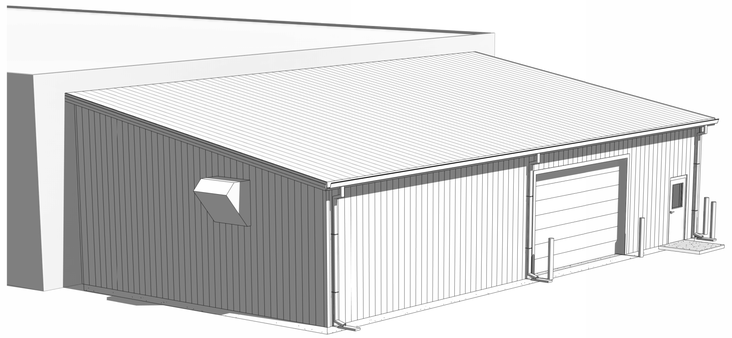
IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DRAWINGS FOR:

SEED BUILDING ADDITION
STATE FOREST NURSERY
STORY COUNTY, IOWA

PROJECT # 24-02-85-01



PLANS PREPARED BY:

CONSERVATION AND RECREATION DIVISION
LAND AND WATERS BUREAU

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

LICENSED PROFESSIONAL ARCHITECT
BRIAN D. PHIPPS 07862 IOWA

I hereby certify that this architectural document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Architect under the laws of the State of Iowa.

Brian D. Phipps — 7-21-26 DATE

My license renewal date is June 30, 2027.

Pages or sheets covered by this seal:

A-001 - A-600

LICENSED PROFESSIONAL ENGINEER
ANDREW J. VERSLUYS P26463 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly LICENSED Professional ENGINEER under the laws of the State of Iowa.

Andrew J. Versluys — 07/21/2026 DATE

My license renewal date is December 31, 2026.

Pages or sheets covered by this seal:

E-001, E-100, E400

LICENSED PROFESSIONAL ENGINEER
CHAD D. BASS 21397 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly LICENSED Professional ENGINEER under the laws of the State of Iowa.

Chad D. Bass — 07/21/2026 DATE

My license renewal date is December 31, 2026.

Pages or sheets covered by this seal:

M-000 - M-101

IOWA ONE CALL
1-800-292-8989 811
www.iowaonecall.com

SHEET INDEX

SHEET NUMBER	SHEET NAME
ARCHITECTURAL	
A001	COVER SHEET
A002	PROJECT LOCATION
A003	WALL TYPES AND NOTES
A004	SITE PLANS
A010	LIFE SAFETY PLAN
A100	FOUNDATION AND FLOOR PLANS
A110	REFERENCE FRAMING PLAN
A120	RCP AND ROOF PLAN
A200	EXTERIOR ELEVATIONS
A300	BUILDING SECTIONS
A400	WALL SECTIONS AND DETAILS
A500	DETAILS
A600	SCHEDULES AND DETAILS
MECHANICAL	
M000	MECHANICAL GENERAL NOTES
M101	MECHANICAL PLAN
ELECTRICAL	
E001	ELECTRICAL NOTES AND SYMBOLS
E100	ELECTRICAL PLAN
E400	ELEC. ONE-LINE AND SCHEDULES

BID ITEMS

ITEM #	ITEM DESCRIPTION	ESTIMATED QUANTITY
1	MOBILIZATION	1 LS
2	SITE GRADING	1 LS
3	CONCRETE FOOTINGS	1 LS
4	CONCRETE APRON SLAB AND BOLLARDS	1 LS
5	INTERIOR CONCRETE SLAB AND INSULATION	1 LS
6	MECHANICAL - VENTS AND LOUVERS	1 LS
7	ELECTRICAL - LIGHTING	1 LS
8	ELECTRICAL - SERVICE AND MISC.	1 LS
9	ELECTRICAL - HEATERS	1 LS
10	PLUMBING - BORING, HYDRANT, DRAIN-DOWN PITS	1 LS
11	PRE-ENGINEERED POST FRAME BUILDING - W/ STEEL SIDING AND ROOFING	1 LS
12	INTERIOR CORRUGATED METAL WALL AND CEILING LINER PANELS	1 LS
13	OVERHEAD DOORS, MAN DOOR, FRAMES, AND TRIM	1 LS
14	GUTTERS AND DOWNSPOUTS	1 LS
15	CLOSED CELL SPRAY FOAM INSULATION - CEILING AND WALLS	1 LS

PROJECT DATA - OFFICE BUILDING

OCCUPANT LOAD:
GROUP U - UTILITY / ACCESSORY
STORAGE AREA - 1682 S.F. / 300 = 6 OCCUPANTS

TOTAL OCCUPANT LOAD = 6 OCCUPANTS

MEANS OF EGRESS:

MIN. REQ'D # OF EXITS = 1 EXITS PER LEVEL (IBC TABLE 1021.1)
MAX TRAVEL DISTANCE = 200' (IBC 1016.1)
DEAD-END CORRIDOR = 20' MAX. (IBC 1018.4)
MIN. CORRIDOR WIDTH = 36" CLEAR
MIN. CLEAR OPENINGS FOR EXIT DOORS = 32" (ACTUAL 34")

FIRE EXTINGUISHERS:

THE NUMBER AND LOCATIONS OF FIRE EXTINGUISHERS TO BE VERIFIED BY THE FIRE MARSHAL PRIOR TO CERTIFICATE OF OCCUPANCY.
(2)TWO CLASS ABC WALL MOUNT FIRE EXTINGUISHERS PROVIDED.

BUILDING:
ADDRESS: IOWA STATE FOREST NURSERY
2404 SOUTH DUFF AVENUE
AMES, IA 50010
STORY COUNTY IOWA

USE - STORAGE
BUILDING CONSTRUCTION - TYPE V-B (WITHOUT AUTOMATIC SPRINKLER SYSTEM)
NUMBER OF STORIES - 1 STORY
BUILDING HEIGHT - 16'-0"
BUILDING AREA - 1682 GSF
BUILDING OCCUPANCY - GROUP U

PROJECT LOCATION - AMES, IOWA



PROJECT NARRITIVE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL ITEMS WITHIN THIS NARRATIVE, THE DRAWINGS, AND PROJECT MANUAL UNLESS SPECIFICALLY NOTED. THIS NARRATIVE IS NOT MEANT TO BE A COMPREHENSIVE ACCOUNT OF ALL ITEMS TO BE COVERED BY THE CONTRACT, REVIEW ALL DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND ESTABLISHING ALL QUANTITIES THAT ARE DICTATED AS "LUMP SUM".

THIS PROJECT, SEED BUILDING ADDITION, SHALL COMMENCE AFTER THE CONTRACT IS EXECUTED AND SHALL BE COMPLETED NO LATER THAN THE COMPLETION DATE STATED ON THE CONTRACT.

PROJECT NARRATIVE: THE STATE FOREST NURSERY IN AMES, IOWA IS IN NEED OF ADDITIONAL STORAGE SPACE TO STORE EQUIPMENT USED IN PRODUCTION AND EXTRACTION OF TREE SEED. THE NEW STORAGE BUILDING WILL BE OF PRE-ENGINEERED WOOD POST-FRAME CONSTRUCTION WITH METAL SIDING AND ROOF. THE INTERIOR WILL HAVE AN INSULATED CONCRETE FLOOR, LED LIGHTING FIXTURES, MULTIPLE 110V RECEPTACLES, TWO SUSPENDED ELECTRICAL HEATERS, WATER HYDRANT SERVICE, AND TWO NEW IN-FLOOR DRAIN-DOWN PITS WITH FLOOR GRATES.

AUTHORIZATION TO BID

Digitally signed by Travis Baker
Date: 2026.08.18 12:20:08 -05'00'

ENGINEERING BUREAU CHIEF — DATE

Jeff Goerndt
Digitally signed by Jeff Goerndt
Date: 2026.08.18 11:30:26 -05'00'

AUTHORIZED - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT — DATE

DIRECTORY

OWNER		DISTRICT INSPECTOR	
COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES	COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES
ADDRESS	6200 PARK AVENUE SUITE 200	ADDRESS	6200 PARK AVENUE SUITE 200
CITY,STATE,ZIP	DES MOINES, IA 50321	CITY,STATE,ZIP	DES MOINES, IA 50321
CONTACT	N/A	CONTACT	HEATH DELZELL
TELEPHONE	515.725.8200	TELEPHONE	515-979-0104
FAX	515.725.8202	FAX	-
EMAIL	N/A	EMAIL	HEATH.DELZELL@DNR.IOWA.GOV
ARCHITECT		**ELECTRICAL ENGINEER**	
COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES	COMPANY	KCL ENGINEERING
ADDRESS	6200 PARK AVENUE SUITE 200	ADDRESS	300 4TH STREET
CITY,STATE,ZIP	DES MOINES, IA 50321	CITY,STATE,ZIP	WEST DES MOINES, IA 50265
CONTACT	BRIAN PHIPPS	CONTACT	DEBBIE BAEDER
TELEPHONE	515-452-9438	TELEPHONE	515-201-2902
FAX	-	FAX	-
EMAIL	BRIAN.PHIPPS@DNR.IOWA.GOV	EMAIL	DBAEDER@KCLENGINEERING.COM
MECHANICAL ENGINEER			
COMPANY	KCL ENGINEERING	COMPANY	
ADDRESS	300 4TH STREET	ADDRESS	
CITY,STATE,ZIP	WEST DES MOINES, IA 50265	CITY,STATE,ZIP	
CONTACT	YUGI RAVICHANDRAN	CONTACT	
TELEPHONE	630-923-2864	TELEPHONE	-
FAX	-	FAX	-
EMAIL	YRAVICHANDRAN@KCLENGINEERING.COM	EMAIL	-
COMPANY	-	COMPANY	-
ADDRESS	-	ADDRESS	-
CITY,STATE,ZIP	-	CITY,STATE,ZIP	-
CONTACT	-	CONTACT	-
TELEPHONE	-	TELEPHONE	-
FAX	-	FAX	-
EMAIL	-	EMAIL	-

COVER SHEET

SEED BUILDING ADDITION
STATE FOREST NURSERY
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Description
07-21-2026	100% Bidding Documents

DRAWN BY: BDP
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No: **A001**





SITE PHOTOS

2 EXISTING BUILDING @ ADDITION LOCATION

GENERAL NOTES

1. OWNER TO REMOVE ALL RACKING, EQUIPMENT AND OTHER ITEMS STORED IN OR NEAR CONSTRUCTION SITE PRIOR TO CONTRACTOR MOBILIZATION.
2. CONTRACTOR TO KEEP CONSTRUCTION SITE CLEAN AND TIDY AND NOT INTERFERE WITH NURSERY OPERATIONS.
3. CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL ITEMS REQUIRING DEMOLITION AND REMOVAL.



EXISTING NURSERY BUILDINGS

1. BUSINESS OFFICE
2. WAREHOUSE AND PRODUCTION FACILITY
3. COOLER/FREEZER 1
4. COOLER FREEZER 2
5. HOOP HOUSE STORAGE
6. LOADING DOCK
7. CONSTRUCTION SITE

N

1 CONSTRUCTION SITE LOCATION

1" = 100'-0"

0 50' 100' 200'
0 1" = 100'-0" 2"

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

PROJECT LOCATION

SEED BUILDING ADDITION
STATE FOREST NURSERY

2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP	PROJECT NUMBER: 24-02-85-01
CHK'D BY:	DATE: 07-21-2026

SHEET No:

A002

DIMENSION NOTES

1. AT SOME INTERIOR SPACES THE ACTUAL DIMENSIONS MAY BE LESS IMPORTANT THAN HAVING THE ELEMENTS BE EQUAL IN DISTANCE. IN THESE CASES, THE WORD "EQUAL OR EQ" IS USED IN LIEU OF THE ACTUAL DIMENSIONS.
2. WHEN A ROOM CENTERLINE IS INDICATED ONLY ONE SIDE OF ROOM ELEMENTS MAY BE DIMENSIONED.
3. COLUMN IDENTIFICATION: DETAILS WILL GOVERN ALL DIMENSIONS. DIMENSIONS MAY NOT BE SHOWN ON SMALL SCALE PLANS.
4. PARTITIONS CENTERED ON COLUMN OR GRID LINES MAY NOT BE DIMENSIONED ON SMALL SCALE PLANS.
5. PARTITIONS WITH A FINISHED FACE FLUSH WITH FINISH FACE OF COLUMN MAY NOT BE DIMENSIONED ON SMALL SCALE PLANS
6. PARTITIONS WITH FINISH FACE ON COLUMN OR GRID LINES WILL NOT BE DIMENSIONED ON SMALL SCALE PLANS.
7. WHEN ONE JAMB OCCURS AT A COLUMN OR GRID LINE NO DIMENSIONS WILL BE SHOWN ON THE SMALL SCALE PLANS. THE OPENING WIDTH WILL BE GOVERNED BY CRITERIA OR SCHEDULES.
8. WHEN NEITHER JAMB OCCURS AT A COLUMN OR GRID LINE ONE JAMB WILL BE DIMENSIONED.
9. DOOR LOCATIONS ARE TO BE LOCATED BY ONE OF THE FOLLOWING:
   a. ALL DOOR JAMB FRAMING NEAR PERPENDICULAR WALLS ARE 4 INCHES FROM FACE OF PERPENDICULAR WALL TYPICAL.
   b. OR AS DIMENSIONED ON PLAN.
10. PARTITIONS ARE DIMENSIONED TO FACE OF CMU OR FACE OF STUD UNLESS NOTED.
11. DIMENSIONS ARE INDICATED IN THE DOCUMENTS. THE DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.

MATERIAL LEGEND

- EARTH
- COMPACTED EARTH
- COMPACTED GRANULAR FILL
- CLAY
- CONCRETE
- CONCRETE BLOCK(CMU)
- MASONRY/BRICK
- METAL STUD
- STEEL
- ALUMINUM
- PARTICLE BOARD
- PLYWOOD
- CARPET
- BATT INSULATION
- FOAM INSULATION
- RIGID INSULATION
- GYPSUM
- STUCCO
- GROUT
- TURF
- PLASTIC
- ACOUSTICAL CEILING TILE
- UNFINISHED WOOD
- FINISHED WOOD
- SAND
- CRUSHED STONE
- CAST STONE/STONE
- STONE
- GLASS
- WOOD BLOCKING
- CONTINUOUS WOOD

SYMBOL LEGEND

- NORTH ARROW
- 00 TITLE — SCALE: 0 = 0'-0" — DRAWING / DETAIL IDENTIFICATION
- 00 / A-000 — SECTION REFERENCE
- 00 / A-000 — DETAIL CALLOUT
- 00 / A-000 — INTERIOR/EXTERIOR ELEVATION
- DESCRIPTION 0'-0" AFF — ELEVATION TARGET
- 1 / A — COLUMN GRID
- MATCH LINES
- ROOM 000 — ROOM/SPACE IDENTIFICATION
- 100 — DOOR TAG
- 00 — WINDOW TAG
- 00 — WALL TYPE REFERENCE
- 00 — NOTE REFERENCE
- PROPERTY LINE REFERENCE
- CENTER LINE REFERENCE
- 0" — LEVEL CHANGE REFERENCE
- DETAIL CUT LINE
- 1 — REVISION NUMBER AND CLOUD

GENERAL NOTES

THE FOLLOWING GENERAL NOTES SHALL PERTAIN TO THE ENTIRE SET OF CONTRACT DOCUMENTS:

1. A GENERAL CONTRACTOR SHALL NOTE THAT THE ARCHITECTURAL DRAWINGS ESTABLISH A MINIMUM MATERIAL AND CONSTRUCTION METHOD STANDARD. THE GENERAL CONTRACTOR SHALL PROVIDE A BID PRICE BASED ON THE SPECIFIC MATERIALS NOTED.
2. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
3. GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL PERFORM THEIR WORK IN ACCORDANCE WITH ALL APPLICABLE CODES GOVERNING EACH TRADE.
4. THE CONTRACTOR SHALL MAINTAIN A CLEAN AND ORGANIZED JOB SITE, ACCEPTABLE TO THE OWNER.
5. THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF WORK WITH THE OWNERS REPRESENTATIVE.
6. THERE SHALL BE NO DEVIATION BY THE GENERAL CONTRACTOR FROM THE CONSTRUCTION DOCUMENTS UNLESS APPROVED IN WRITING BY THE ARCHITECT.
7. EACH CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD PRIOR TO THE INITIATION OF WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR CONDITIONS INTERFERING WITH THE ABILITY OF THE CONTRACTOR TO COMPLETE WORK AS OUTLINED ON THE CONSTRUCTION DRAWINGS.
8. INDIVIDUAL CONTRACTOR TRADES ARE RESPONSIBLE FOR COORDINATING THEIR WORK WITH OTHER TRADES ON THE JOBSITE. ADDITIONAL COSTS INCURRED DUE TO LACK OF COORDINATION ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
9. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE EXISTING BUILDING WATER TIGHT DURING CONSTRUCTION.
10. THE CONTRACTOR WILL VERIFY THAT EXIT EGRESS IS MAINTAINED FOR ALL OCCUPIED AREAS OF THE BUILDING THROUGHOUT ALL PHASES OF CONSTRUCTION.
11. PLAN DIMENSIONS ARE GIVEN TO CENTER OF STUD OR TO FACE OF BLOCK WALL. "CLEAR" DIMENSIONS ARE GIVEN TO WALL FACE.
12. THE OWNER WILL ASSUME ALL LIABILITY AND SHALL TAKE PERSONAL RESPONSIBILITY FOR ANY DECISIONS THAT THEY MAKE TO CHANGE OR ALTER THE CONSTRUCTION DOCUMENTS WITHOUT THE ARCHITECT'S WRITTEN APPROVAL.
13. PROTECT ALL EXISTING FINISHES AND MATERIALS TO REMAIN IN ACCORDANCE WITH ACCEPTABLE TRADE PRACTICES, MANUFACTURER RECOMMENDATIONS, OR AS DIRECTED BY THE ARCHITECT.
14. CUTTING OF EXISTING CONSTRUCTION FOR THE INSTALLATION OF ALL NEW WORK BY ALL TRADES, AND THE SUBSEQUENT PATCHING THEREOF, SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR, REGARDLESS OF WHETHER GENERAL CONTRACTOR PERFORMS THE WORK. GRINDING OF MATERIALS FOR REMOVAL SHALL NOT BE PERMITTED. CUTTING SHALL BE TO STRAIGHT LINE. UNWORKMAN-LIKE CUTTING, DAMAGE RESULTING THEREFROM AND UNACCEPTABLE PATCHING SHALL BE REPAIRED AND/OR REPLACED TO AN ACCEPTABLE CONDITION APPROVED BY THE ARCHITECT. AN OWNER PROJECT REPRESENTATIVE SHALL BE NOTIFIED PRIOR TO CUTTING OF ANY STRUCTURAL ITEM (I.E. CONCRETE FLOOR, MASONRY, WALL, ETC.) WITHIN THE EXISTING BUILDING. METHOD OF CUTTING SHALL BE APPROVED BY THE OWNERS PROJECT REPRESENTATIVE.
15. PATCHING MATERIAL SHALL MATCH EXISTING ADJACENT MATERIALS AS CLOSELY AS POSSIBLE IN COLOR, PATTERNS, AND/OR TEXTURES.
16. ALL SALVAGE MATERIALS REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. ALL NON-SALVAGE CONSTRUCTION MATERIALS AND DEBRIS FROM DEMOLITION WORK SHALL BE REMOVED FROM THE SITE AS WORK PROGRESSES, UNLESS OTHERWISE NOTED.
17. ISOLATE ALL DISSIMILAR METALS. GENERAL CONTRACTOR SHALL REQUEST APPROVAL BY THE ARCHITECT FOR EXCEPTIONS TO THIS PRIOR TO INSTALLATION.
18. SEALANTS SHALL BE COMPATIBLE WITH ADJACENT SURFACE(S) THAT ARE IN CONTACT. REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS AND PROCEDURES.
19. CAULK JOINTS OF DISSIMILAR EXPOSED TO VIEW MATERIALS AS REQUIRED BY THE ARCHITECT.
20. ALL DOOR HARDWARE TO BE 2010 AMERICANS WITH DISABILITIES ACT(ADA) COMPLIANT.
21. ALL EXTERIOR WALLS, DOORS AND WINDOWS ARE EXISTING U.N.O.
22. ALL FINISHES TO BE PER CLASS INDICATED IN SPECIFICATIONS
23. NO CONSTRUCTION SHALL OCCUR WITHOUT ARCHITECTS SHOP DRAWING APPROVAL. GENERAL CONTRACTOR TO PROVIDE REVIEWED, SIGNED AND DATED SHOP DRAWINGS TO ARCHITECT FOR REVIEW AND APPROVAL. SHOP DRAWINGS SHALL BE PROVIDED FOR, BUT NOT LIMITED TO, THE FOLLOWING:
    - CABINETRY MILLWORK
    - RUNNING TRIM AND CASING PROFILES
    - PAINT/LAMINATE COLOR SAMPLES
    - ACOUSTICAL CEILING AND GRID
    - TOILET ACCESSORIES
    - KITCHEN EQUIPMENT
    - ROOF PENETRATIONS
    - HVAC EQUIPMENT
    - PLUMBING EQUIPMENT AND FIXTURES
    - ELECTRICAL EQUIPMENT AND FIXTURES
24. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT (2) COPIES OF MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL PRODUCTS USED TO PERFORM THE WORK.

VERIFY ALL ACTUAL LOCATIONS AND ELEVATIONS WITH DNR ENGINEER.

ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE PROJECT AREA AND THOROUGHLY FAMILIARIZE THEMSELVES WITH THE ACTUAL JOB CONDITIONS PRIOR TO BIDDING AND THE START OF WORK. FAILURE TO VISIT THE PROJECT SITE SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE WORK IN ACCORDANCE TO THE PLANS, SPECIFICATION, SPECIAL PROVISIONS AND CONTRACT.

THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL DIMENSIONS AND CONDITIONS SHOWN ON THE PLANS AND SHALL NOTIFY THE DNR ENGINEER OF ANY DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS PRIOR TO PROCEEDING WITH THE WORK.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE). NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE DNR ENGINEER.

THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR WILL NOT BE PERMITTED TO PARK OR SERVICE VEHICLES AND EQUIPMENT OR USE THESE AREAS FOR STORAGE OF MATERIALS. STORAGE, PARKING AND SERVICE AREAS WILL BE SUBJECT TO THE APPROVAL OF THE DNR ENGINEER.

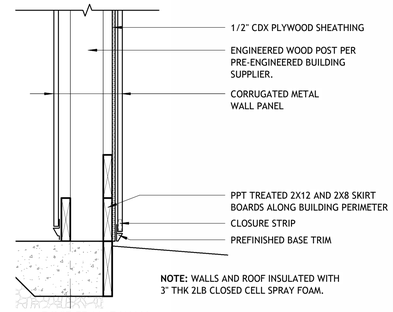
WHERE UTILITIES AND FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE DNR ENGINEER OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE AFFORDED ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

THE CONTRACTOR SHALL SHAPE GRADED AREA TO MAINTAIN SURFACE DRAINAGE. ALL ELEVATIONS ARE TO FINISH GRADE.

THE CONTRACTOR IS EXPECTED TO HAVE MATERIALS, EQUIPMENT, AND LABOR AVAILABLE ON A DAILY BASIS TO INSTALL AND MAINTAIN EROSION CONTROL FEATURES ON THE PROJECT. THIS MAY INVOLVE SEEDING, SILT FENCE, ROCK DITCH CHECKS, SILT BASINS OR SILT DIKES.

*DIVISIONS 20-41 OF THE STANDARD SPECIFICATIONS FOR BRIDGE AND HIGHWAY CONSTRUCTION, CURRENT EDITION WITH GS-15011 SHALL APPLY TO THIS PROJECT.

WALL TYPES



POST-FRAME WALL

1 **NON-RATED/NON-BEARING**

1" = 1'-0"

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

WALL TYPES AND NOTES

SEED BUILDING ADDITION
STATE FOREST NURSERY

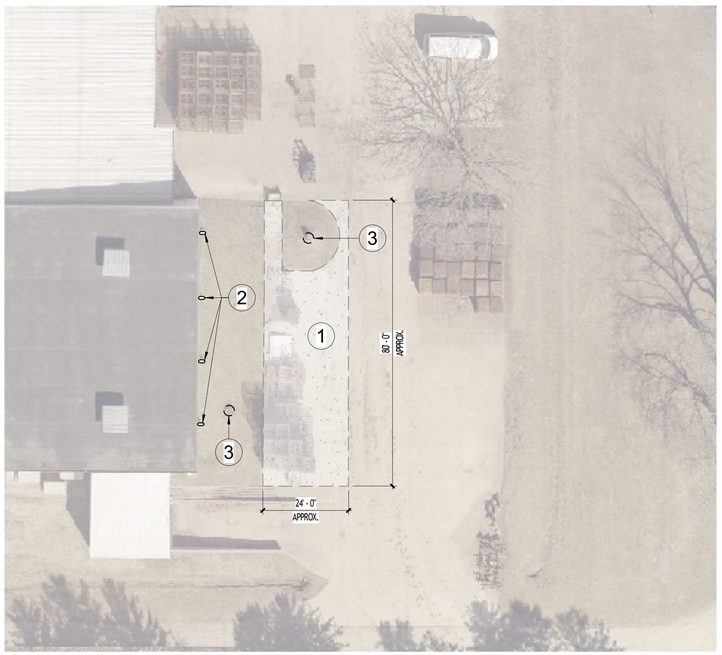
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No:

A003



1 DEMOLITION SITE PLAN
1" = 20'-0"



2 SITE PLAN
1" = 20'-0"

DEMOLITION SITE PLAN NOTES

1 REMOVE AND DISPOSE OF CONCRETE THIS AREA(APPROX. 1620SF)
2 REMOVE 8" DIA. PVC PIPE DOWN APPROX. 4'-0" TO 90 DEGREE ELBOW BELOW GRADE. CUT AND PERMANENTLY CAP EACH LINE(4) WITH COMPLIANT PVC CAP.
3 REMOVE AND DISPOSE OF TREE STUMPS(2) APPROX. 18" DIA. EACH. REMOVE AS MUCH ROOT MASS AS POSSIBLE.

GENERAL NOTES - SITE PLAN

1 NEW BUILDING FOOTPRINT
2 (1505 SF) NEW 4000 PSI CONCRETE APRON. 5" CONCRETE WITH #4 BAR REINFORCEMENT AT 24 INCHES ON CENTER. BAR TO BE PLACED ON CHAIRS AT EACH BAR INTERSECTION TO 3 INCHES ABOVE SUBSTRATE. TROWEL FINISH SMOOTH AND SEAL WITH PENETRATING SILANE/SILOXANE SEALER PER MANUFACTURER SPECIFICATIONS(SILOXA-TEK 8500 R SIMILAR).
3 NEW FROST PROOF STOOP SLAB. SEE DETAIL ON A500.
4 LOADING DOCK DOOR AND WALKWAY TO REMAIN
5 CONDENSER PAD LOCATION
6 PRESERVE EXISTING WALKWAY, RAMP WALL AND RAILINGS.
7 SLOPE CONCRETE AS NECESSARY FROM 1 INCH BELOW ADDITION FFL TO EXISTING CONCRETE. USE 3/4 INCH ASPHALTIC CONCRETE JOINT AND SEALANT WHERE NEW CONCRETE ABUTS EXISITNG CONCRETE.
8 BOLLARDS AT BUILDING CORNERS AND AT BOTH SIDES OF EXTERIOR OF OVERHEAD DOOR OPENINGS. SEE BOLLARD DETAIL FOR CONSTRUCTION AND FLOOR PLAN FOR LOCATIONS.
9 NEW WOODFORD WATER HYDRANT LOCATION. SEE MEP DRAWINGS.
10 EXISTING WATER HYDRANT LOCATION
11 BORE NEW 3/4" CW SERVICE LINE BENEATH EXISTING CONCRETE AND TO NEW HYDRANT LOCATION.
12 HATCHED AREA - UNLOCATED GEOTHERMAL WELL FIELD IN THIS AREA. LOCATE WELL FIELD ALONG BORING ROUTE USING VAC OR OTHER MEANS. LOCATE ALL UTILITES ALONG BORING ROUTE. CONTRACTOR WILL BE HELD RESPONSIBLE FOR REPAIRING DAMAGE DONE TO GEOTHERMAL WELL LINES OR SITE UTILITIES IN THIS AREA.

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

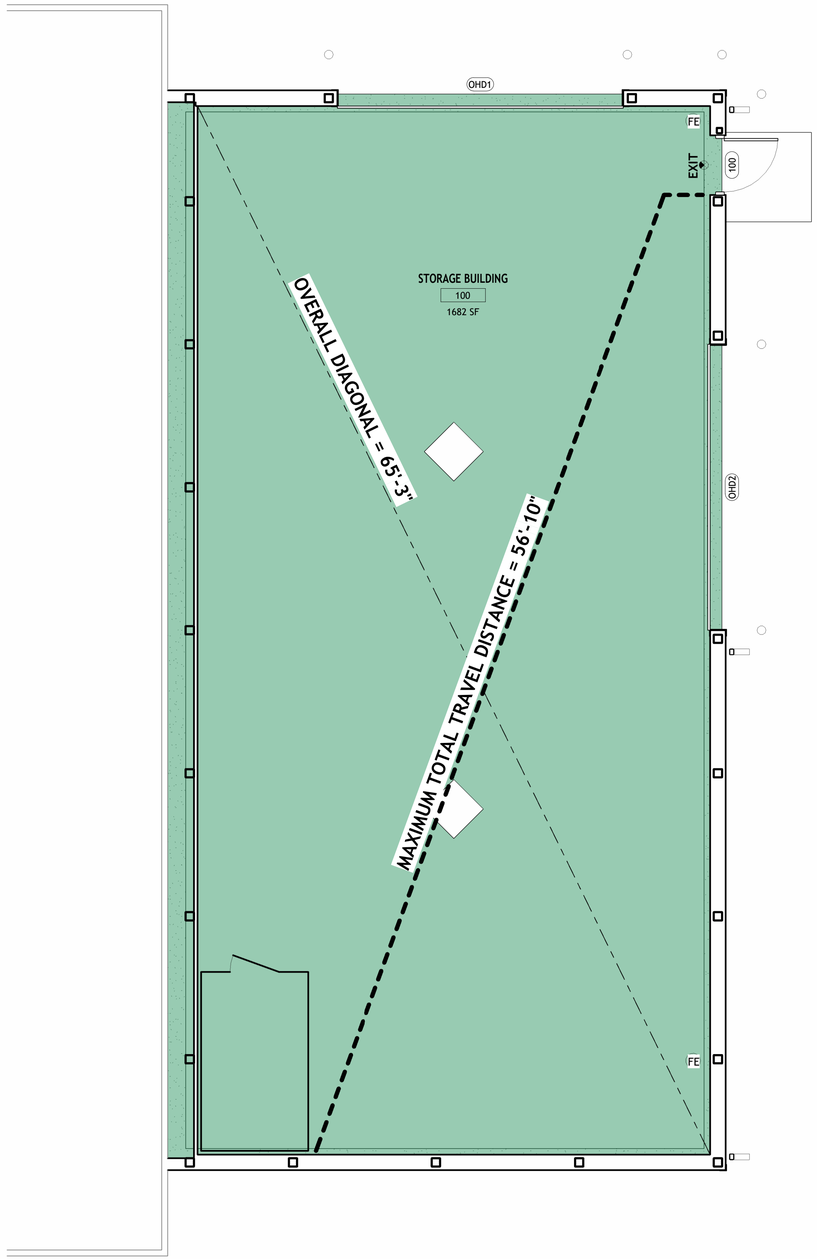
SITE PLANS

SEED BUILDING ADDITION
STATE FOREST NURSERY
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No: **A004**



N

1 LIFE SAFETY PLAN

1/4" = 1'-0"

0 1.3' 2.7' 5.3'
0 2"
3/8" = 1'-0"

APPLICABLE BUILDING CODES:

2024 INTERNATIONAL BUILDING CODE
2024 INTERNATIONAL FIRE CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2024 INTERNATIONAL EXISTING BUILDINGS CODE
IOWA STATE MECHANICAL CODE - BASED ON 2024 INTERNATIONAL MECHANICAL CODE
IOWA STATE PLUMBING CODE - BASED ON 2024 UNIFORM PLUMBING CODE
IOWA STATE ELECTRICAL CODE - BASED ON 2023 NATIONAL ELECTRIC CODE
2010 AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN

INTERNATIONAL BUILDING CODE

CHAPTER 3	
312.1 -	UTILITY AND MISCELLANEOUS - GROUP U
CHAPTER 5	
TABLE 504.3 -	NON-SPRINKLED; TYPE V-B CONSTRUCTION ALLOWABLE BUILDING HEIGHT = 40'-0"
TABLE 504.4 -	1-STORY ALLOWED
TABLE 506.2 - 508.3 -	BUILDING AREA - 5500 SF MAXIMUM ALLOWED
TABLE 508.4 -	NON-SEPARATED OCCUPANCIES - TOTAL SQ. FT. - 3082 SF
CHAPTER 6	
TABLE 601 -	BUILDING CONSTRUCTION TYPE V-B
CHAPTER 9	
906.1 -	LOCATE FIRE EXTINGUISHERS OF REQUIRED TYPE AS REQUIRED BY AHJ.
CHAPTER 10	
1002.2 -	FIRE SAFETY AND EVACUATION PLAN SHALL BE PROVIDED AS REQUIRED BY THE INTERNATIONAL FIRE CODE 401.2 AND 404.
TABLE 1004.1	SEE PROJECT DATA ON SHEET A001 FOR BUILDING OCCUPANT LOADS
1005.3.2	EGRESS SIZING
TABLE 1006.2.1	MAX. COMMON PATH OF EGRESS TRAVEL = 75' FOR U
1010.1.6	THRESHOLDS SHALL NOT EXCEED 1/2" IN HEIGHT AT DOORS ALONG PATH OF EGRESS. FLOOR CHANGES GREATER THAN 1/4" SHALL BE BEVELED AT ONE UNIT VERTICAL AND TWO UNITS HORIZONTAL.
TABLE 1017.2	EXIT ACCESS TRAVEL DISTANCE W/O SPRINKLER = 300'
CHAPTER 11	
1101.2	BUILDING TO BE DESIGNED IN ACCORDANCE WITH ICC A117.1
CHAPTER 13	
1301.1.1	BUILDINGS TO BE DESIGNED AND CONSTRUCTED ACCORDING TO 2012 IECC
CHAPTER 14	
1404.2	MINIMUM THICKNESS OF EXTERIOR STEEL SIDING = 0.0149"(28 GAUGE MIN.)

INTERNATIONAL FIRE CODE

313.1 EX. 1	FUELED EQUIPMENT - BUILDING AND ROOMS CONSTRUCTED AS REQUIRED BY INTERNATIONAL BUILDING CODE
EXIT	EXIT SIGNAGE WITH EMERGENCY LIGHTING
	EMERGENCY EXIT LIGHTING
FE	CLASS ABC WALL MOUNTED DRY CHEMICAL FIRE EXTINGUISHER

OCCUPANCY CLASSIFICATION: U - UTILITY

OCCUPANCY CLASSIFICATION: S-2 - FREEZER STORAGE

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

LIFE SAFETY PLAN

SEED BUILDING ADDITION
STATE FOREST NURSERY

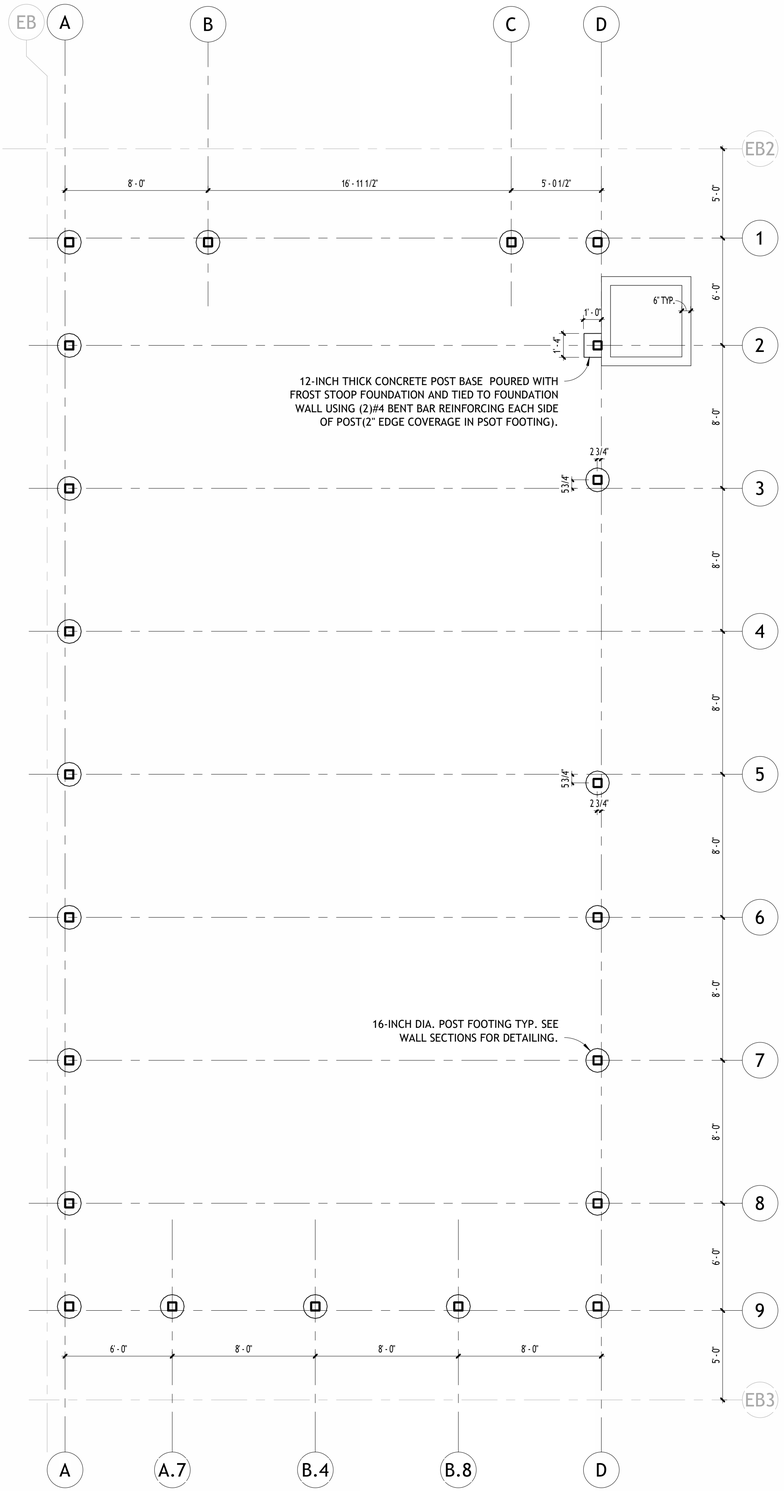
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP	PROJECT NUMBER: 24-02-85-01
CHK'D BY:	DATE: 07-21-2026

SHEET No:

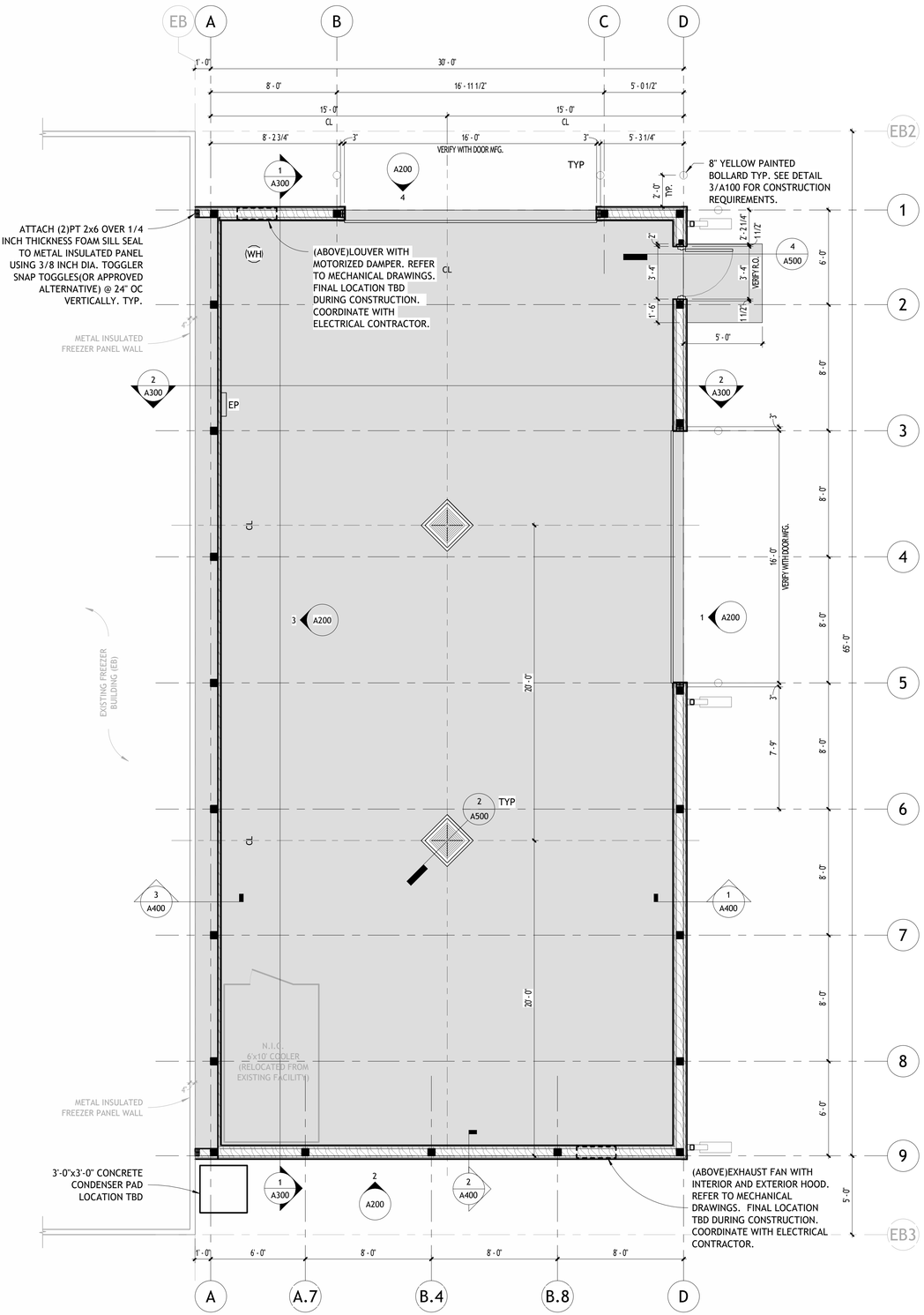
A010



N

2 FOUNDATION PLAN

1/4" = 1'-0"



1 FLOOR PLAN

1/4" = 1'-0"

0 2" 4" 8"
0 2"
1/4" = 1'-0"

FLOOR PLAN NOTES

1. SLOPE FLOOR 1/4:12 TO FLOOR DRAINS.
2. FLOOR SLAB TO BE 5-INCH THICKNESS 4000PSI CONCRETE MINIMUM. SLAB TO BE REINFORCED WITH SHEET STOCK WWF 4X4 W4.0X4.0. ROLLED WWF NOT ALLOWED.
3. TROWEL FINISH INTERIOR SLAB SMOOTH AND SEAL WITH SILANE/SILOXANE SEALER.
4. CUT FLOOR SLAB CONTROL JOINTS 1" DEEP 10'X10' SECTIONS MAXIMUM. FILL WITH URETHANE JOINT SEALANT(GREY).
5. EXTERIOR CONCRETE TO BE 1/2" LOWER THAN INTERIOR SLAB U.N.O.
6. SLOPE CONCRETE AT OVERHEAD DOOR SILLS DOWN 1/2" AND FLUSH WITH EXTERIOR SLAB. SLOPE CONCRETE OVER THICKNESS OF THE WALL ONLY.
7. PROVIDE 3/4" ASPHALTIC JOINT FILLER WHERE EXTERIOR SLAB MEETS INTERIOR SLAB. PROVIDE SEALANT AT TOP OF JOINT.

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

FOUNDATION AND FLOOR PLANS

SEED BUILDING ADDITION
STATE FOREST NURSERY

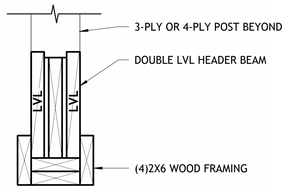
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

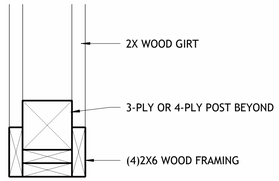
DRAWN BY: BDP	PROJECT NUMBER: 24-02-85-01
CHK'D BY:	DATE: 07-21-2026

SHEET No:

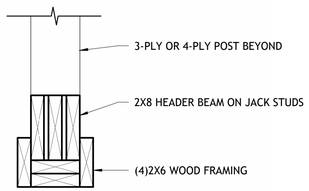
A100



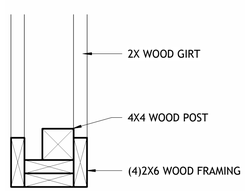
3 HEAD FRAMING DETAIL @ OHD
1 1/2" = 1'-0"



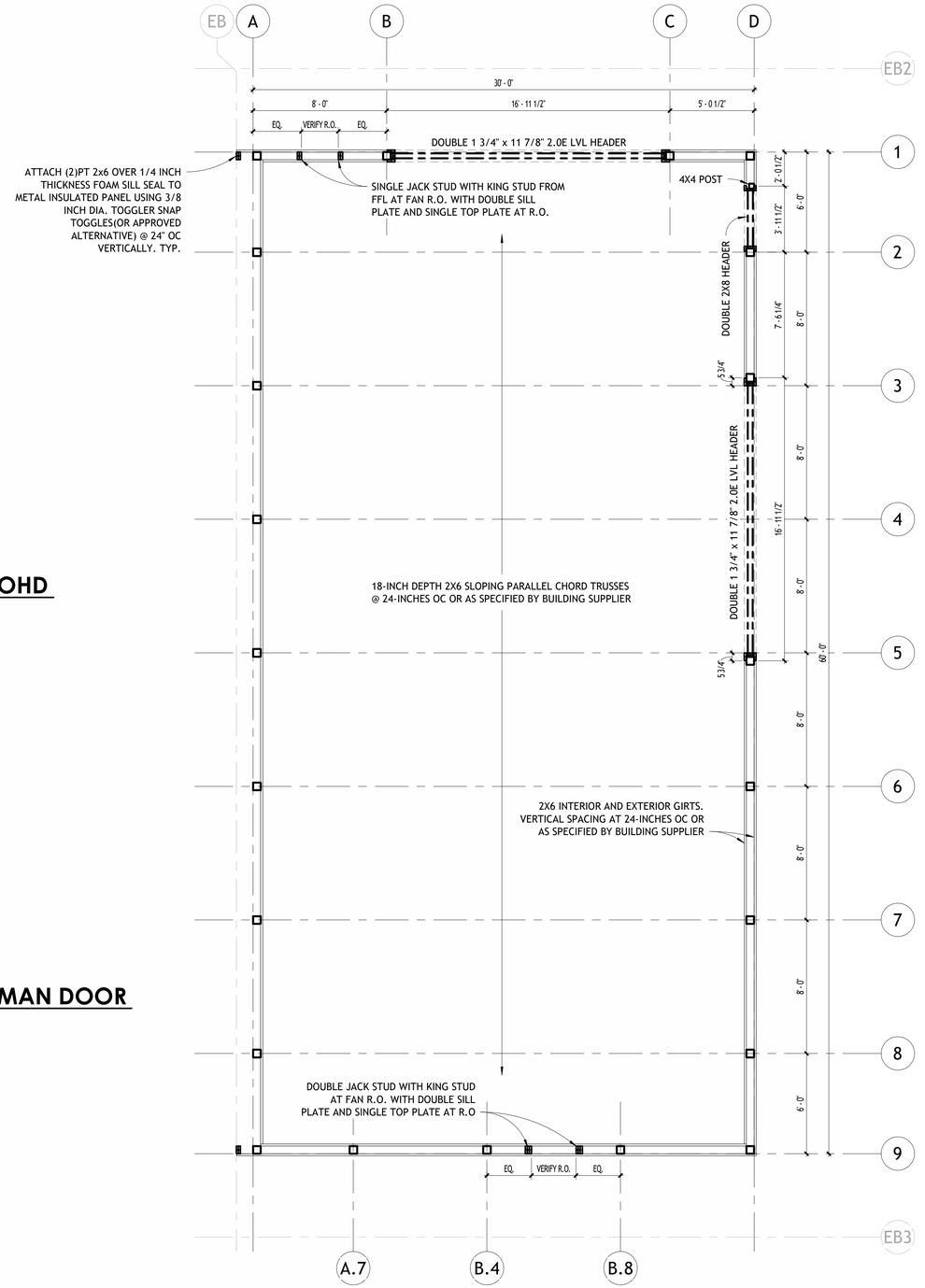
2 JAMB FRAMING DETAIL @ OHD
1 1/2" = 1'-0"



4 HEAD FRAMING DETAIL @ MAN DOOR
1 1/2" = 1'-0"



5 JAMB FRAMING DETAIL @ MAN DOOR
1 1/2" = 1'-0"



1 REFERENCE FRAMING PLAN
1/4" = 1'-0"

FRAMING PLAN NOTES

1. ANCHOR 4X4 POST AT MAN DOOR OPENING TO 8" THICKENED FLOOR SLAB PERIMETER USING SIMPSON RPBZ ZMAX ORIENTED TO THE NORTH AND WEST SIDES OF POST. ANCHOR TO CONCRETE USING (4)1/4"x3 1/2" TITAN TURBO SCREWS. ATTACH TO POST USING (4)1/4"x1 1/2" SDS SCREWS.
2. FRAMING PLAN IS FOR DESIGN INTENT PURPOSES ONLY. BUILDING SUPPLIER SHALL ENGINEER BUILDING AND PROVIDE ALL REQUIRED LUMBER DIMENSIONS, GRADES AND SPACINGS.
3. TRUSS DESIGN TO BE ENGINEERED BY BUILDING SUPPLIER.
4. SEE WALL SECTIONS AND DETAILS FOR SKIRT BOARD SIZES AND LOCATIONS.
5. SEE WALL SECTIONS FOR TRUSS CARRIER/TOP GIRT SIZES AND DETAILING. FINAL DESIGN PER BUILDING SUPPLIER.
6. END WALL TRUSSES TO BE DOUBLE PLY MONO TRUSS SET FLUSH WITH EXTERIOR FACE OF NOTCHED POSTS. FIELD INSTALL VERTICAL STUDS WITHIN TRUSS WEBBING FOR EXTERIOR GIRT ATTACHMENT. BRACING AND FINAL DESIGN PER BUILDING SUPPLIER.

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

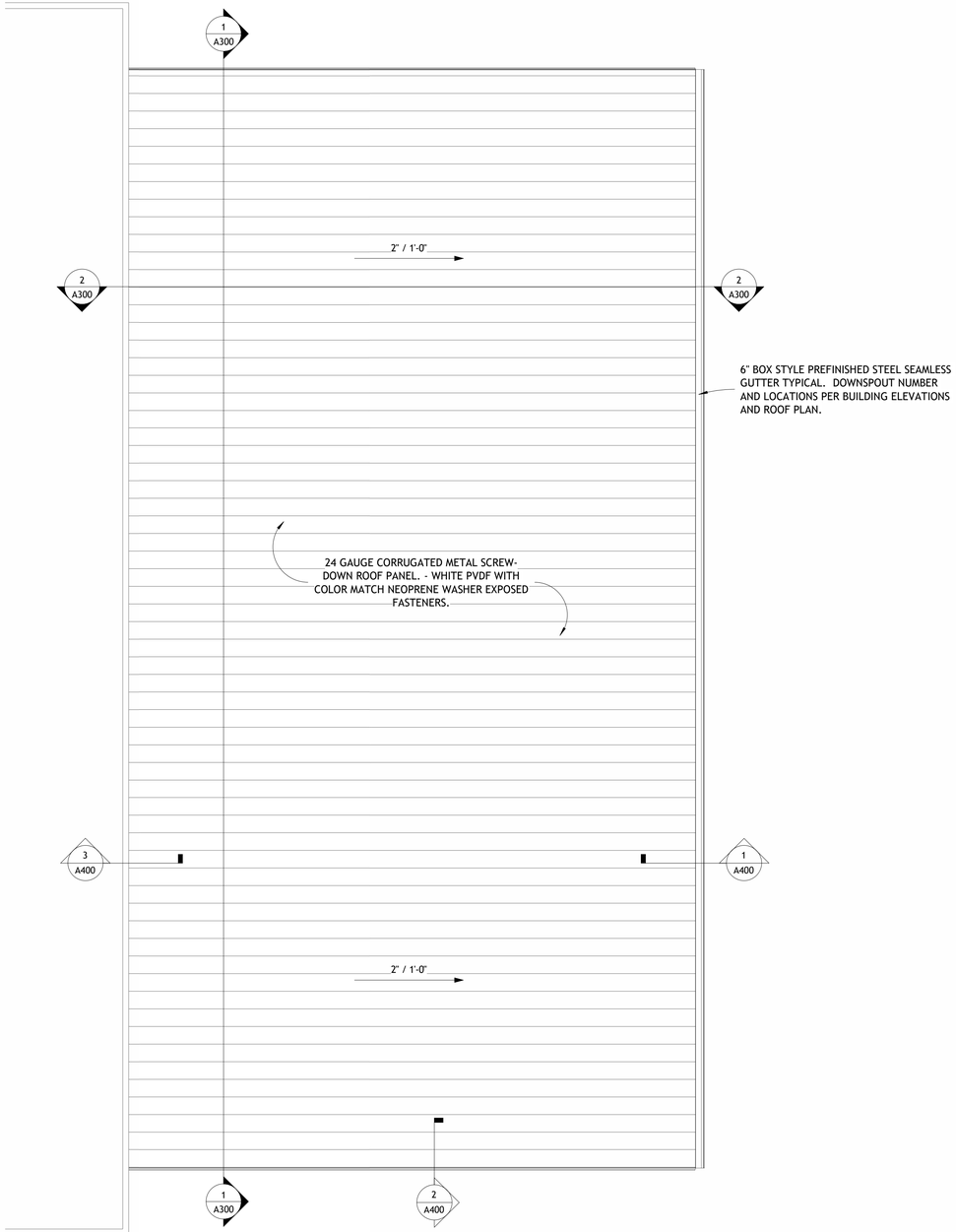
REFERENCE FRAMING PLAN

SEED BUILDING ADDITION
STATE FOREST NURSERY
2404 S DUFF AVENUE AMES, IOWA 50010

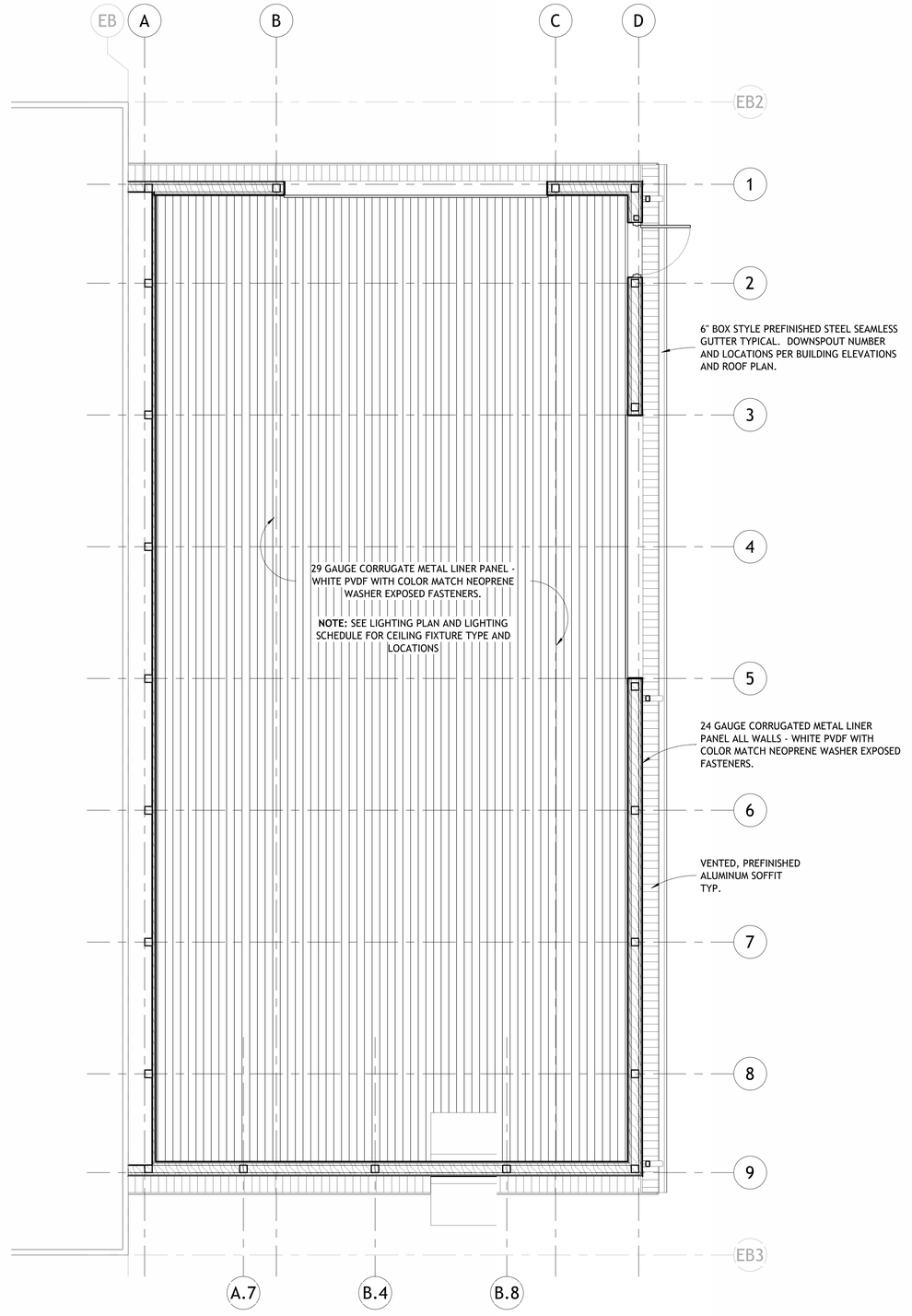
Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP	PROJECT NUMBER: 24-02-85-01
CHK'D BY:	DATE: 07-21-2026

SHEET No:
A110



2 ROOF PLAN
1/4" = 1'-0"



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

0 2' 4' 8'
0 2"
1/4" = 1'-0"

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

RCP AND ROOF PLAN

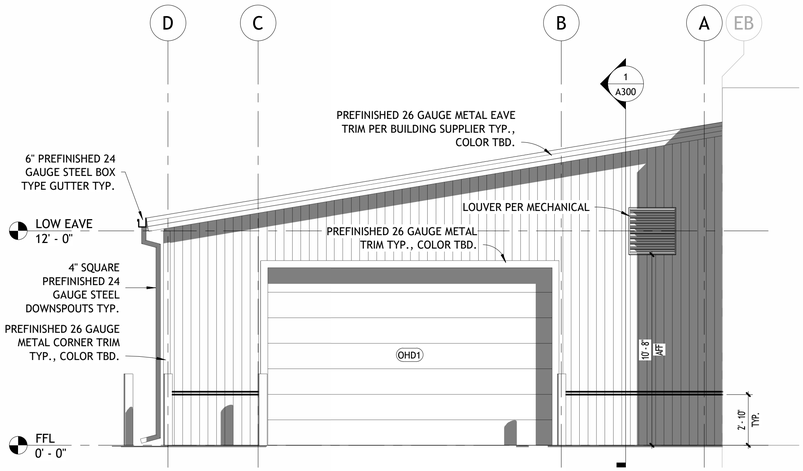
SEED BUILDING ADDITION
STATE FOREST NURSERY

2404 S DUFF AVENUE AMES, IOWA 50010

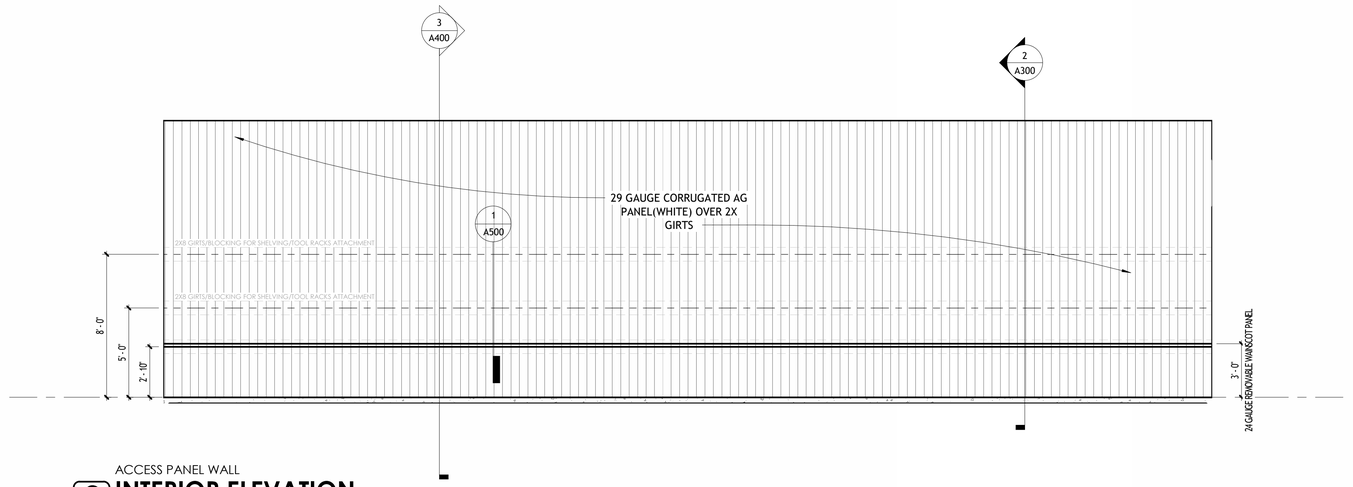
Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No: **A120**

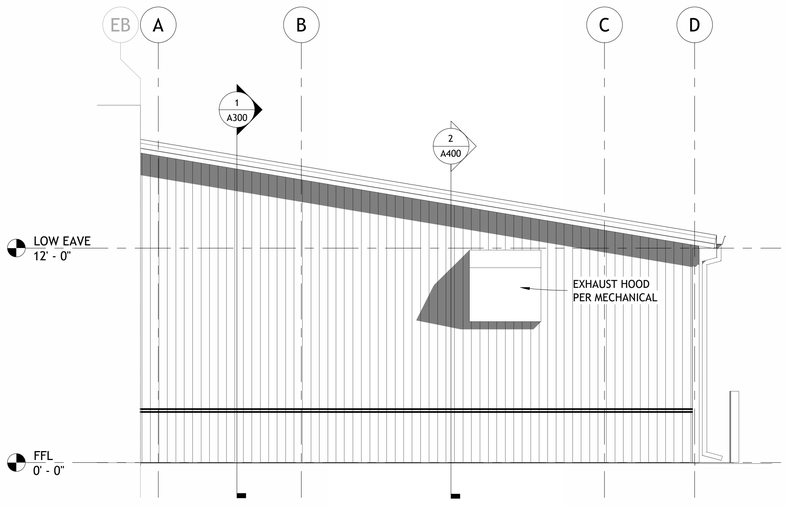


4 NORTH ELEVATION
1/4" = 1'-0"

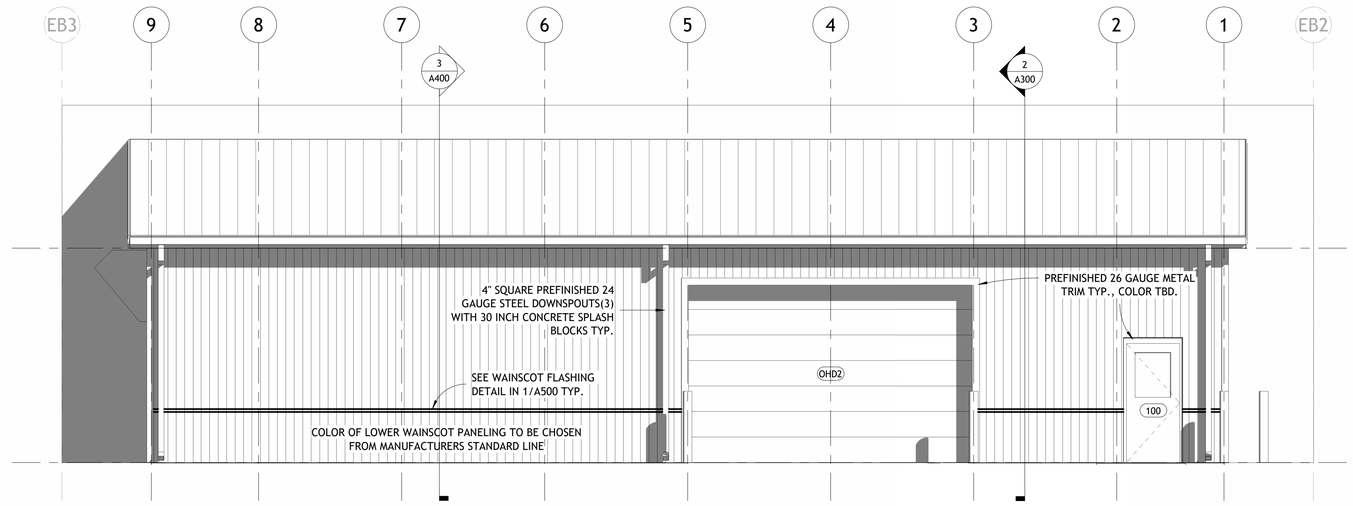


ACCESS PANEL WALL

3 INTERIOR ELEVATION
1/4" = 1'-0"



2 SOUTH ELEVATION
1/4" = 1'-0"



1 EAST ELEVATION
1/4" = 1'-0"

0 2' 4' 8'
0 2'
1/4" = 1'-0"

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

EXTERIOR ELEVATIONS

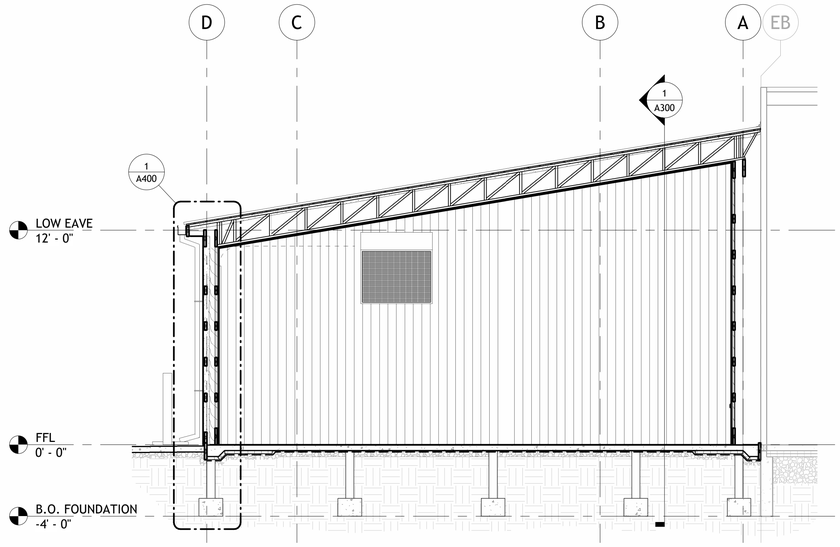
SEED BUILDING ADDITION
STATE FOREST NURSERY

2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No:
A200

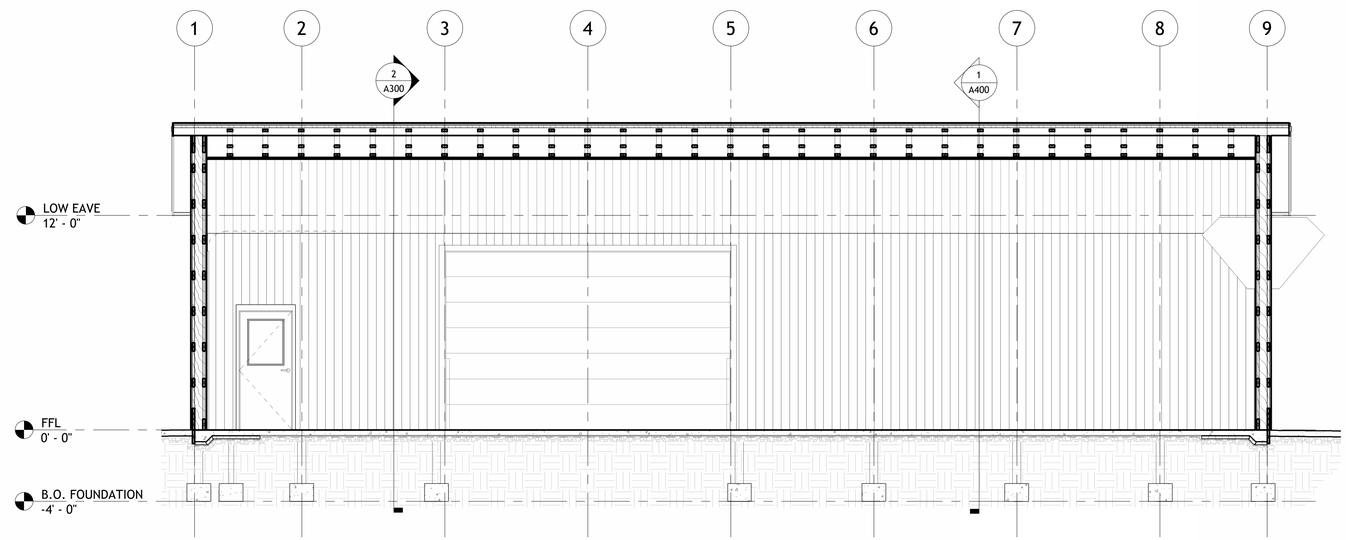


2 EAST-WEST BUILDING SECTION

1/4" = 1'-0"

NOTE: SEE WALL SECTIONS FOR DETAILED CONSTRUCTION REQUIREMENTS

0 2' 4' 8'
0 2"
1/4" = 1'-0"



1 NORTH-SOUTH BUILDING SECTION

1/4" = 1'-0"

NOTE: SEE WALL SECTIONS FOR DETAILED CONSTRUCTION REQUIREMENTS

0 2' 4' 8'
0 2"
1/4" = 1'-0"

IOWA DEPARTMENT OF NATURAL RESOURCES

- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

BUILDING SECTIONS

SEED BUILDING ADDITION
STATE FOREST NURSERY

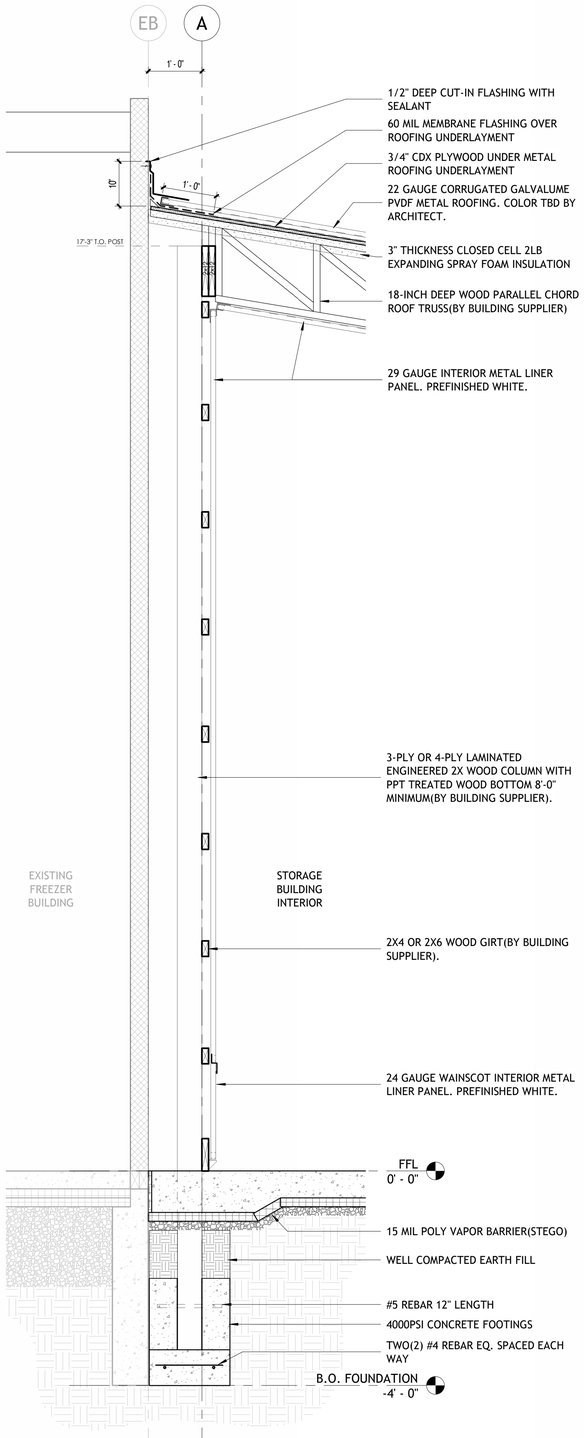
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY:	PROJECT NUMBER:
BDP	24-02-85-01
CHK'D BY:	DATE:
-	07-21-2026

SHEET No:

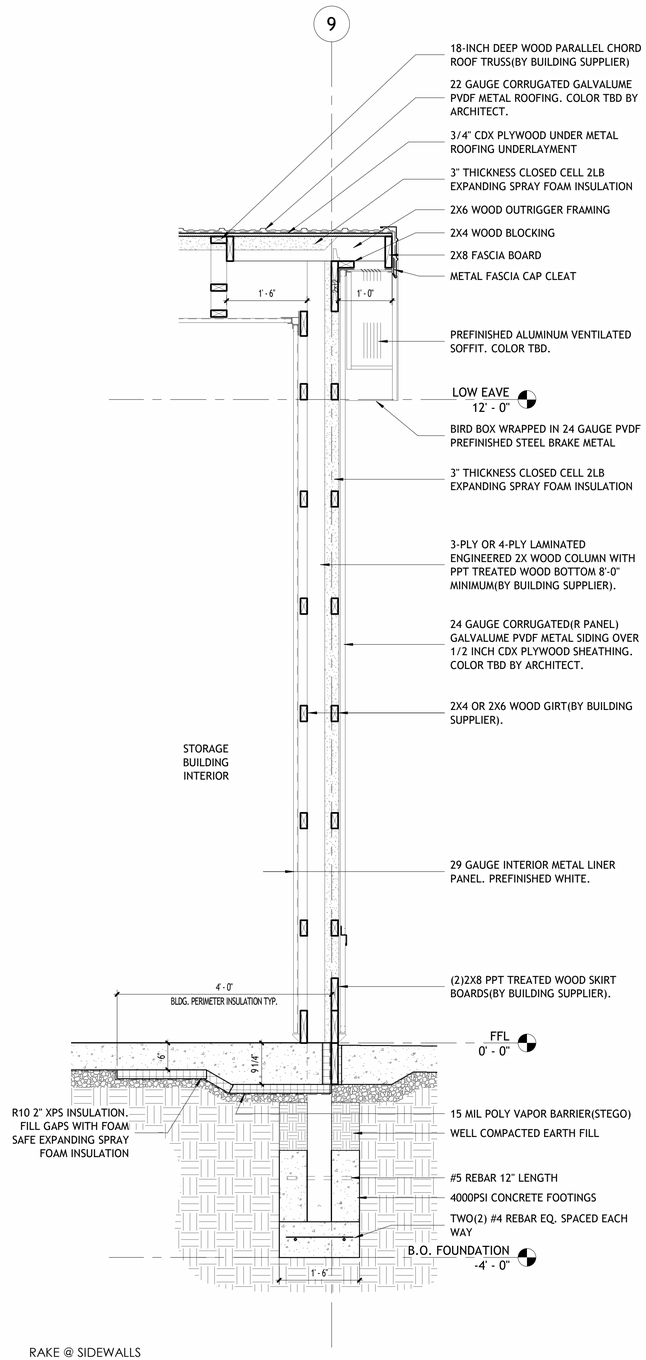
A300



@ EXISTING FREEZER WALL

3 WALL SECTION

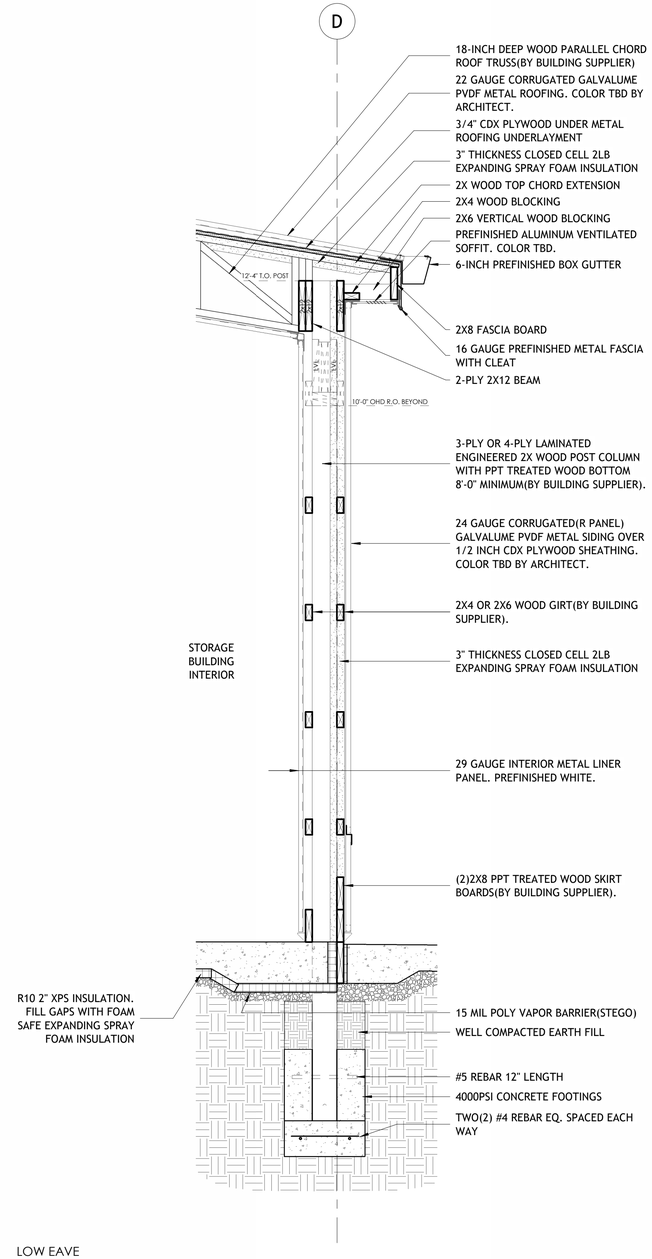
3/4" = 1'-0"



RAKE @ SIDEWALLS

2 WALL SECTION

3/4" = 1'-0"



LOW EAVE

1 WALL SECTION

3/4" = 1'-0"

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

WALL SECTIONS AND DETAILS

SEED BUILDING ADDITION

STATE FOREST NURSERY

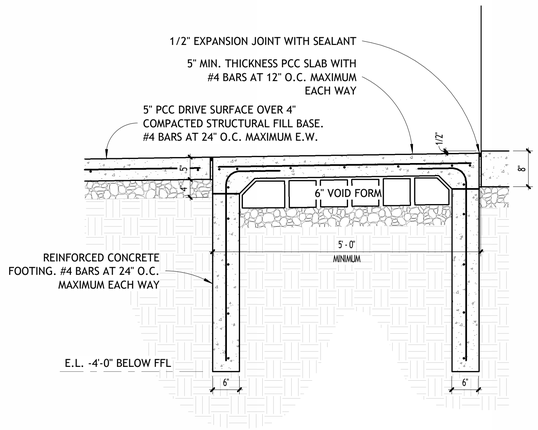
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP	PROJECT NUMBER: 24-02-85-01
CHK'D BY:	DATE: 07-21-2026

SHEET No:

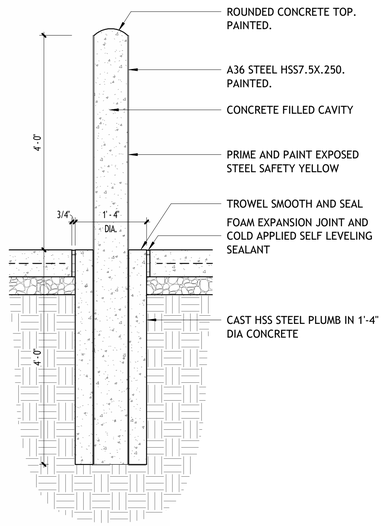
A400



FROST PROTECTED STOOP

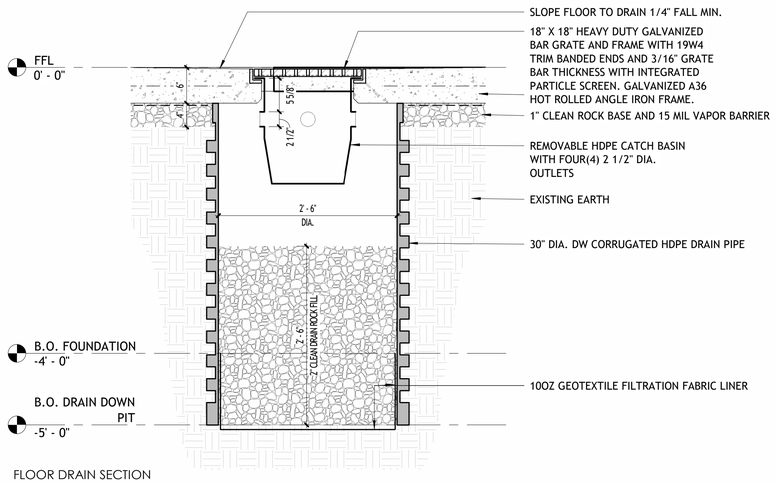
4 DETAIL - STOOP FOOTING

3/4" = 1'-0"



3 BOLLARD DETAIL

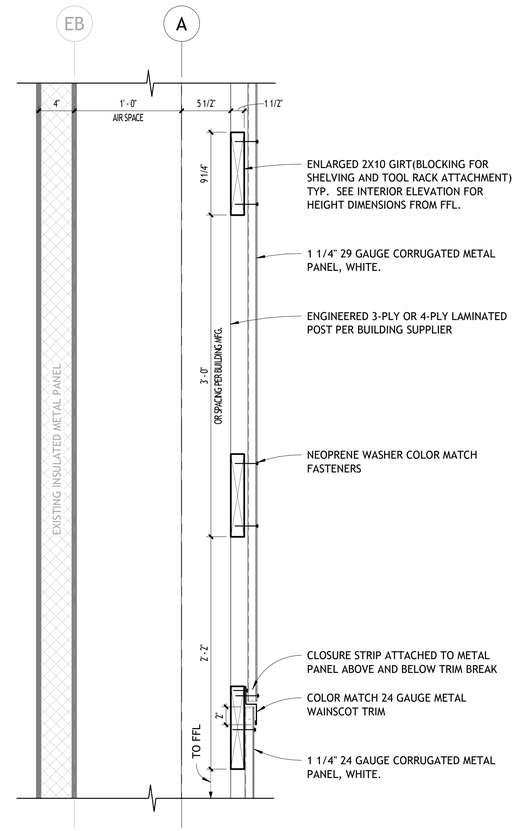
3/4" = 1'-0"



FLOOR DRAIN SECTION

2 DRAIN DOWN PIT

1" = 1'-0"



1 ENLARGED GIRTS AND WAINSCOT FLASHING

1 1/2" = 1'-0"

IOWA DEPARTMENT OF NATURAL RESOURCES

- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

DETAILS

SEED BUILDING ADDITION
STATE FOREST NURSERY
2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY:	PROJECT NUMBER:
BDP	24-02-85-01
CHK'D BY:	DATE:
-	07-21-2026

SHEET No:

A500

ROOM FINISH SCHEDULE

Room Number	Room Name	Floor Finish	Base Finish	North Wall Finish	East Wall Finish	West Wall Finish	South Wall Finish	Ceiling Finish	Comments
100	STORAGE BUILDING	CONC-1	ST-1	ST-1	ST-1	ST-1	ST-1	ST-2	

CONC-1 - PENETRATING CONCRETE SEALER; CLEAR; MATTE; SILANE OR SILOXANE
ST-1 - STEEL LINER PANEL; 24 GAUGE; WHITE UP TO 36"; STEEL LINER PANEL; 29 GAUGE; WHITE ABOVE
ST-2 - STEEL LINER PANEL; 29 GAUGE; WHITE

HARDWARE:

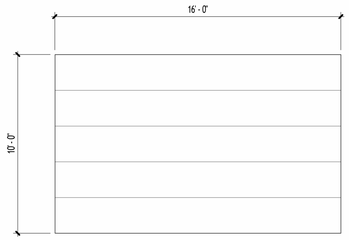
A. ALL DOOR HARDWARE MODEL NUMBERS BASED ON SCHLAGE "ND-SERIES" LOCKSETS(ATHENS) AND "IVES" HARDWARE, OR APPROVED EQUAL.
B. HARDWARE FINISH TO BE: "SATIN CHROMIUM 626" UNLESS OTHERWISE NOTED.
C. CHECK ALL QUANTITIES, DIMENSIONS AND FINISHES BEFORE ORDERING.
D. ALL STEEL DOORS AND FRAMES TO BE FACTORY GALVANIZED AND PRIMED. FIELD PAINT ALL STEEL DOORS. COLOR TBD BY ARCHITECT.

DOOR D100 HARDWARE SET:

3 EA.	HINGES	FBB179 4 1/2" x 4 1/2"
1 EA.	PRIVACY LOCKSET	ND40S
1 EA.	INTERIOR MOUNTED CLOSER	LCN 4040XP

DOOR D100 CONSTRUCTION:

STL - 16 GAUGE STEEL HONEYCOMB OR SOLID URETHANE CORE WITH STEEL STIFFENERS SPACED 8" MAX. HALF-LITE TO BE DOUBLE PANE, LOW-E ARGON FILLED GLAZING. NO MUNTINS OR GRID.
HM - HD HOLLOW METAL FRAME
PNT - PAINT; SHERWIN WILLIAMS EMERALD URETHANE TRIM AND ENAMEL; COLOR TBD BY ARCHITECT



EXTERIOR

OVERHEAD DOORS

***NOTE:** OHD-1 AND OHD-2 BASIS OF DESIGN: OVERHEAD DOOR THERMACORE 599

****NOTE:** OVERHEAD DOORS TO BE PROVIDED WITH CEILING MOUNTED ELECTRICAL OPENER(SEE ELECTRICAL), WALL MOUNTED CONTROLS, THREE(3) TWO CHANNEL REMOTE OPENERS(ONE CHANNEL FOR EACH DOOR), WALL AND CEILING MOUNTED TRACK AND TORSION SPRING, AND FLOOR MOUNTED LOW-VOLTAGE SAFETY SENSORS. WIRING TO LOW-VOLTAGE SAFETY SENSORS TO BE INCLUDED IN ELECTRICAL SCOPE OF WORK.

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

SCHEDULES AND DETAILS

SEED BUILDING ADDITION
STATE FOREST NURSERY

2404 S DUFF AVENUE AMES, IOWA 50010

Date	Revision
07-21-2026	100% Bidding Documents

DRAWN BY: BDP
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No:

A600

LOUVER SCHEDULE

REFERENCE	L-1	L-2
MANUFACTURER	GREENHECK	GREENHECK
MODEL	ESD-635	ESD-635
WEIGHT (LBS)	16	16
DIMENSIONS - W x H (INCHES)	30x20	30x20
APPLICATION	INTAKE	EXHAUST
MATERIAL	ALUMINUM	ALUMINUM
AIRFLOW (CFM)	900	900
FREE AREA VELOCITY (FPM)	513	513
FREE AREA (SQ. FT.)	1.80	1.80
PRESSURE DROP (IN. W.C.)	0.04	0.04
BLADE TYPE	FIXED	FIXED
BLADE DIRECTION	HORIZONTAL	HORIZONTAL
DRAINABLE	YES	YES
NOTES	1,2,3	1,2,3

NOTES:
1. PROVIDE COLOR CHARTS TO ARCHITECT FOR COLOR SELECTION.
2. PROVIDE WITH BIRDSCREEN.
3. STATED SIZES ARE MINIMUM FOR PERFORMANCE, COORDINATE OVERALL LOUVER SIZES AND LOCATIONS WITH ARCHITECT PRIOR TO ORDERING.

UNIT HEATER SCHEDULE

REFERENCE	UH-1,2
MANUFACTURER	INDEECO
MODEL #	UHIR
WEIGHT (LBS)	55
DIMENSIONS - L x W x H (INCHES)	17x11.5x24
AIRFLOW (CFM)	1,100
TYPE	ELECTRIC
KILOWATT	15
ELECTRICAL DATA	
VOLTAGE - PHASE	208 - 3
AMPS	42.5
NOTES	1,2,3,4

NOTES:
1. PROVIDE UNIT WITH SINGLE POINT POWER CONNECTION AND INTEGRAL DISCONNECT.
2. PROVIDE UNIT WITH REMOTE THERMOSTAT. WIRING BY MECHANICAL CONTRACTOR.
3. UNIT TO INCLUDE ALL MOUNTING BRACKETS. HARDWARE, ETC. FOR COMPLETE INSTALL.
4. MOUNT UNIT HEATER WHERE BOTTOM IS AT MINIMUM OF 10'-0" AFF, OR AS RECOMMENDED BY UNIT MFR.

PLUMBING PIPING AND INSULATION SCHEDULE

SYSTEM	SIZE RANGE (INCHES)	LOCATION	PIPE MATERIAL (NOTE 1)	JOINT TYPE (NOTE 1)	VALVE TYPES (NOTE 2)
DOMESTIC COLD WATER	3/4 - 1 1/4	ABOVE GROUND	TYPE L COPPER	SOLDER/PRESSURE SEAL	BRONZE BALL W/ SS TRIM
DOMESTIC COLD WATER	3/4 - 2	BELOW GROUND	TYPE K COPPER	SOLDER / BRAZE	BRONZE BALL W/ SS TRIM

NOTES:
1. ALL PIPING UTILIZED FOR POTABLE WATER SHALL MEET NSF 14, 61 AND 372. PUSH TO CONNECT / PUSH ON TYPE JOINTS ARE NOT ALLOWED. REFER TO SPECIFICATIONS FOR FURTHER JOINT AND MATERIAL REQUIREMENTS.
2. ALL VALVES UTILIZED IN POTABLE WATER SYSTEMS COMPLY WITH NSF 61 AND 372.

FAN SCHEDULE

REFERENCE	EF-1
MANUFACTURER	GREENHECK
MODEL #	AER-20-03-0610-VG
TYPE	IN-LINE
WEIGHT (LBS)	60
DIMENSIONS - L x W x H (INCHES)	22x26x26
AIRFLOW (CFM)	900
ESP (IN. W.C.)	0.30
FAN SPEED (RPM)	1,009
MOTOR DRIVE TYPE	DIRECT
MOTOR SPEED CONTROL	POTENTIOMETER
SONES	10.2
DAMPER TYPE	MOTORIZED
ELECTRICAL DATA	
MOTOR HP	1/4
VOLTAGE - PHASE	120/1
MCA	4.8
MOCP	15
NOTES	1,2,3,4,5,6,7

NOTES:
1. PROVIDE UNIT WITH SINGLE POINT POWER CONNECTION AND INTEGRAL DISCONNECT.
2. PROVIDE WITH STAINLESS STEEL FASTENERS.
3. INSTALL SPEED CONTROLLER ON EXTERIOR OF FAN FOR BALANCING.
4. EC TO POWER MOTORIZED DAMPER TO OPEN/CLOSE WITH FAN START OR STOP.
5. PROVIDE WITH DAMPER AND 115 VAC ACTUATOR WITH UNIT.
6. PROVIDE SEPARATE WALL SWITCH FOR FAN OPERATION.
7. PROVIDE WITH WEATHERHOOD KIT WITH 45° TURNDOWN AND BUGSCREEN ON UPSTREAM AND DOWNSTREAM OF FAN. (GREENHECK WTHD-20 OR SIMILAR)

MOTORIZED DAMPER SCHEDULE

REFERENCE	MOD-1
MANUFACTURER	GREENHECK
MODEL	ICD-45
DIMENSIONS - W x H (INCHES)	30x14
AIRFLOW (CFM)	900
BLADE STYLE	OPPOSED
BLADE DIRECTION	HORIZONTAL
INSULATED	YES
THERMALLY BROKEN	YES
ACTUATOR TYPE	ELECTRIC (120V)
ACTUATOR STYLE	2 POSITION
POWER FAILURE POSITION	CLOSED
NOTES	1,2

NOTES:
1. DAMPER SHOULD BE ULTRA LOW LEAK TYPE WITH INSULATED BLADES, BLADE AND SIDE SEALS.
2. EC TO POWER MOTORIZED DAMPER TO OPEN/CLOSE WITH EF-1 START OR STOP.

IOWA ONE CALL
1-800-292-8989
CALL - BEFORE - YOU - DIG

811 CALL BEFORE YOU DIG STATE DIGGING PARTNER

GENERAL NOTE:

UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN SHOWN BASED UPON INFORMATION OBTAINED FROM FIELD LOCATIONS BY UTILITY COMPANIES, AVAILABLE SURVEYS AND RECORDS. THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS ALSO POSSIBLE THAT THERE MAY BE OTHER UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES IN EXISTENCE THAT ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF EACH INDIVIDUAL PARTY REFERENCING THIS PLAN TO DETERMINE THE EXACT LOCATION AND TYPE OF UNDERGROUND FACILITIES ON THE SITE. HAND EXCAVATE AT CRITICAL POINTS AS NECESSARY TO VERIFY LOCATIONS, SIZES, ELEVATIONS, FLOW LINES, ETC. IF A PROBLEM OR INTERFERENCE EXISTS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING.

GENERAL SYMBOLS

- EXISTING = HALFTONE LINEWORK
- NEW = DARK LINEWORK
- DEMO = DASHED DARK LINEWORK
- BELOW GRADE = LONG DASHED DARK LINEWORK
- NEW CONNECTION POINT
- POINT OF DISCONNECT
- (#) KEYNOTE
- XXX / X — EQUIPMENT IDENTIFICATION TAG
- 1 / A101 SIM — DETAIL DRAWING REFERENCE TAG, SIM-SIMILAR, TYP-TYPICAL, OPP-OPPOSITE / SHEET REFERENCE
- 1 / A101 SIM — SECTION CUT REFERENCE TAG, SIM-SIMILAR, TYP-TYPICAL, OPP-OPPOSITE / SHEET REFERENCE
- A101 / 1 - Ref — INTERIOR ELEVATION DRAWING REFERENCE TAG

MECHANICAL - GENERAL NOTES

1. COORDINATE MECHANICAL AND ELECTRICAL WORK WITH ALL OTHER TRADES. BEGIN INSTALLATION AND ROUGH-IN AFTER COORDINATION WITH ALL TRADES ASSOCIATED WITH THE INSTALLATION IS COMPLETE. COORDINATE BUILDING STRUCTURE, ARCHITECTURAL ASSEMBLIES, SHEET METAL, ALL PIPING SYSTEMS, LIGHT FIXTURES, CONDUITS, CABLE TRAYS, ETC. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR REWORK ASSOCIATED WITH FAILURE TO COORDINATE.
2. INCORPORATE MECHANICAL SPECIFICATIONS, DRAWINGS, STATE AND LOCAL CODES, AND OWNER STANDARDS INTO WORK.
3. WARNING - CALL 48 HOURS BEFORE YOU DIG: LAW REQUIRES ANYONE DOING ANY EXCAVATION, FENCING, PLANTING OR DRILLING TO CALL 48 HOURS IN ADVANCE. HAND DIG WITHIN 18 INCHES OF ANY LOCATE MARK OR FLAG. ONE CALL 811.
4. EACH TRADE IS RESPONSIBLE FOR MAKING PENETRATIONS WHERE REQUIRED IN EXISTING WALLS, FLOORS, CEILINGS, AND ROOFS. MAKE PENETRATIONS NEAT. PATCH, CONCEAL, OR CAULK OVERCUT.
5. COVER EXPOSED WALL PENETRATIONS WITH ESCUTCHEONS OR SHEET METAL AS APPROPRIATE.
6. CAULK ALL CONCEALED AND EXPOSED PIPING AND DUCT WALL PENETRATIONS TO PREVENT NOISE TRANSFER BETWEEN SPACES.

HVAC - NOTES

1. COORDINATE WORK WITH ALL OTHER TRADES AS DESCRIBED IN MECHANICAL GENERAL NOTE #1.
2. PROVIDE A COMPLETE HVAC SYSTEM, INCLUDING SUPPLY, RETURN, EXHAUST, AND VENTILATION DUCTWORK; MECHANICAL EQUIPMENT, SUPPORTS, HANGERS, DIFFUSERS, GRILLES, REGISTERS, AND ALL APPURTENANCES. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. INSTALL SYSTEM TO MEET ALL CITY AND STATE CODES AND REQUIREMENTS.
3. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DUCT SYSTEM. INDICATED DUCT LOCATIONS, CONFIGURATIONS, AND ARRANGEMENTS WERE USED TO SIZE DUCTS AND CALCULATE FRICTION LOSS FOR AIR-HANDLING EQUIPMENT SIZING AND FOR OTHER DESIGN CONSIDERATIONS. INSTALL DUCT SYSTEMS AS INDICATED UNLESS DEVIATIONS TO LAYOUT ARE APPROVED BY ARCHITECT/ENGINEER.
4. ALL DUCT DIMENSIONS INDICATED ARE INTERIOR FREE AREA DUCT DIMENSIONS AND DO NOT INCLUDE INSULATION REQUIREMENTS.
5. SEAL ALL WALL AND FLOOR DUCT PENETRATIONS. PROVIDE FIRE CAULKING ASSEMBLIES FOR PENETRATIONS OF RATED ASSEMBLIES. REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY RATINGS.
6. CONTINUE DUCT AND PIPE INSULATION THROUGH WALLS, FLOORS, AND CEILING PENETRATIONS UNBROKEN, EXCEPT WHERE FIRE OR FIRE/SMOKE DAMPERS ARE INSTALLED IN DUCTWORK. SEAL AROUND DUCT INSULATION AT WALL PENETRATIONS.

PLUMBING - NOTES

1. COORDINATE WORK WITH ALL OTHER TRADES AS DESCRIBED IN MECHANICAL GENERAL NOTE #1.
2. PROVIDE A COMPLETE PLUMBING SYSTEM INCLUDING PIPE, INSULATION, HANGERS, SUPPORTS, EQUIPMENT, WATER HEATERS, FIXTURES, MIXING VALVES, VALVES, ACCESSORIES AND SPECIALTIES. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. SIZE AND INSTALL PLUMBING SYSTEM PER PLUMBING CODE. COMPLY WITH ALL LOCAL AND STATE CODES AND OWNER'S REQUIREMENTS.
3. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PLUMBING SYSTEM.
4. EXISTING PLUMBING DISTRIBUTION AND EQUIPMENT SHOWN ARE BASED ON NON-DESTRUCTIVE SITE OBSERVATION AND AS-BUILT DOCUMENTS PROVIDED BY THE OWNER. FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATING UNDER FLOOR PIPING AND PIPING CONCEALED IN BUILDING ASSEMBLIES WHERE WORK IS REQUIRED.
5. SEAL ALL WALL PIPE PENETRATIONS. PROVIDE THROUGH-PENETRATION FIRESTOPPING WHERE REQUIRED. REFER TO ARCHITECTURAL DRAWINGS FOR WALL, FLOOR, AND CEILING ASSEMBLY RATINGS.
6. CONTINUE PIPE INSULATION THROUGH WALL, FLOOR, AND CEILING PENETRATIONS UNBROKEN. SEAL AROUND PIPE INSULATION AT PENETRATIONS.
7. VERIFY WITH ENGINEER FOR ANY FIXTURES NOT TAGGED OR PIPED PRIOR TO ANY WORK. CONTRACTOR IS RESPONSIBLE FOR ALL PLUMBING FIXTURES SHOWN ON ARCHITECTURAL DRAWINGS; TAGGED OR NOT TAGGED ON PLUMBING / MECHANICAL DRAWINGS UNLESS SPECIFICALLY NOTED AS EXCLUDED FROM SCOPE.

KCL ENGINEERING
300 4th St
West Des Moines, IA
50265
515-724-7938

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

MECHANICAL GENERAL NOTES

SEED BUILDING ADDITION

2404 S. DUFF AVENUE AMES, IA 50010

Date	Revision

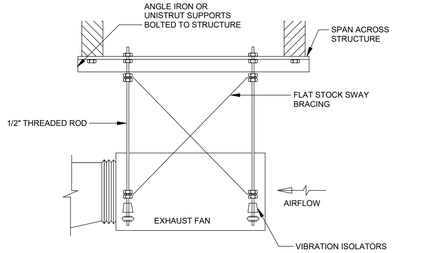
DRAWN BY:
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No: **M000**

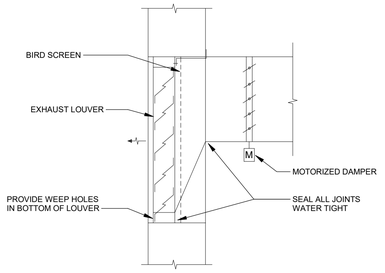
YR

GENERAL NOTES:

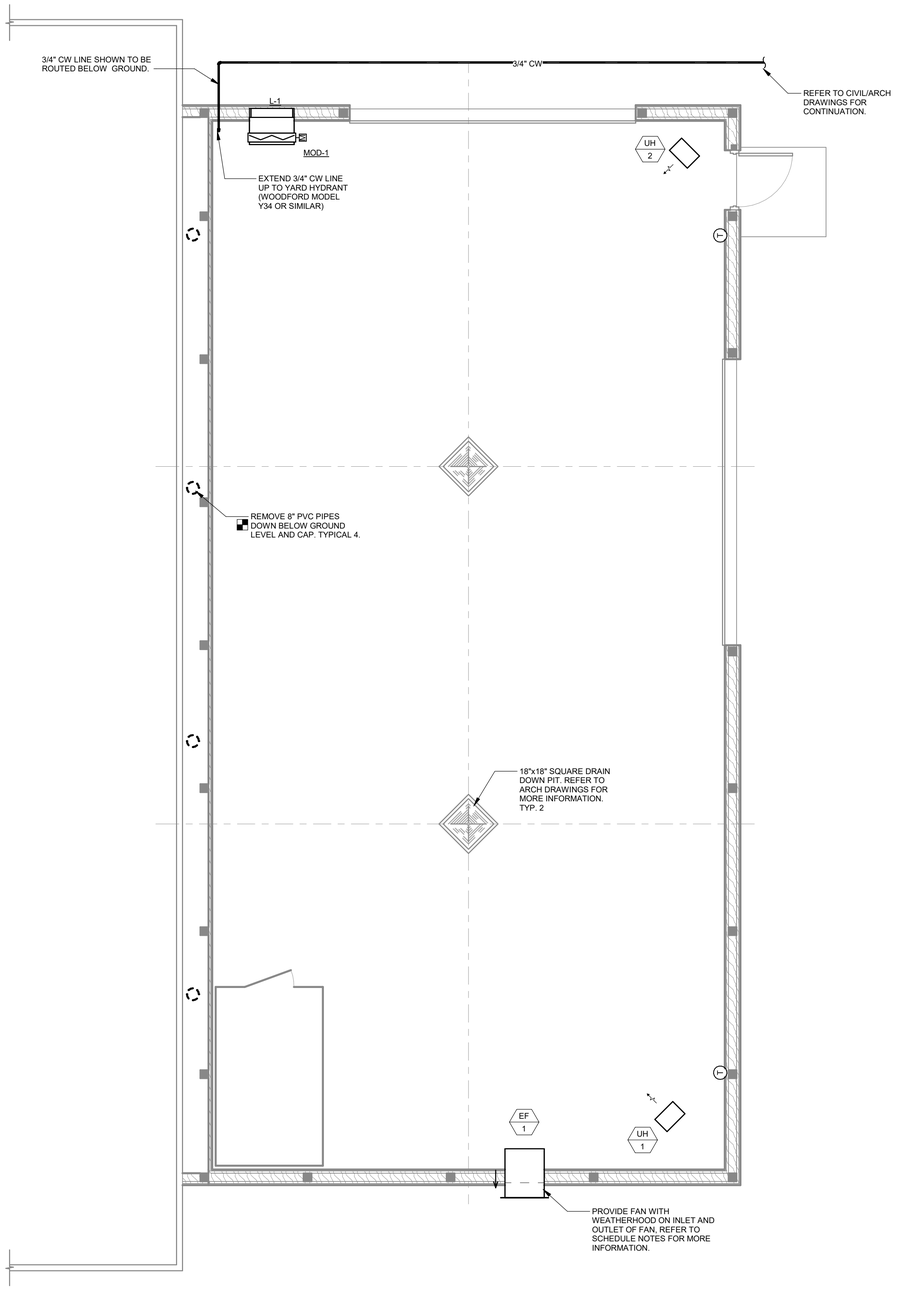
A. REFER TO M000 FOR GENERAL NOTES, SYMBOLS AND SCHEDULES.



2 INLINE EXHAUST FAN DETAIL
NTS



3 INTAKE/EXHAUST LOUVER DETAIL
NTS



1 MECHANICAL & PLUMBING PLAN
1/4" = 1'-0"

KCL ENGINEERING
300 4th St
West Des Moines, IA
50265
515-724-7938

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

MECHANICAL PLAN

SEED BUILDING ADDITION

2404 S. DUFF AVENUE AMES, IA 50010

Date	Revision

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 24-02-85-01
DATE: 07-21-2026

SHEET No:

M101

YR

GENERAL SYMBOLS

(#)	KEYNOTE
XXX / X	EQUIPMENT IDENTIFICATION TAG. REFER TO EQUIPMENT CONNECTION SCHEDULE
SIM 1 / A101	DETAIL DRAWING REFERENCE TAG, SIM-SIMILAR, TYP-TYPICAL, OPP-OPPOSITE / SHEET REFERENCE
1	DRAWINGS REVISION. REFER TO TITLEBLOCK FOR REVISION NAME AND DATE

POWER SYMBOLS

SR	DUPLEX GFCI RECEPTACLE, TAMPER-RESISTANT, SURFACE MOUNT +46", SHADING INDICATES DEVICE PROTECTED BY CIRCUIT BREAKER
W	DUPLEX GFCI WEATHER RESISTANT RECEPTACLE WITH WEATHER-PROOF IN-USE COVER, TAMPER-RESISTANT, WALL MOUNT
	MOTORIZED EQUIPMENT CONNECTION, REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION TYPE. REFER TO PANEL SCHEDULES FOR GFCI PROTECTION WHERE REQUIRED
	EQUIPMENT CONNECTION, REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION TYPE. REFER TO PANEL SCHEDULES FOR GFCI PROTECTION WHERE REQUIRED
	EQUIPMENT CONNECTION, WALL MOUNT, REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION TYPE. REFER TO PANEL SCHEDULES FOR GFCI PROTECTION WHERE REQUIRED
	MOTORIZED DOOR OPERATOR CONTROL STATION, WALL MOUNT, +48", OR AS NOTED
	PANELBOARD - SURFACE MOUNTED

LIGHTING SYMBOLS

	INDUSTRIAL STRIP LIGHT FIXTURE
	EXTERIOR RATED LIGHT FIXTURE, WALL MOUNT AS NOTED
	COMBINATION EXIT SIGN & EMERGENCY LIGHT, WALL MOUNT +96", SHADED AREAS INDICATE NUMBER OF FACES, ARROWS INDICATE SIGN ARROWS
	EMERGENCY REMOTE HEAD LIGHT FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE
$ a	SINGLE POLE SWITCH, WALL MOUNT, LETTER INDICATES SWITCH LEG

GENERAL NOTES - ELECTRICAL

1. COORDINATE LOCATION/INSTALLATION OF MECHANICAL AND ELECTRICAL WORK WITH ALL OTHER TRADES. BEGIN INSTALLATION AND ROUGH-IN ONLY AFTER PROPER AND TIMELY COORDINATION WITH ALL TRADES ASSOCIATED WITH THE INSTALLATION IS COMPLETE. COORDINATE WITH BUILDING STRUCTURE, ARCHITECTURE, MECHANICAL SHEET METAL, ALL PIPING SYSTEMS, LIGHT FIXTURES, CONDUITS, EQUIPMENT ACCESS/CLEARANCE, ETC. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR REWORK OF INSTALLED EQUIPMENT RESULTING FROM INSUFFICIENT COORDINATION.
2. ELECTRICAL DRAWINGS ARE ONLY A PORTION OF THE COMPLETE SET OF PLANS AND CONTRACT DOCUMENTS. THE ELECTRICAL SCOPE OF WORK IS DEFINED BY THE COMPLETE SET OF CONTRACT DOCUMENTS, THIS INCLUDES BUT IS NOT LIMITED TO REFERENCING; ARCHITECTURAL PLANS FOR DIMENSIONS AND DETAILS; EQUIPMENT PLANS FOR ROUGH-IN REQUIREMENTS, MECHANICAL PLANS FOR EQUIPMENT SIZES AND LOCATIONS.

INSTALLATION NOTES - ELECTRICAL

1. INCREASE CONDUCTOR SIZES ON 20A 120V-1 PHASE CIRCUITS EXCEEDING 100 FEET TO CENTER OF LOAD TO ACCOUNT FOR VOLTAGE DROP.
2. RACEWAYS AND BOXES ARE SHOWN DIAGRAMMATICALLY ONLY AND INDICATE GENERAL AND APPROXIMATE LOCATIONS. LAYOUTS DO NOT ALWAYS SHOW THE TOTAL NUMBER OF RACEWAYS OR BOXES FOR THE CIRCUITS REQUIRED, NOR ARE THE LOCATIONS OF INDICATED RUNS INTENDED TO SHOW THE ACTUAL ROUTING OF THE RACEWAYS.
3. LIGHT FIXTURES, SWITCHES, ETC. ARE SHOWN IN PREFERRED LOCATION. MODIFY CONDUIT, HANGERS, CIRCUITING, ETC. TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
4. PROVIDE A DEDICATED GREEN INSULATED GROUND CONDUCTOR TO ALL DEVICES. DO NOT USE CONDUIT SYSTEM AS THE ONLY EQUIPMENT GROUNDING METHOD.
5. BALANCE PANEL LOADS DURING INSTALLATION. CIRCUIT NUMBERING SHOWN ON PLANS MAY BE ADJUSTED TO ACCOMMODATE.
6. PROVIDE TYPED PANEL DIRECTORY AT PROJECT COMPLETION FOR NEW PANELS AND EXISTING PANELS WITH CIRCUITS MODIFIED DURING PROJECT. USE OWNER'S CURRENT ROOM NUMBERS AND EQUIPMENT NAMES. PROVIDE UNIQUE CIRCUIT IDENTIFICATION PER NEC 408.4(A)
7. CONTRACTOR IS RESPONSIBLE FOR OPENINGS IN WALLS, FLOORS, CEILINGS, AND ROOFS THAT ARE REQUIRED TO COMPLETE THEIR SCOPE OF WORK. SEAL PENETRATIONS IN ACCORDANCE WITH THE RATING OF THE AFFECTED ASSEMBLY. REFER TO ARCHITECTURAL CODE PLAN FOR RATED WALLS, FLOORS, AND CEILINGS.

DEVICE INSTALLATION AND MATERIALS - ELECTRICAL

1. PROVIDE NORMAL WIRING DEVICES AS GRAY UNLESS OTHERWISE NOTED. PROVIDE CLASS 2 DIV 2 COMPLIANT MATERIALS FOR ALL DEVICES IN SPACE.
2. PROVIDE DEVICES COVER PLATES AS STAINLESS STEEL. MATCH WIRING DEVICES COLOR.
3. PROVIDE GFCI TYPE RECEPTACLES AT ALL LOCATIONS REQUIRED BY THE NEC.
4. INSTALL WALL MOUNTED RECEPTACLES AT +18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
5. INSTALL WALL MOUNTED LIGHT SWITCHES AT +46" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. EXCEPTION: INSTALL DEVICES ABOVE AN OBSTRUCTED HIGH FORWARD REACH OBSTACLE GREATER THEN 20 INCHES IN DEPTH AT +42".

CODE NOTES - ELECTRICAL

1. PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES.
2. THE CURRENT ADOPTED EDITION OF THE ELECTRICAL CODE IS THE STANDARD FOR THE ELECTRICAL INSTALLATION. VERIFY WITH LOCAL OFFICIALS WHEN PERMITS ARE OBTAINED. NOTIFY DESIGN TEAM OF ANY DISCREPANCIES BETWEEN THE PROJECT MANUAL OR DRAWINGS AND THE GOVERNING CODE.
3. INSTALLATION SHALL FOLLOW REQUIREMENTS OF THE ADAAG –AMERICANS WITH DISABILITIES ACT.
4. REFER TO PROJECT MANUAL AND PROJECT CODE REVIEW SHEET FOR LIST OF APPLICABLE CODES.
5. PER NEC EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT AND SPECIFIC PURPOSE OR USE. CONTRACTOR TO PROVIDE FINAL CIRCUIT IDENTIFICATION FOR ALL NEW AND MODIFIED CIRCUITS AT PROJECT COMPLETION.

ELECTRICAL ABBREVIATIONS

A	DEVICE MOUNTED +8" ABOVE COUNTER TOP (VERIFY LOCATION)	NM	NONMETALLIC
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
C	CEILING	OC	ON CENTER
CB	CIRCUIT BREAKER	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CT	CURRENT TRANSFORMER	OFOI	OWNER FURNISHED, OWNER INSTALLED
E	EXISTING ITEM TO REMAIN	R	EXISTING ITEM TO BE REMOVED
EC	ELECTRICAL CONTRACTOR	RR	EXISTING ITEM TO BE REMOVED AND RELOCATED
EM	EMERGENCY LIGHT FIXTURE	RN	EXISTING ITEM TO BE REMOVED AND REPLACED WITH NEW
ER	NEW LOCATION OF EXISTING ITEM	SCCR	SHORT CIRCUIT CURRENT RATING
F	ROUGH IN FOR FUTURE DEVICE	T	TAMPER PROOF DEVICE
G	GROUND FAULT CIRCUIT INTERRUPTER	TCC	TEMPERATURE CONTROL CONTRACTOR
GND	GROUND	TYP	TYPICAL
KVA	KILO-VOLT-AMPERES	V	VOLTS
KW	KILOWATTS	VA	VOLT-AMPERES
MC	MECHANICAL CONTRACTOR	WG	WIREGUARD COVER
MCB	MAIN CIRCUIT BREAKER	WP	WEATHERPROOF DEVICE
MDP	MAIN DISTRIBUTION PANEL	WR	WEATHER RESISTANT DEVICE
MLO	MAIN LUGS ONLY	+24"	INDICATES MOUNTING HEIGHT CENTER LINE OF DEVICE TO FINISHED FLOOR
N	NEW DEVICE IN EXISTING LOCATION		
NIC	NOT IN CONTRACT		

KCL ENGINEERING
300 4th St
West Des Moines, IA
50265
515-724-7938

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

ELECTRICAL NOTES & SYMBOLS

SEED BUILDING ADDITION

2404 S. DUFF AVENUE AMES, IA 50010

Date	Revision

DRAWN BY:
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No:

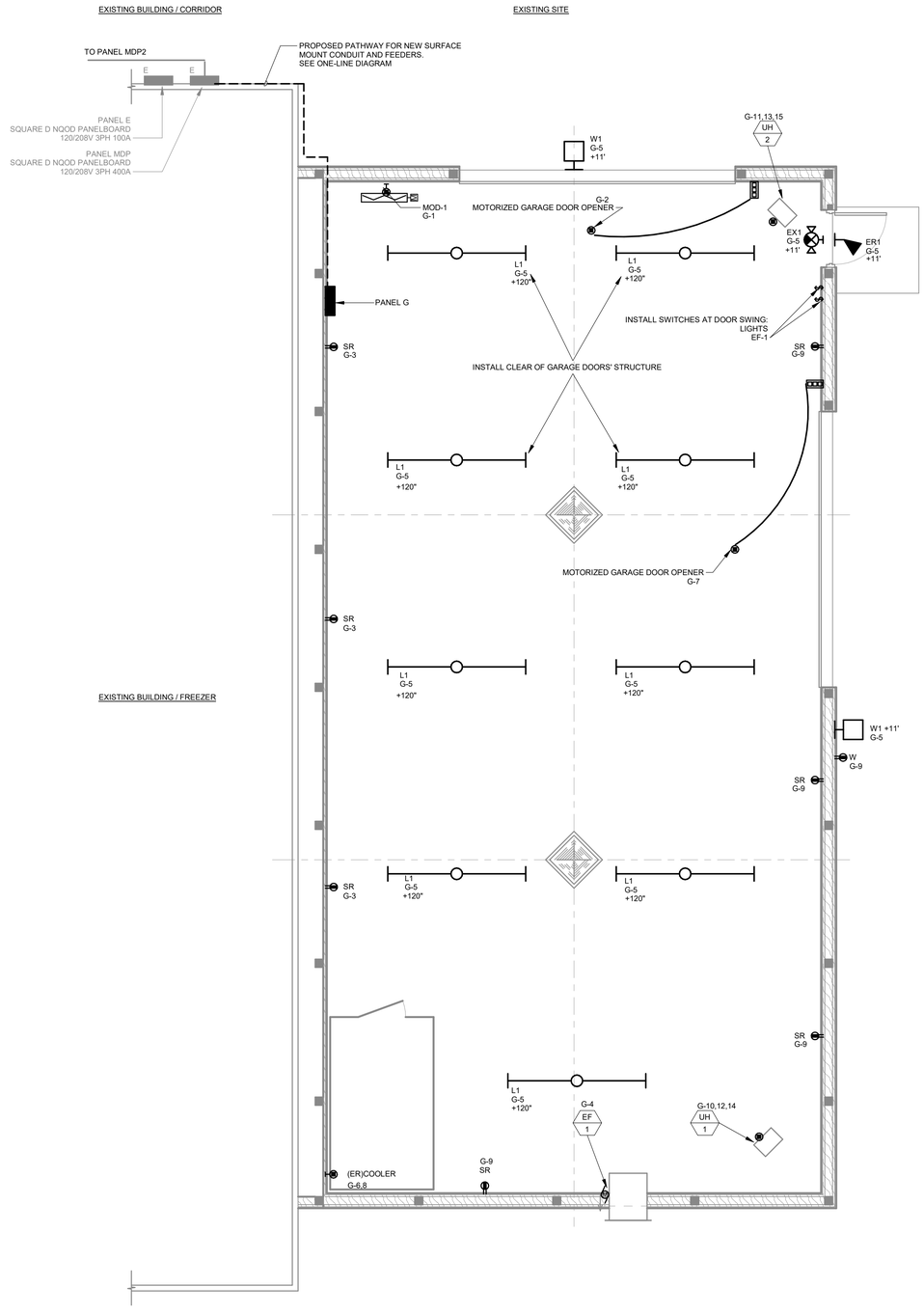
E001

POWER GENERAL NOTES

A. COORDINATE LOCATION/INSTALLATION OF MECHANICAL AND ELECTRICAL WORK WITH ALL OTHER TRADES. NO ASPECT OF A SYSTEM INSTALLATION OR ITS ROUGH-IN SHALL COMMENCE UNTIL PROPER AND TIMELY COORDINATION WITH ALL TRADES ASSOCIATED WITH THE INSTALLATION HAS TRANSPIRED. ITEMS TO BE COORDINATED SHALL INCLUDE BUT NOT BE LIMITED TO: BUILDING STRUCTURE, SHEET METAL, PIPING SYSTEMS, LIGHT FIXTURES, CONDUITS, CABLE TRAYS, ETC. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.

B. COORDINATE ELECTRICAL REQUIREMENTS FOR MECHANICAL UNITS WITH MECHANICAL CONTRACTOR AND FINAL MECHANICAL SHOP DRAWINGS.

C. PROVIDE PENETRATIONS REQUIRED FOR ROUTING RACEWAYS THROUGH THE BUILDING. COORDINATE FIRE RATED WALL PENETRATIONS AND PROVIDE CONDUIT SLEEVES AND FIRE STOPPING TO MAINTAIN RATING.



1 ELECTRICAL PLAN
1/4" = 1'-0"

KCL ENGINEERING
300 4th St
West Des Moines, IA
50265
515-724-7938

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

ELECTRICAL PLAN

SEED BUILDING ADDITION

2404 S. DUFF AVENUE AMES, IA 50010

Date	Revision

DRAWN BY:
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No:

E100

EQUIPMENT CONNECTION SCHEDULE

ABBREVIATIONS:

1	NEMA 1 ENCLOSURE	INT	INTEGRAL WITH EQUIPMENT FROM FACTORY
3R	NEMA 3R ENCLOSURE	M...	MANUAL MOTOR STARTER W/ THERMAL...
4	NEMA 4 ENCLOSURE	NFD	NON-FUSED DISCONNECT SWITCH, HEAVY...
4X	NEMA 4X ENCLOSURE	PFS	PLUG FUSE WITH INTEGRATED SWITCH
BO	PROVIDED BY OTHERS	RF	RETURN AIR DUCT DETECTOR
CB	CIRCUIT BREAKER IN PANEL	RSR	RUN STATUS RELAY , NORMALLY OPEN
CSD	COMBINATION STARTER/DISCONNECT	SD	SUPPLY AIR DUCT DETECTOR
CP	CORD AND PLUG PROVIDED WITH UNIT	SSP	START/STOP PUSHBUTTON WITH PILOT
ECB	ENCLOSED CIRCUIT BREAKER	SS	START/STOP PUSHBUTTON
FAR	FIRE ALARM SHUTDOWN RELAY	ST	SHUNT TRIP
FDS	FUSED DISCONNECT SWITCH, HEAVY...	TOR	TIME DELAY OFF RELAY
GF	GROUND FAULT CIRCUIT...	TS	TOGGLE SWITCH
HOA	HAND-OFF-AUTO	VFD	VARIABLE FREQUENCY DRIVE

NOTES:

1. PROVIDE AND INSTALL ELECTRICAL SYSTEMS MEETING THE REQUIREMENTS OF THE SPECIFIED MECHANICAL, FIRE PROTECTION, PLUMBING AND BUILDING SYSTEMS. REFERENCE THE ENTIRE PROJECT DOCUMENTS, MANUALS,...
2. PROVIDE CONNECTIONS AND ACCESSORIES INCLUDING STARTERS, DISCONNECTS, CONTROL WIRING, ETC. AS REQUIRED FOR THE BUILDING EQUIPMENT. INFORMATION HEREIN AND ON THE DRAWINGS IS FOR GENERAL DESCRIPTION AND ESTIMATING PURPOSES ONLY. VERIFY VOLTAGE, AMPERAGE, PHASE, INRUSH, ETC. FOR EACH ITEM OF EQUIPMENT BEFORE PROCEEDING WITH INSTALLATION. INSTALL PER MANUFACTURERS INSTRUCTIONS.
3. REVIEW EQUIPMENT SHOP DRAWINGS FOR COMPLIANCE AND COORDINATION WITH ELECTRICAL CONNECTIONS. NOTIFY ENGINEER IF CHANGES TO ELECTRICAL CONNECTIONS, WIRING, AND BREAKER REQUIREMENTS ARE...
4. DO NOT RELEASE ELECTRICAL DISTRIBUTION EQUIPMENT UNTIL ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS HAVE BEEN SUBMITTED AND APPROVED. MAKE MINOR ADJUSTMENTS TO BREAKER SIZES, DISCONNECT SIZES, ETC PRIOR TO SUBMITTAL RELEASE.
5. INSTALL DISCONNECTS TO ALLOW EQUIPMENT REMOVAL WITHOUT DISCONNECT REMOVAL AND TO MINIMIZE WIRE...
6. PROVIDE HEAVY DUTY DISCONNECTS RATED FOR THE INSTALLED ENVIRONMENT; NEMA 1 INDOORS, MINIMUM NEMA...
7. VERIFY ALL EQUIPMENT LOCATIONS WITH THE ASSOCIATED SUB-CONTRACTOR.
8. INCLUDE AUXILIARY CONTACTS AND LOW-VOLTAGE WIRING TO AUXILIARY EQUIPMENT THAT RUNS IN TANDEM WITH EQUIPMENT, (I.E. 120V DAMPERS WITH 480V MOTORS).

TAG	ELECTRICAL CHARACTERISTICS					DISCONNECT				REMARKS
	VOLTAGE	PHASE	MOTOR HP	KW	MCA	TYPE	SIZE (AMPS)	NEMA RATING	FUSE SIZE (AMPS)	
EF-1	120 V	1	FHP	-	-	INT	-	-	-	MOTORIZED DAMPER TO OPEN/CLOSE WITH FAN START/STOP
MOD-1	120 V	1	-	-	-	-	-	-	-	OPEN/CLOSE WITH EF-1 FAN START/STOP
UH-2	208 V	3	-	15	-	INT	-	-	-	THERMOSTAT WIRING BY MC
UH-2	208 V	3	-	15	-	INT	-	-	-	THERMOSTAT WIRING BY MC

LIGHTING FIXTURE SCHEDULE

NOTES:

1. ALL FIXTURES SHALL BE U.L. OR SIMILARLY LISTED.
2. INCLUDE A MINIMUM 5 YEAR WARRANTY FOR LIGHTING FIXTURES, WHERE NOT OTHERWISE SPECIFIED.
3. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT MOUNTING LOCATIONS, DETAILS, AND CONFIGURATIONS OF ALL LUMINAIRES. IF ARCHITECTURAL DRAWINGS DO NOT CLARIFY EXACT MOUNTING LOCATION OR DETAIL, ISSUE AN RFI FOR ARCHITECT TO SPECIFICALLY CLARIFY PRIOR TO FIXTURE ROUGH-IN.
4. VERIFY COMPATIBILITY OF LIGHT FIXTURES WITH ARCHITECTURAL CEILING PLAN, MATERIALS, ADJACENT CONSTRUCTION, AND ADJACENT FINISHES PRIOR TO SHOP DRAWINGS SUBMITTAL. ADJUST FIXTURE TYPE, CONSTRUCTION, FLANGE, AND OTHER COORDINATION DETAILS AS REQUIRED FOR CEILING TYPE. NOTIFY THE ARCHITECT OF ANY CONFLICTS WITH THE PROPOSED INSTALLATION.
5. CONTRACTOR IS RESPONSIBLE FOR ALL MISCELLANEOUS HARDWARE NECESSARY TO INSTALL AND SUPPORT THE LUMINAIRES.
6. AIM AND TARGET ADJUSTABLE INTERIOR AND EXTERIOR LIGHT FIXTURES UNDER THE OBSERVATION AND IN COMPLIANCE WITH RECOMMENDATIONS OF THE ARCHITECT. INCLUDE LABOR AND MATERIAL COSTS MADE NECESSARY BY THIS REQUIREMENT.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND FILLING OUT ALL UTILITY REBATE FORMS FOR OWNER.

DESIGNED BY: DEBBIE BAEDER

TYPE	MANUFACTURER	MODEL	DESCRIPTION	FINISH	MINIMUM NOMINAL LUMENS	CRI	DRIVER TYPE	SOURCE-CCT	VOLTAGE	LOAD-VA	APPROVED EQUALS
ER1	LITHONIA LIGHTING	LHQM-RG-HO	WALL MOUNTED REMOTE EMERGENCY UNIT, POWERED VIA TYPE EX1, SINGLE HEAD, WET LOCATION RATED	BLACK	150	80+	NON-DIMMING	LED - 4000K	120 V	2 VA	ISOLITE, DUAL LITE, MULE, AS APPROVED BY ENGINEER
EX1	LITHONIA LIGHTING	LHQM-S-W-RG-MVOLT-HO-M6	EXIT SIGN EMERGENCY UNIT COMBO, WALL MOUNTING, DUAL FACE, ARROWS SHOWN ON PLAN, SELF-DIAGNOSTICS, REMOTE CAPACITY	WHITE	300	-	NON-DIMMING	RED LED	120 V	5 VA	ISOLITE, DUAL LITE, MULE, AS APPROVED BY ENGINEER
L1	ILP	VVT8-10L-U-40-FRL-HUB1/2-C8/3W	CHAIN MOUNT 8-FT INDUSTRIAL STRIPLIGHT, FROSTED POLYCARBONATE LENS, WIDE DISTRIBUTION, IP65 MINIMUM RATED	WHITE	2,200	80+	NON-DIMMING	LED - 4000K	120 V	65 VA	LITHONIA, COPLUMBIA, AS APPROVED BY ENGINEER
W1	LUMARK	AXCS1A-W-PC2	WALL PACK, FULL CUT OFF FORWARD DISTRIBUTION, IP65 MINIMUM RATED, DARK SKY FRIENDLY, INTEGRAL PHOTOCELL	BRONZE	1,500	80+	NON-DIMMING	LED - 3000K	120 V	12 VA	LITHONIA, ILP, BEACON, AS APPROVED BY ENGINEER

BRANCH PANEL: G

LOCATION: SEED NURSERY
SUPPLY FROM: MDP
MOUNTING: SURFACE
ENCLOSURE: TYPE 1
VOLTAGE: 208Y/120
PHASES: 3
WIRES: 4
SCCR RATING: 10 kA
MAINS TYPE: MLO
MAINS RATING: 225 A

NOTES:
NEW PANELBOARD: SQUARE D OR SIMILAR TO EXISTING PANELBOARDS.

CIRCUIT DESCRIPTION	P	AMP	CKT NO	A		B		C		CKT NO	AMP	P	CIRCUIT DESCRIPTION
MOD-1	1	20 A	1	0	300					2	20 A	1	GARAGE DOOR
NORTH RECEPTACLES	1	G 20 A	3			540	696			4	15 A	1	EF-1
LIGHTING	1	20 A	5					616	1500	6	40 A	G 2	COOLER
GARAGE DOOR	1	20 A	7	300	1500					8			
SOUTH RECEPTACLES	1	G 20 A	9			900	5000			10			
UH-2	3	90 A	11					5000	5000	12	90 A	3	UH-1
			13	5000	5000					14			
			15			5000	0			16	20 A	1	SPARE
SPARE	1	20 A	17					0	0	18	20 A	1	SPARE
SPARE	1	20 A	19	0	0					20	20 A	1	SPARE
SPARE	1	20 A	21			0	0			22	20 A	1	SPARE
SPARE	1	20 A	23					0	0	24	20 A	1	SPARE
				12,100 VA		12,136 VA		12,116 VA					
				101 A		101 A		101 A					

LEGEND:
"G" INDICATES GFCI TYPE BREAKER, "L" INDICATES PROVIDE LOCKABLE HASP
"F" INDICATES RED LOCK-ON HASP

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Lighting	616 VA	125.00%	770 VA		
Power	34,296 VA	100.00%	34,296 VA	TOTAL CONN. LOAD:	36,352 VA
Receptacle	1,440 VA	100.00%	1,440 VA	TOTAL EST. DEMAND:	36,506 VA
				TOTAL CONN.:	101 A
				TOTAL EST. DEMAND:	101 A

NOTES:

RISER DIAGRAM GENERAL NOTES

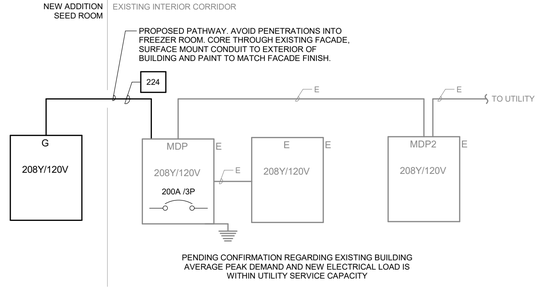
A. DIAGRAM INDICATES OVERALL LAYOUT OF ELECTRICAL DISTRIBUTION SYSTEM. REFER TO FLOOR PLANS FOR EQUIPMENT LOCATIONS.

B. USE COPPER CONDUCTORS UNLESS OTHERWISE INDICATED.

C. MATCH NEUTRAL CONDUCTOR SIZE TO THE PHASE CONDUCTORS UNLESS OTHERWISE NOTED.

D. ALL WIRING SHALL BE IN RACEWAY AS NOTED. REFER TO SPECIFICATIONS FOR CONDUIT APPLICATION REQUIREMENTS.

FEEDER SCHEDULE				
TAG	PHASE	GROUND	CONDUCTOR MATERIAL	CONDUIT
224	1- SET (4) #4/0	#4	COPPER	(1) 2 1/2"



1 ONE-LINE DIAGRAM
NOT TO SCALE

KCL ENGINEERING
300 4th St
West Des Moines, IA
50265
515-724-7938

IOWA DEPARTMENT OF NATURAL RESOURCES
- ENGINEERING SERVICES -
6200 PARK AVENUE STE. 200
DES MOINES, IA 50321
P: 515.725.8200
F: 515.725.8202

IOWA DNR

ELEC. ONE-LINE & SCHEDULES

SEED BUILDING ADDITION

2404 S. DUFF AVENUE AMES, IA 50010

Date	Revision

DRAWN BY:
PROJECT NUMBER: 24-02-85-01
CHK'D BY:
DATE: 07-21-2026

SHEET No:
E400