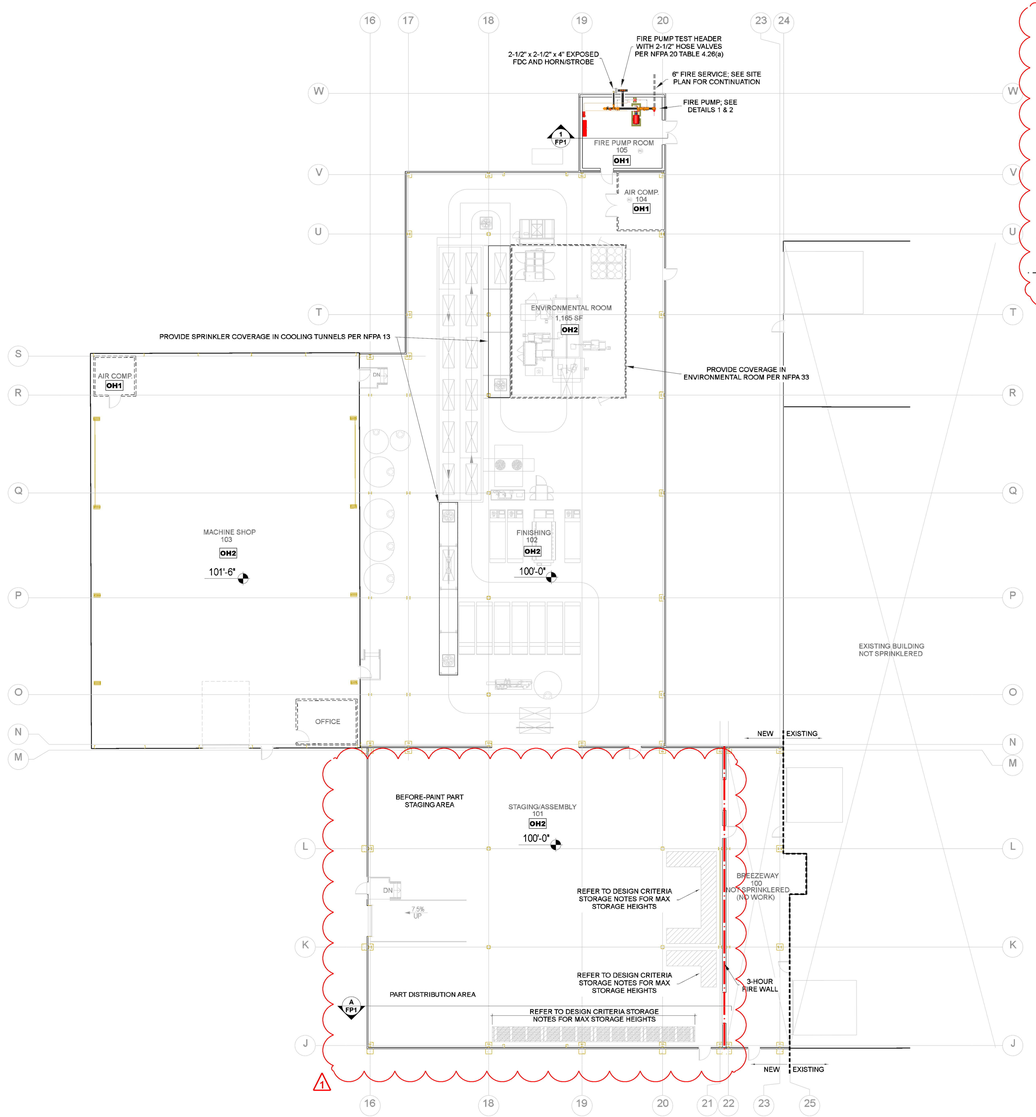
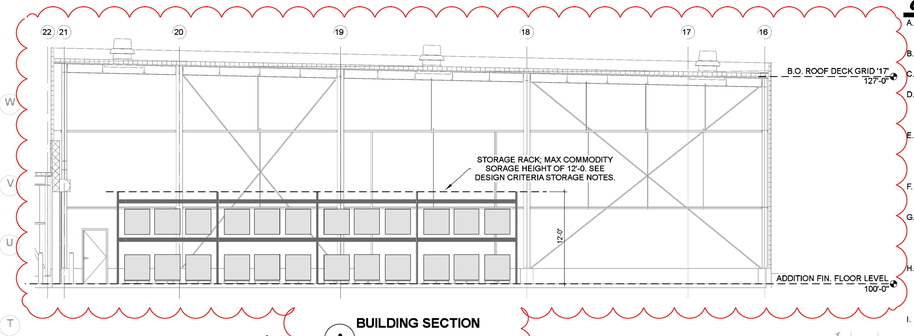


NORTH

FIRE SPRINKLER PLAN

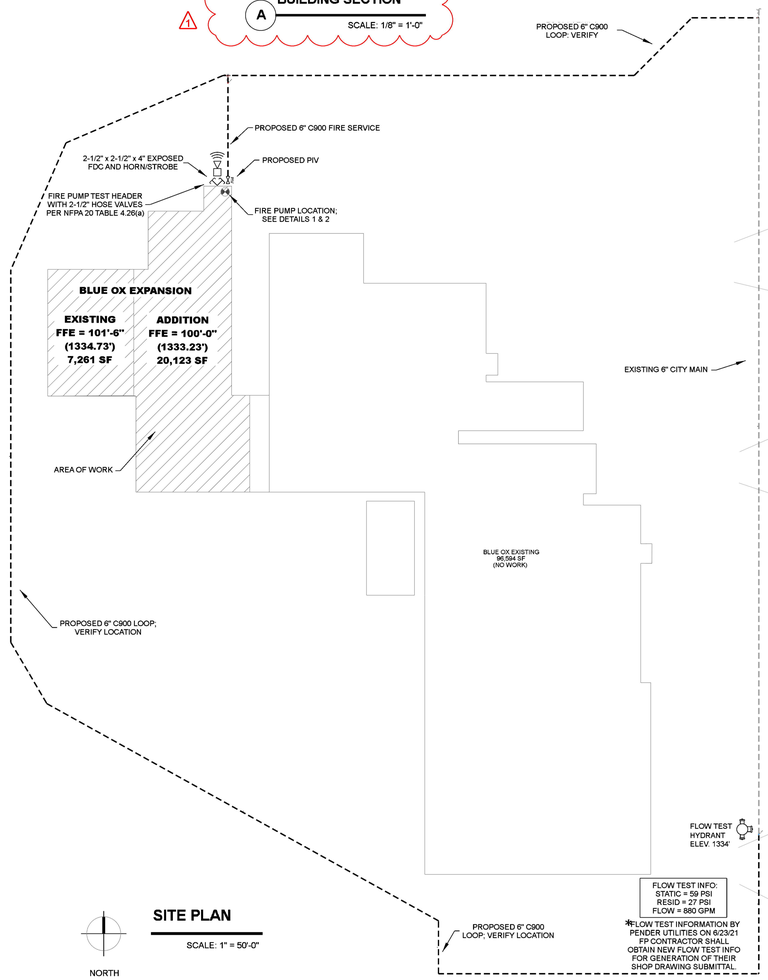
SCALE: 1/16" = 1'-0"



1

A BUILDING SECTION

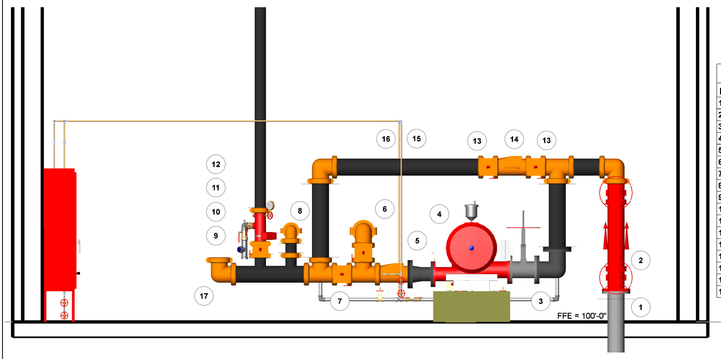
SCALE: 1/8" = 1'-0"



NORTH

SITE PLAN

SCALE: 1" = 50'-0"



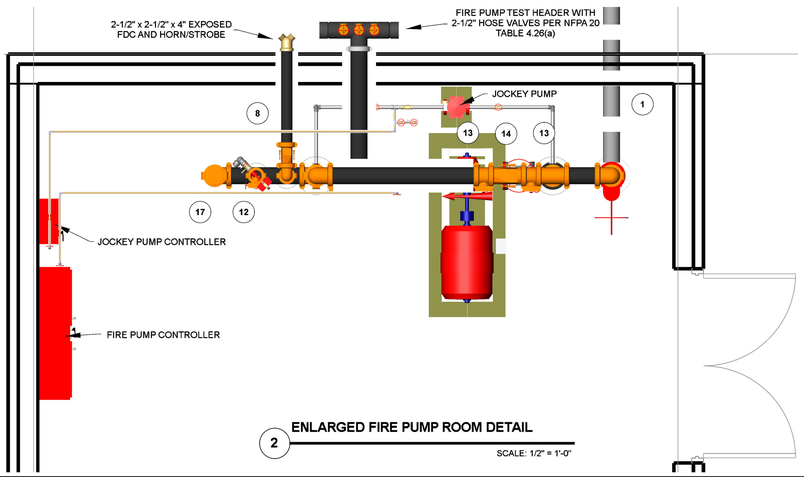
1

FIRE PUMP DETAIL

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

Fire Pump Legend

Key Note	Size	Description
1	6	WATER SERVICE (BY OTHERS)
2	6	BACKFLOW w/ SUPERVISED GATE VALVES (NORMALLY OPEN)
3	6	GATE VALVE w/ TAMPER (NORMALLY OPEN)
4		750 GPM FIRE PUMP (HORIZONTAL SPLIT CASE OR VERTICAL IN-LINE)
5	6	CHECK VALVE
6	6	HOSE HEADER VALVE w/ TAMPER (NORMALLY CLOSED)
7	6	DISCHARGE VALVE w/ TAMPER (NORMALLY OPEN)
8	4	CHECK VALVE TO FDC
9	4	CONTROL VALVE w/ TAMPER (NORMALLY OPEN)
10	2	SYSTEM DRAIN DISCHARGED TO EXTERIOR
11	4	RISER MANIFOLD w/ FLOW SWITCH, PRESSURE GAUGE, PRESURE RELEIF VALVE, INSPECTORS TEST, AND DRAIN
12	4	TO SYSTEM
13	6	BYPASS CONTROL VALVE w/ TAMPER (NORMALLY OPEN)
14	6	BYPASS CHECK VALVE
15		FIRE PUMP SENSING LINE
16		JOCKEY PUMP SENSING LINE
17	6	90 ELL w/ CAP FOR FUTURE EXPANSION



2

ENLARGED FIRE PUMP ROOM DETAIL

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

GENERAL NOTES

A. THIS PROJECT INCLUDES A WET FIRE SPRINKLER SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13 & 20 (2010), NFPA 33 (2011), AND STATE AND LOCAL CODES.
B. REFER TO SPECIFICATION 21 1300 FOR ADDITIONAL FIRE SPRINKLER SYSTEM INFORMATION.
C. THE SYSTEM WILL BE SUPPLIED BY THE CITY'S UNDERGROUND WATER DISTRIBUTION SYSTEM.
D. THE FIRE SPRINKLER CONTRACTOR SHALL PROVIDE ALL THE MATERIALS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM COMPLYING WITH NFPA 13, NFPA 33, AND ALL APPLICABLE STATE AND LOCAL CODES.
E. THE EXACT NUMBER, TYPE, COVERAGE, ETC. OF SPRINKLERS AND THE SYSTEM LAYOUT SHALL BE DETERMINED BY THE FIRE SPRINKLER CONTRACTOR AND IS SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION AND FIRE PROTECTION ENGINEER.
F. PIPE SIZES SHALL BE DETERMINED THROUGH THE HYDRAULIC CALCULATION METHOD DESCRIBED IN NFPA 13 AND IS THE RESPONSIBILITY OF THE FIRE SPRINKLER CONTRACTOR.
G. THE SYSTEM SHALL BE COORDINATED WITH ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL COMPONENTS. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR TYPES, HEIGHTS, AND LOCATIONS OF EXPOSED STRUCTURE.
H. WATER FILLED PIPE SHALL NOT BE INSTALLED IN AREAS SUBJECT TO FREEZING. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT AND FIRE PROTECTION ENGINEER OF AREAS WITH POTENTIAL FREEZING CONCERNS.
I. ANY AND ALL CLARIFICATIONS TO THESE CONSTRUCTION DOCUMENTS SHALL BE MADE PRIOR TO BID. NO ALLOWANCES FOR EXTRA SPRINKLERS, PIPING, FITTINGS, ETC. WILL BE ALLOWED AFTER AWARD OF CONTRACT.
J. ALL MATERIAL SHALL BE NEW, U.L. LISTED FOR FIRE PROTECTION USE.
K. UPRIGHT SPRINKLER FINISH SHALL BE BRASS UNLESS NOTED OTHERWISE ON THESE PLANS.
L. PENDENT SPRINKLER FINISH SHALL BE CHROME WITH MATCHING SEMI-RECESSED ESCUTCHEON IN FINISHED CEILINGS.
M. PENDENT SPRINKLER FINISH SHALL BE BRASS IN UNFINISHED AREAS WITH EXPOSED STRUCTURE.
N. SPRINKLERS IN LIGHT HAZARD AREAS SHALL BE QUICK RESPONSE AS REQUIRED BY NFPA 13.
O. SPRINKLERS SHALL BE LOCATED IN THE CENTER POINT OF SQUARE CEILING TILES AND ALLOWED TO BE IN THE QUARTER AND/OR CENTER POINTS OF RECTANGULAR CEILING PANELS WITH A TOLERANCE OF +/-2".
P. U.L. LISTED GUARDS SHALL BE INSTALLED ON ALL EXPOSED SPRINKLERS ELEVATED BELOW 7'-0", SIDEWALL SPRINKLERS LOCATED BENEATH OVERHEAD DOORS, AND THROUGHOUT AREAS WHERE SPRINKLERS ARE EXPOSED TO INTERFERENCE DAMAGE.
Q. GROOVED PIPING SHALL BE SCHEDULE 10 MINIMUM.
R. THREADED PIPING SHALL BE SCHEDULE 40 MINIMUM.
S. THREADED FITTINGS SHALL BE DUCTILE IRON.
T. ALL PIPING SHALL BE BLACK STEEL.
U. ALL PIPE PENETRATING EXTERIOR WALLS SHALL BE GALVANIZED AND THE ANNULAR SPACE SHALL BE SEALED AT EACH SIDE OF THE WALL.
V. FIRE DEPARTMENT CONNECTION SHALL BE BRASS w/ LOCAL THREADS, INSTALLED MIN. OF 18" TO A MAX OF 48" ABOVE FINAL EXTERIOR GRADE, AND READILY ACCESSIBLE AT ALL TIMES WITH A 36" CLEARANCE.
W. AUXILIARY AND LOW POINT DRAINS TO BE PROVIDED WHERE REQUIRED BY NFPA 13 AND SHALL DISCHARGE TO THE BUILDING EXTERIOR.
X. SPRINKLER PROTECTION SHALL BE PROVIDED BELOW ALL EQUIPMENT, DUCTWORK, MEZZANINES, AND ELEVATED WALKWAYS GREATER THAN 4'-0" WIDE AS REQUIRED PER NFPA 13.
Y. ALL CONTROL VALVES AND FLOW SWITCHES TO BE LOCALLY AND CENTRALLY MONITORED.
Z. HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13.
AA. NEW UNDERGROUND PIPING SHALL BE TESTED AND FLUSHED IN ACCORDANCE WITH NFPA 24 (BY THE INSTALLING CONTRACTOR). DOCUMENTATION SHALL BE OBTAINED BY THE FIRE SPRINKLER CONTRACTOR PRIOR TO CONNECTING THE FIRE SPRINKLER SYSTEM.
AB. ALL HOLES FOR PIPING SHALL BE DRILLED OR CORE DRILLED, NO BREAKING OF CONCRETE OR C.M.U SHALL BE PERMITTED.
AC. ALL SPRINKLERS SHALL BE PROTECTED DURING PAINTING BY THE FIRE SPRINKLER CONTRACTOR.
AD. REQUIRED SYSTEM TESTING IS THE RESPONSIBILITY OF THE FIRE SPRINKLER CONTRACTOR AND SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 25.
AE. A STOCK OF SPARE SPRINKLERS SHALL BE PROVIDED ON SITE ALONG WITH ONE SPRINKLER WRENCH FOR EACH TYPE OF SPRINKLER IN ACCORDANCE WITH NFPA 13.

DESIGN CRITERIA

1. AREAS SHALL BE DESIGNED AS LIGHT HAZARD UNLESS NOTED OTHERWISE ON THESE PLANS.
2. REQUIRED SYSTEM PRESSURE SHALL BE GREATER THAN THAT WHICH IS AVAILABLE AT SPRINKLER SYSTEM DEMAND.
3. DISCHARGE DENSITIES SHALL BE:

   LIGHT HAZARD = 0.10 GPM/SF

   OH1 ORDINARY HAZARD (GROUP 1) = 0.15 GPM/SF

1 OH2 ORDINARY HAZARD (GROUP 2) = 0.20 GPM/SF

STORAGE NOTES:
- PER NFPA 13 SEC. 14.2.3.2 & 17.2.1.1.2; FOLLOW REQUIREMENTS IN TABLE 13.2.1 TO ALLOW OH2 OCCUPANCY.
- PALLETIZED, BIN BOX, SHELF, RACK, AND BACK-TO-BACK SHELF STORAGE UP TO AND INCLUDING 12'-0" IN HEIGHT.
- NO RACK AND BACK-TO-BACK SHELF STORAGE OF CLASS IV COMMODITIES OVER 10'-0" IN HEIGHT.
- NO PLASTIC STORAGE OVER 5'-0" IN HEIGHT.
- PER NFPA 13 SEC. 12.12.1.2(4) CMDA PROTECTION IN ACCORDANCE WITH OH2 IS ALLOWED FOR STORAGE OF IDLE WOOD (OR PLASTIC PER 12.12.2.2.1) PALLETS STORED INDOORS.
- MAX IDLE PALLET STORAGE HEIGHT OF 6'-0".
- A PILE OF NO MORE THAN FOUR STACKS MUST BE SEPARATED FROM OTHER PALLET PILES BY AT LEAST 8 FEET OF CLEAR SPACE OR 25 FEET OF COMMODITY.
- SOLID SHELVES (NFPA 13 SEC. 3.9.3.8) ALLOWED IF RACK SHELF AREA (3.9.3.7.6) IS 20 SQ. FT. OR LESS. SOLID SHELVES HAVING AN AREA OF 20 SQ. FT. OR LESS SHALL BE DEFINED AS OPEN RACKS. SHELVES OF WIRE MESH, SLATS, OR OTHER MATERIALS MORE THAN 50% OPEN AND WHERE FLUE SPACES ARE MAINTAINED SHALL BE DEFINED AS OPEN RACKS.

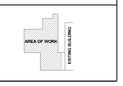
4. LIGHT AND ORDINARY DESIGN AREAS SHALL BE 1500 SF PER NFPA 13 (U.N.O.).
5. REMOTE AREA REDUCTIONS SHALL BE PERMITTED PER NFPA 13.
6. HYDRAULIC CALCULATIONS SHALL INCLUDE HOSE ALLOWANCE PER NFPA 13.

PROJECT TITLE:

FACILITY EXPANSION

PENDER, NE

KEY PLAN:



SHEET TITLE:

FIRE SPRINKLER PLAN

FOR PRICING
2/14/2022

ISSUES / REVISIONS

MARK	DATE	DESCRIPTION
1	12/13/22	LIMIT STORAGE TO 12'-0"

PROJECT STATUS:

FOR PRICING

SHEET NO:

FP1

DRIVEN FIRE CONSULTANTS
910 NORTH SYCAMORE AVENUE, SIOUX FALLS, SD 57110 PHONE: (605)-444-9290 FAX: (605)-444-9291