Transfer Station Permit Modification

CARDS Recycling, LLC
Fairland Transfer Station
Afton, Oklahoma

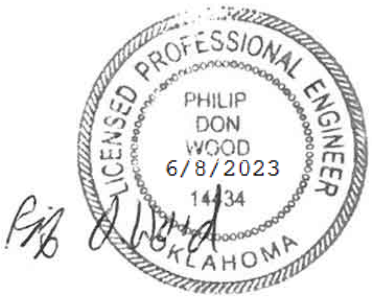
June 2023
Project No. 03237058

Prepared for:
CARDS NEO, LLC
P.O. Box 775
Tontitown, AR 72770
(877) 592-2737

Prepared by:
Terracon Consultants, Inc.
25809 Interstate 30 South
Bryant, Arkansas 72022
(501) 847-9292

PROFESSIONAL ENGINEER'S CERTIFICATION

"I certify to the best of my professional judgment that the following permit application for the proposed solid waste transfer station located on property owned and operated by CARDS NEO, LLC. in Afton, Oklahoma was prepared in accordance with good engineering practices and applicable Oklahoma Department of Environmental Quality regulations. This certification is contingent on the fact that all information supplied to the signatory authority, at the time of this certification is unquestionably accurate and was provided in good faith."



Phil Wood, P.E.
Oklahoma Professional Engineer No. 14434

June 7, 2023
Certification Date

Cert. of Auth. #CA – 4531 exp. 6/30/23

Table of Contents

List of Appendices

1.0 Background and Purpose

The CARDS Fairland Transfer Station is located at 23870 Highway US-59, Afton, Oklahoma, 74331. The existing transfer station permit number is: **3558020**. The Transfer Station is owned and operated by CARDS NEO, LLC (CARDS). The facility layout is shown on **FIGURE 1 of APPENDIX F**. This purpose of this application modification is described below:

1. Expand the existing waste transfer building. The existing building was previously damaged by a tornado. The building needs to be repaired and expanded for operations at the transfer station to continue. The proposed design drawings for the expansion of the existing waste transfer station building are shown in **APPENDIX G.**

2. Increase the anticipated waste streams from approximately 70 tons per day to 500 tons per day. Due to the increase in anticipated waste streams, an updated closure care cost estimate is shown in **APPENDIX H.**

3. Increase the population served by the transfer station from approximately 8,500 persons to approximately 40,000 persons.

The information presented in this general permit modification application for a solid waste transfer station was prepared in accordance TITLE 252 - DEPARTMENT OF ENVIRONMENTAL QUALITY. Specifically, the Permit Modification Application was prepared in accordance with the requirements of CHAPTER 515 - MANAGEMENT OF SOLID WASTE.

This general permit application presents owner information, specific site information, and operational aspects of the Transfer Station. Solid Waste Processing Facility Application Modification Form for the Transfer Station is presented in **APPENDIX A.**

APPENDIX A
TRANSFER STATION APPLICATION FORM

APPLICATION FOR A Transfer Station PERMIT

Date: June 6, 2023 County: Ottawa

Send to:

Solid Waste Permitting Unit
Land Protection Division
Dept. of Environmental Quality
707 N. Robinson (PO Box 1677)
Oklahoma City, OK
73101-1677

FOR DEQ USE

DEQ Log No. _____
No. Copies _____

Date Received: _____

CARDS NEO, LLC proposes to establish, construct, operate, and maintain
(Applicant's Name)
the Fairland Transfer Station, located at 23870 Highway US-59, Afton, OK, 74331
(Facility Name) *(Exact legal description:*
See APPENDIX E of this Permit Application
metes & bounds, platted lot, or land survey. Append extra sheets if necessary)

in Ottawa County, Oklahoma, and hereby makes application for a permit to establish, construct, operate, and maintain a Transfer Station as required by **Oklahoma Solid Waste Management Act** and Rules pursuant thereto.

Brief description of application:

The purpose of this application modification is to increase the waste streams from approximately 70 tons per day to 500 tons per day, increase the population served from 8,500 persons to 40,000 persons, and to expand the existing waste transfer building.

Applicant or Authorized Agent:

Signature

Dan Christensen
Typed Name

Address: P.O. Box 775
City: Tontitown State: AR

Date signed: 6-6-23
Phone: (877) 592-2737

Preparing Engineer:

Signature

Drew Potter
Typed Name

Address: 25809 I-30
City: Bryant State: AR

Date signed: June 7, 2023
Phone: (501) 847-9292

Facility Address (if any):
23870 Highway US-59, Afton, OK, 74331

DEQ USE ONLY

VERIFICATION[1]

STATE OF ~~OKLAHOMA~~ Arkansas)
) ss
COUNTY OF Washington)

Daniel Christensen, of lawful age, being first duly sworn, upon oath state that I have read the foregoing APPLICATION FOR A_____PERMIT, that I am familiar with the matters set forth therein, and that the same are true to the best of my information and belief.

Applicant

Subscribed and sworn to before me this 6 day of June, 2023, by _____(Applicant or legal representative).

Notary Public

My commission expires:

5-4-2028

OFFICIAL SEAL
KELLIE R. HOMWAY
NOTARY PUBLIC, ARKANSAS
WASHINGTON COUNTY
COMMISSION NO 12366412
COMMISSION EXP. 05/04/2028

[1] This Verification is required for a Tier III application.

APPENDIX B
DISCLOSURE STATEMENT FORM

DISCLOSURE STATEMENT FORM

INFORMATION AND INSTRUCTIONS: The Solid Waste Management Act requires applicants to provide the Department of Environmental Quality with information about themselves, any officer, director or partner, any person employed by the applicant as general or key manager who directs the operations of the site which is the subject of the application, and any person owning or controlling more than five percent (5%) of the applicant's debt or equity. By law, the "Disclosure Statement" must be completed by all applicants for the issuance or transfer of any solid waste permit.

If the applicant is a publicly held company, it does not need to submit a disclosure statement, but only need submit the most recent annual (SEC Form 10-K) and quarterly reports (SEC Form 10-Q) required by the Securities and Exchange Commission (SEC), which provide information regarding legal proceedings in which the applicant has been involved. However, the applicant must submit such other information as the Department may require that relates to the competency, reliability, or responsibility of the applicant, officers, directors, or other persons as set out above.

PLEASE PROVIDE THE FOLLOWING INFORMATION: (If additional space is required to answer any of the following questions, please make attachments as needed.)

(1) Name of facility:
Fairland Transfer Station

(2) Applicant's full name and social security number:

(3) Applicant's business address:
P.O. Box 775, Tontitown, AR 72770

(4) Applicant's business telephone number:
(877) 592-2737

(5) Applicant's form of business:
_____ publicly-held corporation;
__X__ privately-held corporation;
_____ partnership or sole proprietorship;
_____ municipality or public agency;
_____ other: _____

(6) Is Applicant a publicly-held company required to file annual reports with the Securities and Exchange Commission, or a wholly-owned subsidiary of such a company?
_____ yes __X__ no

(7) If Applicant answered "yes" to question (6) above, Applicant is required to submit copies of the most recent annual and quarterly reports required by the SEC *that provide information regarding legal proceedings in which Applicant has been involved.* In addition, list below, the name and business address of any person employed by the Applicant as a general or key manager who directs the operations of the site or facility which is the subject of the application.

N/A

(**NOTE**: If Applicant is required to submit SEC reports under this section, no further reporting is required under the disclosure statement requirement, and Applicant should skip to the "Certification and Oath" section on the last page of this form. Applicant should submit copies of any SEC reports as an attachment to this form to be submitted as part of the permit application. If Applicant answered "no" to question (6) above, Applicant is required to complete all remaining sections of this Form.)

(8) Full name, business address and social security number of all affiliated persons:
(**NOTE**: "Affiliated person" means:
(a) any officer, director, or partner of the applicant;
(b) any person employed by the applicant as a general or key manager who directs the operations of the site or facility which is the subject of the application; and
(c) any person (including corporations, partnerships, etc.) owning or controlling more than five (5) percent of the Applicant's debt or equity.):

Dan Christensen, President / P.O. Box 775, Tontitown, AR 72770 / 590-40-0065

(9) Full name and address of any legal entity in which the Applicant holds a debt or equity interest of at least 5 percent, or which is a parent company or subsidiary of the Applicant, and a description of the ongoing organizational relationships as they may impact operations within the State:

N/A

(10) Description of the experience and credentials of the Applicant and any "affiliated person", including any past or present permits, licenses, certifications, or operational authorizations relating to environmental facility regulation:

Phase 1 Environmental Site Assessment and Limited Environmental Compliance Review for the Eastern Oklahoma Transfer Station was prepared in March 2023.

(11) Listing and explanation of any administrative, civil or criminal legal actions against the Applicant or any affiliated person which resulted in a final agency order or final judgment by a court of record

including any final order or judgment on appeal in the ten (10) years immediately preceding the filing of the application relating to solid or hazardous waste. Such action shall include, without limitations, any permit denial or any sanction imposed by a state regulatory authority or the U.S. Environmental Protection Agency:

N/A

(12) Listing of any federal environmental agency and any state environmental agency that has or has had regulatory responsibility over Applicant:

N/A

CERTIFICATION AND OATH

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

CARDS NEO, LLC
(Printed or Typed) Name of Applicant or Agent

6-6-23
Date

Signature of Applicant or Agent

President
Title

ACKNOWLEDGMENT

State of ~~Oklahoma~~ Arkansas)
) ss.
Washington County)

Before me, the undersigned, in and for said county and state, on this 6 day of June, 2023, personally appeared Daniel Christensen, to me known to be the identical person who executed the within and foregoing instrument, and acknowledged to me that _____ executed the same as _____ free and voluntary act and deed for the uses and purposes therein set forth.

Kellie R Homway
Notary Public

My commission expires:

5-4-2028

OFFICIAL SEAL
KELLIE R. HOMWAY
NOTARY PUBLIC, ARKANSAS
WASHINGTON COUNTY
COMMISSION NO 12366412
COMMISSION EXP. 05/04/2028

:\DisclStmtFORM.doc
12/00

APPENDIX C
LANDOWNER NOTIFICATION AFFIDAVIT

DEQ LANDOWNER NOTIFICATION AFFIDAVIT

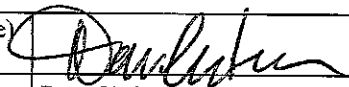
Tier I, II, or III permit applications in which the applicant does not own all the land subject to the application must notify the owner(s) of leases and/or pipeline right-of-ways. The basis for this requirement is Title 27A of the Oklahoma Statutes § 2-14-103(9), as described in OAC 252:004-7-13(b).

Please note that you MUST fill out and return this affidavit even if you don't have to give any landowner notice.

A	NOTICE TO THE LANDOWNER(S) IS NOT REQUIRED because: (check one)		
☐	My application does not involve any land.	☑	My application involves only land owned by me (or applicant business).

OR

B	NOTICE TO THE LANDOWNER(S) IS REQUIRED because the land is owned by someone other than myself or the applicant business AND I HAVE NOTIFIED the following (check one):		
☐	Landowner(s)	☐	Lessor or Administrator or Executor of the land
METHOD OF DELIVERY (check one):			
☐	Actual notice, for which I have a signed and dated receipt		
☐	Service by Sheriff or private process server, for which I have an affidavit		
☐	Service by certified mail, restricted delivery, for which I have a signed return receipt		
☐	Legal publication, for which I have an affidavit of publication from the newspaper, because the landowners could not be located through due diligence		
MY RIGHT TO USE THIS LAND is by:			
☐	Lease ☐ Easement ☐ Other, Specify		

LANDOWNER AFFIDAVIT CERTIFICATION			
I, as the applicant or an authorized representative of the applicant, hereby certify that notice to the landowner(s) about the permit application for the facility described below was provided per Option A or B above.			
Company Name	CARDS NEO, LLC	Facility Name	Fairland Transfer Station
Facility Address or Legal Description	23870 Highway US-59, Afton, Oklahoma, 74331		
Responsible Official (signature)		Date Signed	6-6-23
Responsible Official (typed)	Dan Christensen	Title	President

If the landowner notice applies to your application (Option B Above) you can send the following form to them as your notice:

NOTICE TO LANDOWNER OF FILING

Dear Landowner: (Name)_____

(Applicant name)_____ has filed a permit application with the Oklahoma Department of Environmental Quality for (Name) Fairland Transfer Station facility.

This application involves the land owned by you located at:

Address or Legal Description:_____

_____

Signed:_____ Date:_____

APPENDIX D
TEMPORARY EASEMENT FORM

TEMPORARY EASEMENT FOR ACCESS

This temporary easement is issued pursuant to the Oklahoma Environmental Quality Code (27A O.S. §2-1-101 *et seq.*, including the Solid Waste Management Act, the rules promulgated thereunder, and in accordance with the conditions and requirements of Permit No._____, issued by the Oklahoma Department of Environmental

Quality (DEQ) on _____ to CARDS NEO, LLC.
(Date) (Name of permittee)

The facility is located on property owned by CARDS NEO, LLC, hereinafter referred to as Grantor. Grantor does hereby grant unto the DEQ, including its contractors, employees, and its successors and assigns, the right of access to the below described land for purposes of performing closure, post-closure monitoring, or corrective action in the event of default by the owner or operator of the permitted facility.
The easement is granted over and across the permitted area ("Tract") on land situated in

Ottawa County, State of Oklahoma.

Following is the legal description of the Tract:

A TRACT OF LAND LOCATED IN THE S 1/2 NW 1/4 SE 1/4, SECTION 4, TOWNSHIP 25 NORTH, RANGE 23 EAST OF THE INDIAN MERIDIAN, OTTAWA COUNTY, OKLAHOMA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID S 1/2 NW 1/4 SE 1/4; THENCE N 88°02'38"E 1104.25 FEET ALONG THE NORTH LINE OF SAID S 1/2 NW 1/4 NE 1/4, THENCE S 01°44'44" E 317.43 FEET TO THE POINT OF BEGINNING; THENCE S 01°44'44" E 290.69 FEET; THENCE N 86°06'44" W 266.73 FEET; THENCE N 08°00'15" E 302.46 FEET; THENCE S 82°50'06" E 216.84 FEET TO THE POINT OF BEGINNING; SAID TRACT OF LAND CONTAINS 1.6 ACRES OF LAND, MORE OR LESS.

more particularly described as the permitted area of Fairland Transfer Station
(Facility name)

_____, DEQ Permit Number: _____.

This Temporary Easement for Access is given subject to the following conditions:

1. The Grantor hereby grants unto the DEQ an easement and right-of-way over and across the Tract of land described above for access to said Tract for the purposes of

conducting closure and post-closure activities and/or corrective action as prescribed by the laws of the State of Oklahoma and Rules of the DEQ;

2. This Easement is temporary and shall become null and void upon certification by the DEQ that post-closure and/or corrective action has been properly completed; and

3. This Easement shall be binding upon the heirs, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the Grantor has hereunto set (his/her/its) hand this 6 Day of JUNE, 20 23.

Dan Christensen - President

(Name, Title)

ACKNOWLEDGMENT

STATE OF ~~OKLAHOMA~~ Arkansas)
) SS:
COUNTY OF Washington)

Before me, the undersigned, a Notary Public within and for said County and State, on this 6 day of June, 2023,

Daniel Christensen President,

(name, title)

did personally appear before me and is known to be the identical person who executed the within and foregoing instrument and acknowledged to me that (he/she) executed the same as (his/her) free and voluntary act and deed, for the uses and purposes therein set forth.

Witness my hand and official seal the date above written.

Kellie R Homway
Notary Public

My commission expires:

5-4-2028

OFFICIAL SEAL
KELLIE R. HOMWAY
NOTARY PUBLIC, ARKANSAS
WASHINGTON COUNTY
COMMISSION NO 12366412
COMMISSION EXP. 05/04/2028

APPENDIX E
LEGAL DESCRIPTION

Legal Description:

A tract of land located in the S ½ NW ¼ SE ¼, Section 4, Township 25 North, Range 23 East of the Indian Meridian, Ottawa County, Oklahoma, being more particularly described as follows:

Commencing at the Northwest Corner of said S ½ NW ¼ SE ¼; thence N 88°02'38" E 1104.25 feet along the North Line of said S ½ NW ¼ NE ¼, thence S 01°44'44" E 317.43 feet to the point of beginning; thence S 01°44'44" E 290.69 feet; thence N 86°06'44" W 266.73 feet; thence N 08°00'15" E 302.46 feet; thence S 82°50'06"E 216.84 feet to the point of beginning; said tract of land contains 1.6 acres of land, more or less.

APPENDIX F
SITE LAYOUT

C:\CIVIL 3D PROJECTS\OKLAHOMA TRANSFER STATIONS\GROVE\FIGURES\SITE LAYOUT.DWG

N

150 0 75 150

SCALE IN FEET

IMAGE SOURCE: GOOGLE EARTH, SEPTEMBER 2021

FIGURE 1

SHEET NO.: - OF -
ACAD NO.: 001
JOB NO.: 604-001-3237098
DATE: MAY 2023
SCALE: AS SHOWN
APP'D. BY: PDW
DRAWN BY: DAP
DESIGNED BY: DAP

Terracon
Consulting Engineers and Scientists
25809 I-30 SOUTH BRYANT, AR 72022
PH. (501) 847-9292 FAX. (501) 847-9210

SITE LAYOUT

TRANSFER STATION PERMIT APPLICATION

CARDS NEO, LLC

FAIRLAND TRANSFER STATION

OTTAWA COUNTY OKLAHOMA

REV.	DATE	BY	DESCRIPTION

APPENDIX G
DESIGN DRAWINGS

LOCATION MAP

New Transfer Station

FOR

Cards Recycling

Afton, Ottawa County, Oklahoma

INDEX TO DRAWINGS

STRUCTURAL

ARCHITECTURAL

SET NO. _____

STRUCTURAL ENGINEER

TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

ARCHITECTURAL

PATTERSON LATIMER JONES BRANNON DENHAM
ARCHITECTURAL CORPORATION # 02315
303 S. MAIN JOPLIN, MISSOURI 64801 417-624-4004
WWW.PLJBD.COM
contact@pljbd.com
PLJBD ARCHITECTS

New Transfer Station For Cards Recycling
PATTERSON LATIMER JONES BRANNON DENHAM Inc. 2022 07 03

CONSTRUCTION NOTES

GENERAL:

1. NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL, OR CODE, WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE INTO THE CONTRACT DOCUMENTS, SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF THE OWNER, CONTRACTOR, ENGINEER, SUPPLIER, OR ANY OF THEIR CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS. NOR SHALL IT BE EFFECTIVE TO ASSIGN TO THE STRUCTURAL ENGINEER OF RECORD OR ANY OF THE STRUCTURAL ENGINEER OF RECORD'S CONSULTANTS, AGENTS, OR EMPLOYEES ANY DUTY OR AUTHORITY TO SUPERVISE OR DIRECT THE FURNISHING OR PERFORMANCE OF THE WORK OR ANY DUTY OR AUTHORITY TO UNDERTAKE RESPONSIBILITIES CONTRARY TO THE PROVISIONS OF THE CONTRACT DOCUMENTS.
2. CONTRACT DOCUMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE STRUCTURAL DOCUMENTS (DRAWINGS AND SPECIFICATIONS), BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR.
3. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION ADOPTED BY THE GOVERNING AUTHORITY AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.
4. CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATION OF THE ACI, PCI, AISC, SJI, AITC, CRSI OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.
5. MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE.
6. THE CONTRACTOR SHALL VERIFY THAT MISCELLANEOUS FRAMING SHOWN ON THE STRUCTURAL DRAWINGS FOR THE MECHANICAL EQUIPMENT, OWNER FURNISHED ITEMS, PARTITIONS, ETC. IS CONSISTENT WITH THE REQUIREMENTS OF SUCH ITEMS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE DIMENSIONS WITH THE EQUIPMENT SUPPLIER AND THE FINAL LOCATION WITH THE ARCHITECTURAL AND THE M/E/P DRAWINGS.
7. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
8. THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS, BRACING, AND SHORING REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND MAINTAINING THE INTEGRITY OF ALL EXISTING AND ADJACENT BUILDINGS, STRUCTURES, STREETS, ETC.
10. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS.
11. ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.
12. DETAILS LABELED "TYPICAL" OR "TYP" ON THE STRUCTURAL DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE LOCATIONS SPECIFICALLY INDICATED.
13. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR THE DESIGN OF STEEL STAIRS, HANDRAILS, MECHANICAL PIPE RACK SYSTEMS, CURTAIN WALL SYSTEMS, OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DOCUMENTS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS.
14. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING DIMENSIONS, LOCATIONS, AND DEPTH OF ALL SLAB RECESSES AND PENETRATIONS WITH PRODUCT MANUFACTURERS AND ARCHITECTURAL DRAWINGS.
15. DO NOT SCALE DRAWINGS. ANY DIMENSIONAL DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER IMMEDIATELY.

CODES AND STANDARDS:

1. BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE
   a. STRUCTURAL LOADS:..... ASCE7
   b. STRUCTURAL CONCRETE:..... ACI 318
   c. STRUCTURAL STEEL:..... ANSI/AISC 360

DEFLECTION LIMITS:

1. MAXIMUM ROOF FRAMING DEFLECTION:
   a. NO CEILING: LIVE LOAD Δ = L/180, TOTAL LOAD Δ = L/120
2. MAXIMUM WALL FRAMING DEFLECTION (GIRTS, WIND COLUMNS) :
   a. MAX. Δ = L/120 FOR METAL PANEL, FLEXIBLE WALL CLADDING AT 10-YEAR MEAN RECURRENCE INTERVAL
3. MAXIMUM FRAME SIDESWAY :
   a. MAX. Δ = L/180 AT 10-YEAR MEAN RECURRENCE INTERVAL

POST INSTALLED DOWELS:

1. BARS DOWELED INTO HARDENED CONCRETE SHALL BE EPOXIED INTO PLACE w/ HILTI HIT-HY 200 ADHESIVE. UNLESS OTHERWISE NOTED, THE EMBEDMENT DEPTH SHALL BE AS FOLLOWS:

REBAR SIZE	SMOOTH BAR SIZE	EMBEDMENT DEPTH
#4	½" DIA.	4½"
#5	⅝" DIA.	5½"
#6	¾" DIA.	6¾"

DESIGN LOADS:

1. DEAD LOAD:
   a. ROOF..... BY PEMB SUPPLIER
2. COLLATERAL LOAD:
   a. ROOF..... 5 psf
3. LIVE LOAD:
   a. ROOF..... 20 psf (NON-REDUCIBLE)
4. ROOF SNOW LOAD:
   Pg = 15 psf
   Ce = 1.0
   Ct = 1.0
   I = 1.0
   RISK CATEGORY = II
   ROOF SNOW LOAD = 25 psf
5. WIND LOAD:
   a. WIND SPEED (ULTIMATE) = 108 mph
   b. EXPOSURE = C
   c. RISK CATEGORY = II
   d. ENCLOSED
6. SEISMIC:
   a. Ss = 0.125
   b. S1 = 0.078
   c. SITE CLASS = D
   d. Sds = 0.134
   e. Sd1 = 0.125
   f. SEISMIC DESIGN CATEGORY = B
   g. I = 1.00
7. SOLAR:
   NO PROVISIONS HAVE BEEN MADE TO ACCOMMODATE SOLAR PANEL LOADS ON THE ROOF

SHOP DRAWINGS:

1. THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY THE STRUCTURAL ENGINEER SHOP DRAWINGS FOR THE FOLLOWING MATERIALS:

MATERIAL	ENGINEER'S SEAL REQUIRED
CONCRETE	NO
PRE-ENGINEERED METAL BUILDING	YES

2. SHOP DRAWINGS SHALL BE ORIGINAL DRAWINGS PREPARED BY THE CONTRACTOR, SUBCONTRACTOR OR SUPPLIER. REPRODUCTION OF THE STRUCTURAL DRAWINGS AS ERECTION PLANS OR DETAILS IS NOT PERMITTED.
3. SHOP DRAWINGS REQUIRING ENGINEERING DESIGN BY THE FABRICATOR SHALL BE STAMPED BY AN ENGINEER LICENSED IN THE STATE IN WHICH CONSTRUCTION WILL OCCUR. SHOP DRAWINGS SHALL BE SUBMITTED WITH THE ENGINEER'S SEAL.
4. REVIEW OF THE SHOP DRAWINGS BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS ONLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND CHECK THE SHOP DRAWINGS WITH REGARD TO DIMENSIONS, ELEVATIONS, MEMBER SIZES, AND QUANTITY OF ALL STRUCTURAL ELEMENTS.
5. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF THE SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, AND ELEVATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS USING A FORM OF REPRODUCIBLE MEDIA. THIS MAY BE IN THE FORM OF ELECTRONIC DOCUMENTS.
7. ALL SHOP DRAWING SUBMITTALS SHALL BE ACCOMPANIED BY A LETTER FROM THE CONTRACTOR, ON COMPANY LETTERHEAD, STATING THAT ALL DIMENSIONS, ELEVATIONS, SIZES, AND QUANTITIES HAVE BEEN REVIEWED AND VERIFIED WITH THE CONSTRUCTION DOCUMENTS. WITHOUT THIS LETTER, SHOP DRAWINGS WILL BE RETURNED WITHOUT REVIEW.

FOUNDATIONS:

1. IN THE ABSENCE OF A GEOTECHNICAL REPORT, THE OWNER SHALL CONTRACT WITH A PROFESSIONAL TESTING FIRM TO INVESTIGATE THE SOIL CONDITIONS, TO INSPECT THE SITE, AND TO MONITOR ANY REQUIRED EXCAVATIONS.
2. THE FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING ASSUMED ALLOWABLE NET SOIL BEARING CAPACITIES:
   a. SPREAD FOOTINGS ..... 2000 psf
   b. CONTINUOUS FOOTINGS ..... 2000 psf
3. EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 30" INCHES BELOW FINISH GRADE OR TOP OF PAVING.
4. THE SIDES OF ALL EXCAVATIONS SHALL BE VERTICAL. THE BOTTOM OF ALL EXCAVATIONS SHALL BE DRY AND FREE OF LOOSE SOIL, ROCK, OR DEBRIS.
5. FOOTINGS SHALL NOT BE CAST ON UNCONTROLLED FILL, ORGANIC MATERIAL, FROZEN SOIL, MUD. OR ANY OTHER UNAPPROVED MATERIAL.
6. CONDUIT SHALL NOT RUN THROUGH OR UNDER SPREAD FOOTINGS.
7. AT LOCATIONS WHERE CONDUIT RUNS THROUGH THE STEM WALLS OR GRADE BEAMS, THE HOLE SHALL BE SLEEVED OR OTHERWISE BLOCKED OUT AT THE CONDUIT. THE SLEEVE SHALL BE NO CLOSER THAN 8" FROM THE TOP OR THE BOTTOM OF THE STEM WALL OR GRADE BEAM. THE SLEEVE/BLOCKOUT SHALL BE NO LESS THAN ½" GREATER ALL AROUND THAN THE CONDUIT. BEFORE BACKFILLING, THE SPACE BETWEEN THE CONDUIT AND THE SLEEVE/BLOCKOUT SHALL BE SEALED WITH EXPANDABLE FOAM.
8. THE GEOTECHNICAL ENGINEER SHALL INSPECT ALL FOUNDATION EXCAVATIONS PRIOR TO THE PLACEMENT OF CONCRETE.
9. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE THE TESTING LAB PRIOR TO THE PLACEMENT OF CONCRETE. CONCRETE PLACEMENT WILL NOT BEGIN UNTIL A TECHNICIAN FROM THE TESTING LAB IS ON SITE.
10. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AT LEAST 24 HOURS PRIOR TO THE PLACEMENT OF CONCRETE.

SLAB ON GRADE:

1. SEE "SLAB PLAN" FOR REQUIRED SLAB THICKNESS AND REINFORCEMENT AT ALL INTERIOR SLABS ON GRADE. SEE SITE PLAN FOR ANY EXTERIOR SLABS.
2. SLAB REINFORCING BARS SHALL BE PLACED SUCH THAT THE UPPER BARS ARE 2" CLEAR BELOW THE TOP OF THE SLAB..
3. ALL INTERIOR SLABS ON GRADE SHALL BE PLACED OVER A VAPOR BARRIER PLACED OVER A GRANULAR FILL. SEE "SLAB PLAN" FOR REQUIRED THICKNESS OF GRANULAR BASE.
4. THE VAPOR BARRIER SHALL BE 15 mil. MIN. ALL EDGES SHALL BE LAPPED 6" MIN. ALL EDGES, HOLES, AND PENETRATIONS SHALL BE SEALED WITH A WATERPROOF TAPE. ANY DAMAGED AREAS SHALL BE REPLACED OR REPAIRED PRIOR TO PLACEMENT OF CONCRETE.
5. ALL UNDER-SLAB CONDUIT SHALL BE LOCATED 3" MIN. BELOW THE TOP OF THE GRANULAR BASE.
6. PROVIDE (2) #4 x 24" BARS AT ALL RE-ENTRANT SLAB CORNERS AND AT EACH CORNER OF ALL SQUARE SLAB BLOCK-OUTS. THE BARS SHALL BE CENTERED ON THE CORNER AND PLACED 1½" BELOW THE TOP OF THE SLAB. THE FIRST BAR SHALL BE LOCATED 1½" OFF OF THE SLAB CORNER, THE SECOND BAR SHALL BE LOCATED 2" OFF OF THE FIRST BAR.
7. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE TESTING LAB PRIOR TO THE PLACEMENT OF CONCRETE. CONCRETE PLACEMENT WILL NOT BEGIN UNTIL A TECHNICIAN FROM THE TESTING LAB IS ON SITE.
8. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AT LEAST 24 HOURS PRIOR TO THE PLACEMENT OF CONCRETE.

CAST IN PLACE (CIP) CONCRETE:

1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND AC1 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"
2. CAST IN PLACE CONCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:

LOCATION	28 DAY COMP. STRENGTH	SLUMP
FOUNDATIONS	4000 psi	4"+1"
* SLABS ON GRADE	3000 psi	3"+1"

   * WHEN A WATER REDUCER IS USED, THE MAXIMUM SLUMP PRIOR TO THE ADDITION OF THE WATER REDUCER SHALL NOT EXCEED 3"
3. SLUMP SHALL BE MEASURED AT THE POINT OF PLACEMENT. FOR PUMPED CONCRETE, THE POINT OF PLACEMENT IS AT THE END OF THE HOSE.
4. ALL EXTERIOR, EXPOSED CONCRETE, INCLUDING FOUNDATIONS, SHALL BE AIR ENTRAINED 6% ±1%.
5. FIBROUS REINFORCING SHALL BE "BUCKEYE ULTRAFIBER 500" MANUFACTURED BY SOLOMON COLORS, INC. REINFORCING FIBERS SHALL BE ADDED TO THE CONCRETE MIX ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AT THE FOLLOWING RATE:
   SLAB ON GRADE w/o REINF.....1½ lbs PER cu. yd.
   SLAB ON GRADE w/ TIED BARS.....1 lb PER cu. yd.
6. WATER MAY BE ADDED ON SITE. THE AMOUNT OF WATER ADDED ON SITE SHALL NOT EXCEED THE TRIM WATER AS NOTED ON THE CONCRETE DELIVERY TICKET. THE JOB SUPERINTENDENT AND AN AUTHORIZED REPRESENTATIVE OF THE REDI-MIX PROVIDER ARE THE ONLY PEOPLE AUTHORIZED TO ORDER THE ADDITION OF WATER ON SITE.
7. WATER MAY ONLY BE ADDED BEFORE PLACEMENT OF THE CONCRETE BEGINS. ONCE PLACEMENT BEGINS WATER SHALL NOT BE ADDED.
8. NO ADMIXTURES SHALL BE USED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
9. THE USE OF CALCIUM CHLORIDE IS NOT PERMITTED.
10. THE USE OF FLY ASH IS PERMITTED AS A POZZOLAN. FLY ASH, WHEN USED, SHALL CONFORM TO ASTM C618, TYPE C OR TYPE F. THE QUANTITY OF FLY ASH SHALL NOT EXCEED 20% BY WEIGHT.
11. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED DURING PLACEMENT.
12. SEE ARCHITECTURAL DRAWINGS AND SPECS FOR SLAB SLAB TREATMENTS, COLORS, HARDENERS, WATERPROOFING, ETC.
13. MINIMUM CONCRETE COVER OVER REINFORCING BARS SHALL CONFORM TO ACI 318, CHAPTER 7, AND SHALL INCLUDE, BUT IS NOT LIMITED TO THE FOLLOWING:
   a. CONCRETE EXPOSED TO WEATHER.....2"
   b. CONCRETE EXPOSED TO EARTH.....3"
   c. SLABS ON GRADE:
      SINGLE OR TOP LAYER.....2"
      BOTTOM LAYER NOT CAST AGAINST SOIL.....2"
   d. WALL BELOW GRADE (BACKFILLED FACE).....2"

CONCRETE REINFORCING STEEL:

1. REINFORCING STEEL AND ACCESSORIES SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 (MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES), AND CRSI MSP2 (MANUAL OF STANDARD PRACTICE)
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 UNLESS OTHERWISE NOTED.
3. ALL WELDED REINFORCING SHALL CONFORM TO ASTM A706 GRADE 60, AND SHALL BE USED ONLY WHERE INDICATED ON DRAWINGS.
4. ALL SPLICES SHALL CONFORM TO ACI 318. ALL SPLICES SHALL BE CONSIDERED CLASS B UNLESS NOTED OTHERWISE.
5. CORNER BARS SHALL BE PROVIDED AT ALL CONTINUOUS REINFORCING BARS AT ALL LOCATIONS INCLUDING FOUNDATIONS, WALLS, AND BEAMS. THE LENGTH OF EACH LEG OF THE CORNER BAR SHALL BE EQUAL TO ONE CLASS B, TOP BAR, DEVELOPMENT LENGTH.
6. ALL DOWELS AND TERMINATING BARS SHALL HAVE A 90 DEGREE STANDARD ACI HOOK.
7. REINFORCING BARS SHALL BE SUPPORTED BY METAL OR PLASTIC CHAIRS. CONCRETE BRICKS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.

PRE-ENGINEERED METAL BUILDING (PEMB):

1. THE PEMB SHALL BE DESIGNED FOR THE LOADS AND DEFLECTION LIMITS INDICATED ON THE DRAWINGS.
2. THE PEMB SHALL BE DESIGNED PER THE BUILDING CODE INDICATED ON THE DRAWINGS. THE PEMB SUPPLIER IS RESPONSIBLE FOR ALL AMENDMENTS, ADDITIONS, AND DELETIONS TO THE BUILDING CODE ADOPTED BY THE GOVERNING MUNICIPALITY.
3. THE PEMB SUPPLIER SHALL SUBMIT COLUMN REACTIONS TO THE ARCHITECT AND ENGINEER. THE REACTIONS SHALL BE IN THE FOLLOWING FORMATS:
   a. VERTICAL AND HORIZONTAL SERVICE LOAD REACTIONS AT EACH COLUMN FOR INDIVIDUAL GRAVITY, WIND, AND SEISMIC LOADS.
   b. VERTICAL AND HORIZONTAL REACTIONS AT EACH COLUMN BASED UPON THE A.S.D. COMBINATIONS PER THE AISC 7-16 STANDARD.
4. THE ORIENTATION OF "NORTH", AND THE GRID LINES ON THE THE PEMB ANCHOR SETTING PLAN SHALL MATCH THAT OF THE CONSTRUCTION DRAWINGS.
5. IN ADDITION TO COMPONENTS TYPICALLY SUPPLIED BY THE PEMB PROVIDER, ALL STRUCTURAL ITEMS NOTED "BY PEMB SUPPLIER" SHALL BE DESIGNED, FABRICATED, AND SUPPLIED BY THE PEMB SUPPLIER.

ABBREVIATIONS:

&..... AND
@..... AT

ADDL..... ADDITIONAL
AFF..... ABOVE FINISHED FLOOR
AFG..... ABOVE FINISHED GRADE
ARCH..... ARCHITECTURAL
ALT..... ALTERNATE
APX..... APPROXIMATE, APPROXIMATELY
AWS..... AMERICAN WELDING SOCIETY

BG..... BELOW GRADE
BF..... BOTTOM OF FOUNDATION/FOOTING
BLDG..... BUILDING
BLK..... BLOCK
BLKG..... BLOCKING
BLKS..... BLOCKS
BM..... BEAM
BOS..... BOTTOM OF STEEL
BRG..... BEARING
BRKR..... BREAKER
BSMT..... BASEMENT
BTM..... BOTTOM
BTWN..... BETWEEN

C/C..... CENTER TO CENTER
CIP..... CAST IN PLACE
C/J..... CONTROL JOINT
CJP..... COMPLETE JOINT PENETRATION WELD
CLR..... CLEAR
CMU..... CONCRETE MASONRY UNIT
COL..... COLUMN
CONC..... CONCRETE
CONN..... CONNECTION
CONST..... CONSTRUCTION
CONT..... CONTINUOUS
CONTR..... CONTRACTOR
CTR..... CENTER
CVR..... COVER

d..... PENNY (NAIL)
DEG, ° ..... DEGREE
DEPT..... DEPARTMENT
DIA, ø ..... DIAMETER
DIAG..... DIAGONAL
DIM..... DIMENSION
DL..... DEAD LOAD
DWG..... DRAWING
DWGS..... DRAWINGS

EA..... EACH
E/F..... EACH FACE
ELEV..... ELEVATION
EMBED..... EMBED, EMBEDDED
EOS..... EDGE OF SLAB
EQ..... EQUAL
EQUIP..... EQUIPMENT
E/S..... EACH SIDE
EW..... EACH WAY
EXT..... EXTERIOR

F/R..... FIBER REINFORCED
FF..... FINISHED FLOOR
FG..... FINISHED GRADE
FL..... FLOOR
FOS..... FACE OF STUD
FRMG..... FRAMING
FS..... FAR SIDE
FTG..... FOOTING

G/L..... GRIDLINE
GALV..... GALVANIZED

INTR..... INTERIOR
I/S..... INSIDE

JB..... JOIST BEARING ELEVATION

L..... ANGLE
LL..... LIVE LOAD
LLV..... LONG LEG VERTICAL
LLO..... LONG LEG OUTSTANDING

MECH..... MECHANICAL
MEP..... MECHANICAL, ELECTRICAL, PLUMBING
MFR..... MANUFACTURE, MANUFACTURER
MISC..... MISCELLANEOUS
MRD..... MIRRORED

NTS..... NOT TO SCALE
NS..... NEAR SIDE
NS/FS..... NEAR SIDE & FAR SIDE

OD..... OUTSIDE DIAMETER
OPP..... OPPOSITE (HAND)
PL
PEMB..... PRE-ENGINEERED METAL BUILDING
PL ..... PLATE
PERP..... PERPENDICULAR
PT..... PRESSURE TREATED/POST TENSION
PJP..... PARTIAL JOINT PENETRATION WELD

LLO..... LONG LEG OUTSTANDING
LLV..... LONG LEG VERTICAL
LONG..... LONGITUDINAL

MAX..... MAXIMUM
MIN..... MINIMUM
MTL..... METAL
MRD..... MIRRORED

o/c..... ON CENTER
O/S..... OUTSIDE

RCMD..... RECOMMEND, RECOMMENDED
REINF..... REINFORCE, REINFORCEMENT
REQD..... REQUIRED
RND..... ROUND

SCHED..... SCHEDULE
SEC..... SECTION
SHT..... SHEET
SIM..... SIMILAR
SL..... SNOW LOAD
SPA..... SPACE, SPACING
SPEC..... SPECIFICATION
SPEC's..... SPECIFICATIONS
STND..... STANDARD

T&B..... TOP AND BOTTOM
T&G..... TONGUE AND GROOVE
TB..... TOP OF BEAM
TF..... TOP OF FTG
TM..... TOP OF MASONRY
TP..... TOP OF PILASTER/PIER
TRANS..... TRANSVERSE
TS..... TOP OF SLAB
TW..... TOP OF WALL
TYP..... TYPICAL
THKND..... THICKENED
THKNS..... THICKNESS

UNO..... UNLESS NOTED OTHERWISE
VERT..... VERTICAL

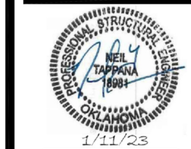
w/..... WITH
w/o..... WITHOUT
WWF..... WELDED WIRE FABRIC

CONCRETE TESTING:

1. CONCRETE TESTING SHALL BE AS FOLLOWS:
   SLUMP..... (1) TEST EVERY 50 yds OR EA. DAY
   TEST CYLINDERS..... (4) CYLINDERS EVERY 50 yds OR EA. DAY
   AIR..... (1) TEST EVERY 50 YDS OR EA. DAY
   CONCRETE COMPRESSIVE STRENGTH
   ONE BREAK @ 7 DAYS
   TWO BREAKS @ 28 DAYS
2. ALL SAMPLING AND TESTING SHALL BE CONDUCTED BY A LICENSED TESTING LAB
3. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE TESTING LAB PRIOR TO EACH POUR EXCEEDING 3 yds

TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

NEIL TAPPANA-PROFESSIONAL ENGINEER
COA# 5153



1/11/23
DATE
NEIL TAPPANA-PROFESSIONAL ENGINEER
OK# 19081

NEW TRANSFER STATION FOR CARDS RECYCLING
23750 US-59
AFTON, OTTAWA COUNTY, OKLAHOMA

PROJECT ENGINEER: NT
DRAWN: JH
CHECKED: NT
DATE: 1-11-2023
REVISIONS:
CERTIFICATE OF AUTH.: COA# 5153
6-30-01 TO 6-30-23
PROJ. NO.: 22-206
SHEET NO.: S0.1

CONSTRUCTION NOTES / STANDARD DETAILS

ACI TENSION LAP SPLICE LENGTHS (IN.)				
BAR SIZE	f'_c = 3000 psi		f'_c = 4000 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	28	22	24	19
#4	37	29	33	25
#5	47	36	41	31
#6	56	43	49	37
#7	81	63	71	54
#8	93	72	81	62
#9	105	81	91	70
#10	118	91	102	79
#11	131	101	113	87

NOTES:

1. TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL-WEIGHT CONCRETE.
2. TENSION DEVELOPED LENGTHS AND TENSION LAP SPLICE LENGTHS ARE BASED ON ACI 318, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY. TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING THE MINIMUM CODE REQUIREMENTS.
3. TABULATED VALUES ARE BASED UPON A MINIMUM CENTER TO CENTER BAR SPACING OF 3 BAR DIA's, AND CONCRETE COVER MEETING THE MINIMUM CODE REQUIREMENTS.
4. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
5. ALL SPLICES ARE ASSUMED TO BE CLASS B SPLICES.

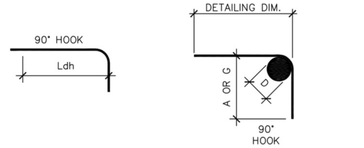
CONCRETE REBAR LAP LENGTHS 11S0.2

DEVELOPMENT LENGTHS OF STANDARD HOOKS IN TENSION		
BAR SIZE	f'_c = 3000 psi	f'_c = 4000 psi
	Ldh	Ldh
#3	6	6
#4	8	7
#5	10	9
#6	12	10
#7	14	12
#8	16	14
#9	18	15
#10	20	17
#11	22	19

END HOOKS ALL GRADES		
BAR SIZE	FINISHED BEND DIA. (D) (in.)	90° HOOKS
		A OR G (in.)
#3	2¼	6
#4	3	8
#5	3¾	10
#6	4½	12
#7	5¼	14
#8	6	16
#9	9½	19
#10	10¾	22
#11	12	24

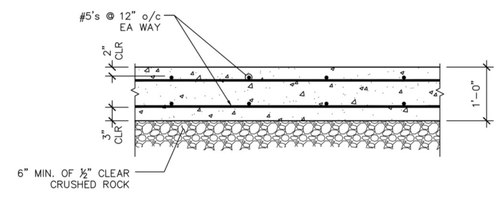
NOTES:

1. Ldh = DEVELOPMENT LENGTH OF STANDARD HOOKS IN TENSION (INCHES).
2. DEVELOPMENT LENGHT (Ldh) IS BASED UPON THE FOLLOWING CRITERIS:
   a. #11 BARS AND SMALLER
   b. SIDE COVER (NORMAL TO PLANE OF HOOK) IS NOT LESS THAN 2½"
   c. FOR 90° HOOKS, COVER ON BAR EXTENSION BEYOND HOOK IS NOT LESS THAN 2"
3. HOOKS ARE NOT CONSIDERED EFFECTIVE FOR DEVELOPING BARS IN COMPRESSION.

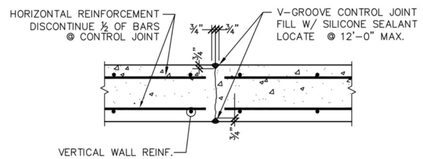


D = INSIDE DIAMETER OF BEND

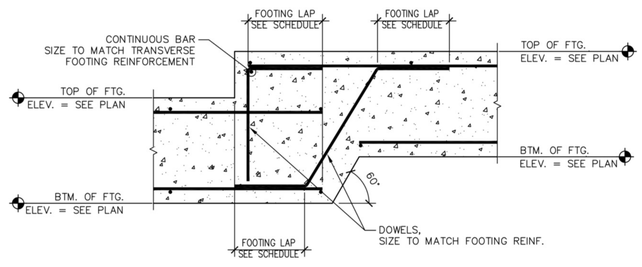
CONCRETE REBAR HOOK LENGTHS 10S0.2



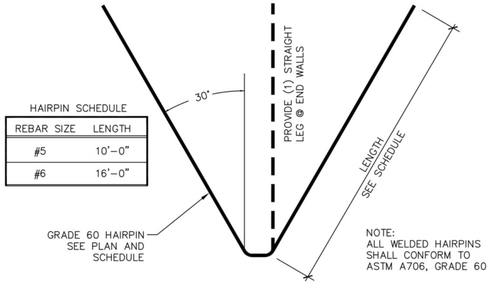
SLAB DETAIL 6S0.2
3/4" = 1'-0"



TYP. CONCRETE WALL CONTROL JOINT 5S0.3
3/4" = 1'-0"



DETAIL - FOOTING STEP 4S0.2
3/4" = 1'-0"



NOTE:
ALL WELDED HAIRPINS SHALL CONFORM TO ASTM A706, GRADE 60

TYP. HAIRPIN DETAIL 3S0.2

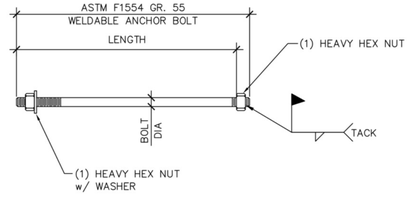
ANCHOR BOLT PLATE WASHERS		
BOLT ø	PLATE WASHER	COMMENTS
⅝"	2½"x2½"x¼"	1,2
¾"	2½"x2½"x⅜"	1,2
1"	3½"x3½"x⅜"	1,2
1¼"	4½"x4½"x½"	1,2
1⅜"	5"x5"x½"	1,2
1½"	5½"x5½"x⅝"	1,2

COMMENTS:
1. PLATE WASHER SIZES ARE PRELIMINARY PRIOR TO REVIEW OF FINAL PEMB DRAWINGS BY THE EOR
2. BOLT HOLES IN PLATE WASHERS SHALL BE OVERSIZED 1/16"
3. ADJUST BOLT PROJECTION AS REQUIRED FOR PLATE WASHERS

NOTE:
ALL ANCHOR BOLTS SHALL BE ASTM F1554 GR. 55 WELDABLE. HOOKED OR "J" BOLTS SHALL NOT BE USED.

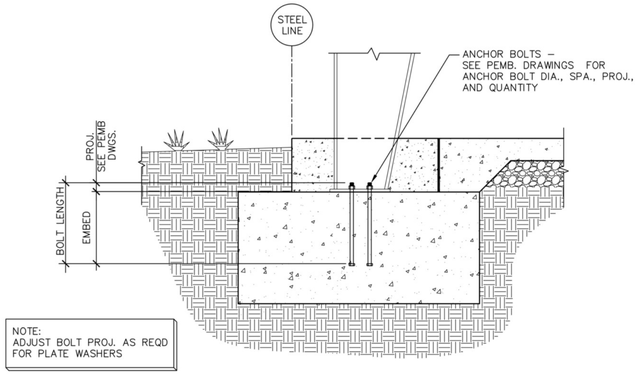
ANCHOR BOLT SCHEDULE			
BOLT ø	BOLT EMBED	PROJ.	COMMENTS
⅝"	9"	----	1,2,3,4
¾"	15"	----	1,2,4
1"	15"	----	1,2,4
1¼"	15"	----	1,2,4

COMMENTS:
1. SEE PEMB DWGS FOR BOLT DIA, QUANTITY, SPACING AND PROJ. THE BOLT PROJ NOTED ON THE PEMB DRAWINGS SHALL BE INCREASED TO ACCOMMODATE THE THICKNESS OF THE PLATE WASHER
2. SEE DETAIL 3S0.2 FOR ANCHOR BOLTS
3. JAMB BOLTS MAY BE INSTALLED IN SLAB EDGE. EMBED FOR JAMB BOLTS SHALL BE 2" LESS THAN THE SLAB EDGE THICKNESS.
4. ANCHOR BOLT LENGTH SHALL BE CONSIDERED PRELIMINARY PRIOR TO SUBMISSION OF SEALED PEMB SHOP DRAWINGS BY THE CONTRACTOR



NOTE:
SEE PEMB DRAWINGS FOR ANCHOE BOLT DIA. & PROJECTION. BOLT SIZES SHALL BE FINALIZED AFTER REVIEW OF PEMB SHOP DWGS BY THE EOR

TYP. PEMB ANCHOR BOLT 2S0.2
3/4" = 1'-0"

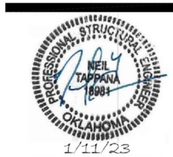


NOTE:
ADJUST BOLT PROJ. AS REQD FOR PLATE WASHERS

ANCHOR BOLTS @ PEMB COL's 1S0.2
3/4" = 1'-0"

TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

NEIL TAPPANA-PROFESSIONAL ENGINEER
COA# 5153



1/11/23
DATE
NEIL TAPPANA-PROFESSIONAL ENGINEER
OK# 19981

NEW TRANSFER STATION FOR CARDS RECYCLING
23750 US-59
AFTON, OTTAWA COUNTY, OKLAHOMA

PROJECT ENGINEER
NT
DRAWN
JH
CHECKED
NT
DATE
1-11-2023
REVISIONS
CERTIFICATE OF AUTH.
COA# 5153
6-3-07 TO 6-30-23
PROJ. NO.
22-206
SHEET NO.
S0.2

FOOTING SCHEDULE								
FOOTING					ANCHOR BOLTS			
MK.	TOP OF FTG.	SIZE	REINF. MATS	REINF.	DIA. x LENGTH	PROJ.	COMMENTS	MK.
F1	–	---	–	---	---	4"	1, 2, 4, 5	F1
F2	98'–6"	3'–0" x 6'–0" x 18"	2	(3) #5's LONG. (5) #5's TRANS.	¾"ø x18"	4"	1, 5	F2
F3	98'–6"	3'–0" x 8'–0" x 18"	2	(5) #5's LONG. (7) #5's TRANS.	¾"ø x18"	4"	1, 5	F3
F4	98'–6"	3'–0" x 8'–0" x 18"	2	(5) #5's LONG. (7) #5's TRANS.	¾"ø x18"	4"	1, 5	F4
F5	98'–6"	3'–0" x 3'–0" x 18"	2	(3) #5's E.W.	¾"ø x18"	4"	1, 5	F5
F6	98'–6"	3'–0" x 3'–0" x 18"	2	(3) #5's E.W.	¾"ø x18"	4"	1, 5	F6
F7	98'–6"	3'–0" x 3'–0" x 18"	2	(3) #5's E.W.	¾"ø x18"	4"	1, 5	F7
F8	98'–6"	3'–0" x 6'–0" x 18"	2	(3) #5's LONG. (5) #5's TRANS.	¾"ø x18"	4"	1, 5	F8
F9	98'–6"	3'–0" x 8'–0" x 18"	2	(5) #5's LONG. (7) #5's TRANS.	¾"ø x18"	4"	1, 5	F9
F10	98'–6"	3'–0" x 6'–0" x 18"	2	(3) #5's LONG. (5) #5's TRANS.	¾"ø x18"	4"	1, 5	F10
F11	98'–6"	3'–0" x 6'–0" x 18"	2	(3) #5's LONG. (5) #5's TRANS.	¾"ø x18"	4"	1, 5	F11
F12	–	---	–	---	---	4"	1, 2, 4, 5	F12
F13	85'–6"	---	–	---	¾"ø x18"	4"	1, 3, 5	F13
F14	85'–6"	---	–	---	¾"ø x18"	4"	1, 3, 5	F14
F15	85'–6"	---	–	---	¾"ø x18"	4"	1, 3, 5	F15
F16	85'–6"	---	–	---	¾"ø x18"	4"	1, 3, 5	F16
F17	85'–6"	---	–	---	¾"ø x18"	4"	1, 3, 5	F17

COMMENTS:

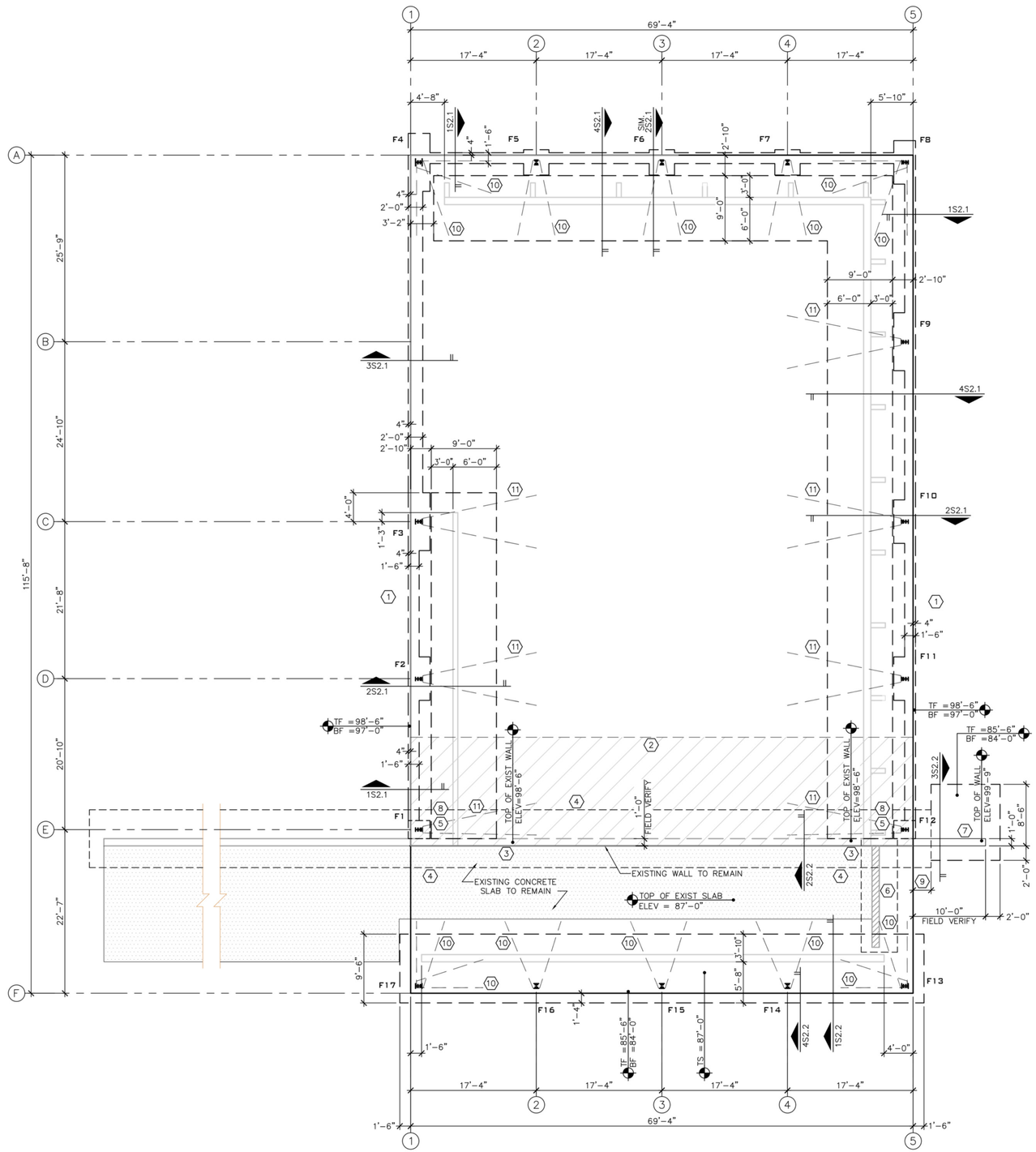
1) ANCHOR BOLT INFORMATION SHALL BE CONSIDERED PRELIMINARY PRIOR TO SUBMITTAL OF PEMB SHOP DRAWINGS BY THE CONTRACTOR.
2) FIELD VERIFY EXISTING WALL FOUNDATION & FILL CONDITIONS & REPORT TO THE ENGINEER. FTG DESIGN WILL BE BASED UPON THIS INFORMATION
3) CONT. FTG – SEE PLAN, FOUNDATION DETAILS
4) 30"x36" PILASTER REQ. THIS FTG
5) MIN. BOLT PATTERN: 4"x4"

SHEET NOTES:

1. MAXIMUM COUNTERFORT SPACING= 12'–0" o/c. ADJUST AS REQD. AT COLUMN LOCATIONS TO AVOID ANY INTERFERENCE.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS ELEVATIONS, AND CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR SHALL CONTRACT w/ A LICENSED SOIL ENGINEER TO VERIFY SOILS CONDITIONS PRIOR TO START OF WORK. VERIFY THAT NO EXPANSIVE SOIL IS PRESENT BENEATH THE BUILDING FOOTPRINT.

KEYED NOTES:

1. X–BRACED BAY
2. CONTRACTOR SHALL CONTRACT w/ A SOIL TESTING LAB TO DETERMINE THE EXTENT & CONDITION OF EXISTING FILL AGAINST EXISTING 13'–0" CONC. WALL PRIOR TO CONTINUATION OF WORK. IF EXISTING FILL IS NOT CAPABLE OF SUPPORTING THE NEW SLAB, IT SHALL BE REPLACED w/ CLEAN CRUSHED ROCK PLACED PER THE RECOMMENDATION OF THE SOILS ENGINEER.
3. FIELD VERIFY TOP OF WALL ELEV. & THICKNESS
4. EXISTING WALL FOUNDATION. FIELD VERIFY WIDTH, ELEVATION, & THICKNESS PRIOR TO START OF WORK
5. PILASTER 30"x36" DOWLED TO EXIST WALL. FINAL DESIGN WILL BE BASED UPON FIELD CONDITIONS. SEE FTG SCHED.
6. REMOVE EXISTING WALL. REMOVE EXISTING WALL FTG AS REQUIRED TO CONSTRUCT NEW FOUNDATION
7. CONSTRUCT NEW WING WALL. TOP OF WALL ELEV. 99'–9" SEE DETAILS. FTG ELEVATIONS SHALL BE CONSIDERED PRELIMINARY PRIOR TO VERIFICATION BY CONTRACTOR
8. DOWEL EACH CONT FOUNDATION BAR 3" INTO PILASTER w/ HILTI HIT–HY 200 ADHESIVE.
9. PRIOR TO START OF CONSTRUCTION, PROVIDE ARCH/ENG WITH THE DIMENSION THAT THE EXIST. WALL FOUNDATION EXTENDS BEYOND GRID LINE 5. DOWEL NEW CONT. FOUNDATION BARS 3" INTO EXIST. FOUNDATION. DOWEL ALL VERTICAL WALL REINF INTO EXIST. FOUNDATION 9" @ #6's, 7½" @ #5's. DOWEL ½ OF CONT. WALL REINF 3" INTO EXISTING WALL. DOWEL ALL BARS INTO EXIST. CONCRETE w/ HILTI HIT–HY 200 ADHESIVE.
10. #5 HAIRPIN WIRED TO BACK PAIR OF ANCHOR BOLTS
11. #6 HAIRPIN FIELD WELDED TO EMBED ℄



FOUNDATION PLAN
Scale: 1/8" = 1'–0"

NOTE:
ALL FOOTING SIZES, TIE RODS, HAIRPINS & ANCHOR BOLTS SHALL BE CONSIDERED PRELIMINARY PRIOR TO REVIEW OF PEMB FRAME REACTIONS BY ENGINEER

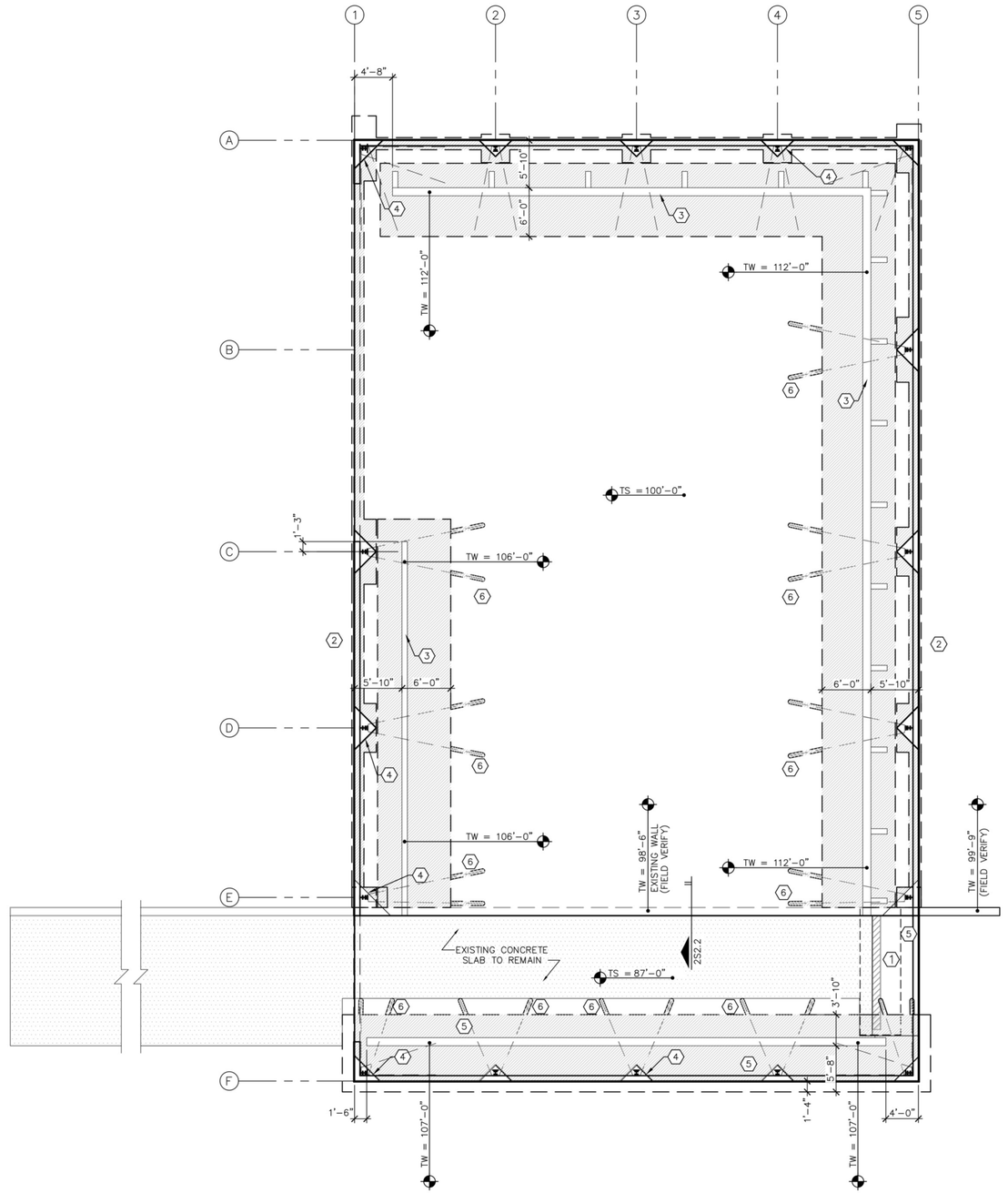
TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

NEIL TAPPANA–PROFESSIONAL ENGINEER
COA# 5153

PROFESSIONAL STRUCTURAL ENGINEER NEIL TAPPANA 19981 OKLAHOMA
1/11/23
DATE
NEIL TAPPANA–PROFESSIONAL ENGINEER
OK# 19981

NEW TRANSFER STATION FOR CARDS RECYCLING 23750 US-59 AFTON, OTTAWA COUNTY, OKLAHOMA

PROJECT ENGINEER: NT
DRAWN: JH
CHECKED: NT
DATE: 1-11-2023
REVISIONS:
CERTIFICATE OF AUTH.: COA# 5153
6-3-07 TO 6-30-23
PROJ. NO.: 22-206
SHEET NO.: S1.1



SLAB PLAN

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

SHEET NOTES:

1. SLAB ON GRADE:
   12" F/R CONCRETE SLAB REINFORCED w/ (2) MATS #5 BARS @ 12" o/c EACH WAY OVER 15 mil VAPOR BARRIER. OVER 6" OF ½" CLEAN GRANULAR BASE. SEE STND DETAILS.
   TOP OF UPPER SLAB @ ELEV = 100'-0"
   TOP OF LOWER SLAB @ ELEV = 87'-0"
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS ELEVATIONS, AND CONDITIONS PRIOR TO START OF WORK.
3. SEE SHEET S1.1 FOR HAIRPINS

KEYED NOTES:

(1) EXISTING WALL TO BE REMOVED. REMOVE FTG AS REQUIRED TO CONSTRUCT NEW FOUNDATIONS.

(2) X-BRACING AT THIS LOCATION

(3) PUSH WALLS. SEE DETAILS FOR MORE INFORMATION.

(4) SLAB BLOCKOUTS. SEE DETAILS FOR MORE INFORMATION

(5) NEW SLAB. SEE SHEET NOTES

(6) THICKENED SLAB @ HAIRPIN. SEE DETAILS FOR MORE INFO

TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

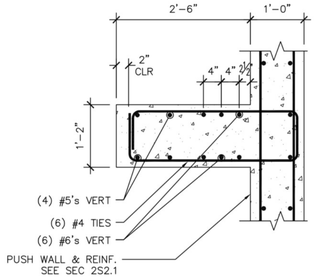
NEIL TAPPANA-PROFESSIONAL ENGINEER
COA# 5153

PROFESSIONAL STRUCTURAL ENGINEER
NEIL TAPPANA
19981
OKLAHOMA

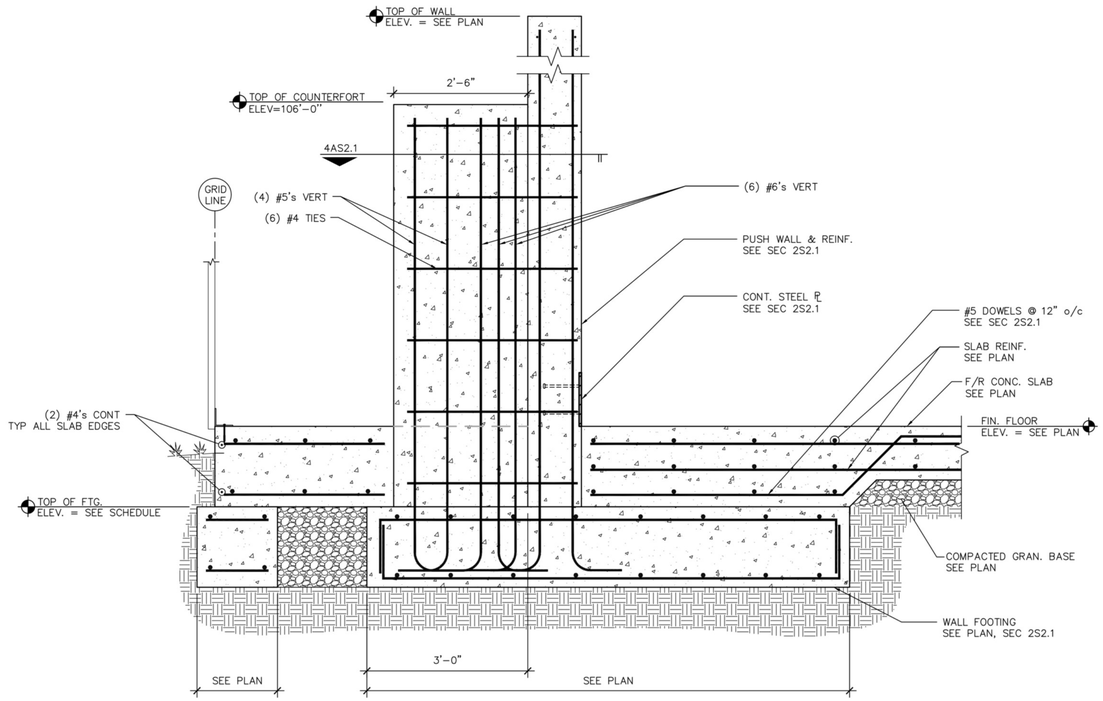
1/11/23
DATE
NEIL TAPPANA-PROFESSIONAL ENGINEER
OK# 19981

NEW TRANSFER STATION FOR CARDS RECYCLING
23750 US-59
AFTON, OTTAWA COUNTY, OKLAHOMA

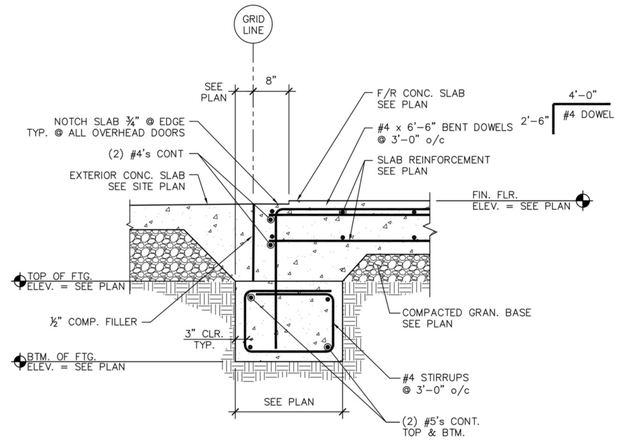
PROJECT ENGINEER: NT
DRAWN: JH
CHECKED: NT
DATE: 1-11-2023
REVISIONS:
CERTIFICATE OF AUTH.: COA# 5153
6-3-07 TO 6-30-23
PROJ. NO.: 22-206
SHEET NO.: S1.1A



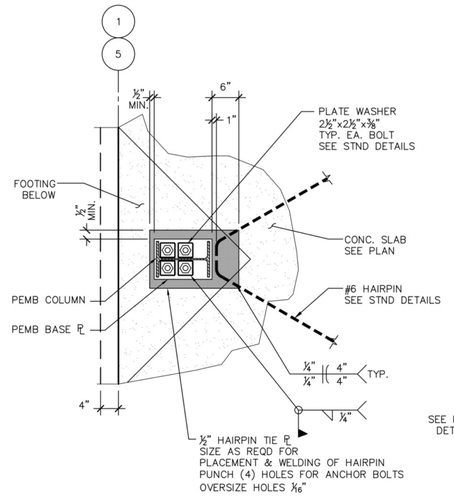
DETAIL 4AS2.1
3/4" = 1'-0"



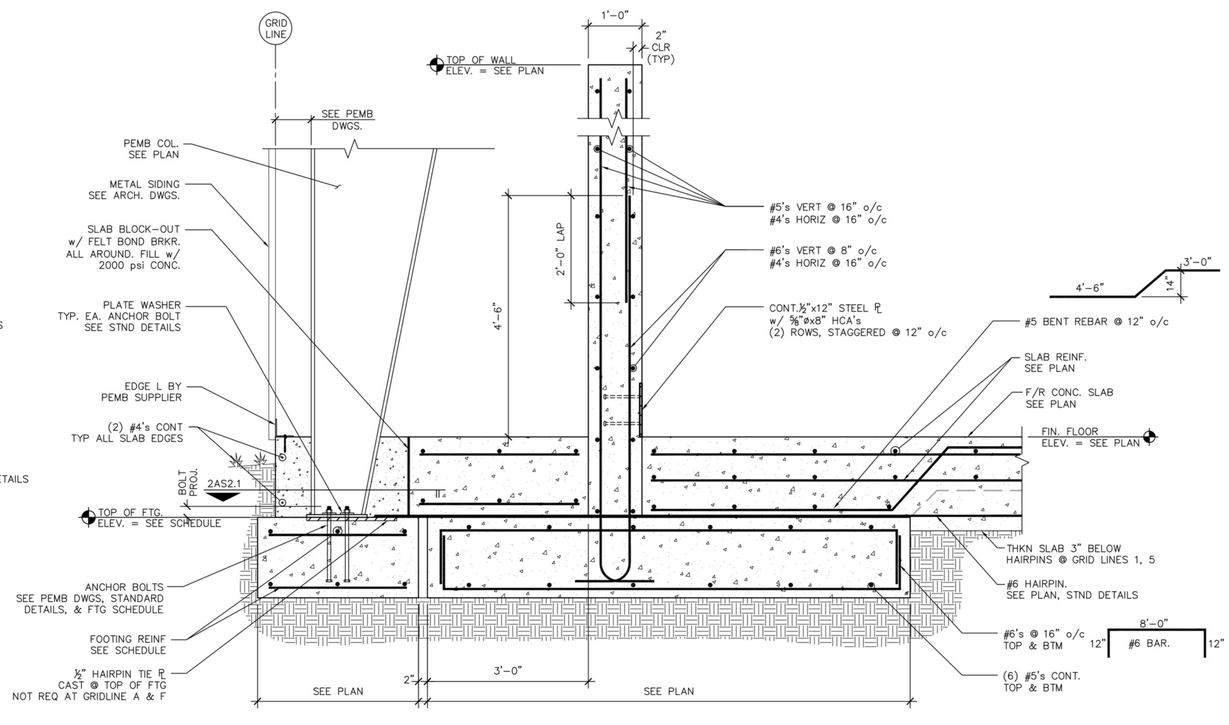
SECTION 4S2.1
3/4" = 1'-0"



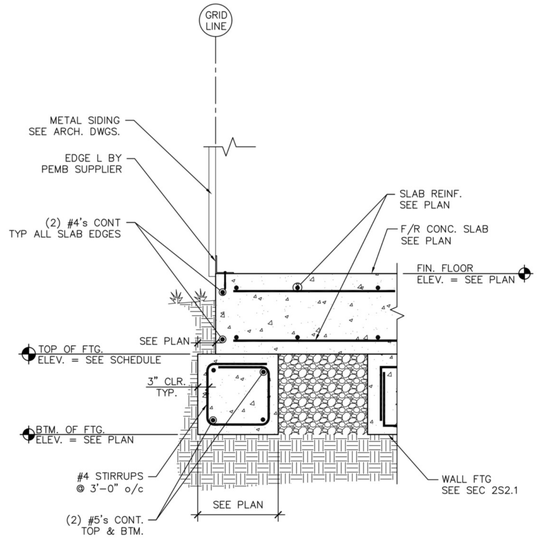
SECTION 3S2.1
3/4" = 1'-0"



SECTION 2AS2.1
3/4" = 1'-0"



SECTION 2S2.1
3/4" = 1'-0"



SECTION 1S2.1
3/4" = 1'-0"

TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

NEIL TAPPANA-PROFESSIONAL ENGINEER
COA# 5153

PROFESSIONAL STRUCTURAL ENGINEER
NEIL TAPPANA 18981
OKLAHOMA

1/11/23
DATE

NEIL TAPPANA-PROFESSIONAL ENGINEER
OK# 18981

NEW TRANSFER STATION FOR CARDS RECYCLING
23750 US-59
AFTON, OTTAWA COUNTY, OKLAHOMA

PROJECT ENGINEER
NT
DRAWN
JH
CHECKED
NT

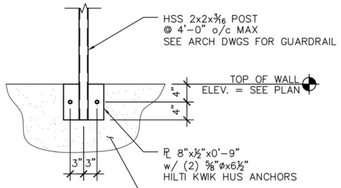
■ DATE
1-11-2023

■ REVISIONS

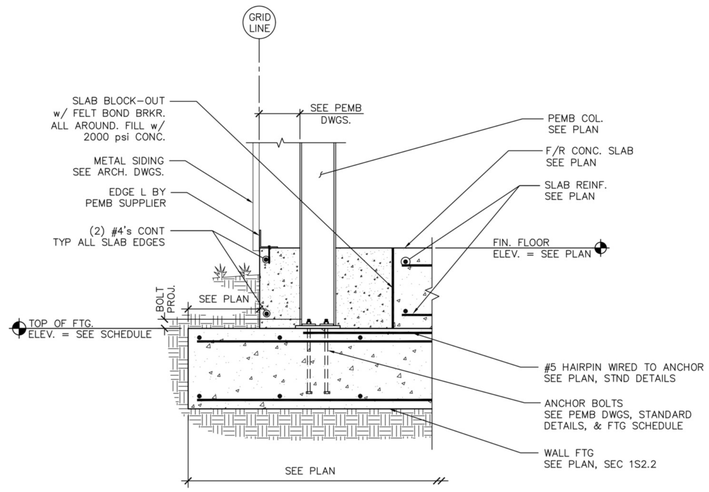
■ CERTIFICATE OF AUTH.
COA# 5153
6-3-07 TO 6-30-23

■ PROJ. NO.
22-206

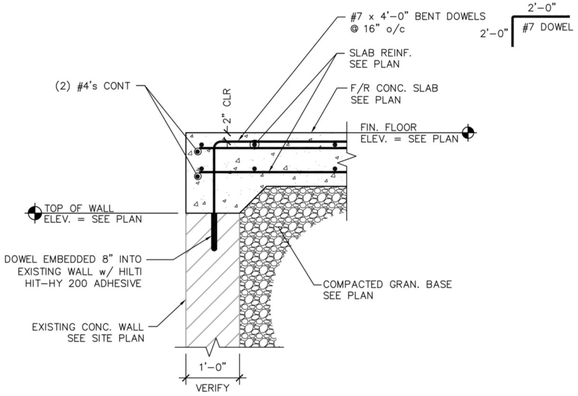
■ SHEET NO.
S2.1



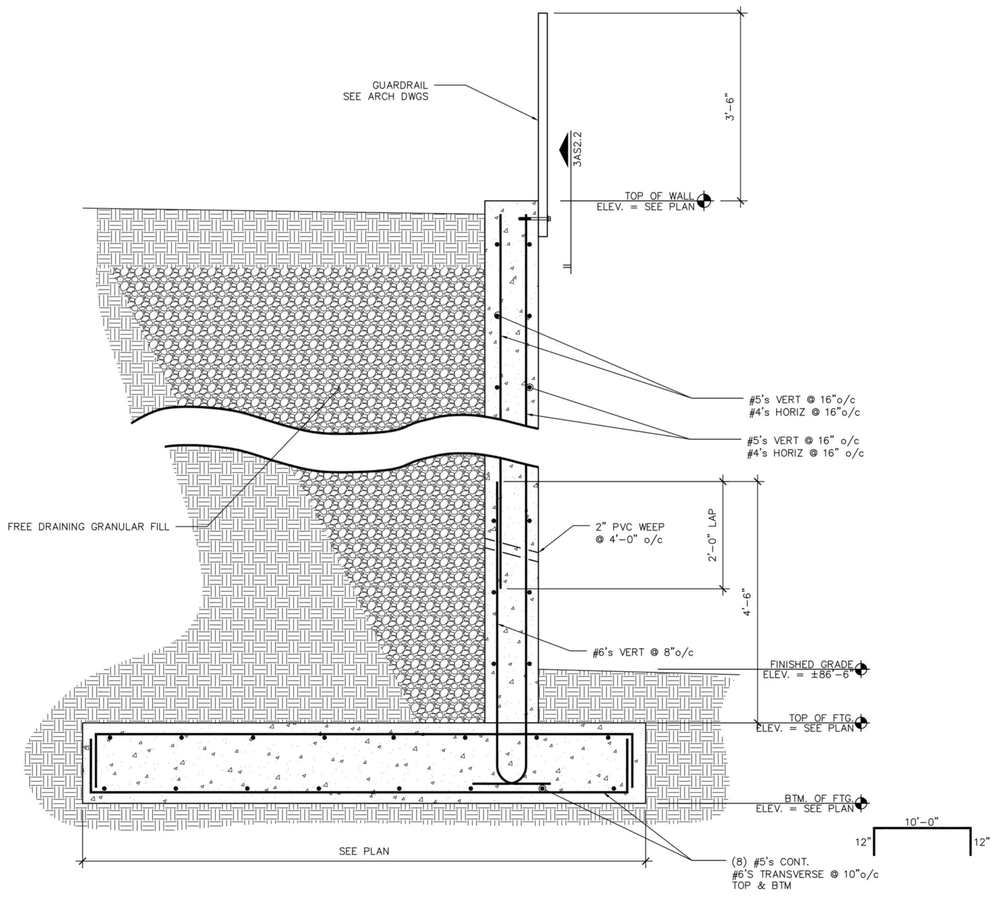
DETAIL 3AS2.2
3/4" = 1'-0"



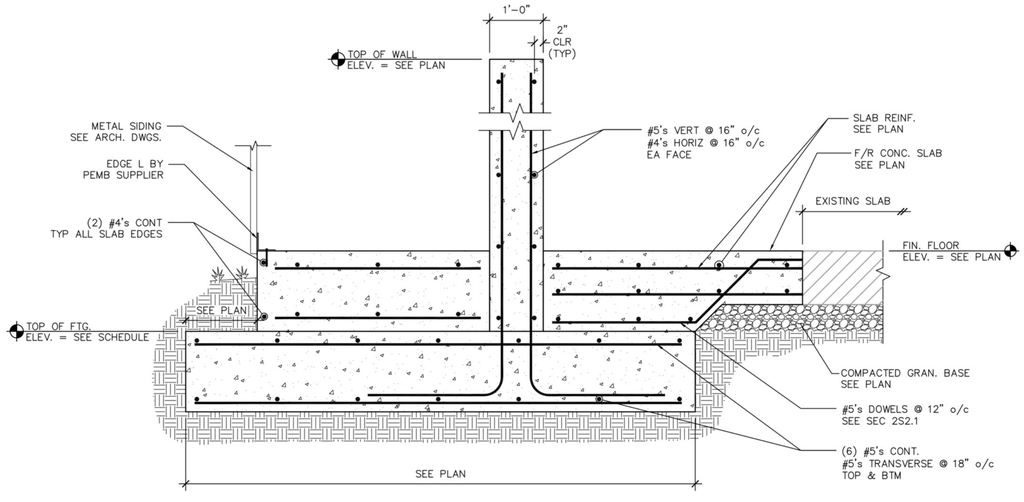
SECTION 4S2.2
3/4" = 1'-0"



SECTION 2S2.2
3/4" = 1'-0"



SECTION 3S2.2
3/4" = 1'-0"



SECTION 1S2.2
3/4" = 1'-0"

TAPPANA ONDRICK
STRUCTURAL ENGINEERS
1968 S. HALL
WEBB CITY, MO. 64870
PHONE: 1-417-673-0463
FAX: 1-417-673-0465

NEIL TAPPANA-PROFESSIONAL ENGINEER
COA# 5153

STRUCTURAL ENGINEER
NEIL TAPPANA
18981
OKLAHOMA

1/11/23
DATE

NEIL TAPPANA-PROFESSIONAL ENGINEER
OK# 18981

NEW TRANSFER STATION FOR CARDS RECYCLING
23750 US-59
AFTON, OTTAWA COUNTY, OKLAHOMA

PROJECT ENGINEER
NT
DRAWN
JH
CHECKED
NT

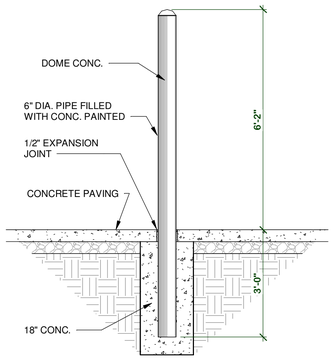
■ DATE
1-11-2023

■ REVISIONS

■ CERTIFICATE OF AUTH.
COA# 5153
6-3-07 TO 6-30-23

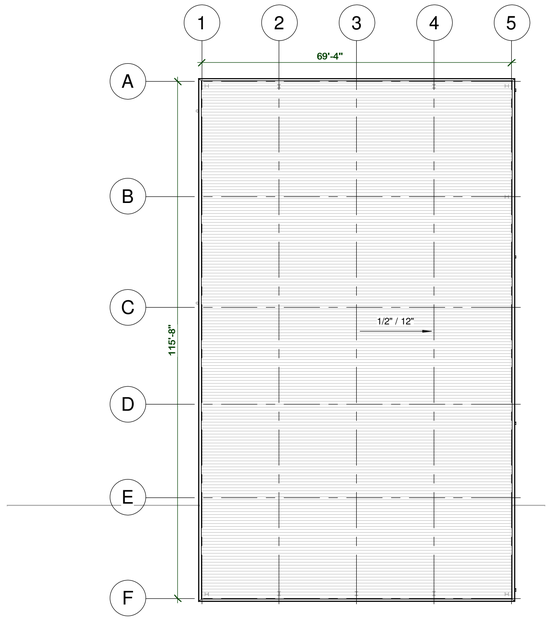
■ PROJ. NO.
22-206

■ SHEET NO.
S2.2



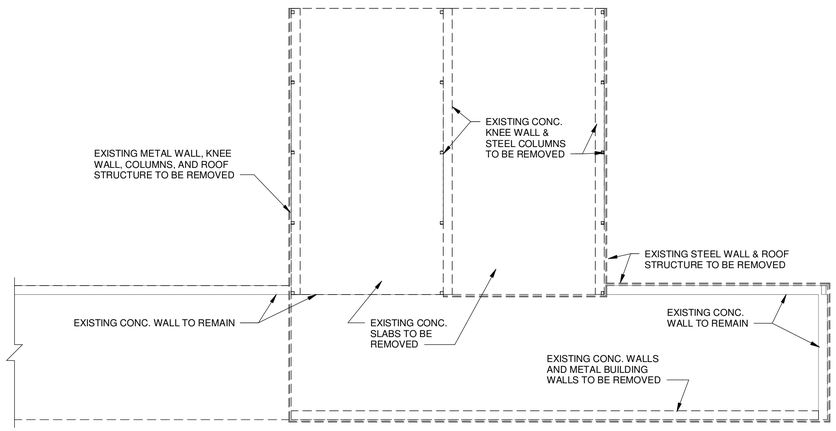
BALLARD DETAIL

SCALE 1/2" = 1'-0" — 1 A2.1



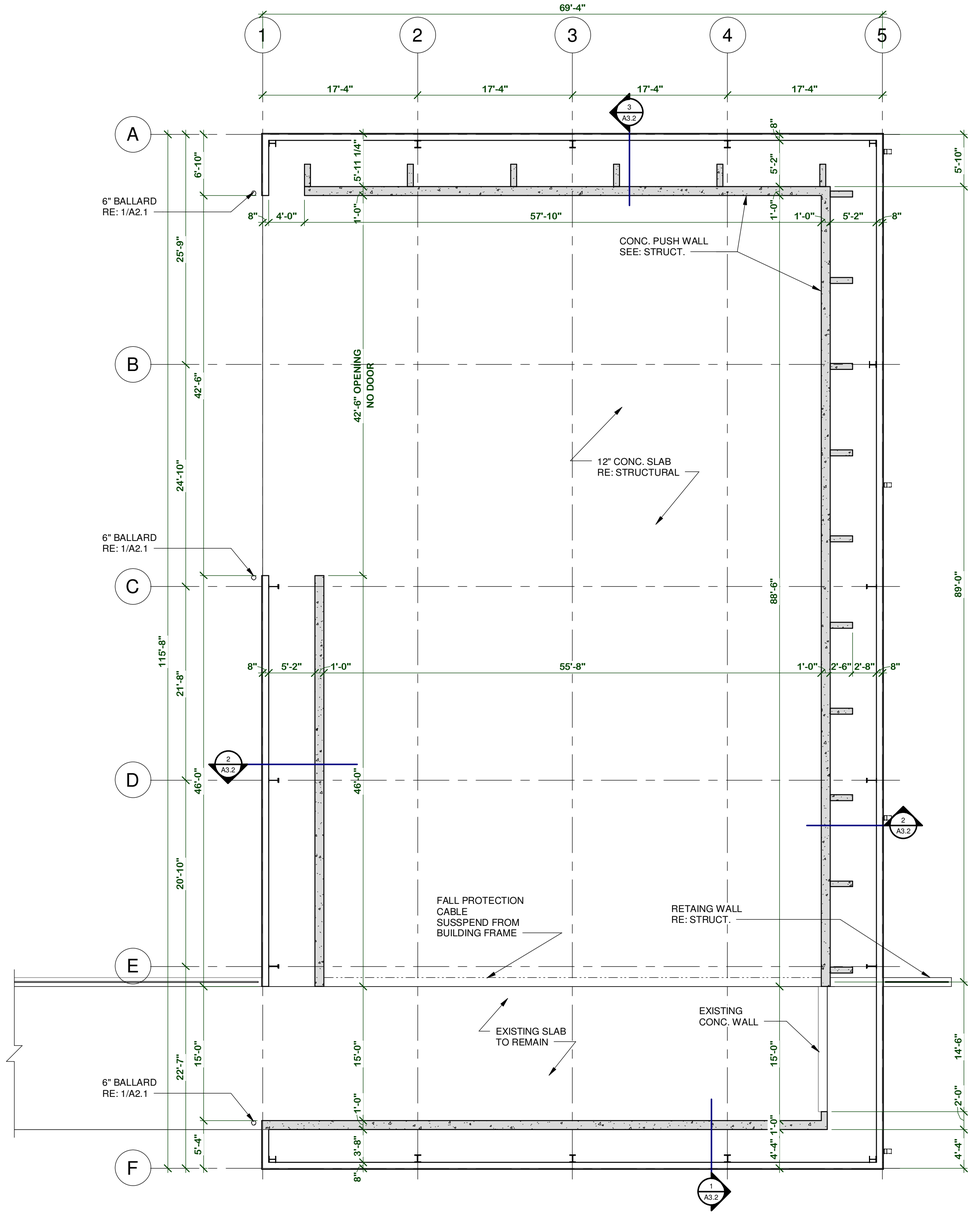
ROOF PLAN

SCALE 1/16" = 1'-0" — NORTH



DEMOLITION PLAN

SCALE 1/8" = 1'-0" — NORTH



FLOOR PLAN

SCALE 1/8" = 1'-0" — NORTH

PLJBD ARCHITECTS
PATTERSON LATIMER JONES BRANNON DENHAM
ARCHITECTURAL CORPORATION #02315
111 W. 3RD JOPLIN, MISSOURI 64801
Phone: 417-624-4004
Fax: 417-624-4022
E-mail: contact@pljbd.com

Consultant

Consultant

Consultant

New Transfer Station For Cards Recycling Afton, Ottawa County, Oklahoma

Cards Recycling
23750 US-59
Afton, OK 74331

STATE OF OKLAHOMA — E. KYLE DENHAM — a5782 — LICENSED ARCHITECT

E. Kyle Denham
ARCHITECT 5782

DATE
January, 2023

DRAWN BY:	CHECKED BY:
LEW	KD

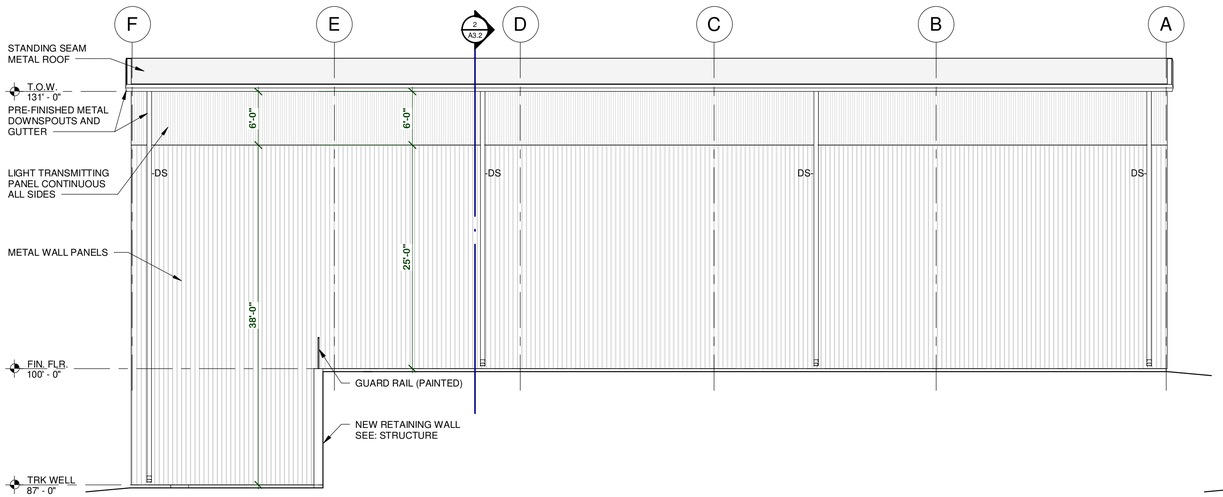
REVISIONS

PROJECT NUMBER
2022 07 03

FLOOR PLAN, DEMO PLAN, & ROOF PLAN

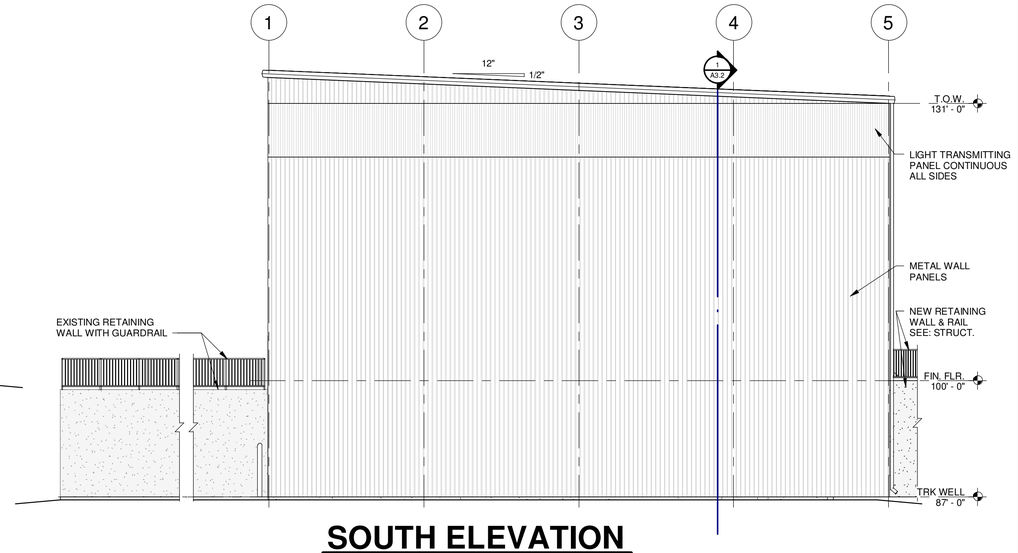
SHEET NUMBER

A2.1



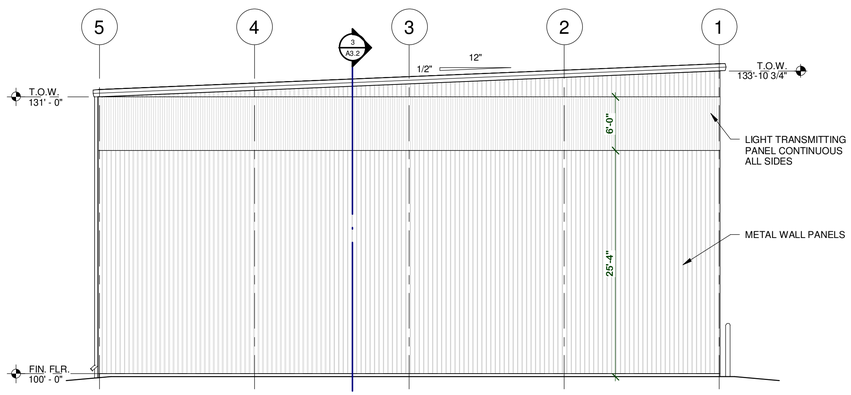
EAST ELEVATION

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



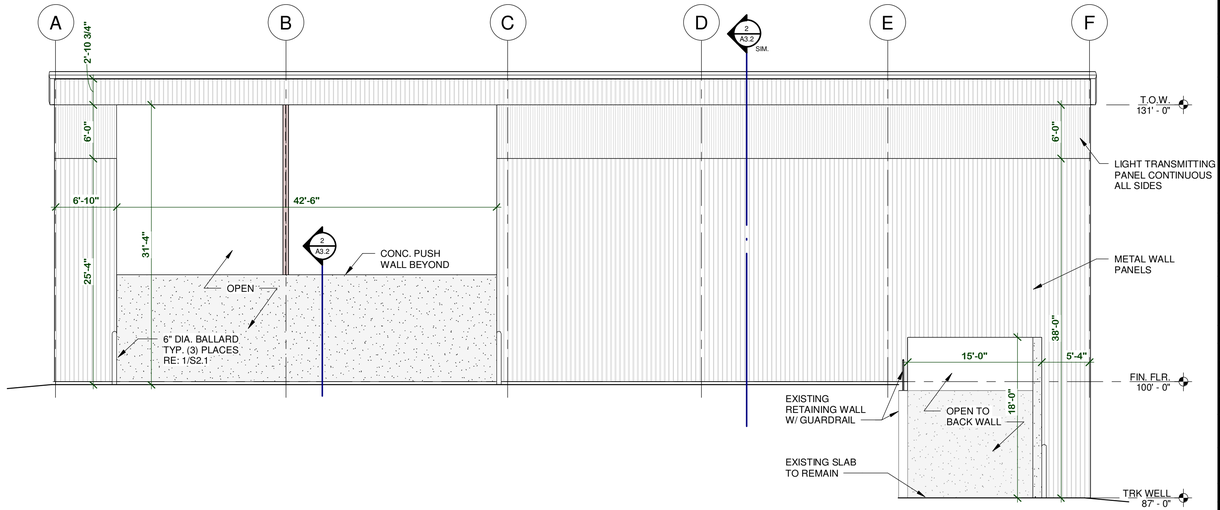
SOUTH ELEVATION

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



NORTH ELEVATION

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



WEST ELEVATION

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

pljbd ARCHITECTS
PATTERSON LATIMER JONES BRANNON DENHAM
ARCHITECTURAL CORPORATION #02315
111 W. 3RD JOPLIN, MISSOURI 64801
Phone: 417-624-4004
Fax: 417-624-4022
E-mail: contact@pljbd.com

Consultant

Consultant

Consultant

New Transfer Station For Cards Recycling Afton, Ottawa County, Oklahoma

Cards Recycling
23750 US-59
Afton, OK 74331

STATE OF OKLAHOMA
E. KYLE DENHAM
a5782
LICENSED ARCHITECT

E. Kyle Denham
ARCHITECT 5782

DATE
January, 2023

DRAWN BY: Author

CHECKED BY: KD

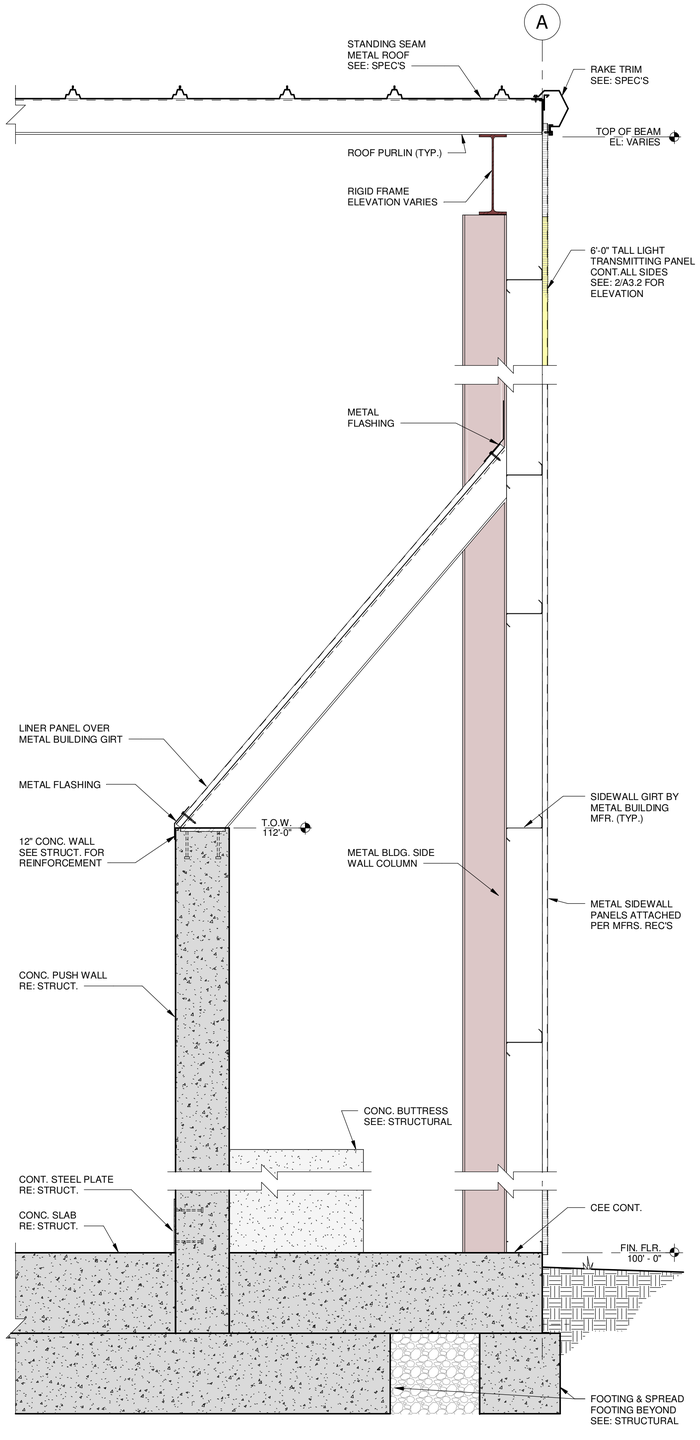
REVISIONS

PROJECT NUMBER
2022 07 03

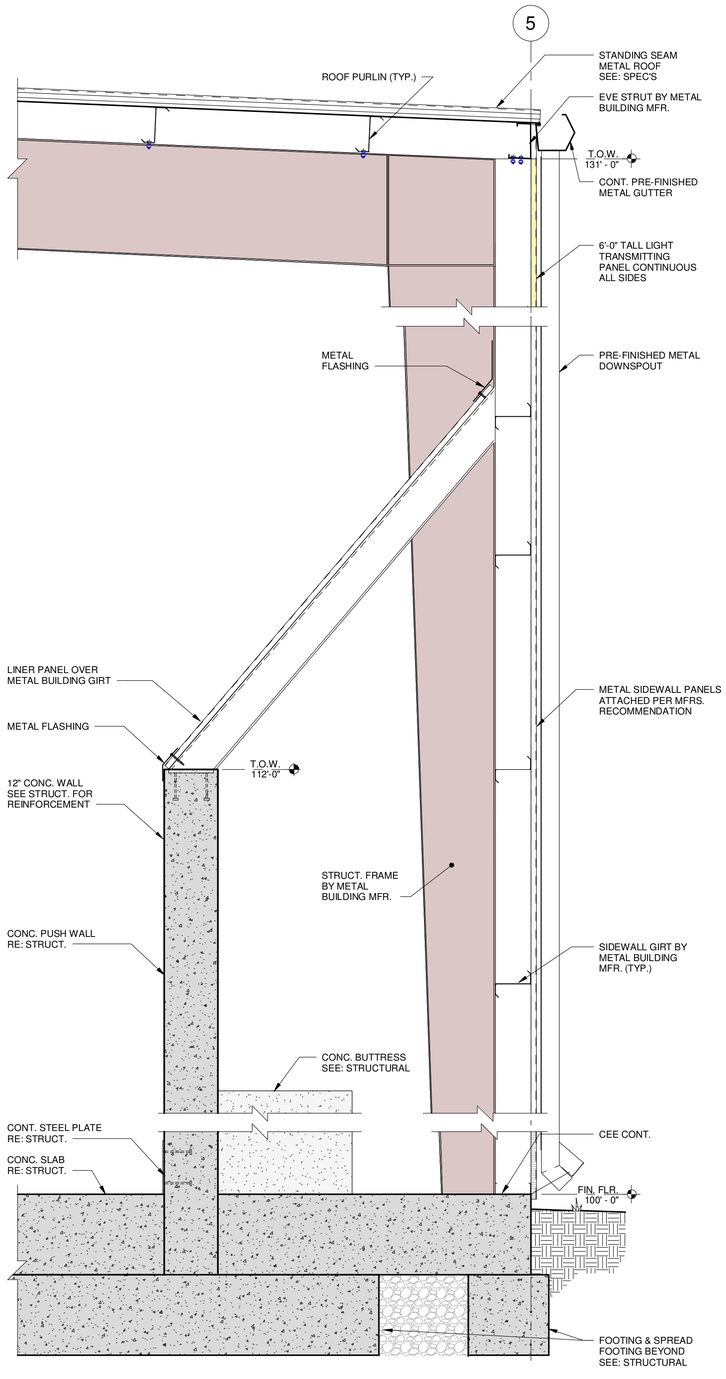
EXTERIOR ELEVATIONS

SHEET NUMBER

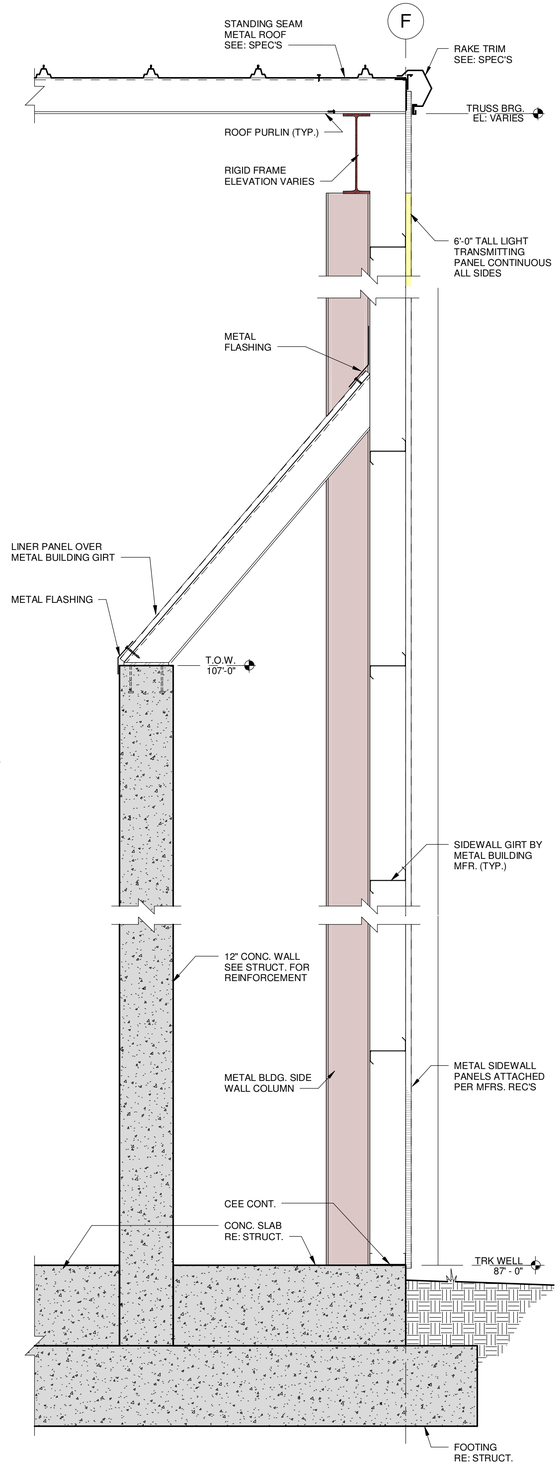
A3.1



WALL SECTION 3 A3.2
SCALE 3/4" = 1'-0"



WALL SECTION 2 A3.2
SCALE 3/4" = 1'-0"



WALL SECTION 1 A3.2
SCALE 3/4" = 1'-0"

ARCHITECTS
PATTERSON LATIMER JONES BRANNON DENHAM
ARCHITECTURAL CORPORATION #02315
111 W. 3RD JOPLIN, MISSOURI 64801
Phone: 417-624-4004
Fax: 417-624-4022
E-mail: contact@pljbd.com

Consultant

Consultant

Consultant

New Transfer Station For Cards Recycling Afton, Ottawa County, Oklahoma

Cards Recycling
23750 US-59
Afton, OK 74331

STATE OF OKLAHOMA
E. KYLE DENHAM
a5782
LICENSED ARCHITECT

E. Kyle Denham
ARCHITECT 5782

DATE
January, 2023

DRAWN BY:	CHECKED BY:
Author	KD

REVISIONS

PROJECT NUMBER
2022 07 03

WALL SECTIONS

SHEET NUMBER

A3.2

APPENDIX H
CLOSURE PLAN

Closure Plan

CARDS Recycling, LLC
Fairland Transfer Station
Afton, Oklahoma

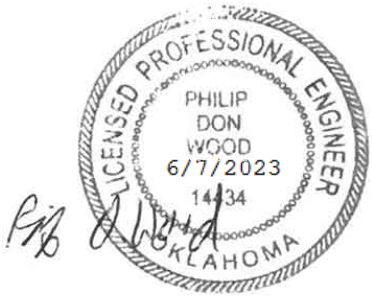
June 2023
Project No. 03237058

Prepared for:
CARDS NEO, LLC
P.O. Box 775
Tontitown, AR 72770
(877) 592-2737

Prepared by:
Terracon Consultants, Inc.
25809 Interstate 30 South
Bryant, Arkansas 72022
(501) 847-9292

PROFESSIONAL ENGINEER'S CERTIFICATION

"I certify to the best of my professional judgment that the following permit application for the proposed solid waste transfer station located on property owned and operated by CARDS NEO, LLC. in Afton, Oklahoma was prepared in accordance with good engineering practices and applicable Oklahoma Department of Environmental Quality regulations. This certification is contingent on the fact that all information supplied to the signatory authority, at the time of this certification is unquestionably accurate and was provided in good faith."



Phil Wood, P.E.
Oklahoma Professional Engineer No. 14434

June 7, 2023
Certification Date

Cert. of Auth. #CA – 4531 exp. 6/30/23

Closure Plan and Financial Assurance

1.1 Introduction

This closure plan provides for the conclusion of all operations per OAC 252:515-25-32 and the termination of the CARDS Fairland Transfer Station Facility Permit. In order to close the facility, the on-site waste will be transferred to a disposal facility. The storage areas of trailers and trucks used for the transfer of waste will be cleaned and sanitized.

1.2 Estimate of Cost of Closure

Total cost for closure at the CARDS Fairland Oklahoma Transfer Station is estimated at $210,173.56. This is based on a waste disposal cost of $0.03 per pound. The OAC 252:515-Appendix H form of closure cost estimate is included with this transfer station application modification.

1.3 Estimate of Maximum Inventory of Waste on the Site

The maximum inventory of waste in storage of waste is estimated at 500 tons.

1.4 Financial Instrument

CARDS NEO, LLC will submit a financial assurance instrument to the benefit of the State of Oklahoma for $210,173.56 - as specified under OAC 252:515-27-73.

1.5 Schedule

The schedule for final closure will begin with notification to Oklahoma Department of Environmental Quality (ODEQ) 15 days prior to the effective date of closure. All activities shall be completed within ninety (90) days of initiation of the closure activities. The estimated closure schedule is summarized in **TABLE 1.1** below.

TABLE 1.1
ESTIMATED CLOSURE SCHEDULE

Closure Activity/Task	Number of days to complete
Notify the department of intent to perform closure	1
Begin closure activities following DEQ approval of Closure Plan	40
Load waste into containers and transport material to landfill	20
Clean equipment and containers	20
Remove equipment and containers	10

CARDS NEO, LLC customers will be notified prior to closure. The closure activities will be completed in accordance with this closure plan within 90 days of closure. Within 15 days of completion of closure, a closure certification statement will be signed by CARDS NEO, LLC certifying that the facility has been closed in accordance with this closure plan. Until final closure of the facility, CARDS NEO, LLC will review and update the closure cost estimate as necessary.

1.6 Closure Activities

All waste will be collected and transported to a permitted landfill facility for final disposal. All waste storage, receiving and loading areas shall be cleaned and free of waste residues through steam cleaning with environmentally appropriate disinfectant. All runoff water from cleaning will be collected, containerized, treated, and disposed of properly.

1.7 Certification of Final Closure

Certification requirements. A Certification of Final Closure shall be submitted to Oklahoma DEQ after completion of final closure. The Certification shall:

- Be signed by the owner/ operator;
- State that the facility was closed according to the approved closure plan, the permit, and applicable rules;
- Contain a closure report with related drawings, plans or specifications describing how closure was performed.

The Certification of Final Closure shall be prepared and sealed by an independent professional engineer licensed in the State of Oklahoma if the facility served a population or population equivalent of greater than 5,000.

1.8 County Land Records Notice

- **Notice required.** Upon Oklahoma DEQ approval of final closure, a notice shall be recorded in the land records of the property in the county in which the facility is located, that will give notice in perpetuity that the site was used for the processing or disposal of solid waste and has been closed.
- **Identification of wastes.** The notice shall specify the type, location and quantity of wastes processed or disposed.
- **Post-closure monitoring**. For land disposal facilities, the notice shall:

- **Identify** the required post-closure monitoring period and state that the facility will be monitored for at least this period of time;

- **State** that a survey plat and record of the disposal area with locations and elevations has been filed with Oklahoma DEQ and with an identified city or county; and

- **State** that future uses may be restricted in accordance with OAC 252:515-25-57.

- **Copy to DEQ.** A file-stamped copy of the notice shall be provided to the Oklahoma DEQ.

1.9 Post Closure

No Post Closure Plan is required due to the nature of the proposed operation

2023 Worksheet for Calculating Closure and Post-closure Cost Estimates

All site data necessary to calculate estimates of closure and post-closure costs can be gathered by completing Table H.1. Data from Table H.1 should be inserted into Tables H.2 and I.1 to complete calculations.

Table H.1: Site Data

Facility Name:

Permit Number:

Description	Quantity	Units
Total Permitted Area	23	acres
Active Portion		
Composite Lined	N/A	acres
Soil Lined	N/A	acres
Area of Largest Cell/Phase Requiring Final Cap		
Composite Lined	N/A	acres
Soil Lined	N/A	acres
Perimeter Fencing	4,300	linear feet
Groundwater Monitoring Wells	N/A	VLF
Methane Gas Probes	N/A	VLF
Terraces	N/A	linear feet
Letdown channels	N/A	linear feet
Perimeter drainage ditches	N/A	linear feet
Average Daily Flow	500	tons/day
Landfill Disposal Cost	$60	$/ton

VLF = Vertical linear feet. The sum of the depths of all monitoring wells.

Table H.2: Closure Cost Estimate

Facility Name:

Permit Number:

	Task/Service	Quantity	Units	Multiplier[a]	Unit Cost[b]	Subtotal
1	**Preliminary Site Work**					
1.1	Conduct Site Evaluation	1	Lump sum	1	$4,222.39	$4,222.39
1.2	Dispose Final Wastes					
	Average Daily Flow[c]	500	tons/day			
	Disposal Cost[d,e]	500	tons/day	5 (5 days waste)	$60	$150,000

1.3	Remove Temporary Building(s)	1	lump sum	1	$3,871.95	N/A
1.4	Remove Equipment	1	lump sum	1	$3,160.64	N/A
1.5	Repair/Replace Perimeter Fencing		linear feet	0.25 (25% of fencing)	$4.14	N/A
1.6	Clean Leachate Line(s)	1	lump sum	1	$1,912.44	N/A
2	**Monitoring Equipment**					
2.1	Rework/Replace Monitoring Well(s)		VLF	0.25 (25% of wells)	$88.78	N/A
2.2	Plug Abandoned Monitoring Well(s)		VLF	0.25 (25% of wells)	$35.54	N/A
2.3	Rework/Replace Methane Probe(s)		VLF	0.25 (25% of probes)	$76.68	N/A
2.4	Plug Abandoned Methane Probe(s)		VLF	0.25 (25% of probes)	$28.02	N/A
2.5	Rework/Replace Remediation and/or Gas Control Equipment [f]	1	lump sum	0.05 (5% of equipment capital cost)	[f]	N/A
3	**Construction**					
3.1	Complete Site Grading to include on- and off-site borrow areas		acres	1	$1,674.07	N/A
3.2	Construct Final Cap					
	Compacted On-site Clay Cap or		cubic yards	1	$6.01	N/A
	Compacted Off-site Clay Cap or		cubic yards	1	$9.77	N/A
	Install Geosynthetic Clay Liner Cap		square feet	1	$0.63	N/A
3.3	Construct Landfill Gas Venting Layer					
	Place Sand or		acres	1	$44,762.88	N/A
	Install Net and Geotextile		square feet	1	$0.44	N/A
3.4	Install Passive Landfill Gas Vents		acres	1	$1,072.36	N/A
3.5	Install Flexible Membrane Liner		square feet	1	$0.49	N/A

3.6	Drainage Layer					
	Place Sand or		acres	1	$44,762.88	N/A
	Install Net and Geonet		square feet	1	$0.44	N/A
3.7	Place On-site Topsoil		cubic yards	1	$2.59	N/A
	Place Off-site Topsoil		cubic yards	1	$20.69	N/A
3.8	Establish vegetative cover, including on- and off-site borrow areas		acres	1	$1,193.06	N/A
4	**Drainage/erosion control**					
4.1	Construct Terraces		linear feet	1	$10.84	N/A
4.2	Construct Letdown Channels		linear feet	1	$118.51	N/A
4.3	Clean Perimeter Drainage Ditches		linear feet	0.5 (50% of ditches)	$8.26	N/A
5	**Tasks Not Identified** (Sanitize)					$5,000
6	**Subtotal**					$159,222.39
7	**Administrative Services** [g]	1	lump sum	0.1 (10%)	g	$15,922.24
8	**Technical and Professional Services** [g]	1	lump sum	0.12 (12%)	g	$19,106.69
9	**Closure Contingency** [g]	1	lump sum	0.1 (10%)	g	$15,922.24
10	**Total Final Closure** [h]					$210,173.56

a Multipliers are determined from the *Solid Waste Financial Assurance Program Report* , December 22, 2000.

b Unit costs include a 6.98% inflationary adjustment for 2023.

c New facilities: Insert the value for "W" in OAC 252:515-27-8(a)(2). Existing facilities: Insert reported annual tonnage for the previous year, divided by 312 operating days per year (52 weeks per year x 6 operating days per week).

d Insert number of tons/day from above.

e Insert landfill disposal cost per ton of waste ($/ton).

f Input capital cost for gas control/remediation equipment, if installed at the site.

g Input subtotal from line 6.

h Add rows 6 through 9.