERFLY VALVE W/TAMPER
5. NOT USED
6. 4" RISER MANIFOLD W/1/2" P.R.V.
7. NOT USED
8. 4" GRV CHECK VALVE
9. 2" DRAIN (TO SPILL OUTSIDE)
10. NOT USED
11. 4"X2½"X2½" BRASS F.D.C. W/PLATE
12. 1/2" BALL DRIP (OPEN TO FLOOR)
13. 4" GRV SHORT-TURN 90 ELL
14. 4x1 GRV DRAIN 90 ELL
15. 8" FLANGED BOLT PACK
16. 4" FLANGED BOLT PACK
17. HORN & STROBE @ 10'-0" AFF
18. SPARE HEAD CABINET (12 HDS)
19. 2" x 4" DIA. PIPE STANDS
20. 1" PLUGGED BALL VALVE AUX. DRAIN

2 WATER SERVICE & RISER DETAIL

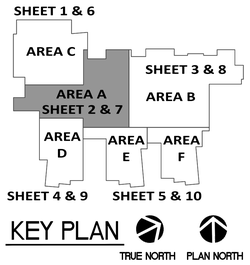
SCALE: 1/8" = 1'-0"



1 FIRST FLOOR PLAN (AREA A)

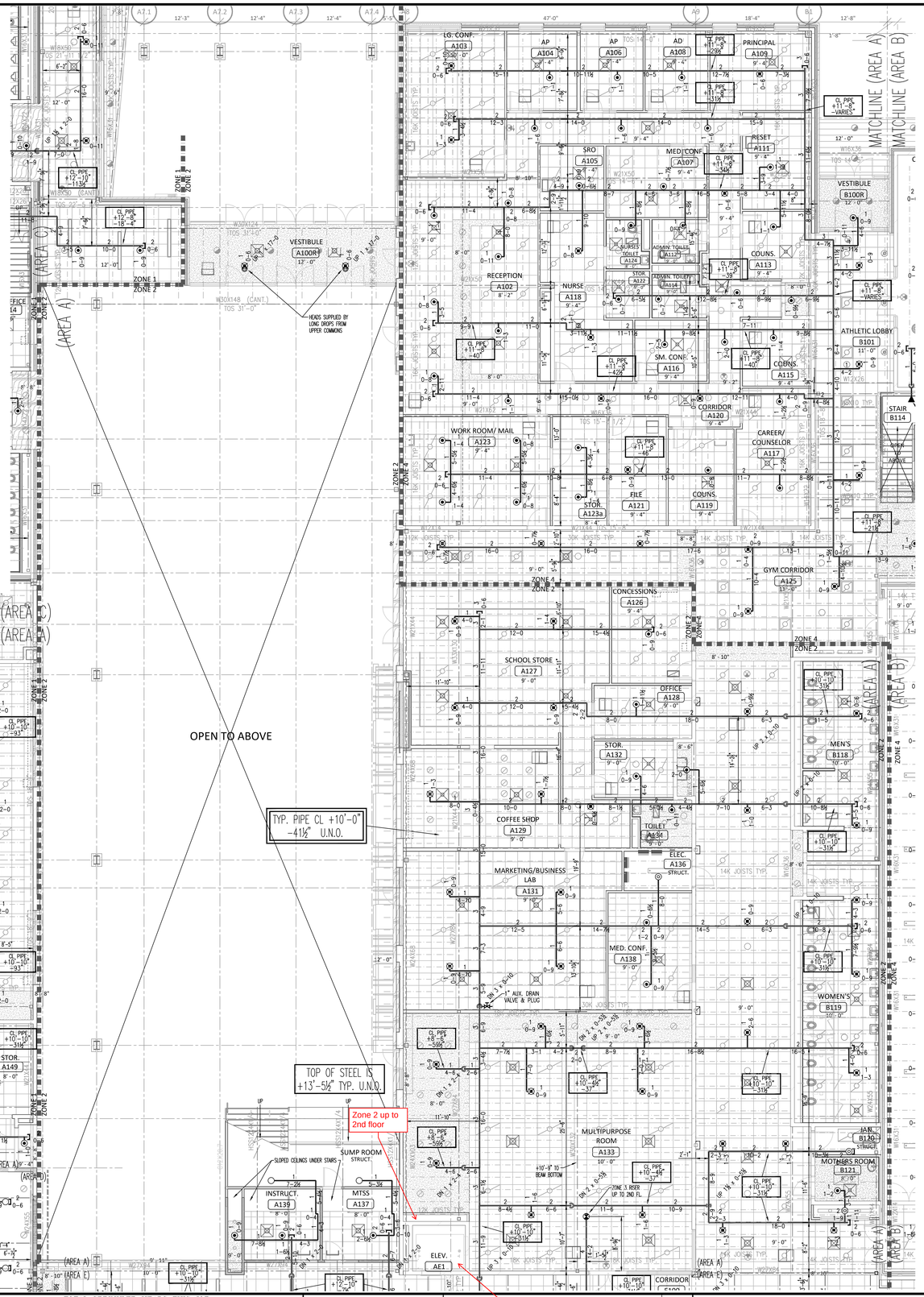
SCALE: 1/8" = 1'-0"

NORTH



KEY PLAN

TRUE NORTH PLAN NORTH



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SPRINKLER DESIGN NOTES

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5. QR 5.6 BRASS UPRIGHTS IN ORDINARY HAZARD ROOMS MAX COVERAGE 130 SQ. FT. & 7'–6" MAX OFF WALLS.
6. GROOVED SPRINKLER PIPING TO BE BLACK SCHEDULE 10. THREADED PIPE TO BE BLACK SCHEDULE 30.
6. GROOVED FITTINGS TO BE SHORT–TURN CAST IRON, GROOVED COUPLINGS TO BE VIC #009 OR EQUAL, THREADED FITTINGS TO BE BLACK DUCTILE IRON.
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PIPE TYPE	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index

No.	Description
1	First Floor – Area C
2	First Floor – Area A
3	First Floor – Area B
4	First Floor – Area D, Site Plan
5	First Floor – Areas E & F
6	Second Floor – Area C
7	Second Floor – Area A
8	Second Floor – Area B
9	Second Floor – Area D
10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 192 Total This Job: ---

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	43
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	72
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	55
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	68
▲	RELIABLE F3QR56 QR DRY PENDENT	R5714	5.6	1/2"	200°	CHROME	4
◁	RELIABLE F1FR56 QR EXPOSED HSW	RA1435	5.6	1/2"	155°	BRASS	1

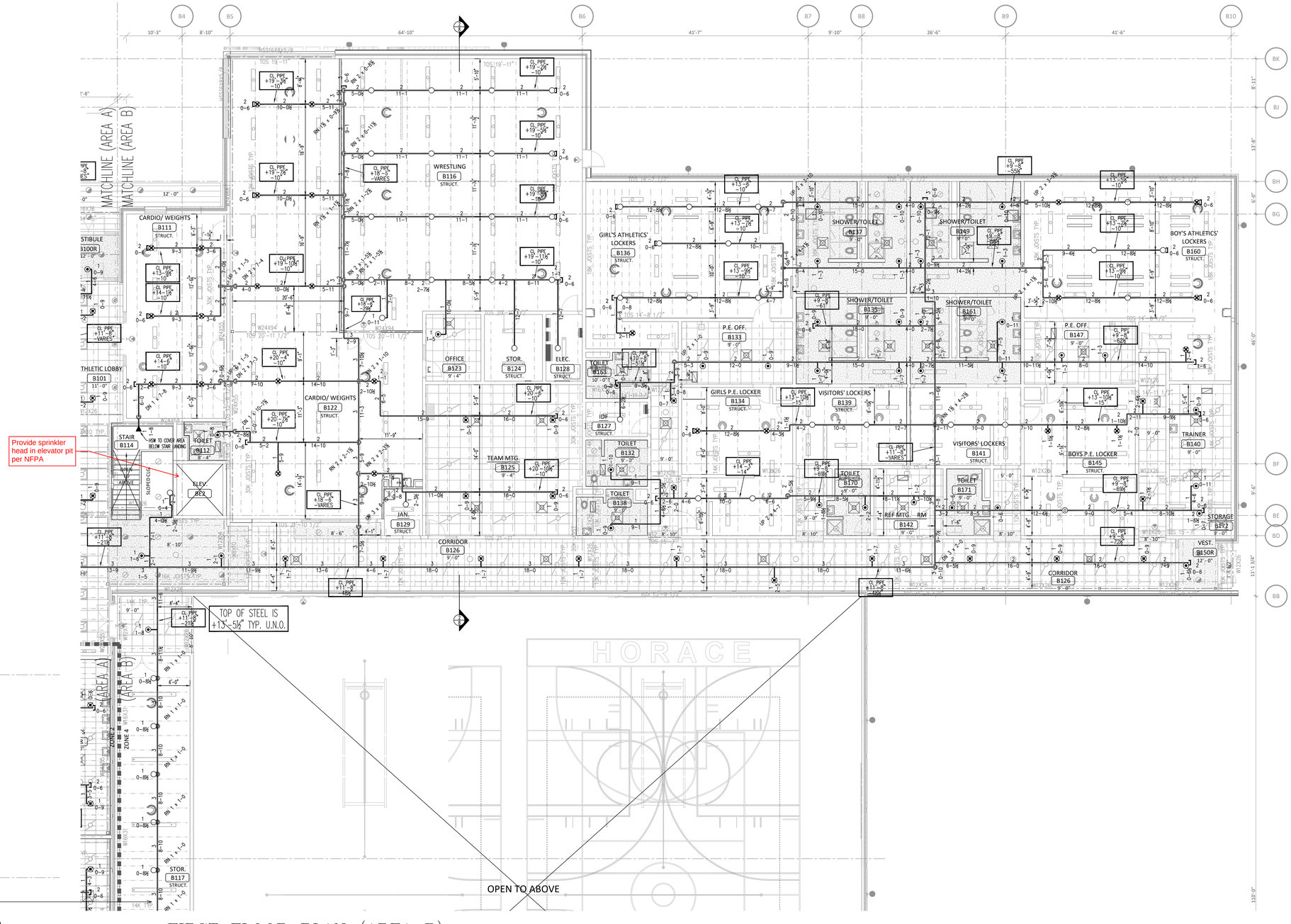
Drawing Title	1ST FL AREA A
Contract No.	A20–04
Drawn By:	DAVE CLARK
Scale:	1/8" = 1'–0
Date:	8–17–2020 (SUBMITTAL)
Approval By:	STATE, A & E

Revisions	Date

Job: **HORACE HIGH SCHOOL**
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1801 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #C065

SHEET 2 OF 10



2 FIRST FLOOR PLAN (AREA B)

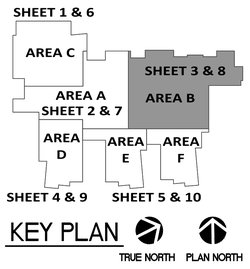
SCALE: 1/8" = 1'-0"

NORTH

1 FIRST FLOOR PLAN (AREA B – SOUTH)

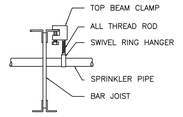
SCALE: 1/8" = 1'-0"

NORTH



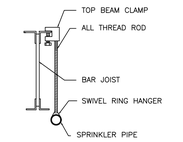
KEY PLAN

TRUE NORTH PLAN NORTH



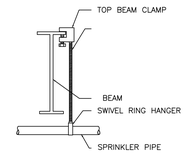
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



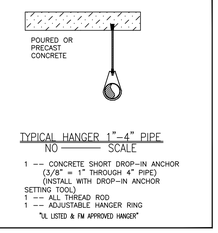
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



TYP. PIPE HANGER DETAIL

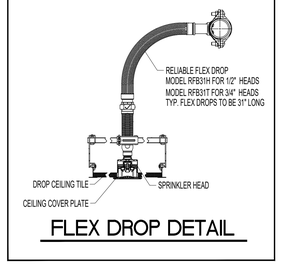
– NOT TO SCALE



TYPICAL HANGER 1"–4" PIPE

NO SCALE

1 -- CONCRETE SHORT DROP–IN ANCHOR (3/8" = 1" THROUGH 4" PIPE) (INSTALL WITH DROP–IN ANCHOR SETTING TOOL)
1 -- ALL THREAD ROD
1 -- ADJUSTABLE HANGER RING
"UL LISTED & FM APPROVED HANGER"



FLEX DROP DETAIL

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CERTIFICATION NO. 70490 David P. Clark

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THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

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8	Second Floor – Area B
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10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 135 Total This Job: ----

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	50
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	2
⦿	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	38
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	18
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	26
◀	RELIABLE F1FR56 QR RECESSED HSW	RA1435	5.6	1/2"	155°	CHROME	1

Drawing Title: 1ST FL AREA B
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020 (SUBMITTAL)
Approval By: STATE, A & E

Revisions	Date

Job: **HORACE HIGH SCHOOL**
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Contractor:
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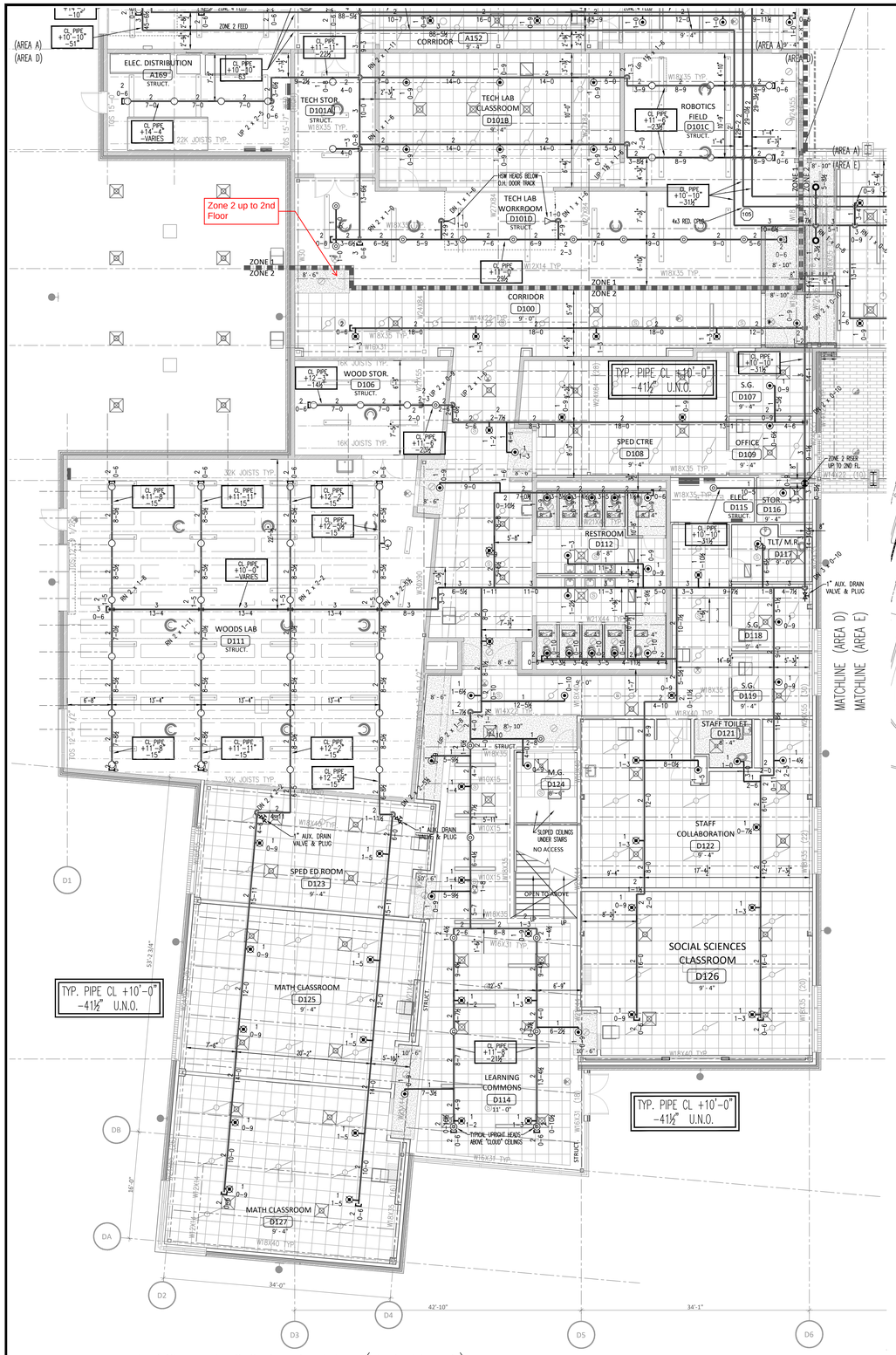
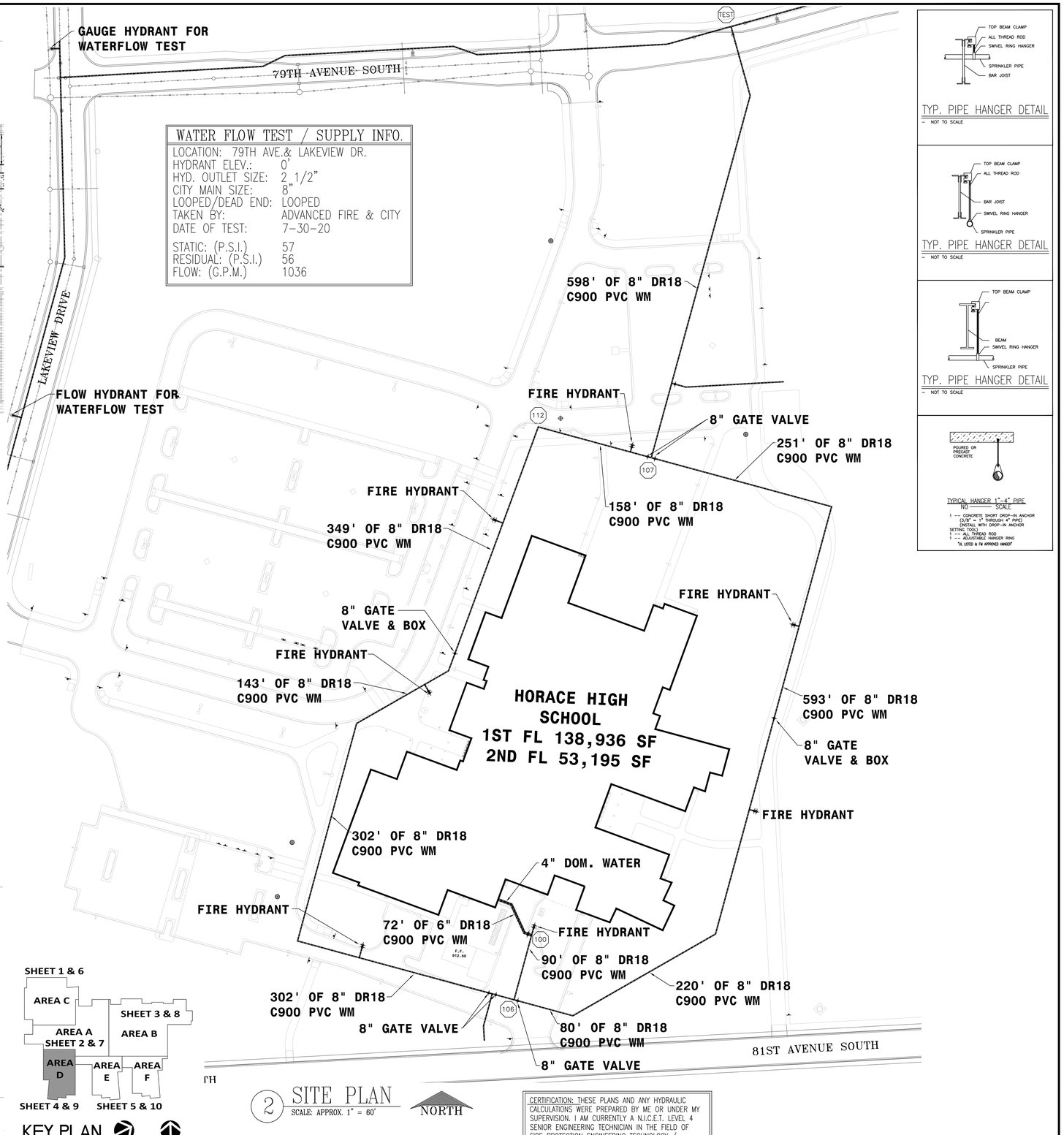
SHEET 3 OF 10



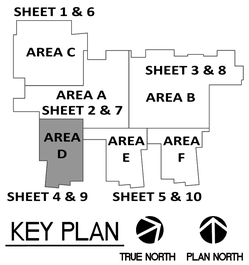
1 FIRST FLOOR PLAN (AREA D)
SCALE: 1/8" = 1'-0"



WATER FLOW TEST / SUPPLY INFO.	
LOCATION:	79TH AVE.& LAKEVIEW DR.
HYDRANT ELEV.:	0'
HYD. OUTLET SIZE:	2 1/2"
CITY MAIN SIZE:	8"
LOOPED/DEAD END:	LOOPED
TAKEN BY:	ADVANCED FIRE & CITY
DATE OF TEST:	7-30-20
STATIC: (P.S.I.)	57
RESIDUAL: (P.S.I.)	56
FLOW: (G.P.M.)	1036

2 SITE PLAN
SCALE: APPROX. 1" = 60'

NORTH



KEY PLAN
TRUE NORTH PLAN NORTH

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THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

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TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 146 Total This Job: 1198

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	22
⊘	RELIABLE F1FR QR UPRIGHT	RA1425	5.6	1/2"	286°	BRASS	6
◎	RELIABLE F1FR QR BR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	14
⊗	RELIABLE F1FR QR EXPOSED PENDENT	RA1414	5.6	1/2"	155°	CHROME	–
●	RELIABLE F3QR56 QR DRY PENDENT	R5714	5.6	1/2"	200°	CHROME	6
⊗	RELIABLE JL112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	12
⊘	RELIABLE JL112 QR EC UPRT ON SPRIG	RA7326	11.2	3/4"	155°	BRASS	–
●	RELIABLE G5–56 QR CONCEALED PEND	RA3415	5.6	1/2"	155°	WHITE	54
Ⓐ	RELIABLE G4XLO QR EC CONCEALED PD	R7146	11.2	3/4"	155°	WHITE	32

Drawing Title	1ST FL AREA D
Contract No.	A20–??
Drawn By:	DAVE CLARK
Scale:	1/8" = 1'–0
Date:	8–17–2020 (SUBMITAL)
Approval By:	STATE, A & E

Revisions	Date

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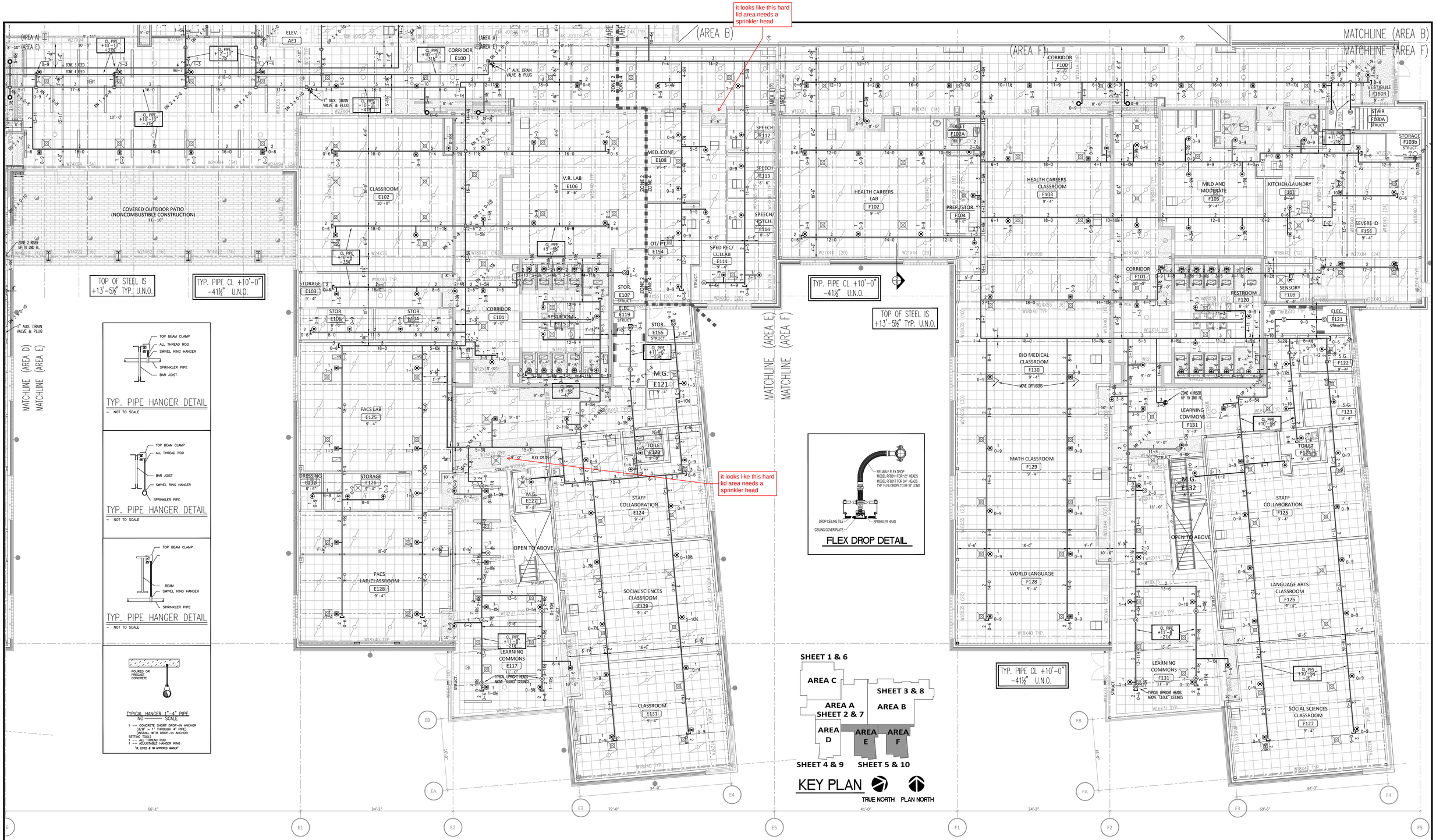
SHEET 4 OF 10



1 FIRST FLOOR PLAN (AREAS E & F)

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

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THREADED LIGHTWALL STEEL PIPE	NA	12'-0	12'-0	12'-0	12'-0	12'-0	12'-0	NA	NA	NA	NA
COPPER TUBE	8'-0	8'-0	10'-0	10'-0	12'-0	12'-0	12'-0	15'-0	15'-0	15'-0	15'-0
CPVC PIPE	5'-6	6'-0	6'-6	7'-0	8'-0	9'-0	10'-0	NA	NA	NA	NA

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Total This Sheet: 225 Total This Job: ----

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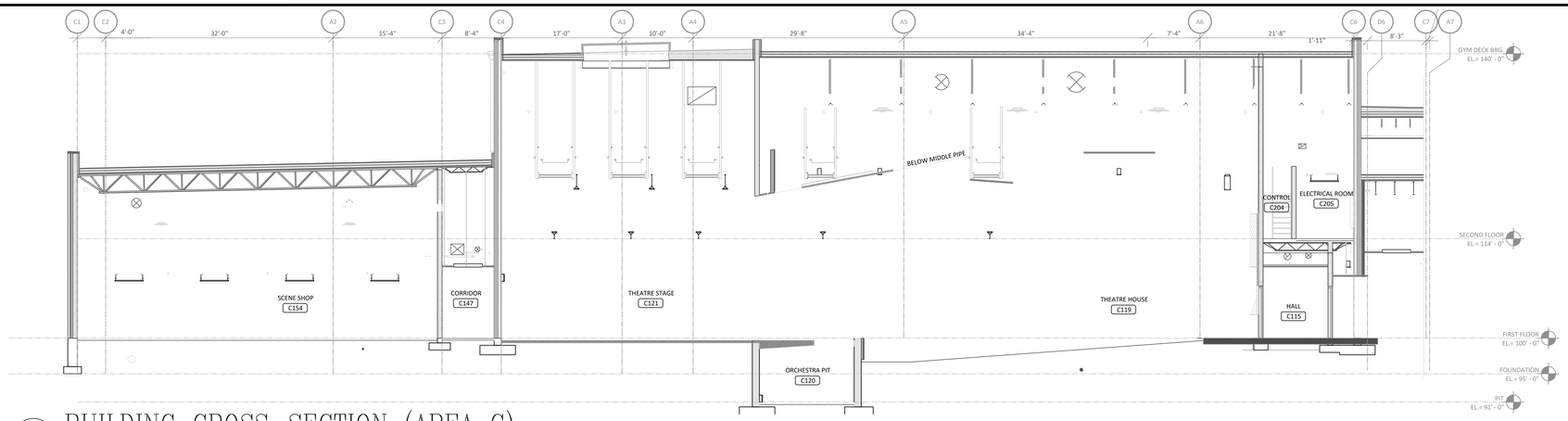
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	80
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	118
○	RELIABLE F1FR56 QR EXPOSED PEND.	RA1414	5.6	1/2"	155°	CHROME	4

Drawing Title: 1ST FL AREAS E & F
Contract No. A20-04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'-0
Date: 8-17-2020 (SUBMITTAL)
Approval By: STATE, A & E

Revisions	Date

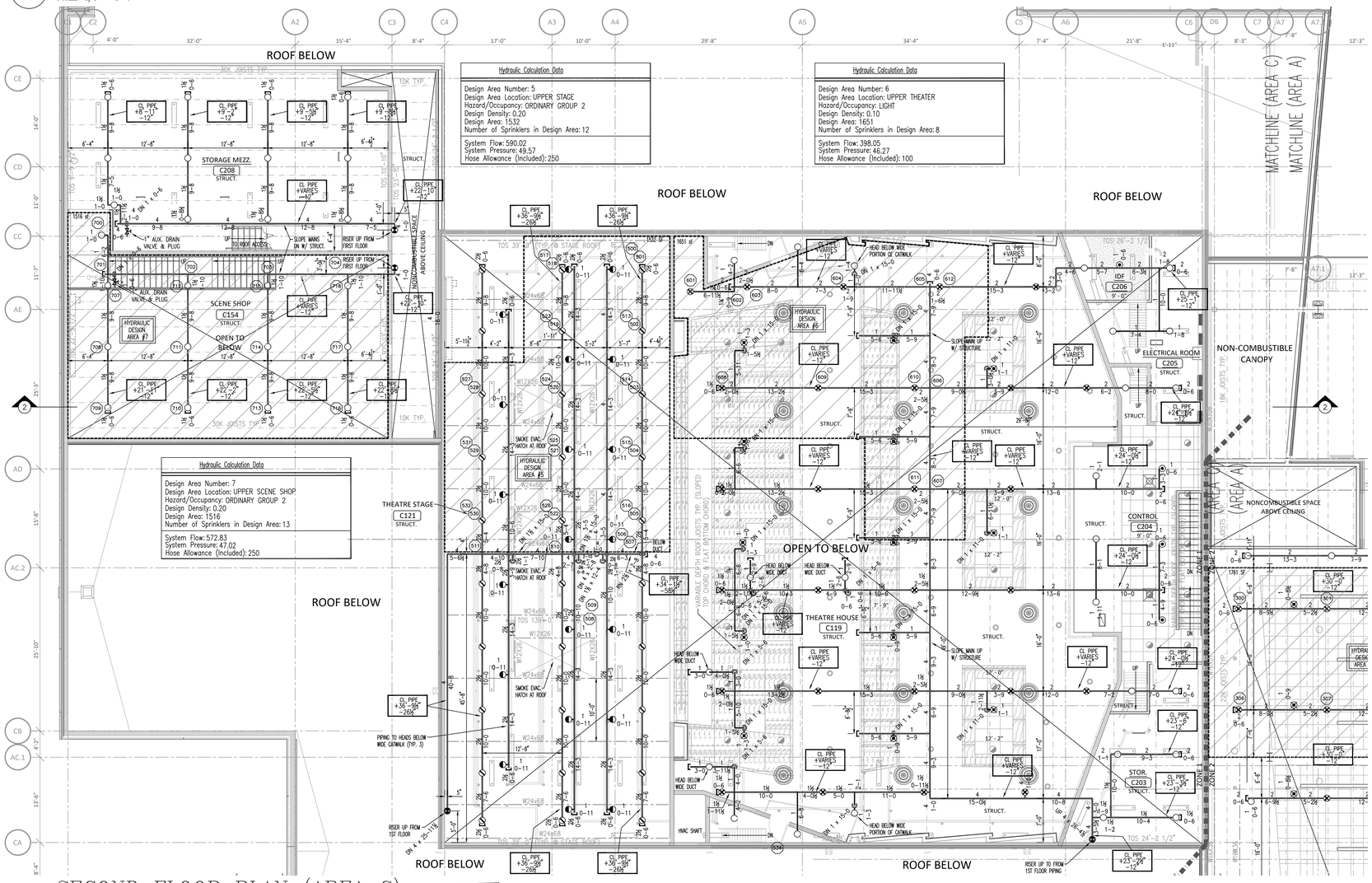
Job: **HORACE HIGH SCHOOL WEST FARGO SCHOOL DIST.**
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1601 N. 43RD STREET SUITE B
FARGO, ND 58102
1-701-298-9804 FAX 1-701-298-9804
MN STATE LICENSE #C065



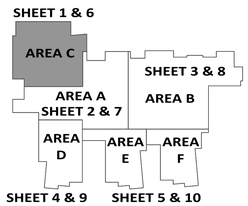
2 BUILDING CROSS-SECTION (AREA C)

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

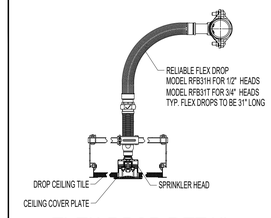


1 SECOND FLOOR PLAN (AREA C)

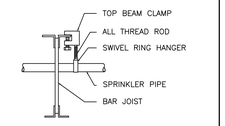
SCALE: 1/8" = 1'-0"



KEY PLAN — TRUE NORTH — PLAN NORTH

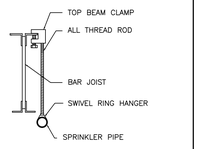


FLEX DROP DETAIL



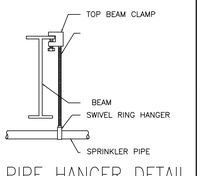
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



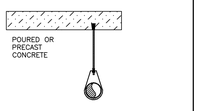
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



TYP. PIPE HANGER DETAIL

– NOT TO SCALE



TYPICAL HANGER 1"–4" PIPE
NO SCALE

1 — CONCRETE SHORT DROP-IN ANCHOR (3/8" = 1" THROUGH 4" PIPE) (INSTALL WITH DROP-IN ANCHOR SETTING TOOL)
1 — ALL THREAD ROD
1 — ADJUSTABLE HANGER RING
"UL LISTED & FM APPROVED HANGER"

CERTIFICATION: THESE PLANS AND ANY HYDRAULIC CALCULATIONS WERE PREPARED BY ME OR UNDER MY SUPERVISION. I AM CURRENTLY A N.I.C.E.T. LEVEL 4 SENIOR ENGINEERING TECHNICIAN IN THE FIELD OF FIRE PROTECTION ENGINEERING TECHNOLOGY / AUTOMATIC SPRINKLER SYSTEM LAYOUT.
CERTIFICATION NO. 70490 David P. Clark

SPRINKLER DESIGN NOTES

1. HORACE HIGH SCHOOL PROJECT IS NEW CONSTRUCTION, WITH A COMPLETE FIRE SPRINKLER SYSTEM DESIGNED TO NFPA 13 2010.
2. 4 NEW WET SYSTEM ZONES TO PROTECT ENTIRE BUILDING.
3. SEE SPECIAL HEAD SPACING BLOCKS FOR EXTENDED COVERAGE HEAD SPACING LIMITATIONS.
4. QR 5.6 CHROME PENDENTS IN OFFICE AREA MAX COVERAGE 15'X15' 7'–6" MAX OFF WALLS
5. QR 5.6 BRASS UPRIGHTS IN ORDINARY HAZARD ROOMS MAX COVERAGE 130 SQ. FT. & 7'–6" MAX OFF WALLS.
6. GROOVED SPRINKLER PIPING TO BE BLACK SCHEDULE 10. THREADED PIPE TO BE BLACK SCHEDULE 30.
6. GROOVED FITTINGS TO BE SHORT–TURN CAST IRON, GROOVED COUPLINGS TO BE VIC #009 OR EQUAL, THREADED FITTINGS TO BE BLACK DUCTILE IRON.
7. INSTALL HANGERS PER NFPA 13.
8. ALL CONTROL VALVES TO HAVE TAMPER SWITCHES
9. HEADS TO BE CENTERED IN CEILING TILES TYP. (UTILIZING FLEX–DROPS).
10. BRASS UPRIGHTS TO BE INSTALLED WITHIN 1" TO 12" WITHIN ROOF DECK, UNLESS IT IS AN AREA OF OBSTRUCTED CONSTRUCTION (22" MAX. DN FROM DECK).

HANGER NOTES

UP TO 4" PIPE USE 3/8" DIAMETER ROD
5", 6", AND 8" PIPE USE 1/2" DIAMETER ROD
10" AND 12" PIPE USE 5/8" DIAMETER ROD
ALL PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH NFPA 13 GUIDELINES

PIPE TYPE	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index

No.	Description
1	First Floor – Area C
2	First Floor – Area A
3	First Floor – Area B
4	First Floor – Area D, Site Plan
5	First Floor – Areas E & F
6	Second Floor – Area C
7	Second Floor – Area A
8	Second Floor – Area B
9	Second Floor – Area D
10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 144 — Total This Job: ----

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	50
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	–
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	4
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	13
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	27
◐	RELIABLE F1FRLO QR UPRIGHT	R3622	8.0	3/4"	155°	BRASS	20
⊘	RELIABLE F1FRLO QR URPT ON SPRIG	R3622	8.0	3/4"	155°	BRASS	30

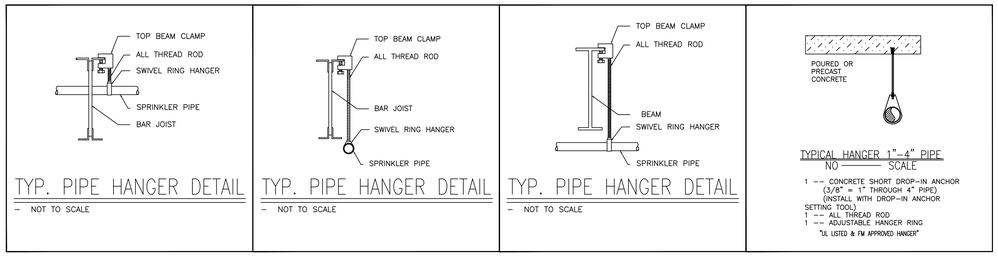
Drawing Title: 2ND FL AREA C
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020 (SUBMITTAL)
Approval By: STATE, A & E

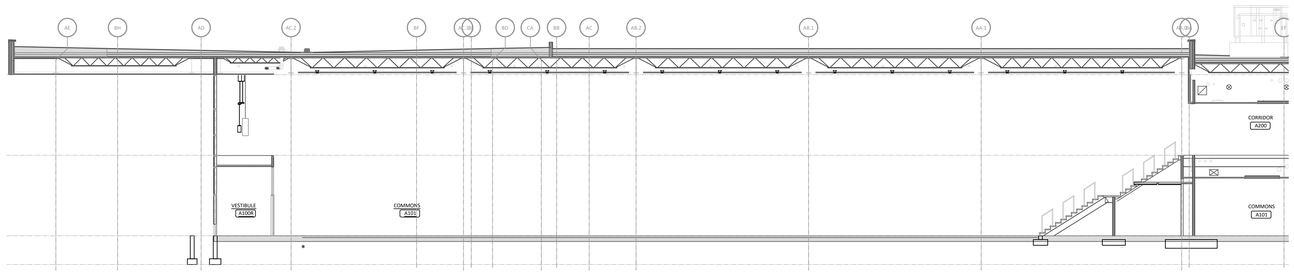
Revisions	Date

Job: **HORACE HIGH SCHOOL**
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1801 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #CO65

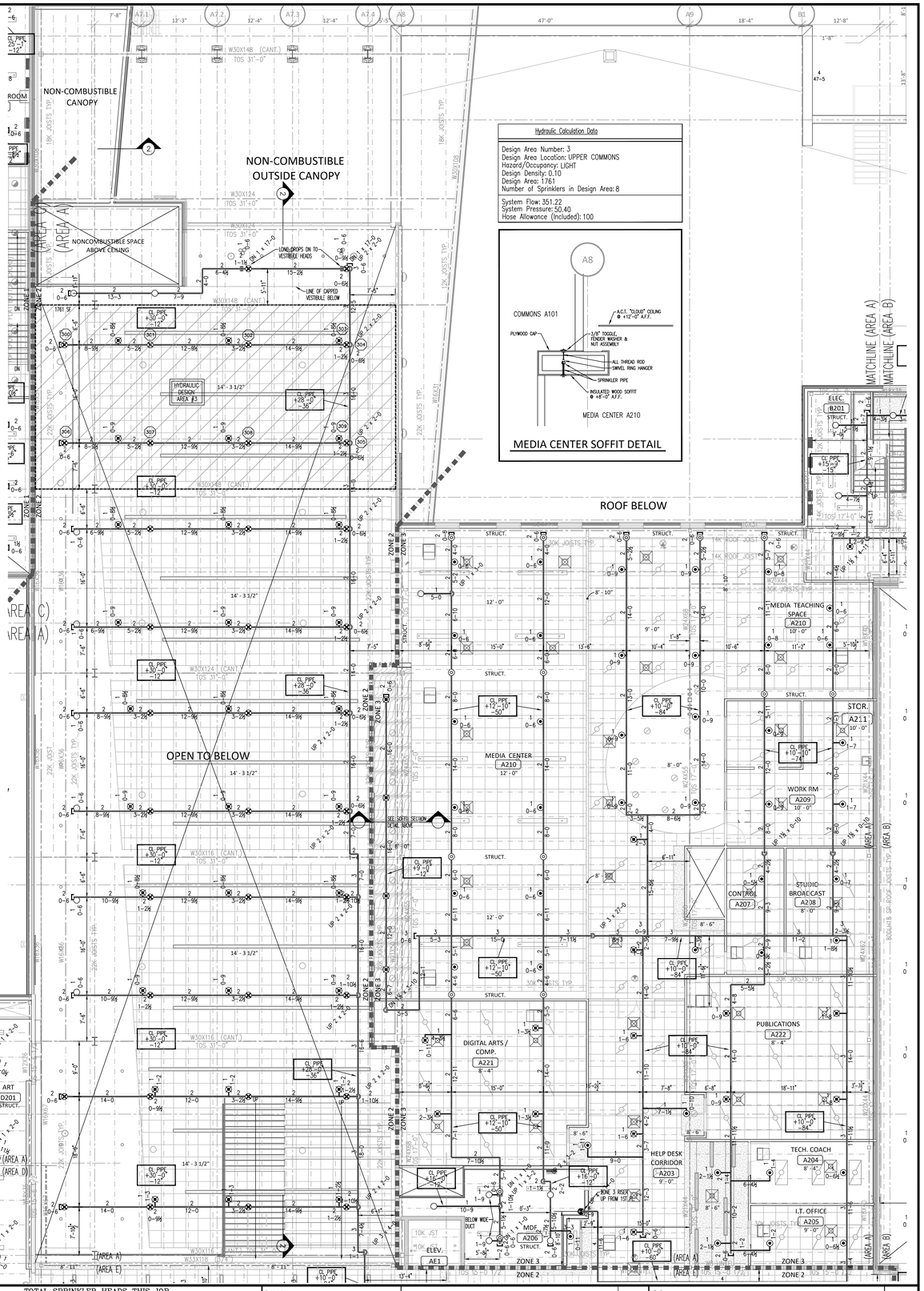
SHEET 6 OF 10





2 BUILDING CROSS-SECTION (COMMONS)

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

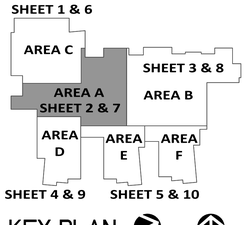


Hydraulic Calculation Data

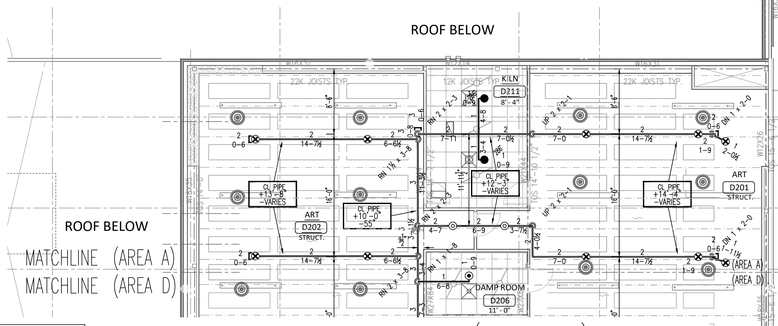
Design Area Number: 3
Design Area Location: UPPER COMMONS
Hazard/Occupancy: LIGHT
Design Density: 0.10
Design Area: 1761
Number of Sprinklers in Design Area: 8

System Flow: 351.22
System Pressure: 50.40
Hose Allowance (included): 100

MEDIA CENTER SOFFIT DETAIL



KEY PLAN — TRUE NORTH — PLAN NORTH



1 SECOND FLOOR PLAN (AREA A)

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

CERTIFICATION: THESE PLANS AND ANY HYDRAULIC CALCULATIONS WERE PREPARED BY ME OR UNDER MY SUPERVISION. I AM CURRENTLY A N.I.C.E.T. LEVEL 4 SENIOR ENGINEERING TECHNICIAN IN THE FIELD OF FIRE PROTECTION ENGINEERING TECHNOLOGY / AUTOMATIC SPRINKLER SYSTEM LAYOUT.
CERTIFICATION NO. 70490 David P. Clark

SPRINKLER DESIGN NOTES

1. HORACE HIGH SCHOOL PROJECT IS NEW CONSTRUCTION, WITH A COMPLETE FIRE SPRINKLER SYSTEM DESIGNED TO NFPA 13 2010.
2. 4 NEW WET SYSTEM ZONES TO PROTECT ENTIRE BUILDING.
3. SEE SPECIAL HEAD SPACING BLOCKS FOR EXTENDED COVERAGE HEAD SPACING LIMITATIONS.
4. QR 5.6 CHROME PENDENTS IN OFFICE AREA MAX COVERAGE 15'X15' 7'–6" MAX OFF WALLS
5. QR 5.6 BRASS UPRIGHTS IN ORDINARY HAZARD ROOMS MAX COVERAGE 130 SQ. FT. & 7'–6" MAX OFF WALLS.
6. GROOVED SPRINKLER PIPING TO BE BLACK SCHEDULE 10. THREADED PIPE TO BE BLACK SCHEDULE 30.
6. GROOVED FITTINGS TO BE SHORT–TURN CAST IRON, GROOVED COUPLINGS TO BE VIC #009 OR EQUAL, THREADED FITTINGS TO BE BLACK DUCTILE IRON.
7. INSTALL HANGERS PER NFPA 13.
8. ALL CONTROL VALVES TO HAVE TAMPER SWITCHES
9. HEADS TO BE CENTERED IN CEILING TILES TYP. (UTILIZING FLEX–DROPS).
10. BRASS UPRIGHTS TO BE INSTALLED WITHIN 1" TO 12" WITHIN ROOF DECK, UNLESS IT IS AN AREA OF OBSTRUCTED CONSTRUCTION (22" MAX. DN FROM DECK).

HANGER NOTES

UP TO 4" PIPE USE 3/8" DIAMETER ROD
5", 6", AND 8" PIPE USE 1/2" DIAMETER ROD
10" AND 12" PIPE USE 5/8" DIAMETER ROD
ALL PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH NFPA 13 GUIDELINES

PIPE TYPE	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE.	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index

No.	Description
1	First Floor – Area C
2	First Floor – Area A
3	First Floor – Area B
4	First Floor – Area D, Site Plan
5	First Floor – Areas E & F
6	Second Floor – Area C
7	Second Floor – Area A
8	Second Floor – Area B
9	Second Floor – Area D
10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 172 — Total This Job: ---

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	17
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	17
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	42
⊗	RELIABLE J112 QR EC RECESSED PENDENT	RA7216	11.2	3/4"	155°	CHROME	48
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	46
●	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	286°	CHROME	2

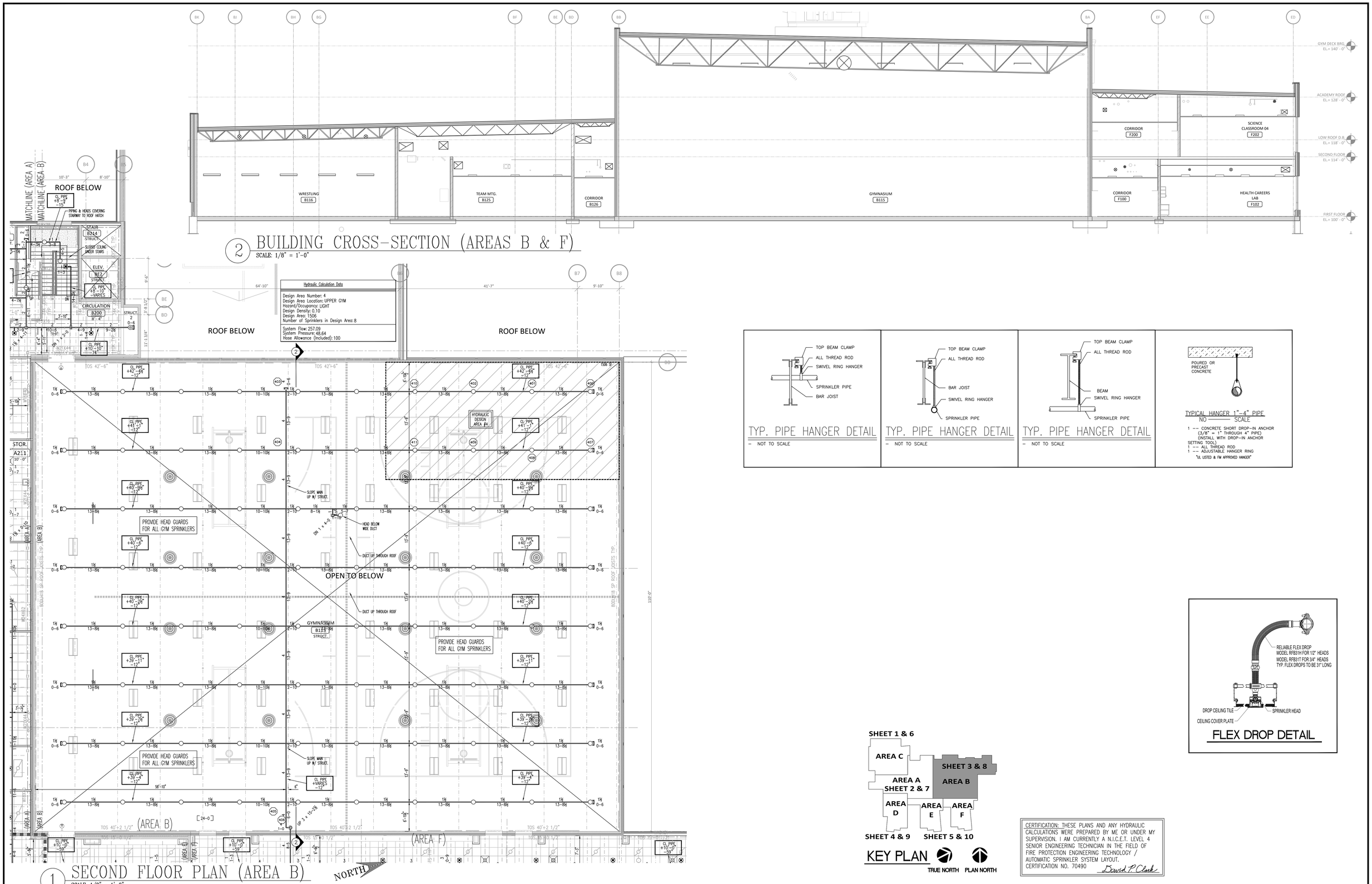
Drawing Title: 2ND FL AREA A
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020 (SUBMITTAL)
Approval By: STATE, A & E

Revisions	Date

Job: **HORACE HIGH SCHOOL**
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1801 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #C065

SHEET 7 OF 10



2 BUILDING CROSS-SECTION (AREAS B & F)

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

1 SECOND FLOOR PLAN (AREA B)

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

TYP. PIPE HANGER DETAIL

– NOT TO SCALE

TYP. PIPE HANGER DETAIL

– NOT TO SCALE

TYP. PIPE HANGER DETAIL

– NOT TO SCALE

TYPICAL HANGER 1"–4" PIPE

NO SCALE

1 -- CONCRETE SHORT DROP-IN ANCHOR (3/8" = 1" THROUGH 4" PIPE) (INSTALL WITH DROP-IN ANCHOR SETTING TOOL)
1 -- ALL THREAD ROD
1 -- ADJUSTABLE HANGER RING
"UL LISTED & FM APPROVED HANGER"

FLEX DROP DETAIL

KEY PLAN

TRUE NORTH PLAN NORTH

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CERTIFICATION NO. 70490 David P Clark

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6. GROOVED SPRINKLER PIPING TO BE BLACK SCHEDULE 10, THREADED PIPE TO BE BLACK SCHEDULE 30.
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PIPE TYPE	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index

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5	First Floor – Areas E & F
6	Second Floor – Area C
7	Second Floor – Area A
8	Second Floor – Area B
9	Second Floor – Area D
10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 86 | Total This Job: ____

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	83
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	1
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	–
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	2
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	–

Drawing Title: 2ND FL AREA B
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020 (SUBMITTAL)
Approval By: STATE, A & E

Revisions	Date

Job: **HORACE HIGH SCHOOL**
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
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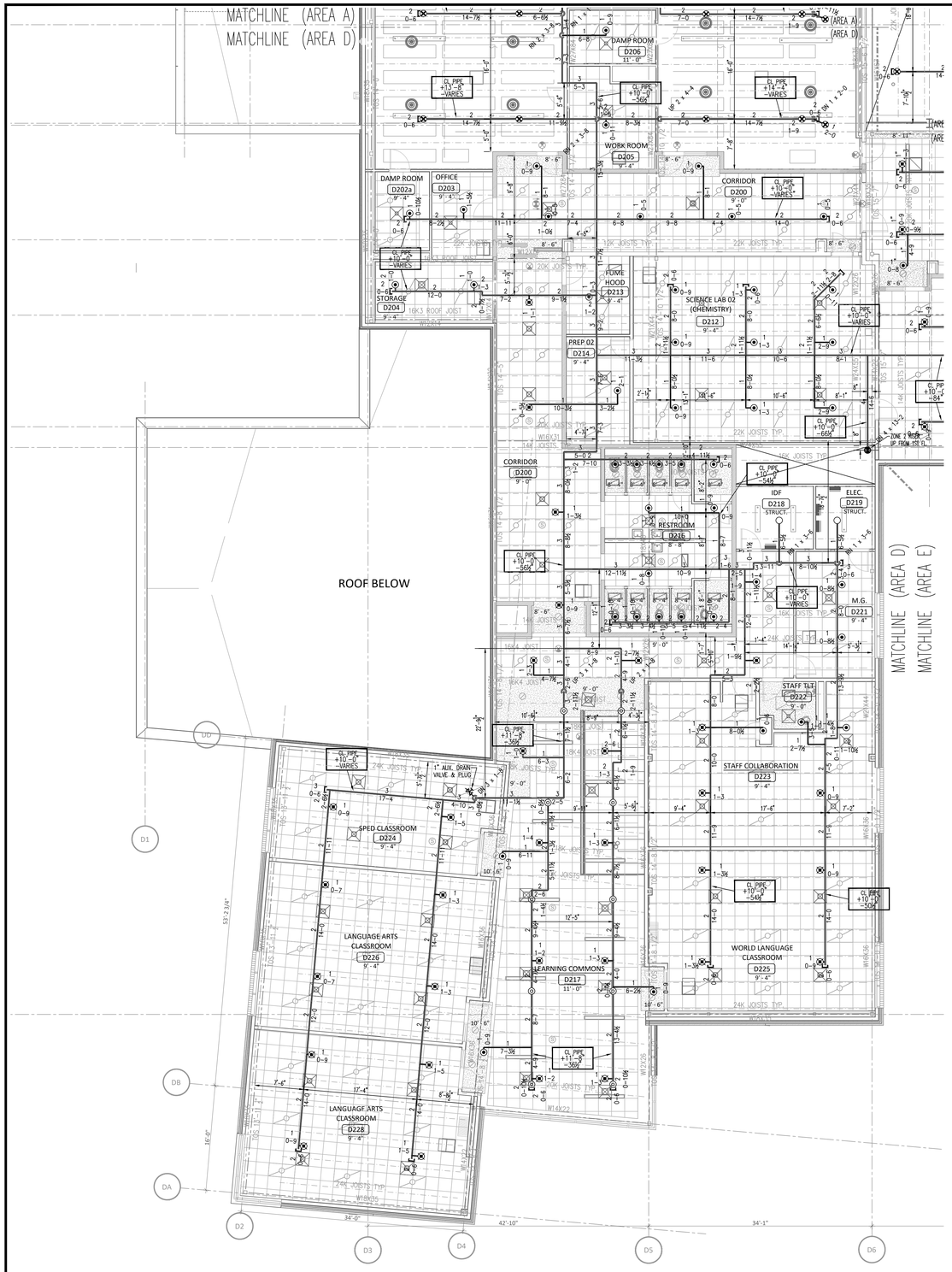
1801 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #C065

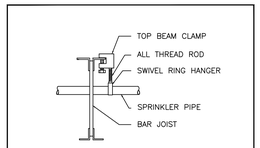
SHEET 8 OF 10



1 SECOND FLOOR PLAN (AREA D)

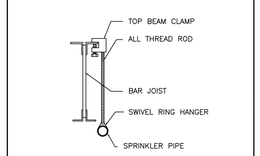
SCALE: 1/8" = 1'-0"

NORTH



TYP. PIPE HANGER DETAIL

– NOT TO SCALE



TYP. PIPE HANGER DETAIL

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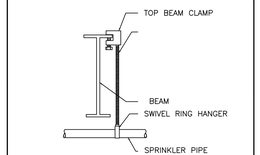
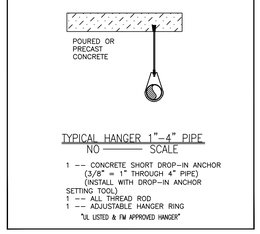


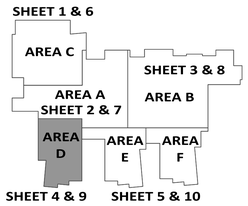
TYP. PIPE HANGER DETAIL

– NOT TO SCALE



TYPICAL HANGER 1"–4" PIPE
NO SCALE

1 –– CONCRETE SHORT DROP–IN ANCHOR (3/8" = 1" THROUGH 4" PIPE) (INSTALL WITH DROP–IN ANCHOR SETTING TOOL)
1 –– ALL THREAD ROD
1 –– ADJUSTABLE HANGER RING
"UL LISTED & FM APPROVED HANGER"



KEY PLAN

TRUE NORTH PLAN NORTH

CERTIFICATION: THESE PLANS AND ANY HYDRAULIC CALCULATIONS WERE PREPARED BY ME OR UNDER MY SUPERVISION. I AM CURRENTLY A N.I.C.E.T. LEVEL 4 SENIOR ENGINEERING TECHNICIAN IN THE FIELD OF FIRE PROTECTION ENGINEERING TECHNOLOGY / AUTOMATIC SPRINKLER SYSTEM LAYOUT.
CERTIFICATION NO. 70490 David P. Clark

SPRINKLER DESIGN NOTES

1. HORACE HIGH SCHOOL PROJECT IS NEW CONSTRUCTION, WITH A COMPLETE FIRE SPRINKLER SYSTEM DESIGNED TO NFPA 13 2010.
2. 4 NEW WET SYSTEM ZONES TO PROTECT ENTIRE BUILDING.
3. SEE SPECIAL HEAD SPACING BLOCKS FOR EXTENDED COVERAGE HEAD SPACING LIMITATIONS.
4. QR 5.6 CHROME PENDENTS IN OFFICE AREA MAX COVERAGE 15'X15' 7'–6" MAX OFF WALLS
5. QR 5.6 BRASS UPRIGHTS IN ORDINARY HAZARD ROOMS MAX COVERAGE 130 SQ. FT. & 7'–6" MAX OFF WALLS.
6. GROOVED SPRINKLER PIPING TO BE BLACK SCHEDULE 10. THREADED PIPE TO BE BLACK SCHEDULE 30.
6. GROOVED FITTINGS TO BE SHORT–TURN CAST IRON, GROOVED COUPLINGS TO BE VIC #009 OR EQUAL, THREADED FITTINGS TO BE BLACK DUCTILE IRON.
7. INSTALL HANGERS PER NFPA 13.
8. ALL CONTROL VALVES TO HAVE TAMPER SWITCHES
9. HEADS TO BE CENTERED IN CEILING TILES TYP. (UTILIZING FLEX–DROPS).
10. BRASS UPRIGHTS TO BE INSTALLED WITHIN 1" TO 12" WITHIN ROOF DECK, UNLESS IT IS AN AREA OF OBSTRUCTED CONSTRUCTION (22" MAX. DN FROM DECK).

HANGER NOTES

UP TO 4" PIPE USE 3/8" DIAMETER ROD
5", 6", AND 8" PIPE USE 1/2" DIAMETER ROD
10" AND 12" PIPE USE 5/8" DIAMETER ROD
ALL PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH NFPA 13 GUIDELINES

PIPE TYPE	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index

No.	Description
1	First Floor – Area C
2	First Floor – Area A
3	First Floor – Area B
4	First Floor – Area D, Site Plan
5	First Floor – Areas E & F
6	Second Floor – Area C
7	Second Floor – Area A
8	Second Floor – Area B
9	Second Floor – Area D
10	Second Floor – Areas E & F

TOTAL SPRINKLER HEADS THIS JOB

Total This Sheet: 94 Total This Job: ----

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	2
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	10
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	45
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	32
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	5

Drawing Title: 2ND FL AREA D
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020
Approval By: STATE, A & E

Revisions	Date

Job: **HORACE HIGH SCHOOL**
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1801 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #C065

SHEET 9 OF 10

MATCHLINE (AREA D)
MATCHLINE (AREA E)

MATCHLINE (AREA E)
MATCHLINE (AREA F)

MATCHLINE (AREA B)
MATCHLINE (AREA F)

SCIENCE LAB 03 (CHEMISTRY) E204
SCIENCE LAB 04 (BIOLOGY) E206
SCIENCE LAB 05 (ANATOMY) F203
SCIENCE LAB 06 (PHYSICAL SCIENCE) F205
SCIENCE CLASSROOM 01 E202
SCIENCE CLASSROOM 02 E203
SCIENCE CLASSROOM 03 E211
SCIENCE CLASSROOM 04 F202
SCIENCE CLASSROOM 06 F208
CORRIDOR A200
CORRIDOR E200
CORRIDOR F200
CORRIDOR F201
PREP 03 E205
PREP 04 E206A
PREP 05 F204
PREP 06 F206
RESTROOM E218
ELECTRICAL E215
JAN. E209
IDF F207
HYDRAULIC DESIGN AREA #2
HYDRAULIC DESIGN AREA #1
STAIR
STRUCT.
ZONE 2
ZONE 3
ZONE 4

TYP. PIPE HANGER DETAIL
– NOT TO SCALE

TOP BEAM CLAMP
ALL THREAD ROD
SWIVEL RING HANGER
SPRINKLER PIPE
BAR JOIST

TYP. PIPE HANGER DETAIL
– NOT TO SCALE

TOP BEAM CLAMP
BAR JOIST
SWIVEL RING HANGER
SPRINKLER PIPE

TYP. PIPE HANGER DETAIL
– NOT TO SCALE

POURED OR PRECAST CONCRETE

TYPICAL HANGER 1"–4" PIPE
NO SCALE

1 — CONCRETE SHORT DROP–IN ANCHOR (3/8" = 1" THROUGH 4" PIPE) (INSTALL WITH DROP–IN ANCHOR SETTING TOOL)
1 — THREADED ROD
1 — ADJUSTABLE HANGER RING
"UL LISTED & FM APPROVED HANGER"

Hydraulic Calculation Data
Design Area Number: 2 Design Area Location: SCIENCE LAB 04 (ROOM E206) Hazard/Occupancy: ORDINARY GROUP 1 Design Density: 0.10 Design Area: 1019 Number of Sprinklers in Design Area: 9
System Flow: 527.89 System Pressure: 48.49 Hose Allowance (Included): 250

RELIABLE FLEX DROP
MODEL RFB3TH FOR 1/2" HEADS
MODEL RFB3IT FOR 3/4" HEADS
TYP. FLEX DROPS TO BE 3FT LONG
DROP CEILING TILE
CEILING COVER PLATE
SPRINKLER HEAD

FLEX DROP DETAIL

Hydraulic Calculation Data
Design Area Number: 1 Design Area Location: LEVEL 2 – AREA F (FUTURE CLASSROOMS) Hazard/Occupancy: LIGHT Design Density: 0.10 Design Area: 1300 Number of Sprinklers in Design Area: 5
System Flow: 277.14 System Pressure: 50.06 Hose Allowance (Included): 100

SHEET 1 & 6
AREA C
AREA A
SHEET 2 & 7
AREA B
SHEET 3 & 8
AREA D
AREA E
AREA F
SHEET 4 & 9
SHEET 5 & 10

KEY PLAN
TRUE NORTH
PLAN NORTH

1 SECOND FLOOR PLAN (AREAS E & F)
SCALE: 1/8" = 1'-0"

NORTH

CERTIFICATION: THESE PLANS AND ANY HYDRAULIC CALCULATIONS WERE PREPARED BY ME OR UNDER MY SUPERVISION. I AM CURRENTLY A N.I.C.E.T. LEVEL 4 SENIOR ENGINEERING TECHNICIAN IN THE FIELD OF FIRE PROTECTION ENGINEERING TECHNOLOGY / AUTOMATIC SPRINKLER SYSTEM LAYOUT.
CERTIFICATION NO. 70490
David P. Clark

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HANGER NOTES											
UP TO 4" PIPE USE 3/8" DIAMETER ROD 5", 6", AND 8" PIPE USE 1/2" DIAMETER ROD 10" AND 12" PIPE USE 5/8" DIAMETER ROD ALL PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH NFPA 13 GUIDELINES											
PIPE TYPE	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"
STEEL PIPE (EXCEPT LIGHTWALL)	NA	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0	15'–0
THREADED LIGHTWALL STEEL PIPE	NA	12'–0	12'–0	12'–0	12'–0	12'–0	12'–0	NA	NA	NA	NA
COPPER TUBE	8'–0	8'–0	10'–0	10'–0	12'–0	12'–0	12'–0	15'–0	15'–0	15'–0	15'–0
CPVC PIPE	5'–6	6'–0	6'–6	7'–0	8'–0	9'–0	10'–0	NA	NA	NA	NA

Sheet Index	
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TOTAL SPRINKLER HEADS THIS JOB
Total This Sheet: 199 Total This Job: ----

Symbol	SPRINKLER DESCRIPTION	S.I.N.	K-FACTOR	NPT	TEMP (F)	FINISH	QTY.
○	RELIABLE F1FR56 QR UPRIGHT	RA1425	5.6	1/2"	155°	BRASS	11
◎	RELIABLE F1FR56 QR UPRT ON SPRIG	RA1425	5.6	1/2"	155°	BRASS	1
⊙	RELIABLE F1FR56 QR RECESSED PEND.	RA1414	5.6	1/2"	155°	CHROME	37
⊗	RELIABLE J112 QR EC REC. PENDENT	RA7216	11.2	3/4"	155°	CHROME	84
⊗	RELIABLE J112 QR EC UPRIGHT	RA7326	11.2	3/4"	155°	BRASS	66

Drawing Title: 2ND FL AREAS E & F
Contract No. A20–04
Drawn By: DAVE CLARK
Scale: 1/8" = 1'–0
Date: 8–17–2020 (SUBMITTAL)
Approval By: STATE, A & E

Revisions	Date

Job: HORACE HIGH SCHOOL
WEST FARGO SCHOOL DIST.
8100 LAKEVIEW DRIVE
HORACE, NORTH DAKOTA

Contractor:
ADVANCED FIRE PROTECTION
1601 N. 43RD STREET SUITE B
FARGO, ND 58102
1–701–298–9804 FAX 1–701–298–9804
MN STATE LICENSE #C065

SHEET 10 OF 10

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - LEVEL 2 AREA F
Drawing	:	10 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	1
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 1.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 10 OF 10
Date: 8-17-20

Design

Remote area number: 1
Remote area location: LEVEL 2 - AREA F (FUTURE CLASSROOMS)
Occupancy classification: LIGHT
Density: 0.10 - Gpm/SqFt
Area of application: 1300 - SqFt
Coverage per sprinkler: 324 - SqFt
Type of sprinklers calculated: RELIABLE J112 EC UPRIGHT
No. of sprinklers calculated: 5
In-rack demand: - GPM
Hose streams: 100 - GPM
Total water required (including hose streams): 277.14 - GPM @ 50.06 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

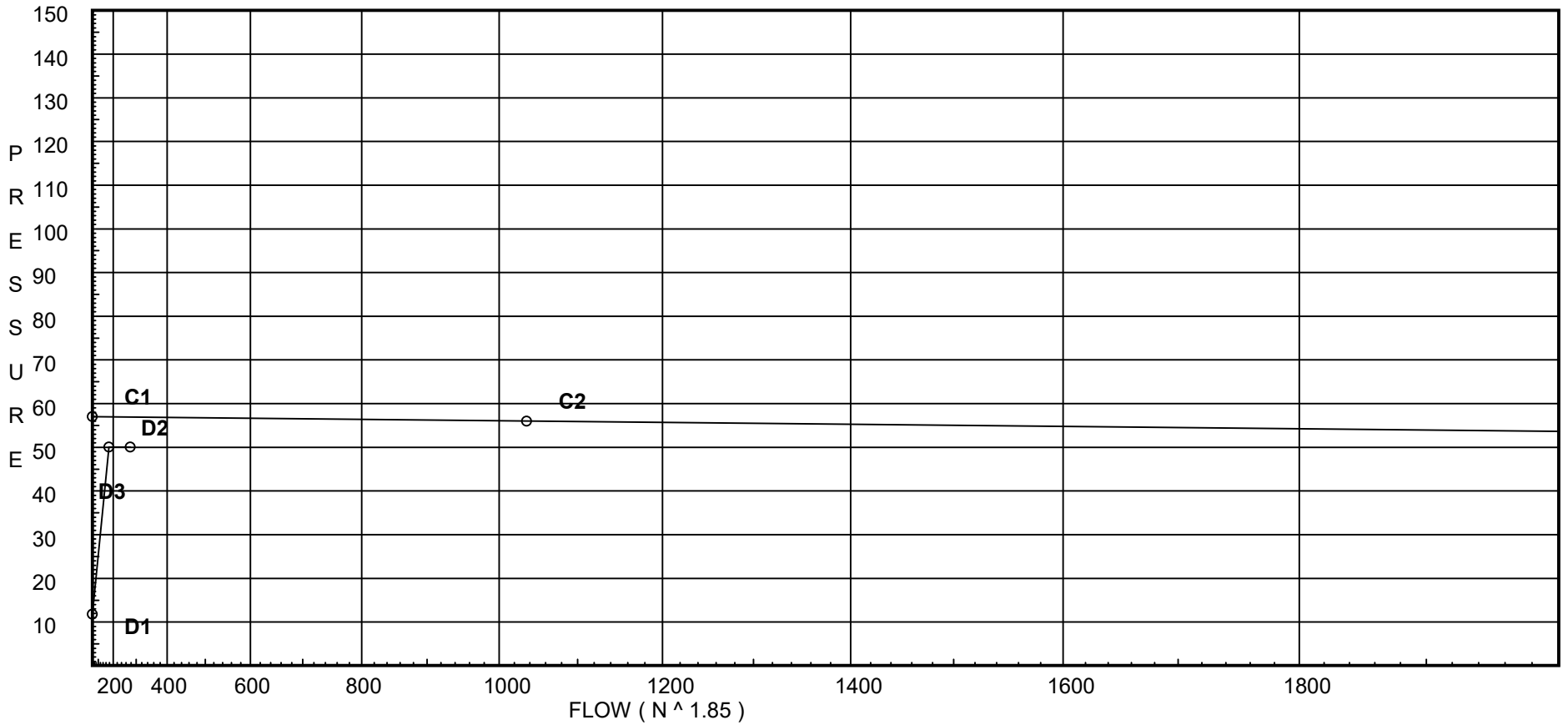
Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.)

City Water Supply:
- C1 - Static Pressure : 57
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1036

Demand:
- D1 - Elevation : 11.767
- D2 - System Flow : 177.143
- D2 - System Pressure : 50.058
- Hose (Demand) : 100
- D3 - System Demand : 277.143
- Safety Margin : 6.855



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	9.3	11	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	57.0	56	1036.0	56.913	277.14	50.058

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
108	27.17	11.2	8.7	33.04	
109	27.17	11.2	8.86	33.33	
110	27.17	11.2	9.36	34.26	
111	25.83		16.13		
103	25.83		16.32		
104	25.83		17.62		
105	10.83		37.92		
Z4T	10.83		39.9		
UG	0.83		49.22		
100	0.0		49.76		
106	0.83		49.43		
107	0.83		49.53		
TEST	0.0		50.06	100.0	
101	27.54	11.2	11.58	38.11	
102	27.54	11.2	11.76	38.4	
112	0.83		49.51		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
108	27.17	11.20	33.04	2		0.0	16.000	120	8.700	
to						0.0	0.0		0.0	
109	27.17		33.04	2.157		0.0	16.000	0.0098	0.157	Vel = 2.90
109	27.17	11.20	33.33	2		0.0	14.000	120	8.857	
to						0.0	0.0		0.0	
110	27.17		66.37	2.157		0.0	14.000	0.0358	0.501	Vel = 5.83
110	27.17	11.20	34.26	2	V	4.307	63.600	120	9.358	
to					T	12.307	16.614		0.580	
111	25.83		100.63	2.157		0.0	80.214	0.0772	6.196	Vel = 8.84
111	25.83		0.0	3		0.0	18.070	120	16.134	
to						0.0	0.0		0.0	
103	25.83		100.63	3.26		0.0	18.070	0.0103	0.187	Vel = 3.87
103	25.83		76.51	3	X	17.471	26.700	120	16.321	
to						0.0	17.471		0.0	
104	25.83		177.14	3.26		0.0	44.171	0.0294	1.300	Vel = 6.81
104	25.83		0.0	3	11V	73.917	395.150	120	17.621	
to						0.0	73.917		6.496	
105	10.83		177.14	3.26		0.0	469.067	0.0294	13.801	Vel = 6.81
105	10.83		0.0	4	5V	44.768	202.950	120	37.918	
to						0.0	44.768		0.0	
Z4T	10.83		177.14	4.26		0.0	247.718	0.0080	1.981	Vel = 3.99
Z4T	10.83		0.0	4	B	15.8	12.580	120	39.899	
to					Zcb	0.0	42.661		8.881	* * Fixed Loss = 4.55
UG	0.83		177.14	4.26	3V	26.861	55.241	0.0080	0.441	Vel = 3.99
UG	0.83		0.0	6	3E	64.749	72.000	150	49.221	
to					T	46.249	115.623		0.359	
100	0		177.14	6.09	G	4.625	187.623	0.0009	0.175	Vel = 1.95
100	0		0.0	8	T	52.855	90.000	150	49.755	
to						0.0	52.855		-0.359	
106	0.83		177.14	7.98		0.0	142.855	0.0002	0.035	Vel = 1.14
106	0.83		-87.66	8	3E	81.548	1234.000	150	49.431	
to					T	52.855	146.485		0.0	
107	0.83		89.48	7.98	2G	12.081	1380.485	0.0001	0.097	Vel = 0.57
107	0.83		87.66	8	G	6.041	598.000	150	49.528	
to					T	52.855	86.077		0.359	
TEST	0		177.14	7.98	E	27.183	684.077	0.0002	0.171	Vel = 1.14
			100.00							Qa = 100.00
TEST			277.14						50.058	K Factor = 39.17
101	27.54	11.20	38.11	2		0.0	14.000	120	11.578	
to						0.0	0.0		0.0	
102	27.54		38.11	2.157		0.0	14.000	0.0128	0.179	Vel = 3.35
102	27.54	11.20	38.40	2	V	4.307	65.550	120	11.757	
to					T	12.307	16.614		0.741	
103	25.83		76.51	2.157		0.0	82.164	0.0465	3.823	Vel = 6.72
			0.0							
103			76.51						16.321	K Factor = 18.94
106	0.83		87.67	8	2G	12.081	1096.000	150	49.431	
to					4E	108.73	120.813		0.0	
112	0.83		87.67	7.98		0.0	1216.813	0.0001	0.083	Vel = 0.56

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
112	0.83		0.0	8	G	6.041	158.000	150	49.514			
to					T	52.855	58.895		0.0			
107	0.83		87.67	7.98		0.0	216.895	0.0001	0.014	Vel = 0.56		
			0.0									
107			87.67						49.528	K Factor = 12.46		

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - SCIENCE LAB E206
Drawing	:	10 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	2
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 2.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 10 OF 10
Date: 8-17-20

Design

Remote area number: 2
Remote area location: SCIENCE LAB 04 (ROOM E206)
Occupancy classification: ORDINARY GROUP 1
Density: 0.10 - Gpm/SqFt
Area of application: 1019 - SqFt
Coverage per sprinkler: 196 - SqFt
Type of sprinklers calculated: RELIABLE J112 EC PENDENT
No. of sprinklers calculated: 9
In-rack demand: - GPM
Hose streams: 250 - GPM
Total water required (including hose streams): 527.89 - GPM @ 48.89 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

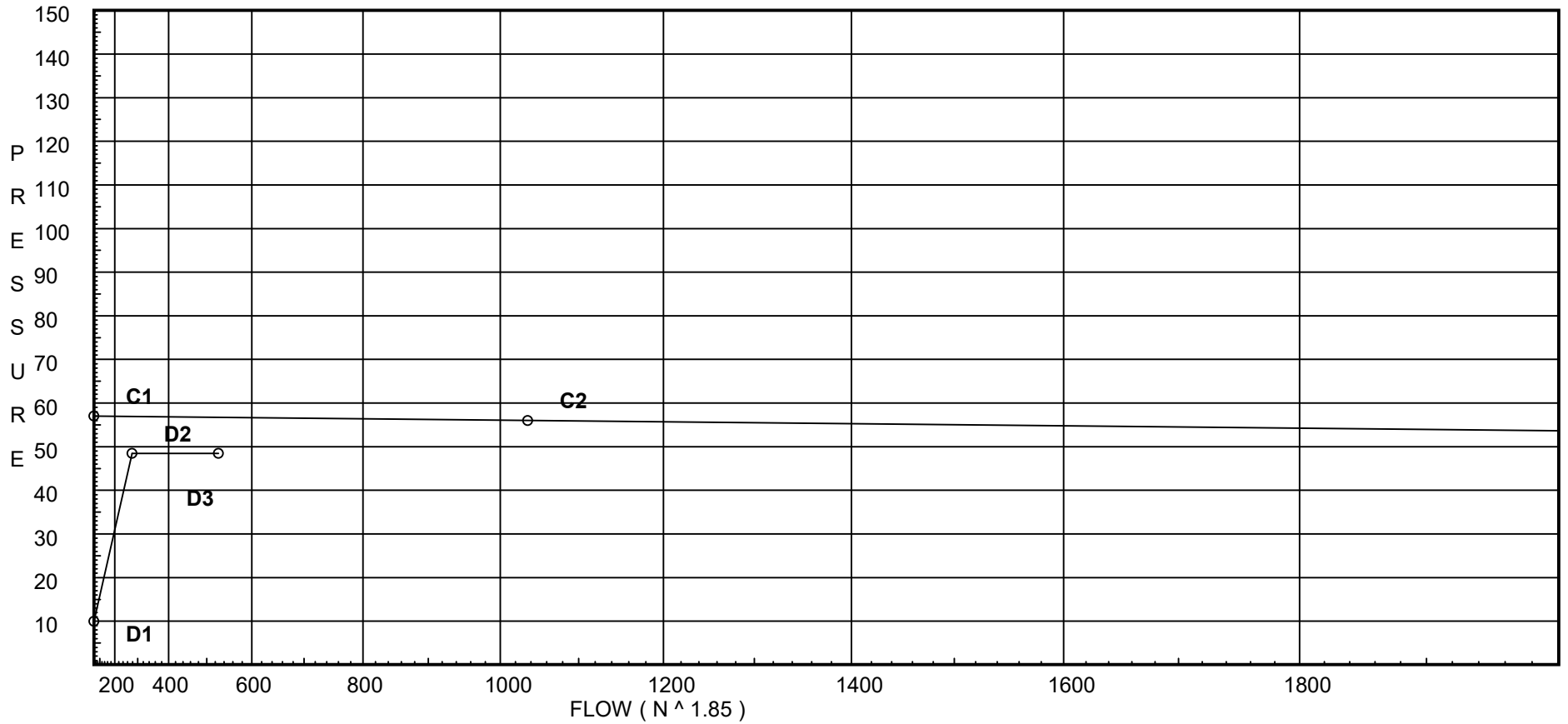
Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.) ROOM DESIGN METHOD W/ SELF-CLOSING DOORS,

City Water Supply:
- C1 - Static Pressure : 57
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1036

Demand:
- D1 - Elevation : 9.961
- D2 - System Flow : 277.889
- D2 - System Pressure : 48.488
- Hose (Demand) : 250
- D3 - System Demand : 527.889
- Safety Margin : 8.225



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
I	90' Grvd-Vic Elbow #10	0	0	2	3	4	3.5	6	5	8	7	8.5	10	13	17	20	23	25	33	36	40
J	90'Tee-Branch Grv Vic #20	0	0	4.5	6	8	8.5	10.8	13	17	16	21	25	33	41	50	65	78	88	98	120
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	9.3	11	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	57.0	56	1036.0	56.713	527.89	48.488

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
200	23.0	11.2	7.2	30.05	
201	24.0		13.68		
202	24.0		16.23		
203	24.0		16.35		
204	24.0		16.77		
205	24.0		21.76		
206	24.0		21.85		
207	24.0		22.65		
Z2T	5.0		38.73		
UG	0.0		47.44		
100	0.0		47.8		
106	0.0		47.88		
107	0.0		48.1		
TEST	0.0		48.49	250.0	
211	23.0	11.2	7.25	30.16	
212	24.0		13.77		
213	23.0	11.2	7.29	30.24	
214	24.0		13.85		
215	24.0		16.16		
216	24.0		16.27		
217	24.0		16.7		
218	24.0		22.46		
219	23.0	11.2	7.34	30.35	
220	24.0		13.95		
221	23.0	11.2	7.44	30.55	
222	24.0		14.13		
223	23.0	11.2	7.54	30.75	
224	24.0		14.31		
225	23.0	11.2	8.5	32.66	
226	24.0		14.55		
227	24.0		17.21		
228	24.0		17.35		
229	24.0		17.81		
230	23.0	11.2	7.84	31.35	
231	24.0		14.88		
232	23.0	11.2	8.05	31.78	
233	24.0		15.28		
112	0.0		48.06		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
200	23	11.20	30.05	1		0.0	25.000	120	7.200	
to						0.0	0.0		-0.433	
201	24		30.05	1.049		0.0	25.000	0.2764	6.910	Vel = 11.16
201	24		0.0	1	E	2.0	2.250	120	13.677	
to					T	5.0	7.000		0.0	
202	24		30.05	1.049		0.0	9.250	0.2764	2.557	Vel = 11.16
202	24		0.0	2		0.0	13.990	120	16.234	
to						0.0	0.0		0.0	
203	24		30.05	2.157		0.0	13.990	0.0083	0.116	Vel = 2.64
203	24		30.16	2		0.0	14.000	120	16.350	
to						0.0	0.0		0.0	
204	24		60.21	2.157		0.0	14.000	0.0299	0.418	Vel = 5.29
204	24		30.55	2	2J	20.921	45.000	120	16.768	
to					T	12.307	33.228		0.0	
205	24		90.76	2.157		0.0	78.228	0.0638	4.992	Vel = 7.97
205	24		0.0	3		0.0	11.000	120	21.760	
to						0.0	0.0		0.0	
206	24		90.76	3.26		0.0	11.000	0.0085	0.094	Vel = 3.49
206	24		95.79	3	V	6.72	17.910	120	21.854	
to						0.0	6.720		0.0	
207	24		186.55	3.26		0.0	24.630	0.0324	0.797	Vel = 7.17
207	24		91.34	4	9V	80.583	325.110	120	22.651	
to					X	21.067	101.650		8.229	
Z2T	5		277.89	4.26		0.0	426.760	0.0184	7.848	Vel = 6.26
Z2T	5		0.0	4	X	21.067	11.910	120	38.728	
to					B	15.8	63.201		7.335	* * Fixed Loss = 5.17
UG	0		277.89	4.26	T	26.334	75.111	0.0184	1.381	Vel = 6.26
					Zcb	0.0				
UG	0		0.0	6	2E	43.166	72.000	150	47.444	
to					T	46.249	94.040		0.0	
100	0		277.89	6.09	G	4.625	166.040	0.0021	0.355	Vel = 3.06
100	0		0.0	8	T	52.855	90.000	150	47.799	
to						0.0	52.855		0.0	
106	0		277.89	7.98		0.0	142.855	0.0006	0.082	Vel = 1.78
106	0		-134.82	8	3E	81.548	1144.000	150	47.881	
to					T	52.855	140.443		0.0	
107	0		143.07	7.98	G	6.041	1284.443	0.0002	0.215	Vel = 0.92
107	0		134.82	8	E	27.183	598.000	150	48.096	
to					T	52.855	86.077		0.0	
TEST	0		277.89	7.98	G	6.041	684.077	0.0006	0.392	Vel = 1.78
			250.00							Qa = 250.00
TEST			527.89						48.488	K Factor = 75.81
211	23	11.20	30.16	1		0.0	25.000	120	7.251	
to						0.0	0.0		-0.433	
212	24		30.16	1.049		0.0	25.000	0.2782	6.955	Vel = 11.20
212	24		0.0	1	E	2.0	2.260	120	13.773	
to					T	5.0	7.000		0.0	
203	24		30.16	1.049		0.0	9.260	0.2783	2.577	Vel = 11.20

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
			0.0							
203			30.16						16.350	K Factor = 7.46
213	23	11.20	30.24	1		0.0	25.000	120	7.292	
to						0.0	0.0		-0.433	
214	24		30.24	1.049		0.0	25.000	0.2796	6.991	Vel = 11.23
214	24		0.0	1	E	2.0	1.250	120	13.850	
to					T	5.0	7.000		0.0	
215	24		30.24	1.049		0.0	8.250	0.2796	2.307	Vel = 11.23
215	24		0.0	2		0.0	13.990	120	16.157	
to						0.0	0.0		0.0	
216	24		30.24	2.157		0.0	13.990	0.0084	0.117	Vel = 2.66
216	24		30.36	2		0.0	14.000	120	16.274	
to						0.0	0.0		0.0	
217	24		60.6	2.157		0.0	14.000	0.0302	0.423	Vel = 5.32
217	24		30.74	2	2I	8.615	68.360	120	16.697	
to					T	12.307	20.922		0.0	
218	24		91.34	2.157		0.0	89.282	0.0646	5.766	Vel = 8.02
218	24		0.0	3	X	17.471	4.320	120	22.463	
to						0.0	17.471		0.0	
207	24		91.34	3.26		0.0	21.791	0.0086	0.188	Vel = 3.51
			0.0							
207			91.34						22.651	K Factor = 19.19
219	23	11.20	30.35	1		0.0	25.000	120	7.344	
to						0.0	0.0		-0.433	
220	24		30.35	1.049		0.0	25.000	0.2815	7.038	Vel = 11.27
220	24		0.0	1	E	2.0	1.260	120	13.949	
to					T	5.0	7.000		0.0	
216	24		30.35	1.049		0.0	8.260	0.2815	2.325	Vel = 11.27
			0.0							
216			30.35						16.274	K Factor = 7.52
221	23	11.20	30.55	1		0.0	25.000	120	7.438	
to						0.0	0.0		-0.433	
222	24		30.55	1.049		0.0	25.000	0.2849	7.122	Vel = 11.34
222	24		0.0	1	E	2.0	2.270	120	14.127	
to					T	5.0	7.000		0.0	
204	24		30.55	1.049		0.0	9.270	0.2849	2.641	Vel = 11.34
			0.0							
204			30.55						16.768	K Factor = 7.46
223	23	11.20	30.75	1		0.0	25.000	120	7.537	
to						0.0	0.0		-0.433	
224	24		30.75	1.049		0.0	25.000	0.2884	7.209	Vel = 11.42
224	24		0.0	1	E	2.0	1.270	120	14.313	
to					T	5.0	7.000		0.0	
217	24		30.75	1.049		0.0	8.270	0.2883	2.384	Vel = 11.42
			0.0							
217			30.75						16.697	K Factor = 7.53
225	23	11.20	32.66	1		0.0	25.000	120	8.503	
to						0.0	0.0		-0.433	
226	24		32.66	1.097		0.0	25.000	0.2592	6.481	Vel = 11.09

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
226	24		0.0	1	E	2.0	1.250	120	14.551	
to					T	5.0	7.000		0.0	
227	24		32.66	1.049		0.0	8.250	0.3224	2.660	Vel = 12.12
227	24		0.0	2		0.0	13.990	120	17.211	
to						0.0	0.0		0.0	
228	24		32.66	2.157		0.0	13.990	0.0096	0.134	Vel = 2.87
228	24		31.35	2		0.0	14.000	120	17.345	
to						0.0	0.0		0.0	
229	24		64.01	2.157		0.0	14.000	0.0335	0.469	Vel = 5.62
229	24		31.78	2	T	12.307	44.990	120	17.814	
to						0.0	12.307		0.0	
206	24		95.79	2.157		0.0	57.297	0.0705	4.040	Vel = 8.41
			0.0							
206			95.79						21.854	K Factor = 20.49
230	23	11.20	31.35	1		0.0	25.000	120	7.836	
to						0.0	0.0		-0.433	
231	24		31.35	1.049		0.0	25.000	0.2989	7.473	Vel = 11.64
231	24		0.0	1	E	2.0	1.260	120	14.876	
to					T	5.0	7.000		0.0	
228	24		31.35	1.049		0.0	8.260	0.2989	2.469	Vel = 11.64
			0.0							
228			31.35						17.345	K Factor = 7.53
232	23	11.20	31.78	1		0.0	25.000	120	8.050	
to						0.0	0.0		-0.433	
233	24		31.78	1.049		0.0	25.000	0.3065	7.662	Vel = 11.80
233	24		0.0	1	E	2.0	1.270	120	15.279	
to					T	5.0	7.000		0.0	
229	24		31.78	1.049		0.0	8.270	0.3065	2.535	Vel = 11.80
			0.0							
229			31.78						17.814	K Factor = 7.53
106	0		134.82	8	4E	108.73	1096.000	150	47.881	
to					2G	12.081	120.813		0.0	
112	0		134.82	7.98		0.0	1216.813	0.0002	0.183	Vel = 0.86
112	0		0.0	8	T	52.855	158.000	150	48.064	
to					G	6.041	58.895		0.0	
107	0		134.82	7.98		0.0	216.895	0.0001	0.032	Vel = 0.86
			0.0							
107			134.82						48.096	K Factor = 19.44

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - UPPER COMMONS
Drawing	:	7 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	3
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 3.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 7 OF 10
Date: 8-17-20

Design

Remote area number: 3
Remote area location: UPPER COMMONS
Occupancy classification: LIGHT
Density: 0.10 - Gpm/SqFt
Area of application: 1761 - SqFt
Coverage per sprinkler: 256 - SqFt
Type of sprinklers calculated: RELIABLE J112 EC UPRIGHT
No. of sprinklers calculated: 8
In-rack demand: - GPM
Hose streams: 100 - GPM
Total water required (including hose streams): 351.22 - GPM @ 50.40 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

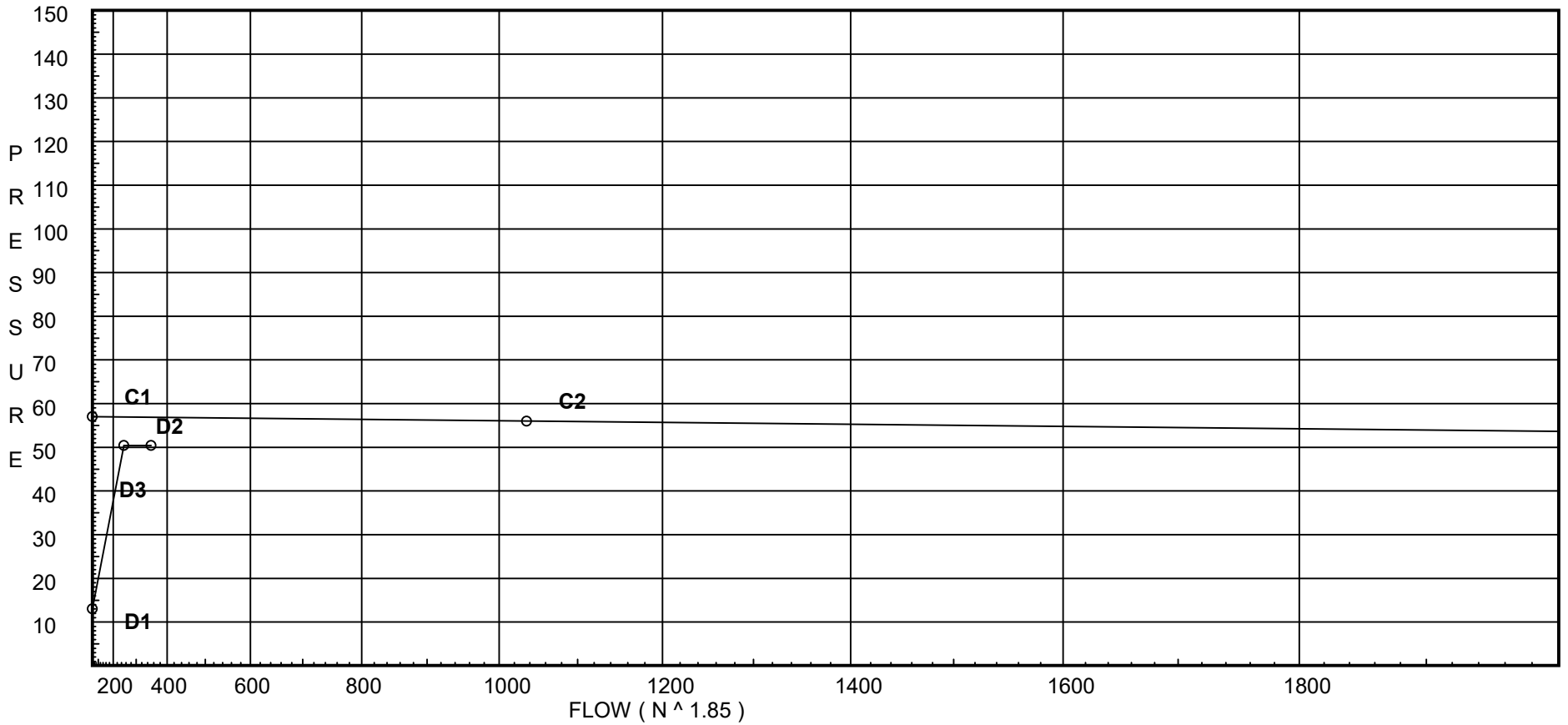
Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.)

City Water Supply:
- C1 - Static Pressure : 57
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1036

Demand:
- D1 - Elevation : 12.993
- D2 - System Flow : 251.222
- D2 - System Pressure : 50.402
- Hose (Demand) : 100
- D3 - System Demand : 351.222
- Safety Margin : 6.463



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
I	90' Grvd-Vic Elbow #10	0	0	2	3	4	3.5	6	5	8	7	8.5	10	13	17	20	23	25	33	36	40
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	9.3	11	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	57.0	56	1036.0	56.865	351.22	50.402

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
300	30.0	11.2	7.2	30.05	
301	30.0	11.2	7.32	30.29	
302	30.0	11.2	7.8	31.27	
303	30.0	11.2	8.83	33.29	
304	28.0		11.99		
305	28.0		12.23		
218	24.0		25.39		
207	24.0		26.77		
Z2T	5.0		41.51		
UG	0.0		49.54		
100	0.0		49.83		
106	0.0		49.9		
107	0.0		50.08		
TEST	0.0		50.4	100.0	
306	30.0	11.2	7.36	30.39	
307	30.0	11.2	7.48	30.64	
308	30.0	11.2	7.97	31.62	
309	30.0	11.2	9.03	33.66	
112	0.0		50.05		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
300	30	11.20	30.05	2		0.0	14.000	120	7.200	
to						0.0	0.0		0.0	
301	30		30.05	2.157		0.0	14.000	0.0083	0.116	Vel = 2.64
301	30	11.20	30.30	2		0.0	16.000	120	7.316	
to						0.0	0.0		0.0	
302	30		60.35	2.157		0.0	16.000	0.0299	0.479	Vel = 5.30
302	30	11.20	31.27	2		0.0	16.000	120	7.795	
to						0.0	0.0		0.0	
303	30		91.62	2.157		0.0	16.000	0.0649	1.039	Vel = 8.04
303	30	11.20	33.29	2	I	4.307	3.220	120	8.834	
to					T	12.307	16.614		0.866	
304	28		124.91	2.157		0.0	19.834	0.1153	2.286	Vel = 10.97
304	28		0.0	3		0.0	16.000	120	11.986	
to						0.0	0.0		0.0	
305	28		124.91	3.26		0.0	16.000	0.0154	0.246	Vel = 4.80
305	28		126.31	3	5I	33.599	169.870	120	12.232	
to						0.0	33.599		1.732	
218	24		251.22	3.26		0.0	203.469	0.0562	11.426	Vel = 9.66
218	24		0.0	3	T	20.159	4.320	120	25.390	
to						0.0	20.159		0.0	
207	24		251.22	3.26		0.0	24.479	0.0562	1.375	Vel = 9.66
207	24		0.0	4	9V	80.583	325.110	120	26.765	
to					X	21.067	101.650		8.229	
Z2T	5		251.22	4.26		0.0	426.760	0.0153	6.512	Vel = 5.65
Z2T	5		0.0	4	X	21.067	11.910	120	41.506	
to					B	15.8	63.201		6.884	* * Fixed Loss = 4.718
UG	0		251.22	4.26	T	26.334	75.111	0.0153	1.146	Vel = 5.65
					Zcb	0.0				
UG	0		0.0	6	2E	43.166	72.000	150	49.536	
to					T	46.249	94.040		0.0	
100	0		251.22	6.09	G	4.625	166.040	0.0018	0.294	Vel = 2.77
100	0		0.0	8	T	52.855	90.000	150	49.830	
to						0.0	52.855		0.0	
106	0		251.22	7.98		0.0	142.855	0.0005	0.068	Vel = 1.61
106	0		-121.88	8	3E	81.548	1144.000	150	49.898	
to					T	52.855	140.443		0.0	
107	0		129.34	7.98	G	6.041	1284.443	0.0001	0.178	Vel = 0.83
107	0		121.88	8	E	27.183	598.000	150	50.076	
to					T	52.855	86.077		0.0	
TEST	0		251.22	7.98	G	6.041	684.077	0.0005	0.326	Vel = 1.61
			100.00							Qa = 100.00
TEST			351.22						50.402	K Factor = 49.47
306	30	11.20	30.39	2		0.0	14.000	120	7.364	
to						0.0	0.0		0.0	
307	30		30.39	2.157		0.0	14.000	0.0084	0.118	Vel = 2.67
307	30	11.20	30.64	2		0.0	16.000	120	7.482	
to						0.0	0.0		0.0	
308	30		61.03	2.157		0.0	16.000	0.0306	0.490	Vel = 5.36

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
308	30	11.20	31.62	2		0.0	16.000	120	7.972			
to						0.0	0.0		0.0			
309	30		92.65	2.157		0.0	16.000	0.0663	1.061	Vel = 8.13		
309	30	11.20	33.67	2	I	4.307	3.220	120	9.033			
to					T	12.307	16.614		0.866			
305	28		126.32	2.157		0.0	19.834	0.1176	2.333	Vel = 11.09		
			0.0									
305			126.32						12.232	K Factor = 36.12		
106	0		121.88	8	4E	108.73	1096.000	150	49.898			
to					2G	12.081	120.813		0.0			
112	0		121.88	7.98		0.0	1216.813	0.0001	0.152	Vel = 0.78		
112	0		0.0	8	T	52.855	158.000	150	50.050			
to					G	6.041	58.895		0.0			
107	0		121.88	7.98		0.0	216.895	0.0001	0.026	Vel = 0.78		
			0.0									
107			121.88						50.076	K Factor = 17.22		

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - UPPER GYM
Drawing	:	8 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	4
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 4.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 8 OF 10
Date: 8-17-20

Design

Remote area number: 4
Remote area location: UPPER GYM
Occupancy classification: LIGHT
Density: 0.10 - Gpm/SqFt
Area of application: 1506 - SqFt
Coverage per sprinkler: 256 - SqFt
Type of sprinklers calculated: RELIABLE F1FR56 UPRIGHT
No. of sprinklers calculated: 8
In-rack demand: - GPM
Hose streams: 100 - GPM
Total water required (including hose streams): 257.09 - GPM @ 48.65 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.)

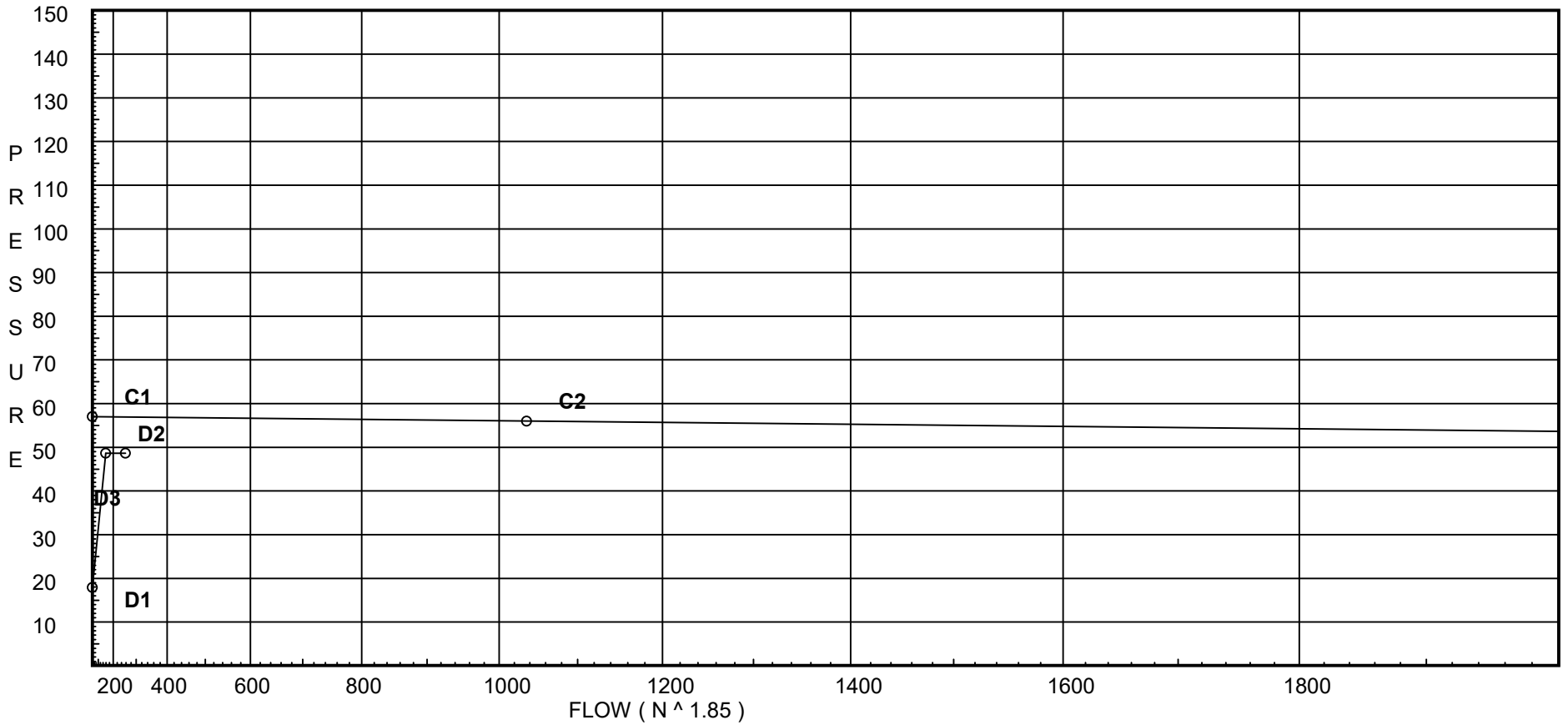
Water Supply Curve C

City Water Supply:

C1 - Static Pressure	: 57
C2 - Residual Pressure	: 56
C2 - Residual Flow	: 1036

Demand:

D1 - Elevation	: 17.917
D2 - System Flow	: 157.089
D2 - System Pressure	: 48.644
Hose (Demand)	: 100
D3 - System Demand	: 257.089
Safety Margin	: 8.280



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
J	90'Tee-Branch Grv Vic #20	0	0	4.5	6	8	8.5	10.8	13	17	16	21	25	33	41	50	65	78	88	98	120
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	*Static Pressure*	*Residual Pressure*	*Flow*	*Available Pressure*	*Total Demand*	*Required Pressure*
TEST	57.0	56	1036.0	56.924	257.09	48.644

NODE ANALYSIS

Node Tag	*Elevation*	*Node Type*	*Pressure at Node*	*Discharge at Node*	*Notes*
400	41.37	5.6	11.39	18.9	
401	41.37	5.6	11.55	19.03	
402	41.37	5.6	12.14	19.51	
410	41.37	5.6	13.4	20.5	
403	41.37		19.89		
404	40.04		20.49		
405	39.21		21.48		
406	24.0		28.28		
Z3T	10.0		38.24		
UG	0.0		48.29		
100	0.0		48.4		
106	0.0		48.43		
107	0.0		48.51		
TEST	0.0		48.64	100.0	
407	40.04	5.6	11.75	19.19	
408	40.04	5.6	11.91	19.33	
409	40.04	5.6	12.52	19.81	
411	40.04	5.6	13.81	20.81	
112	0.0		48.5		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
400	41.370	5.60	18.90	1.5		0.0	13.710	120	11.391	
to						0.0	0.0		0.0	
401	41.370		18.9	1.682		0.0	13.710	0.0117	0.161	Vel = 2.73
401	41.370	5.60	19.03	1.5		0.0	13.710	120	11.552	
to						0.0	0.0		0.0	
402	41.370		37.93	1.682		0.0	13.710	0.0427	0.585	Vel = 5.48
402	41.370	5.60	19.51	1.5		0.0	13.710	120	12.137	
to						0.0	0.0		0.0	
410	41.370		57.44	1.682		0.0	13.710	0.0919	1.260	Vel = 8.29
410	41.370	5.60	20.50	1.5	T	9.9	30.250	120	13.397	
to						0.0	9.900		0.0	
403	41.370		77.94	1.682		0.0	40.150	0.1617	6.491	Vel = 11.25
403	41.370		0.0	4		0.0	15.750	120	19.888	
to						0.0	0.0		0.576	
404	40.040		77.94	4.26		0.0	15.750	0.0018	0.028	Vel = 1.75
404	40.040		79.15	4	V	8.954	89.500	120	20.492	
to						0.0	8.954		0.359	
405	39.210		157.09	4.26		0.0	98.454	0.0064	0.631	Vel = 3.54
405	39.210		0.0	4	2V	17.907	15.210	120	21.482	
to						0.0	17.907		6.587	
406	24		157.09	4.26		0.0	33.117	0.0064	0.212	Vel = 3.54
406	24		0.0	4	2J	42.135	459.160	120	28.281	
to					12V	107.443	149.578		6.063	
Z3T	10		157.09	4.26		0.0	608.738	0.0064	3.897	Vel = 3.54
Z3T	10		0.0	4	B	15.8	13.080	120	38.241	
to					T	26.334	51.088		9.638	* * Fixed Loss = 5.307
UG	0		157.09	4.26	V	8.954	64.168	0.0064	0.411	Vel = 3.54
					Zcb	0.0				
UG	0		0.0	6	2V	30.833	72.000	150	48.290	
to					G	4.625	81.707		0.0	
100	0		157.09	6.09	T	46.249	153.707	0.0007	0.114	Vel = 1.73
100	0		0.0	8	T	52.855	90.000	150	48.404	
to						0.0	52.855		0.0	
106	0		157.09	7.98		0.0	142.855	0.0002	0.029	Vel = 1.01
106	0		-76.21	8	3E	81.548	1144.000	150	48.433	
to					T	52.855	140.443		0.0	
107	0		80.88	7.98	G	6.041	1284.443	0.0001	0.075	Vel = 0.52
107	0		76.21	8	E	27.183	598.000	150	48.508	
to					T	52.855	86.077		0.0	
TEST	0		157.09	7.98	G	6.041	684.077	0.0002	0.136	Vel = 1.01
			100.00							Qa = 100.00
TEST			257.09						48.644	K Factor = 36.86
407	40.040	5.60	19.19	1.5		0.0	13.710	120	11.748	
to						0.0	0.0		0.0	
408	40.040		19.19	1.682		0.0	13.710	0.0121	0.166	Vel = 2.77
408	40.040	5.60	19.33	1.5		0.0	13.710	120	11.914	
to						0.0	0.0		0.0	
409	40.040		38.52	1.682		0.0	13.710	0.0439	0.602	Vel = 5.56

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
409	40.040	5.60	19.82	1.5		0.0	13.710	120	12.516			
to						0.0	0.0		0.0			
411	40.040		58.34	1.682		0.0	13.710	0.0946	1.297	Vel = 8.42		
411	40.040	5.60	20.81	1.5	T	9.9	30.250	120	13.813			
to						0.0	9.900		0.0			
404	40.040		79.15	1.682		0.0	40.150	0.1664	6.679	Vel = 11.43		
			0.0									
404			79.15						20.492	K Factor = 17.48		
106	0		76.21	8	4E	108.73	1096.000	150	48.433			
to					2G	12.081	120.813		0.0			
112	0		76.21	7.98		0.0	1216.813	0.0001	0.063	Vel = 0.49		
112	0		0.0	8	T	52.855	158.000	150	48.496			
to					G	6.041	58.895		0.0			
107	0		76.21	7.98		0.0	216.895	0.0001	0.012	Vel = 0.49		
			0.0									
107			76.21						48.508	K Factor = 10.94		

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - UPPER STAGE
Drawing	:	6 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	5
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 5.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 6 OF 10
Date: 8-17-20

Design

Remote area number: 5
Remote area location: UPPER STAGE
Occupancy classification: ORDINARY GROUP 2
Density: 0.20 - Gpm/SqFt
Area of application: 1532 - SqFt
Coverage per sprinkler: 125 - SqFt
Type of sprinklers calculated: RELIABLE FIFRLO
No. of sprinklers calculated: 12
In-rack demand: - GPM
Hose streams: 250 - GPM
Total water required (including hose streams): 590.02 - GPM @ 49.57 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

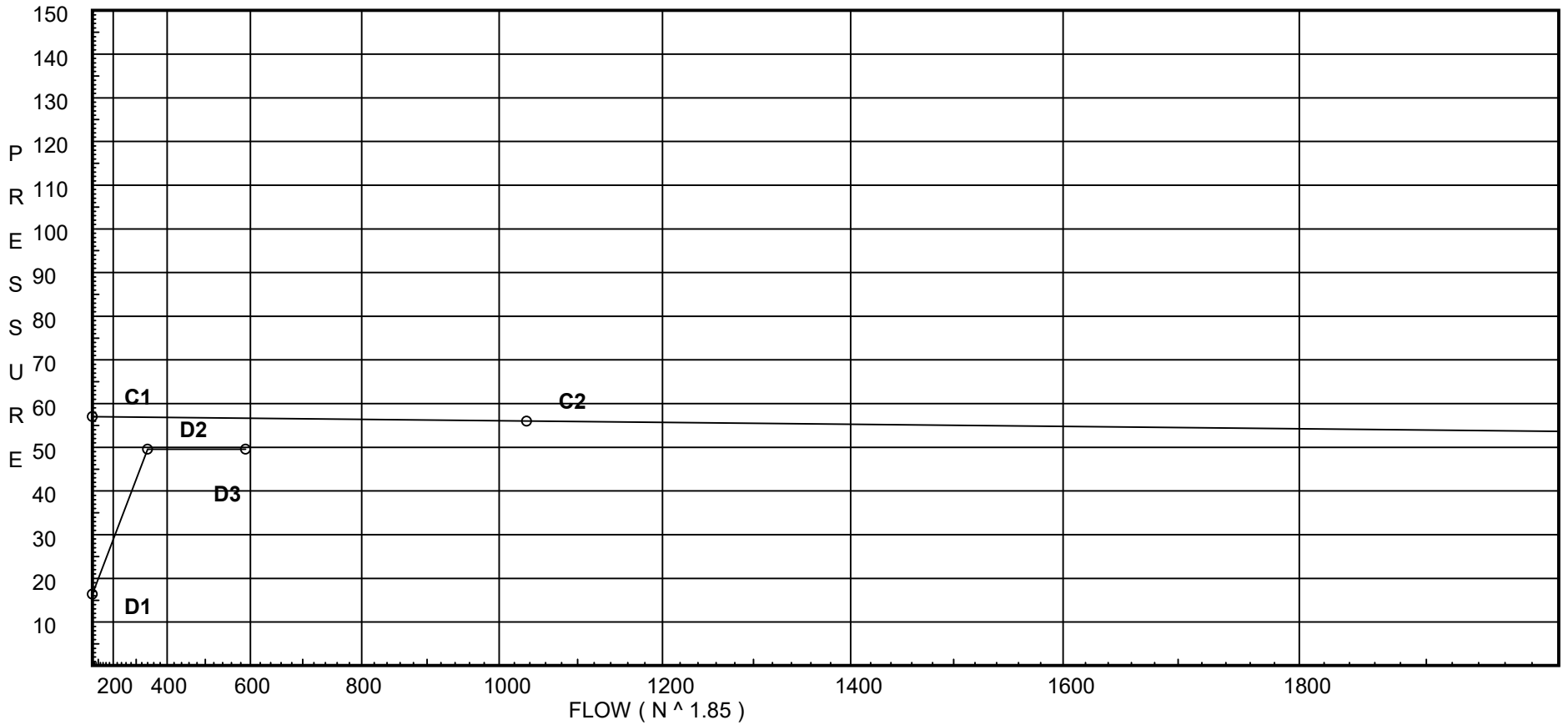
Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.)

City Water Supply:
- C1 - Static Pressure : 57
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1036

Demand:
- D1 - Elevation : 16.367
- D2 - System Flow : 340.02
- D2 - System Pressure : 49.566
- Hose (Demand) : 250
- D3 - System Demand : 590.02
- Safety Margin : 7.081



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	9.3	11	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	57.0	56	1036.0	56.647	590.02	49.566

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
500	32.46	8	10.81	26.3	
501	31.46		12.51		
502	31.46		12.53		
503	31.46		12.62		
504	31.46		12.8		
505	31.46		13.12		
506	31.46		13.38		
507	34.12		13.88		
510	36.79		12.88		
511	36.79		13.42		
533	10.82		27.93		
534	10.82		30.45		
Z1T	10.0		35.71		
UG	0.0		48.05		
100	0.0		48.56		
106	0.0		48.68		
107	0.0		49.0		
TEST	0.0		49.57	250.0	
513	32.46	8	10.83	26.32	
514	32.46	8	10.91	26.42	
515	32.46	8	11.07	26.62	
516	32.46	8	11.36	26.97	
517	37.79	8	9.77	25.0	
518	36.79		11.35		
519	36.79		11.37		
520	36.79		11.45		
521	36.79		11.62		
522	36.79		11.91		
523	37.79	8	9.78	25.02	
524	37.79	8	9.86	25.12	
525	37.79	8	10.01	25.31	
526	37.79	8	10.27	25.64	
527	37.79	8	11.43	27.05	
528	36.79		13.2		
529	36.79		13.22		
530	36.79		13.32		
531	37.79	8	11.45	27.08	
532	37.79	8	11.54	27.17	
112	0.0		48.95		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
500	32.46	8.00	26.30	1	T	5.762	1.000	120	10.806	
to						0.0	5.762		0.433	
501	31.46		26.3	1.08		0.0	6.762	0.1874	1.267	Vel = 9.21
501	31.46		0.0	2.5		0.0	9.670	120	12.506	
to						0.0	0.0		0.0	
502	31.46		26.3	2.635		0.0	9.670	0.0025	0.024	Vel = 1.55
502	31.46		26.32	2.5		0.0	10.000	120	12.530	
to						0.0	0.0		0.0	
503	31.46		52.62	2.635		0.0	10.000	0.0087	0.087	Vel = 3.10
503	31.46		26.42	2.5		0.0	10.000	120	12.617	
to						0.0	0.0		0.0	
504	31.46		79.04	2.635		0.0	10.000	0.0187	0.187	Vel = 4.65
504	31.46		26.62	2.5		0.0	10.000	120	12.804	
to						0.0	0.0		0.0	
505	31.46		105.66	2.635		0.0	10.000	0.0319	0.319	Vel = 6.22
505	31.46		26.97	2.5		0.0	5.320	120	13.123	
to						0.0	0.0		0.0	
506	31.46		132.63	2.635		0.0	5.320	0.0485	0.258	Vel = 7.80
506	31.46		0.0	2.5	X	14.827	2.670	120	13.381	
to					T	16.474	31.301		-1.152	
507	34.12		132.63	2.635		0.0	33.971	0.0486	1.650	Vel = 7.80
507	34.12		0.0	4	2V	17.907	15.330	120	13.879	
to						0.0	17.907		-1.156	
510	36.79		132.63	4.26		0.0	33.237	0.0047	0.155	Vel = 2.99
510	36.79		126.09	4	X	21.067	12.660	120	12.878	
to						0.0	21.067		0.0	
511	36.79		258.72	4.26		0.0	33.727	0.0161	0.544	Vel = 5.82
511	36.79		81.30	4	3V	26.861	74.290	120	13.422	
to					X	21.067	47.928		11.248	
533	10.820		340.02	4.26		0.0	122.218	0.0267	3.264	Vel = 7.65
533	10.820		0.0	4	V	8.954	64.040	120	27.934	
to					X	21.067	30.021		0.0	
534	10.820		340.02	4.26		0.0	94.061	0.0267	2.512	Vel = 7.65
534	10.820		0.0	4	3V	26.861	114.850	120	30.446	
to					2X	42.135	68.996		0.355	
Z1T	10		340.02	4.26		0.0	183.846	0.0267	4.912	Vel = 7.65
Z1T	10		0.0	4	B	15.8	15.580	120	35.713	
to					V	8.954	51.088		10.553	* * Fixed Loss = 6.222
UG	0		340.02	4.26	T	26.334	66.668	0.0267	1.780	Vel = 7.65
					Zcb	0.0				
UG	0		0.0	6	2E	43.166	72.000	150	48.046	
to					T	46.249	94.040		0.0	
100	0		340.02	6.09	G	4.625	166.040	0.0031	0.515	Vel = 3.75
100	0		0.0	8	T	52.855	90.000	150	48.561	
to						0.0	52.855		0.0	
106	0		340.02	7.98		0.0	142.855	0.0008	0.119	Vel = 2.18
106	0		-163.48	8	3E	81.548	1144.000	150	48.680	
to					T	52.855	140.443		0.0	
107	0		176.54	7.98	G	6.041	1284.443	0.0002	0.318	Vel = 1.13

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
107	0		163.48	8	E	27.183	598.000	150	48.998	
to					T	52.855	86.077		0.0	
TEST	0		340.02	7.98	G	6.041	684.077	0.0008	0.568	Vel = 2.18
			250.00							Qa = 250.00
TEST			590.02						49.566	K Factor = 83.81
513	32.46	8.00	26.32	1	T	5.762	1.000	120	10.827	
to						0.0	5.762		0.433	
502	31.46		26.32	1.08		0.0	6.762	0.1878	1.270	Vel = 9.22
			0.0							
502			26.32						12.530	K Factor = 7.44
514	32.46	8.00	26.42	1	T	5.762	1.000	120	10.906	
to						0.0	5.762		0.433	
503	31.46		26.42	1.08		0.0	6.762	0.1890	1.278	Vel = 9.25
			0.0							
503			26.42						12.617	K Factor = 7.44
515	32.46	8.00	26.62	1	T	5.762	1.000	120	11.074	
to						0.0	5.762		0.433	
504	31.46		26.62	1.08		0.0	6.762	0.1918	1.297	Vel = 9.32
			0.0							
504			26.62						12.804	K Factor = 7.44
516	32.46	8.00	26.97	1	T	5.762	1.000	120	11.362	
to						0.0	5.762		0.433	
505	31.46		26.97	1.08		0.0	6.762	0.1964	1.328	Vel = 9.45
			0.0							
505			26.97						13.123	K Factor = 7.44
517	37.79	8.00	25.00	1	T	5.762	1.000	120	9.766	
to						0.0	5.762		0.433	
518	36.79		25.0	1.08		0.0	6.762	0.1707	1.154	Vel = 8.76
518	36.79		0.0	2.5		0.0	9.670	120	11.353	
to						0.0	0.0		0.0	
519	36.79		25.0	2.635		0.0	9.670	0.0022	0.021	Vel = 1.47
519	36.79		25.02	2.5		0.0	10.000	120	11.374	
to						0.0	0.0		0.0	
520	36.79		50.02	2.635		0.0	10.000	0.0080	0.080	Vel = 2.94
520	36.79		25.12	2.5		0.0	10.000	120	11.454	
to						0.0	0.0		0.0	
521	36.79		75.14	2.635		0.0	10.000	0.0170	0.170	Vel = 4.42
521	36.79		25.31	2.5		0.0	10.000	120	11.624	
to						0.0	0.0		0.0	
522	36.79		100.45	2.635		0.0	10.000	0.0290	0.290	Vel = 5.91
522	36.79		25.64	2.5	T	16.474	5.320	120	11.914	
to						0.0	16.474		0.0	
510	36.79		126.09	2.635		0.0	21.794	0.0442	0.964	Vel = 7.42
			0.0							
510			126.09						12.878	K Factor = 35.14
523	37.79	8.00	25.02	1	T	5.762	1.000	120	9.785	
to						0.0	5.762		0.433	
519	36.79		25.02	1.08		0.0	6.762	0.1710	1.156	Vel = 8.76

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
			0.0									
519			25.02						11.374	K Factor = 7.42		
524	37.79	8.00	25.12	1	T	5.762	1.000	120	9.857			
to						0.0	5.762		0.433			
520	36.79		25.12	1.08		0.0	6.762	0.1721	1.164	Vel = 8.80		
			0.0									
520			25.12						11.454	K Factor = 7.42		
525	37.79	8.00	25.31	1	T	5.762	1.000	120	10.010			
to						0.0	5.762		0.433			
521	36.79		25.31	1.08		0.0	6.762	0.1747	1.181	Vel = 8.86		
			0.0									
521			25.31						11.624	K Factor = 7.42		
526	37.79	8.00	25.64	1	T	5.762	1.000	120	10.272			
to						0.0	5.762		0.433			
522	36.79		25.64	1.08		0.0	6.762	0.1788	1.209	Vel = 8.98		
			0.0									
522			25.64						11.914	K Factor = 7.43		
527	37.79	8.00	27.05	1	T	5.762	1.000	120	11.431			
to						0.0	5.762		0.433			
528	36.79		27.05	1.08		0.0	6.762	0.1974	1.335	Vel = 9.47		
528	36.79		0.0	2.5		0.0	10.000	120	13.199			
to						0.0	0.0		0.0			
529	36.79		27.05	2.635		0.0	10.000	0.0026	0.026	Vel = 1.59		
529	36.79		27.07	2.5		0.0	10.000	120	13.225			
to						0.0	0.0		0.0			
530	36.79		54.12	2.635		0.0	10.000	0.0092	0.092	Vel = 3.18		
530	36.79		27.18	2.5		0.0	5.320	120	13.317			
to						0.0	0.0		0.0			
511	36.79		81.3	2.635		0.0	5.320	0.0197	0.105	Vel = 4.78		
			0.0									
511			81.30						13.422	K Factor = 22.19		
531	37.79	8.00	27.08	1	T	5.762	1.000	120	11.454			
to						0.0	5.762		0.433			
529	36.79		27.08	1.08		0.0	6.762	0.1979	1.338	Vel = 9.48		
			0.0									
529			27.08						13.225	K Factor = 7.45		
532	37.79	8.00	27.17	1	T	5.762	1.000	120	11.538			
to						0.0	5.762		0.433			
530	36.79		27.17	1.08		0.0	6.762	0.1991	1.346	Vel = 9.52		
			0.0									
530			27.17						13.317	K Factor = 7.45		
106	0		163.49	8	4E	108.73	1096.000	150	48.680			
to					T	52.855	167.626		0.0			
112	0		163.49	7.98	G	6.041	1263.626	0.0002	0.271	Vel = 1.05		
112	0		0.0	8	T	52.855	158.000	150	48.951			
to					G	6.041	58.895		0.0			
107	0		163.49	7.98		0.0	216.895	0.0002	0.047	Vel = 1.05		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
			0.0									
107			163.49						48.998	K Factor =	23.36	

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - UPPER THEATER
Drawing	:	6 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	6
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 6.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 6 OF 10
Date: 8-17-20

Design

Remote area number: 6
Remote area location: UPPER THEATER
Occupancy classification: LIGHT
Density: 0.10 - Gpm/SqFt
Area of application: 1651 - SqFt
Coverage per sprinkler: 324 - SqFt
Type of sprinklers calculated: RELIABLE J112 EC UPRIGHT
No. of sprinklers calculated: 8
In-rack demand: - GPM
Hose streams: 100 - GPM
Total water required (including hose streams): 398.05 - GPM @ 46.27 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

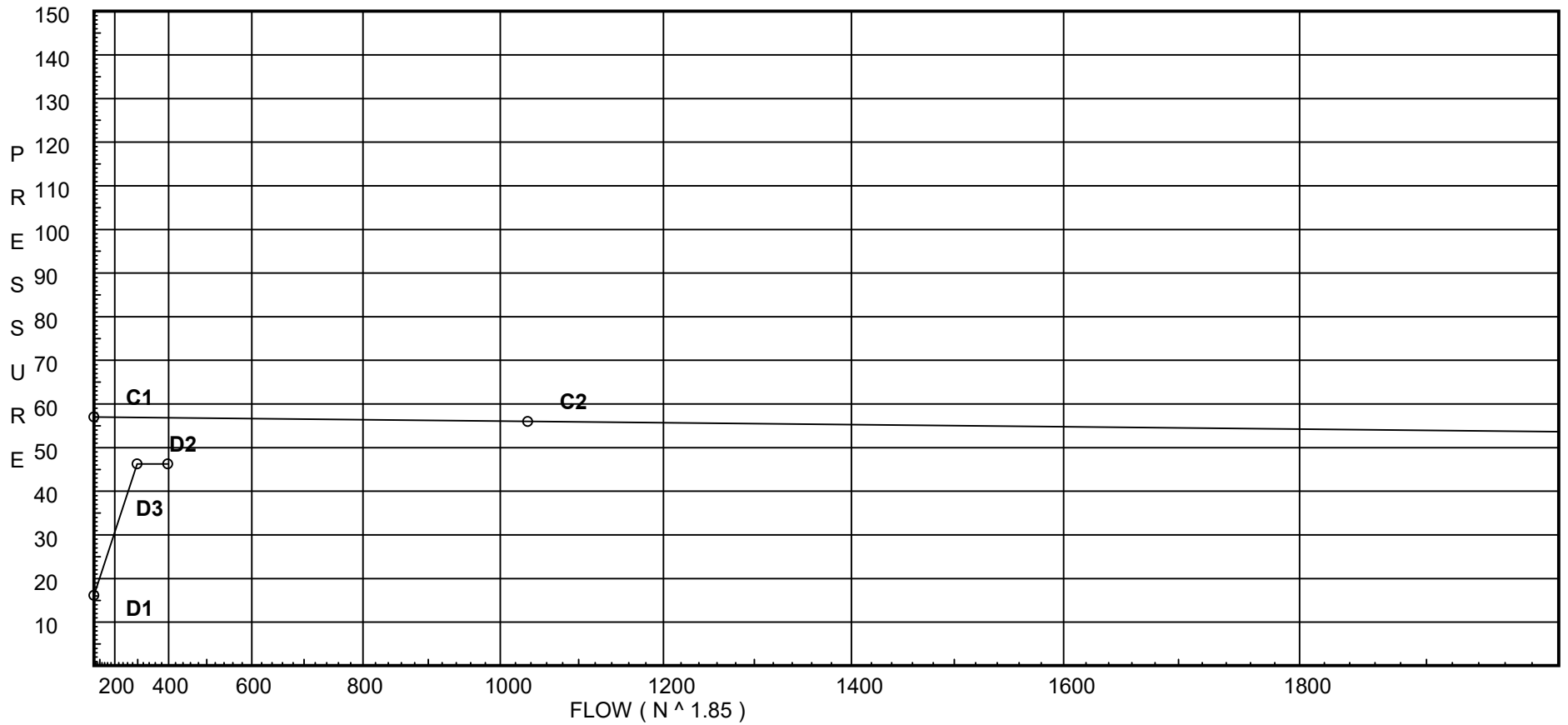
Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.)

City Water Supply:
- C1 - Static Pressure : 57
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1036

Demand:
- D1 - Elevation : 16.116
- D2 - System Flow : 298.047
- D2 - System Pressure : 46.266
- Hose (Demand) : 100
- D3 - System Demand : 398.047
- Safety Margin : 10.564



Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	9.3	11	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	*Static Pressure*	*Residual Pressure*	*Flow*	*Available Pressure*	*Total Demand*	*Required Pressure*
TEST	57.0	56	1036.0	56.83	398.05	46.266

NODE ANALYSIS

Node Tag	*Elevation*	*Node Type*	*Pressure at Node*	*Discharge at Node*	*Notes*
601	37.21	11.2	8.7	33.04	
602	37.21		10.15		
603	37.21	11.2	10.17	35.71	
604	37.21	11.2	10.75	36.72	
605	37.21		12.94		
606	37.21		13.03		
607	37.21		13.28		
613	10.83		28.22		
534	10.83		29.66		
Z1T	10.0		33.87		
UG	0.0		45.11		
100	0.0		45.48		
106	0.0		45.57		
107	0.0		45.82		
TEST	0.0		46.27	100.0	
608	37.21	11.2	10.79	36.79	
609	37.21	11.2	10.97	37.1	
610	37.21	11.2	11.64	38.21	
612	37.21	11.2	12.75	39.99	
611	37.21	11.2	13.07	40.5	
112	0.0		45.78		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
601	37.21	11.20	33.04	1.25	E	3.0	7.710	120	8.700	
to					T	6.0	9.000		0.0	
602	37.21		33.04	1.38		0.0	16.710	0.0866	1.447	Vel = 7.09
602	37.21		0.0	2		0.0	2.040	120	10.147	
to						0.0	0.0		0.0	
603	37.21		33.04	2.157		0.0	2.040	0.0098	0.020	Vel = 2.90
603	37.21	11.20	35.71	2		0.0	15.250	120	10.167	
to						0.0	0.0		0.0	
604	37.21		68.75	2.157		0.0	15.250	0.0382	0.582	Vel = 6.04
604	37.21	11.20	36.72	2	T	12.307	13.700	120	10.749	
to						0.0	12.307		0.0	
605	37.21		105.47	2.157		0.0	26.007	0.0842	2.191	Vel = 9.26
605	37.21		39.99	4		0.0	16.000	120	12.940	
to						0.0	0.0		0.0	
606	37.21		145.46	4.26		0.0	16.000	0.0056	0.089	Vel = 3.27
606	37.21		112.09	4		0.0	16.000	120	13.029	
to						0.0	0.0		0.0	
607	37.21		257.55	4.26		0.0	16.000	0.0160	0.256	Vel = 5.80
607	37.21		40.50	4	4V	35.814	110.750	120	13.285	
to					X	21.067	56.881		11.425	
613	10.830		298.05	4.26		0.0	167.631	0.0209	3.509	Vel = 6.71
613	10.830		0.0	4	X	21.067	47.860	120	28.219	
to						0.0	21.067		0.0	
534	10.83		298.05	4.26		0.0	68.927	0.0209	1.443	Vel = 6.71
534	10.83		0.0	4	3V	26.861	114.850	120	29.662	
to					2X	42.135	68.996		0.359	
Z1T	10		298.05	4.26		0.0	183.846	0.0209	3.849	Vel = 6.71
Z1T	10		0.0	4	B	15.8	15.580	120	33.870	
to					V	8.954	51.088		9.842	* * Fixed Loss = 5.511
UG	0		298.05	4.26	T	26.334	66.668	0.0209	1.396	Vel = 6.71
					Zcb	0.0				
UG	0		0.0	6	2V	30.833	72.000	150	45.108	
to					G	4.625	81.707		0.0	
100	0		298.05	6.09	T	46.249	153.707	0.0024	0.374	Vel = 3.28
100	0		0.0	8	T	52.855	90.000	150	45.482	
to						0.0	52.855		0.0	
106	0		298.05	7.98		0.0	142.855	0.0007	0.093	Vel = 1.91
106	0		-144.60	8	3E	81.548	1144.000	150	45.575	
to					T	52.855	140.443		0.0	
107	0		153.45	7.98	G	6.041	1284.443	0.0002	0.245	Vel = 0.98
107	0		144.60	8	E	27.183	598.000	150	45.820	
to					T	52.855	86.077		0.0	
TEST	0		298.05	7.98	G	6.041	684.077	0.0007	0.446	Vel = 1.91
			100.00							Qa = 100.00
TEST			398.05						46.266	K Factor = 58.52
608	37.21	11.20	36.79	2		0.0	15.250	120	10.789	
to						0.0	0.0		0.0	
609	37.21		36.79	2.157		0.0	15.250	0.0120	0.183	Vel = 3.23

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
609	37.21	11.20	37.10	2		0.0	15.250	120	10.972			
to						0.0	0.0		0.0			
610	37.21		73.89	2.157		0.0	15.250	0.0437	0.666	Vel = 6.49		
610	37.21	11.20	38.21	2	T	12.307	2.450	120	11.638			
to						0.0	12.307		0.0			
606	37.21		112.1	2.157		0.0	14.757	0.0943	1.391	Vel = 9.84		
			0.0									
606			112.10						13.029	K Factor = 31.06		
612	37.21	11.20	39.99	2	T	12.307	1.550	120	12.746			
to						0.0	12.307		0.0			
605	37.21		39.99	2.157		0.0	13.857	0.0140	0.194	Vel = 3.51		
			0.0									
605			39.99						12.940	K Factor = 11.12		
611	37.21	11.20	40.50	2	T	12.307	2.450	120	13.073			
to						0.0	12.307		0.0			
607	37.21		40.5	2.157		0.0	14.757	0.0144	0.212	Vel = 3.56		
			0.0									
607			40.50						13.285	K Factor = 11.11		
106	0		144.60	8	4E	108.73	1096.000	150	45.575			
to					2G	12.081	120.813		0.0			
112	0		144.6	7.98		0.0	1216.813	0.0002	0.208	Vel = 0.93		
112	0		0.0	8	T	52.855	158.000	150	45.783			
to					G	6.041	58.895		0.0			
107	0		144.6	7.98		0.0	216.895	0.0002	0.037	Vel = 0.93		
			0.0									
107			144.60						45.820	K Factor = 21.36		

Hydraulic Calculations by HydraCALC

International Fire Protection
833 3rd Street SW
Suite #3
New Brighton, MN 55112
612-567-4653

Job Name	:	HORACE HIGH SCHOOL - UPPER SCENE SHOP
Drawing	:	6 OF 10
Location	:	8100 LAKEVIEW DRIVE, HORACE, ND
Remote Area	:	7
Contract	:	I19-24
Data File	:	HORACE HIGH SCHOOL - SUBMITTAL PLANS Area 7.WXF

HYDRAULIC CALCULATIONS
for

Project name: HORACE HIGH SCHOOL
Location: 8100 LAKEVIEW DRIVE, HORACE, ND
Drawing no: 6 OF 10
Date: 8-17-20

Design

Remote area number: 7
Remote area location: UPPER SCENE SHOP
Occupancy classification: ORDINARY GROUP 2
Density: 0.20 - Gpm/SqFt
Area of application: 1516 - SqFt
Coverage per sprinkler: 123 - SqFt
Type of sprinklers calculated: RELIABLE F1FR56 UPRIGHT
No. of sprinklers calculated: 13
In-rack demand: - GPM
Hose streams: 250 - GPM
Total water required (including hose streams): 572.83 - GPM @ 47.02 - Psi
Type of system: WET
Volume of dry or preaction system: N/A - Gal

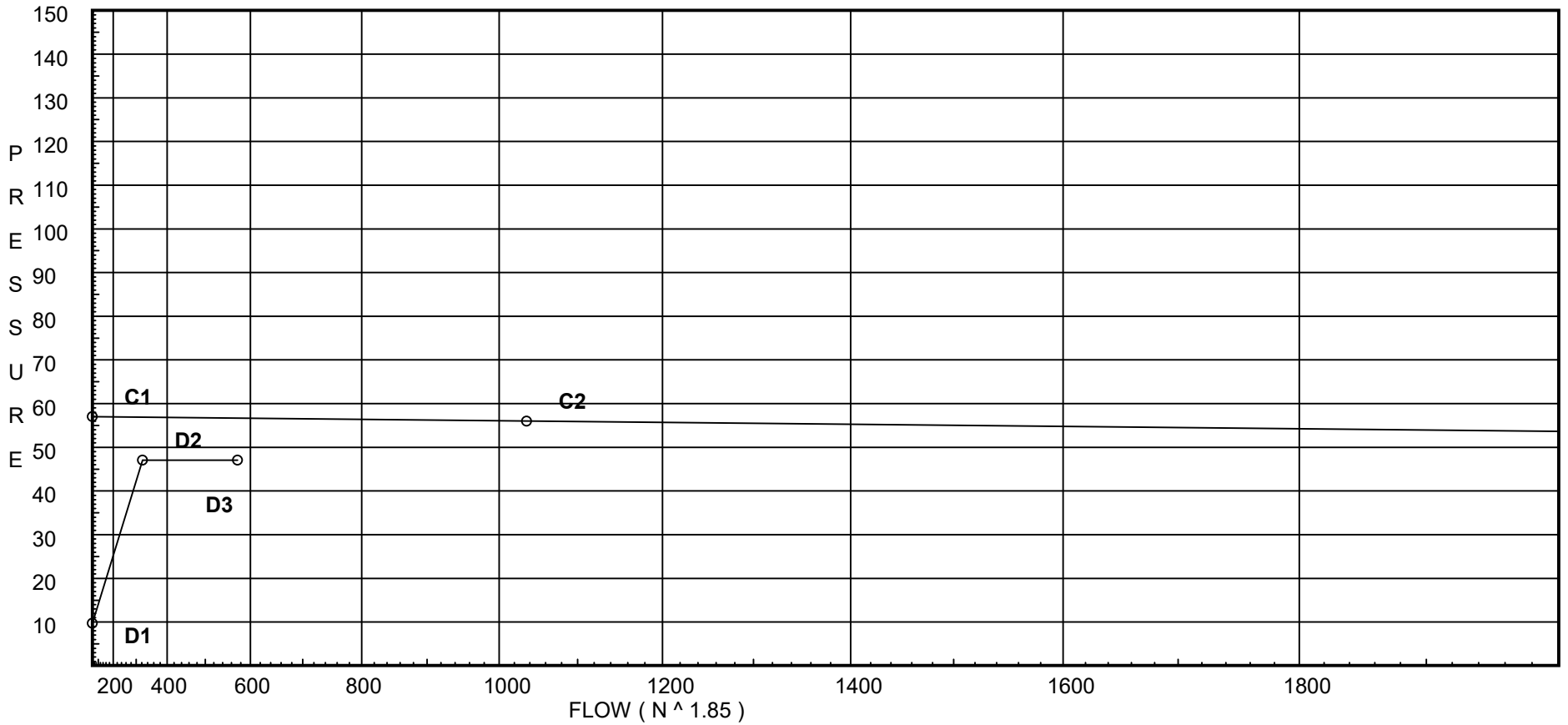
Water supply information

Date: 7-30-20
Location: 79TH AVE. SOUTH & LAKEVIEW DRIVE
Source: AFP & CITY FLOW TEST

Name of contractor: Adavanced Fire Protection
Address: 1801 N. 43rd St. - Suite B, Fargo, ND 58102
Phone number: 701-298-9804
Name of designer: DAVE CLARK 651-247-6861
Authority having jurisdiction: CITY OF SHOREVIEW
Notes: (Include peaking information or gridded systems here.)

City Water Supply:
- C1 - Static Pressure : 57
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1036

Demand:
- D1 - Elevation : 9.706
- D2 - System Flow : 322.83
- D2 - System Pressure : 47.023
- Hose (Demand) : 250
- D3 - System Demand : 572.83
- Safety Margin : 9.643



Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	NFPA 13 Butterfly Valve	0	0	0	0	0	6	7	10	0	12	9	10	12	19	21	0	0	0	0	0
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	4.5	5.1	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	9.3	11	0	0	0	0	0
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	*Static Pressure*	*Residual Pressure*	*Flow*	*Available Pressure*	*Total Demand*	*Required Pressure*
TEST	57.0	56	1036.0	56.666	572.83	47.023

NODE ANALYSIS

Node Tag	*Elevation*	*Node Type*	*Pressure at Node*	*Discharge at Node*	*Notes*
700	21.89	5.6	19.44	24.69	
701	21.89		21.99		
702	22.15		21.91		
703	22.41		21.89		
704	22.68		21.97		
705	17.83		25.49		
533	10.83		28.75		
534	10.83		28.95		
Z1T	10.0		33.77		
UG	0.0		45.65		
100	0.0		46.11		
106	0.0		46.22		
107	0.0		46.51		
TEST	0.0		47.02	250.0	
707	21.89	5.6	20.24	25.19	
708	21.89	5.6	19.57	24.77	
709	21.89	5.6	19.38	24.65	
710	22.15	5.6	19.31	24.61	
711	22.15	5.6	19.5	24.73	
712	22.15	5.6	20.17	25.15	
713	22.41	5.6	19.3	24.6	
714	22.41	5.6	19.48	24.72	
715	22.41	5.6	20.15	25.14	
716	22.68	5.6	19.36	24.64	
717	22.68	5.6	19.55	24.76	
718	22.68	5.6	20.22	25.18	
112	0.0		46.46		
719	10.83		28.95		
613	10.83		28.95		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
700	21.89	5.60	24.69	1	E	2.305	7.180	120	19.444	
to					T	5.762	8.067		0.0	
701	21.89		24.69	1.08		0.0	15.247	0.1668	2.543	Vel = 8.65
701	21.89		74.62	4		0.0	12.670	120	21.987	
to						0.0	0.0		-0.113	
702	22.15		99.31	4.26		0.0	12.670	0.0028	0.035	Vel = 2.24
702	22.15		74.48	4		0.0	12.670	120	21.909	
to						0.0	0.0		-0.113	
703	22.41		173.79	4.26		0.0	12.670	0.0077	0.098	Vel = 3.91
703	22.41		74.46	4		0.0	12.670	120	21.894	
to						0.0	0.0		-0.117	
704	22.68		248.25	4.26		0.0	12.670	0.0149	0.189	Vel = 5.59
704	22.68		74.58	4	2V	17.907	19.650	120	21.966	
to					X	21.067	38.974		2.101	
705	17.830		322.83	4.26		0.0	58.624	0.0243	1.422	Vel = 7.27
705	17.830		-237.44	4	2V	17.907	92.980	120	25.489	
to						0.0	17.907		3.032	
533	10.830		85.39	4.26		0.0	110.887	0.0021	0.230	Vel = 1.92
533	10.830		0.0	4	V	8.954	64.050	120	28.751	
to					X	21.067	30.021		0.0	
534	10.83		85.39	4.26		0.0	94.071	0.0021	0.195	Vel = 1.92
534	10.83		237.44	4	3V	26.861	114.850	120	28.946	
to					2X	42.135	68.996		0.359	
Z1T	10		322.83	4.26		0.0	183.846	0.0243	4.462	Vel = 7.27
Z1T	10		0.0	4	B	15.8	15.580	120	33.767	
to					V	8.954	51.088		10.262	* * Fixed Loss = 5.931
UG	0		322.83	4.26	T	26.334	66.668	0.0243	1.617	Vel = 7.27
					Zcb	0.0				
UG	0		0.0	6	2E	43.166	72.000	150	45.646	
to					T	46.249	94.040		0.0	
100	0		322.83	6.09	G	4.625	166.040	0.0028	0.468	Vel = 3.56
100	0		0.0	8	T	52.855	90.000	150	46.114	
to						0.0	52.855		0.0	
106	0		322.83	7.98		0.0	142.855	0.0008	0.108	Vel = 2.07
106	0		-156.62	8	3E	81.548	1144.000	150	46.222	
to					T	52.855	140.443		0.0	
107	0		166.21	7.98	G	6.041	1284.443	0.0002	0.284	Vel = 1.07
107	0		156.62	8	E	27.183	598.000	150	46.506	
to					T	52.855	86.077		0.0	
TEST	0		322.83	7.98	G	6.041	684.077	0.0008	0.517	Vel = 2.07
			250.00							Qa = 250.00
TEST			572.83						47.023	K Factor = 83.54
701	21.89		-74.62	1.5	T	9.9	1.820	120	21.987	
to						0.0	9.900		0.0	
707	21.89		-74.62	1.682		0.0	11.720	-0.1491	-1.748	Vel = 10.77
707	21.89	5.60	25.20	1.5		0.0	9.670	120	20.239	
to						0.0	0.0		0.0	
708	21.89		-49.42	1.682		0.0	9.670	-0.0696	-0.673	Vel = 7.14

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
708	21.89	5.60	24.77	1.5		0.0	9.670	120	19.566	
to						0.0	0.0		0.0	
709	21.89		-24.65	1.682		0.0	9.670	-0.0192	-0.186	Vel = 3.56
			5.60							Qa = 5.60
709			-19.05						19.380	K Factor = -4.33
710	22.15	5.60	24.61	1.5		0.0	9.670	120	19.310	
to						0.0	0.0		0.0	
711	22.15		24.61	1.682		0.0	9.670	0.0192	0.186	Vel = 3.55
711	22.15	5.60	24.72	1.5		0.0	9.670	120	19.496	
to						0.0	0.0		0.0	
712	22.15		49.33	1.682		0.0	9.670	0.0693	0.670	Vel = 7.12
712	22.15	5.60	25.15	1.5	T	9.9	1.820	120	20.166	
to						0.0	9.900		0.0	
702	22.15		74.48	1.682		0.0	11.720	0.1487	1.743	Vel = 10.75
			0.0							
702			74.48						21.909	K Factor = 15.91
713	22.41	5.60	24.60	1.5		0.0	9.670	120	19.297	
to						0.0	0.0		0.0	
714	22.41		24.6	1.682		0.0	9.670	0.0191	0.185	Vel = 3.55
714	22.41	5.60	24.72	1.5		0.0	9.670	120	19.482	
to						0.0	0.0		0.0	
715	22.41		49.32	1.682		0.0	9.670	0.0694	0.671	Vel = 7.12
715	22.41	5.60	25.14	1.5	T	9.9	1.820	120	20.153	
to						0.0	9.900		0.0	
703	22.41		74.46	1.682		0.0	11.720	0.1485	1.741	Vel = 10.75
			0.0							
703			74.46						21.894	K Factor = 15.91
716	22.68	5.60	24.64	1.5		0.0	9.670	120	19.361	
to						0.0	0.0		0.0	
717	22.68		24.64	1.682		0.0	9.670	0.0192	0.186	Vel = 3.56
717	22.68	5.60	24.76	1.5		0.0	9.670	120	19.547	
to						0.0	0.0		0.0	
718	22.68		49.4	1.682		0.0	9.670	0.0696	0.673	Vel = 7.13
718	22.68	5.60	25.18	1.5	T	9.9	1.820	120	20.220	
to						0.0	9.900		0.0	
704	22.68		74.58	1.682		0.0	11.720	0.1490	1.746	Vel = 10.77
			0.0							
704			74.58						21.966	K Factor = 15.91
106	0		156.62	8	4E	108.73	1096.000	150	46.222	
to					2G	12.081	120.813		0.0	
112	0		156.62	7.98		0.0	1216.813	0.0002	0.241	Vel = 1.00
112	0		0.0	8	T	52.855	158.000	150	46.463	
to					G	6.041	58.895		0.0	
107	0		156.62	7.98		0.0	216.895	0.0002	0.043	Vel = 1.00
			0.0							
107			156.62						46.506	K Factor = 22.97
705	17.830		237.44	4	2V	17.907	13.000	120	25.489	
to						0.0	17.907		3.032	
534	10.83		237.44	4.26		0.0	30.907	0.0138	0.425	Vel = 5.34

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
			0.0									
534			237.44						28.946	K Factor = 44.13		
719	10.830		0.0	3	3V	20.159	282.470	120	28.946			
to						0.0	20.159		0.0			
613	10.830		0.0	3.26		0.0	302.629	0	0.0	Vel = 0		
613	10.830		0.0	4	X	21.067	47.860	120	28.946			
to						0.0	21.067		0.0			
534	10.83		0.0	4.26		0.0	68.927	0	0.0	Vel = 0		
			0.0									
534			0.0						28.946	K Factor = 0		

MBN ENGINEERING

February 27, 2026

PROJECT

Horace High School – Addition and Remodel
West Fargo Public Schools
Horace, North Dakota

ADDENDUM NO. 1

Drawings and Project Specification Manual for the above referenced project are hereby revised in accordance with the items set forth herein. This Addendum supersedes and supplements all portions of the Bidding Documents with which it conflicts.

Receipt of this Addendum shall be acknowledged by entering this Addendum number on your proposal.

DRAWINGS

Sheet E001 Symbols Legend & Luminaire Schedule

1. Type Z1 – Provide a distributor net allowance price of $894 per fixture, plus freight.

Sheet E501 Electrical One-Line Diagram

1. Electrical One-Line Diagram – Revise plan note #2 – Intercept existing conduits routed underground. Existing conduits are stubbed to existing north vestibule.

PRIOR APPROVALS

Section 26 5100 – Lighting

Type	Manufacturer	Series
B1	Mark Lighting	WHISPER
D1	OCL	TB7
G1-G2	Lithonia	CPHB
K1	Lumenwerx Bartco	QUAWW BSS215
L1/L2	Mark Lighting	Slot 2
M1	Mark Lighting Axis Lighting	Slot 2 TB2DILED
N1	Halo Commercial	HCC6
P1	Mark Lighting Axis Lighting	Slot 4 BBRLED

END ADDENDUM NO. 1