

**FORM EQP 5111 ATTACHMENT MODULE C1
USE AND MANAGEMENT OF CONTAINERS**

This document is an attachment to the Michigan Department of Environment, Great Lakes, and Energy's *Instructions for Completing Form EQP 5111, Operating License Application Form for Hazardous Waste Treatment, Storage, and Disposal Facilities*. See Form EQP 5111 for details on how to use this attachment.

R 299.9614 of the administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); R 29.4101 to R 29.4505 promulgated pursuant to the provisions of the Michigan Fire Protection Act, PA 207, as amended (Act 207); and Title 40 of the Code of Federal Regulations (CFR) §§270.14(d), 270.15, and Part 264, Subpart I, establish requirements for the use and management of containers. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license application module addresses requirements for the use and management of containers at the Dow Silicones Corporation facility located in Midland, Michigan. This template addresses the condition of containers, compatibility of waste with containers, management of containers, inspections, containment, special requirements for ignitable or reactive waste, special requirements for incompatible wastes, and closure.

(Check as appropriate)

Operating License Applicant:

R 299.9614 use and management of containers

Construction Permit Applicant:

R 299.9614 use and management of containers

This module is organized as follows:

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INTRODUCTION

The Dow Silicones Corporation Site contains 809 Building as its one distinct container hazardous waste storage area. 809 Building may also be used to store other containerized materials (e.g., non-hazardous wastes and raw materials) other than those described above, as long as the design capacity for each area is not exceeded.

801 Building is only used to house non-hazardous wastes. Wastes can be received into the container storage areas from on-site generators.

C1.A DESCRIPTION OF CONTAINERS

[R 299.9614 and 40 CFR §264.171]

Wastes generated at the Midland plant are picked up from the generating locations and transferred to the licensed facility on pallets via industrial lift truck, flatbed trailer, or closed van trailer. Types of containers used for transporting hazardous wastes include steel, plastic and fiber drums and pails, and portable tanks of various capacities.

Hazardous wastes are stored in various types (e.g., fiber packs, drums, totes, pails, gaylord boxes, supersacks, activated carbon absorption units, etc.) of containers in the 809 Building. See Appendix C1-1 for complete drawings of these container storage areas and structures.

All containers used for storage of hazardous wastes at this facility are chosen for compatibility with the wastes they contain. Dow Silicones's databases of material information and packaging documentation, and formal written procedures for approval of process and compositional changes ensure that close scrutiny is given to selection of appropriate container types for all materials. See Table A2-1, Hazardous Waste Generated and Accepted at the Facility, for the wastes stored in containers.

Containers of hazardous wastes in storage at this facility are kept securely closed at all times during storage except to add or remove waste. Containers of hazardous wastes are not opened, handled, transported, or stored in a manner which may rupture the container or cause it to leak.

Smaller, non-bulk containers are stored on pallets to facilitate their movement with forklifts and minimize the risk of damage. Larger, intermediate bulk containers, such as IBC and Gaylord (yard) boxes, are typically constructed with forklift channels or are skid-mounted to facilitate safe movement. RCRA hazardous non-bulk (containers less than or equal to 119-gallons in size) and intermediate bulk containers of hazardous wastes are not stacked more than two containers high.

809 Building

Rows of pallets in 809 Building are typically 44 feet long, with minimum three foot aisle space between, and main aisles 20 feet wide to permit forklift access. Allowing for adequate aisle space there is sufficient room for 24 rows of pallets, with 11 pallets in each row, double stacked, as shown on Figure C1-2. Calculating on the basis that the typical containers in storage are 55-gallons steel drums and 47-gallon fiber packs, both of which are stored eight containers per pallet (assuming the pallets to be 4 feet x 4 feet), the total capacity for containers in the 809

building, with adequate aisle space is:

$$24 \text{ rows} \times 11 \text{ pallets/row} \times 8 \text{ containers/pallet} = 2,112 \text{ containers}$$

Calculating total volumetric capacity based on the use of 55-gallon drums, the total storage volume for the 809 Building container storage area is:

$$2,112 \text{ drums} \times 55 \text{ gallons/drum} = 116,160 \text{ gallons}$$

The 809 building therefore has sufficient physical capacity to store the entire requested facility non-bulk container storage capacity of 85,000 gallons in the 809 Building. Storage in 55-gallon drums is used here as a typical example, but other containers are also used in this area as explained above.

C1.B CONDITION OF CONTAINERS

[R 299.9614 and 40 CFR §264.171]

All containers stored are properly labeled and in good condition and are free from leaks, severe rusting, or structural defects. Hazardous waste containers in storage are inspected at their time of arrival at the facility and at least weekly, while they are in storage. If any leak, significant rust, or serious structural defect such as a crease or large dent, is discovered, the container is removed from storage and either over-packed in another container which is in good condition and which is compatible with the waste, or the contents of the container are transferred to another container which is in good condition and is compatible with the wastes. In either case, the new container is then securely closed and properly labeled before being placed into storage. In the event that container repackaging is necessary due to container corrosion, damage, or leakage, the hazardous waste from this container will be transferred to a container in good condition.

C1.C COMPATIBILITY OF WASTE WITH CONTAINERS

[R 299.9614 and 40 CFR §264.172]

Generators are required to assure that packaging materials are compatible with the waste to be stored. The appropriate container is chosen by considering the chemical compatibility of the waste with the container material of construction. Both compatibility and the expected life of the container are taken into consideration for the appropriate selection of containers. No container is selected that will knowingly fail prior to final processing on-site or off-site. Container selection and definition is determined in accordance with the Waste Analysis Plan, Module A3 of this operating license reapplication, through use of the Generator Waste Characterization Form.

C1.D MANAGEMENT OF CONTAINERS

[R 299.9614 and 40 CFR §264.173]

Containers are closed prior to delivery to any of the container storage areas. They are not opened when placed in the container storage areas except for sampling or in the event that it is necessary to transfer the contents to other containers. In the event it is necessary to transfer the contents of a container, procedures will be used that will minimize the exposure of hazardous waste to workers and the environment. Special attention is given to safe handling to avoid damaging or rupturing the containers.

Smaller waste containers, like packs, pails and/or drums, are placed on pallets for transportation and storage. The containers are moved in and out of container storage areas by forklift. Drums and totes can be stacked no more than three high. Sufficient aisle space of approximately 3-feet will be provided between each container and row of pallets to allow for complete inspection of the containers and to provide space for any response to emergencies involving the containers. Containers are stored so that the labels are visible for inspection.

C1.E INSPECTIONS

[R 299.9614 and 40 CFR §264.174]

Containers and container storage areas are inspected as specified in Module A5, Inspection Schedule, of this operating license reapplication.

C1.F CONTAINMENT

[R 299.9614 and 40 CFR §§264.175 and 270.15]

See Appendix C1-2 for drawings on secondary containment for the container storage area.

C1.F.1 Secondary Containment System Design and Operation for Containers with Free Liquids

[R 299.9614 and 40 CFR §§264.175(a) and 270.15(a)]

C1.F.1(a) Requirement for Base or Liner

[R 299.9614 and 40 CFR §§264.175(b)(1) and 270.15(a)(1)]

All secondary containment for container storage areas at this facility, except for the spill pond, is constructed of reinforced concrete and sealed with an epoxy coating compound that is resistant to solvents as well as most acids and bases. Expansion joints in the concrete slabs are provided with chemical resistant water stops.

The spill pond is constructed of clay and sand and is lined with HDPE sheets that are heat welded to form a continuous barrier against liquids migrating to the soil. Underlying the spill pond is a system of leak collection piping which is designed to intercept any liquids that might leak from the spill pond. These pipes drain to a manhole where they can be inspected to determine whether the spill pond is leaking. The manhole is equipped with a pump for removal of accumulated liquids to the chemical sewer for treatment and disposal. See Appendices C1-1 and C1-2 for drawings showing the design and construction of the spill pond.

C1.F.1(b) Containment System Drainage

[R 299.9614 and 40 CFR §§264.175(b)(2) and 270.15(a)(2)]

809 Building

The 809 Building is a 5,886 square foot building, including the 384 square foot loading dock annex designated as 805 Building. Because this loading dock annex is attached to the 809 Building and under the same roof and is used in the normal operations carried out in the 809 Building, for the sake of this description it will be considered to be part of 809 Building. The

floor of this building is constructed of reinforced concrete with a minimum thickness of nine inches and is sealed with an epoxy coating compound that is resistant to solvents and most acids and bases. The floor of the storage area slopes downward to the center. Containers of hazardous wastes are stored on pallets to ensure that they do not come into contact with spilled liquids.

As shown in the drawing (X1-35726) provided in Appendix C1-2, the floor of the 809 Building container storage area is sloped to the center of the building with a pitch of one inch in 17 feet, and to the western end of the building, with a pitch of one inch in 10 feet. This causes liquids to accumulate at the drainage flume at the western end of the containment, which then channels any liquids to the spill pond.

C1.F.1(c) Containment System Capacity
[R 299.9614 and 40 CFR §§264.175(b)(3) and 270.15(a)(3)]

The containment system has ample capacity to contain potential releases from 809 building, the 806 tank farm and the bulk container loading/offloading areas.

809 Building

Containment capacity for the 809 Building container storage area is provided by the 800 Block spill pond, which has a containment capacity of 142,000 gallons, calculated based on the dimensions shown in the spill pond drawing provided in (Y1-35727) in Appendix C1-2. See below, for the determination of containment capacity of the spill pond.

Spill Pond

The spill pond in the 800 block provides secondary containment capacity for the 806 tank farm, the 809 Building container storage area, the bulk container load/offload area, and for the bulk container (e.g., vac truck or trailer) loading/offloading areas adjacent to the 806 tank farm. The spill pond has a total capacity of 142,000 gallons as calculated based on the dimensions shown in the spill pond drawing (Y1-35727) in Appendix C1-2.

As shown on the drawing (Y1-45401) in Appendix C1-2, the spill pond receives accumulated runoff from the 806 tank farm and the paved areas surrounding it, including the bulk container loading/offloading areas, as well as from the paved area immediately surrounding the pond. The total surface area receiving precipitation, including the flumes from the 806 tank farm and 809 Building, and the pond itself, is 15,300 square feet. According to information provided by the Midland City Wastewater Treatment Department, in the Midland area a 100-year rainfall event will deposit 3.9 inches of water in 24 hours. The volume of runoff water from this area to the spill pond from such an event is:

$$15,300 \text{ ft}^2 \times (3.9 \text{ in.}/12 \text{ in/ft}) \times 7.48 \text{ gal/ft}^3 = 37,194 \text{ gallons}$$

The remaining capacity to contain spills is:

$$142,000 - 37,194 = 104,806 \text{ gallons}$$

Because the spill pond serves as containment capacity for the 806 tank farm, as well as the 809 Building container storage area and the bulk container load/offload area, the total capacity required is the sum of the requirements for each area, as follows:

806 tank farm: largest tank, or 10% of total tank volumes, whichever is larger
Largest tank = 10,000 gallons
Total tank capacity = 60,000 gallons x 10% = 6,000 gallons
Capacity required = 10,000 gallons

809 Building: largest container or 10% of total volume of all containers
Largest container = 750 gallons
Total requested storage = 121,000 gallons x 10% = 12,100 gallons
Capacity required = 12,100 gallons

Bulk container load/offload area: capacity (maximum) = 6,500 gallons
Capacity required = 6,500 gallons

Total containment capacity required:
 $10,000 + 12,100 + 6,500 = 28,600$ gallons

This is only 27% of the total capacity available, after allowing for precipitation, so the spill pond has about three and a half times the required capacity. Adequate spill containment is therefore provided.

C1.F.1(d) Control of Run-on
[R 299.9614 and 40 CFR §§264.175(b)(4) and 270.15(a)(4)]

Control of run-on into the 809 Building container storage area is provided on all sides, except at the north end overhead doorways, by a concrete curb six inches in height. At the north doorways the exterior parking lot is sloped away from the building to prevent run-on.

C1.F.1(e) Removal of Liquids from Containment System
[R 299.9614 and 40 CFR §§264.175(b)(5) and 270.15(a)(5)]

Due to the slope of the floor in the 809 Building secondary containment, liquids flow by gravity to the flume (sloped channel) which leads to the spill pond. From the spill pond, liquids are pumped to the chemical sewer for treatment and disposal within 24-hours.

C1.F.2 Secondary Containment System Design and Operation for Containers with No Free Liquids
[R 299.9614 and 40 CFR §§264.175 and 270.15(b)(1)]

All containers of hazardous wastes managed at this facility may contain free liquids and are handled and stored as though they do contain free liquids. All containers of hazardous wastes are stored in areas provided with secondary containment meeting the requirements of 40 CFR 264.175(b).

C1.F.2(a) Containment System Drainage
[R 299.9614 and 40 CFR §§264.175 and 270.15(b)(2)]

All containers of hazardous wastes managed at this facility may contain free liquids and are handled and stored as though they do contain free liquids. All containers of hazardous wastes are stored in areas provided with secondary containment meeting the requirements of 40 CFR 264.175(b).

C1.F.2(b) Container Management
[R 299.9614 and 40 CFR §§264.175 and 270.15(b)(2)]

All containers of hazardous wastes managed at this facility may contain free liquids and are handled and stored as though they do contain free liquids. All containers of hazardous wastes are stored in areas provided with secondary containment meeting the requirements of 40 CFR 264.175(b). Storage on pallets keeps the containers off the floor so that, in case of a leak from a container, other containers of incompatible wastes will not come into contact with the leaked material.

C1.G SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE
[R 299.9614 and 40 CFR §§264.176 and 270.15(b)(2)]

All containers storage areas at this facility are located approximately 1,000 feet from the nearest property line, which is northeast of the landfill. This exceeds the requirement that containers of ignitable and/or reactive wastes be stored least 50 feet (15 meters) from the nearest property line (see Site Plan Appendix A1-1).

To prevent accidental ignition or reaction of ignitable or reactive waste, special precautions are taken. The entire Midland Plant Site has a no smoking policy within the facility fence line. A sign indicating the no smoking policy is located at each access gate into Midland Plant Site. Appropriate disciplinary action is taken if someone is caught violating this policy.

The use of open flames, cutting or welding, spark producing equipment or other potential sources of ignition in an area that handles reactive and/or ignitable waste requires a hot work permit from trained personnel responsible for managing the areas. Prior to issuing a hot work permit the area must be checked for flammable and combustible materials and appropriate fire prevention and protection precautions must be implemented. These permits must be reissued at least daily and are suspended if a safe condition no longer exists. The hot work permit procedures are consistent with the requirements of 29 CFR 1910.119 (k): Hot Work Permit.

Areas that handle ignitable or reactive waste are designed, constructed and maintained to minimize the potential for ignition of the waste. These practices are consistent with the requirements of NFPA 70, "National Electric Code", NFPA 497, "Recommended Practice for Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas", NFPA 30, "Flammable and Combustible Liquids Code" and other appropriate codes and standards.

Documentation of compliance with these procedures and practices described in this section are maintained in the operating record. The documentation will be made available upon request.

C1.H SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES

[R 299.9614 and 40 CFR §§264.177(c) and 270.15(b)(2)]

Each waste to be stored in containers will be evaluated prior to storage for its effect, if any, upon other stored wastes. This information is evaluated with the aid of the generator waste characterization form. When a new waste is considered for storage, a comparison is made of the nature of that waste with the nature of all other wastes currently in storage at the facility to ensure compatibility. If a new waste is deemed incompatible with one or more of the wastes in storage at the time, the material will be managed as follows:

- The waste will not be stored at the facility, or
- The waste will be stored remotely from the wastes with which it is incompatible. This would include inside versus outside storage (separated by a wall) or by storing it in an area within the facility that itself is separated from the rest of the facility.

In the event insufficient information is available from published reference literature to adequately evaluate a waste for compatibility, the waste material in question will be managed as follows:

1. The waste will be isolated from all materials presently stored at the unit.
2. The waste generator will be notified of the status of the material with suggested treatment and disposal alternatives.
3. The waste will be treated or disposed of by the appropriate method.

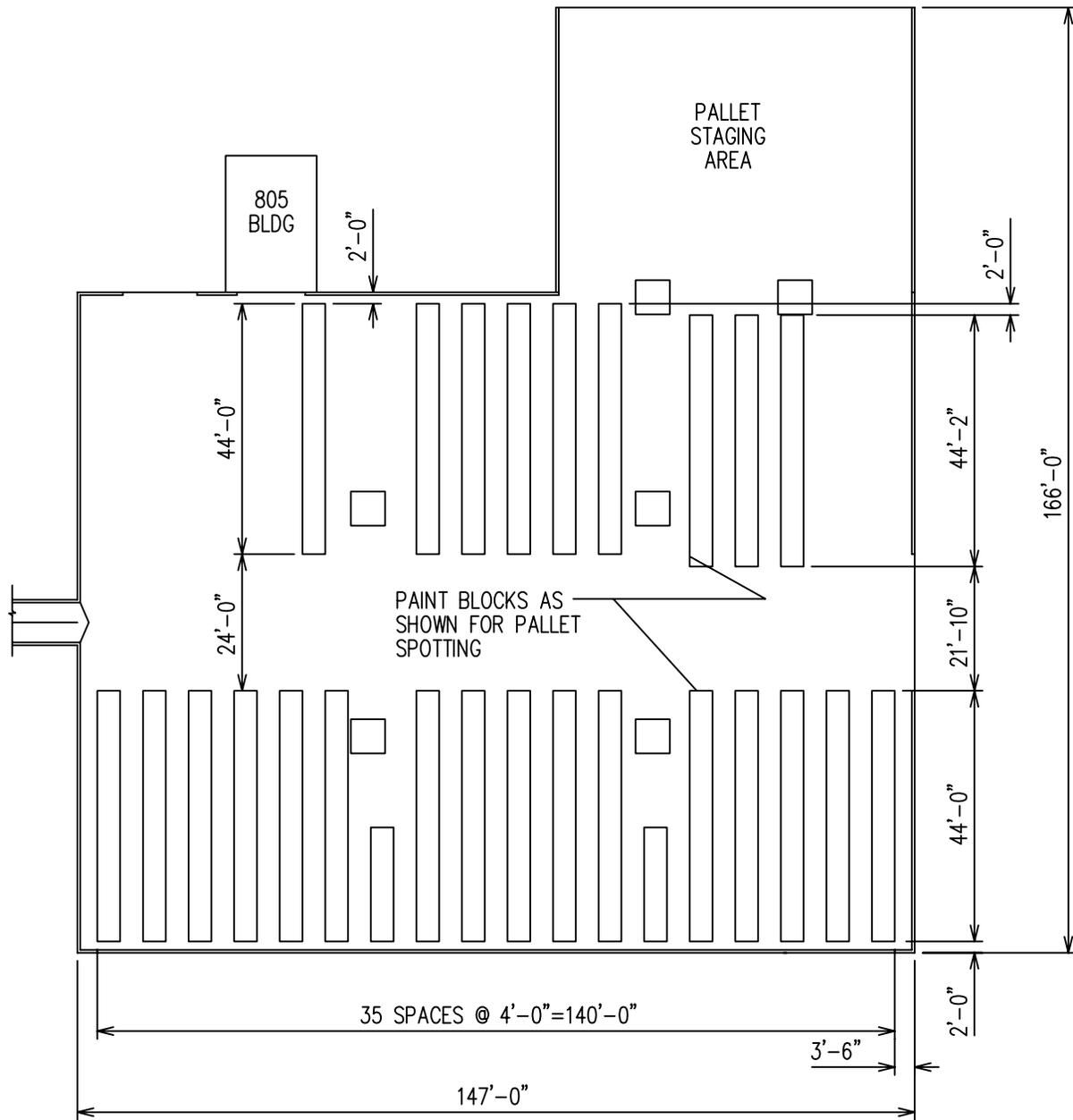
C1.I CLOSURE

[R 299.9614 and 40 CFR §264.178]

The closure plan is in Section A11.

The 801 and 809 Buildings are used for storage of wastes in containers and will undergo closure as required at the end of its active service life, as described in this section. Post-closure care is not required for this unit because all wastes will be removed and all contaminated structures and equipment either removed or decontaminated during closure. Because this unit is situated on an inactive portion of the Dow Silicones Midland site landfill, this area will be capped with the final landfill cover, and post-closure care for the landfill will include this area.

At closure, all hazardous waste and hazardous waste residues will be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues will be decontaminated or removed. See Module A11 for a more detailed description of closure activities.



DOW CORNING CORPORATION

DRAWN BY: NLW DATE: JUNE, 2011
CHECKED BY: MG EDITED BY: NLW030210
FILE NAME: FgC1-2.Dwg

FIGURE C1-2 CONTAINER STORAGE CONFIGURATION IN 809 BUILDING

DOW CORNING CORPORATION MIDLAND SITE
3901 SOUTH SAGINAW
MIDLAND, MICHIGAN

PROJECT
NUMBER

SCALE: AS SHOWN

**Table C1-1
Waste Compatibility Groups
Dow Silicones Corporation, Midland, Michigan**

Type of Waste	EPA Codes	Q8 Numbers
Group 1: Ignitable and Reactive Liquids		
1.a. Chlorosilanes (Si-Cl compounds), vinyl silanes and acetoxysilanes, also containing any of the following: aromatic solvents, aliphatic hydrocarbons, chlorinated solvents, acetic acid, acetyl chloride	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D035, D038, D039, D041, D042, F002, F003, F005 Michigan codes 001D, 003D, 002U, 041U	Q8-6011, Q8-6018, Q8-6118, Q8-6119
1.b. Alkoxysilanes (Si-O-CH ₃), containing aliphatic and aromatic solvents, alcohols	D001, D003, F003, F005	Q8-6062
1.c. Silanes (Si-H), also containing aliphatic, aromatic and/or chlorinated solvents, and/or other monomers, including acetonitrile	D001, D003, D039, F002, F003, F005	Q8-6061, Q8-6230
1.d. Silazanes and Aminosilanes, containing aliphatic and/or aromatic solvents	D001, D003, F003, F005	Q8-6204, Q8-6247
Group 2: Ignitable and Reactive Solids		
2.a. Solids, soils and/or debris containing chlorosilanes	D001, D003, D004, D005, D007, D008, D011, D018, D019, D021, D022, D035, D039, D040, F002, F003, F004, F005, P005, P022, P120, U002, U003, U006, U008, U009, U019, U031, U035, U037, U040, U044, U045, U055, U056, U069, U075, U080, U092, U096, U103, U108, U112, U113, U115, U117, U120, U121, U122, U123, U133, U134, U140, U144, U151, U154, U159, U161, U162, U165, U188, U210, U211, U213, U220, U223, U226, U228, U239, U328, U353, U359, Michigan 001D, 003D	Q8-6172, Q8-6338, Q8-6339
2.b. Solids, soils and/or debris containing alkoxysilanes	D001, D003, F003, F005	
2.c. Solids, soils and/or debris containing silanes (Si-H)	D001, D003, D039, F002, F003, F005	Q8-6336
2.d. Solids, soils and/or debris containing silazanes and/or aminosilanes	D001, D003, F003, F005	
2.e. Magnesium solids	D001, D003	Q8-6337

Table C1-1 (continued)
Waste Compatibility Groups
Dow Silicones Corporation, Midland, Michigan

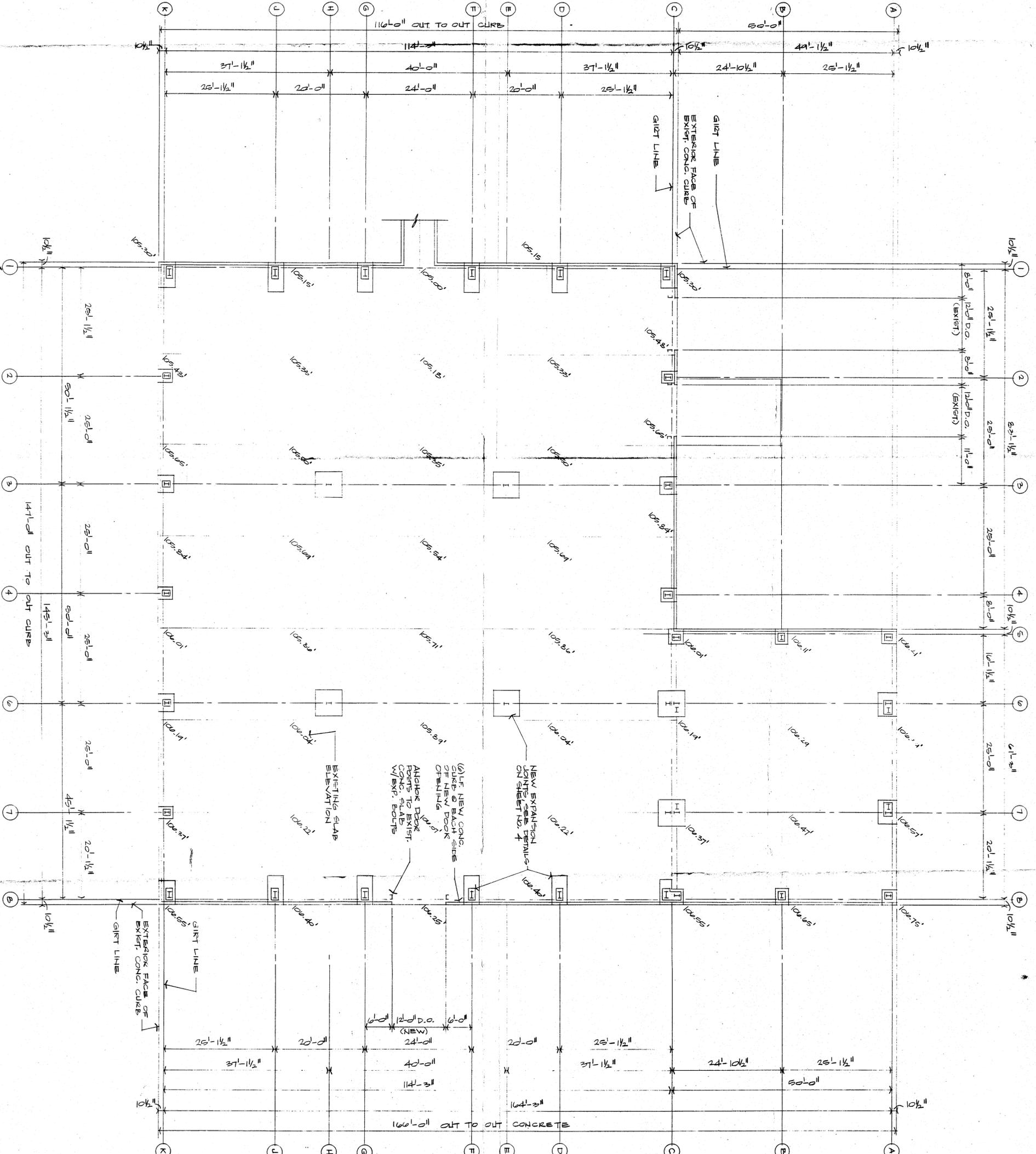
Type of Waste	EPA Codes	Q8 Numbers
Group 3: Lab Packs		
3.a. Ignitable, acidic corrosive and reactive lab packs	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D035, D038, D039, D041, D042, F002, F003, F004, F005, P005, P022, P120, U002, U003, U006, U009, U009, U018, U019, U031, U035, U037, U040, U041, U044, U045, U055, U056, U069, U075, U080, U096, U103, U108, U112, U113, U115, U117, U120, U121, U122, U133, U134, U140, U154, U159, U161, U162, U165, U188, U210, U211, U213, U220, U223, U226, U228, U239, U328, U353, U359, Michigan codes 001D, 003D, 002U, 032U, 041U, 070U, 131U, 139U, 140U	Q8-6038
3.b. Ignitable, basic corrosive lab packs	D001, D002, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D035, D038, D039, D041, D042, F002, F003, F004, F005, P005, P022, P120, U002, U003, U006, U009, U009, U018, U019, U031, U035, U037, U040, U041, U044, U045, U055, U056, U069, U075, U080, U096, U103, U108, U112, U113, U115, U117, U120, U121, U122, U133, U134, U140, U154, U159, U161, U162, U165, U188, U210, U211, U213, U220, U223, U226, U228, U239, U328, U353, U359, Michigan codes 001D, 003D, 002U, 032U, 041U, 070U, 131U, 139U, 140U	Q8-6117

Table C1-1 (continued)
Waste Compatibility Groups
Dow Silicones Corporation, Midland, Michigan

Type of Waste	EPA Codes	Q8 Numbers
Group 3: Lab Packs (continued)		
3.c. Ignitable lab packs	D001, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D035, D038, D039, D041, D042, F001, F002, F003, F004, F005, P005, P022, P120, U002, U003, U006, U009, U009, U018, U019, U031, U035, U037, U040, U041, U044, U045, U055, U056, U069, U075, U080, U096, U103, U108, U112, U113, U115, U117, U120, U121, U122, U133, U134, U140, U154, U159, U161, U162, U165, U188, U210, U211, U213, U220, U223, U226, U228, U239, U328, U353, U359, Michigan codes 001D, 003D, 002U, 032U, 041U, 070U, 131U, 139U, 140U	Q8-6199
3.d. Acidic corrosive lab packs	D002, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D035, D038, D039, D041, D042, F001, F002, F003, F004, F005, P005, P022, P120, U002, U003, U006, U009, U009, U018, U019, U031, U035, U037, U040, U041, U044, U045, U055, U056, U069, U075, U080, U096, U103, U108, U112, U113, U115, U117, U120, U121, U122, U133, U134, U140, U154, U159, U161, U162, U165, U188, U210, U211, U213, U220, U223, U226, U228, U239, U328, U353, U359, Michigan codes 001D, 003D, 002U, 032U, 041U, 070U, 131U, 139U, 140U	Q8-6200
Group 4: Ignitable, acidic corrosive wastes		
4.a. Ignitable, acidic corrosive liquids	D001, D002	Q8-6711
4.b. Ignitable, acidic corrosive solids	D001, D002	Q8-6246, Q8-6821

Table C1-1 (continued)
Waste Compatibility Groups
Dow Silicones Corporation, Midland, Michigan

Type of Waste	EPA Codes	Q8 Numbers
Group 5: Solvent wastes		
5.a. Ignitable mixed solvents	D001, D018, D019, D021, D022, D035, D039, D040, F001, F002, F003, F004, F005	Q8-6017, Q8-6026, Q8-6116, Q8-6227, Q8-6504, Q8-6507, Q8-6509
5.b. Solvent contaminated solids	D018, D019, D021, D022, D035, D039, D040, F001, F002, F003, F004, F005	Q8-6323, Q8-6817, Q8-6821
5.c. Solvent contaminated water	D001, D018, D019, D021, D022, D035, D039, D040, F001, F002, F003, F004, F005	Q8-6320
Group 6: Discarded virgin raw materials		
6. Discarded virgin raw materials	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D027, D035, D038, D039, D041, D042, P005, P022, P120, U002, U003, U006, U009, U009, U018, U019, U031, U035, U037, U040, U041, U044, U045, U055, U056, U069, U075, U080, U096, U103, U108, U112, U113, U115, U117, U120, U121, U122, U133, U134, U140, U154, U159, U161, U162, U165, U188, U210, U211, U213, U220, U223, U226, U228, U239, U328, U353, U359, Michigan codes 001D, 003D, 002U, 032U, 041U, 070U, 131U, 139U, 140U	Q8-6071
Group 7: Metals contaminated solids		
7.a. Lead contaminated solids	D008	
7.b. Mercury contaminated solids	D009	Q8-6015
Group 8: Non-RCRA regulated materials		
RCRA-empty containers	None	None
Non-RCRA regulated dirt	None	None
Non-RCRA regulated scrap solids (rags, pieces of metal and glass, asbestos & construction debris, column packing, used office furniture)	None	None
Containers of non regulated gloves	None	None
Cleaned process equipment	None	None



FLOOR PLAN

SCALE 3/8" = 1'-0"

DRAWN LSG
DATE 12-15-92
CHECKED
DATE

DRUM SHELTER CONTAINMENT BUILDING FOR:
DOW CORNING CORPORATION
BLDG. 809
MIDLAND PLANT

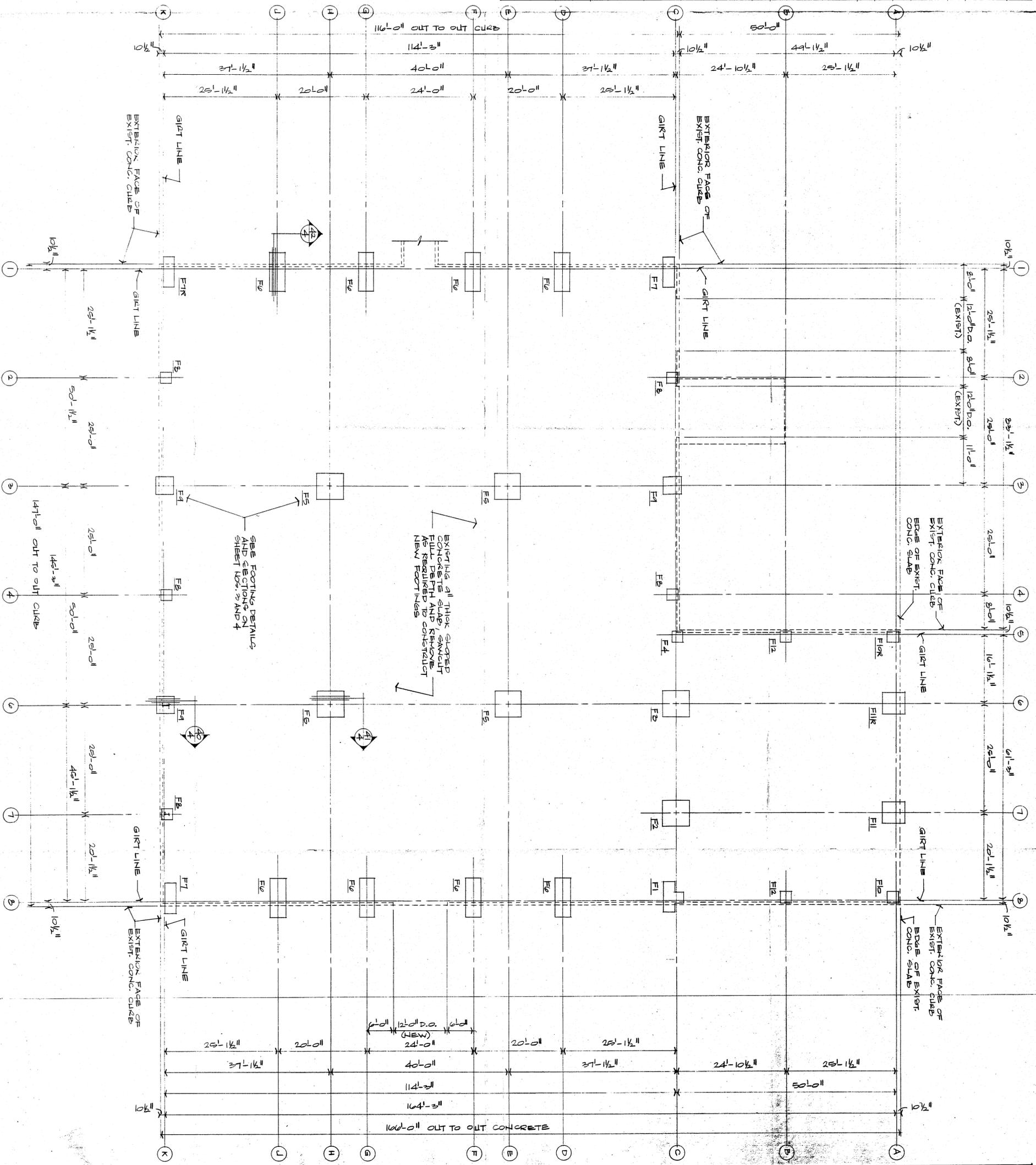
ISSUED FOR:
APPROVAL 12-16-92

LAURENCE S. GREGORY, P.E., P.C.
5258 CROWFOOT DR.
TROY, MI 48068
313-828-3771

GREGORY CONSTRUCTION CO.
1009 S. HENRY 517-892 4551
BAY CITY, MICHIGAN 48706

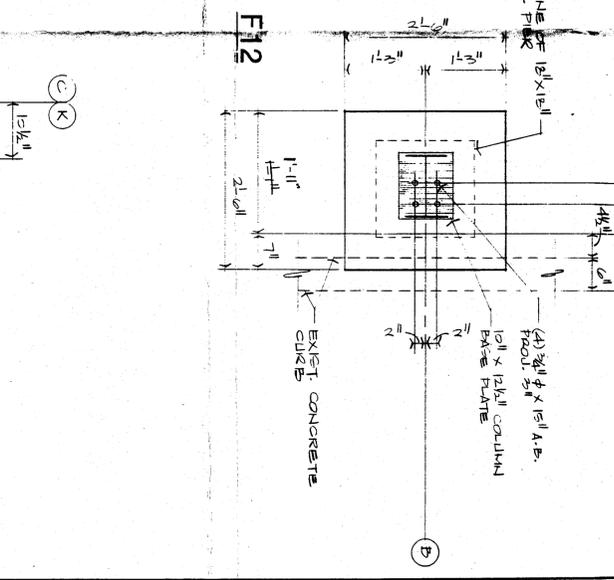
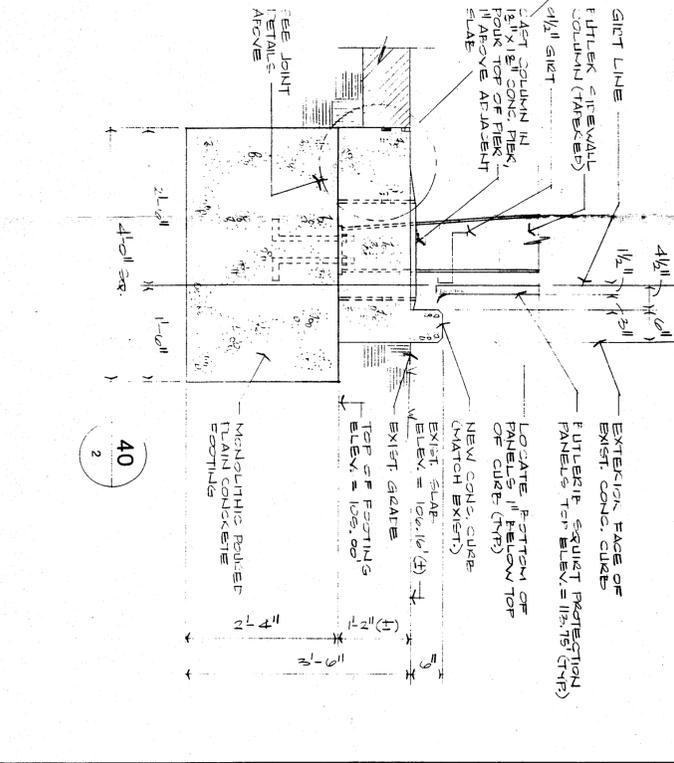
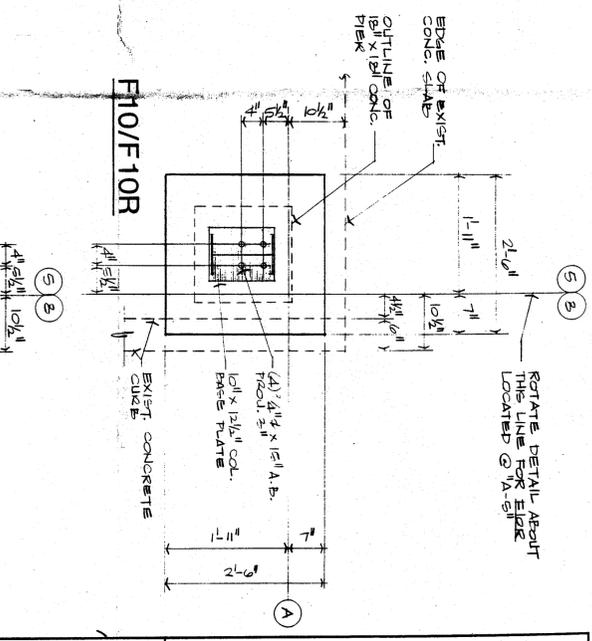
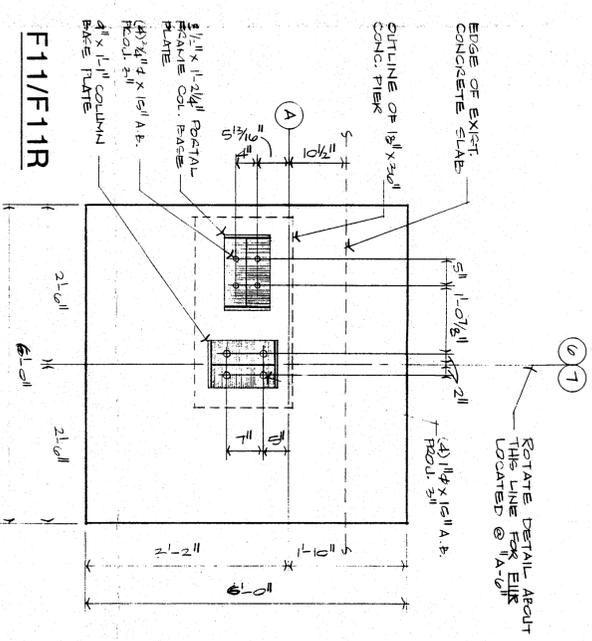
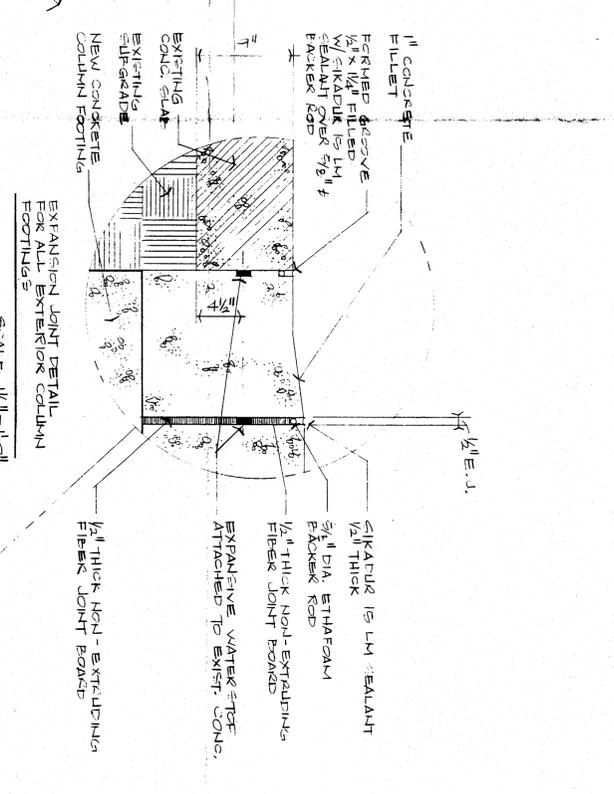
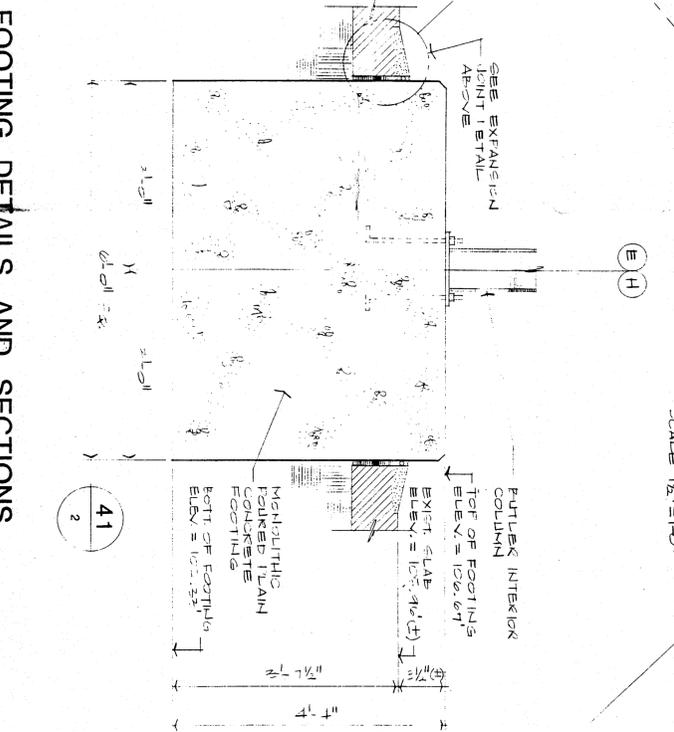
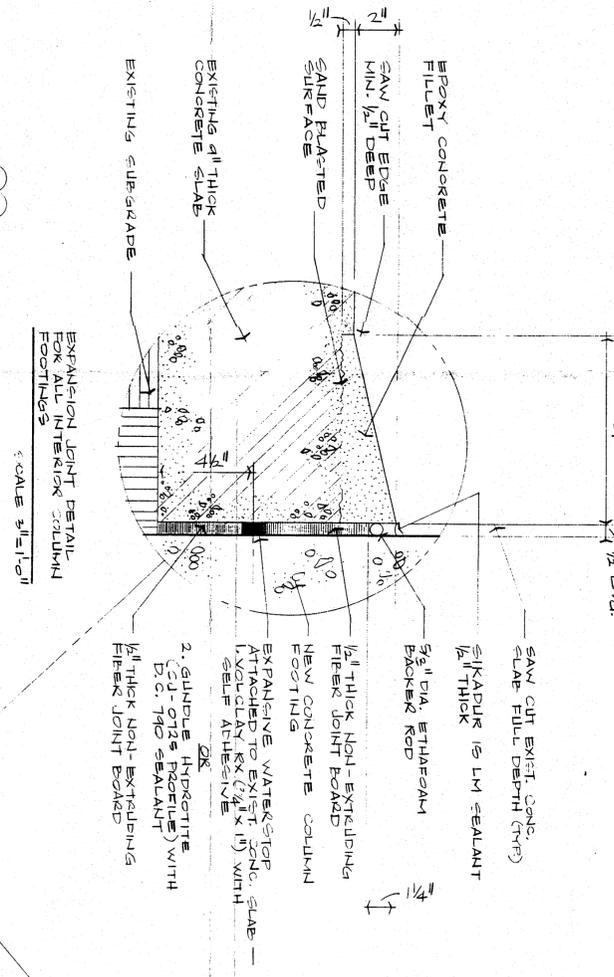
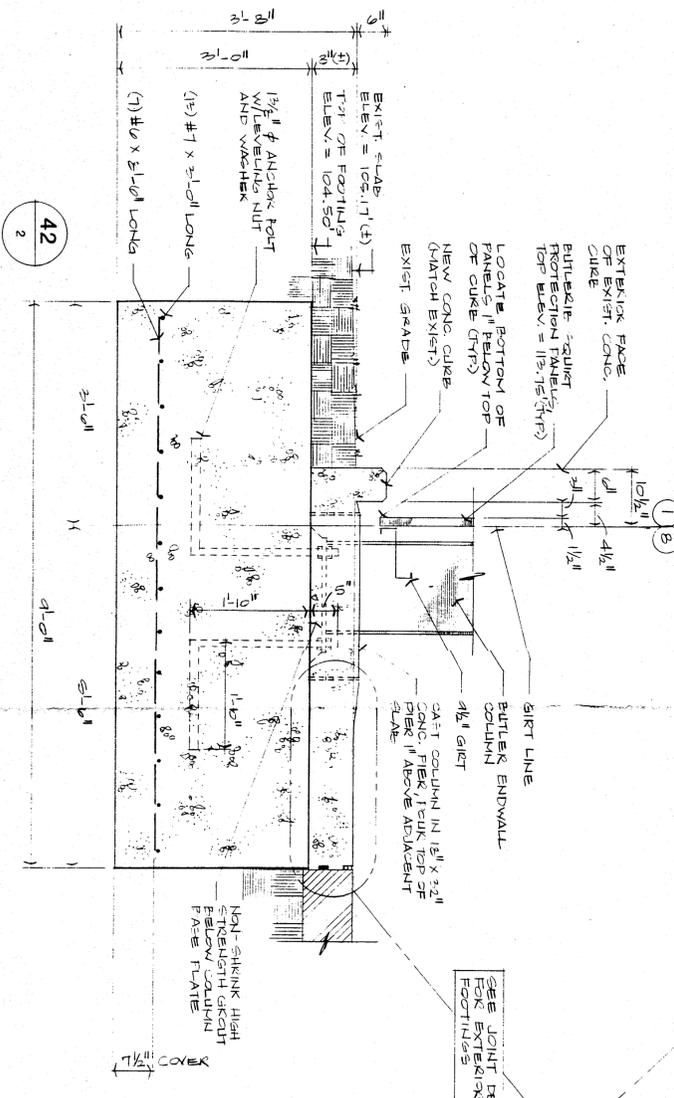
FOOTING SCHEDULE					
TYPE	LOCATION	EXIST. SLAB ELEVATION	TOP OF Fdg. ELEVATION	BOT. OF Fdg. ELEVATION	FOOTING THICKNESS
F1	C-B	106.55'	104.50'	101.50'	31.0"
F2	C-7	106.37'	106.47'	102.47'	41.0"
F3	C-6	106.16'	106.47'	102.47'	41.0"
F4	C-5	106.01'	105.00'	102.50'	21.6"
F5	E-4, H-4	109.90'	106.47'	102.39'	41.4"
F6	E-3, H-3	105.58'	106.47'	102.00'	41.8"
F7	D-1, J-1	105.11'	105.11'	101.50'	31.0"
F8	F-1, G-1	105.00'	105.00'	101.50'	31.0"
F9	D-3, J-3	106.42'	104.50'	101.50'	31.0"
F10	F-3, G-3	106.31'	104.50'	101.50'	31.0"
F11	C-1	105.30'	104.50'	101.50'	31.0"
F12	K-1	105.30'	104.50'	101.50'	31.0"
F13	C-2, K-2	105.52'	104.50'	102.00'	31.0"
F14	C-4, K-4	105.45'	105.00'	102.39'	21.8"
F15	K-7	106.37'	105.00'	102.89'	21.2"
F16	C-3, K-3	105.75'	105.00'	102.00'	31.0"
F17	K-6	106.16'	105.00'	102.67'	21.4"
F18	A-5	106.21'	105.00'	103.25'	11.9"
F19	A-5	106.21'	105.00'	102.67'	21.4"
F20	A-1	106.57'	105.00'	102.83'	21.2"
F21	A-6	106.36'	105.00'	102.89'	21.2"
F22	B-5	106.11'	105.00'	102.50'	21.6"
F23	B-5	106.45'	105.00'	103.00'	21.0"

- ### FOUNDATION NOTES
- Foundations are designed to support "Landmark" structural system as manufactured by Butler Manufacturing Co., Kansas City, MO. The system shall be designed to support (30) psf roof snow load, (10) psf collateral load, (80) mph wind speed, Exposure "B", in accordance with Uniform Building Code, 1985 edition. Butler Structural Engineering and Erection Drawings shall be stamped and sealed by an Engineer Licensed in the State of Michigan.
 - Foundation design based on allowable soil bearing capacity of 3000 psf.
 - All concrete shall have a minimum compressive strength of 3000 psi at (28) days.
 - All concrete reinforcing steel shall be Grade 60.
 - All anchor bolts shall meet ASTM A307. Provide leveling nuts and washers for erection of rigid base endwall columns. Place high strength non-shrink grout between endwall column base plate and top of footing.



FOUNDATION PLAN
SCALE 3/8"=1'-0"

SHEET NO 2	DRAWN LSG DATE 12-15-92 CHECKED DATE	DRUM SHELTER CONTAINMENT BUILDING FOR: DOW CORNING CORPORATION BLDG. 809 MIDLAND PLANT	ISSUED FOR: APPROVAL 12-16-92	LAURENCE S. GREGORY, P.E., P. 5268 CROMFORD DR. TROY, MI 48068 313-423-3774	GREGORY CONSTRUCTION CO. 1009 S. HENRY 517-892-4551 BAY CITY, MICHIGAN 48706
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FOOTING DETAILS AND SECTIONS

SCALE 3/4" = 1'-0"

BOLT CHART			
QTY.	DESCRIPTION	BOLT	NUT
A	4	3/4" X 2 1/2" A325T	097284 095235
B	6	3/4" X 2 1/2" A325T	097284 095235
C	8	3/4" X 2 1/2" A325T	097284 095235
D	12	3/4" X 2 1/2" A325T	097284 095235
E	8	7/8" X 2 1/4" A325T	097285 095237
F	12	1" X 3" A325T	097287 095238

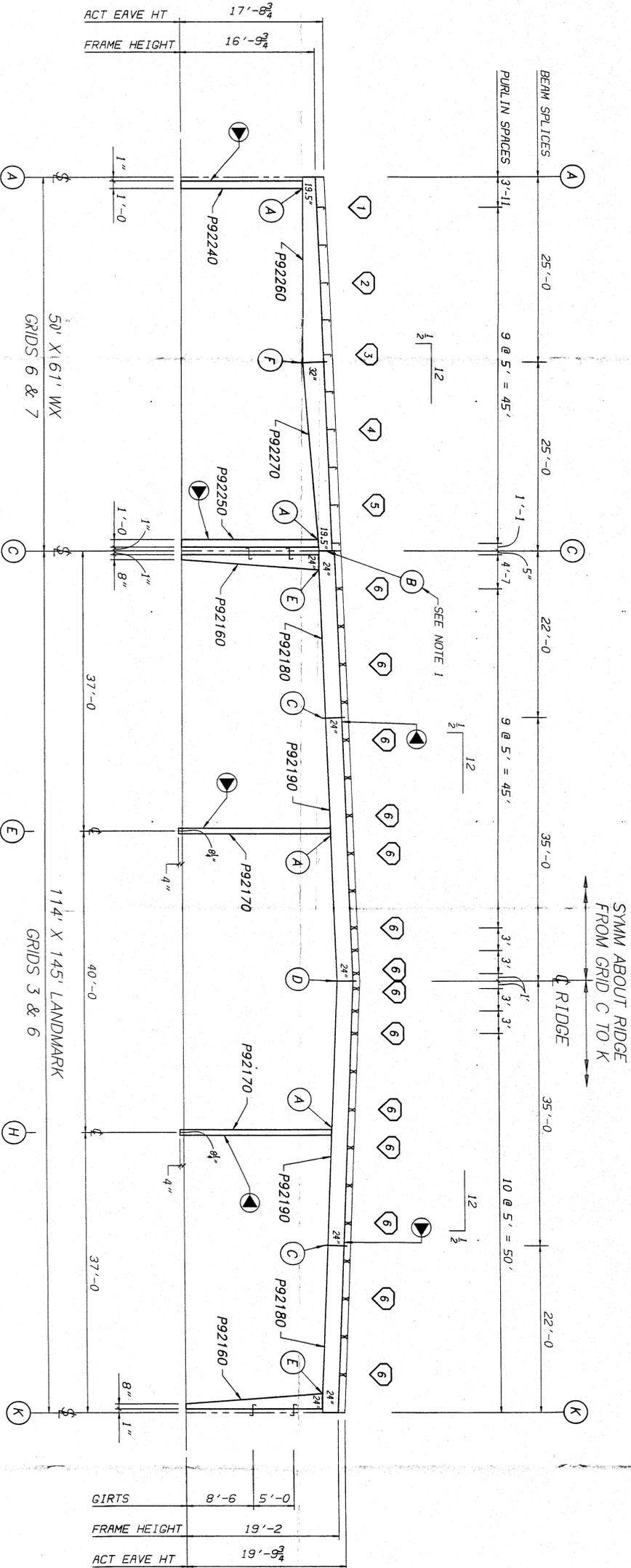
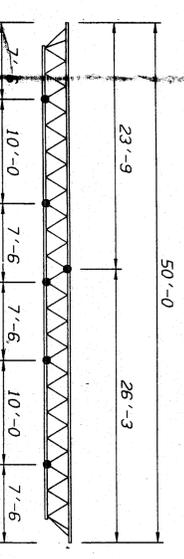
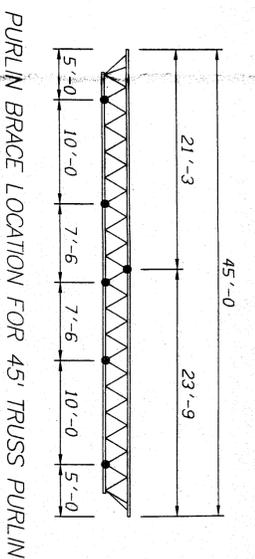
WX FLANGE BRACES			
CODE	DETAIL	"Y" DIM	LENGTH
1	005673	C003	1'-10 1/2"
2	005650	C004	2'-4 1/2"
3	005727	C003	3'-4 1/2"
4	005654	C004	2'-10 1/2"
5	005742	C003	2'-4 1/2"

LM FLANGE BRACE			
CODE	DETAIL	LENGTH	
6	700098-31-2	FB01	2'-7 1/4"

PURLIN BRACES FOR WX
(2) ROWS TOP
544067 3'-11 SPACES
544167 5'-0 SPACES
544047-16 1'-1 SPACE FIELD
WORK TO EAVE MEMBER OF LANDMARK
SEE PLAND DRAWINGS 107988 & 1080028

PURLIN BRACES FOR LANDMARK
EAVE LOCATIONS
544003 TOP (W/OUT PURLIN AT EAVE)
544040 TOP (WITH PURLIN AT EAVE)
544097 & 544098 DIAGNOL
5' SPACES
544003 TOP AND BOTTOM
3' SPACES
544083-40-1 TOP AND BOTTOM
AT RIDGE
544000 TOP
544001 BOTTOM

SEE PLAND DRAWING 105817 FOR CONNECTIONS
SEE DIAGRAMS THIS SHEET FOR LOCATIONS



CROSS SECTION

- GENERAL NOTES:
- BOLT CODE B IS THE CONNECTION OF THE WX BEAM TO THE EAVE BEAM OR THE LANDMARK AT GRID 7. CONNECT TO INTERMEDIATE SIDEWALL COLUMN AND USE (2) E72009 SHIM PLATES.
 - INDICATES DIRECTION MARK. LOCATE AS SHOWN.
 - SEE SHEET -05C FOR DETAILS.



REVISION NO.	DATE	BY	CHECKED BY	DESCRIPTION
1				
2				
3				
4				

BUTLER MANUFACTURING COMPANY
GENERAL OFFICES-KANSAS CITY, MISSOURI

GREGORY CONSTRUCTION
BRY CITY, MICHIGAN

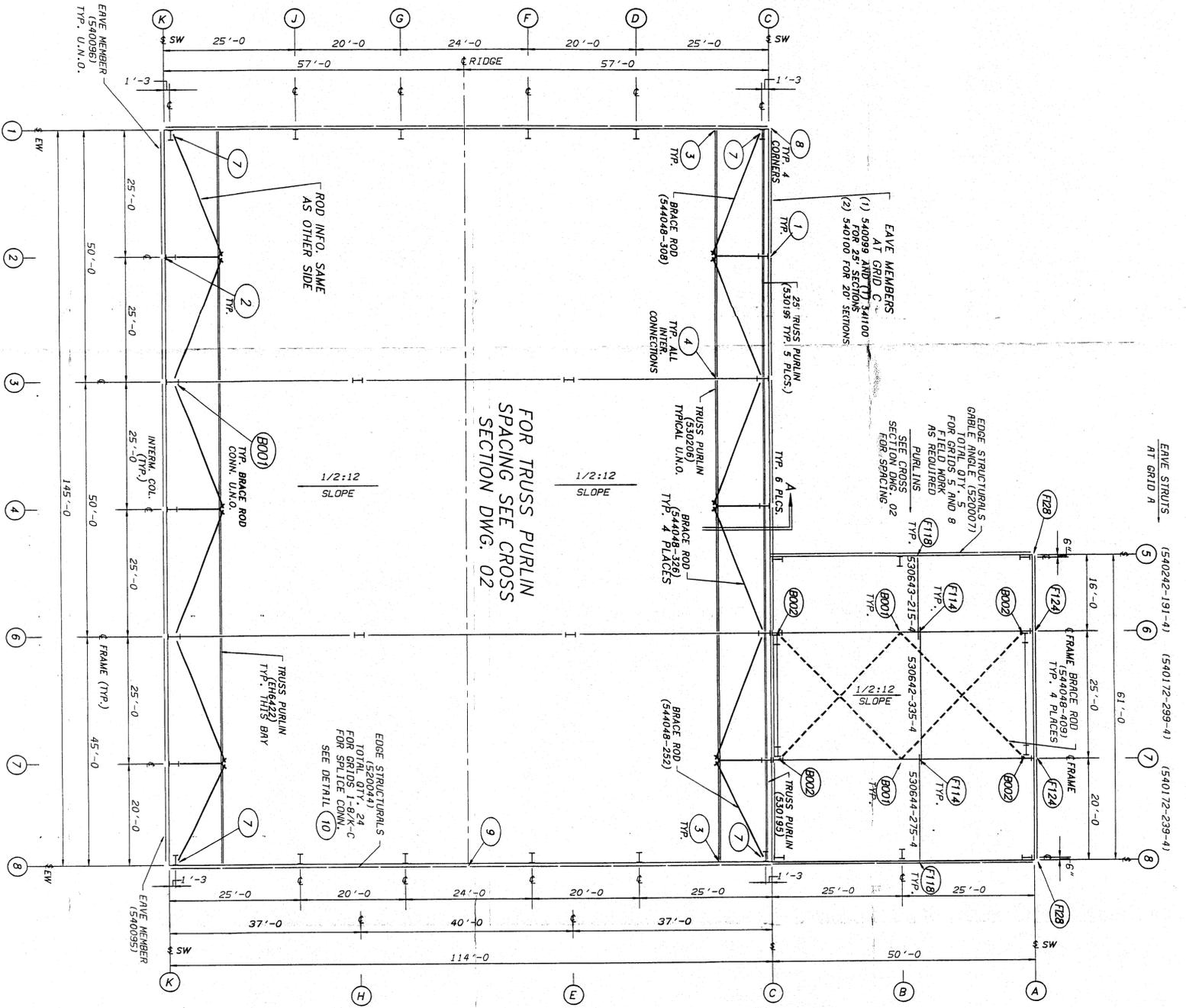
PROJECT: DOM CORNING
MIDLAND, MICHIGAN

BUILDING ORDER DESCRIPTION:
114 X 145 X 20 LMOD
50 X 61 X 20 WX
1:12 UBC-85 EXP B
40 SL 80 MPH 10 COLL

DRAWING TITLE:
CROSS SECTION

ENGINEER APPROVAL:
DRAWN BY: BIEKER
CHECKED BY: HURD
DATE: 12-15-92
D 92-041274-02
REV. 00

FRONT ENDWALL



ROOF STRUCTURAL LAYOUT

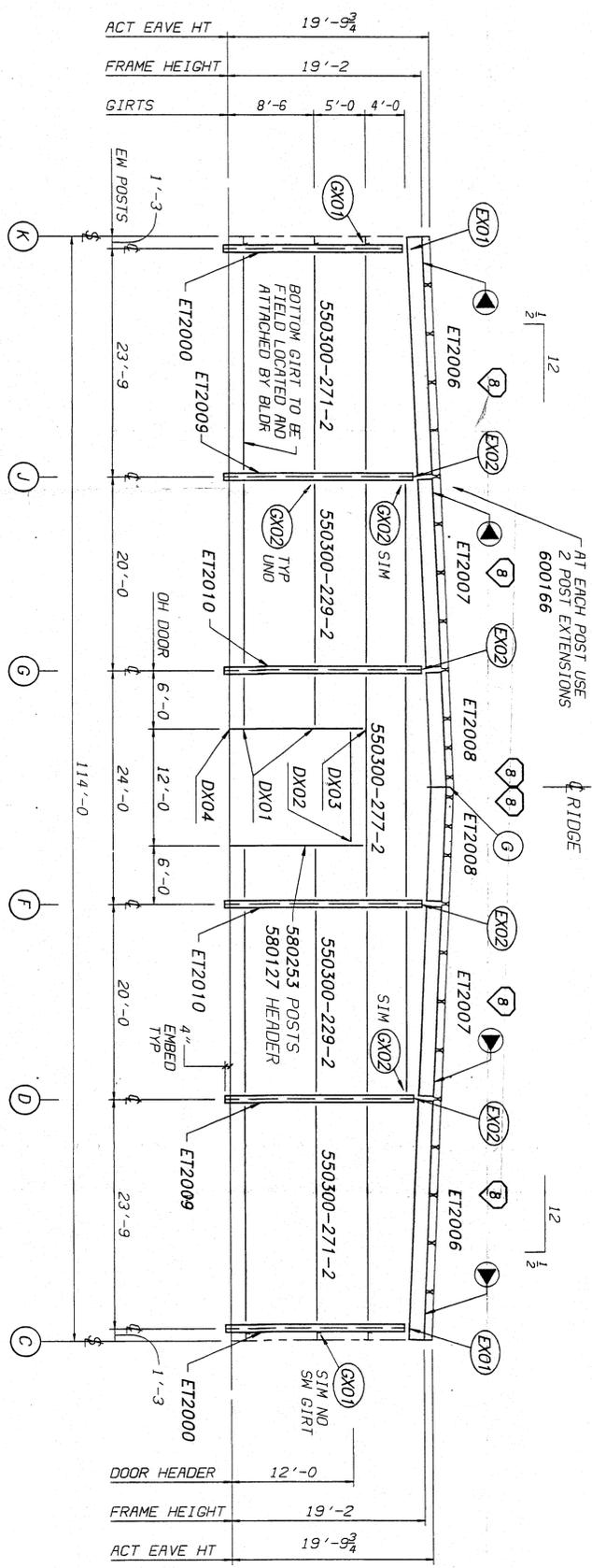
REVISION NO. 1	DATE:	REVISION NO. 2	DATE:	REVISION NO. 3	DATE:	REVISION NO. 4	DATE:	BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	ENGINEER APPROVAL:
DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	GREGORY CONSTRUCTION	DDW CORNING	114 X 145 X 20 50 X 61 X 20 MX 1/2:12 UBC 1985 40SL/80mph/10CL EXP. B	ROOF STRUCTURAL LAYOUT	ENGINEER APPROVAL: <i>AK</i> DRAWN BY: YKEL CHECKED BY: BJEKZ DATE: 12-14-92 NO. FILE NO.: 004127404 REV. 00

BUTLER MANUFACTURING COMPANY
 GENERAL OFFICES-KANSAS CITY, MISSOURI

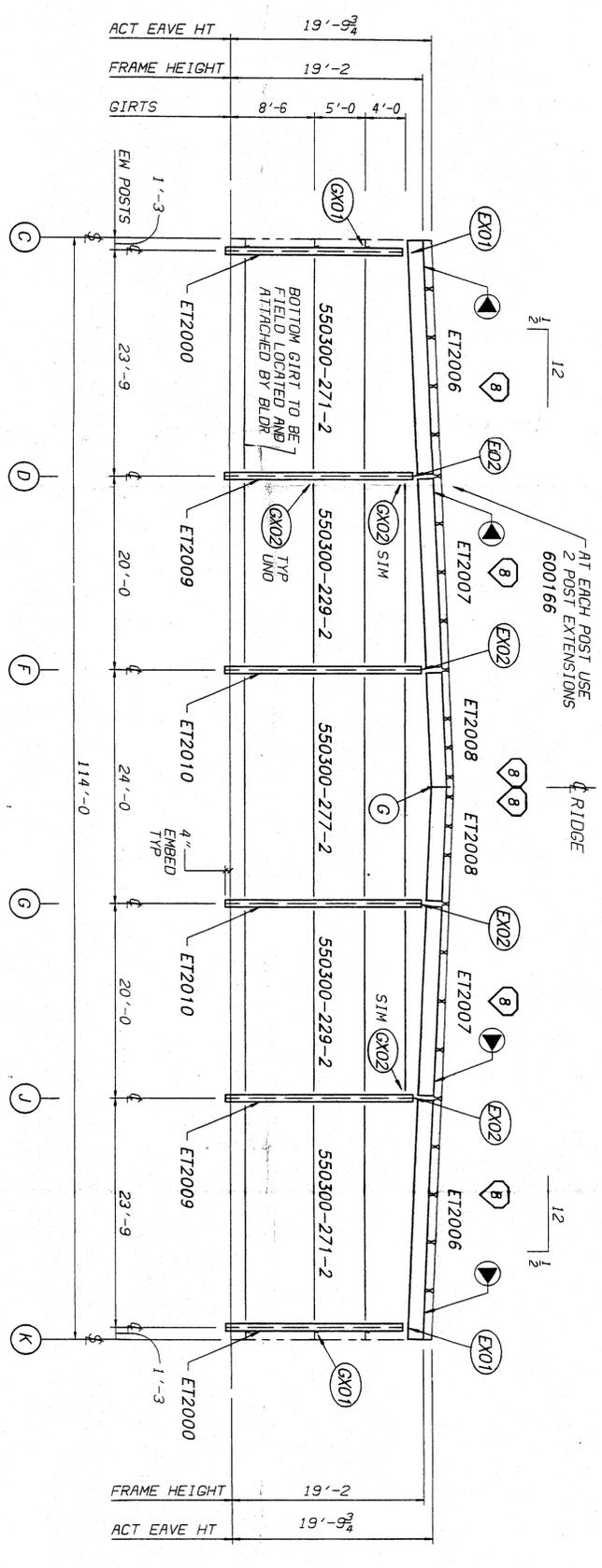


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	DRAWN BY:		DRAWN BY:		DRAWN BY:		DRAWN BY:	GREGORY CONSTRUCTION BAY CITY, MICHIGAN	DOM CORNING MIDLAND, MICHIGAN	114 X 145 X 20 LMS 50 X 61 X 20 WX 1:12 UBC-85 EXP B 40 SL 80 MPH 10 COLL	ENDWALL ELEVATIONS	ENGINEER APPROVAL: DRAWN BY: BIEKER CHECKED BY: HJQD DATE: 12-15-92 NO FILE NO: D04127405 REV: 00

REAR ENDWALL ELEVATION GRID 8



FRONT ENDWALL ELEVATION GRID 1



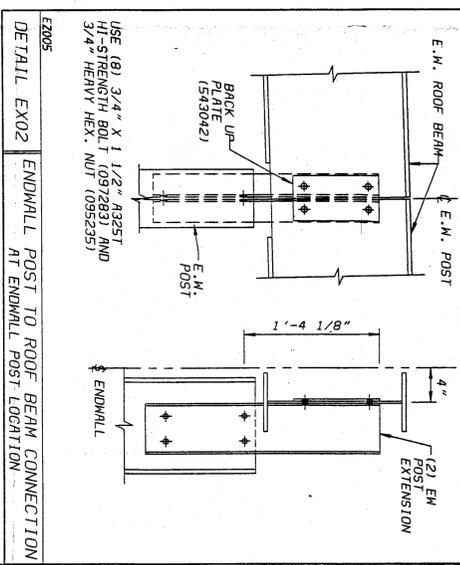
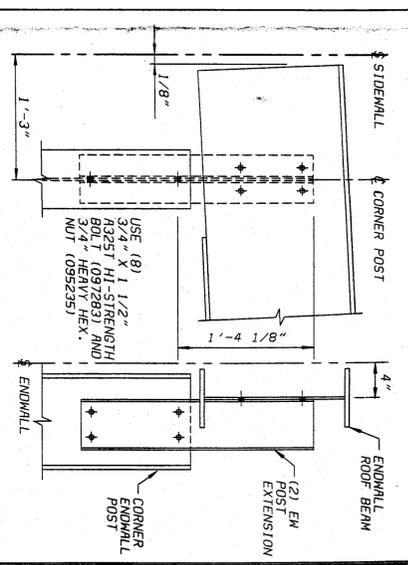
BOLT CHART

QTY.	DESCRIPTION	BOLT	NUT
8	1" X 3" A325T	097287	095238

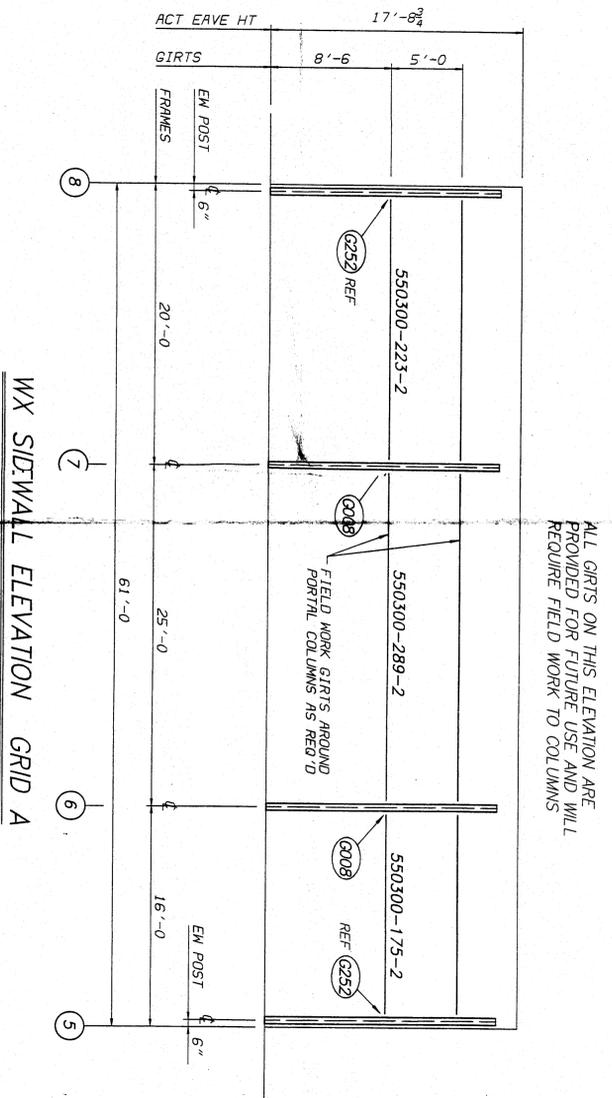
NOTE:
ALL BOLTS ARE HIGH STRENGTH (A325-T) HEX HEAD WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE "TURN-OF-THE-NUT TIGHTENING" METHOD SPECIFIED IN THE AISC MANUAL.

EW FLANGE BRACE

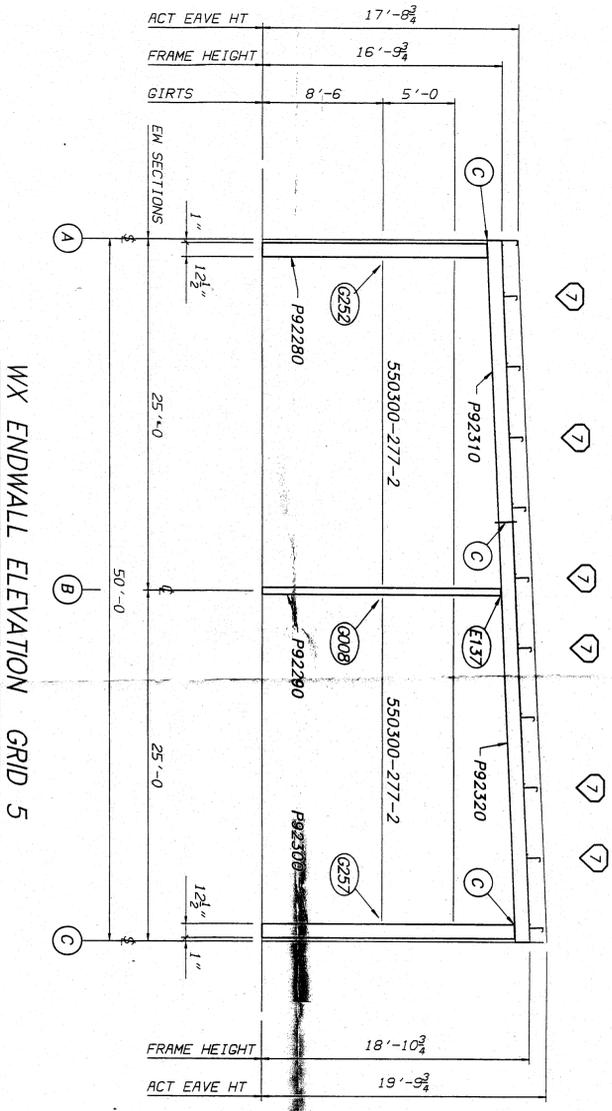
QTY.	CODE	DETAIL	LENGTH
8	700098-28-0	FB02	2'-4"



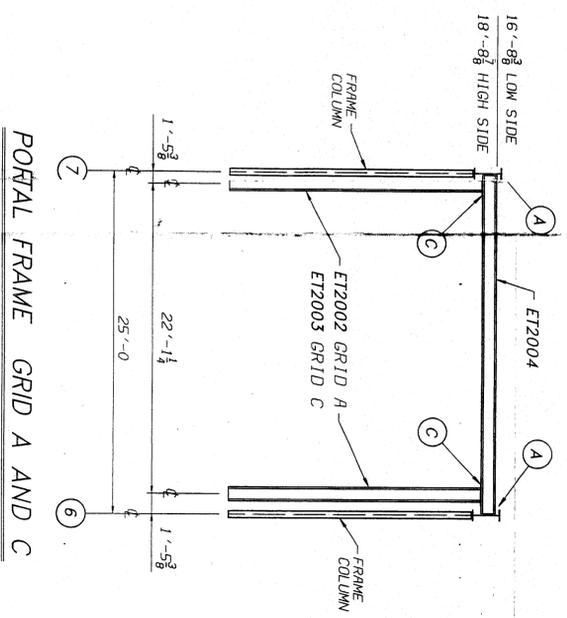
REVISION NO. 1	DATE:	REVISION NO. 2	DATE:	REVISION NO. 3	DATE:	REVISION NO. 4	DATE:	ENGINEER APPROVAL:
DRAWN BY:		DRAWN BY:		DRAWN BY:		DRAWN BY:		DATE:
CHECKED BY:		CHECKED BY:		CHECKED BY:		CHECKED BY:		NO. FILE NO.:
								DATE:
BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI								BUTLERS: GREGORY CONSTRUCTION BAY CITY, MICHIGAN
PROJECT: DOW CORNING MIDLAND, MICHIGAN								BUILDING ORDER DESCRIPTION: 114 X 145 X 20 LINDS 1:50 X 61 X 20 WX 1:12 UBC-85 EXP B 40 SL 80 MPH 10 COLL
DRAWING TITLE: WX WALL ELEVATIONS								ENGINEER APPROVAL: DATE: 12-15-92 NO. FILE NO.: D04127405B
DRAWING NUMBER: D92-041274-05B								REV. 00



ALL GIRTS ON THIS ELEVATION ARE PROVIDED FOR FUTURE USE AND WILL REQUIRE FIELD WORK TO COLUMNS



WX ENDWALL ELEVATION GRID 5
REVERSE FOR ENDWALL AT GRID 8



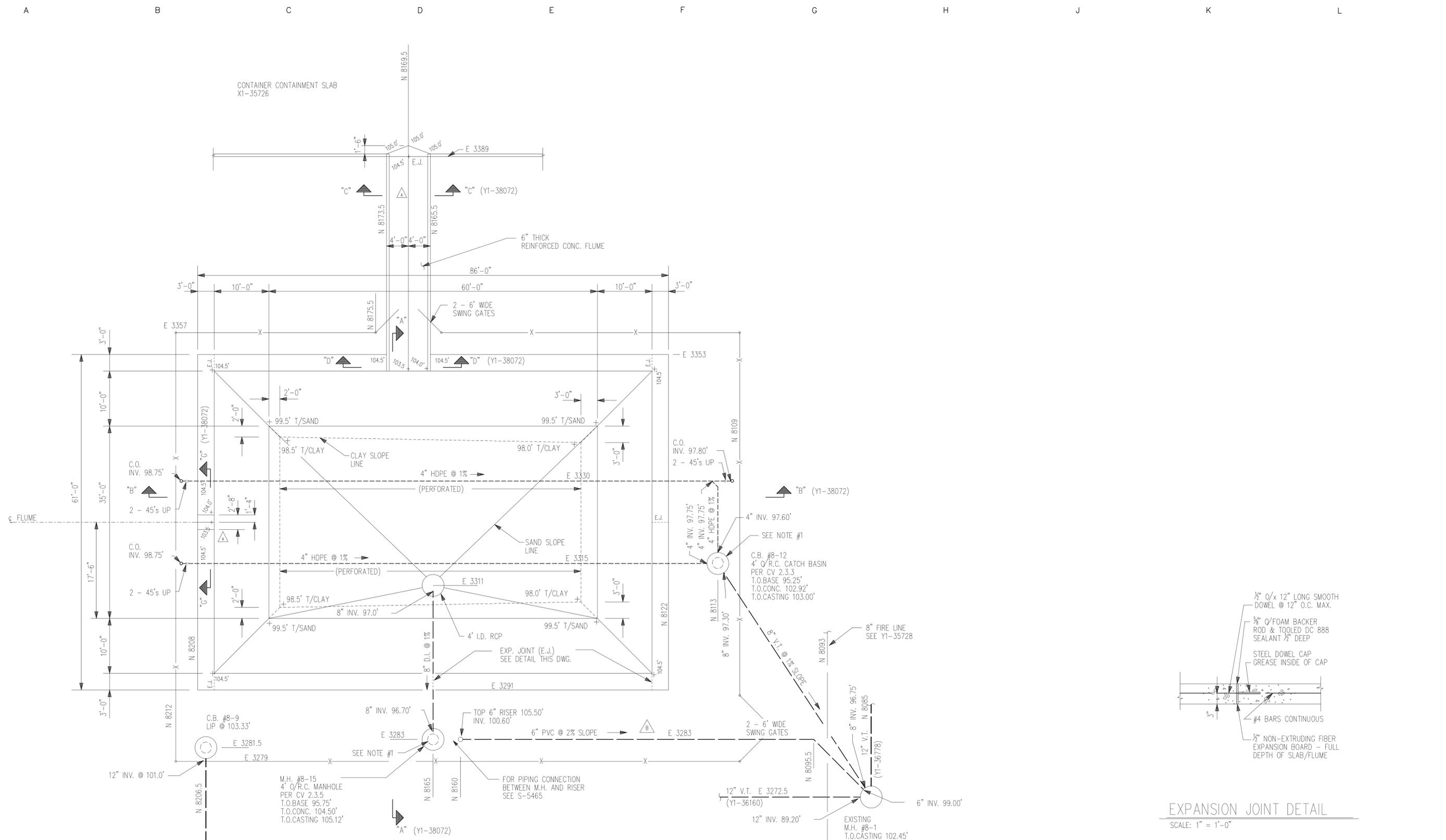
PORTAL FRAME GRID A AND C

QTY.	DESCRIPTION	BOLT	NUT
4	3/4" X 2 1/2" A325T	097284	095235
8	3/4" X 2 1/2" A325T	097284	095235

NOTE:
ALL BOLTS ARE HIGH STRENGTH (A325-T) HEX HEAD WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE "DOWN-ON-THE-NUT TIGHTENING" METHOD SPECIFIED IN THE AISC MANUAL.

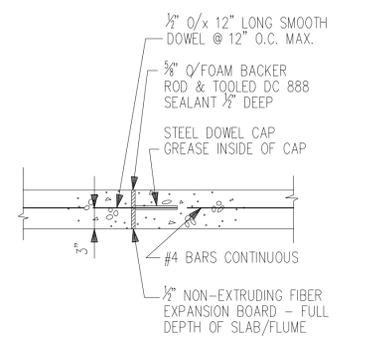
CODE	DETAIL	LENGTH
005680	C001	1'-4 1/2"





PLAN REFERENCE NOTES:
 #1 PROVIDE KOR-N-SEAL BOOTS FOR ALL PIPE PENETRATIONS THROUGH NEW MANHOLES.

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



EXPANSION JOINT DETAIL
 SCALE: 1" = 1'-0"

LAST GENERAL UPDATE: 04JAN2010

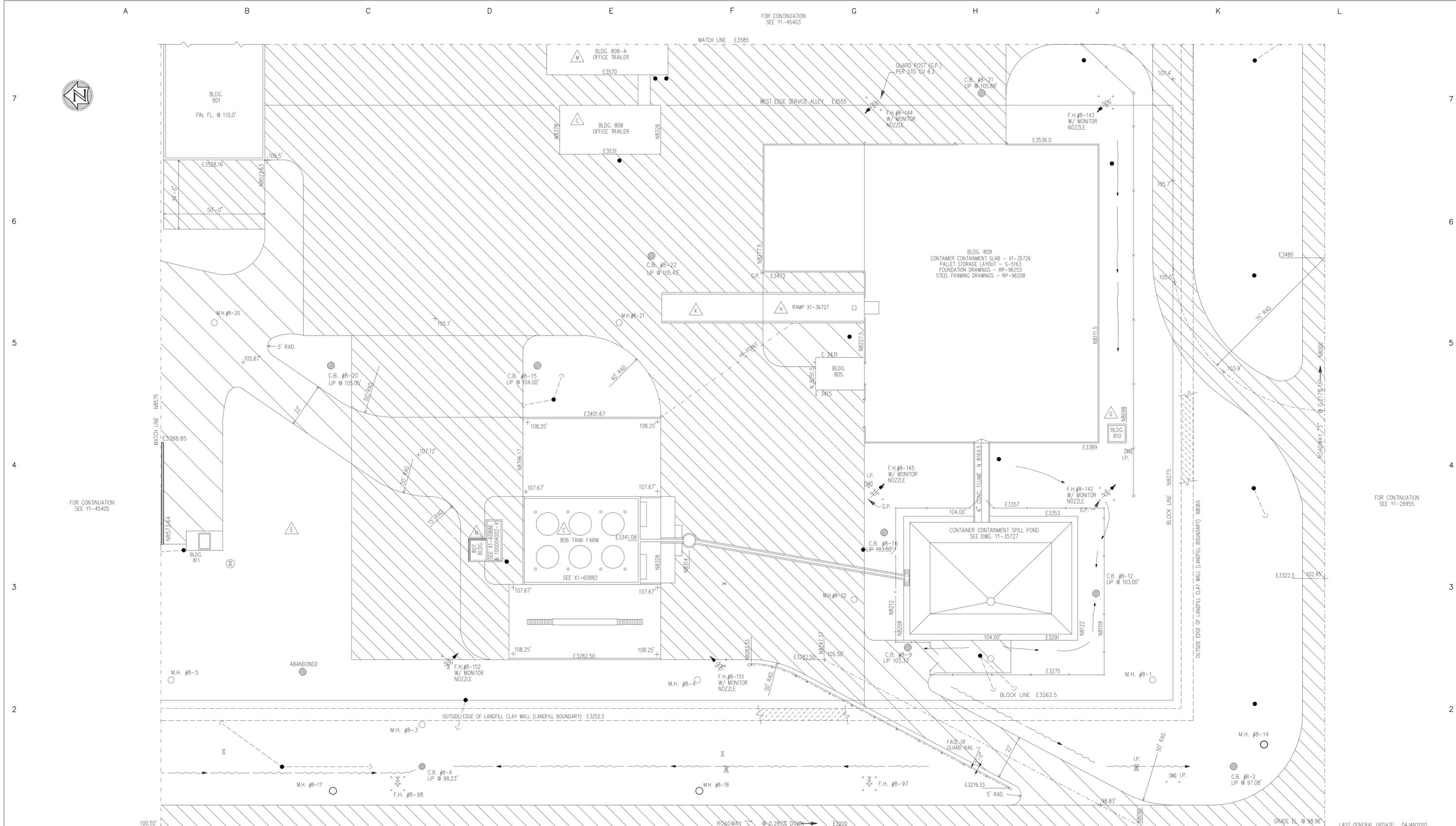
MARK	LOC.	REVISIONS	BY	DATE	APP.	DESIGNED	DATE
A	8-4	REVISED FLUMES	JKL	03-29-88	JLV	J.L.VANDERMALE	08-18-86
B	E-2	ADDED 6" PVC LINE FROM M.H. #8-15	RJF	07-21-88	JLV		
C							
D							
E							
F							
G							
H							
J							

MARK	LOC.	REVISIONS	BY	DATE	APP.	DESIGNED	DATE
A	8-4	REVISED FLUMES	JKL	03-29-88	JLV	J.L.VANDERMALE	08-18-86
B	E-2	ADDED 6" PVC LINE FROM M.H. #8-15	RJF	07-21-88	JLV		
C							
D							
E							
F							
G							
H							
J							

SCALE	INCH	FOOT	DRAWING NUMBER	REVISION
	AS NOTED		Y1-35727	B

CADD

DOW CORNING CORPORATION
 MIDLAND PLANT 800 BLOCK
 CONTAINER CONTAINMENT SPILL POND
 PLAN



FOR CONTINUATION
SEE Y1-45403

FOR CONTINUATION
SEE Y1-45405

FOR CONTINUATION
SEE Y1-29955

LAST GENERAL UPDATE: 04JAN2010

FOR CONTINUATION
SEE Y1-30887

REV	DATE	BY	APP	DESIGNED	DATE	REFERENCES		SCALE	INCH	FOOT	DRAWING NUMBER	REVISION
						NUMBER	TITLE					
V												
W												
X												
Y												
Z												
AA												
AB												
AC												
AD												
AE												

REV	DATE	BY	APP	DESCRIPTION
K	F-5			ADDED LOADING SLAB
L	GEN			REVISED POWER POLES PER WADE-TRIM SURVEY
M	E-7			ADDED NEW 808-A TRAILER AND POWER POLES
N	D-3			ADDED 807 BLDG. ADDITION
P				
Q	B-3			REMOVED 803 TANK FARM
R	GEN			GENERAL UPDATE
S	J-4			ADDED BLDG. 810
T	F-5			ADDED RAMP NORTH OF BLDG. 809
U	C-2			1995 PAVING UPDATES

REV	DATE	BY	APP	DESCRIPTION
JAM	25JUN97	NSD		
WRL	01FEB99	SFH		
CWR	27JUL99	SFH		
CAF	12JAN07	SFH		

REV	DATE	BY	APP	DESCRIPTION
A	GEN			ADDED CONTAINER CONTAINMENT SLAB & SPILL POND
B	GEN			GENERAL UPDATE
C	GEN			UPDATE-ADDED 806 TANK FARM, BLDGS. 807 & 808
D	GEN			GENERAL UPDATE
E	B-3			REMOVED 803 TANK FARM
F	GEN			GENERAL UPDATE
G	J-4			ADDED BLDG. 810
H	F-5			ADDED RAMP NORTH OF BLDG. 809
J	C-2			1995 PAVING UPDATES

DATE	BY	APP	DESCRIPTION
01-05-87	JML		
09-01-88	RJF		
03-20-89	RJF		
11-28-89	RJF		
26MAR90	PC		
09-19-90	LSA		
21JAN93	SFH		
12JUL94	NSD		
04JAN96	SFH		

DATE	BY	APP	DESCRIPTION
03-11-86	R.J. FORTIER		
03-11-86	G.E. BARTOS		
03-11-86	R.G. COOK		

DATE	BY	APP	DESCRIPTION
03-11-86	R.G. COOK		

DATE	BY	APP	DESCRIPTION
03-11-86	R.G. COOK		

DATE	BY	APP	DESCRIPTION
03-11-86	R.G. COOK		

DATE	BY	APP	DESCRIPTION
03-11-86	R.G. COOK		

DOW CORNING CORPORATION
MIDLAND PLANT 800 BLOCK
 ROADS & GROUNDS
 SOUTHWEST SECTION

SCALE: 1"=20'
 DRAWING NUMBER: Y1-45401
 REVISION: N