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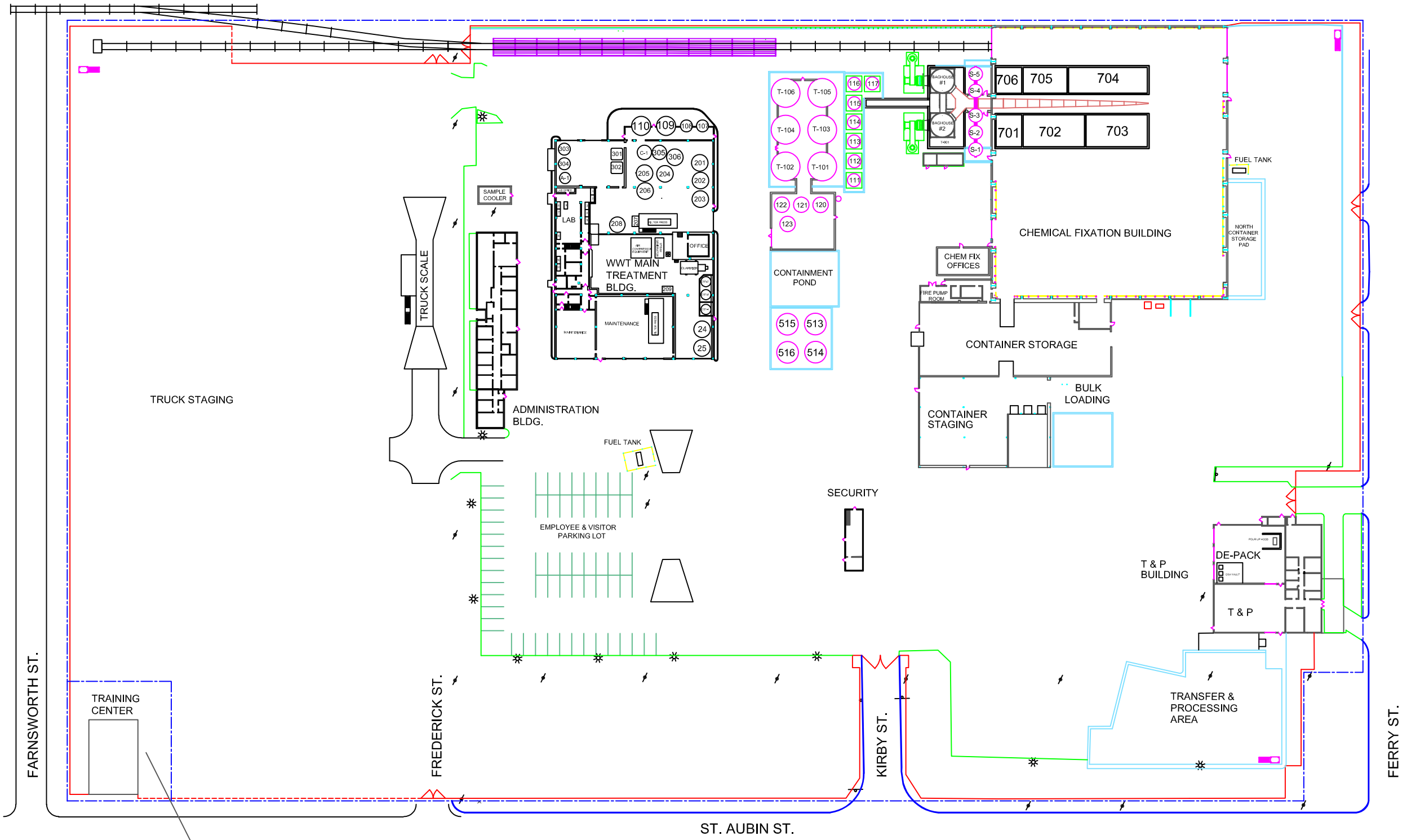
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DRAWN:	AEO	DATE: 01-JUNE-2020
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EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

USGS SITE MAP - 1 MILE RADIUS

A-01



PROPERTY LINE

FENCE LINE

LEGAL DESCRIPTION:

W ST AUBIN 2 THRU 22 SECOR & DAVIS SUB L9 P41 PLATS, WCR 9/92 ALSO S 21 FT 1; 2 THRU 42 PHILLIS BEAUBIENS SUB L9 P16 PLATS, WCR 9/87 ALSO S 12.80 FT OF E 100 FT OF L O 50 LYG N & ADJ LOT 1 OF DAVIS SUB; SUB OF PCS 14 & 587 BASILIQUE ST AUBIN L31 P91 DEEDS, WCR 9/9 ALSO 1, N 1/2 2, W 1/2 4, 6 DAVIS SUB L8 P91 PLATS WCR 9/85 ALSO S 156.09 FT OF E 371.36 FT OF O L 30 LYG S OF & ADJ FERRY AND N 219 FT OF O L 29 LYG N OF & ADJ KIRBY; S 204.48 FT OF O L 29 LYG S OF & ADJ KIRBY ALSO TH PT OF O L 28 BG N 105.70 FT LYG N & ADJ FREDERICK ALSO ALL VAC ALLEYS ADJ & VAC KIRBY AND FREDERICK ST PLAT OF SUB OF PC 90 L34 P2 DEEDS, WCR 9/4 9/-- APPRX 945.86 IRREG OR 661,940 SQ FT

LEGAL DESCRIPTION:

W ST AUBIN 3 DAVIS SUB L8 P91 PLATS, W C R 9/85 50 X 100



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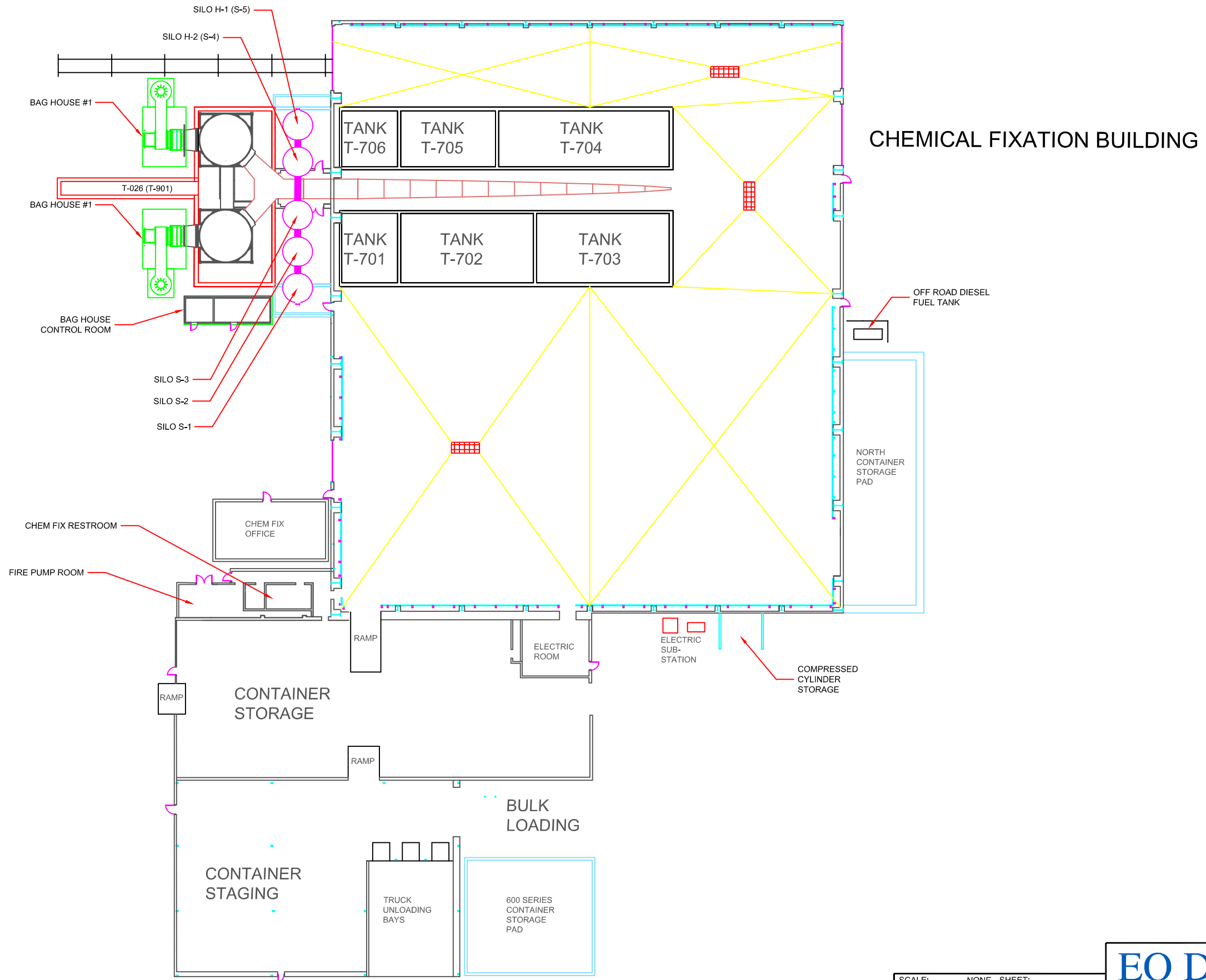
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SURVEY PROPERTY DESCRIPTION

A-02



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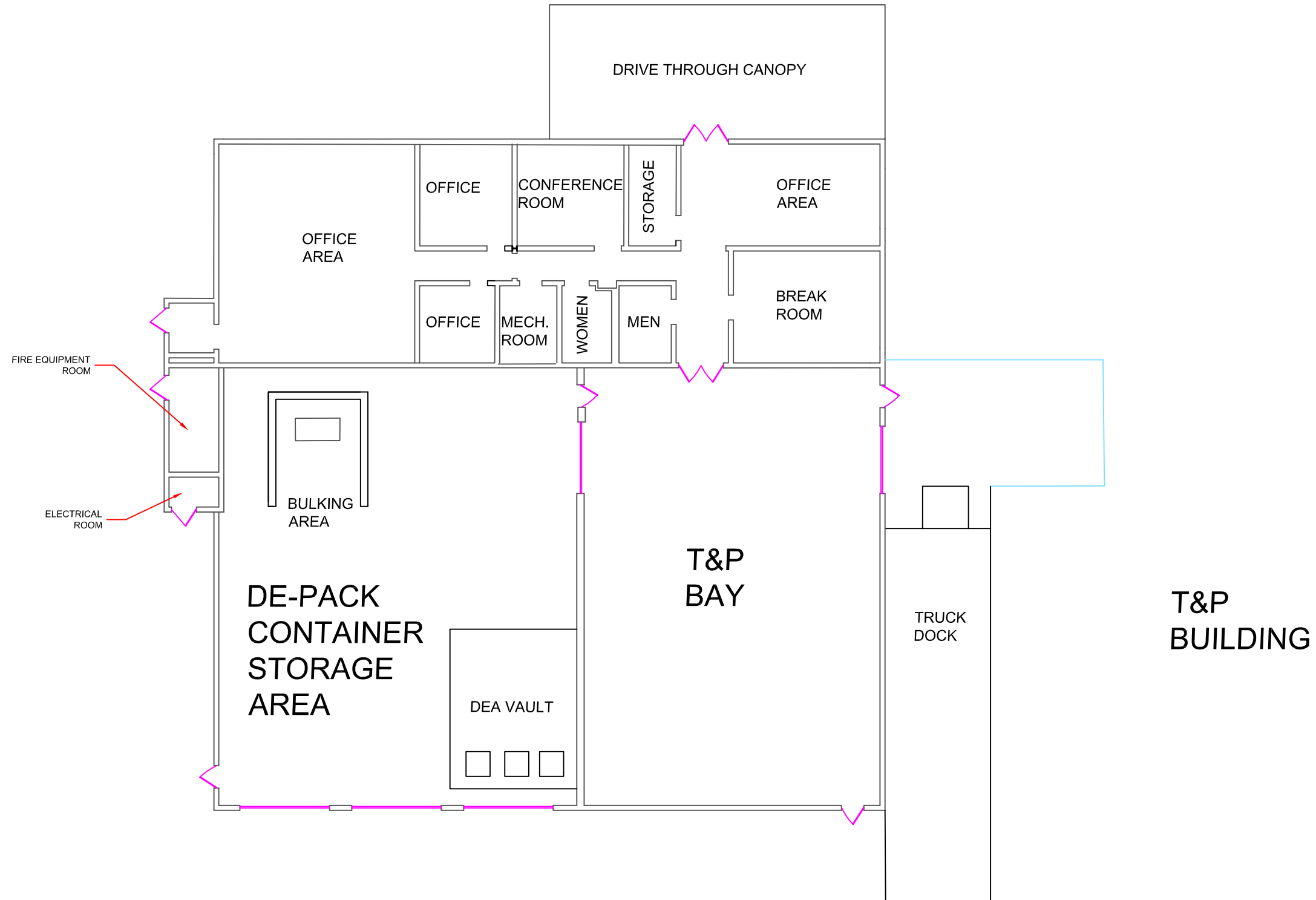
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CHEMICAL FIXATION BUILDING

FLOOR PLAN

A-04



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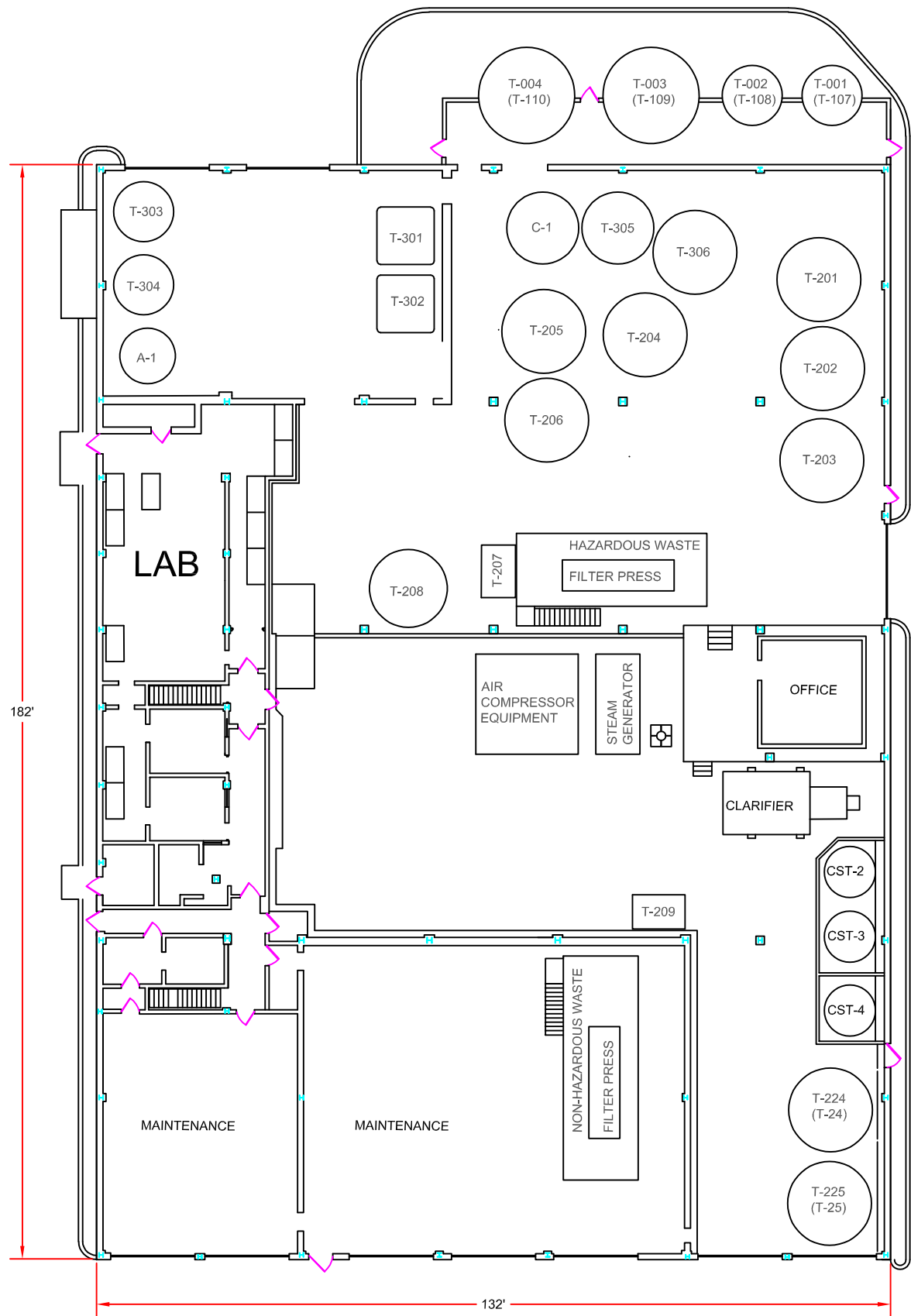
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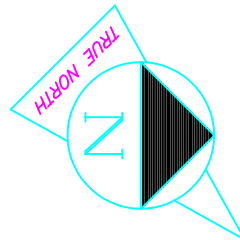
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T&P BUILDING
FLOOR PLAN

A-05



WWT MAIN TREATMENT BUILDING



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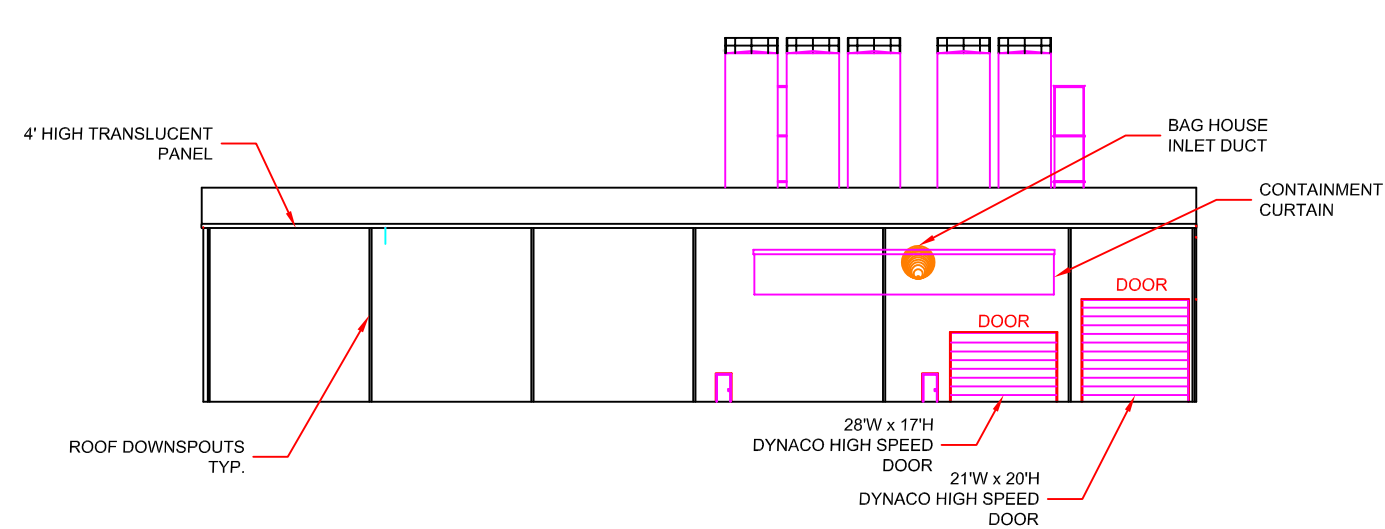
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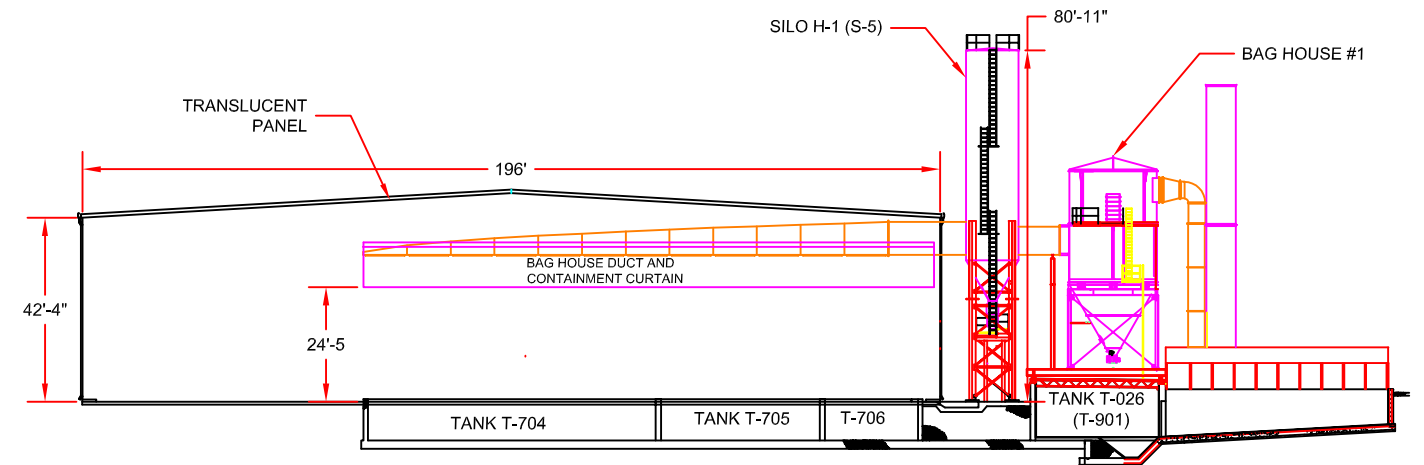
WWT MAIN TREATMENT BUILDING

FLOOR PLAN

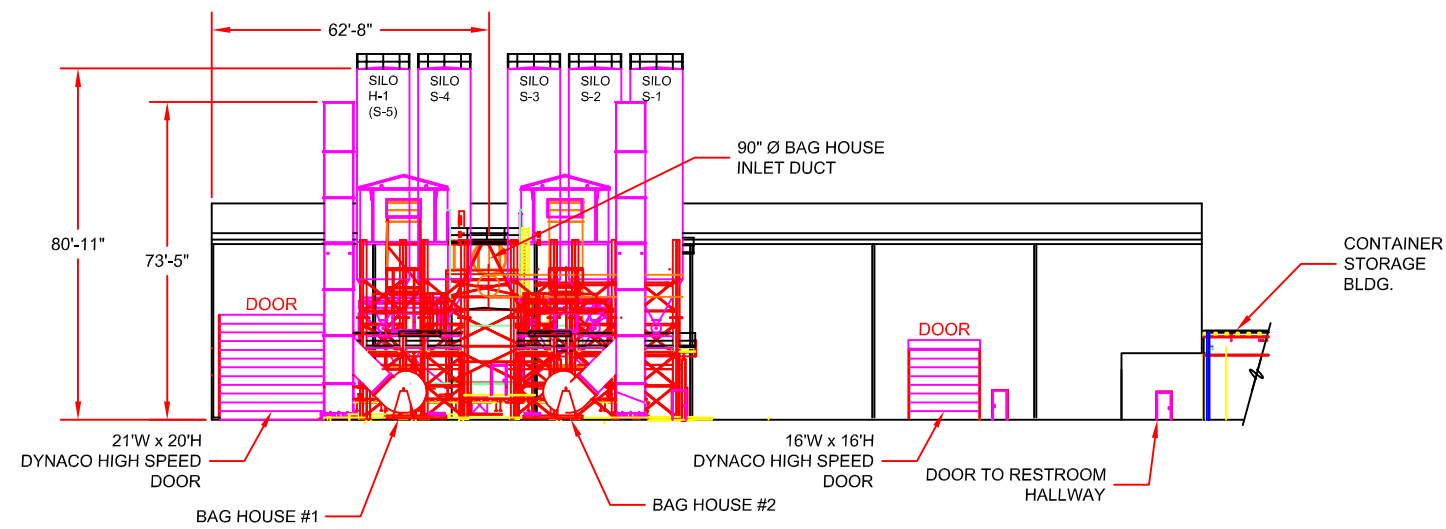
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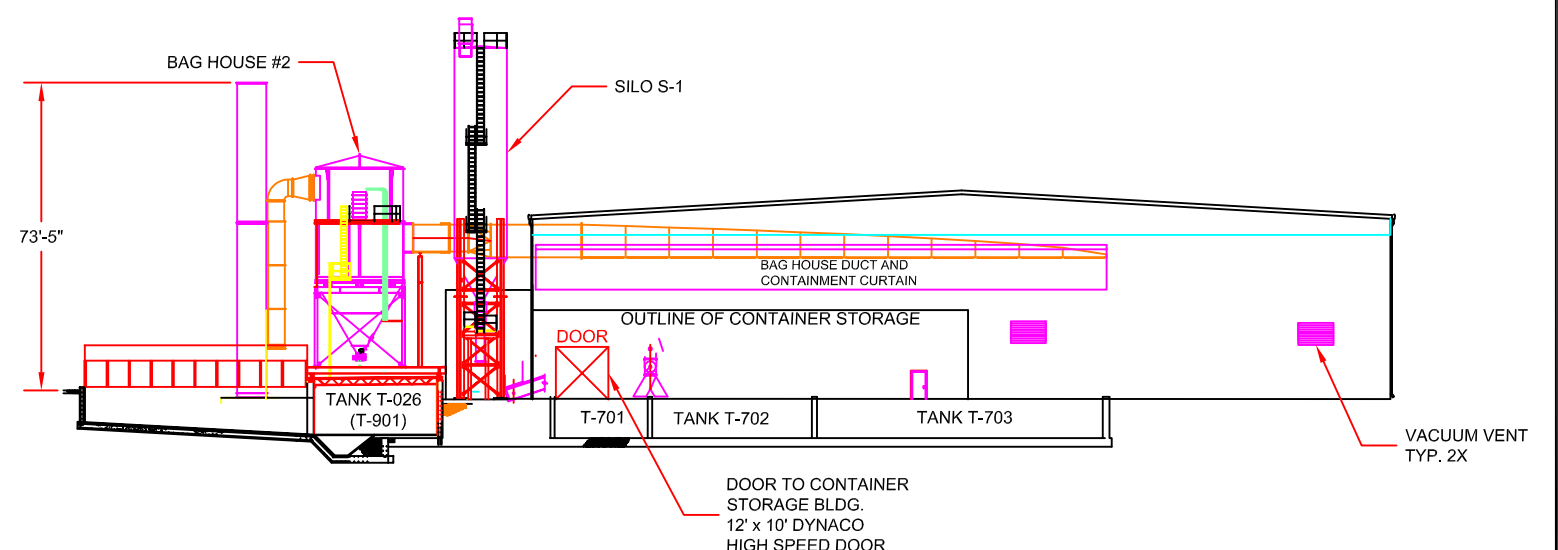
ELEVATION LOOKING SOUTH



ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH



ELEVATION LOOKING WEST

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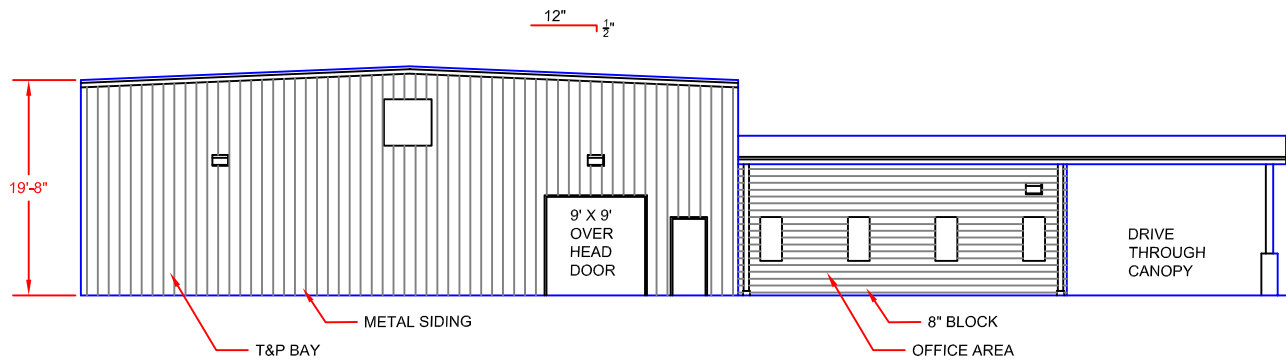
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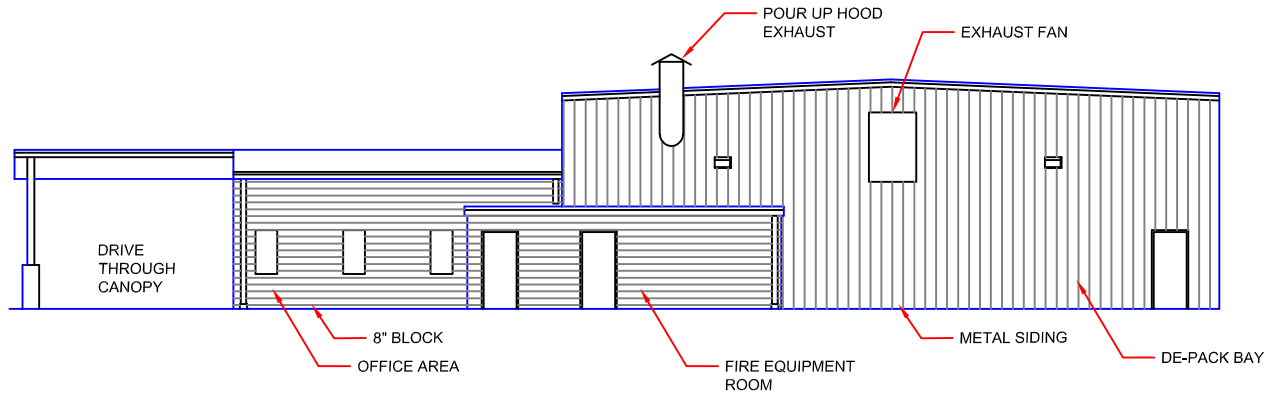
CHEMICAL FIXATION BUILDING

ARCHITECTURAL ELEVATIONS

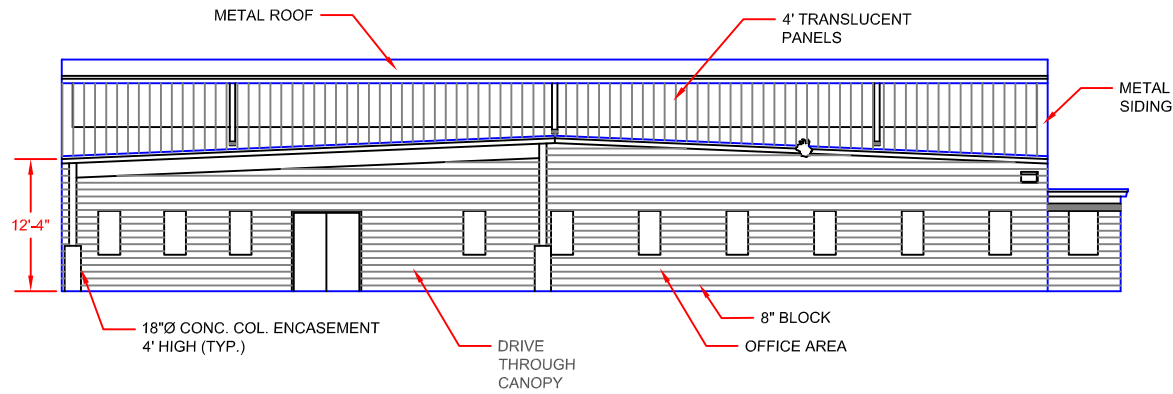
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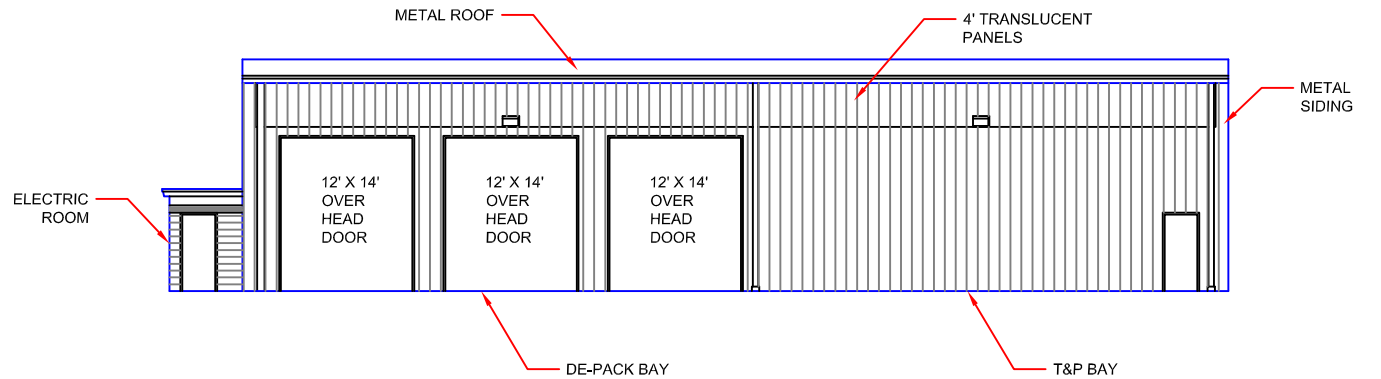
ELEVATION LOOKING EAST



ELEVATION LOOKING WEST



ELEVATION LOOKING SOUTH



ELEVATION LOOKING NORTH

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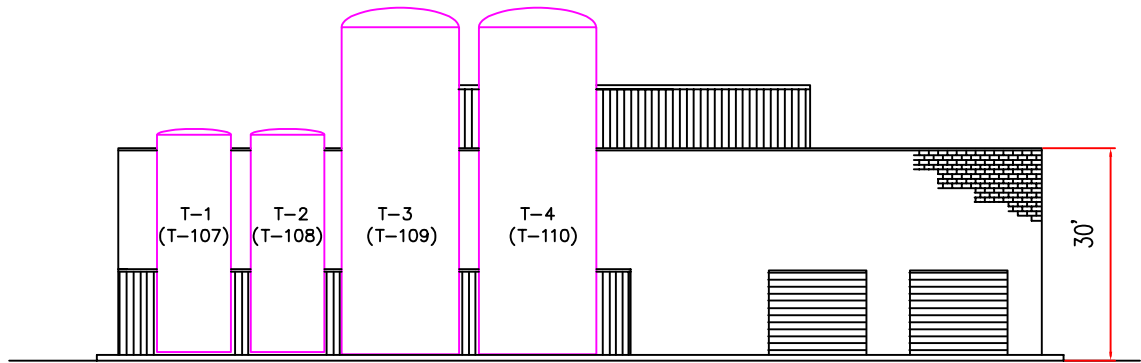
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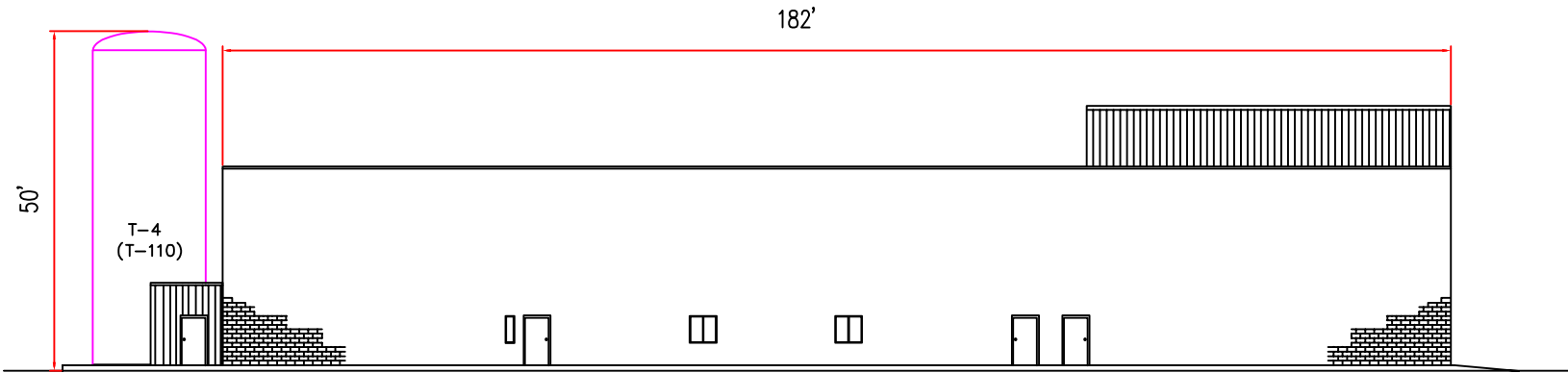
T&P BUILDING

ARCHITECTURAL ELEVATIONS

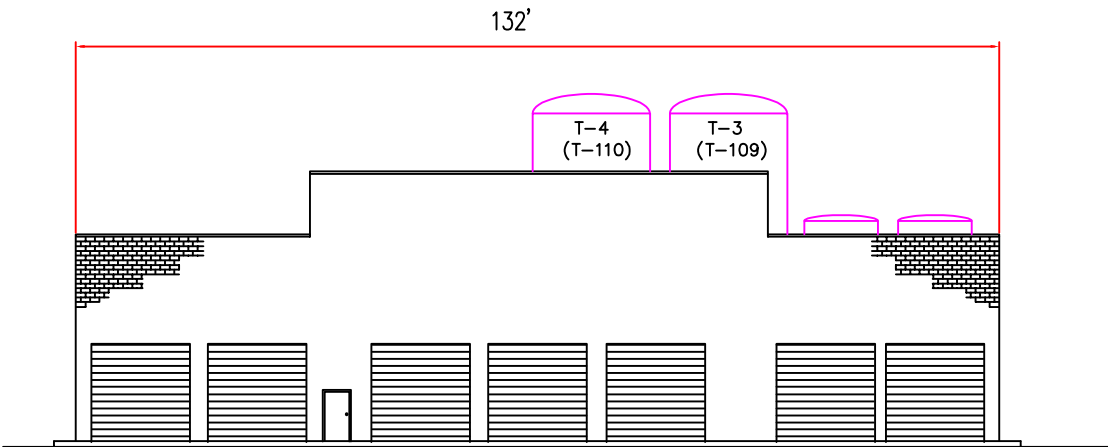
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ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH



ELEVATION LOOKING WEST



ELEVATION LOOKING SOUTH

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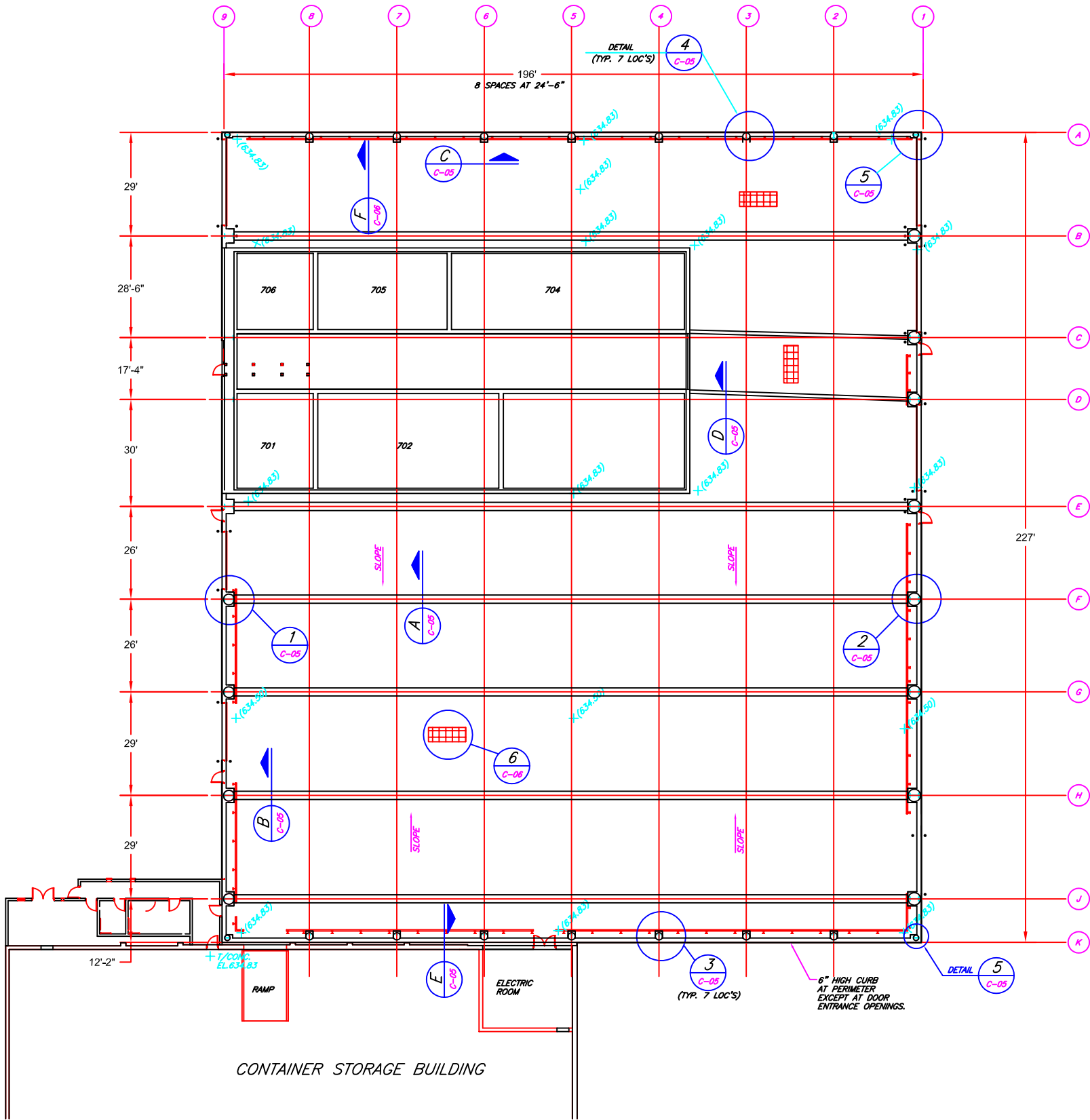
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WWT MAIN TREATMENT BUILDING

ARCHITECTURAL ELEVATIONS

A-09



STRUCTURAL NOTES

GENERAL:

- ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURES AND PLANT UTILITIES HAVE BEEN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF DESIGN AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE TO VERIFY ALL DIMENSIONS AND ELEVATIONS BEFORE PROCEEDING WITH ANY WORK. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WHICH WILL EFFECT THE PROGRESS OF THE WORK.
- NOTIFY FIBER OPTIC UTILITY OWNERS BEFORE PERFORMING ANY EXCAVATION OR FOUNDATION WORK IN THE VICINITY OF THESE BURIED LINES. (REFER TO CIVIL DRAWINGS FOR LOCATION.)
- SHALLOW FOUNDATIONS SHALL BE PLACED ON UNDISTURBED NATURAL SOIL WITH AN ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF. IF UNACCEPTABLE SOIL CONDITIONS ARE ENCOUNTERED, THE ENGINEER SHALL BE CONSULTED FOR DIRECTION WITH REGARD TO FOUNDATION CONSTRUCTION.
- DRILLED PIER FOUNDATIONS SHALL EXTEND DOWN TO THE NATIVE SILTY CLAY WITH AN ALLOWABLE SOIL BEARING PRESSURE OF 10,000 PSF.
- REFER TO NTH CONSULTANT'S "GEOTECHNICAL INVESTIGATION - PROPOSED ADDITION TO CITY ENVIRONMENTAL FREDERICK STREET FACILITY, DETROIT MICHIGAN" PROJECT NO. 34-4634-00 REPORT, DATED DECEMBER 6, 1994, FOR FOUNDATION RECOMMENDATIONS, AS WELL AS THE SITE SOIL CONDITIONS.
- THE FLOOR SLAB SUB-BASE SHALL BE PLACED ON NATURAL SUBGRADE MATERIAL AFTER THE TOPSOIL HAS BEEN STRIPPED AND THE SUBGRADE PROFILED. IF UNDERCUTTING IS REQUIRED TO REMOVE UNSUITABLE SUBGRADE MATERIAL OR IF THE NATURAL SUBGRADE IS BELOW THE DESIGN LEVEL, COMPACTED GRANULAR FILL SHALL BE USED TO ACHIEVE THE DESIRED SUBGRADE ELEVATION. FILL MATERIAL SHALL BE AS SHOWN ON THE DRAWINGS, AND SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM STANDARD D-1557 (MODIFIED PROCTOR).
- GRADE BEAM EXCAVATIONS MAY BE TRENCHED IF THE EXCAVATION SIDES WILL STAND WITHOUT CAVING DURING CONCRETE PLACEMENT. OTHERWISE, THE GRADE BEAMS SHALL BE FORMED WITH VERTICAL SIDES.
- TESTING OF FOUNDATION SUBGRADE, FOUNDATION AND FLOOR SLAB CONCRETE, GRANULAR BACKFILL, AND OTHER TESTING REQUIRED WILL BE BY THE CONTRACTOR AND COORDINATED WITH THE ENGINEER. THE ENGINEER SHALL BE ADVISED OF AND APPROVE OF THE TEST RESULTS PRIOR TO THE PERFORMANCE OF ANY TEST-DEPENDENT WORK BY THE CONTRACTOR.

STRUCTURAL STEEL:

- THE TYPE OF CONSTRUCTION AND ASSOCIATED DESIGN ASSUMPTIONS SHALL BE IN ACCORDANCE WITH AMERICAN INSTITUTE OF STEEL CONSTRUCTION TYPE 2 STRUCTURAL STEEL CONSTRUCTION UNLESS DETAILED OTHERWISE.
- ALL STRUCTURAL STEEL SHALL CONFORM TO:

STEEL SHAPES, BARS AND PLATES ASTM A36
STEEL TUBING AND PIPE ASTM A501,A500, GRADE B OR A53 GRADE B
- WELDING ELECTRODES: AWS E70XX.
- HIGH STRENGTH BOLTS: ASTM A325, WITH FLAT WASHERS UNDER TURNED ELEMENTS.
- ANCHOR BOLTS: ASTM A307.

CAST-IN-PLACE CONCRETE:

- ALL REINFORCING IN FOOTINGS AND WALLS SHALL BE CONTINUOUS AROUND CORNERS AND INTERSECTIONS.
- PROVIDE 3/4" BEVELED EDGES ON ALL PERMANENTLY EXPOSED SURFACES OF CONCRETE SURFACES.
- MINIMUM COMPRESSIVE STRENGTHS (F'c):
3,500 PSI FOR FOOTINGS AND FOUNDATIONS
4,000 PSI FOR SLABS ON GRADE.
- MINIMUM CEMENT CONTENT: 5-1/2 SACKS PER CUBIC YARD FOR 3,500 PSI, 6.0 SACKS PER CUBIC YARD FOR 4,000 PSI.
- AGGREGATES: COURSE - M.D.O.T.6A; FINE M.D.O.T.2NS.
- STEEL REINFORCEMENT: ASTM 615, GRADE 60. Fy = 60,000 PSI.
- ALL CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI "SPECIFICATIONS FOR STRUCTURAL CONCRETE" 301-84.
- WELDED WIRE FABRIC (FLAT SHEET) SHALL CONFORM TO ASTM A-185.

DESIGN DATA:

SUPERIMPOSED DESIGN LOADS

MECHANICAL ROOM/TOILET ROOMS	
SNOW L.L.	30 PSF
ROOF D.L.	15 PSF
MISC. MECH & ELEC. D.L.	5 PSF

LIQUID TANK COVER	
SNOW L.L.	30 PSF
ROOF D.L.	15 PSF
MISC. MECH & ELEC. D.L.	10 PSF

SPECIFIC CONCENTRATED POINT LOADS DUE TO HEAVY MECHANICAL EQUIPMENT ARE SUPPORTED BY STEEL FRAMING AS DETAILED ON DRAWINGS. MEZZANINES & CATWALKS 100 PSF

DRILLED PIER FOUNDATION:

- CONTRACTOR IS RESPONSIBLE FOR PROVIDING LINE AND GRADE FOR CONSTRUCTION.
- TOWER FOUNDATION SHALL BE A DRILLED TYPE PIER.
- PIER FOUNDATION SHALL BE FOUNDED ON SOLID UNDISTURBED SOIL. BOTTOM SHALL BE EXCAVATED TO A LEVEL PLANE AND CLEARED OF LOOSE MATERIAL. NO WATER SHALL BE STANDING IN BOTTOM OF THE PIER EXCAVATION AT THE TIME OF PLACING THE CONCRETE.
- ALL REINFORCING STEEL SHALL BE TIES AND FORMED INTO A CAGE PRIOR TO SETTING INTO POSITION IN THE EXCAVATED PIER.
- ALL CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
- MAXIMUM FREE DROP OF CONCRETE SHALL BE 6 FEET PROVIDED IT IS DIRECTED THROUGH A HOPPER OR OTHER SIMILAR DEVICE TO PREVENT THE SEGREGATION OF THE MATERIAL. CONCRETE SHALL NOT HIT SIDES OF SOIL OR REINFORCING.

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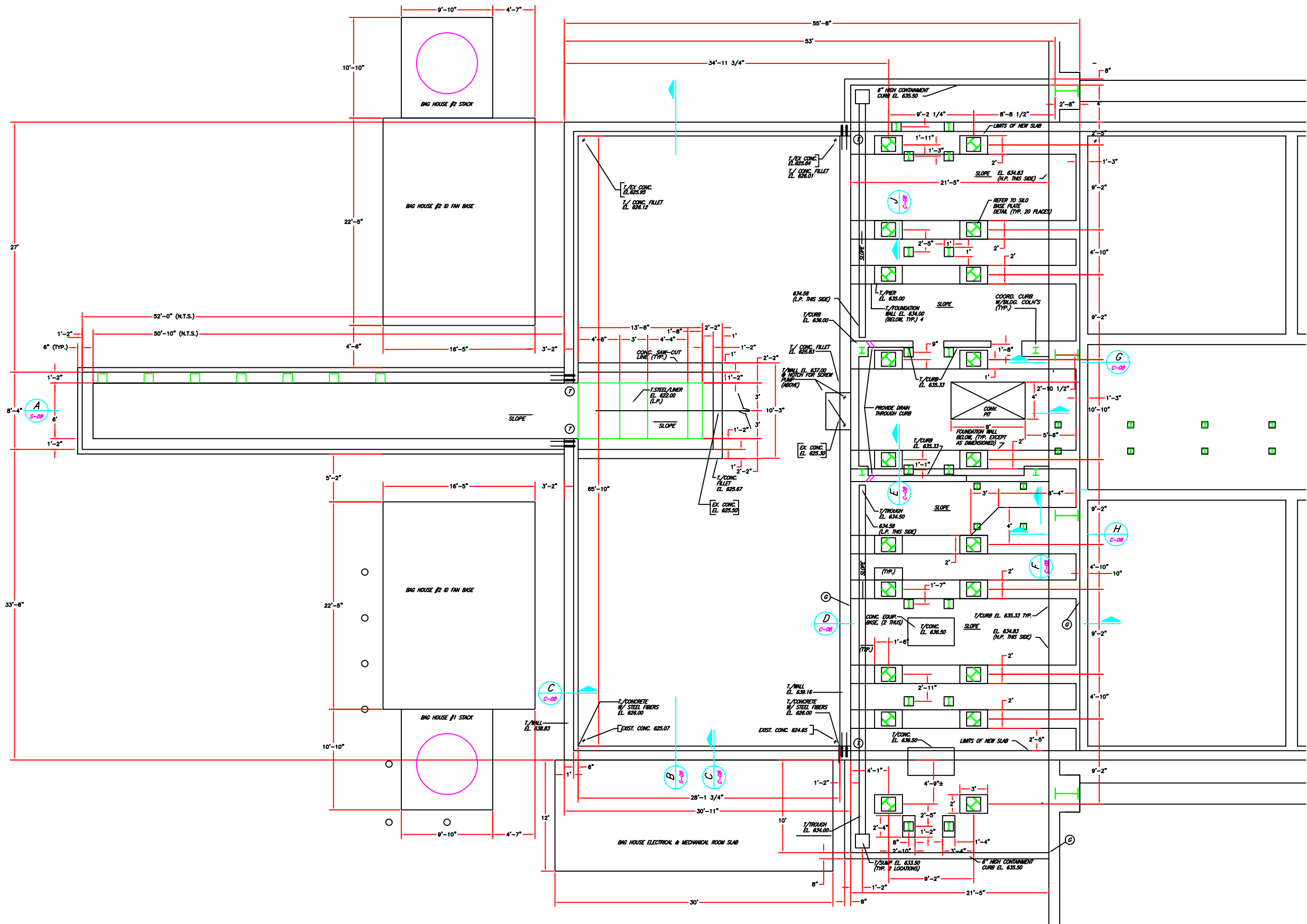
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CHEMICAL FIXATION BUILDING

FOUNDATION PLAN

C-01



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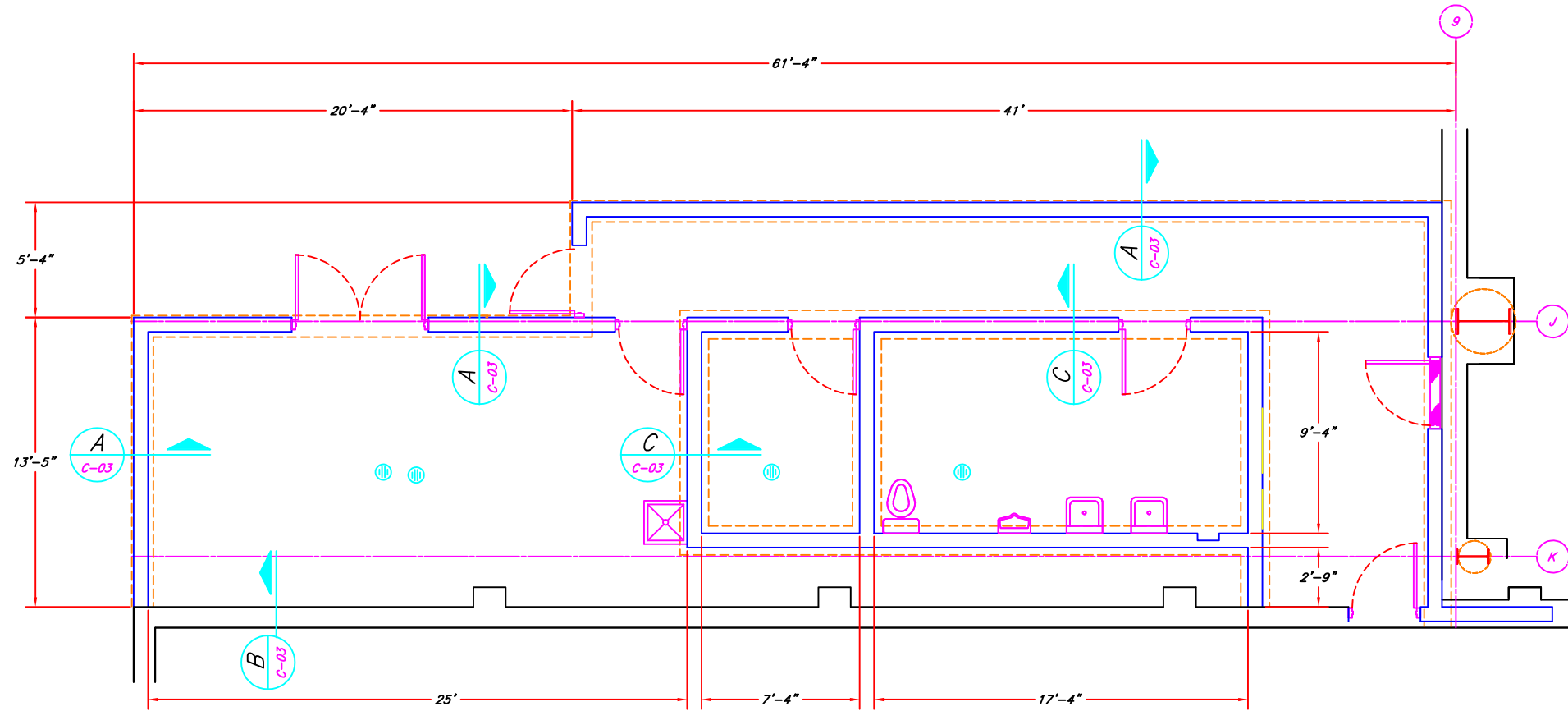
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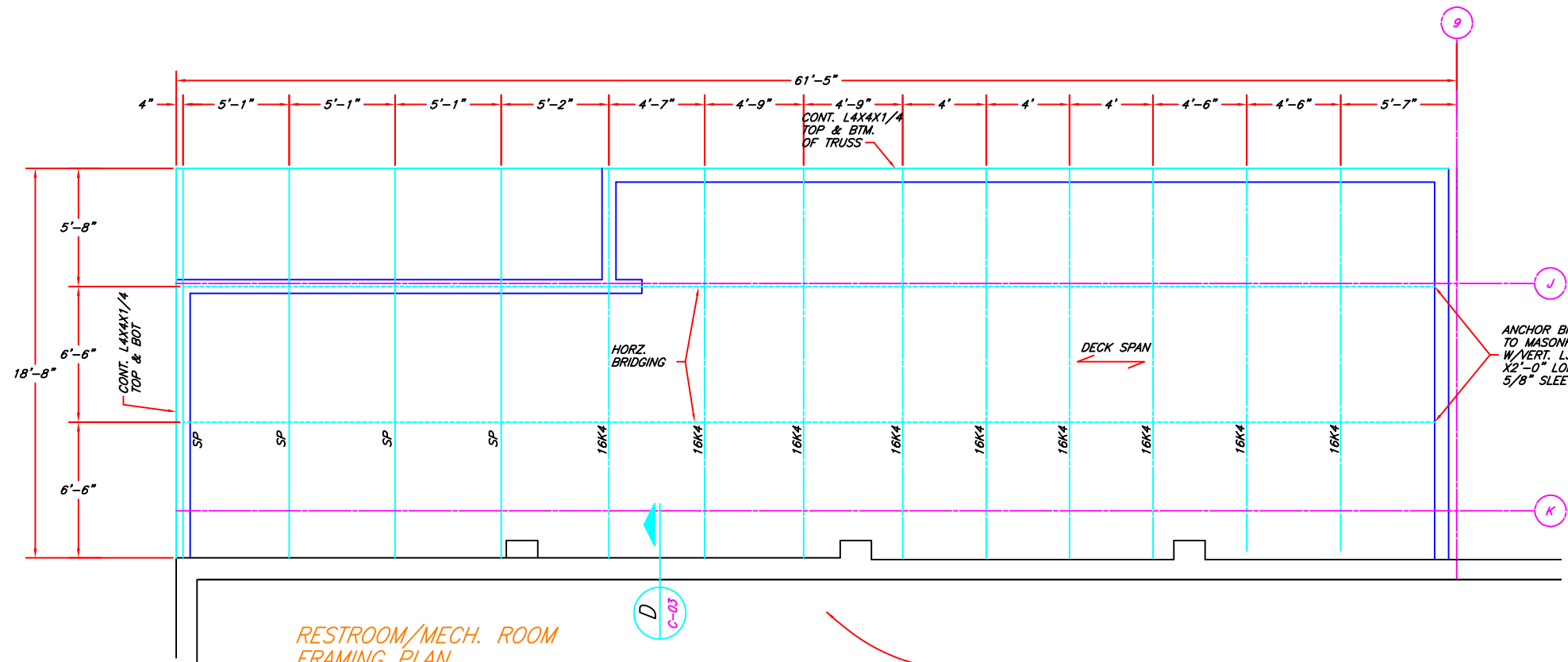
CHEMICAL FIXATION BUILDING

SILO & APC AREA FOUNDATION PLAN

C-02



RESTROOM/MECH. ROOM
FOUNDATION PLAN

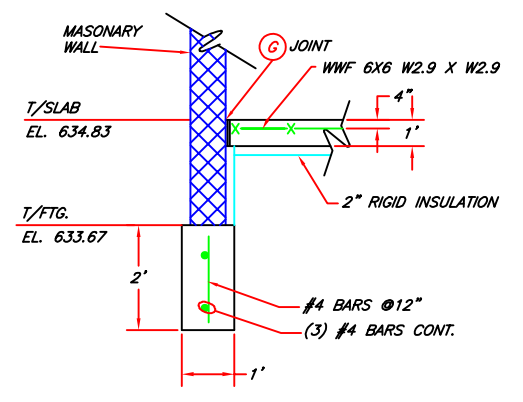


RESTROOM/MECH. ROOM
FRAMING PLAN
SCALE: 1/4"=1'-0"

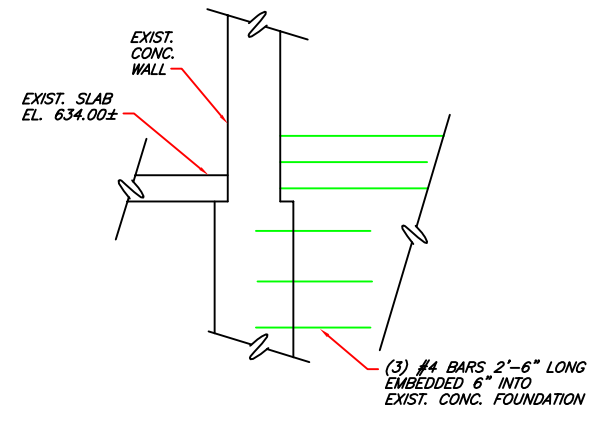
- NOTES:
1. "SP" 16 INCH K SERIES JOIST W/ FULL DEPTH CANTILEVER END DESIGNED FOR 400 PLF UNIFORM LOAD.
 2. T.O. JOISTS EL. 648.33 FT.
 3. METAL DECK: GALVANIZED TYPE 1.5F, 20 GAGE MANIF. BY VULCRAFT OR APPROVED EQUAL.

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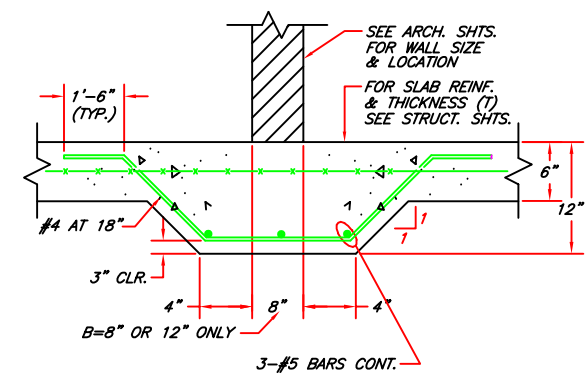
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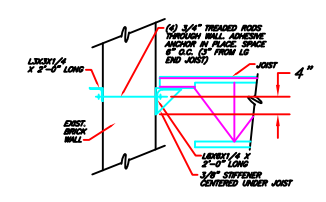
SECTION A
C-03



SECTION B
C-03



SECTION C
C-03



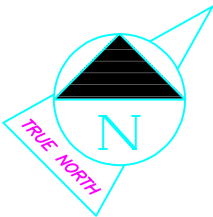
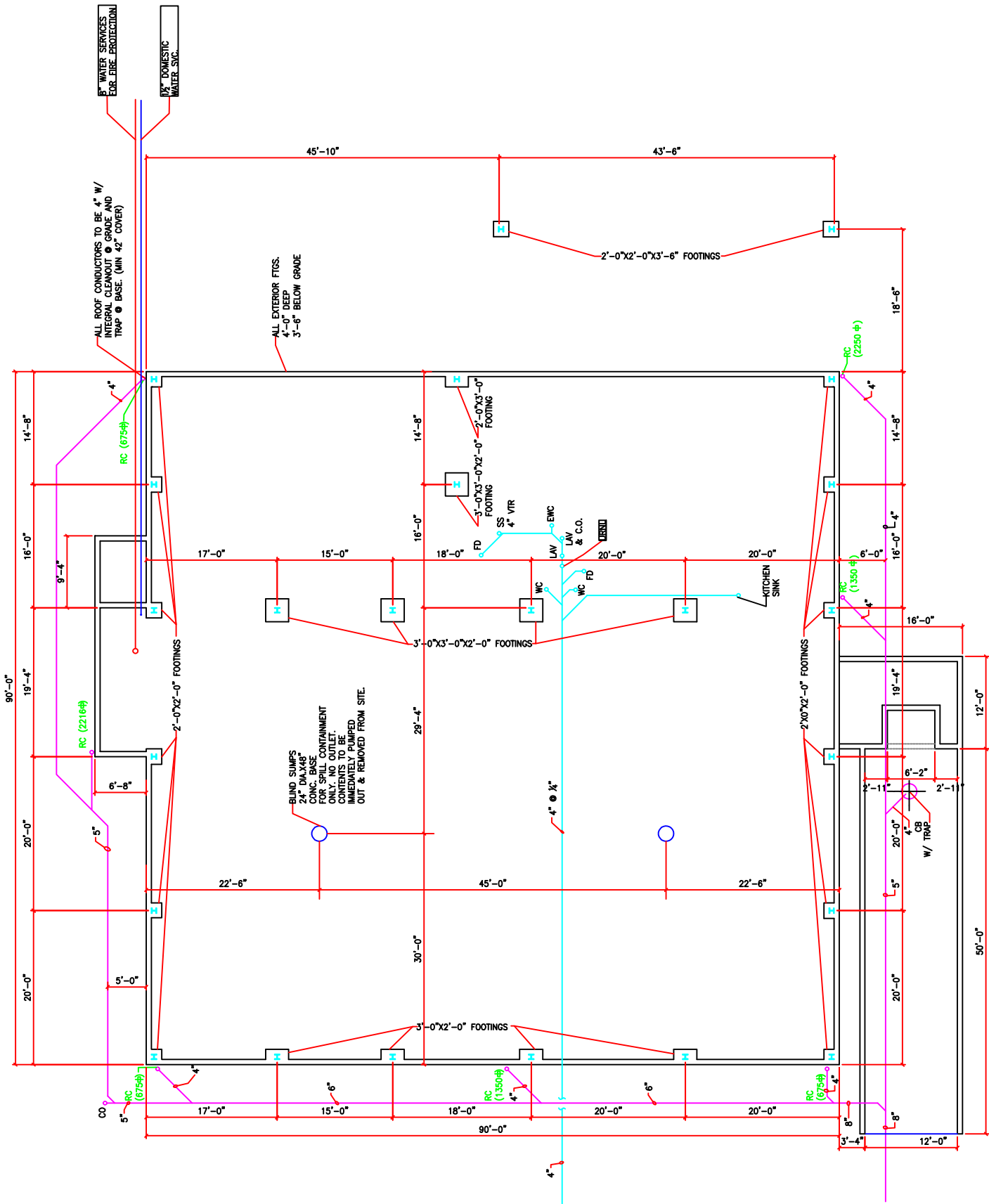
SECTION D
C-03



EQ DETROIT

1923 FREDERICK ST., DETROIT, MI 48211 (313) 347-1300
CHEMICAL FIXATION BUILDING
RESTROOM / MECHANICAL FIRE ROOM AREA
FOUNDATION / FRAMING PLAN & DETAIL

C-03



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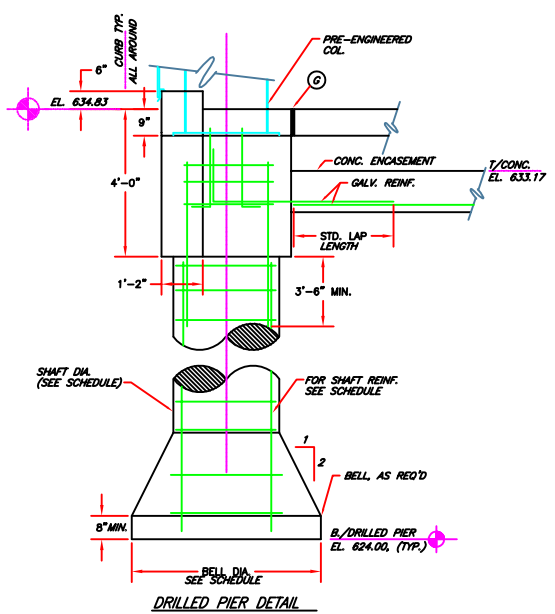
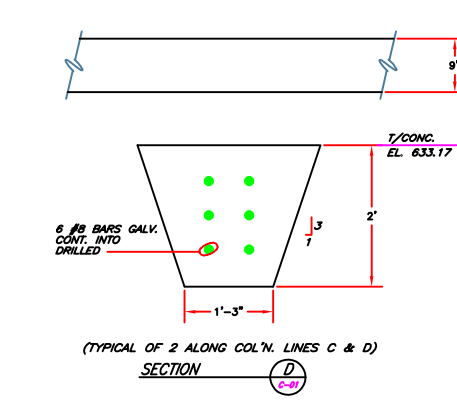
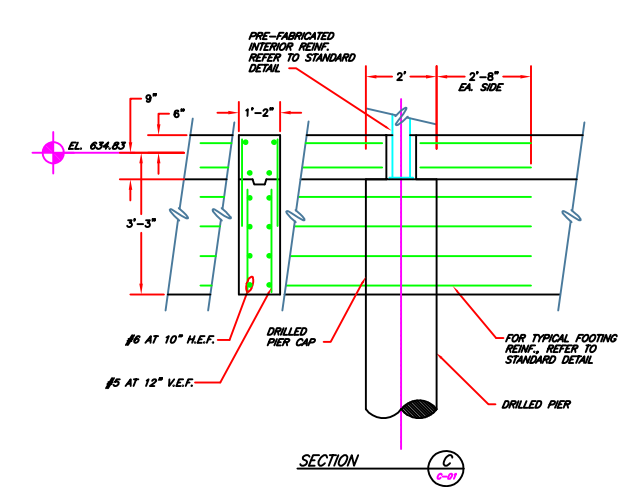
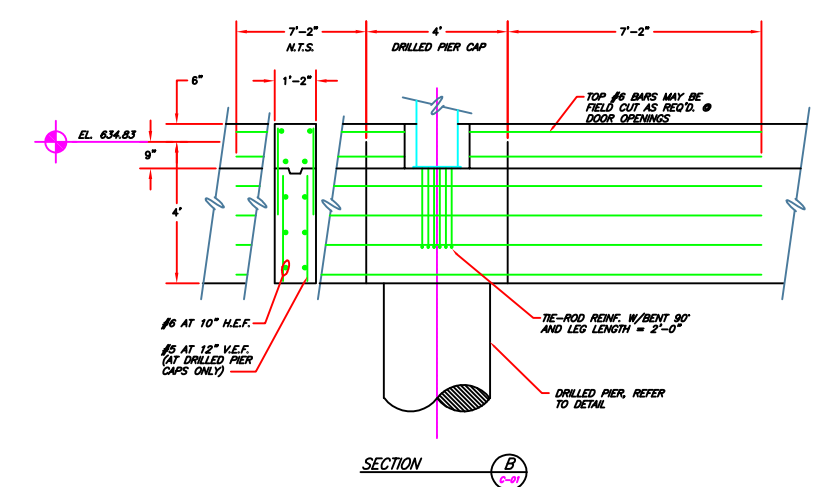
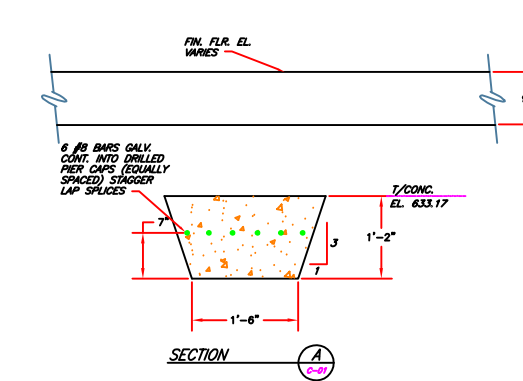
EQ DETROIT

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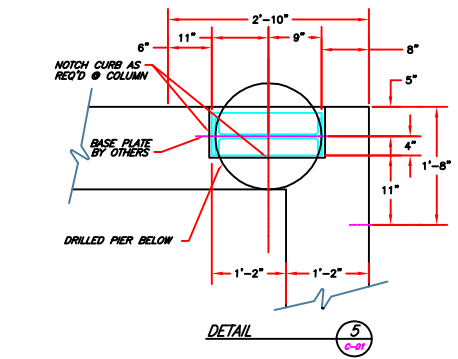
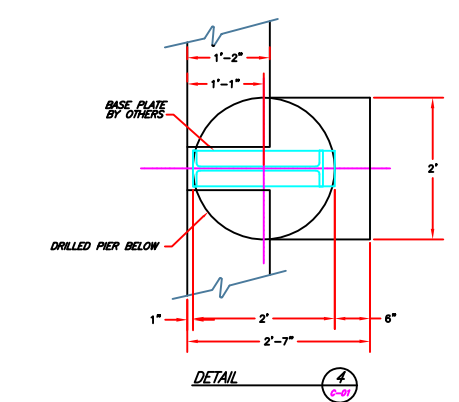
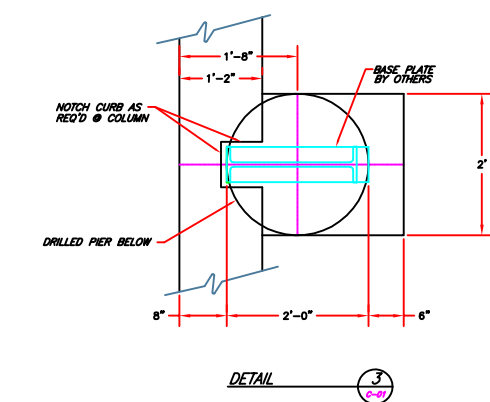
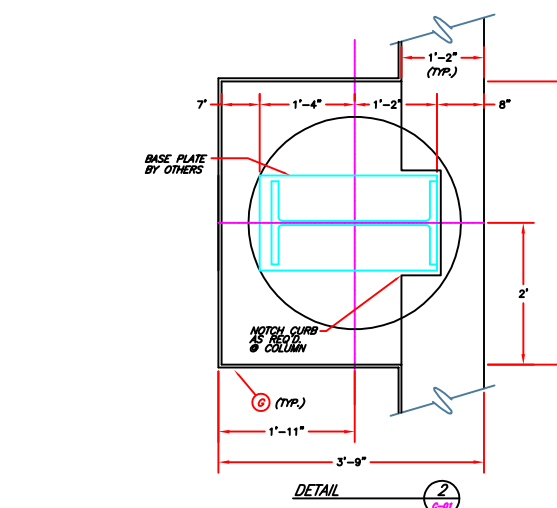
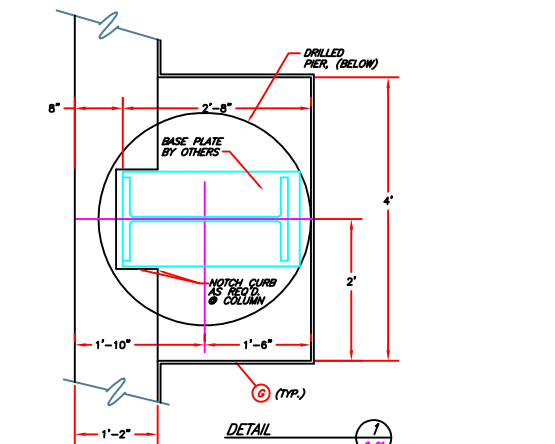
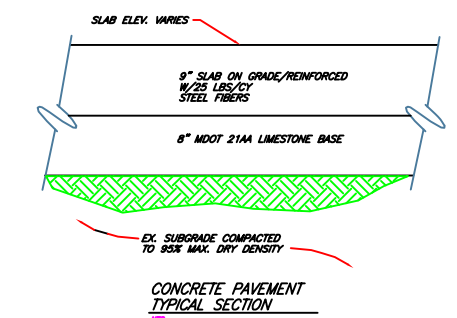
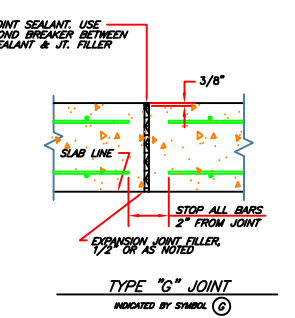
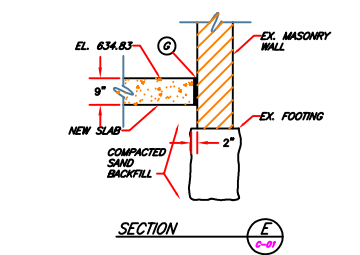
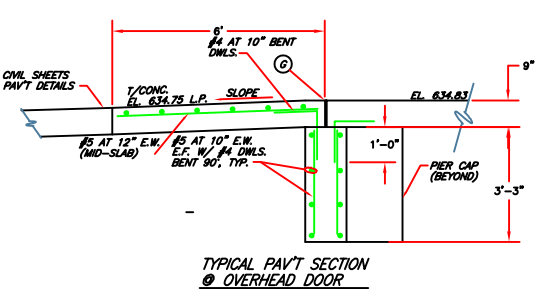
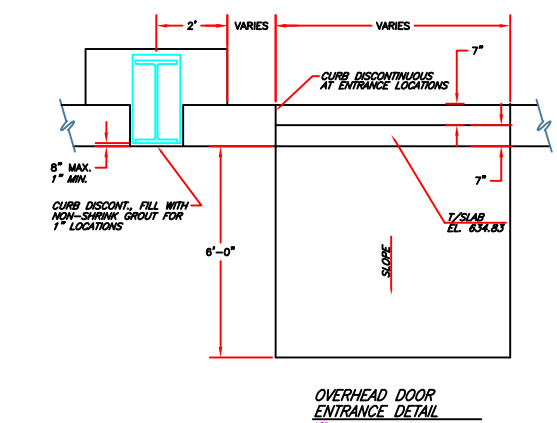
T&P BUILDING

FOUNDATION PLAN

C-04



DRILLED PIER (CAISSON) SCHEDULE											
FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11
FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11
FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11
FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11
FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11
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FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11
FOUNDATION MARK	DP-1	DP-2	DP-3	DP-4	DP-5	DP-6	DP-7	DP-8	DP-9	DP-10	DP-11



NUMBER	REFERENCE DRAWING

REV	DATE	DESCRIPTION	BY
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SCALE:	NONE SHEET:
PROJECT No.	
DRAWN:	AEO
CHECKED:	
APPROVED:	

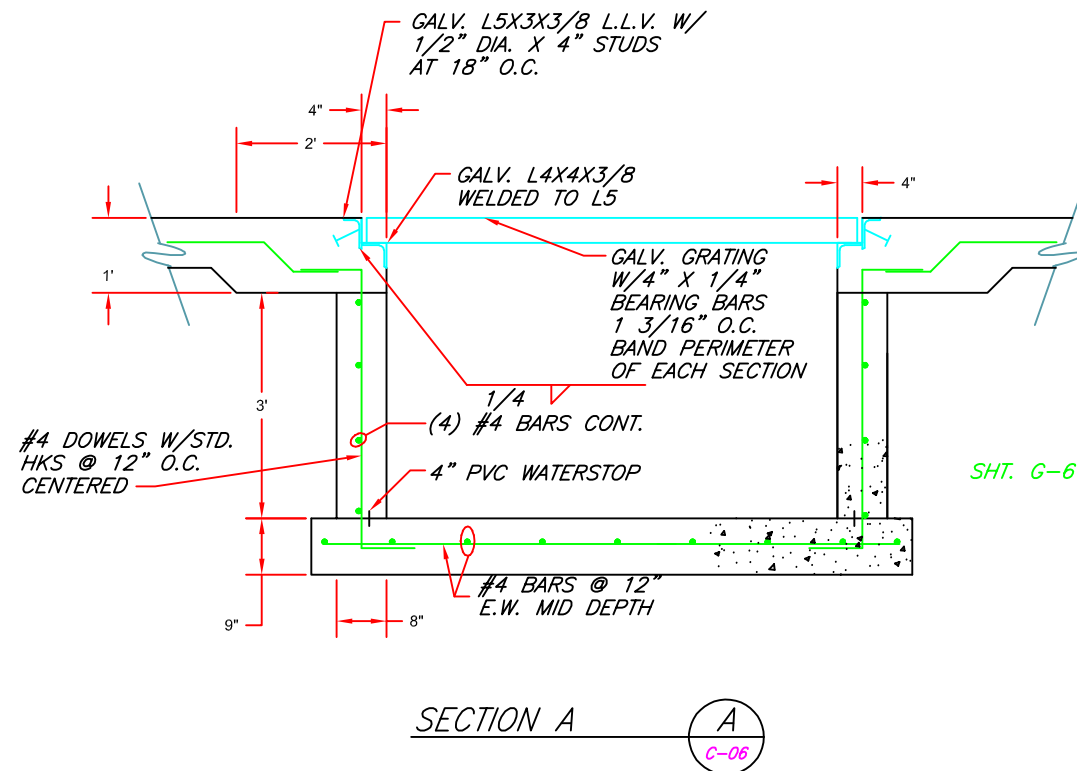
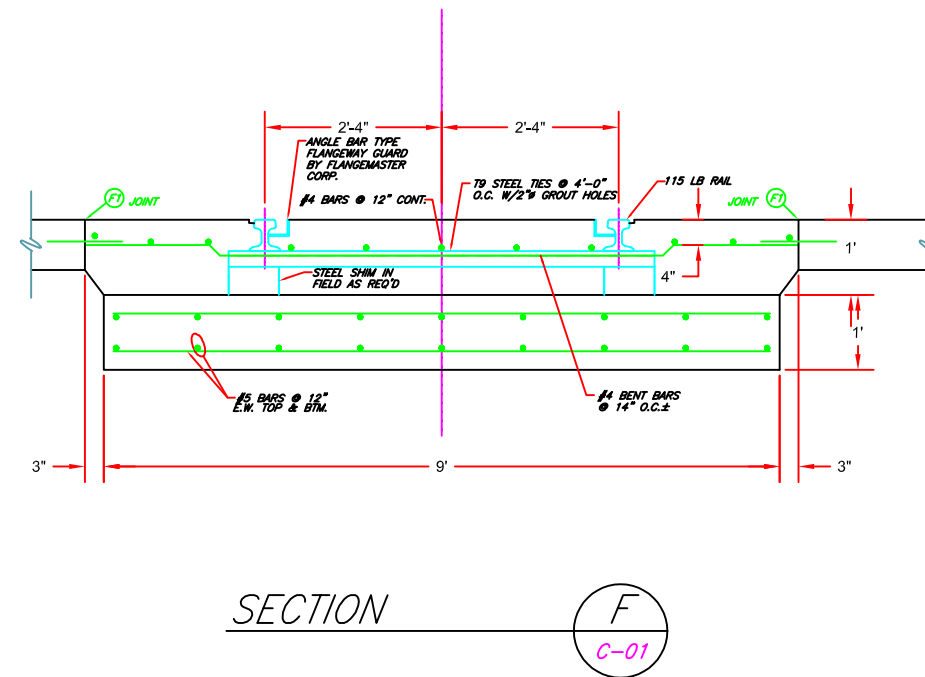
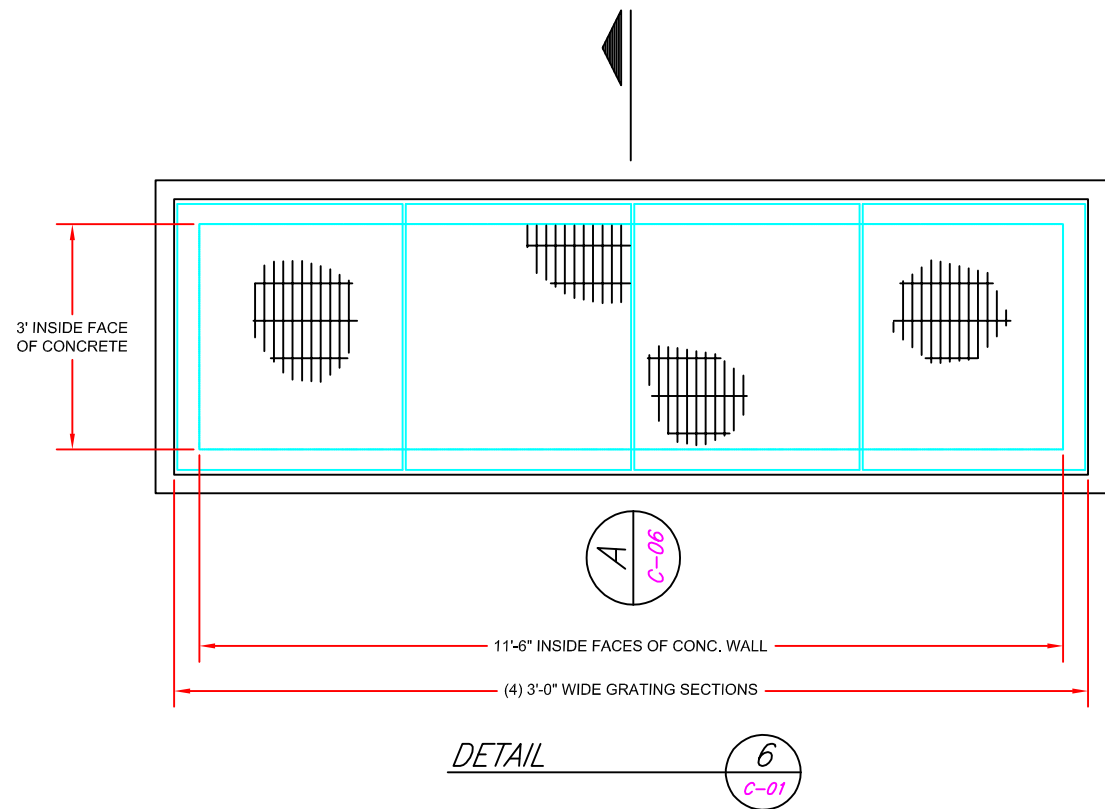
EQ DETROIT

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CHEMICAL FIXATION BUILDING

FOUNDATION DETAILS & SECTIONS

C-05



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REV	DATE	DESCRIPTION

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
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BY	

EQ DETROIT

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CHEMICAL FIXATION BUILDING

FOUNDATION DETAILS & SECTIONS

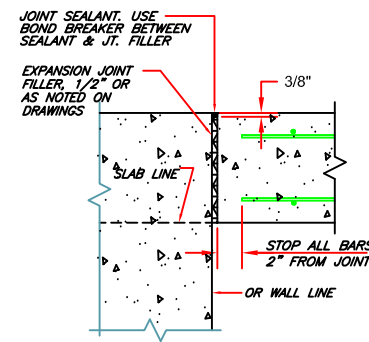
C-06



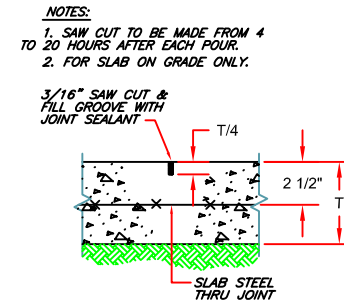
NOTE:
GRATING MATERIAL TO BE AS SPECIFIED.
ALL FRAMES & ACCESSORIES TO BE GALVANIZED STEEL.
1" x 4" BARS MAY BE USED FOR ANCHORS IN
LIEU OF 1/2" x 4" HEADED STUDS.

FRAMES FOR GRATING OPENINGS DETAIL

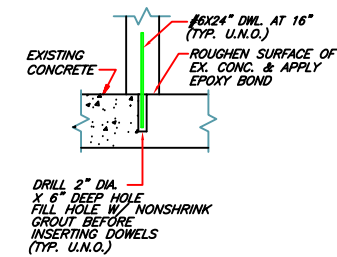
DIAMETER OF BOLT	TENSILE STRENGTH LB. 1" S P.S.I.		METAL PIPE SLEEVE		PLASTIC SLEEVE		LENGTH OF BOLT IN CONC., in. e	SIZE OF PLATE WASHER in.
			LENGTH b ≈ 10d	SIZE # c ≈ d + 2"	LENGTH b	SIZE # c = in.		
1/2	1500	1'-3"	6"	1 1/2	5"	2	9"	4X4X1/2
5/8	2425	1'-6"	6"	2	7"	2	1'-0"	4X4X1/2
3/4	3600	1'-10"	9"	2	7"	2	1'-3"	4X4X1/2
7/8	5040	2'-2"	9"	2 1/2	7"	2	1'-6"	6X6X3/4
1	6600	2'-6"	10"	3	10"	3	1'-9"	6X6X3/4
1 1/8	8320	2'-10"	1'-0"	3	10"	3	2'-0"	6X6X3/4
1 1/4	10630	3'-2"	1'-1"	3	10"	3	2'-2"	7X7X1
1 3/8	12660	3'-6"	1'-2"	3	1'-3"	4	2'-4"	7X7X1
1 1/2	15500	3'-9"	1'-3"	3	1'-3"	4	2'-6"	8X8X1 1/4
1 5/8	18360	4'-1"	1'-4"	4	1'-3"	4	2'-8"	8X8X1 1/4
1 3/4	20950	4'-5"	1'-4"	4	1'-3"	4	2'-9"	9X9X1 1/2
1 7/8	24600	4'-9"	1'-6"	4	1'-6"	4	2'-10"	9X9X1 1/2
2	27600	5'-0"	1'-8"	4	1'-6"	4	3'-0"	11X11X1 3/4
2 1/4	36300	5'-8"	2'-2"	4	1'-6"	4	3'-3"	11X11X1 3/4
2 1/2	44600	6'-3"	2'-1"	4	2'-0"	6	3'-6"	11X11X1 3/4
2 3/4	55400	6'-10"	2'-4"	6	2'-0"	6	3'-9"	12X12X2
3	65280	7'-6"	2'-6"	6	2'-0"	6	4'-0"	12X12X2



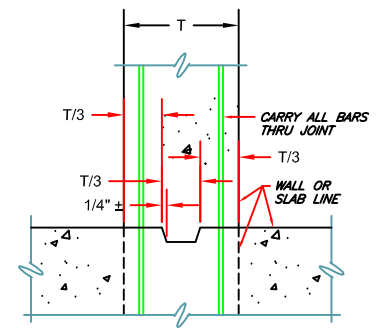
TYPE "G" JOINT
INDICATED BY SYMBOL (G)



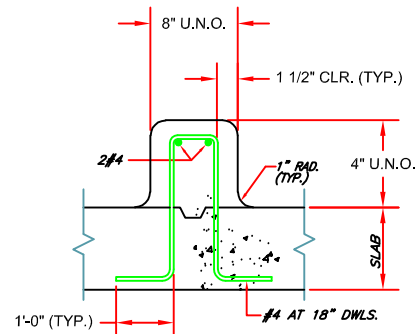
TYPE "S" JOINT
INDICATED BY SYMBOL (S)



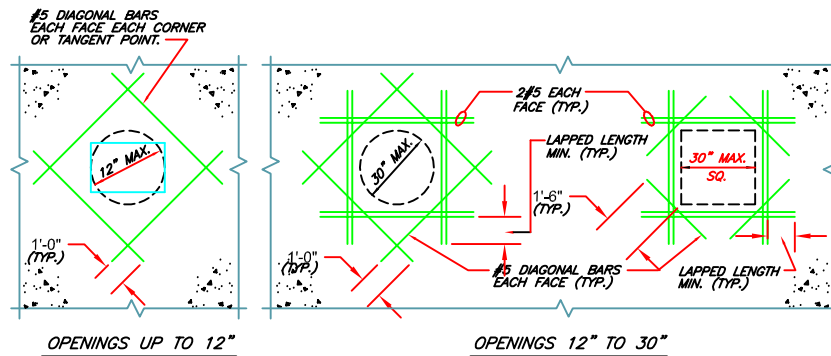
GROUTED DOWEL JOINT
INDICATED BY SYMBOL (GD)



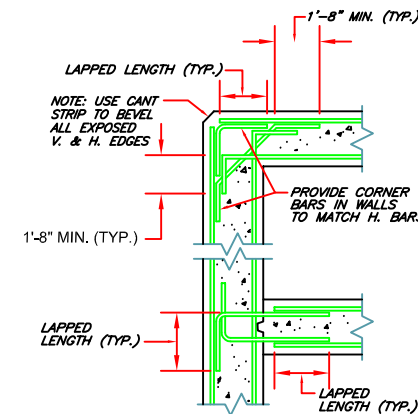
STANDARD JOINT
EITHER SHOWN ON SECTION
OR NOTED AS C.J. ON PLAN



CONCRETE CURB DETAIL

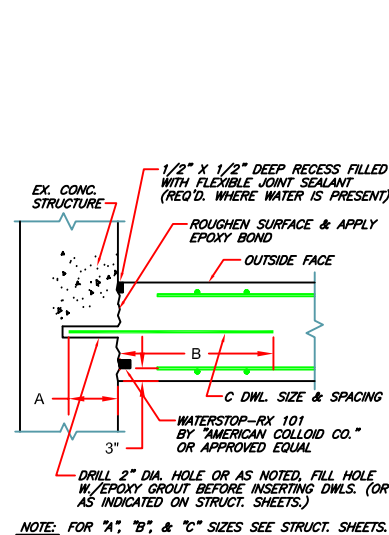


REINFORCEMENT FOR OPENINGS DETAILS

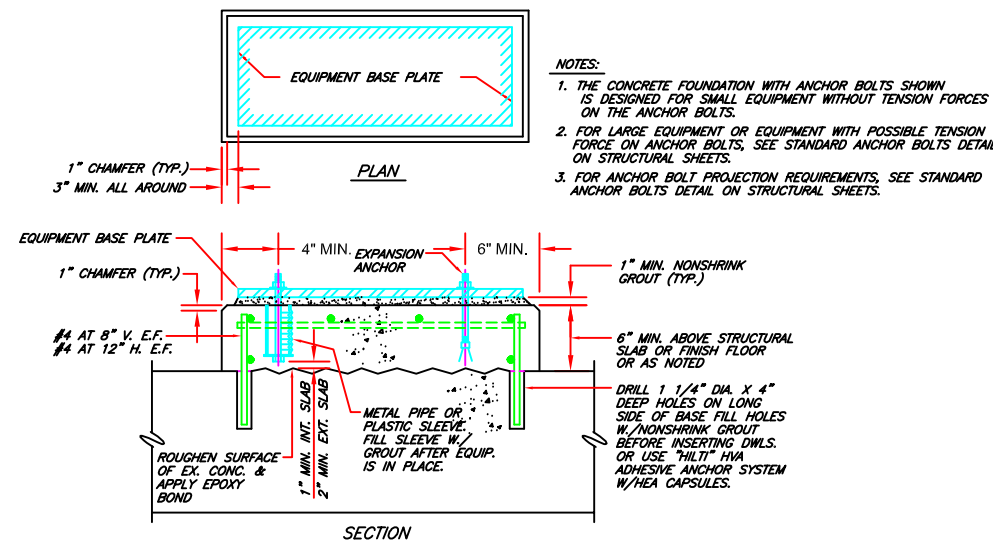


SECTIONAL PLAN
OF WALLS DETAIL

<div> <div>REINFORCING TENSION</div> <div>SPLICE TABLE</div> </div>		
BAR SIZE	TENSION LAP LENGTH	* TOP BARS
#3	16"	18"
#4	20"	24"
#5	24"	30"
#6	28"	36"
#7	34"	42"
#8	38"	48"
#9	42"	56"
#10	50"	66"
#11	62"	80"
<div> <div>NOTES:</div> <ol style="list-style-type: none"> ALL SPLICES SHALL BE CONSIDERED TENSION SPLICES USING LAP LENGTHS IN TABLE ABOVE UNLESS SPECIFICALLY SHOWN OTHERWISE ON THE DRAWINGS. LENGTHS ARE BASED ON LAP CLASS B SPLICES WITH CENTER TO CENTER SPACING OF BARS GREATER THAN 6 DIAMETERS. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST UNDER THEM. USE TENSION LAP LENGTHS FOR WALL BARS. </div>		



WATERTIGHT TYPE "T" JOINT
INDICATED BY SYMBOL (T)



CONCRETE EQUIPMENT BASE DETAIL

NUMBER	REFERENCE DRAWING

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REV	DATE:	DESCRIPTION:	BY

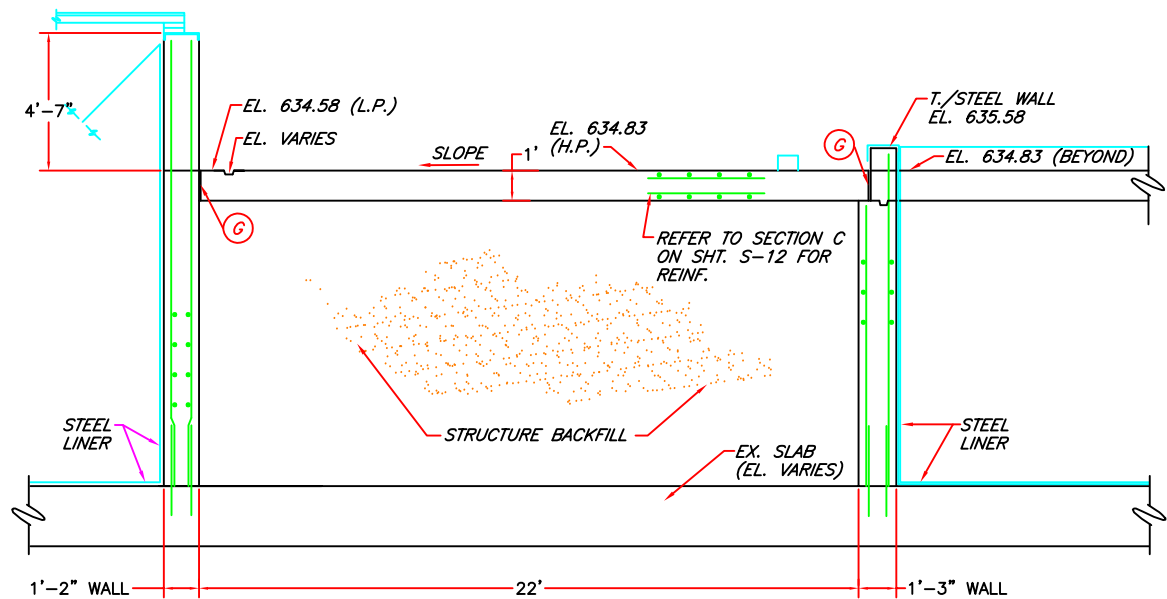
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PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:

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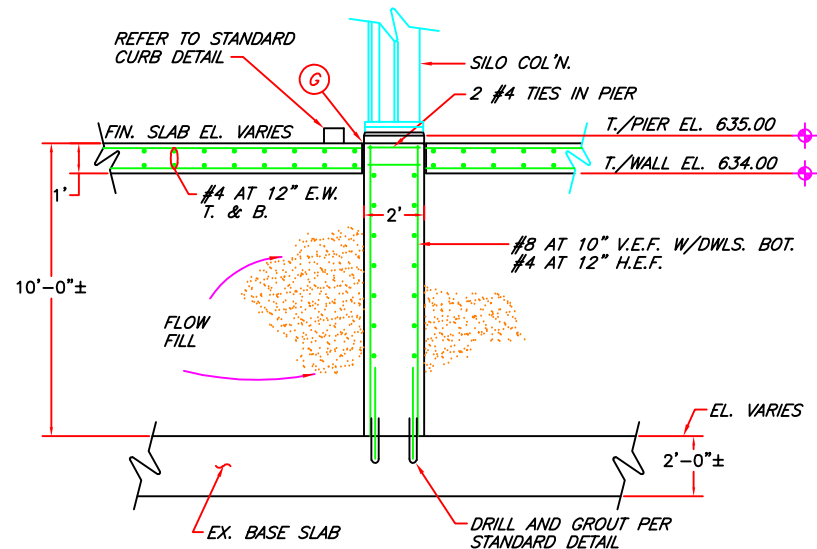
EQ DETROIT

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CHEMICAL FIXATION BUILDING
STANDARD FOUNDATION DETAILS

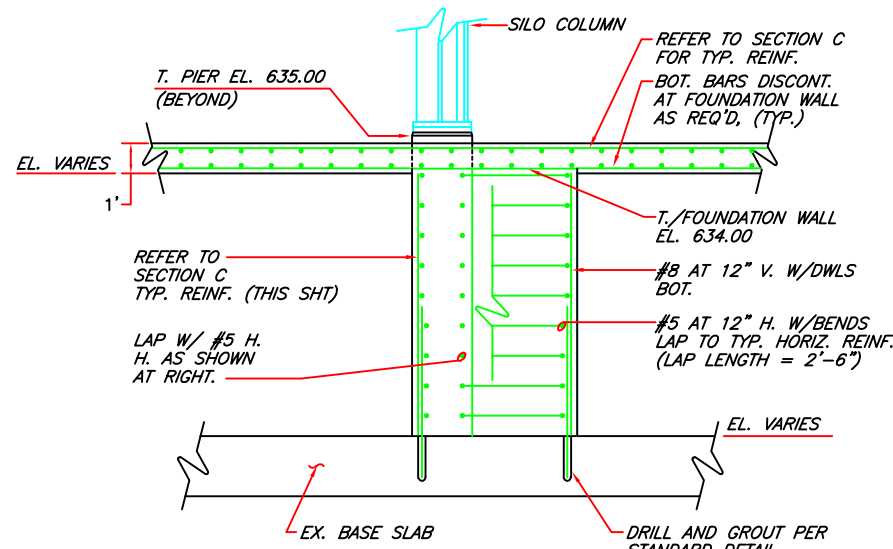
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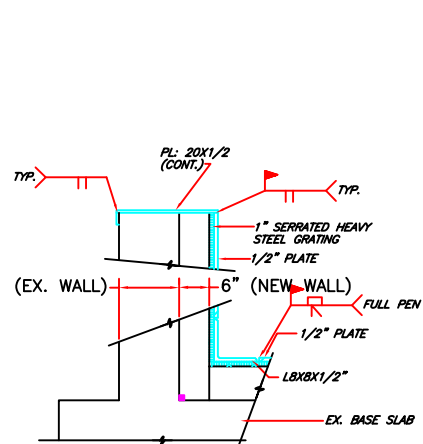
SECTION D
C-02



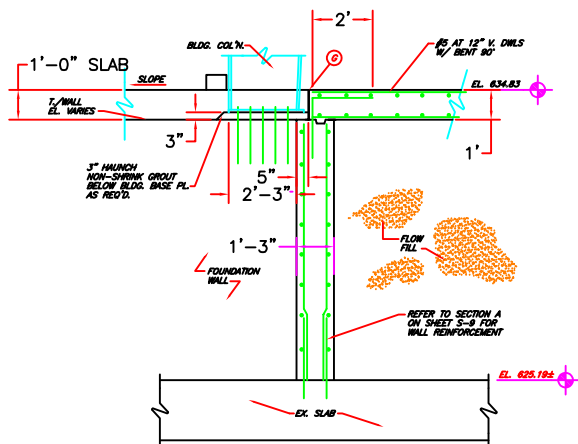
SECTION E
C-02



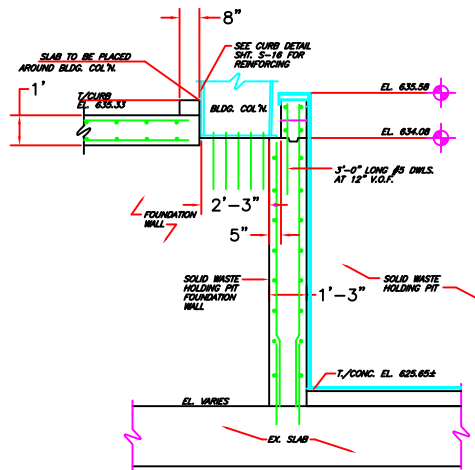
SECTION F
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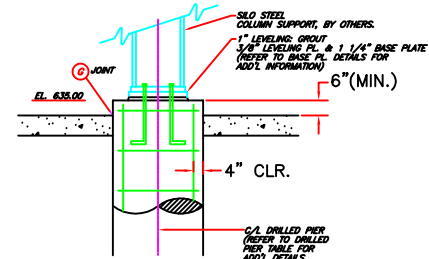
SECTION C
C-02



SECTION G
C-02



SECTION H
C-02



SECTION J
C-02

NOTE: MITRE ANGLE AT CORNERS AND PROVIDE FULL PENETRATION WELD (TYP.)

NUMBER	REFERENCE DRAWING

REV	DATE	DESCRIPTION	BY
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SCALE:	NONE	SHEET:	
PROJECT No.			
DRAWN:	AEO	DATE:	01-JUNE-2020
CHECKED:		DATE:	
APPROVED:		DATE:	
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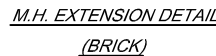
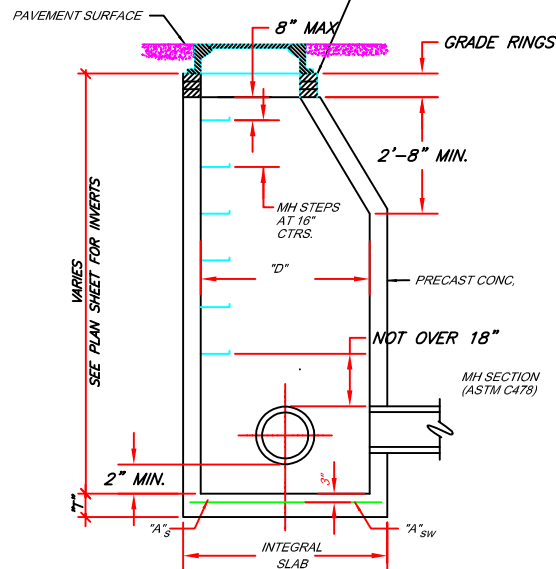
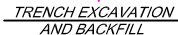
EQ DETROIT

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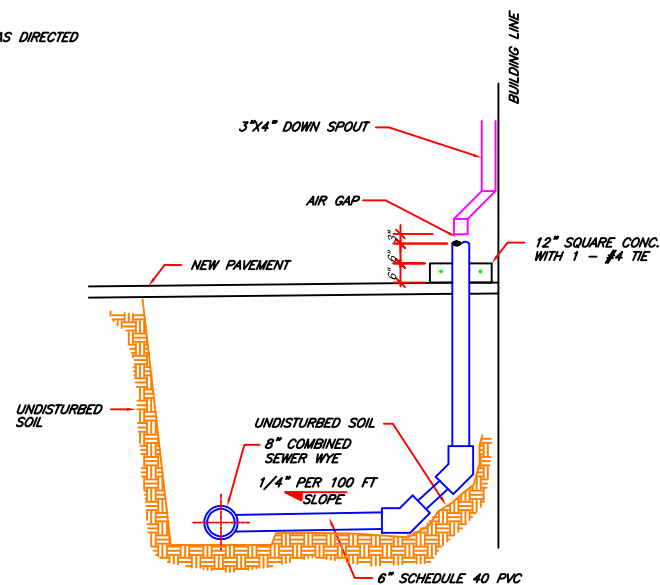
CHEMICAL FIXATION BUILDING

FOUNDATION DETAILS & SECTIONS

C-08

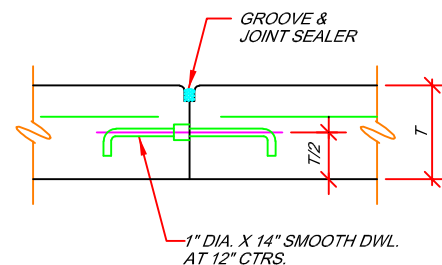


- [illegible]

EQ DETROIT

FIRE HYDRANT AND STORM WATER DETAILS

C-09

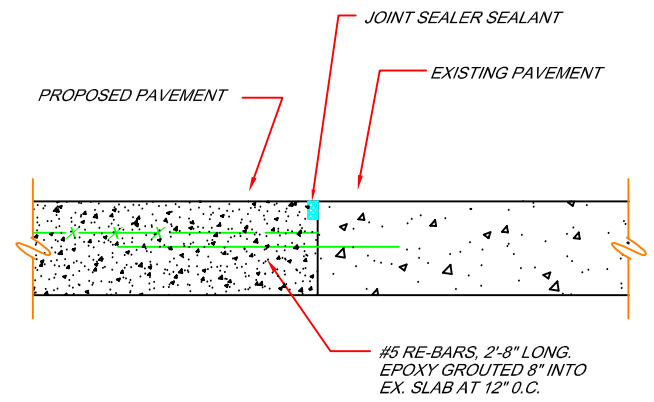


MATERIALS:
JOINT SEALER - SIKAFLEX ICLS.
EXPANSION JOINT FILLER- FIBER TYPE CONFORMING TO ASTM D-1751

TYPE F1
TRANSVERSE
END-OF-POUR JOINT

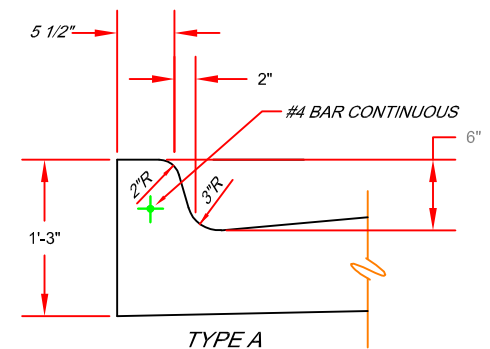
CONCRETE PAVEMENT JOINT DETAILS

NO SCALE



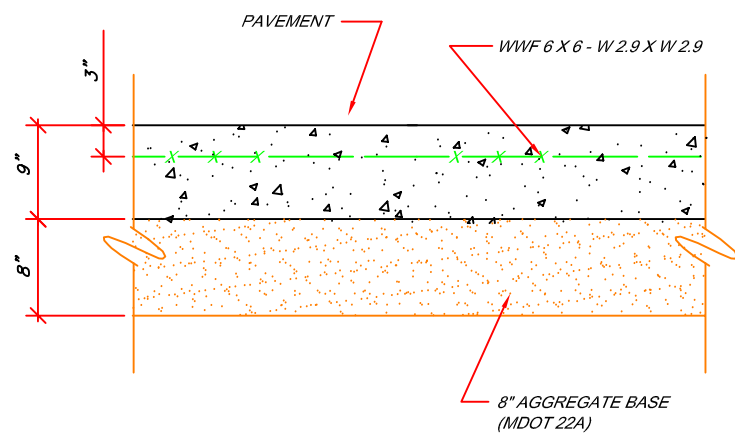
EXISTING TO NEW PAVEMENT DETAIL

NO SCALE



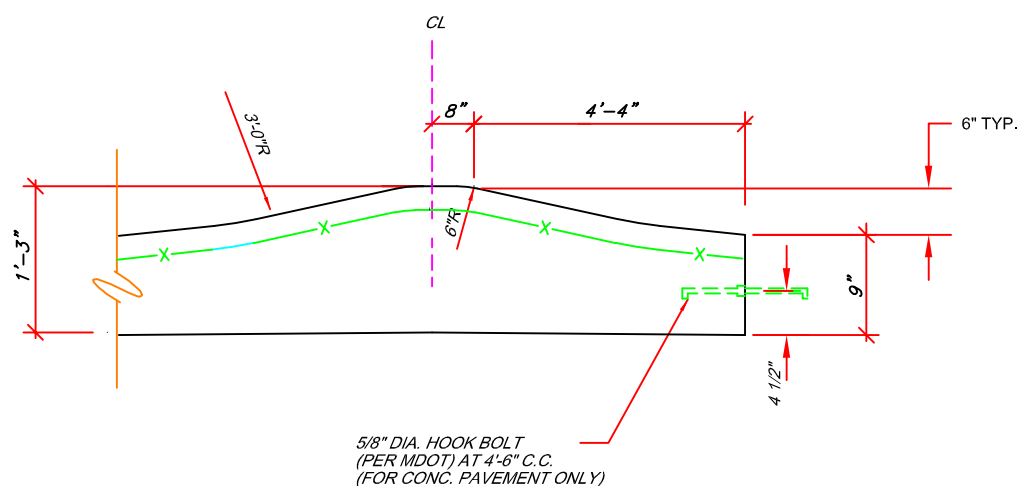
INTEGRAL CURB DETAIL

NO SCALE



CONCRETE PAVEMENT CROSS SECTION

NO SCALE



ROLLED CURB DETAIL

NO SCALE

NOTE:
REFER TO "EXISTING TO NEW PAVEMENT DETAIL"
THIS SHEET AT EXISTING PAVEMENT JOINTS.

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REV	DATE:	DESCRIPTION:	BY

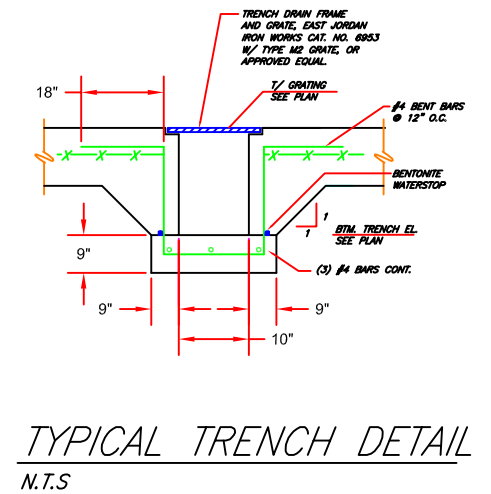
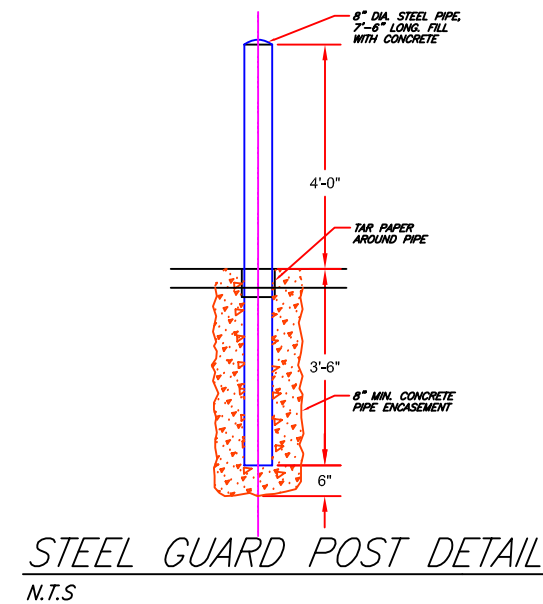
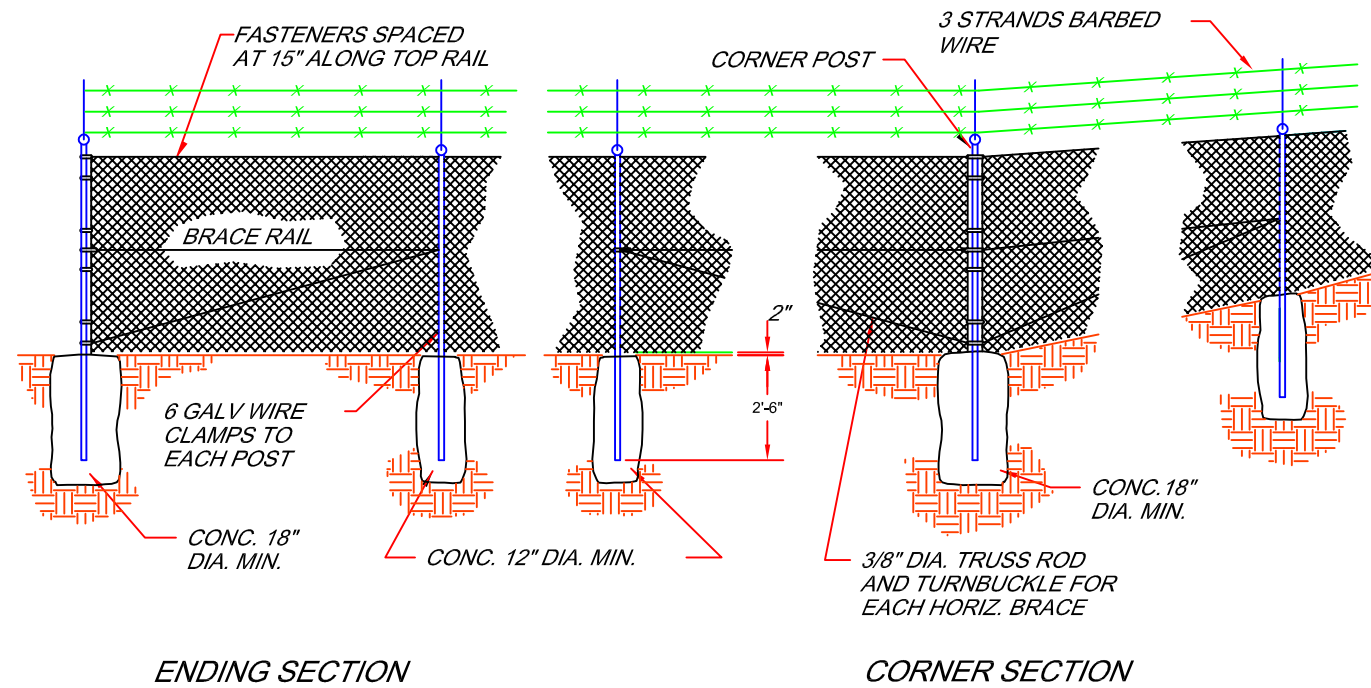
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PROJECT No.		
DRAWN:	AEO	DATE: 01-JUNE-2020
CHECKED:		DATE:
APPROVED:		DATE:
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EQ DETROIT

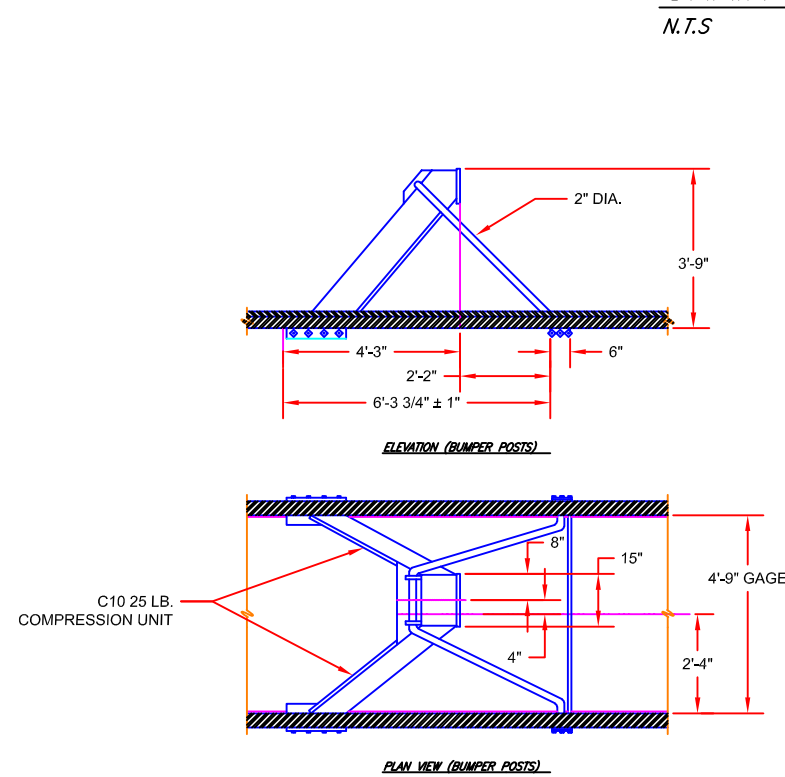
1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

MISCELLANEOUS PAVEMENT DETAILS

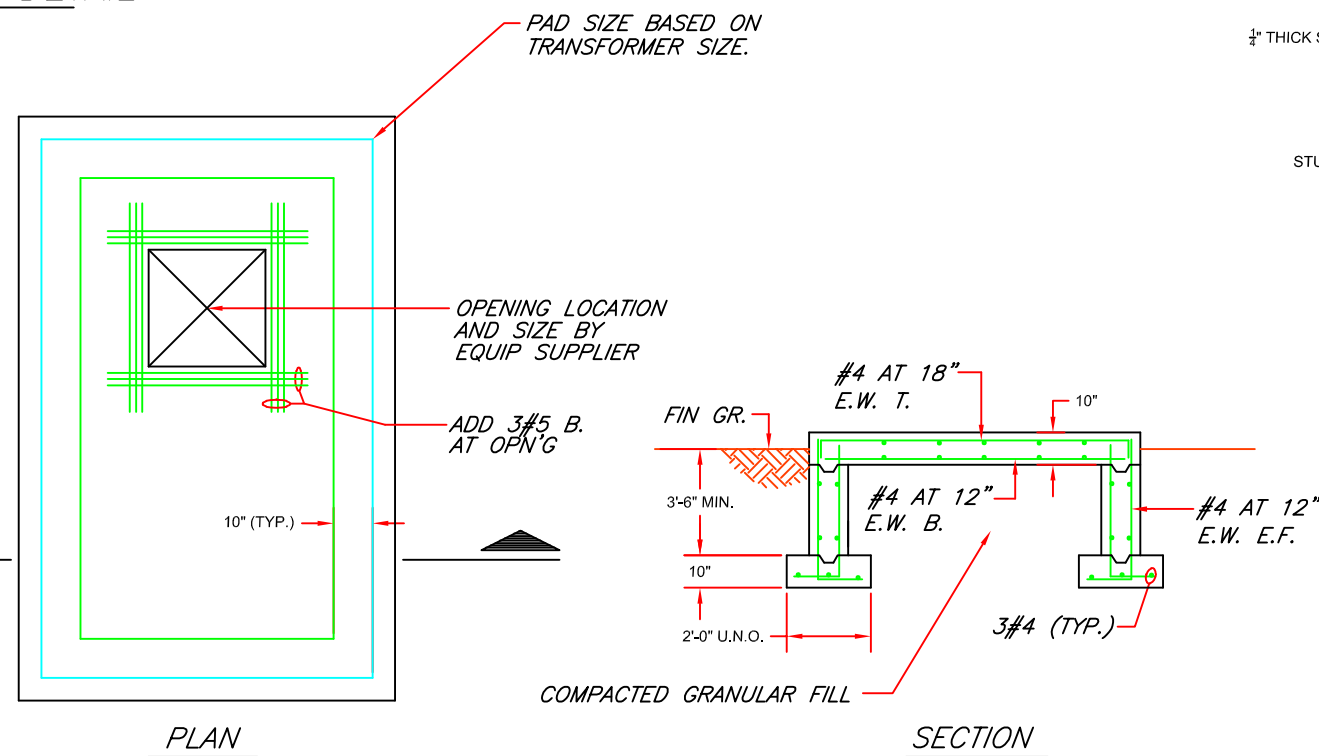
C-10



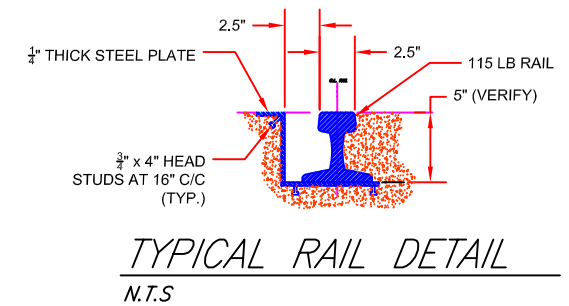
CHAIN LINK FENCE DETAIL
N.T.S.



TYPICAL RAIL STOP DETAIL
N.T.S.



TRANSFORMER CONCRETE BASE DETAIL
N.T.S.



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REV	DATE	DESCRIPTION	BY

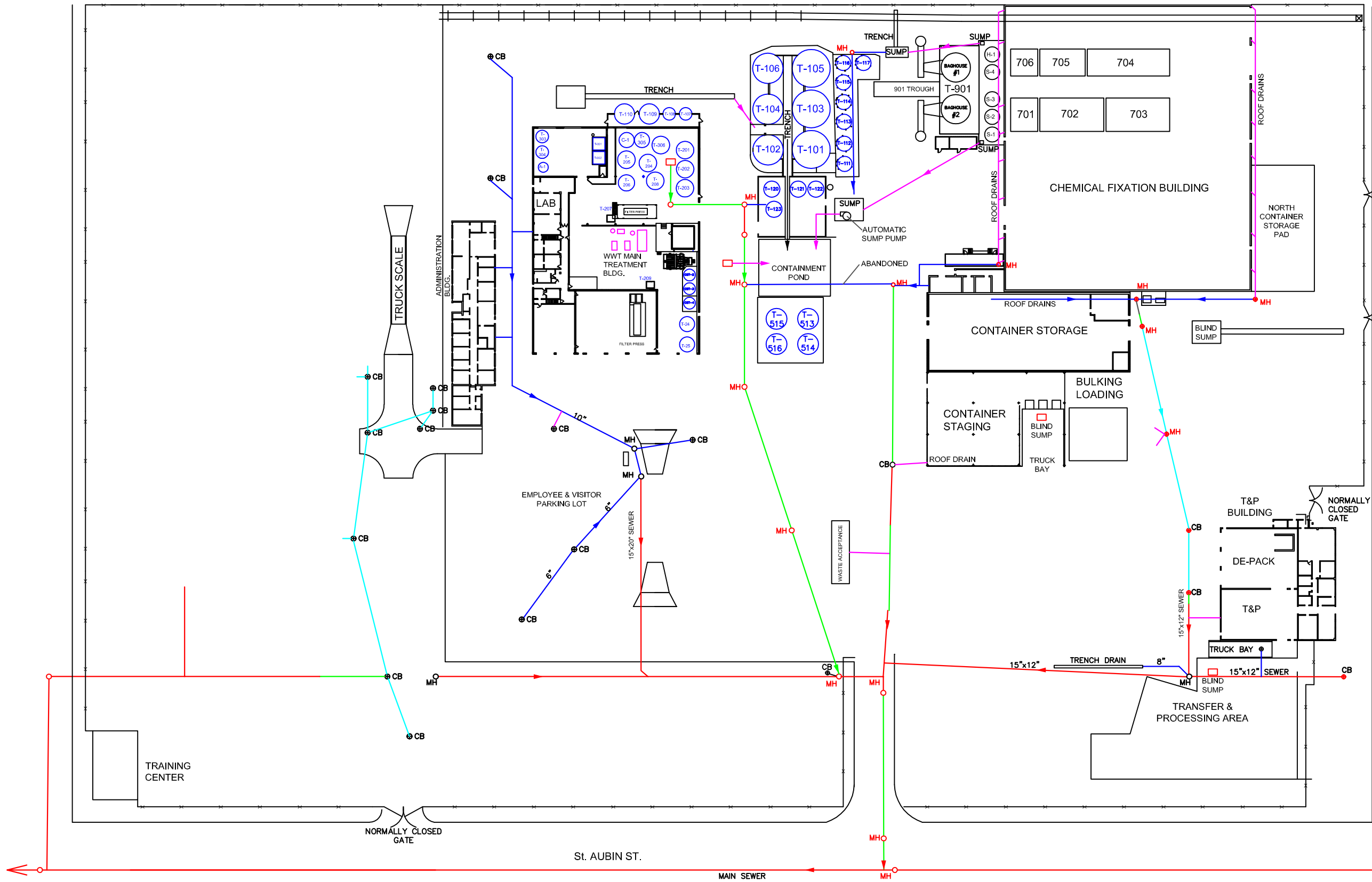
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CHECKED:		DATE:	
APPROVED:		DATE:	
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EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

MISCELLANEOUS CIVIL DETAILS

C-11



- SDR 26 SEWER PIPE
- PVC PIPE
- BRICK PIPE
- UNKNOWN
- PRE-CAST CONCRETE
- CLAY CROCK PIPE

NUMBER	REFERENCE DRAWING

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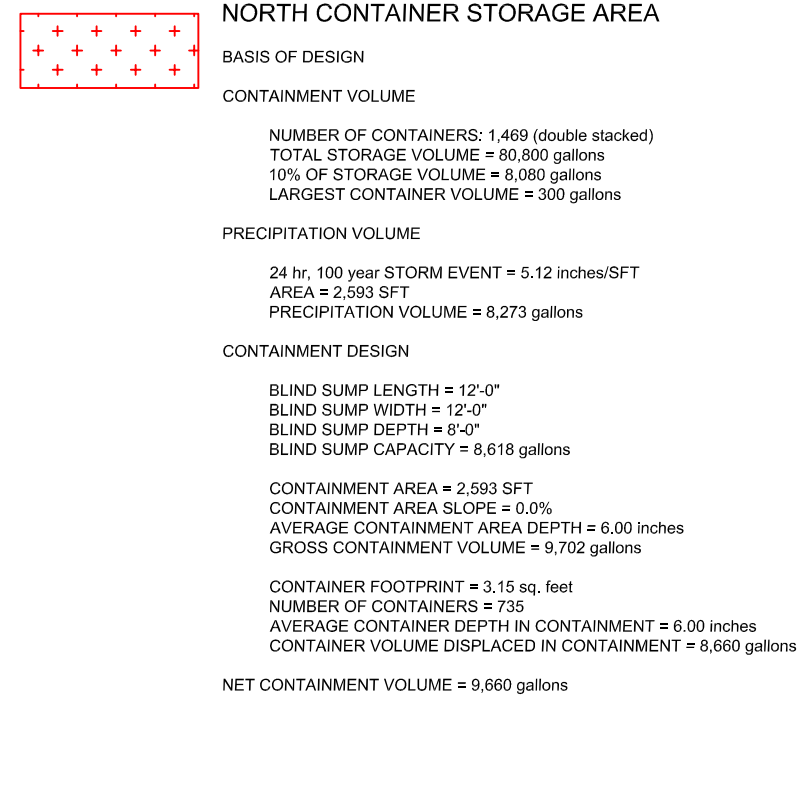
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SEWER SYSTEM PLAN

C-12



- NOTES:
1. EACH ROLL OFF BOX STORED IN CHEMICAL FIXATION BUILDING MAY BE SUBSTITUTED FOR 73 DRUMS FOR OPERATIONAL FLEXIBILITY.
 2. NORTH CONTAINER STORAGE AREA WAS CONSTRUCTED WITH XYPEX ADMIX IN THE CONCRETE MIX. JOINTS ARE CONSTRUCTED WITH CHEMICAL RESISTANT WATER-STOP AND JOINT SEALANT. SEE C-14 FOR DETAILS.

			5				DRAWN:	AEO	DATE: 01-JUNE-2020
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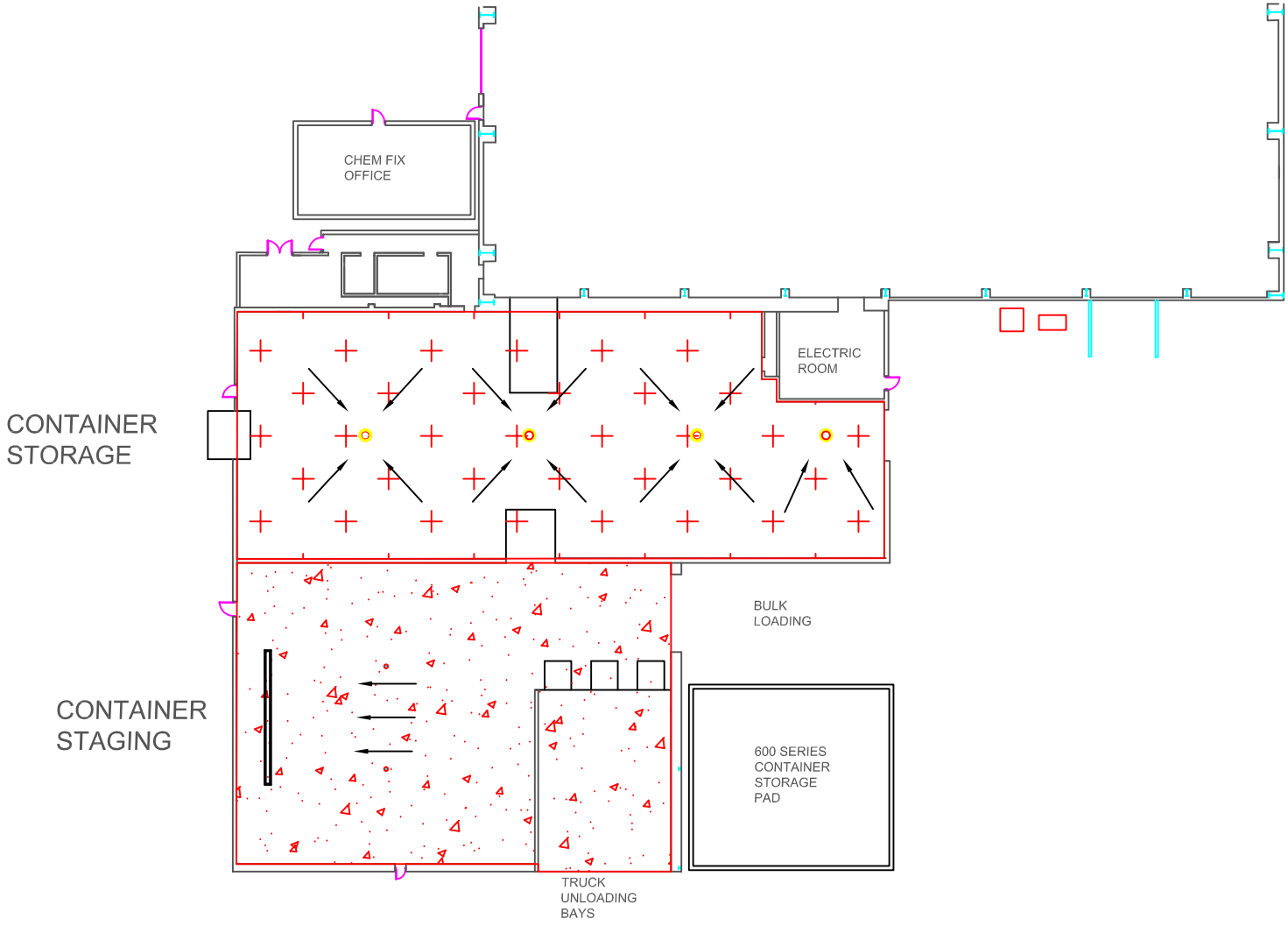
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CHEMICAL FIXATION BUILDING

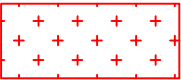
CHEM FIX & NORTH CONTAINER STORAGE CONTAINMENT



CONTAINER
STORAGE

CONTAINER
STAGING

NOTES:
1. CONTAINER STORAGE & STAGING AREAS ARE COATED WITH
DUR-A-GUARD EPOXY COATING. SEE DRAWING C-16.



CONTAINER STORAGE AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 1,826 (double stacked)
TOTAL STORAGE VOLUME = 100,430 gallons
10% OF STORAGE VOLUME = 10,043 gallons
LARGEST CONTAINER VOLUME = 300 gallons

PRECIPITATION VOLUME (INSIDE)

24 hr, 100 year STORM EVENT = 0 inches/SFT
AREA = 0 SFT
PRECIPITATION VOLUME = 0 gallons

CONTAINMENT DESIGN

BLIND SUMP DIAMETER = 2'-0"
BLIND SUMP DEPTH = 4'-0"
NUMBER OF BLIND SUMPS = 4
BLIND SUMP CAPACITY = 376 gallons

CONTAINMENT AREA = 8,890 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 6.00 inches
GROSS CONTAINMENT VOLUME = 33,250 gallons

CONTAINER FOOTPRINT = 3.15 sq. feet
NUMBER OF CONTAINERS = 913
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 6.00 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 10,757 gallons

NET CONTAINMENT VOLUME = 22,869 gallons



CONTAINER STAGING AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 988 (double stacked)
TOTAL STORAGE VOLUME = 54,340 gallons
10% OF STORAGE VOLUME = 5,434 gallons
LARGEST CONTAINER VOLUME = 300 gallons

PRECIPITATION VOLUME (INSIDE)

24 hr, 100 year STORM EVENT = 0 inches/SFT
AREA = 0 SFT
PRECIPITATION VOLUME = 0 gallons

CONTAINMENT DESIGN

TRENCH LENGTH = 12'-0"
TRENCH WIDTH = 1'-0"
TRENCH DEPTH = 15"
TRENCH CAPACITY = 112 gallons

TRUCK WELL CAPACITY = 10,000 gallons

CONTAINMENT AREA = 8,062 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 3.00 inches
GROSS CONTAINMENT VOLUME = 15,077 gallons

CONTAINER FOOTPRINT = 3.15 sq. feet
NUMBER OF CONTAINERS = 494
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 3.00 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 2,910 gallons

NET CONTAINMENT VOLUME = 22,279 gallons



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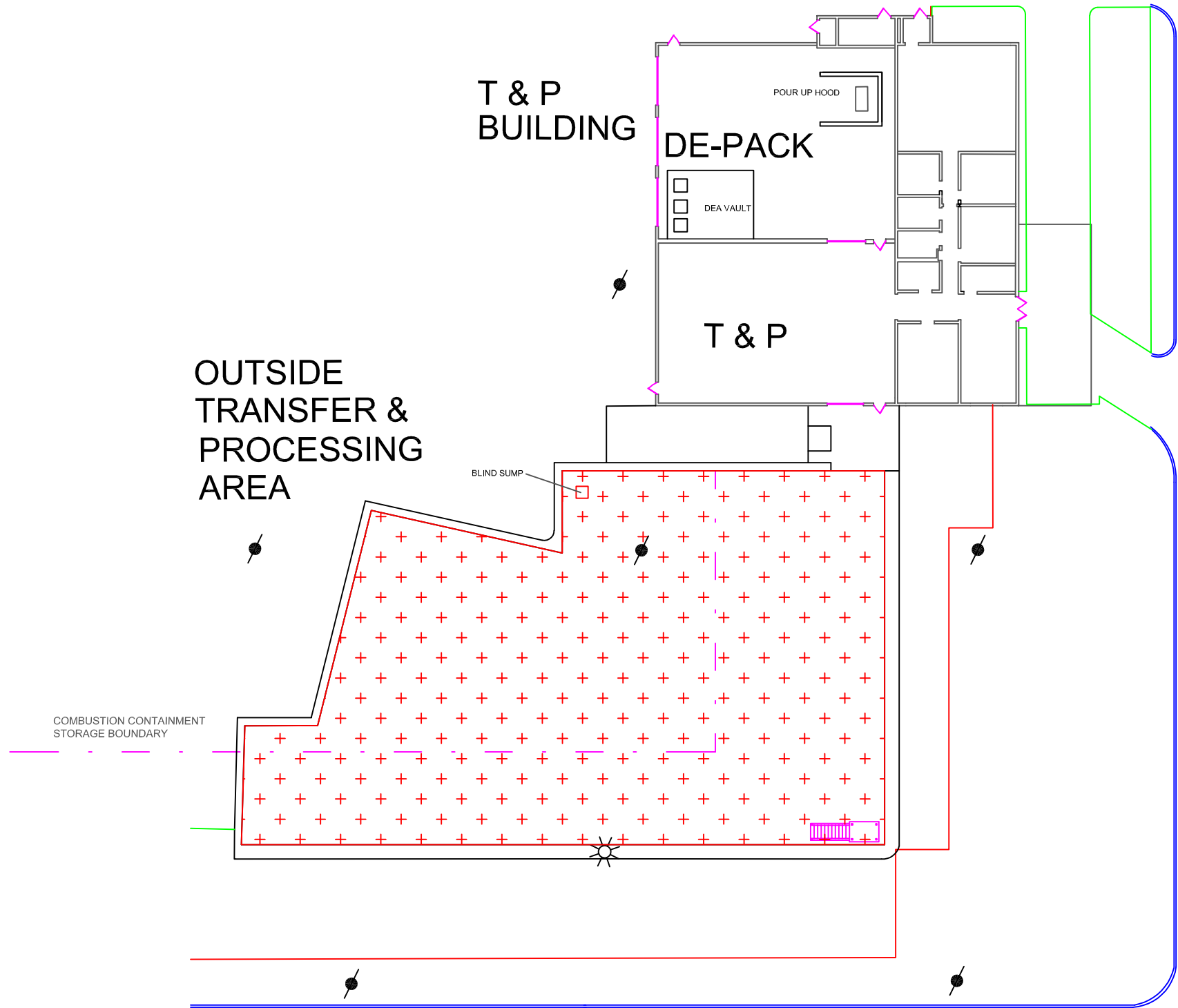
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

CHEMICAL FIXATION BUILDING

CONTAINER STORAGE AND STAGING CONTAINMENT

C-16



T&P OUTSIDE CONTAINER STORAGE AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 1,500 (double stacked)
TOTAL STORAGE VOLUME = 82,500 gallons
10% OF STORAGE VOLUME = 8,250 gallons
LARGEST CONTAINER VOLUME = 300 gallons

PRECIPITATION VOLUME

24 hr, 100 year STORM EVENT = 5.12 inches/SFT
AREA = 13,220 SFT
PRECIPITATION VOLUME = 42,194 gallons

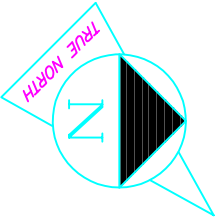
CONTAINMENT DESIGN

BLIND SUMP LENGTH = 3'
BLIND SUMP WIDTH = 3'
BLIND SUMP DEPTH = 3'
BLIND SUMP CAPACITY = 202 gallons

CONTAINMENT AREA = 13,220 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 6 inches
GROSS CONTAINMENT VOLUME = 49,446 gallons

CONTAINER FOOTPRINT = 3.15 sq. feet
NUMBER OF CONTAINERS = 750
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 6 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 8,836 gallons

NET CONTAINMENT VOLUME = 40,812 gallons



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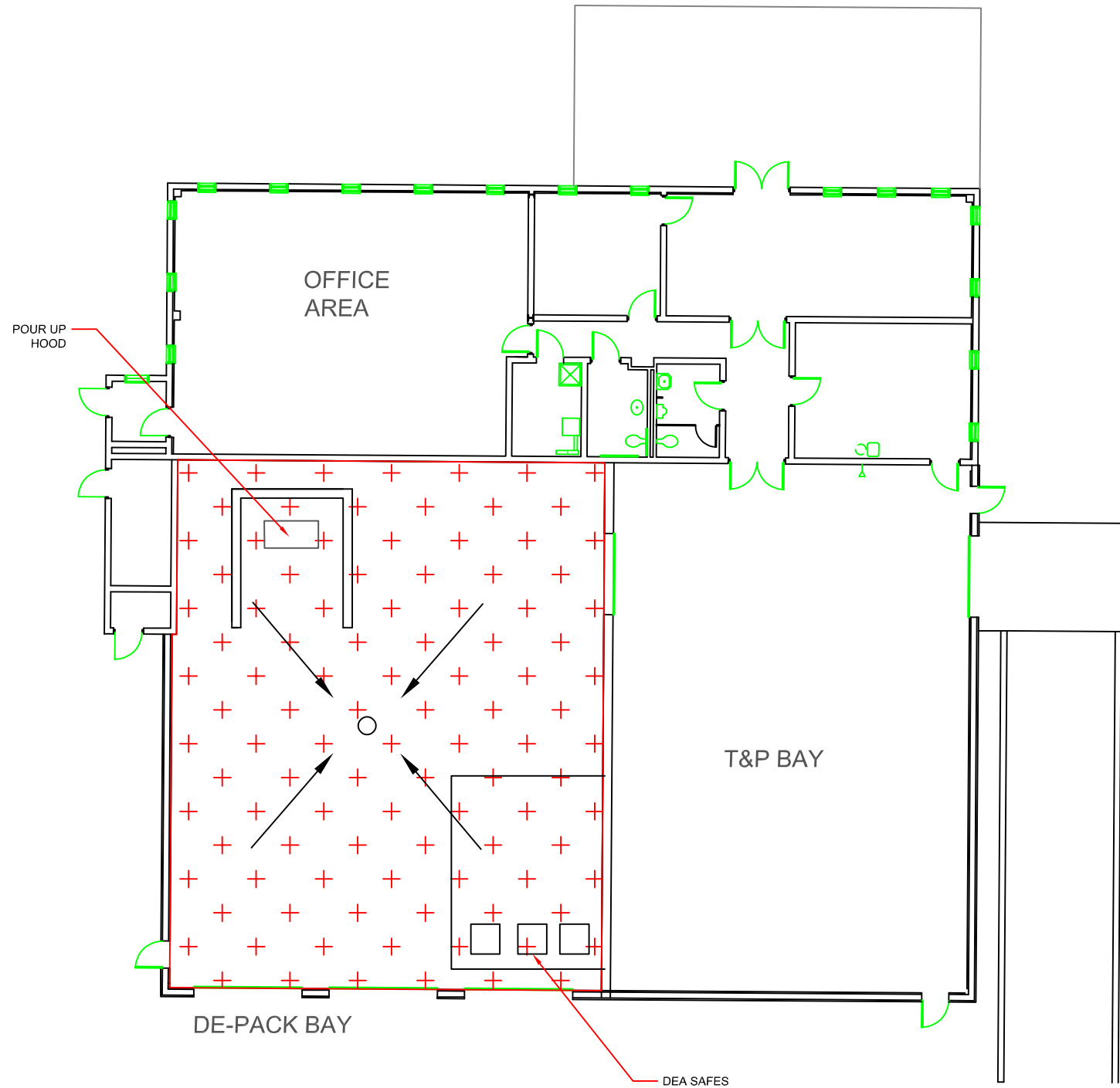
EQ DETROIT

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T&P BUILDING

OUTSIDE CONTAINER STORAGE CONTAINMENT

C-17



T&P
BUILDING

DE-PACK BAY CONTAINER STORAGE AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 160 (double stacked)
TOTAL STORAGE VOLUME = 8,800 gallons
10% OF STORAGE VOLUME = 880 gallons
LARGEST CONTAINER VOLUME = 300 gallons

PRECIPITATION VOLUME (INSIDE)

24 hr, 100 year STORM EVENT = 0
AREA = 0 SFT
PRECIPITATION VOLUME = 0 gallons

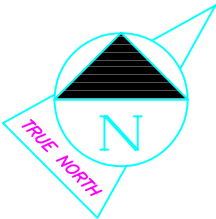
CONTAINMENT DESIGN

BLIND SUMP DIAMETER = 2'
BLIND SUMP DEPTH = 4'
BLIND SUMP CAPACITY = 94 gallons

CONTAINMENT AREA = 2,788 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 3 inches
GROSS CONTAINMENT VOLUME = 5,214 gallons

CONTAINER FOOTPRINT = 3.15 sq. feet
NUMBER OF CONTAINERS = 80
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 3 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 471 gallons

NET CONTAINMENT VOLUME = 4,837 gallons



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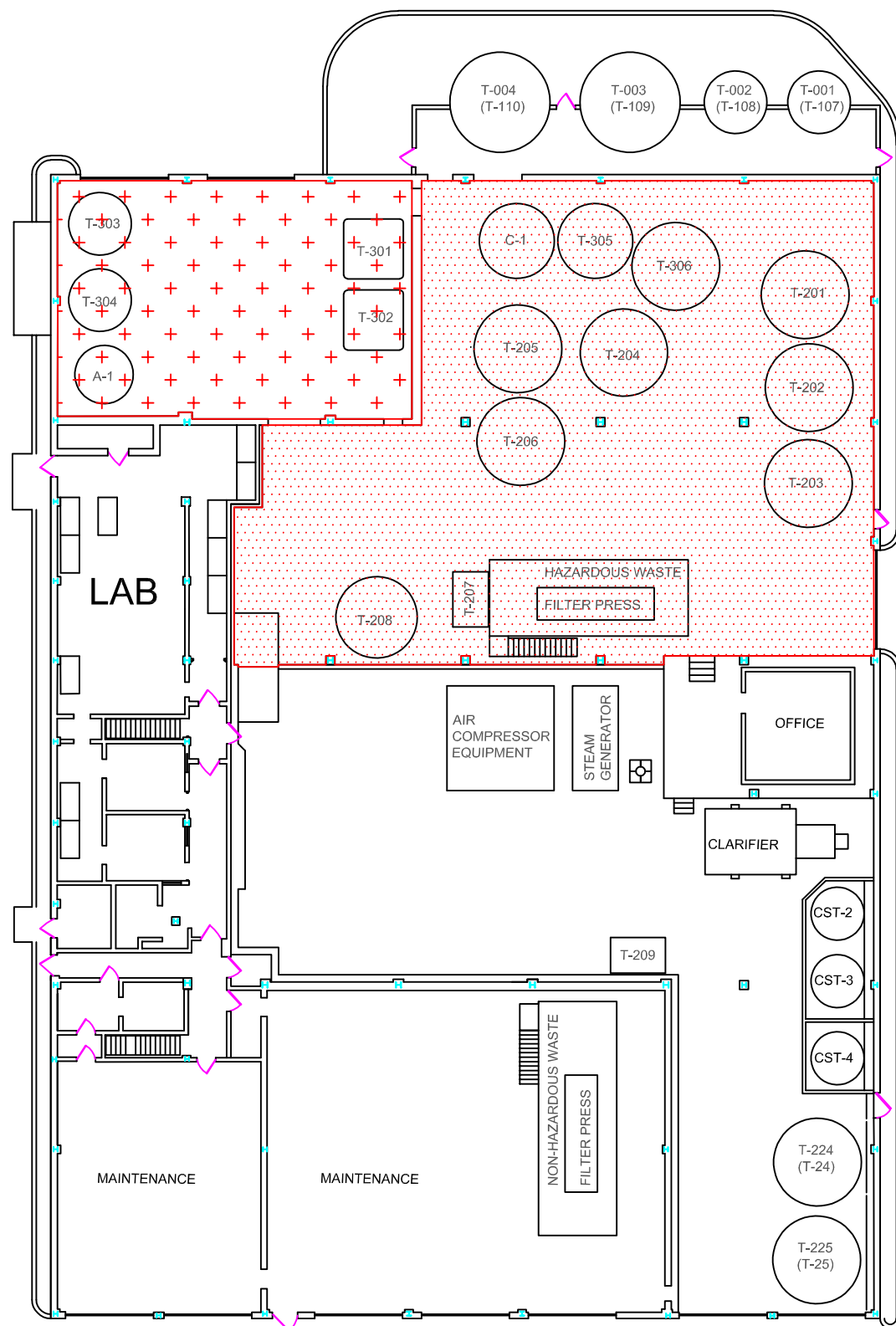
EQ DETROIT

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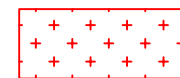
T&P BUILDING

DE-PACK BAY CONTAINMENT

C-18



WWT MAIN TREATMENT BUILDING



CORROSIVE CONTAINER STORAGE AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 125
TOTAL STORAGE VOLUME = 41,600 gallons
10% OF STORAGE VOLUME = 4,160 gallons
LARGEST CONTAINER VOLUME = 8,000 gallons

PRECIPITATION VOLUME (INSIDE)

24 hr, 100 year STORM EVENT = 0 inches/SFT
AREA = 0 SFT
PRECIPITATION VOLUME = 0 gallons

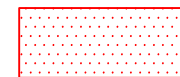
CONTAINMENT DESIGN

BLIND SUMP DIAMETER = 0
BLIND SUMP DEPTH = 0
NUMBER OF BLIND SUMPS = 0
BLIND SUMP CAPACITY = 0 gallons

CONTAINMENT AREA = 1,997 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 8.00 inches
GROSS CONTAINMENT VOLUME = 9,959 gallons

CONTAINER FOOTPRINT = 3.15 sq. feet
NUMBER OF CONTAINERS = 120
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 8.00 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 1,885 gallons
STORAGE TANK VOLUME DISPLACED IN CONTAINMENT = 474 gallons

NET CONTAINMENT VOLUME = 7,600 gallons



CHEMICAL PRECIPITATION CONTAINER STORAGE AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 131
TOTAL STORAGE VOLUME = 184,800 gallons
10% OF STORAGE VOLUME = 18,480 gallons
LARGEST CONTAINER VOLUME = 20,000 gallons

PRECIPITATION VOLUME (INSIDE)

24 hr, 100 year STORM EVENT = 0 inches/SFT
AREA = 0 SFT
PRECIPITATION VOLUME = 0 gallons

CONTAINMENT DESIGN

BLIND SUMP DIAMETER = 0
BLIND SUMP DEPTH = 0
NUMBER OF BLIND SUMPS = 0
BLIND SUMP CAPACITY = 0 gallons

CONTAINMENT AREA = 6,568 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 6.00 inches
GROSS CONTAINMENT VOLUME = 24,566 gallons

CONTAINER FOOTPRINT = 3.15 sq. feet
NUMBER OF CONTAINERS = 120
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 6.00 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 1,414 gallons

STORAGE TANK VOLUME DISPLACED IN CONTAINMENT = 661 gallons

NET CONTAINMENT VOLUME = 22,491 gallons

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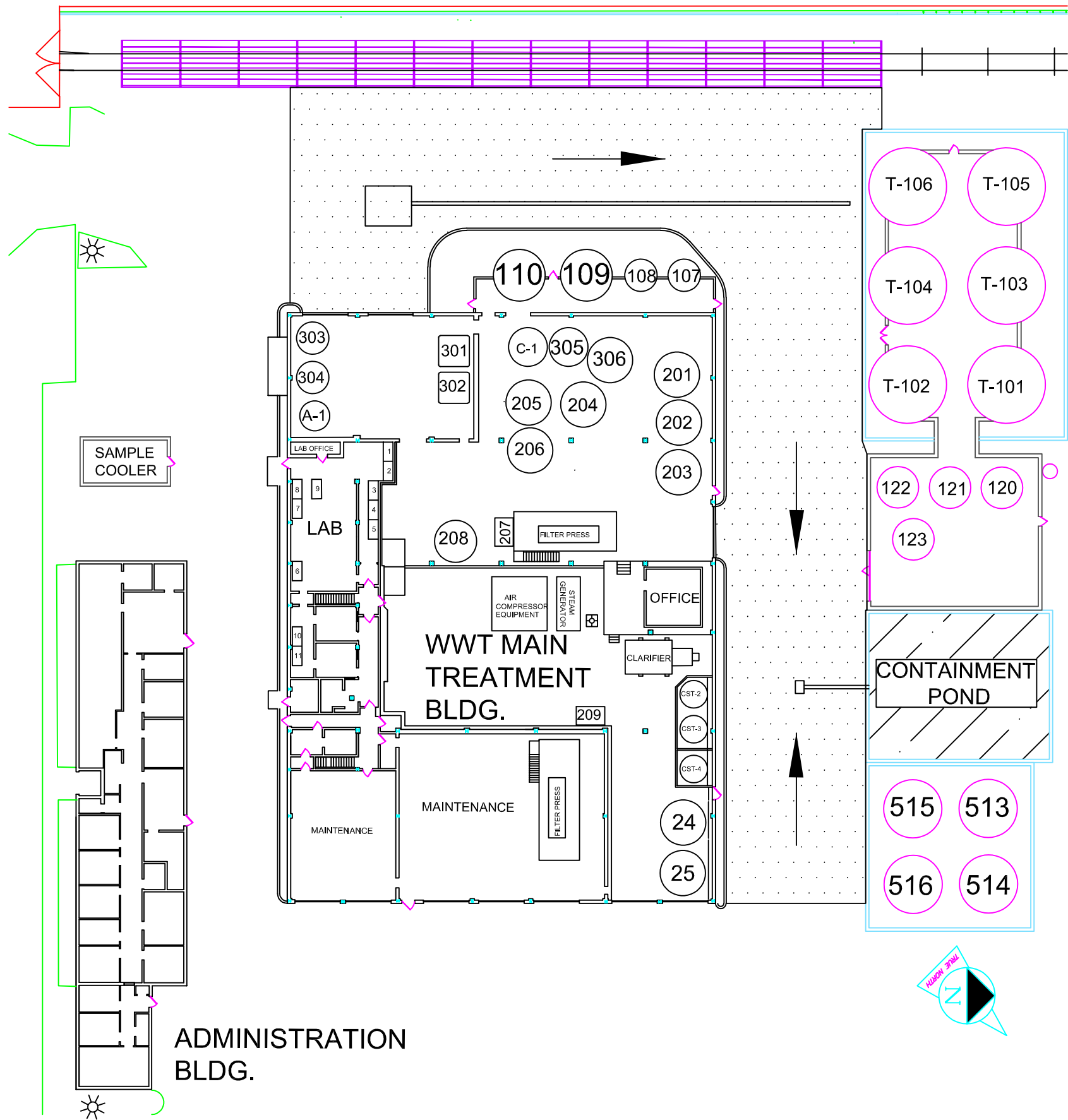
EQ DETROIT

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MAIN TREATMENT BUILDING

HAZARDOUS WASTE TREATMENT TANK CONTAINMENT PLAN

C-19



UNLOADING AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 6
TOTAL STORAGE VOLUME = 30,000 gallons
10% OF STORAGE VOLUME = 3,000 gallons
LARGEST CONTAINER VOLUME = 10,000 gallons

PRECIPITATION VOLUME

24 hr, 100 year STORM EVENT = 5.12 inches/SFT
AREA = 23,700 SFT
PRECIPITATION VOLUME = 75,643 gallons

CONTAINMENT DESIGN

BLIND SUMP DIAMETER = 0
BLIND SUMP DEPTH = 0
NUMBER OF BLIND SUMPS = 0
BLIND SUMP CAPACITY = 0 gallons

CONTAINMENT AREA = 2,700 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 8 feet
GROSS CONTAINMENT VOLUME = 161,580 gallons

CONTAINER FOOTPRINT = 0 sq. feet
NUMBER OF CONTAINERS = 0
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 0 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 0 gallons

NET CONTAINMENT VOLUME = 161,580 gallons

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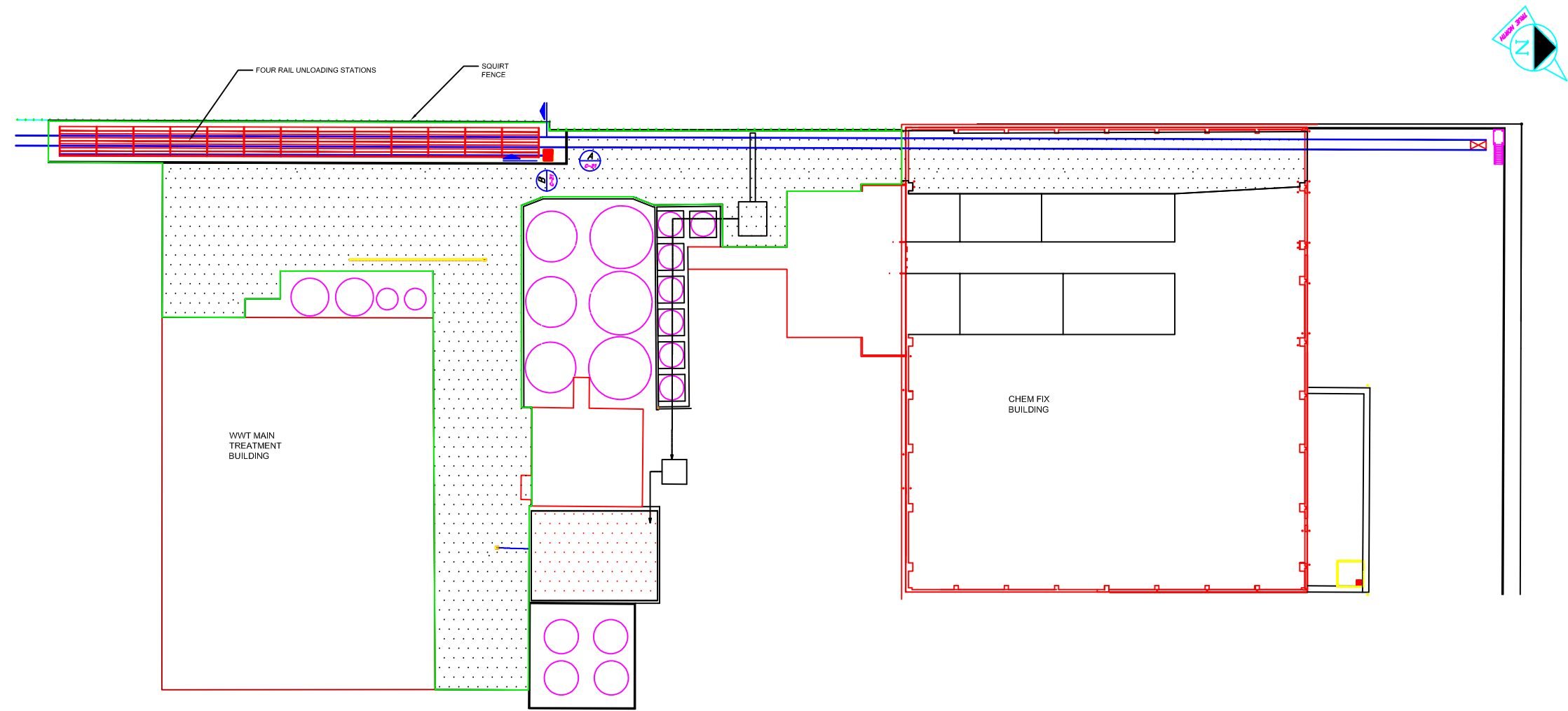
EQ DETROIT

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MAIN TREATMENT BUILDING

HAZARDOUS TANKER UNLOADING AREA CONTAINMENT PLAN

C-20



RAIL UNLOADING AREA

BASIS OF DESIGN

CONTAINMENT VOLUME

NUMBER OF CONTAINERS: 9 rail cars
TOTAL STORAGE VOLUME = 207,000 gallons
10% OF STORAGE VOLUME = 20,700 gallons
LARGEST CONTAINER VOLUME = 23,000 gallons

PRECIPITATION VOLUME

24 hr, 100 year STORM EVENT = 5.12 inches/SFT
AREA = 33,800 SFT
PRECIPITATION VOLUME = 107,879 gallons

CONTAINMENT DESIGN

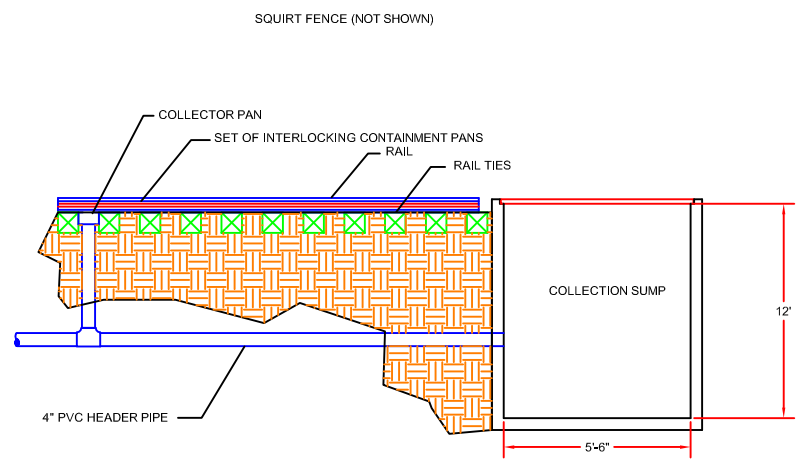
BLIND SUMP LENGTH = 5'-6"
BLIND SUMP WIDTH = 15'
BLIND SUMP DEPTH = 12'
NUMBER OF BLIND SUMPS = 1
BLIND SUMP CAPACITY = 7,406 gallons

CONTAINMENT AREA = 2,700 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 8 feet
GROSS CONTAINMENT VOLUME = 161,580 gallons

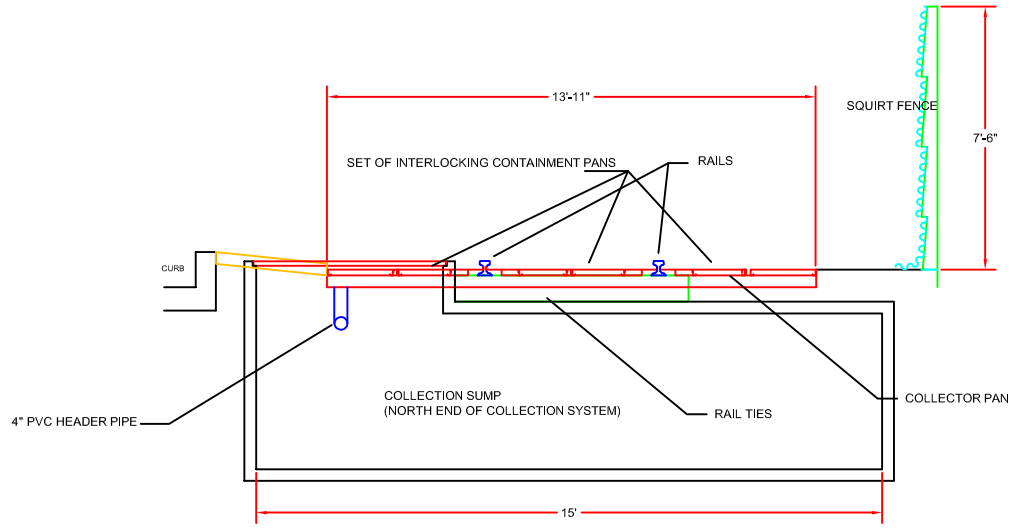
CONTAINMENT AREA = 31,800 SFT
CONTAINMENT AREA SLOPE = 0.0%
AVERAGE CONTAINMENT AREA DEPTH = 4 inches
GROSS CONTAINMENT VOLUME = 79,294 gallons

CONTAINER FOOTPRINT = 0 sq. feet
NUMBER OF CONTAINERS = 0
AVERAGE CONTAINER DEPTH IN CONTAINMENT = 0 inches
CONTAINER VOLUME DISPLACED IN CONTAINMENT = 0 gallons

NET CONTAINMENT VOLUME = 248,277 gallons



TYPICAL TRACK SECTION-SECTION A-A'



TYPICAL TRACK SECTION-SECTION B-B'

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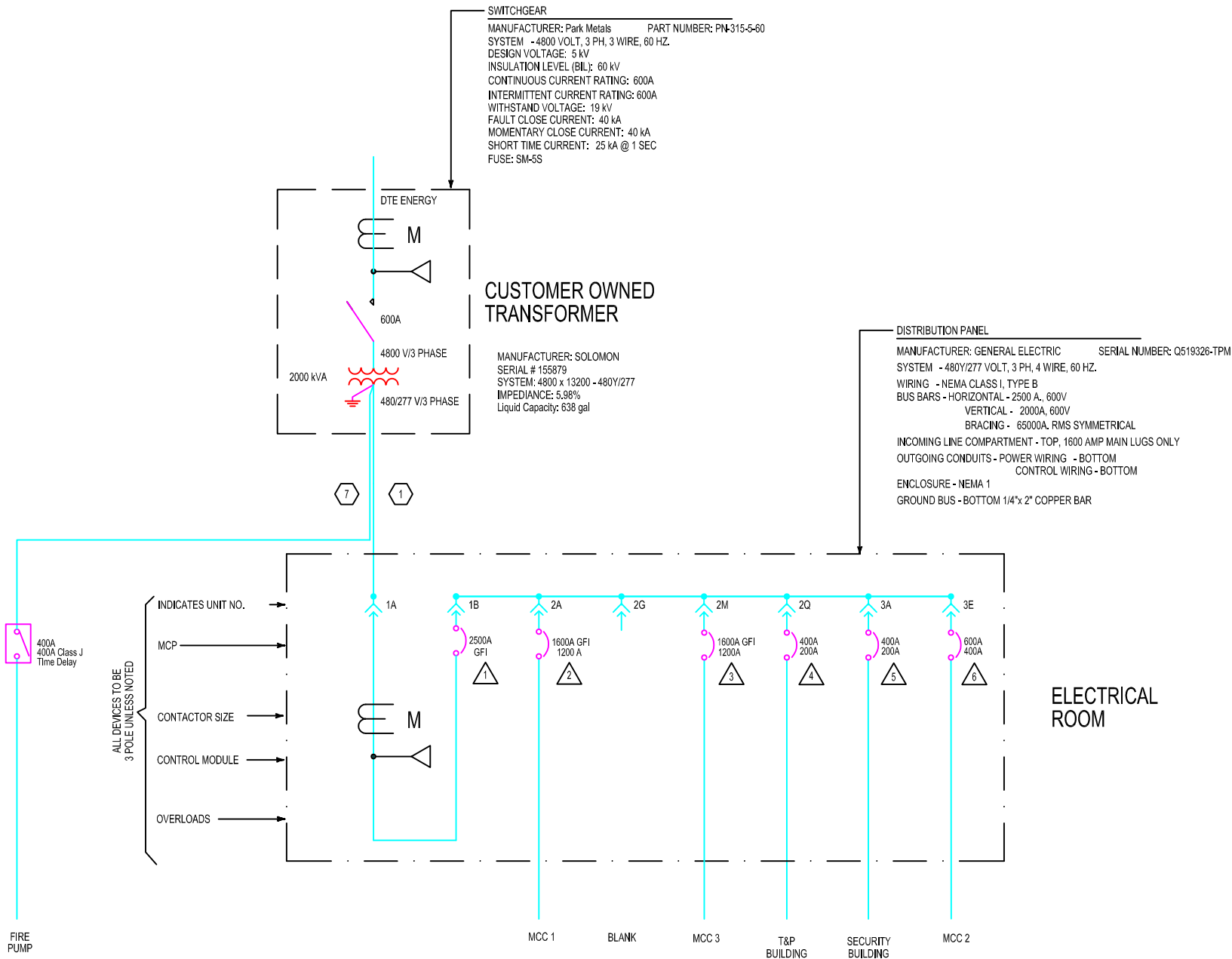
EQ DETROIT

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MAIN TREATMENT BUILDING

RAIL UNLOADING CONTAINMENT PLAN

C-21

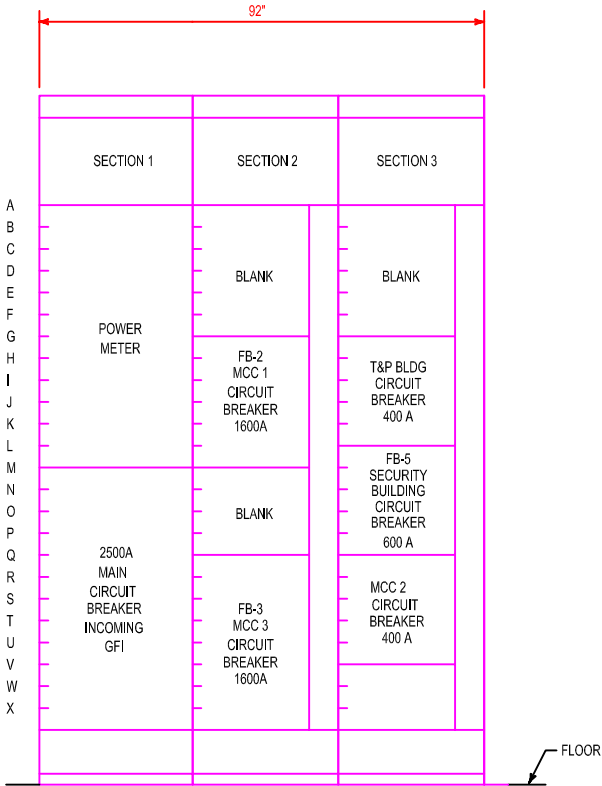


MCC ONE-LINE DIAGRAM

NTS

BREAKER TABLE					
	MANUFACTURER	PART NUMBER	SERIAL NUMBER	FRAME RATING	PLUG RATING
1	GE	TP2525TTFCE1R	148189	2500 Amps	2000 Amps
2	GE	TP1616TTR	148809	1600 Amps	1200 Amps
3	GE	TP1616TTR	148808	1600 Amps	1200 Amps
4	GE	SOLB36BF0400		400 Amps	200 Amps
5	GE	SOLB36BF0400		400 Amps	200 Amps
6	GE	SOLB36BF0600		600 Amps	600 Amps

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MCC ELEVATION

NTS

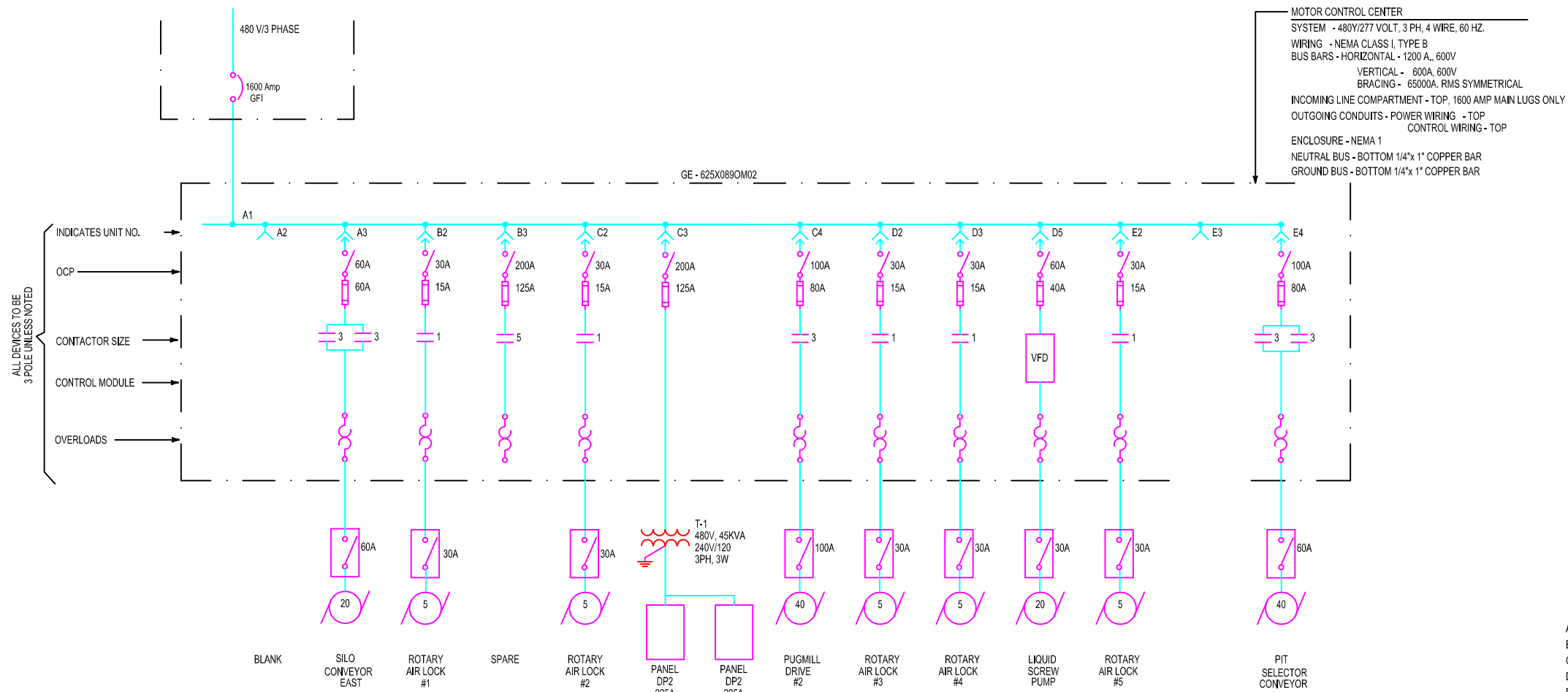
EQ DETROIT

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CHEMICAL FIXATION BUILDING

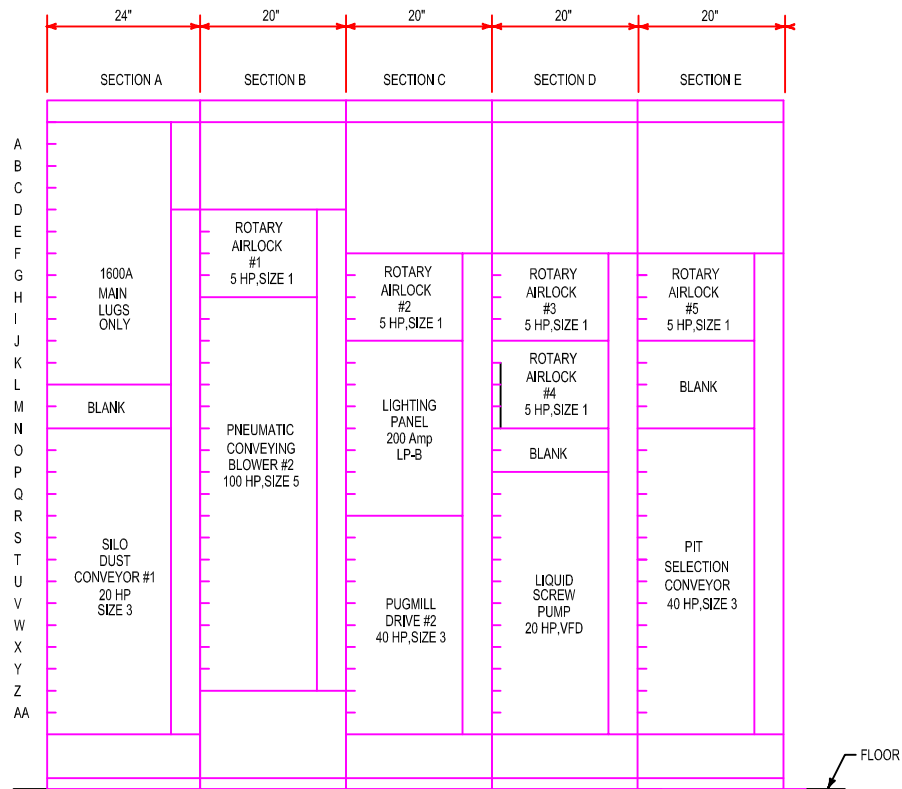
ONE LINE ELECTRICAL DIAGRAM - DISTRIBUTION PANEL

E-01



MCC ONE-LINE DIAGRAM

NTS



MCC ELEVATION

NTS

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REV	DATE:	DESCRIPTION:	BY

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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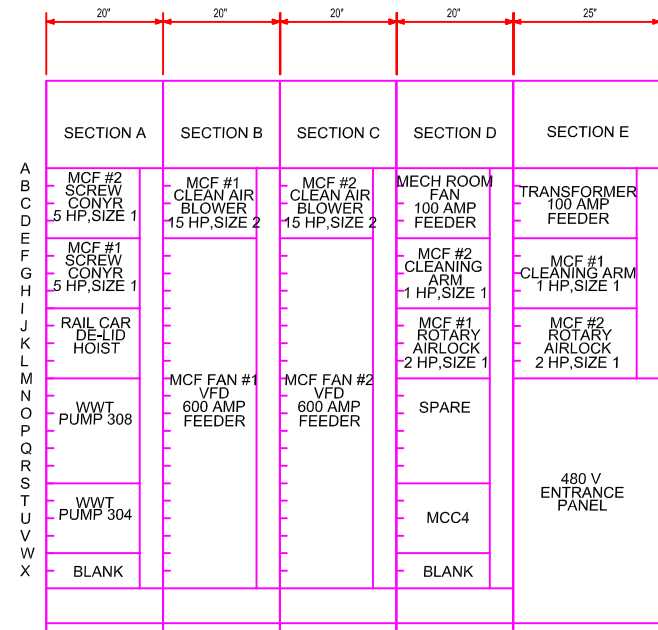
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

CHEMICAL FIXATION BUILDING

ONE LINE ELECTRICAL DIAGRAM - MCC 2

E-03

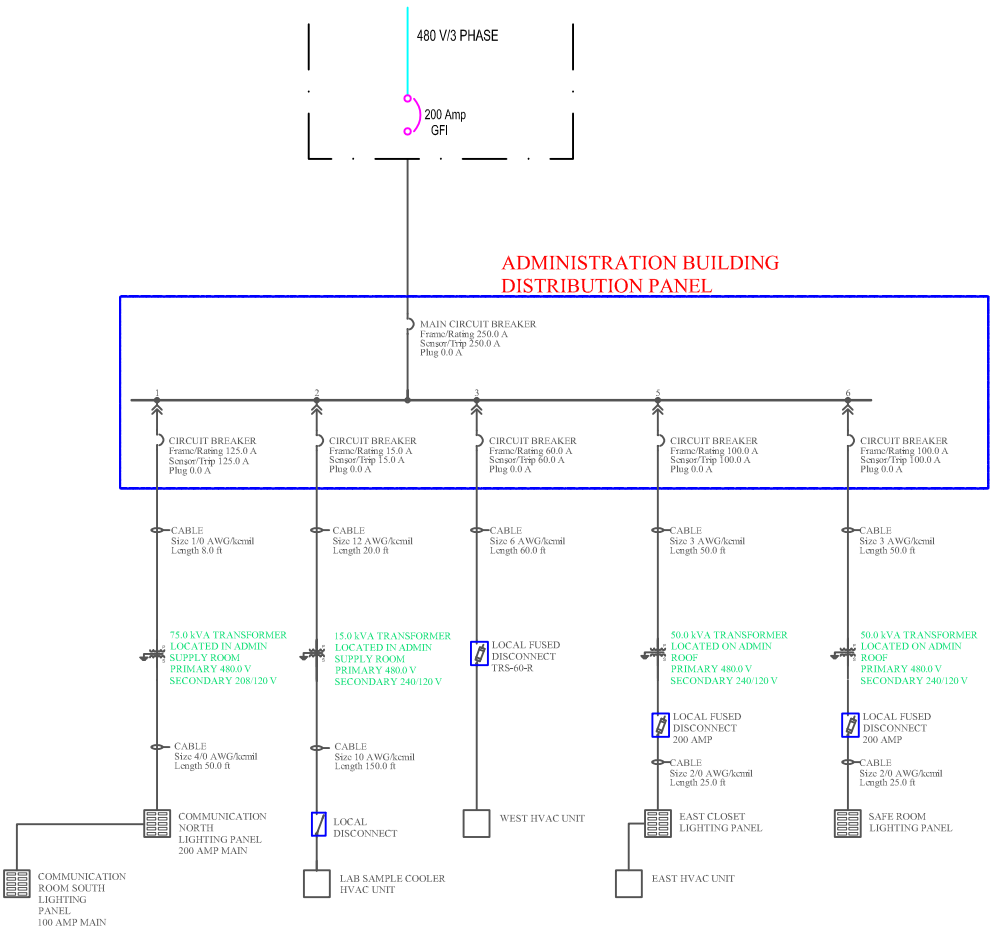
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SCALE:	NONE	SHEET:	
PROJECT NO.			
DRAWN:	AO	DATE:	01-JUNE-2020
CHECKED:		DATE:	
APPROVED:		DATE:	
<p>THIS DRAWING IS LOANED WITH THE EXPRESS AGREEMENT THAT THE DRAWING AND INFORMATION THEREIN CONTAINED ARE THE PROPERTY OF US COLUDDY AND WILL NOT BE REPRODUCED, COPIED, OR OTHERWISE DISSEMINATED OR INDIRECTLY BE USED IN WHOLE OR IN PART TO ASSIST IN MAKING OR TO FURNISH ANY INFORMATION FOR THE MAKING OF DRAWINGS, PRINTS, OR PHOTO COPIATIONS HEREON, OR FOR THE CONSTRUCTION OF PARTS THEREOF, EXCEPT UNDER WRITTEN PERMISSION OF US COLUDDY FIRST OBTAINED AND SPECIFIC AS TO THE FOLLOWING: THE ACCEPTANCE OF THIS DRAWING WILL BE CONSIDERED AS AN ACCEPTANCE OF THE FOREGOING AGREEMENT.</p>			

EQ DETROIT	
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CHEMICAL FIXATION BUILDING	
ONE LINE ELECTRICAL DIAGRAM - MCC 3	
E-04	

SERVICE DISCONNECT PANEL
SEE DRAWING E-05



NUMBER	REFERENCE DRAWING

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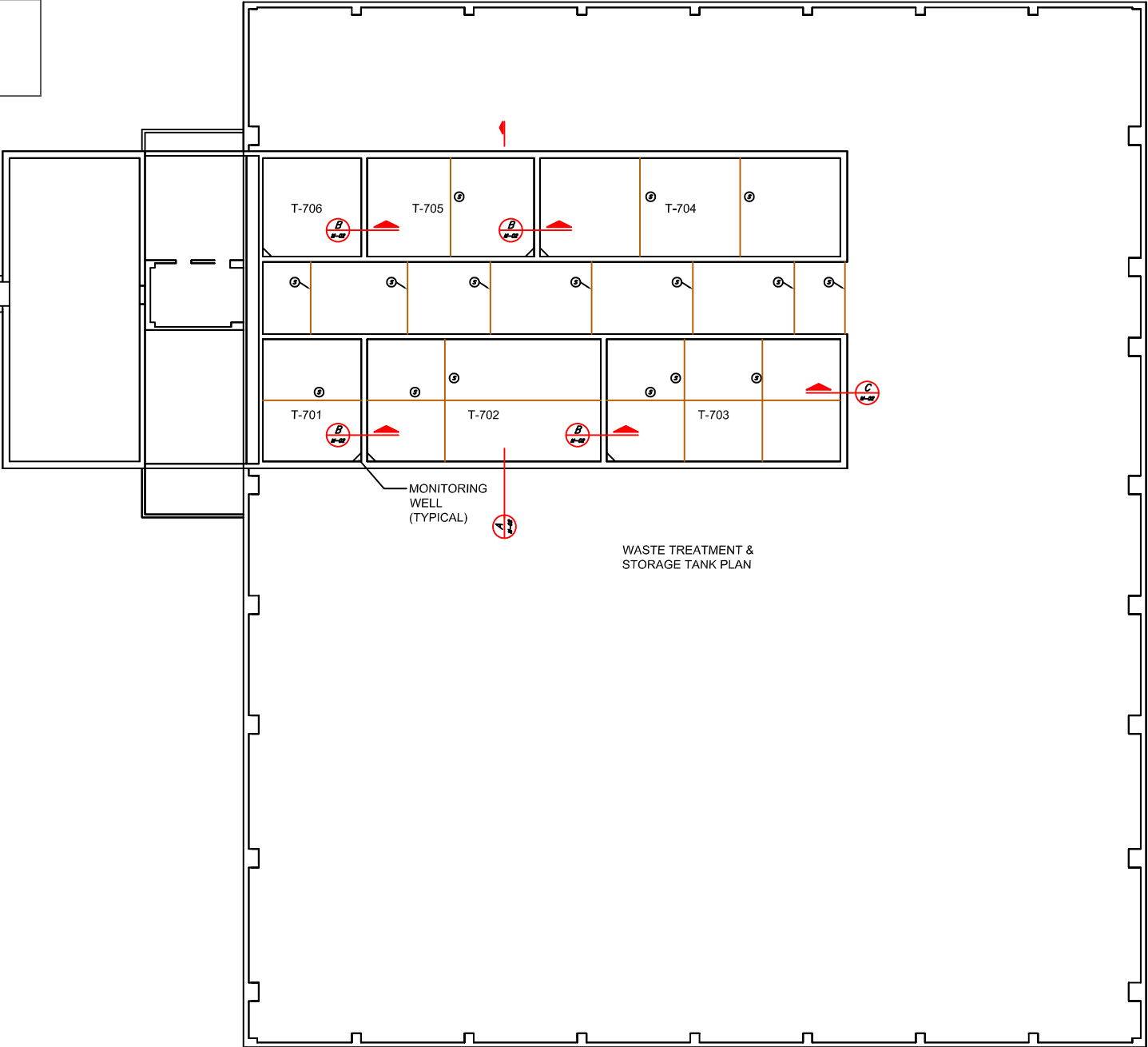
ADMINISTRATION BUILDING

ONE LINE ELECTRICAL DIAGRAM

E-06

CONTAINMENT & DETECTION OF RELEASES 40 CFR 264.193									
DESCRIPTION	CAPABLE OF DETECTING & COLLECTING RELEASES UNTIL REMOVED	COMPATIBLE MATERIAL OF CONSTRUCTION OR LINED	LEAK DETECTION	SLOPED TO DRAIN OR REMOVE LIQUIDS	LARGEST TANKS WITHIN BOUNDARY	DIMENSIONS & CAPACITY	PREVENTION OF RUN-ON OF INFILTRATION OR PRECIPITATION	FREE OF GAPS & CRACKS	CHEMICAL RESISTANT WATER STOP AT ALL JOINTS
700 SERIES TANKS	IN VAULT WITH INTERSTITIAL MONITORING WELLS	REINFORCED CONCRETE LINED WITH WELDED STEEL PLATES AND INTERSTITIAL BARS	YES	YES	T-704 NOMINAL505 CUBIC YARDS	IN VAULT WITH CONTAINMENT EQUAL TO TANK VOLUME	INSIDE BUILDING	NOT ACCESSIBLE	YES

SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-701	21' X 26'-6" X 10' DEEP 206 CYDS	NONE	NONE	VENTED TO ATMOSPHERE THROUGH CONTROL SYSTEM	HAZARDOUS, LIQUIDS, SLUDGES AND SOLIDS/ REINFORCED CONCRETE WITH WELDED STEEL PLATE LINING	N/A	NO
T-702	50'-6" X 26'-6" X 10' DEEP 496 CYDS	NONE	NONE	VENTED TO ATMOSPHERE THROUGH CONTROL SYSTEM	HAZARDOUS, LIQUIDS, SLUDGES AND SOLIDS/ REINFORCED CONCRETE WITH WELDED STEEL PLATE LINING	N/A	NO
T-703	50'-6" X 26'-6" X 10' DEEP 496 CYDS	NONE	NONE	VENTED TO ATMOSPHERE THROUGH CONTROL SYSTEM	HAZARDOUS, LIQUIDS, SLUDGES AND SOLIDS/ REINFORCED CONCRETE WITH WELDED STEEL PLATE LINING	N/A	NO
T-704	65' X 21" X 10' DEEP 506 CYDS	NONE	NONE	VENTED TO ATMOSPHERE THROUGH CONTROL SYSTEM	HAZARDOUS, LIQUIDS, SLUDGES AND SOLIDS/ REINFORCED CONCRETE WITH WELDED STEEL PLATE LINING	N/A	NO
T-705	36' X 21" X 10' DEEP 280 CYDS	NONE	NONE	VENTED TO ATMOSPHERE THROUGH CONTROL SYSTEM	HAZARDOUS, LIQUIDS, SLUDGES AND SOLIDS/ REINFORCED CONCRETE WITH WELDED STEEL PLATE LINING	N/A	NO
T-706	21' X 21" X 10' DEEP 163 CYDS	NONE	NONE	VENTED TO ATMOSPHERE THROUGH CONTROL SYSTEM	HAZARDOUS, LIQUIDS, SLUDGES AND SOLIDS/ REINFORCED CONCRETE WITH WELDED STEEL PLATE LINING	N/A	NO



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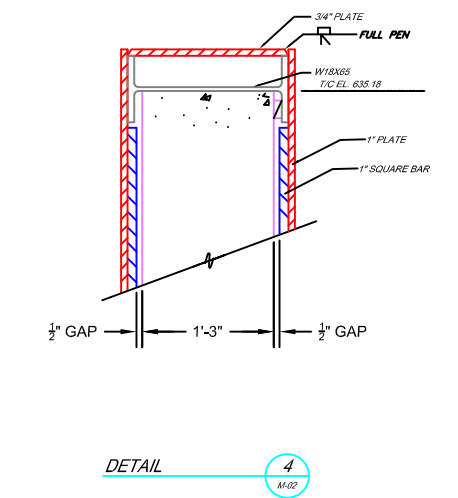
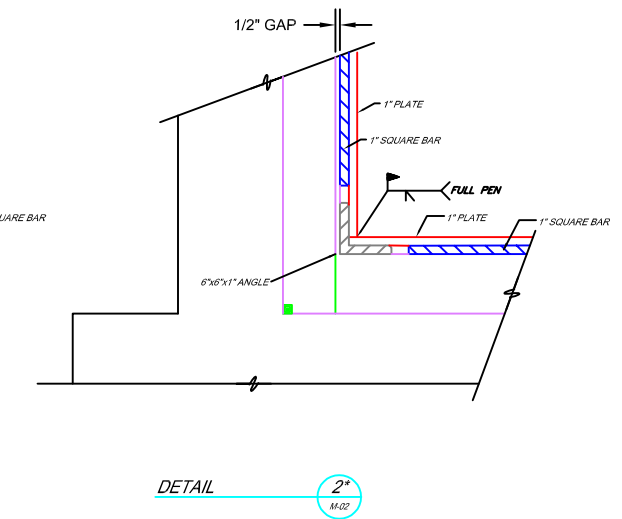
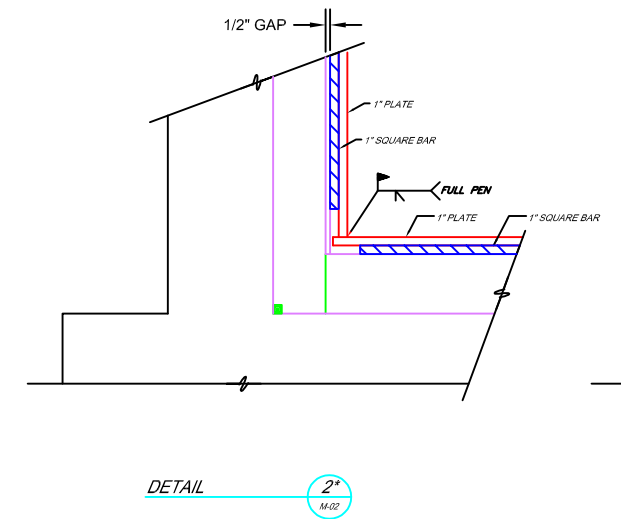
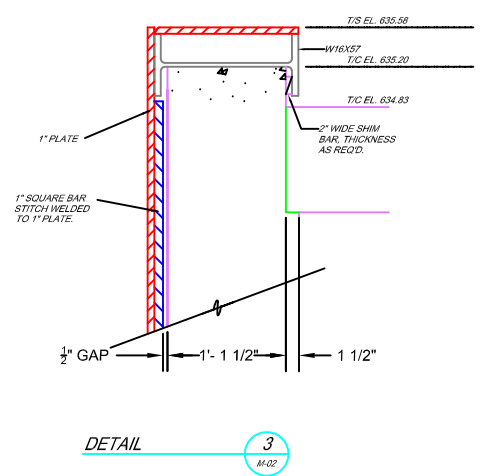
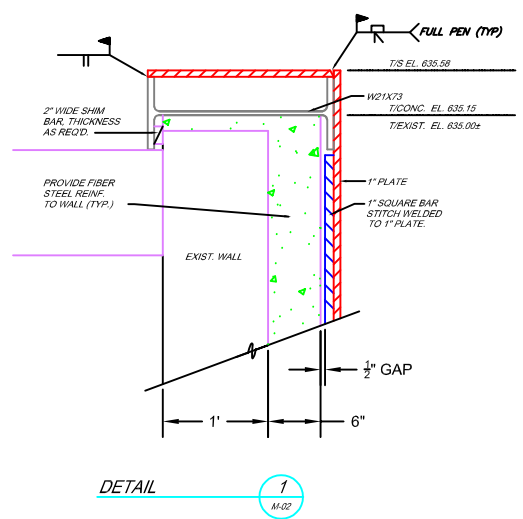
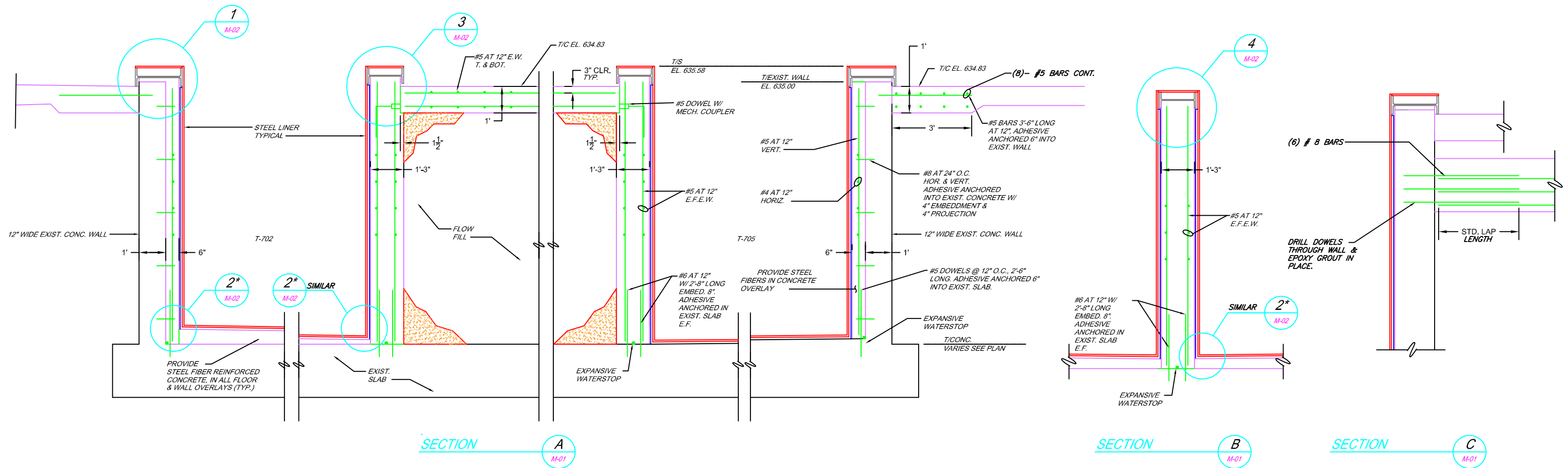
EQ DETROIT

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CHEMICAL FIXATION BUILDING

WASTE TREATMENT & STORAGE TANKS T-701 TO T-706

M-01



NUMBER	REFERENCE DRAWING

REV	DATE	DESCRIPTION	BY
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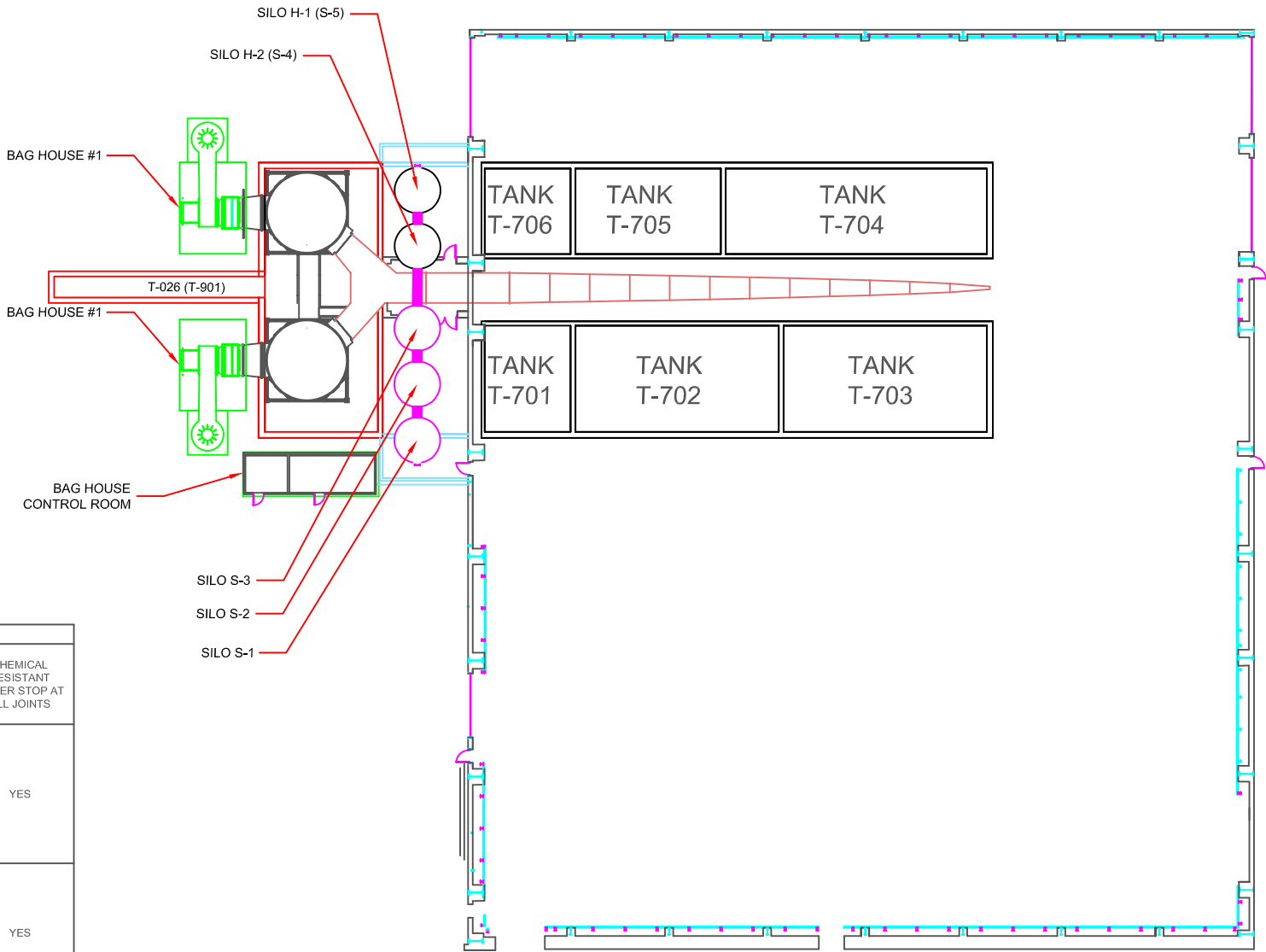
CHEMICAL FIXATION BUILDING

WASTE TREATMENT & STORAGE TANKS SECTIONS & DETAILS

M-02

CONTAINMENT & DETECTION OF RELEASES 40 CFR 264.193									
DESCRIPTION	CAPABLE OF DETECTING & COLLECTING RELEASES UNTIL REMOVED	COMPATIBLE MATERIAL OF CONSTRUCTION OR LINED	LEAK DETECTION	SLOPED TO DRAIN OR REMOVE LIQUIDS	LARGEST TANKS WITHIN BOUNDARY	DIMENSIONS & CAPACITY	PREVENTION OF RUN-ON OF INFILTRATION OR PRECIPITATION	FREE OF GAPS & CRACKS	CHEMICAL RESISTANT WATER STOP AT ALL JOINTS
H-1 (S-5)	CONTAINMENT AREA VISIBLE	CONCRETE	VISUAL	YES	41,500 GALLONS 100 YEAR RAINFALL = 4.8" = 64,000 GALLONS	CURB AREA 41' LONG X 22' WIDE, 9" AVE. DEPTH = 4966 GALLONS. ADDITIONAL AREA (21,620 SF) SOUTHEAST OF BUILDING = 64,000 GALLONS	DRAINS TO LOW POINT SUMPS, CURBING PROVIDED, NO COVER	YES	YES
H-S (S-4)	CONTAINMENT AREA VISIBLE	CONCRETE	VISUAL	YES	41,500 GALLONS 100 YEAR RAINFALL = 4.8" = 64,000 GALLONS	CURB AREA 41' LONG X 22' WIDE, 9" AVE. DEPTH = 4966 GALLONS. ADDITIONAL AREA (21,620 SF) SOUTHEAST OF BUILDING = 64,000 GALLONS	DRAINS TO LOW POINT SUMPS, CURBING PROVIDED, NO COVER	YES	YES

SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
H-1 (S-5)	12" DIA X 56' TALL/ 5541 CUBIC FEET	HIGH LEVEL ALARM	NONE	VENTED TO ATMOSPHERE THROUGH BAG HOUSE	DRY POWER/ CARBON STEEL	PAINTED	YES
H-2 (S-4)	12" DIA X 56' TALL/ 5541 CUBIC FEET	HIGH LEVEL ALARM	NONE	VENTED TO ATMOSPHERE THROUGH BAG HOUSE	DRY POWER/ CARBON STEEL	PAINTED	YES



CHEMICAL FIXATION BUILDING



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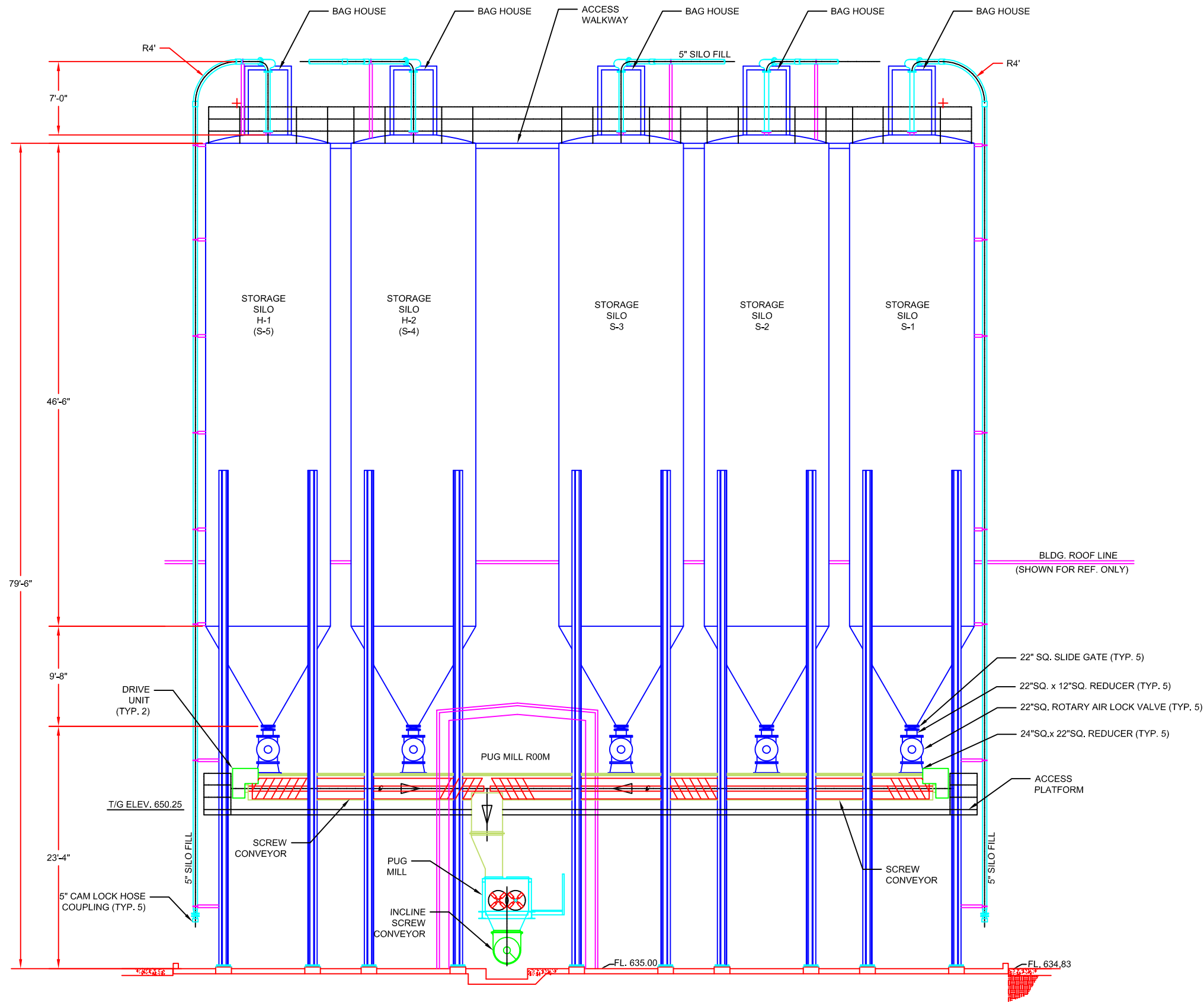
EQ DETROIT

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CHEMICAL FIXATION BUILDING

HAZARDOUS WASTE STORAGE SILOS - H1 & H2

M-03



NUMBER	REFERENCE DRAWING

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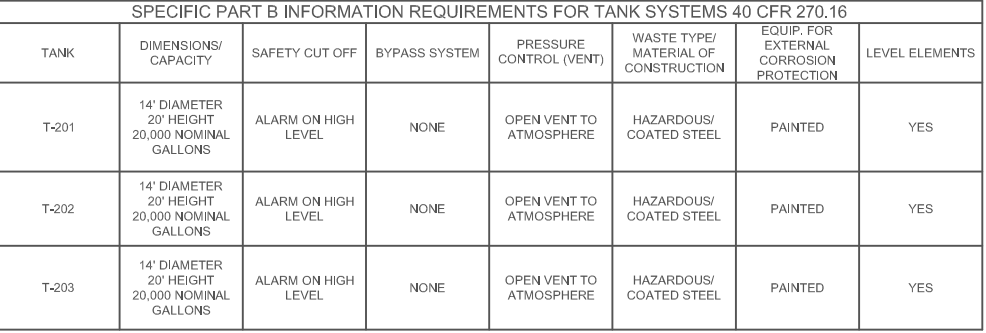
EQ DETROIT

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CHEMICAL FIXATION BUILDING

HAZARDOUS WASTE STORAGE SILOS - ELEVATION VIEWS

M-04



SPECIFIC GRAVITY : MAXIMUM 1.15



Fitting Schedule					
ITEM	QTY	SIZE	RATING	DESCRIPTION	Material
10	11	4	150	RF SOF w/ 4" S/40 PIPE .	CARBON ST
20	1	30		MANWAY ASSEMBLY	CARBON ST
30	1	30		MANWAY ASSEMBLY	CARBON ST
40	4	4	150	RF SOF w/ 4" S/40 PIPE	CARBON ST
50	5	1	150	RF SOF w/ 1" S/40 PIPE	CARBON ST
60	1	6	150	RF SOF w/ 6" S/40 PIPE	CARBON ST

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M-05

5	CHG. SERVICE, CORRECTED N22 IN ATTACHMENT CHART	6/12/18 DDL
4	CHANGED WHERE THE FITTINGS ARE DIMENSIONED FROM, RELOCATED SIDE MANHOLE IN ELEVATION.	5/31/18 DDL
3	RELOCATED N12,N13,N14,N19,N20,N21 & N22 IN ELEVATION.	5/30/18 DDL
2	CHG. N2-N7 TO 2", N9 TO 6", N11 TO 4", RELOCATED N12,N13,NN20,N21,N22,M3,M4 & BTT TAG IN ELEVATION, REVISED HOLE PATTERN & WIDTH OF AGITATOR RAIL	5/25/18 DDL
1	DELETED N4,N15,N17,N18, RELOCATED N19,N20,N21,N22, (3) HANDRAIL BRACKETS & HANDRAIL OPENING IN ORIENTATION, ADDED EQUIPMENT No.	5/14/18 DDL
REV	DESCRIPTION	DATE
REVISION		

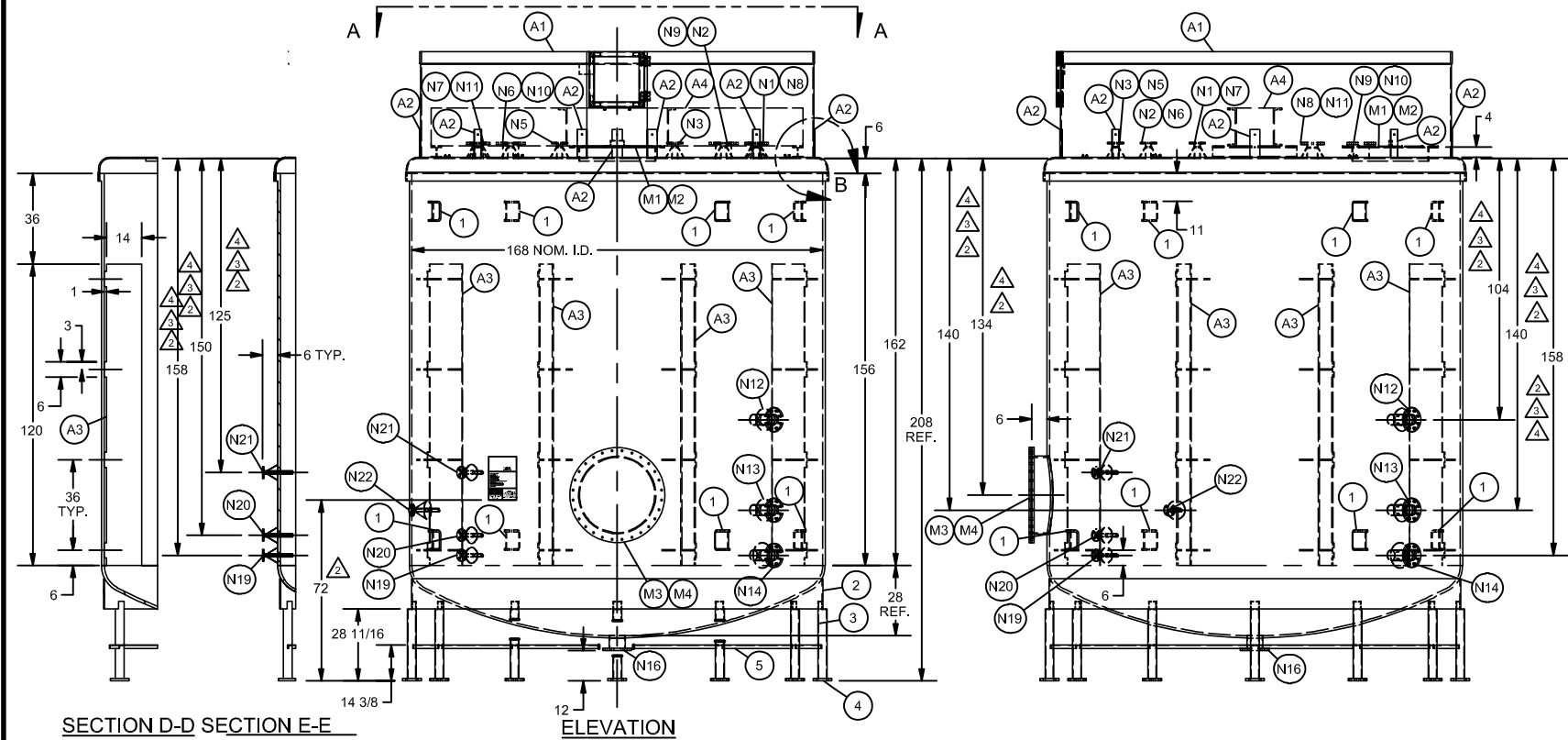
A6	6	1" DIA. SKIRT DRAIN HOLES	F.R.P.
A5	1	4" DIA. HOLE IN FLAT TOP	F.R.P.
A4	1	C15" @ 33.9#/FT. AGITATOR RAIL ASSEMBLY	C.S. POLY-U (PAINT GRAY)
A3	4	14" W. x 120" LG. PLATE-TYPE ANTI-SWIRL BAFFLES	F.R.P.
A2	9	3/8" TH. x 4" W. x 11" H. HANDRAIL MOUNT BRACKETS	F.R.P.
A1	1	REMOVABLE SKIRT HANDRAIL ASSEMBLY W/ SAFETY GATE	F.R.P.
ITEM	QTY	DESCRIPTION	MATERIAL
ACCESSORIES			

AA-pH PROBE	N22	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
X-SAMPLE	N21	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
W-SAMPLE	N20	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
V-SAMPLE	N19	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
S-DRAIN	----- DELETED -----			
	----- DELETED -----			
	N16	1	6" 150# FLANGED NOZZLE	F.R.P.
	----- DELETED -----			
ITEM	QTY		DESCRIPTION	MATERIAL
NOZZLES				

Q-DISCHARGE	N14	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
P-DISCHARGE	N13	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N-DISCHARGE	N12	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
K-FILL	N11	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
J-VENT	N10	1	6" 150# FLANGED NOZZLE	F.R.P.
I-LEVEL	N9	1	6" 150# FLANGED NOZZLE	F.R.P.
H-SPARE	N8	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
G-BLEACH	N7	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
F-SPARE	N6	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
E-SPARE	N5	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
	----	----	----- DELETED -----	----
C-FERRIC	N3	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
B-FERRIC	N2	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
A-FILL	N1	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
	ITEM	QTY	DESCRIPTION	MATERIAL
NOZZLES				
	M4	1	38" DIA. COVER PLATE W/S.S. BOLTS & EPDM GASKET	F.R.P.
	M3	1	30" DIA. SIDE MANHOLE	F.R.P.
	M2	1	38" DIA. COVER W/ HANDLE,S.S. BOLTS & EPDM GASKET	F.R.P.
	M1	1	30" DIA. TOP MANHOLE	F.R.P.
	ITEM	QTY	DESCRIPTION	MATERIAL

OWNER	EQ DETROIT
PO No	12187
EQUIPT. No.	TANK 204
SERVICE:	TREATMENT OF INDUSTRIAL WASTE BY CHEMICAL PRECIPITATION UNSING 40% FERRIC CHLORIDE AND 15% SODIUM HYPOCHLORITE

DESIGN DATA:	
DESIGN STANDARD	ASTM D 3299-10
MAX. PRESSURE	ATMOSPHERIC
VACUUM	NONE
MAX TEMP.	70°F
SPECIFIC GRAVITY	1.5 MAX
SEISMIC CODE	ASCE 7-10(SITE CLASS=D)
SEISMIC DESIGN	RISK CATEGORY = II, SDs = 0, SD1 = 0.075
WIND LOAD	0 MPH
SNOW LOAD	0 PSF
APPROX. EMPTY WEIGHT	6,900 LBS.
NOM. CAPACITY	16,603 GALLONS
INTERIOR CATALYST	BPO/DMA
EXTERIOR CATALYST	Co/MEKP
LINER RESIN	DERAKANE 441-400
STRUCTURAL RESIN	DERAKANE 441-400
EXTERIOR LAYER RESIN	DERAKANE 441-400
COLOR	NATURAL
VEIL	DOUBLE GLASS



SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-204	14' DIAMETER x 15'-10" TALL / 17,000 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	HAZARDOUS/ DERAKANE 441-400 F.R.P.	NONE	YES

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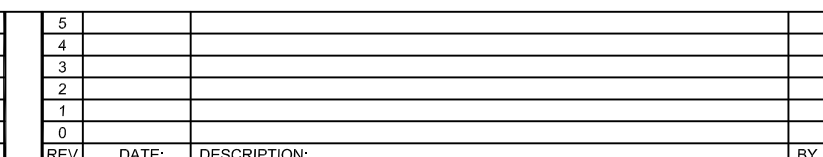
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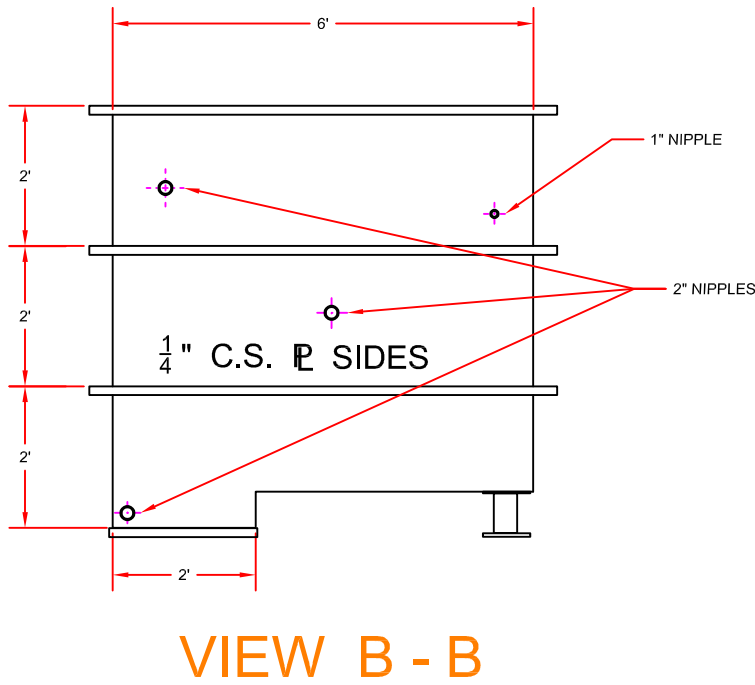
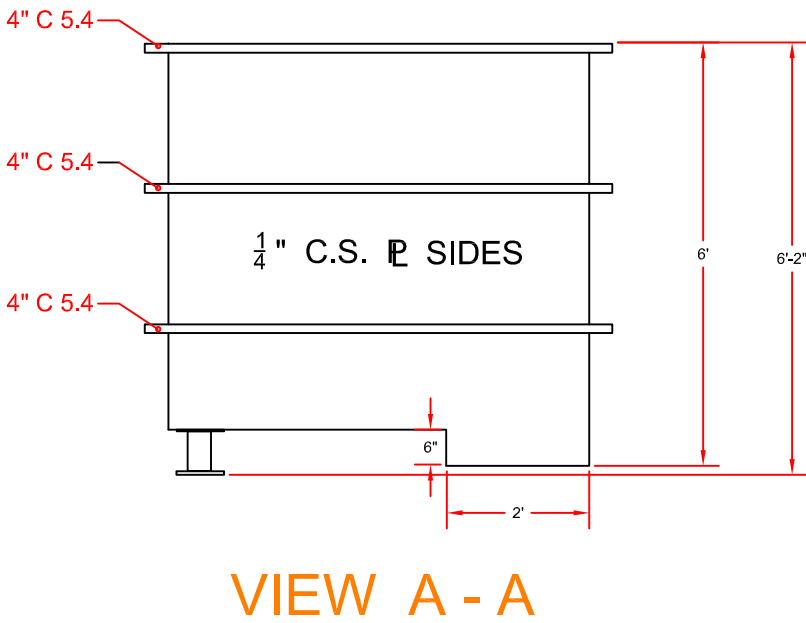
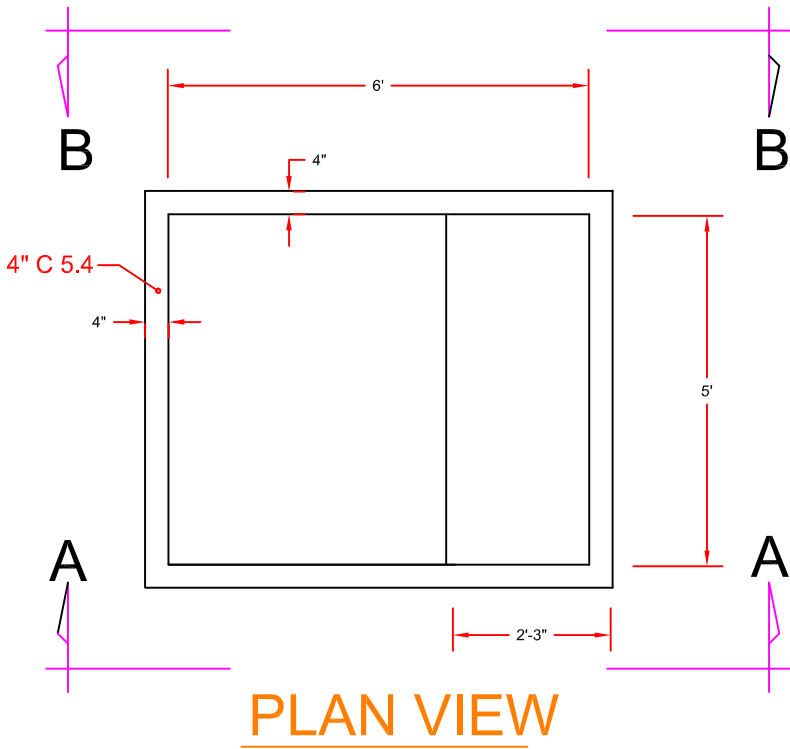
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WWT MAIN TREATMENT BUILDING

HAZARDOUS TREATMENT TANKS T-204

M-06





SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-207	6' x 5' x 6' TALL / 1,200 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	HAZARDOUS/ CARBON STEEL	NONE	YES

NUMBER	REFERENCE DRAWING

5			
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REV	DATE:	DESCRIPTION:	BY

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

WWT MAIN TREATMENT BUILDING

HAZARDOUS TREATMENT TANKS T-207

M-09

DESIGN DATA

[illegible]

RELEASED
FOR
FABRICATION
DATE: 6-12-18

A7	6 1/4"	DIA. SKIRT DRAIN HOLES	F.R.P.
A6	1 4"	DIA. HOLE IN FLAT TOP	F.R.P.
A5	1	C15" @ 33.9#/FT. AGITATOR RAIL ASSEMBLY	C.S. POLY-U (PAINT GRAY)
A4	4	14" W. x 66" LG. PLATE-TYPE ANTI-SWIRL BAFFLES	F.R.P.
A3	4	14" W. x 54" LG. PLATE-TYPE ANTI-SWIRL BAFFLES	F.R.P.
A2	9	3/8" TH. x 4" W. x 11" H. HANDRAIL MOUNT BRACKETS	F.R.P.
A1	1	REMOVABLE SKIRT HANDRAIL ASSEMBLY W/ SAFETY GATE	F.R.P.
ITEM	QTY	DESCRIPTION	MATERIAL
ACCESSORIES			

N14	1	6" 150# FLANGED NOZZLE	F.R.P.
N13	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N12	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N11	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N10	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N9	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N8	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N7	1	6" 150# FLANGED NOZZLE	F.R.P.
N6	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N5	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N4	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N3	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N2	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
N1	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.

ITEM	QTY	DESCRIPTION	MATERIAL
MANHOLE			
5	1	3/16" TH. x 1 1/2" ANGLE SINGLE LEG BRACE	C.S. POLY-U (PAINT GRAY)
4	12	15/16" TH. x 7 1/2" DIA. FLOOR FLANGES W/ (4) 3/4" DIA HOLES	C.S. POLY-U (PAINT GRAY)
3	12	3" SCH. 40 X TO SUIT LG. PIPE LEGS	C.S. POLY-U (PAINT GRAY)
2	1 3/8"	TH. x 12" W. SUPPORT RING	C.S. POLY-U (PAINT GRAY)
1A	8	ASSEMBLY LUGS No. 7	C.S. POWDER COATED
1	8	LIFTING LUGS No. 7	C.S. POWDER COATED
ITEM	QTY	DESCRIPTION	MATERIAL

<h1 style="text-align: center;">TANK COMPONENTS</h1>			
<p style="text-align: center;">70 W. LONG LAKE RD. SUITE 121 TROY, MI 48068 PHONE: (248) 879-9000 FAX: (248) 879-9090 WWW.WAGNERENTERPRISE.COM</p>			
<p style="text-align: center;">200 N. GOODING ST. - P.O. BOX 180 - BELDING, MICHIGAN 48809-160 PHONE: (616) 794-1130 FAX: (616) 794-3666 E-MAIL: sales@beldingtank.com WEBSITE: www.beldingtank.com</p>			
<h2 style="text-align: center;">GENERAL ARRANGEMENT</h2>			
<h3 style="text-align: center;">168" DIA. x 162" S.S. x 208" HIGH F.R.P. TANK</h3>			
DATE:	04/24/18	ORDER NO.:	32864
SCALE:	NONE	MODEL NO.:	(1) C-FDV-14-16603
CUSTOMER:			CHECKED BY:
		MWW	
<h2 style="text-align: center;">EQ DETROIT</h2>			
REP:	DWG. NO.:	D-30784	SHEET NO.: 1 OF 4

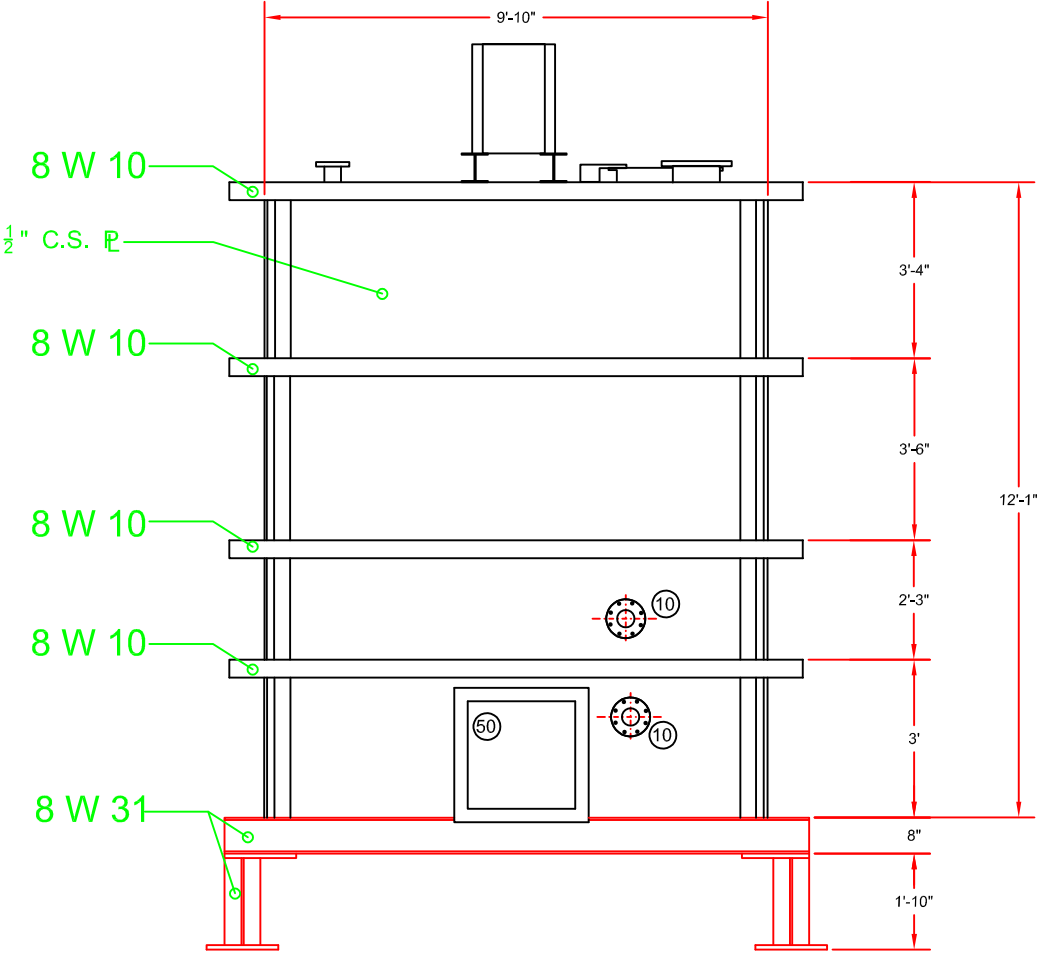
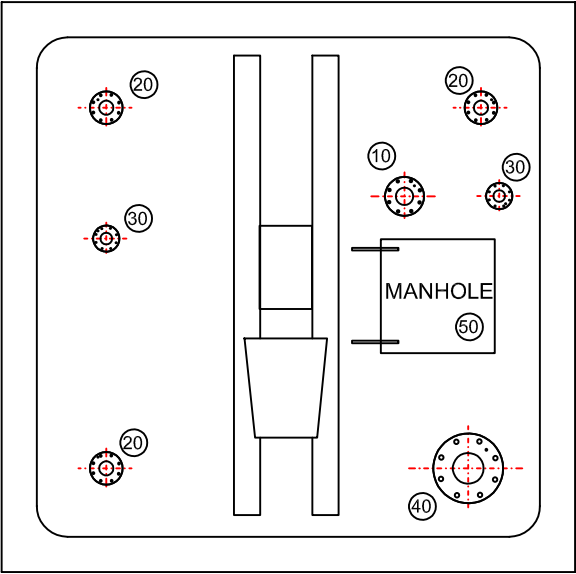
SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-208	14" DIAMETER x 15'-10" TALL / 17,000 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	HAZARDOUS/ DERAKANE 441-400 F,R,P.	NONE	YES

		5				
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NUMBER	REFERENCE DRAWING	REV	DATE:	DESCRIPTION:		BY

SCALE:	NONE	SHEET:	
PROJECT NO:			
DRAWN:	AEO	DATE:	01-JUNE-2020
CHECKED:		DATE:	
APPROVED:		DATE:	

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EQ DETROIT	
1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300	
WWT MAIN TREATMENT BUILDING	
HAZARDOUS TREATMENT TANKS T-208	
M-10	



SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-301	9'-10" x 9'-10" x 12' HEIGHT 8,000 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	CORROSIVE/ CARBON STEEL FIBERGLASS LINED	PAINTED	YES
T-302	9'-10" x 9'-10" x 12' HEIGHT 8,000 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	CORROSIVE/ CARBON STEEL FIBERGLASS LINED	PAINTED	YES

NOTE: INTERIOR OF TANK LINED
WITH $\frac{1}{4}$ " FIBERGLASS, NEXUS
VEIL AND DOW VINYL ESTER
DERAKANE 470-36

Fitting Schedule					
ITEM	QTY	SIZE	RATING	DESCRIPTION	Material
10	3	4	150	RF SOF w/ 4" S/40 PIPE .	CARBON ST
20	3	3	150	RF SOF w/ 4" S/40 PIPE .	CARBON ST
30	2	2	150	RF SOF w/ 4" S/40 PIPE .	CARBON ST
40	1	10	150	RF SOF w/ 10" S/40 PIPE	CARBON ST
50	2	30		MANWAY ASSEMBLY	CARBON ST

NUMBER	REFERENCE DRAWING

5		
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REV	DATE:	DESCRIPTION:
		BY

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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EQ DETROIT

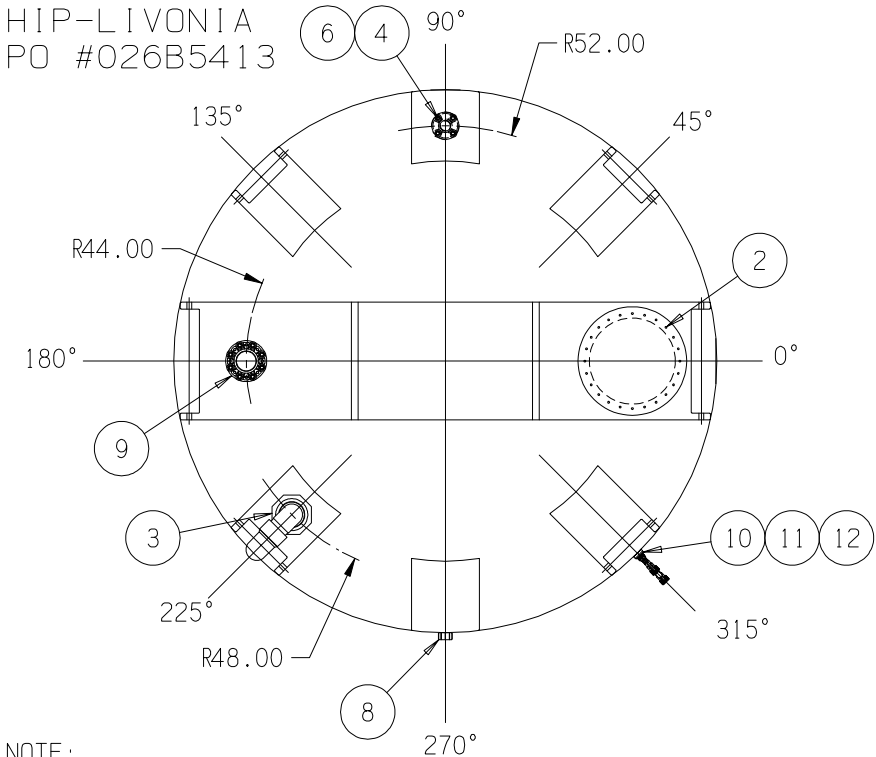
1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

WWT MAIN TREATMENT BUILDING

HAZARDOUS TREATMENT TANKS T-301 AND T-302

M-11

HIP-LIVONIA
PO #026B5413



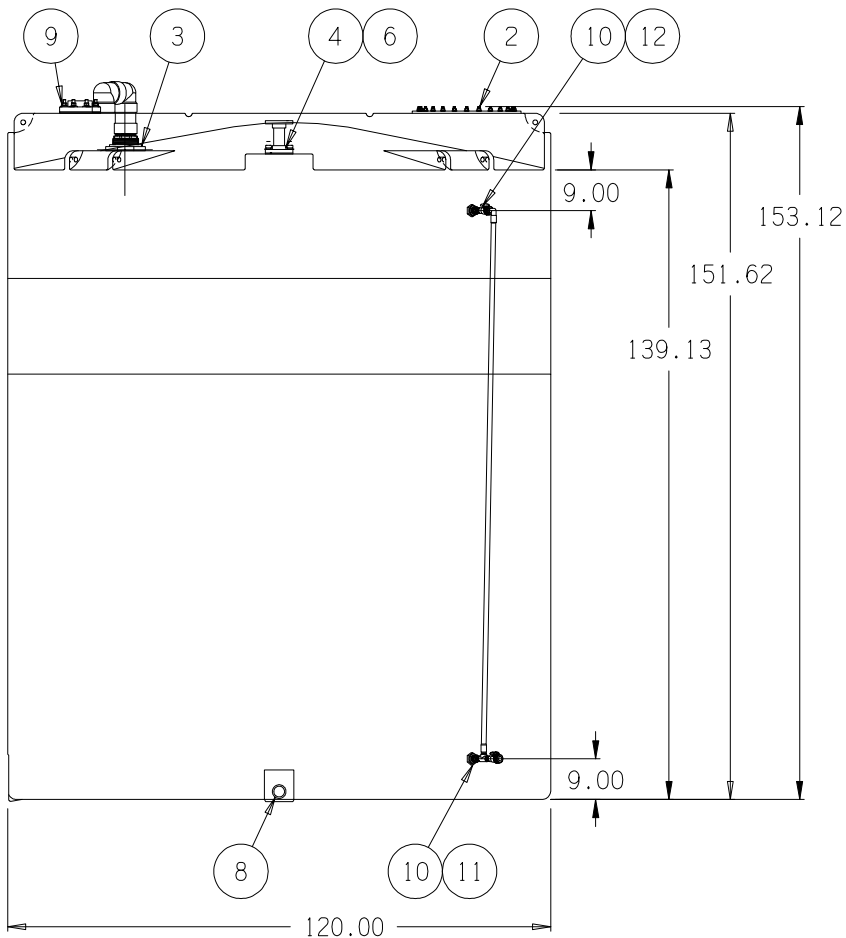
NOTE:
ALL EXTERNAL PIPING MUST BE INDEPENDENTLY SUPPORTED.
SII RECOMMENDS SHORTENING FLANGE ADAPTERS ON FLEXMASTER COUPLINGS TO REDUCE TANK WALL STRESS. A NOTCH IN THE TANK SUPPORT PAD MAY BE ADVISABLE. ADEQUATE CLEARANCE MUST BE ALLOWED FOR S.U.M.O. FITTING AND PIPING ACCESSORIES.

2. 24" PE BOLTED-SEALED MANWAY W/20" ACCESS [P/N 34700353]
3. 4" PVC SxT BH U-VENT ASSY W/EPDM GASKET [P/N 34700260]
4. 2" PVC DBL FLANGED BOLTED FTG W/EPDM GASKETS & ENCAP. SS LONG BOLTS [P/N 34700630]
5. 2" HD/NAT FLEXMASTER COUPLER [P/N 5390100N95401] - NOT SHOWN, SHIPPED LOOSE
6. 2" PVC SCH. 80 SLIP-FIT FLANGE ADAPTER [P/N 34700861]
7. 2" EPDM GASKET FOR PVC (CPVC) BOLTED FITTINGS [P/N 33100020]-NOT SHOWN, SHIPPED LOOSE
8. 2" S.U.M.O. W/HASTELLOY INSERT, VITON O-RINGS & PVC ADAPTER [P/N 34700726]
9. 4" PVC DBL FLANGED BOLTED FTG W/EPDM GASKETS & ENCAP. SS LONG BOLTS [P/N 34700634]
10. 3/4" PVC SxT BH SIGHT GLASS ASSY W/EPDM GASKETS [P/N 34700198]
11. 3/4" PVC SIGHT GLASS DRAIN VALVE ASSY W/EPDM O-RINGS & TEE [P/N 34700206]
12. 3/4" PVC SIGHT GLASS VALVE ASSY W/EPDM O-RINGS [P/N 34700207]
13. PROTECTIVE PLASTIC PACKAGING, 4000 - 9500 GAL. (120") [P/N 00000175] - NOT SHOWN
14. ADHESIVE GALLONAGE INDICATOR FOR 120" Ø TANKS [P/N 99700195] - NOT SHOWN, SHIP LOOSE

* BASE FITTINGS TO BE LEFT INSTALLED AT TIME OF SHIPMENT PER SII PROCEDURE
* Consult Snyder's Guidelines for Use and Installation prior to delivery. Available on-line at www.snydernet.com
ALL DIMENSIONS, DESIGNS, AND INFORMATION ON THIS PRINT MUST BE CONSIDERED PROPRIETARY TO SNYDER INDUSTRIES, INC. AND MAY NOT BE USED, COPIED, OR DISTRIBUTED WITHOUT WRITTEN PERMISSION OF AN OFFICER (OR HIS AGENT) OF THE FIRM.

6,500 GALLON FLAT BOTTOM TANK

© SNYDER INDUSTRIES, INC., 2013



APPROVED: _____

SIGNATURE: _____ DATE: ____
DRAWING NOT VALID UNLESS SIGNED

(all dimensions in inches)

PART # TANK: 7140014N97201
HDLPE/NATURAL/1.9 SG
ROTATE MOLD CAN 180°
REF#: 31257 11/16/13

SNYDER INDUSTRIES INC.

SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16

TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-303	10' DIAMETER x 12' TALL / 6,500 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	CORROSIVE/ HDL POLYETHYLENE	NONE	YES

NUMBER	REFERENCE DRAWING

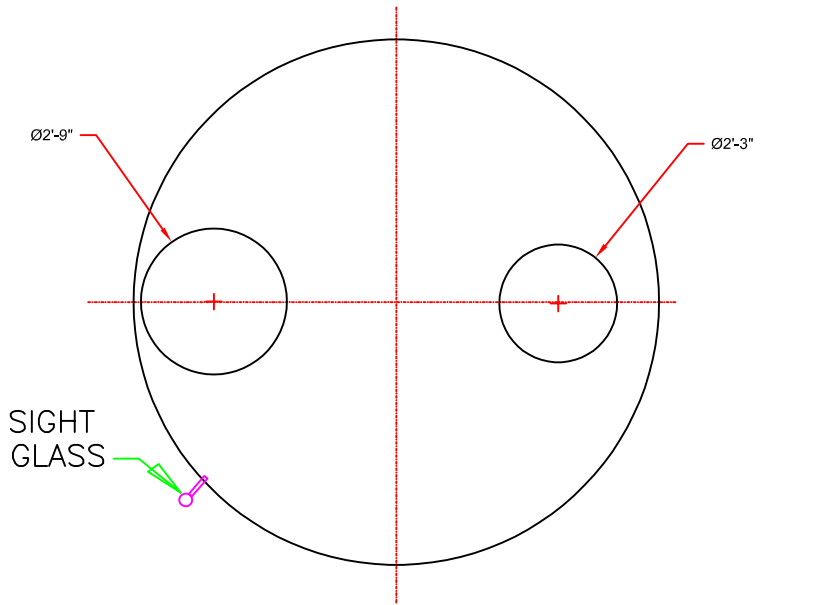
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SCALE: NONE	SHEET:
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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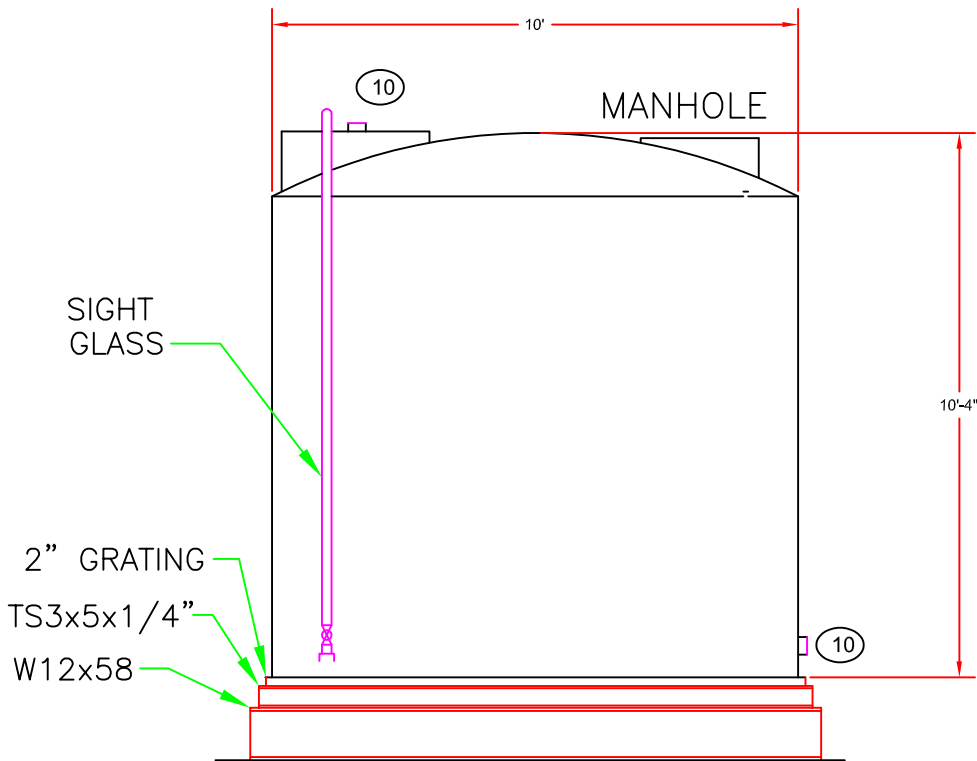
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300
WWT MAIN TREATMENT BUILDING
HAZARDOUS TREATMENT TANKS T-303

M-12



PLAN VIEW



SIDE VIEW

SPECIFICATIONS

- 1) Service:
- Waste Acid Storage
- 2) Temperature:
- Operating: Ambient Design: 120 F
- 3) Pressure:
- Operating: Atmospheric
- 4) Capacity:
- 6,500 U.S. Gallons
- 5) Specific Gravity:
- Design: 1.15 maximum

CONSTRUCTION

Shell: High Density Cross-Linked Polyethylene

Fitting Schedule					
Item	Qty	Size	Rating	Description/Service	Material
10	2	2		Threaded Connections	HDPE

SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-304	10' DIAMETER x 10' TALL / 6,500 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	CORROSIVE/ HDL POLYETHYLENE	NONE	YES

NUMBER	REFERENCE DRAWING

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REV	DATE:	DESCRIPTION:

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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BY	

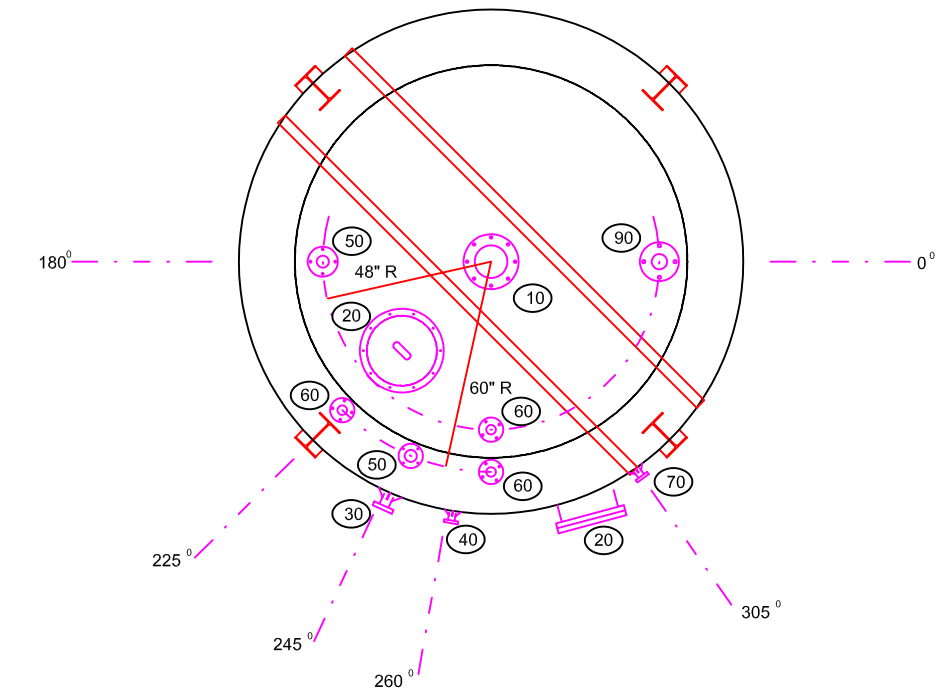
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

WWT MAIN TREATMENT BUILDING

HAZARDOUS TREATMENT TANKS T-304

M-13



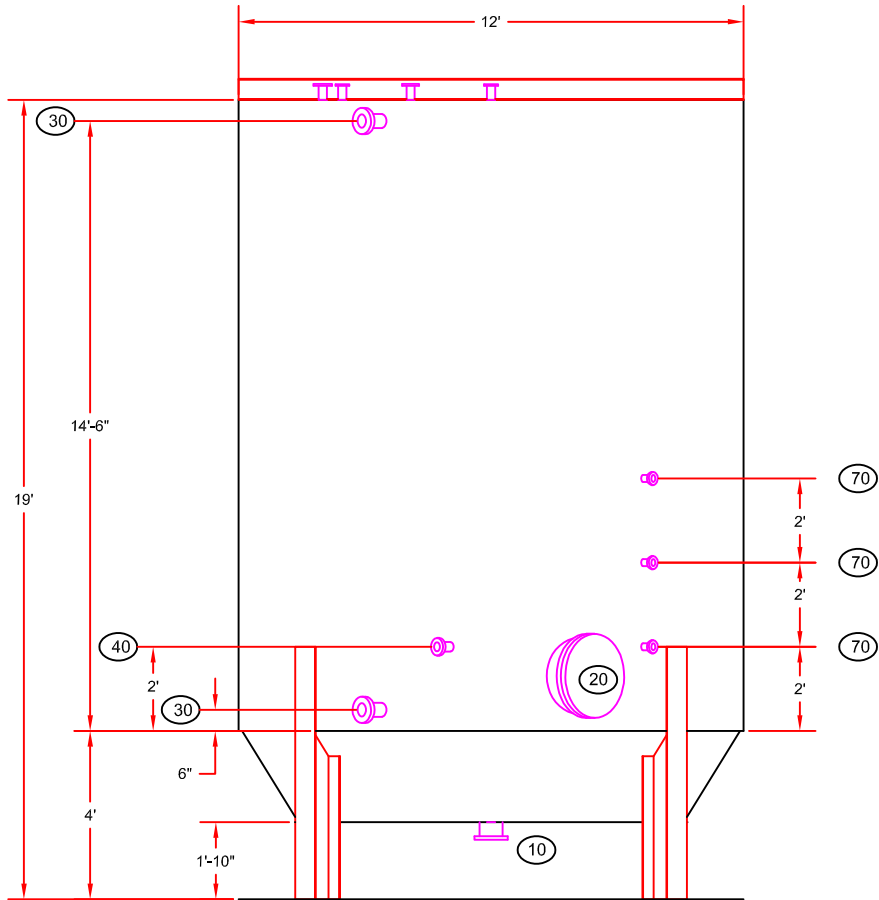
SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-305	12' DIAMETER x 17" HEIGHT 15,000 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	CORROSIVE WASTE/ COATED STEEL FIBERGLASS LINED	PAINTED	YES

SPECIFICATIONS

- 1) Service:
- 2) Temperature: Operating: Ambient Design: 200 F
- 3) Pressure: Operating: Atmospheric
- 4) Capacity: 15,000 U.S. Gallons
- 5) Specific Gravity: Design: 1.15 maximum

CONSTRUCTION

Tank Shell: Carbon Steel
Interior Liner: FRP



Fitting Schedule					
Item	Qty	Size	Rating	Description/Service	Material
10	1	6	125	H.L. Flange	FRP
20	1	24		Manway Assembly	FRP
30	1	3	125	H.L. Flange	FRP
40	1	2	125	H.L. Flange	FRP
50	1	2 1/2	125	H.L. Flange	FRP
60	1	1 1/2	125	H.L. Flange	FRP
70	1	1	125	H.L. Flange	FRP
80	1	16	125	H.L. Flange	FRP
90	1	4	125	H.L. Flange	FRP

HAZARDOUS WASTE TANK - T-305

NUMBER	REFERENCE DRAWING

5			
4			
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REV	DATE:	DESCRIPTION:	BY

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

WWT MAIN TREATMENT BUILDING

HAZARDOUS TREATMENT TANKS T-305

M-14

1	CHG. NOZ. (N10) TO 4", CHG. HOLE IN FLAT TOP (A3) TO 8", MOD. AGITATOR RAIL	5/13/2020 WAD
REV	DESCRIPTION	DATE
REVISION		

A3	1	8" DIA. HOLE IN FLAT TOP	_____
A2	4	14" W. x 156" LG. PLATE-TYPE ANTI-SWIRL BAFFLES	F.R.P.
A1	1	C15" @ 33.9#/ FT. AGITATOR RAIL ASSEMBLY	C.S. POLY-U PAINTED GRAY
ITEM	QTY	DESCRIPTION	MATERIAL
ACCESSORIES			

LEVEL -----	N15	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P
SPARE -----	N14	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P
SPARE -----	N13	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P
MANIFOLD FILL----	N12	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P
TRUCK FILL-----	N11	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P
△ DRAIN -----	N10	1	4" 150# SIDE-BOTTOM FLANGED NOZZLE W/ (1) FULL PLATE GUSSET	F.R.P
PH-----	N9	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P
FERRIC ACID #1--	N8	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
FERRIC ACID #2--	N7	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
BLEACH -----	N6	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
MANIFOLD -----	N5	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
LIME -----	N4	1	2" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
SAMPLE -----	N3	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
SAMPLE -----	N2	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
SAMPLE -----	N1	1	1" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
	ITEM	QTY	DESCRIPTION	MATERIAL

NOZZLES			
M4	1	38 3/4" DIA. COVERPLATE W/ S.S. BOLTS & EPDM GASKET	F.R.P.
M3	1	30" DIA. SIDE MANHOLE	F.R.P.
M2	1	34" DIA. COVER W/ S.S. HANDLE, S.S. BOLTS & EPDM GASKET	F.R.P.
M1	1	30" DIA. TOP MANHOLE	F.R.P.
ITEM	QTY	DESCRIPTION	MATERIAL

MANHOLES			
2	4	HOLD DOWN LUGS No. 7	C.S. POWDER COATED
1A	8	ASSEMBLY LUGS No.7	C.S. POWDER COATED
1	4	LIFTING LUGS No. 7	C.S. POWDER COATED
ITEM	QTY	DESCRIPTION	MATERIAL

TANK COMPONENTS	
70 W. LONG LAKE RD. SUITE 121 TROY, MI 48098 PHONE: (248) 879-9000 FAX: (248) 879-9090 WWW.WAGNERENTERPRISE.COM	
200 N. GOODING ST. - P.O. BOX 160 - BELDING, MICHIGAN 48809-160 PHONE: (616) 794-1130 FAX: (616) 794-3666 E-MAIL: sales@beldingtank.com WEBSITE: www.beldingtank.com	

ELEVATION & SECTIONS PAGE			
168" DIA. x 212" S.S. x 218" HIGH F.R.P. TANK			
DATE: 4/30/2020	ORDER NO.: 34054	DRAWN BY: WAD	
SCALE: NONE	MODEL NO.: (1) C-FSV4-DT2013	CHECKED BY: MWW	
EQ ELECTROD, INC			
REP:	DWG. NO. D-31878	SHEET NO. 2 OF 4	

VENT-----	N20	1	6" 150# FLANGED NOZZLE	F.R.P.
WATER FILL--	N19	1	6" 150# FLANGED NOZZLE	F.R.P.
DISCHARGE---	N18	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
DISCHARGE---	N17	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
DISCHARGE---	N16	1	4" 150# FLANGED NOZZLE W/ CONICAL GUSSET	F.R.P.
	ITEM	QTY	DESCRIPTION	MATERIAL
	NOZZLES			

SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS 40 CFR 270.16							
TANK	DIMENSIONS/ CAPACITY	SAFETY CUT OFF	BYPASS SYSTEM	PRESSURE CONTROL (VENT)	WASTE TYPE/ MATERIAL OF CONSTRUCTION	EQUIP. FOR EXTERNAL CORROSION PROTECTION	LEVEL ELEMENTS
T-306	14' DIAMETER x 17'-8" TALL / 20,000 NOMINAL GALLONS	ALARM ON HIGH LEVEL	NONE	OPEN VENT TO ATMOSPHERE	HAZARDOUS/ DERAKANE SIGNIA 441 F.R.P.	NONE	YES

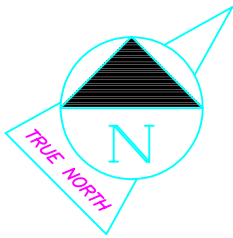
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SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:

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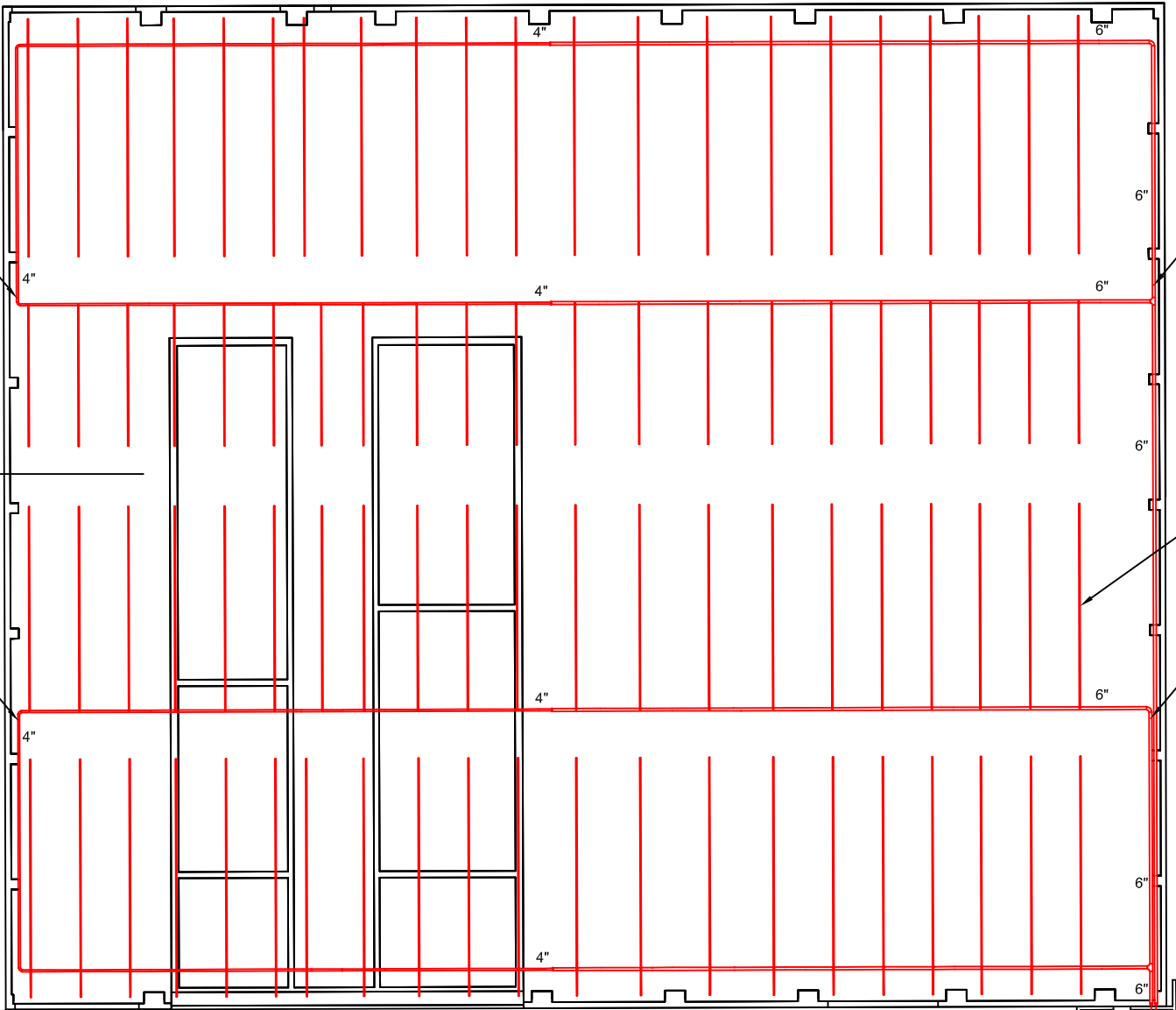
EQ DETROIT	
1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300	
WWT MAIN TREATMENT BUILDING	
HAZARDOUS TREATMENT TANKS T-306	
M-15	



DRY PIPE INSPECTOR
STATION PER NFPA 13

NORTH ZONE
↓
SOUTH ZONE

DRY PIPE INSPECTOR
STATION PER NFPA 13



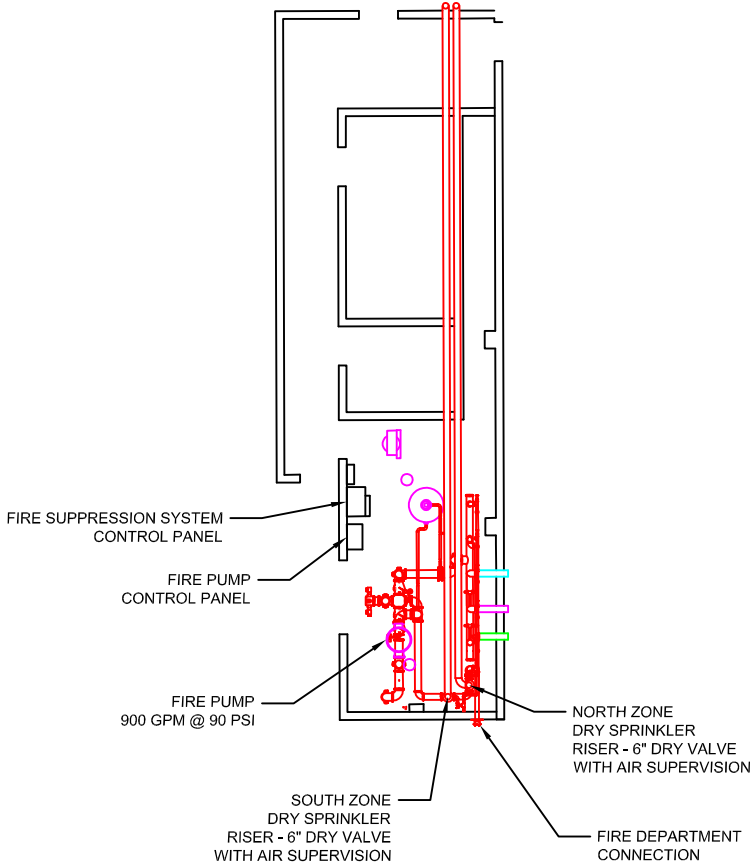
DRY PIPE INSPECTOR
STATION PER NFPA 13

ALL RUNS ARE 2"

DRY PIPE INSPECTOR
STATION PER NFPA 13

FIRE EQUIPMENT ROOM
SEE DETAIL

NUMBER OF SPRINKLERS: 189 / ZONE, 2 ZONES
BASIS OF DESIGN PER ZONE
DESIGN DENSITY: 0.20 GPM / SQ FT
DESIGN AREA: REMOTE MOST 3,900 SQ FT
SYSTEM DEMAND
DESIGN FLOW RATE: 780 GPM
DESIGN PRESSURE: 40 PSI



FIRE EQUIPMENT ROOM

- FIRE PROTECTION NOTES:
1. FIRE PROTECTION SYSTEMS COMPLY WITH NFPA 13, NFPA 14, ALL STATE & LOCAL CODES AND ORDINANCES
 2. BUILDING CLASSIFICATION IS ORDINARY HAZARD GROUP 2
 3. FIRE PROTECTION SPRINKLER SYSTEMS ARE DRY PIPE, 165F UPRIGHT TYPE
 4. FIRE PROTECTIONS SPRINKLER SYSTEM PIPE SIZING WAS HYDRAULICALLY CALCULATED INCLUDING A 500 GPM HOSE ALLOWANCE.
 5. FIRE PROTECTIONS SYSTEM MATERIALS AND COMPONENTS ARE UNDERWRITER'S LABORATORIES LISTED & LABELED AND FACTORY MUTUAL APPROVED FOR THE APPLICATION.
 6. ABOVE GRADE FIRE PROTECTIONS PIPING IS SCHEDULE 40 BCS, ASTM A 120. PIPING 3" AND LARGER IS GROOVED AND PIPING 2-1/2" AND SMALLER IS THREADED.
 7. GATE VALVES 2-1/2" AND LARGER ARE IRON BODY, BRONZE MOUNTED, 175 POUND COLD WATER WORKING PRESSURE-NON SHOCK, OUTSIDE SCREW 7 YOKE, RISING STEM, FLANGED BONNET, SOLID TAPER WEDGED WITH REPLACEABLE BRONZE WEDGE FACING RINGS, FLANGED ENDS. VALVE SHALL BE CAPABLE OF BEING REPACKED UNDER PRESSURE, WITH VALVE WIDE OPEN.
 8. VALVES 2" AND SMALLER ARE SAME AS ABOVE, EXCEPT WITH SCREWED BONNET, NON REPLACEABLE WEDGE FACINGS.
 9. DRY PIPE VALVE IS A RELIABLE MODEL DDX

NUMBER	REFERENCE DRAWING

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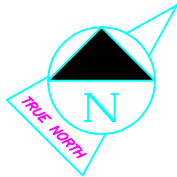
EQ DETROIT

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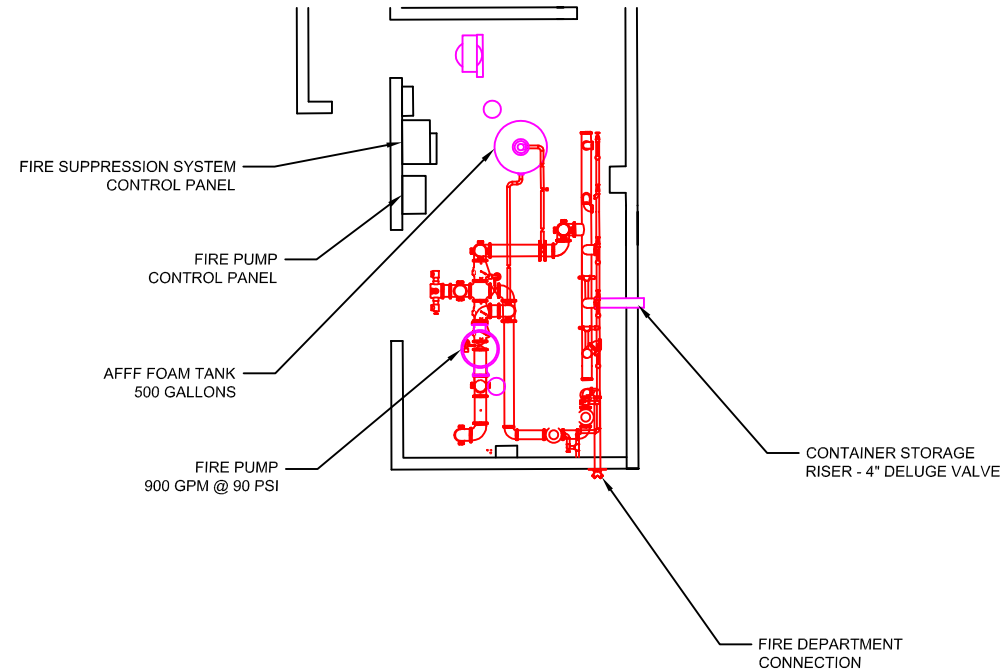
CHEMICAL FIXATION BUILDING

FIRE PROTECTION SYSTEM - DRY SPRINKLER SYSTEM

M-16



FIRE DOOR
WITH FUSIBLE LINKS



FIRE EQUIPMENT ROOM

NUMBER OF SPRINKLERS: 92
BASIS OF DESIGN
DESIGN DENSITY: 0.30 GPM / SQ FT
DESIGN AREA: REMOTE MOST 3,000 SQ FT
SYSTEM DEMAND
DESIGN FLOW RATE: 900 GPM
DESIGN PRESSURE: 40 PSI

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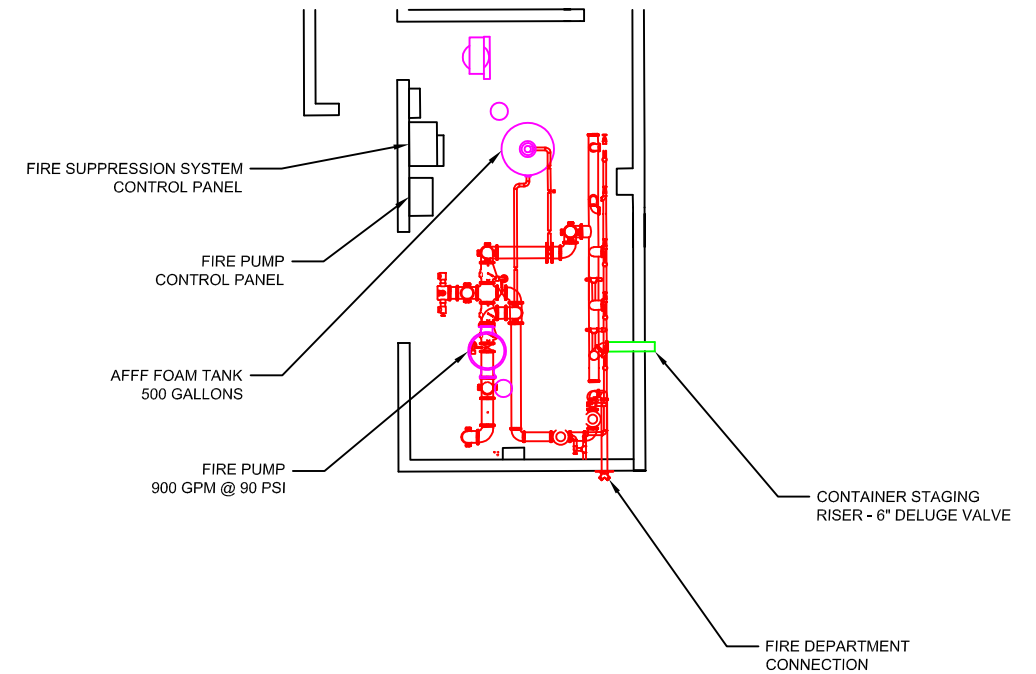
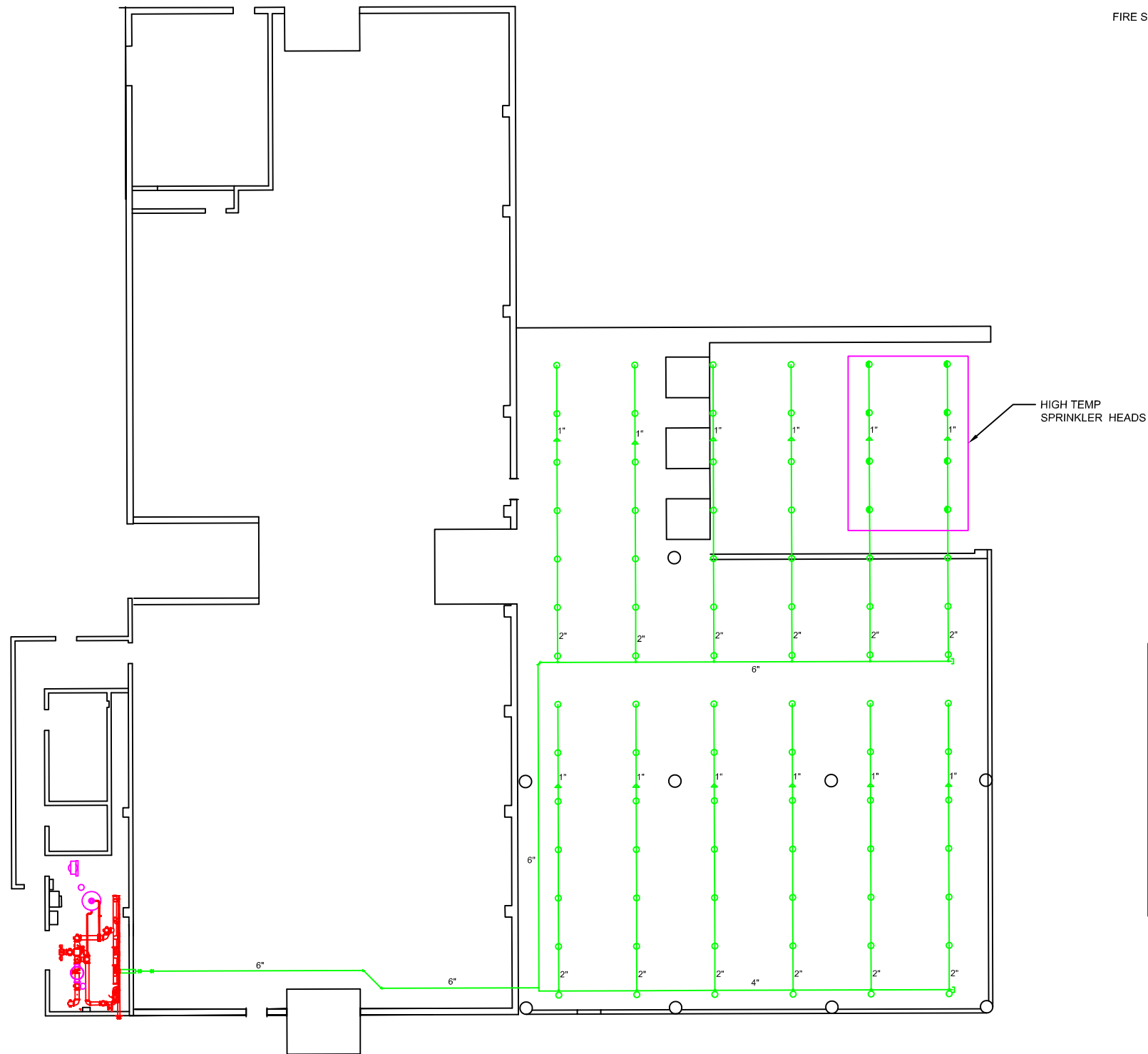
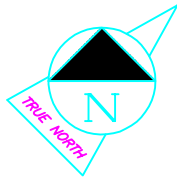
EQ DETROIT

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CHEMICAL FIXATION BUILDING

FIRE PROTECTION SYSTEM - CONTAINER STORAGE

M-17



FIRE EQUIPMENT ROOM

NUMBER OF SPRINKLERS: 84
BASIS OF DESIGN
DESIGN DENSITY: 0.30 GPM / SQ FT
DESIGN AREA: REMOTE MOST 3,000 SQ FT
SYSTEM DEMAND
DESIGN FLOW RATE: 900 GPM
DESIGN PRESSURE: 40 PSI

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SCALE: NONE SHEET:	
PROJECT No.	
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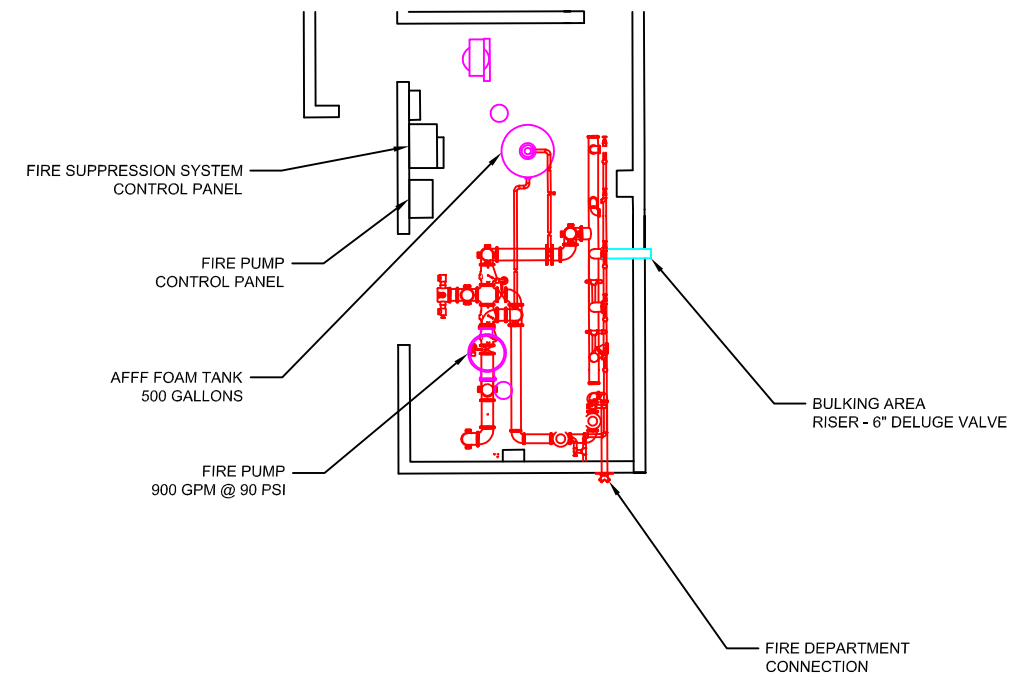
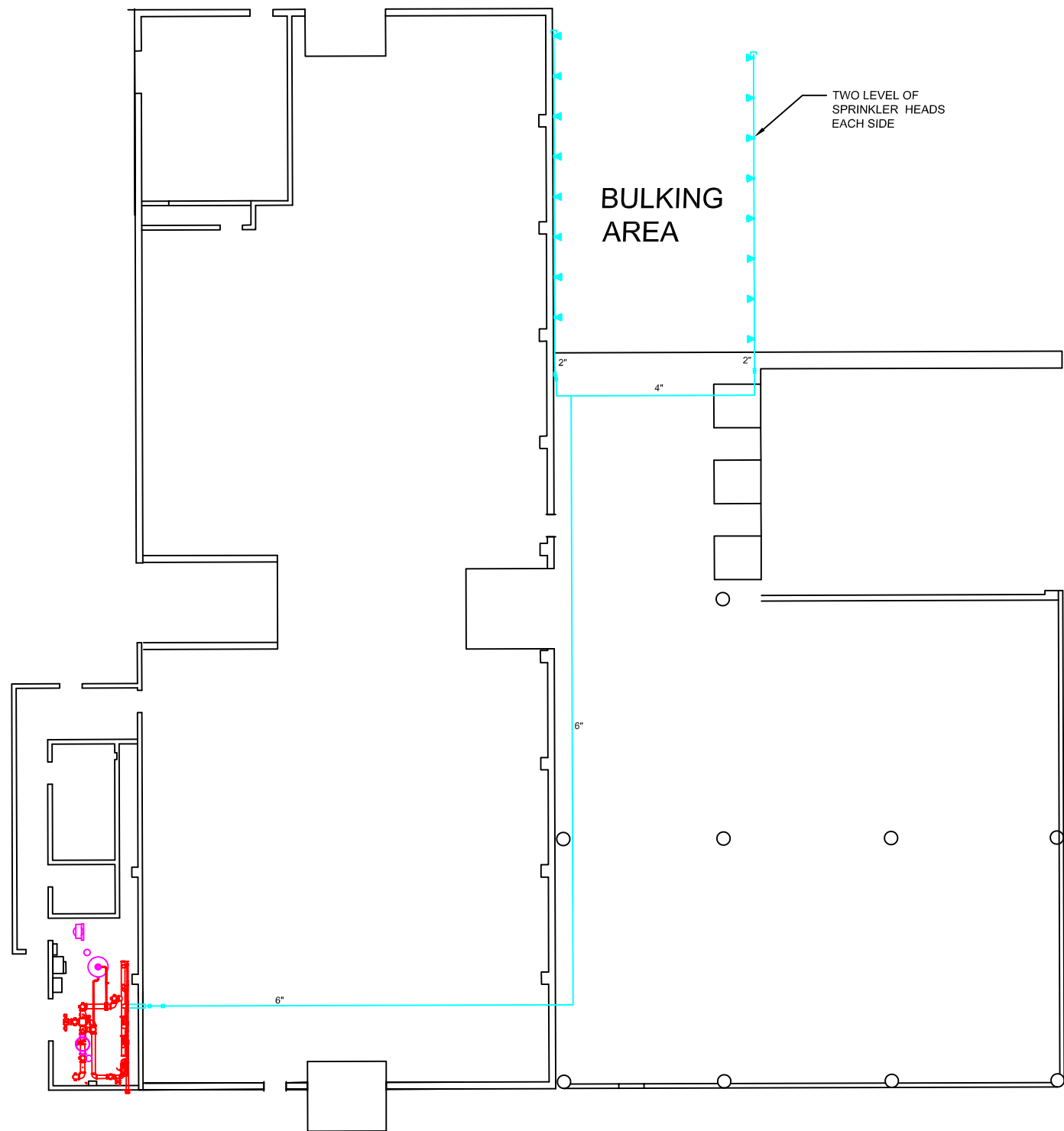
EQ DETROIT

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CHEMICAL FIXATION BUILDING

FIRE PROTECTION SYSTEM - CONTAINER STAGING

M-18



FIRE EQUIPMENT ROOM

NUMBER OF SPRINKLERS: 32
BASIS OF DESIGN
DESIGN DENSITY: 0.30 GPM / SQ FT
DESIGN AREA: REMOTE MOST 3,000 SQ FT
SYSTEM DEMAND
DESIGN FLOW RATE: 900 GPM
DESIGN PRESSURE: 40 PSI

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PROJECT No.	
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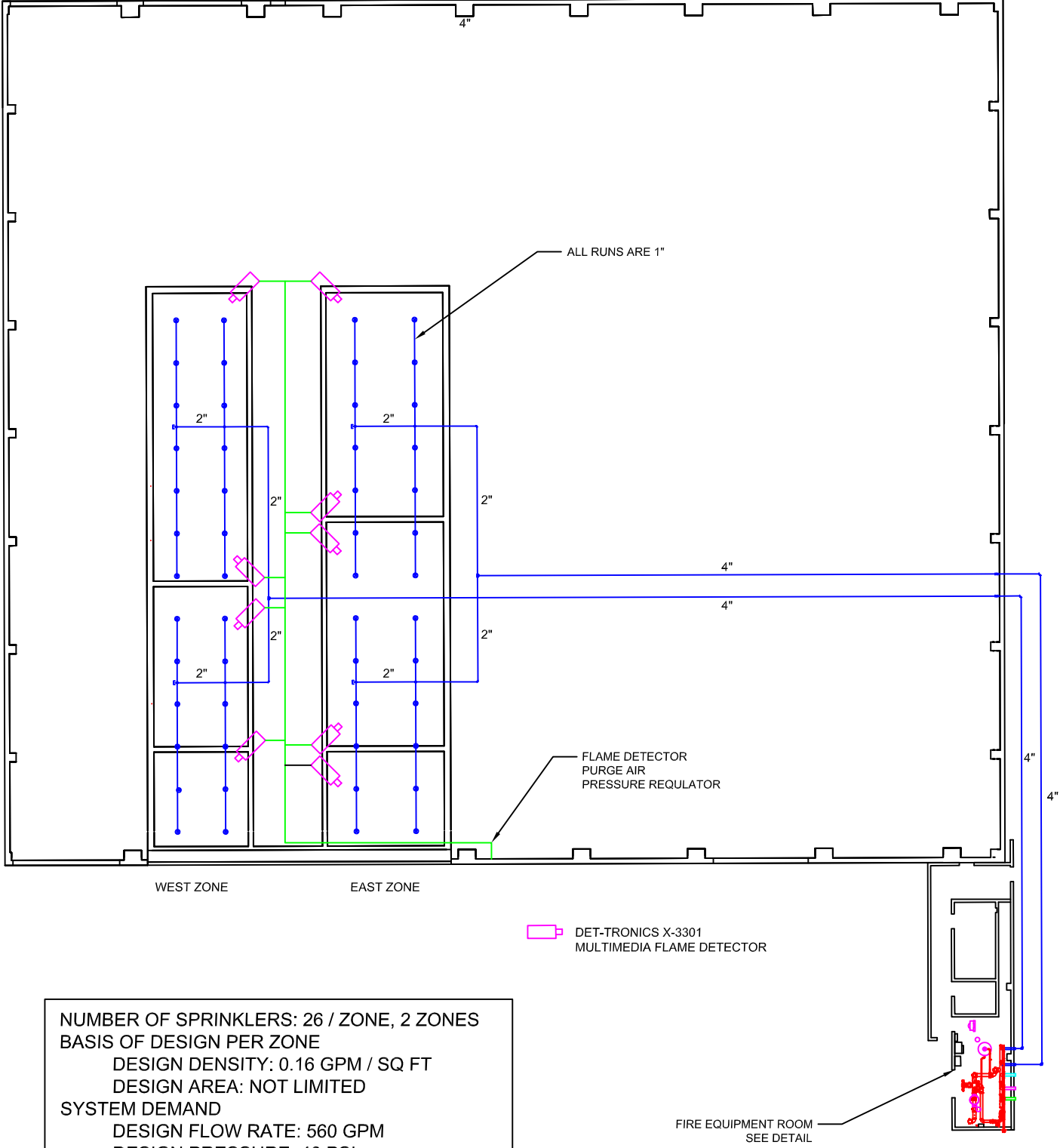
EQ DETROIT

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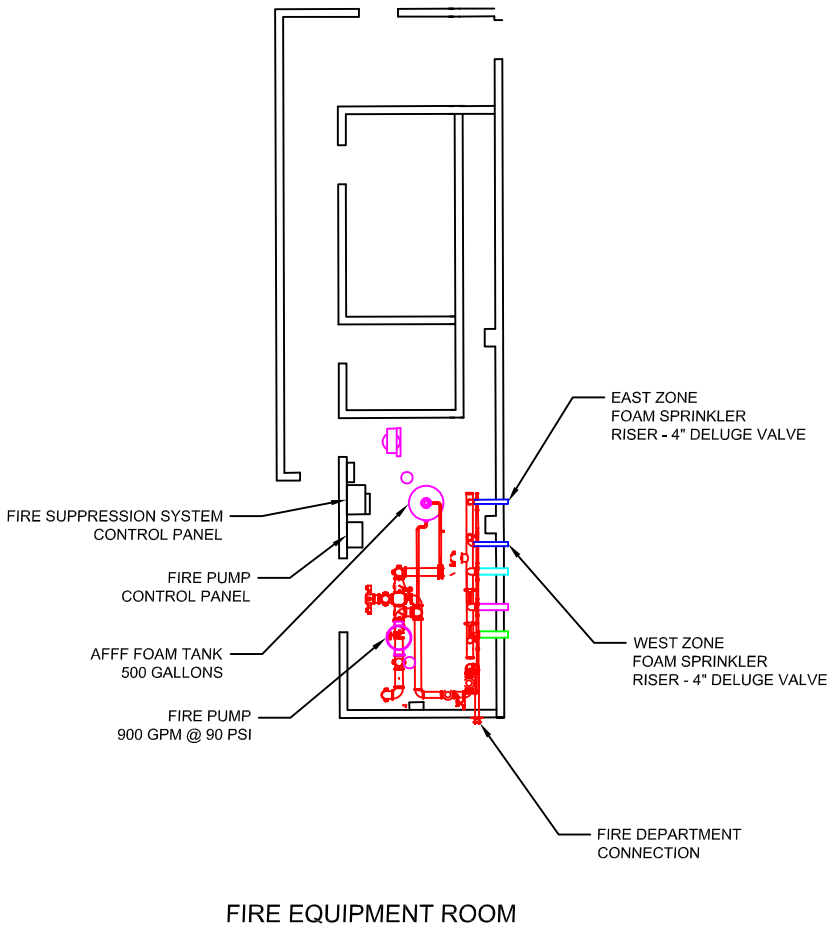
CHEMICAL FIXATION BUILDING

FIRE PROTECTION SYSTEM - BULKING

M-19



NUMBER OF SPRINKLERS: 26 / ZONE, 2 ZONES
BASIS OF DESIGN PER ZONE
DESIGN DENSITY: 0.16 GPM / SQ FT
DESIGN AREA: NOT LIMITED
SYSTEM DEMAND
DESIGN FLOW RATE: 560 GPM
DESIGN PRESSURE: 40 PSI



- FIRE PROTECTION NOTES:
- 1. SPRINKLER ARE OPEN HEAD
 - 2. COMPRESSED AIR FOR FLAME DETECTOR LENS PURGE AIR SET AT 12 PSI
 - 3. FLAME DETECTORS SHALL BE SET AT MEDIUM SENSITIVITY

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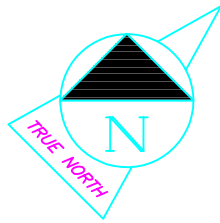
EQ DETROIT

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CHEMICAL FIXATION BUILDING

FIRE PROTECTION SYSTEM - TREATMENT TANKS

M-20



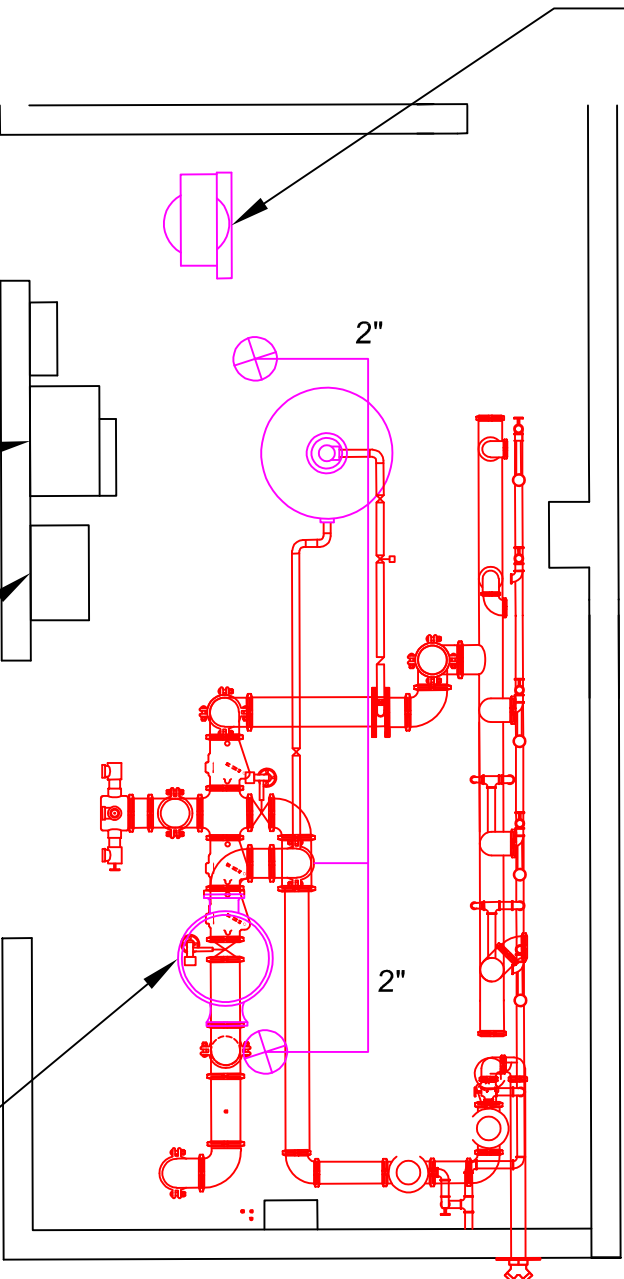
BACK UP AIR COMPRESSOR

NUMBER OF SPRINKLERS: 2
BASIS OF DESIGN
DESIGN DENSITY: 0.2 GPM / SQ FT
DESIGN AREA: NOT LIMITED
SYSTEM DEMAND
DESIGN FLOW RATE: 60 GPM
DESIGN PRESSURE: 40 PSI

FIRE SUPPRESSION SYSTEM
CONTROL PANEL

FIRE PUMP
CONTROL PANEL

FIRE PUMP
900 GPM @ 90 PSI



FIRE DEPARTMENT
CONNECTION

FIRE EQUIPMENT ROOM

NUMBER	REFERENCE DRAWING

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5			
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SCALE:	NONE	SHEET:	
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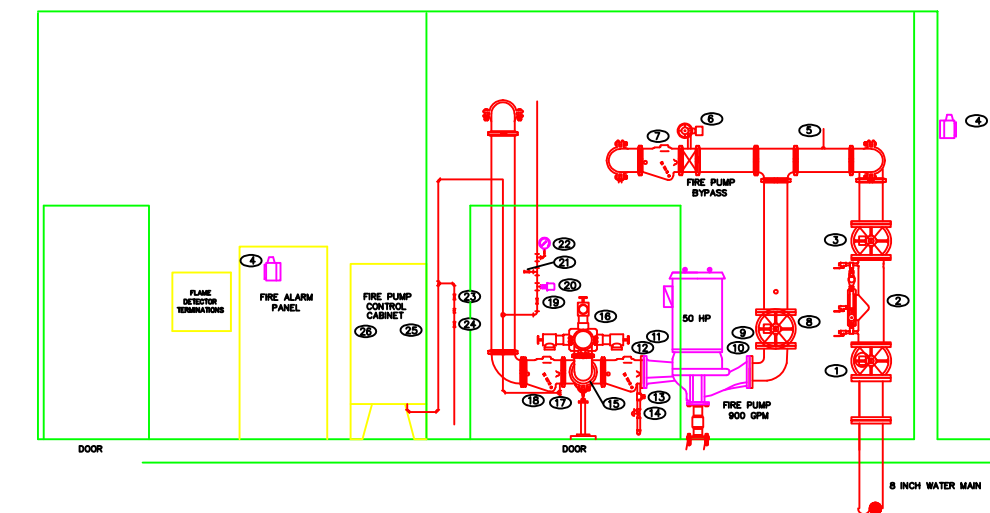
EQ DETROIT

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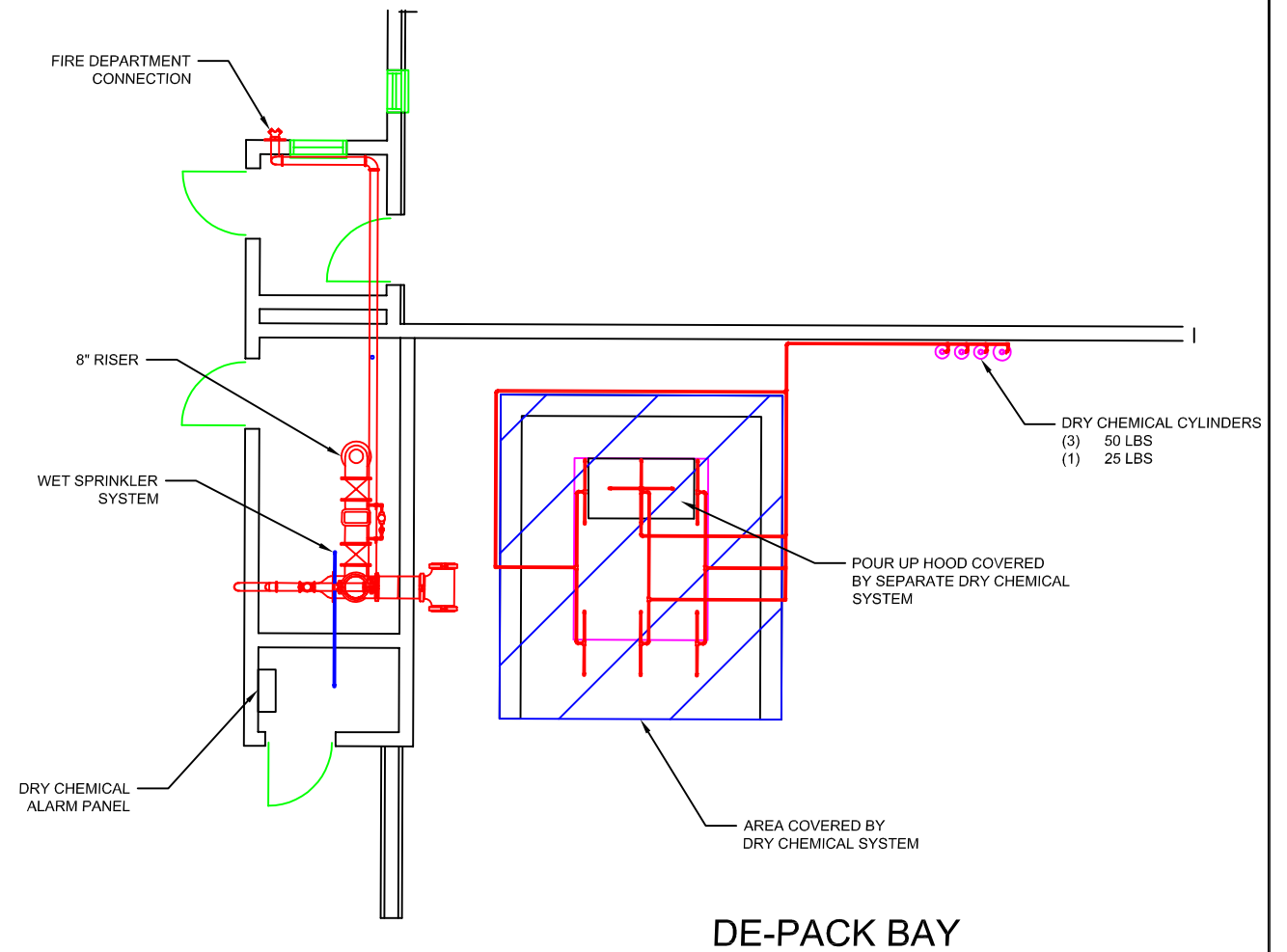
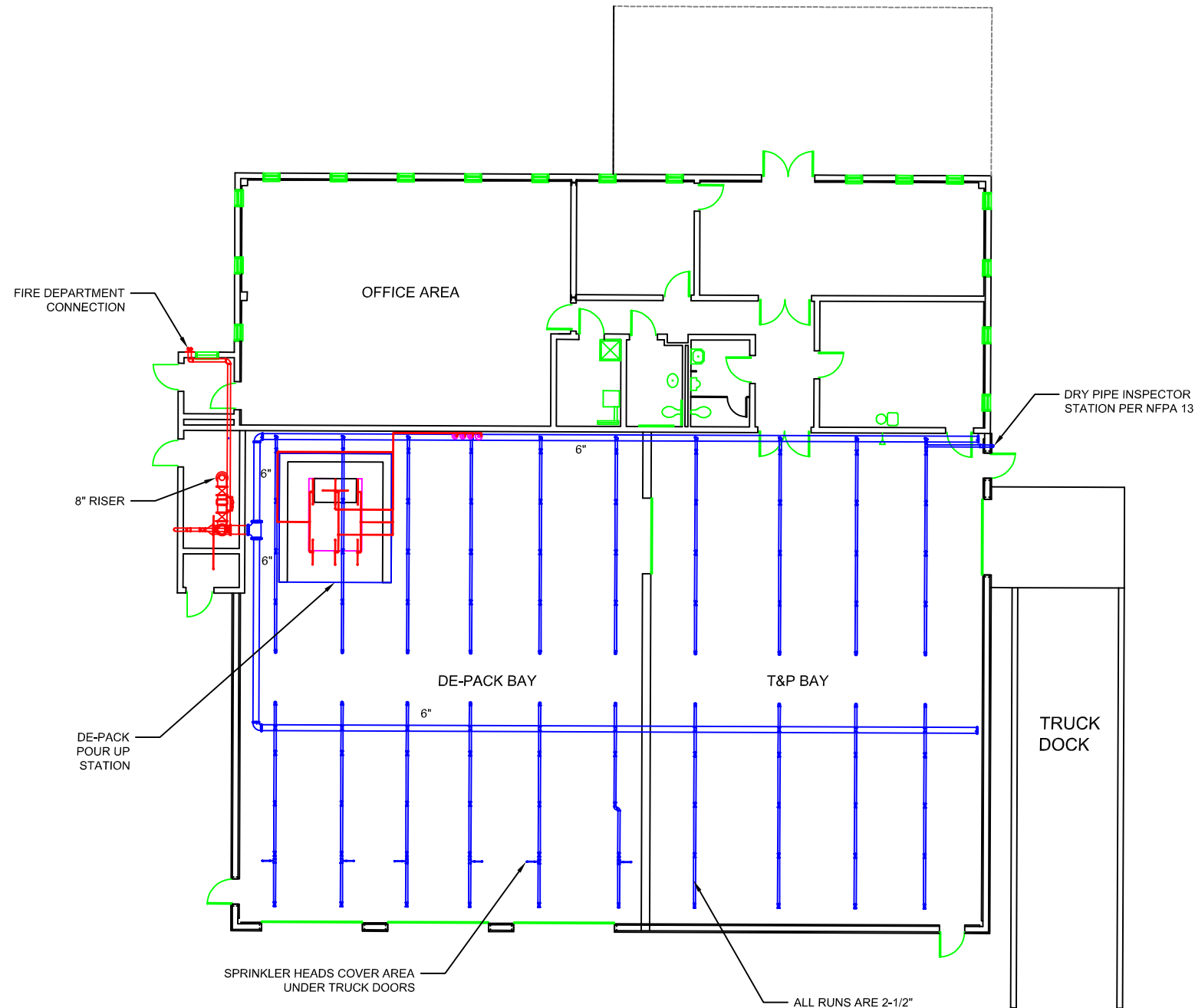
CHEMICAL FIXATION BUILDING

FIRE PROTECTION SYSTEM - FIRE EQUIPMENT ROOM WET SYSTEM

M-21

M-22

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REV	DATE:	DESCRIPTION:	BY



NUMBER OF SPRINKLERS: 110
BASIS OF DESIGN:
DESIGN DENSITY: 0.60 GPM / SQ FT
DESIGN AREA: REMOTE MOST 2,833 SQ FT
SYSTEM DEMAND
DESIGN FLOW RATE: 1700 GPM
DESIGN PRESSURE: 40 PSI

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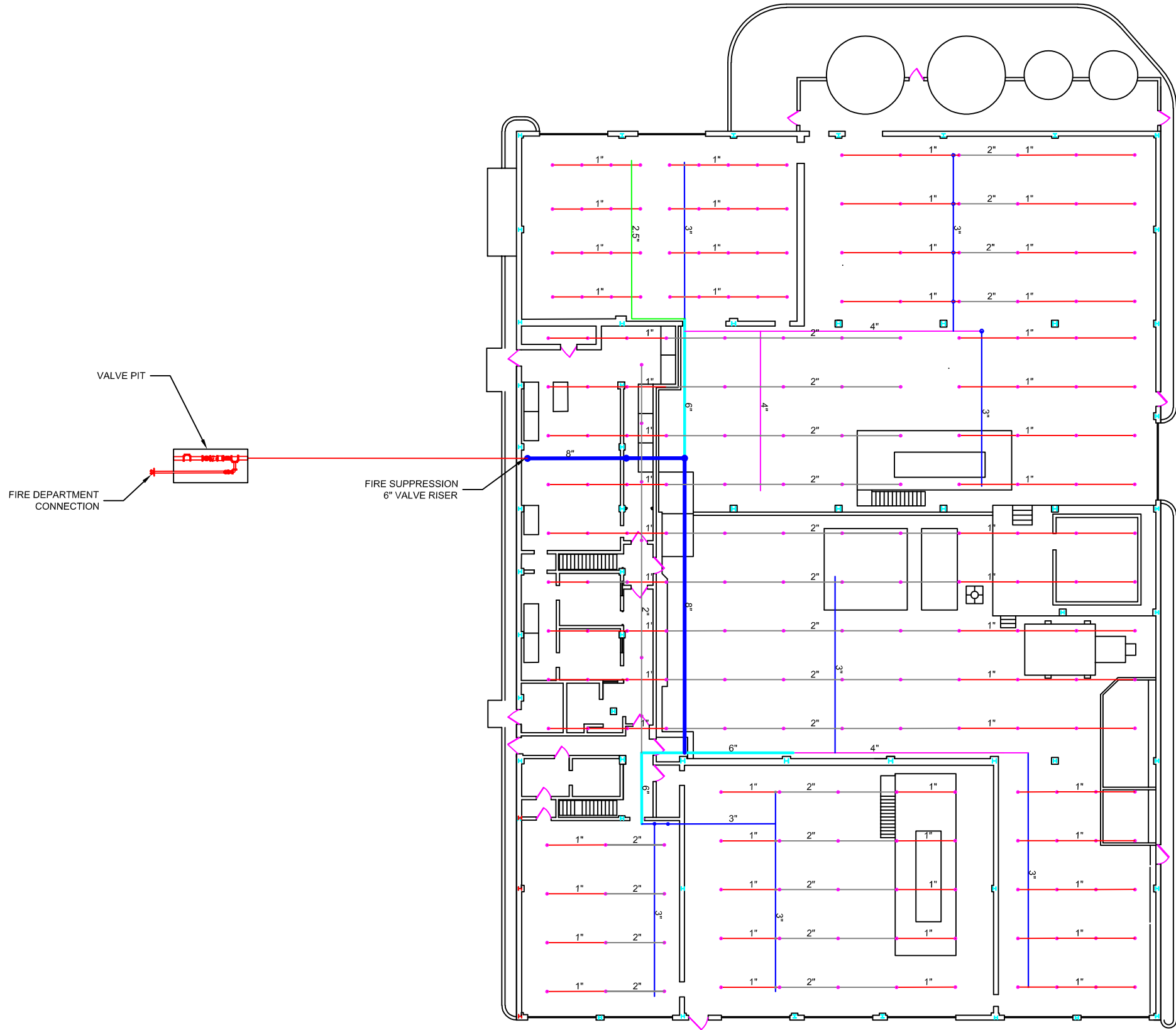
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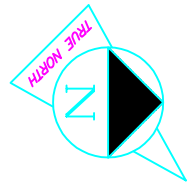
T&P BUILDING

FIRE PROTECTION SYSTEM

M-23



NUMBER OF SPRINKLERS: 229
BASIS OF DESIGN
DESIGN DENSITY: 0.20 GPM / SQ FT
DESIGN AREA: REMOTE MOST 3,000 SQ FT
SYSTEM DEMAND
DESIGN FLOW RATE: 600 GPM
DESIGN PRESSURE: 40 PSI



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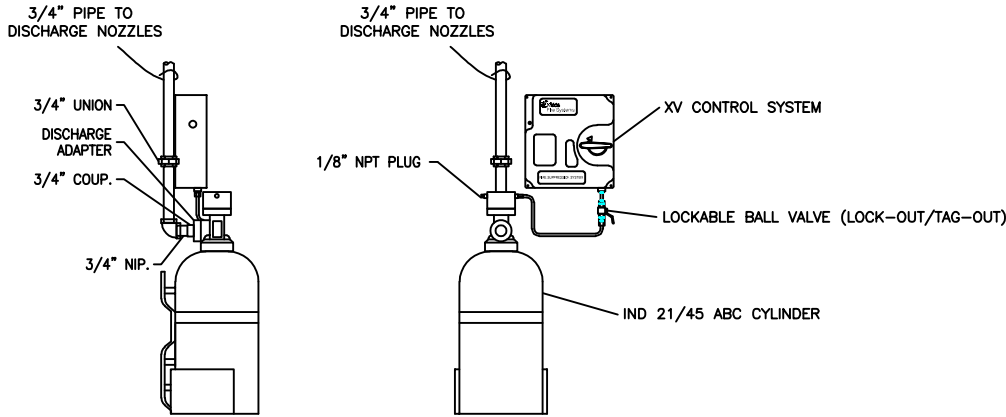
EQ DETROIT

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WWT MAIN TREATMENT BUILDING

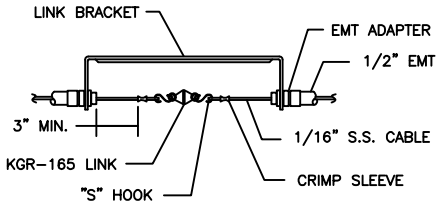
FIRE PROTECTION SYSTEM - WET SPRINKLER SYSTEM

M-24

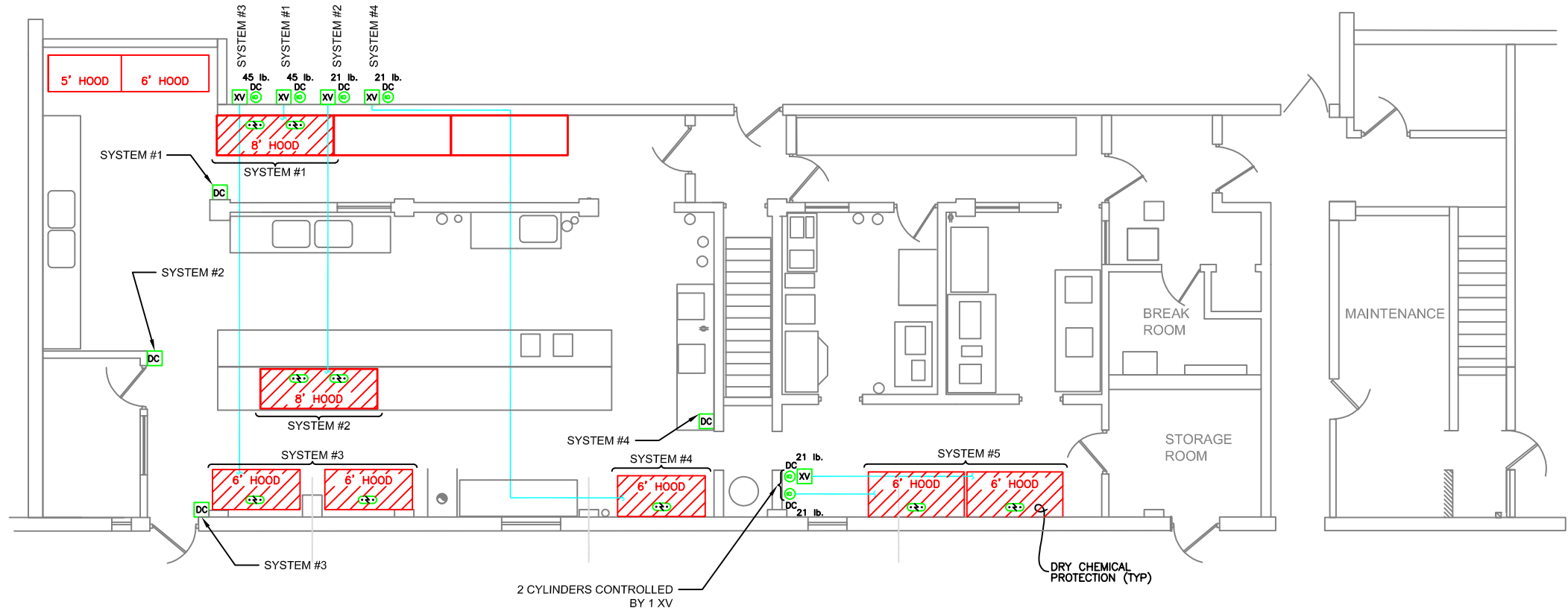


DRY CHEMICAL CYLINDER
SIDE VIEW
SCALE : NONE

DRY CHEMICAL CYLINDER
FRONT VIEW
SCALE : NONE



FUSIBLE LINK DETECTION DETAIL
SCALE : NONE



PARTIAL PLAN VIEW - LABORATORY

SYMBOLS
SCALE: NONE

- XV XV CONTROL SYSTEM
- DC DRY CHEMICAL MECHANICAL REMOTE MANUAL RELEASE
- 21 lb. DC 21/45 LB. DRY CHEMICAL CYLINDER - ABC
- 165 F FUSIBLE LINK, 165°F



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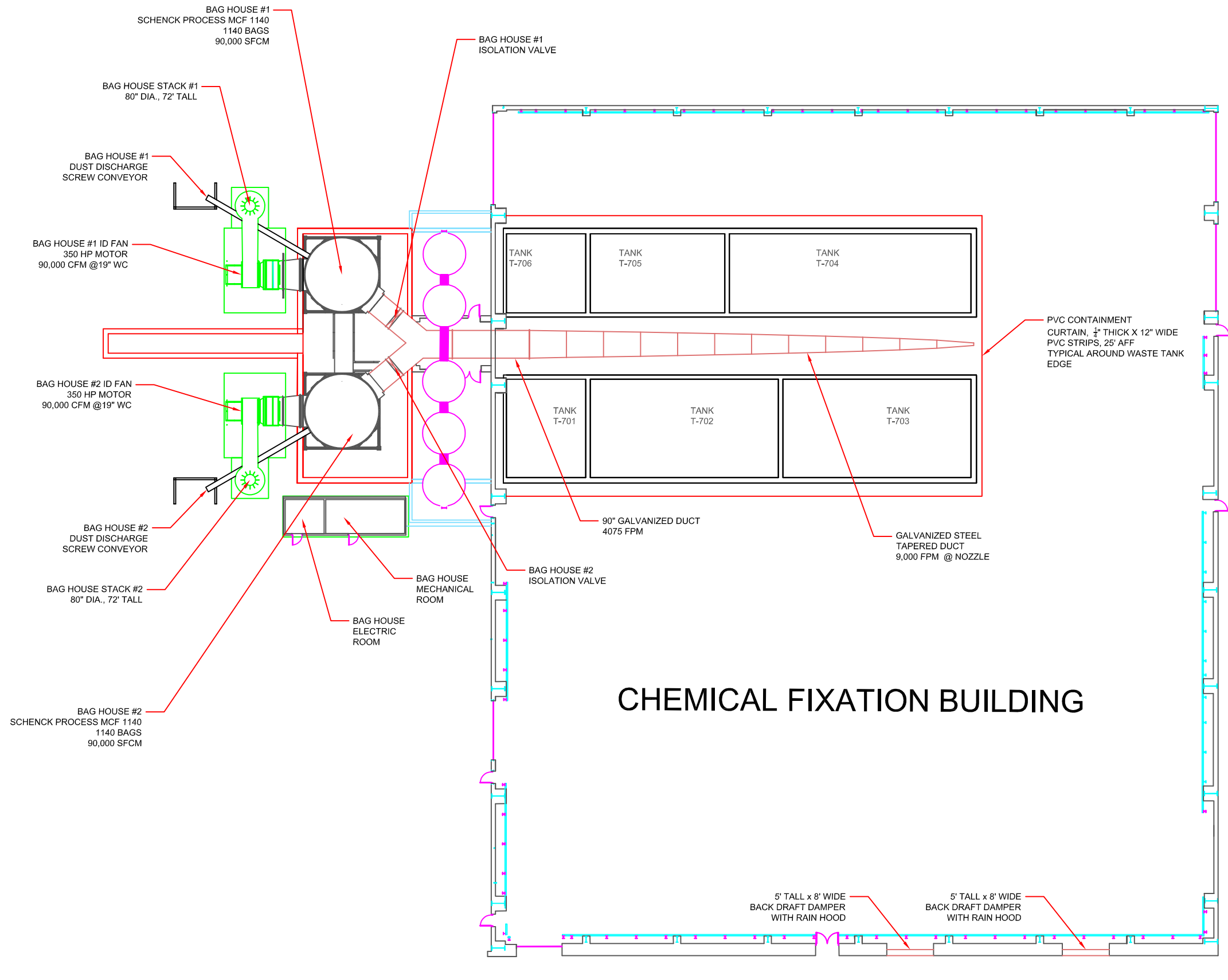
EQ DETROIT

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WWT MAIN TREATMENT BUILDING

FIRE PROTECTION SYSTEM - LABORATORY

M-25



CHEMICAL FIXATION BUILDING

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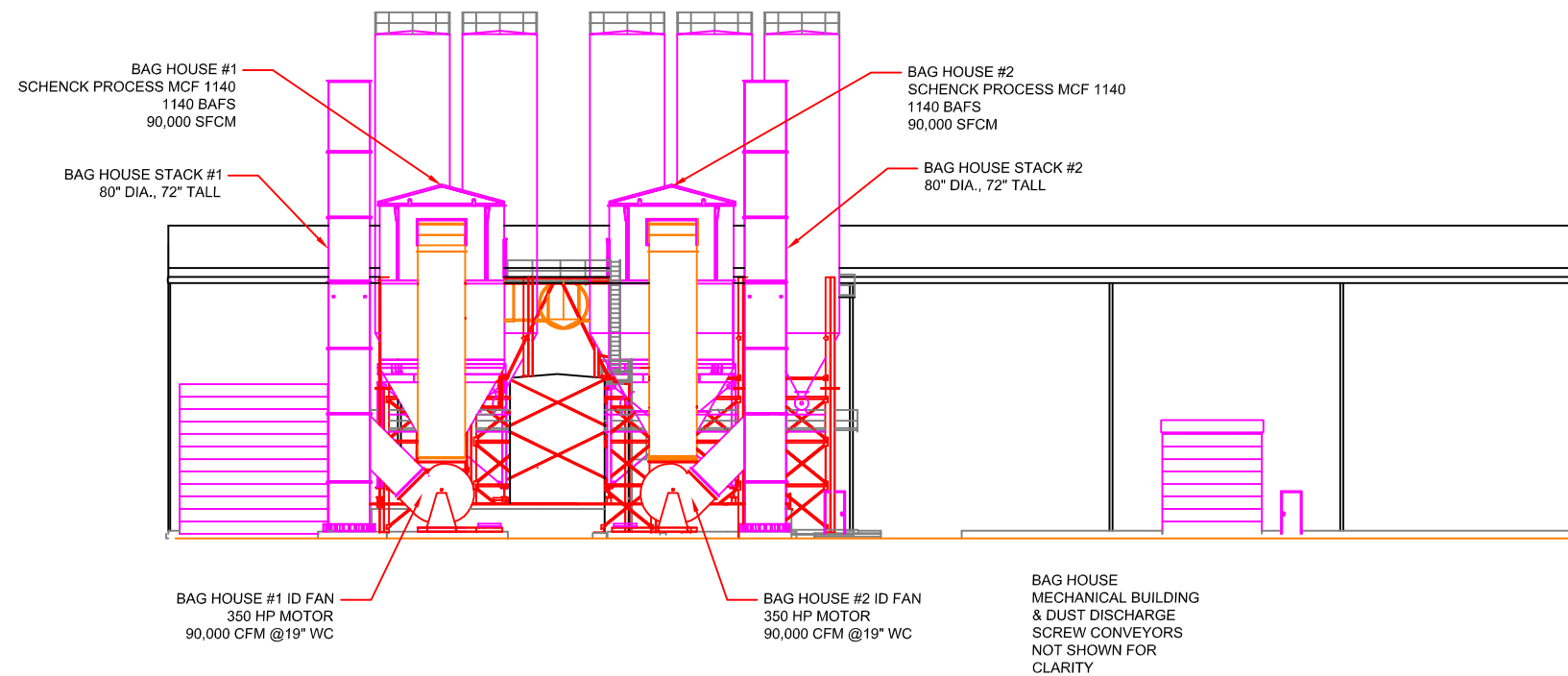
EQ DETROIT

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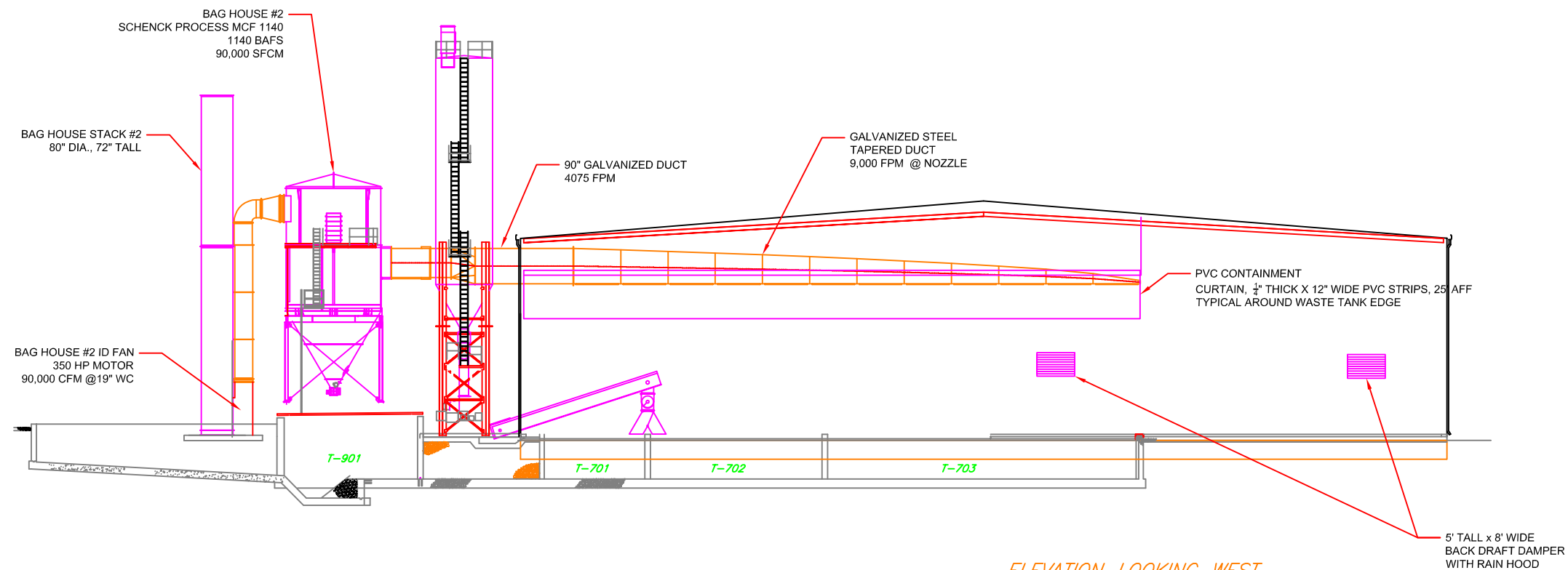
CHEMICAL FIXATION BUILDING

AIR POLLUTION CONTROL SYSTEM - PLAN VIEW

M-26



ELEVATION_LOOKING_SOUTH



ELEVATION_LOOKING_WEST

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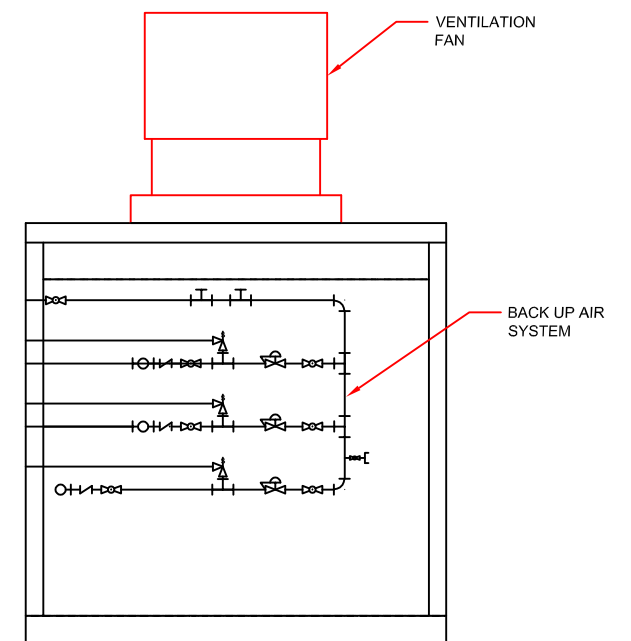
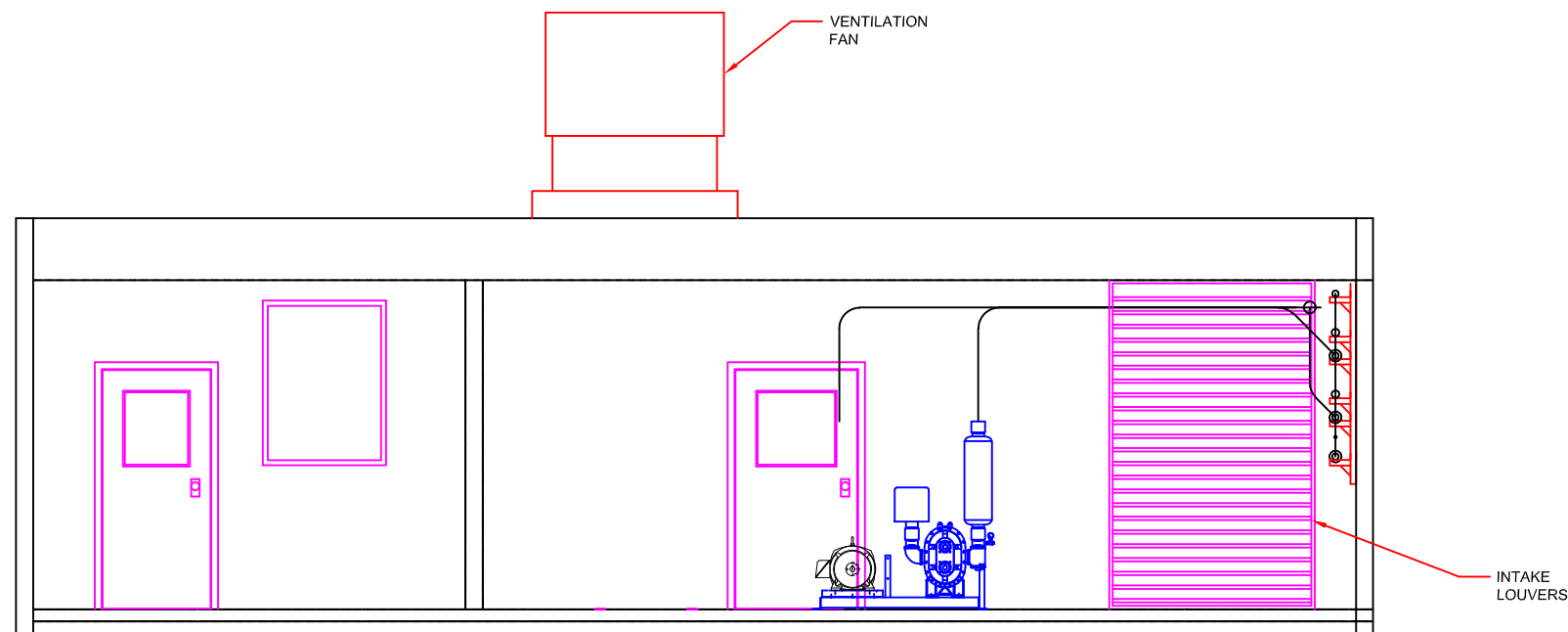
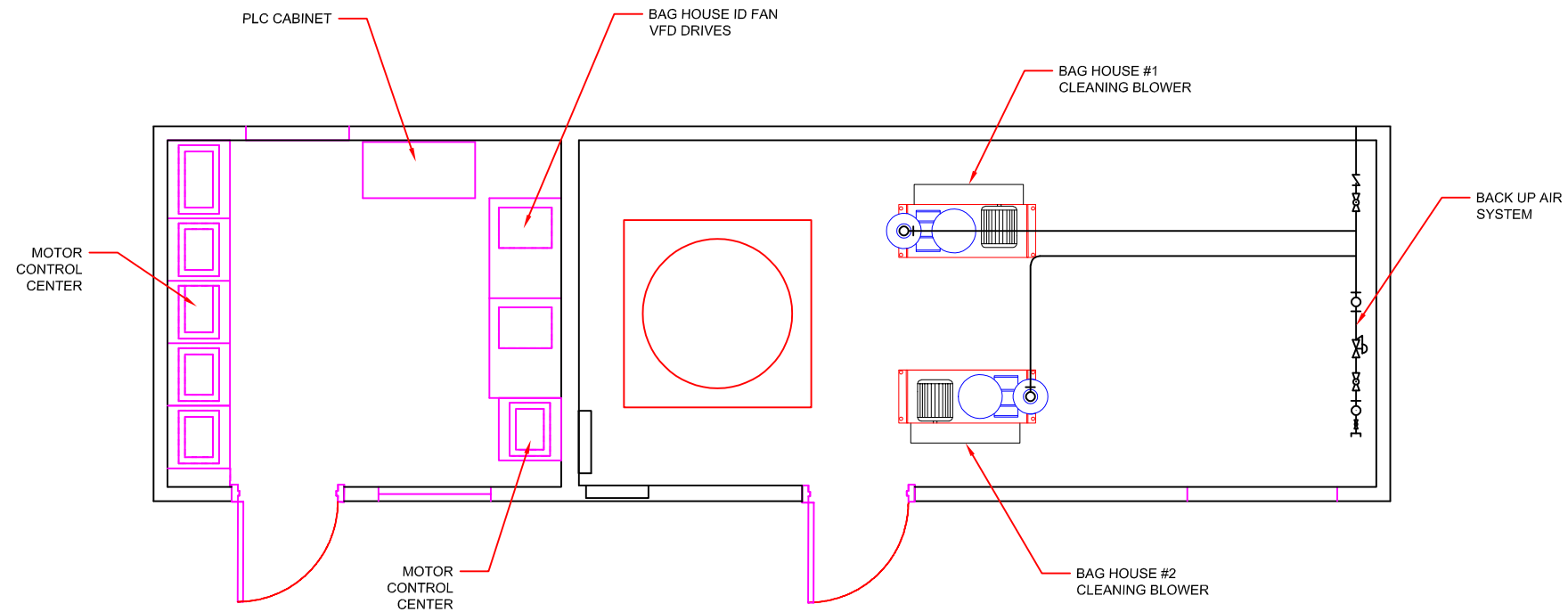
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

CHEMICAL FIXATION BUILDING

AIR POLLUTION CONTROL SYSTEM - ELEVATION VIEW

M-27



NUMBER	REFERENCE DRAWING

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REV	DATE:	DESCRIPTION:	BY

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
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APPROVED:	DATE:
<small>THIS DRAWING IS LOANED WITH THE EXPRESS AGREEMENT THAT THE DRAWING AND INFORMATION THEREIN CONTAINED ARE THE PROPERTY OF US ECOLOGY AND WILL NOT BE REPRODUCED, COPIED, OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, BE USED IN WHOLE OR IN PART TO ASSIST IN MAKING OR TO FURNISH ANY INFORMATION FOR THE MAKING OF DRAWING, PRINTS, OR OTHER REPRODUCTIONS HEREOF, OR FOR THE MAKING OF APPARATUS OF PARTS THEREOF, EXCEPT UPON WRITTEN PERMISSION OF US ECOLOGY FIRST OBTAINED AND SPECIFIED AS TO EACH CASE. THE ACCEPTANCE OF THIS DRAWING WILL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING AGREEMENT.</small>	

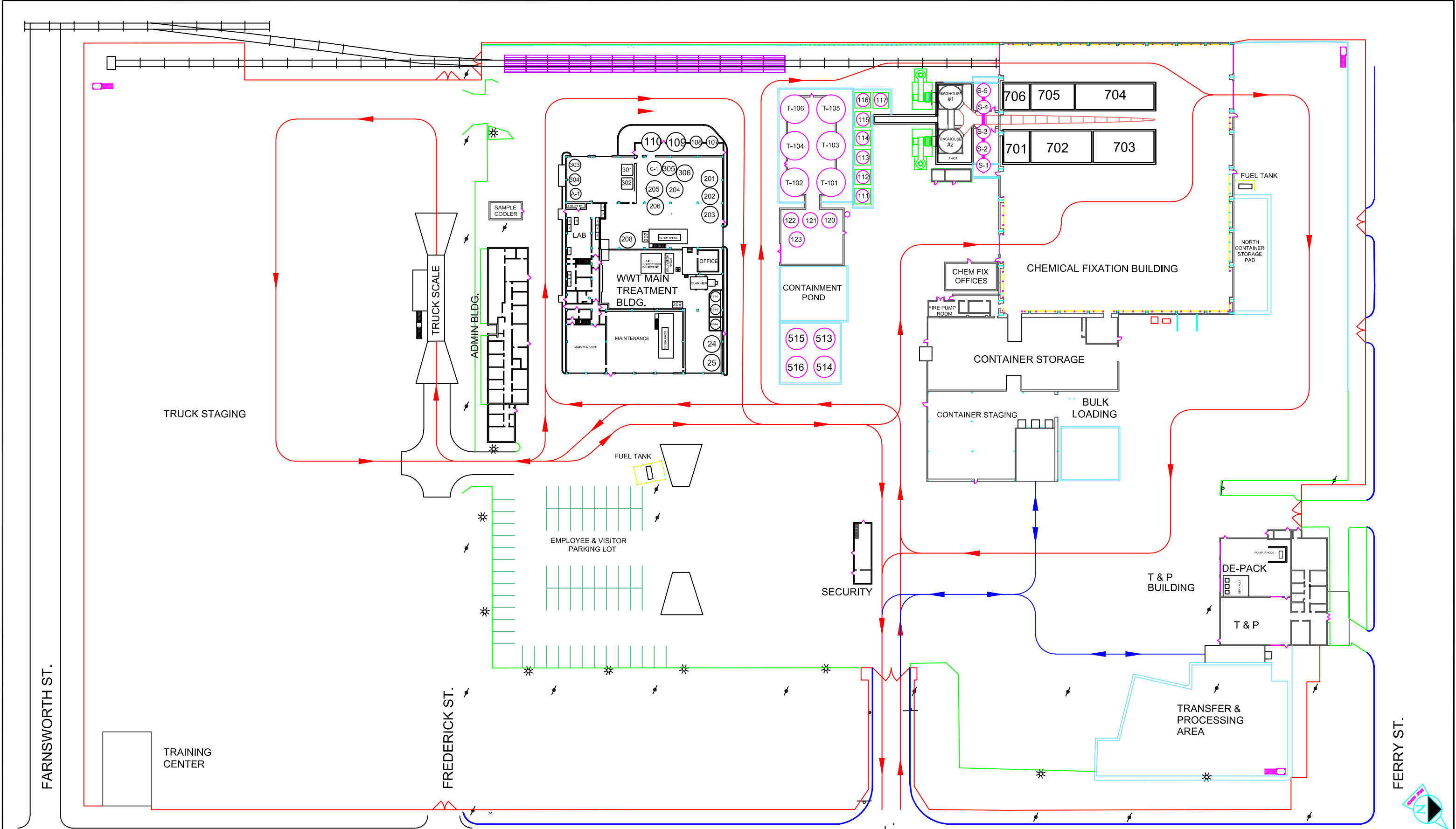
EQ DETROIT

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CHEMICAL FIXATION BUILDING

AIR POLLUTION CONTROL SYSTEM - CONTROL BUILDING

M-28



FARNSWORTH ST.

FREDERICK ST.

ST. AUBIN ST.

KIRBY ST.

FERRY ST.

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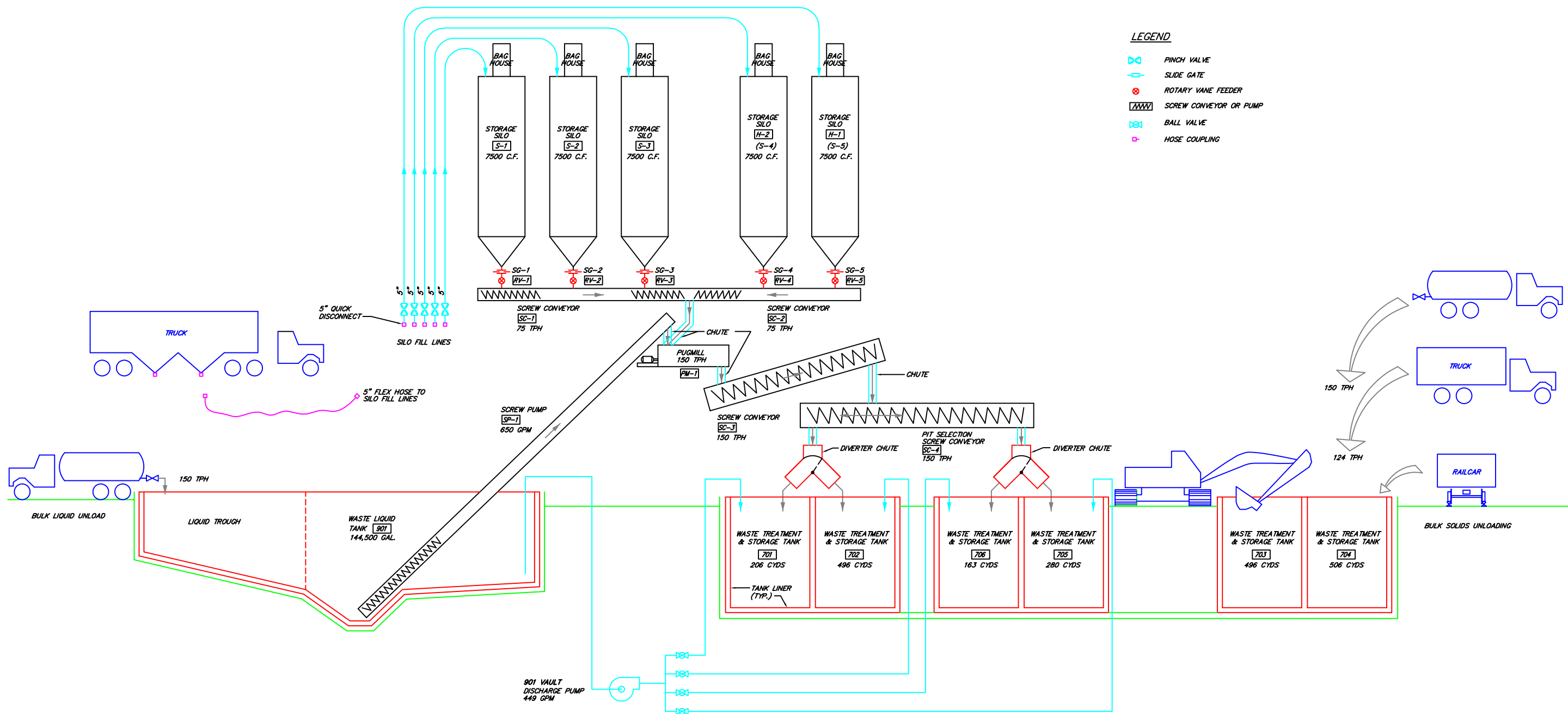
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EQ DETROIT

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SITE TRAFFIC PLAN

P-01



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SCALE:	NONE	SHEET:	
PROJECT No.			
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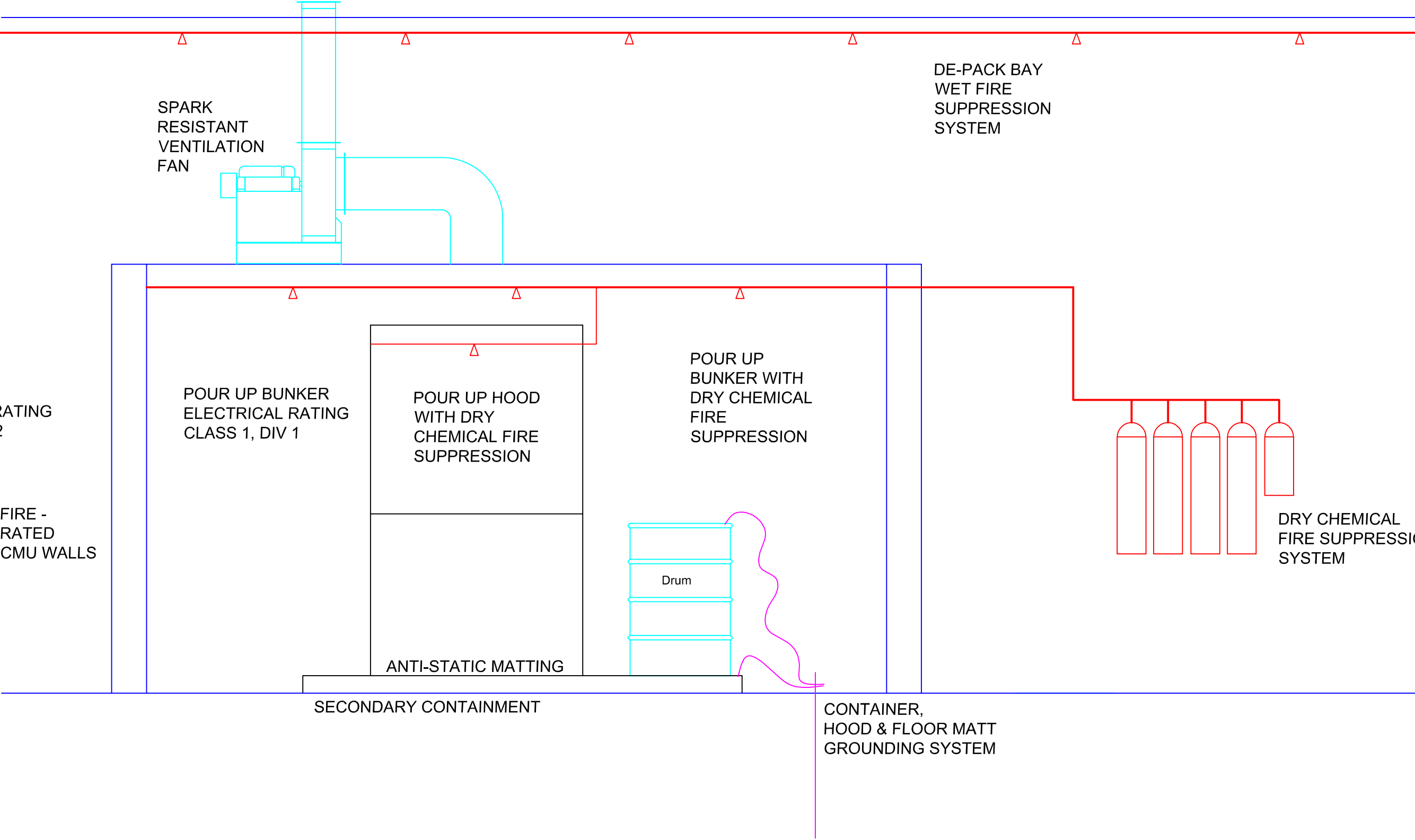
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

CHEMICAL FIXATION BUILDING

PROCESS FLOW DIAGRAM

P-02



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SCALE:	NONE	SHEET:
PROJECT No.		
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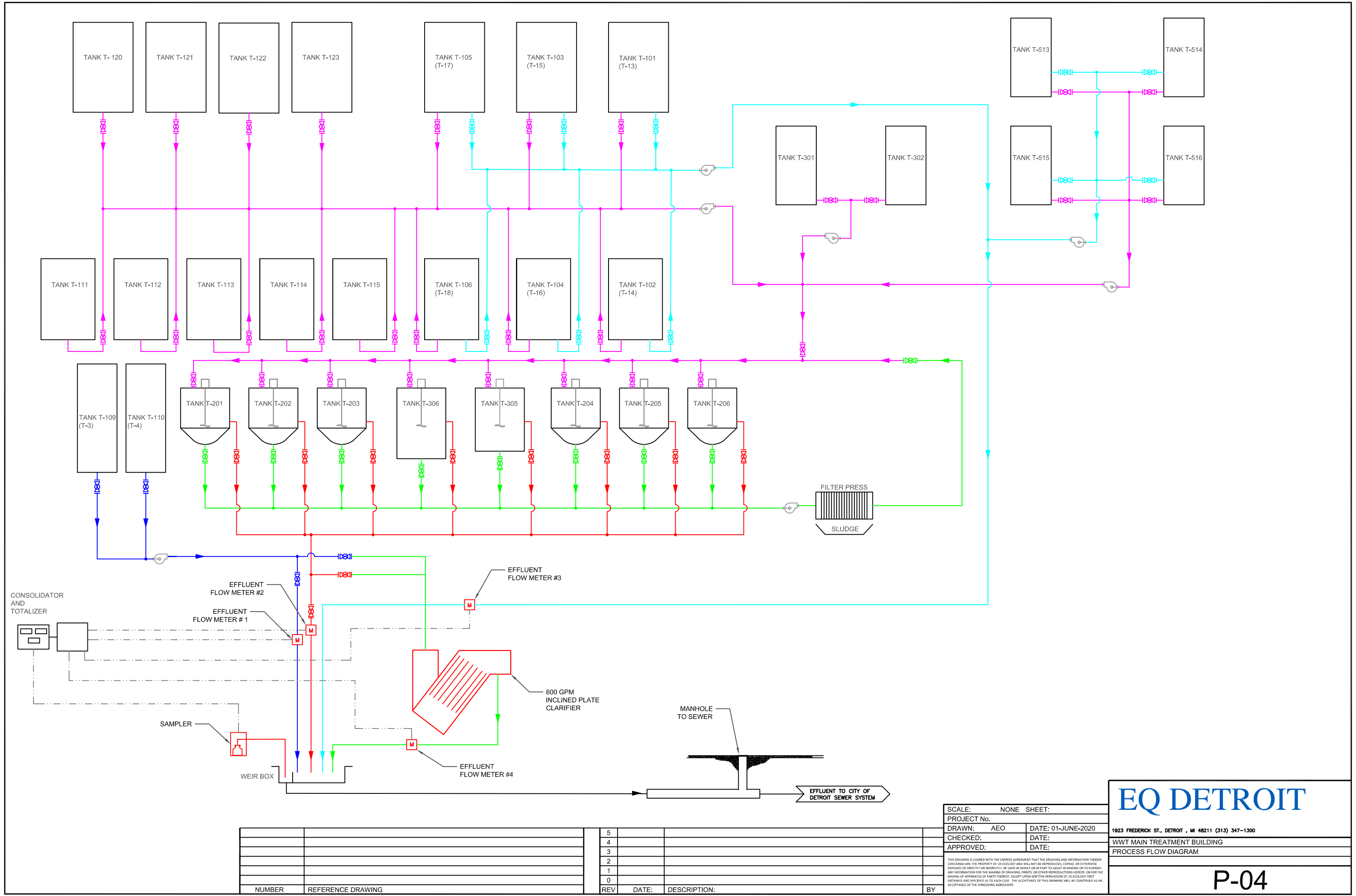
EQ DETROIT

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T&P BUILDING

DE-PACK PROCESS FLOW DIAGRAM

P-03



EQ DETROIT

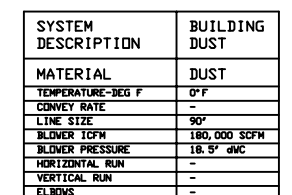
1923 FREDERICK ST., DETROIT, MI 48211 (313) 347-1300
WWT MAIN TREATMENT BUILDING
PROCESS FLOW DIAGRAM

P-04

SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
CHECKED:	DATE:
APPROVED:	DATE:
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NUMBER	REFERENCE DRAWING



TEMP °F	STACK VELOCITY FPM	DUCT VELOCITY FPM	SCFM	ACFM
10° F	2301	3635	180,000	160,615
60° F	2579	4074	180,000	180,000
100° F	2739	4327	180,000	191,154

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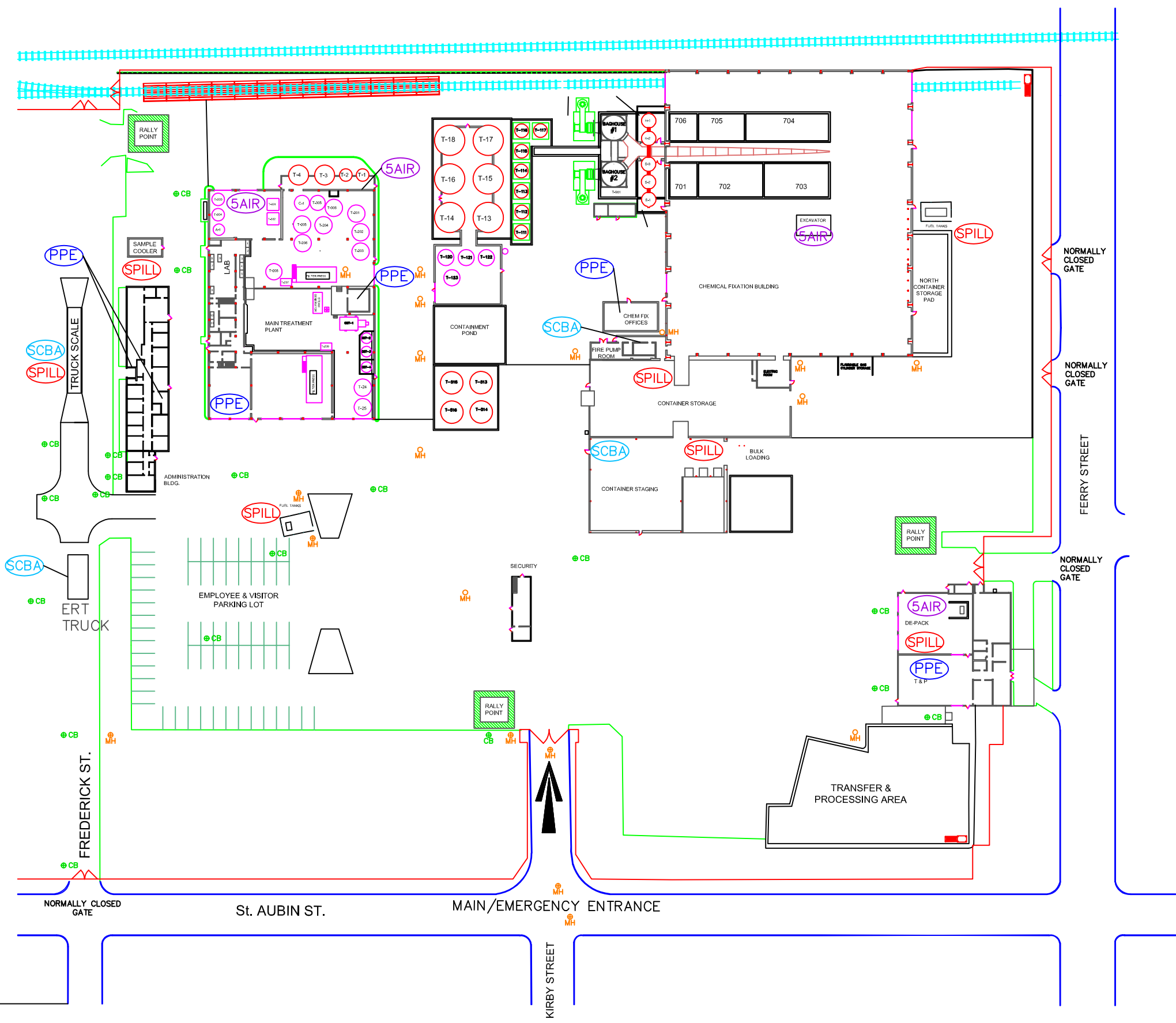
EQ DETROIT

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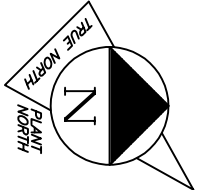
CHEMICAL FIXATION BUILDING

APCS PIPING & INSTRUMENTATION DIAGRAM

P-05



NOTE:
ALL TRENCHES AND BASINS INSIDE ALL BUILDINGS ARE
BLIND AND REQUIRES TO BE PUMPED OUT



PLEASE NOTE: ALL LOCATIONS
ARE APPROXIMATE

- SPILL — SPILL KIT (ABSORBENTS, COVERS, ETC.)
- 5AIR — 5 MINUTE AIR PACK
- SCBA — AIR PACK (SCBA)
- PPE — PPE EQUIPMENT
- CB — CATCH BASIN DISCHARGES DIRECTLY TO SEWER
- MH — OPEN MAN HOLE DISCHARGES TO SEWER
- MH — SEALED MAN HOLE DISCHARGES TO SEWER
- BLIND SUMP

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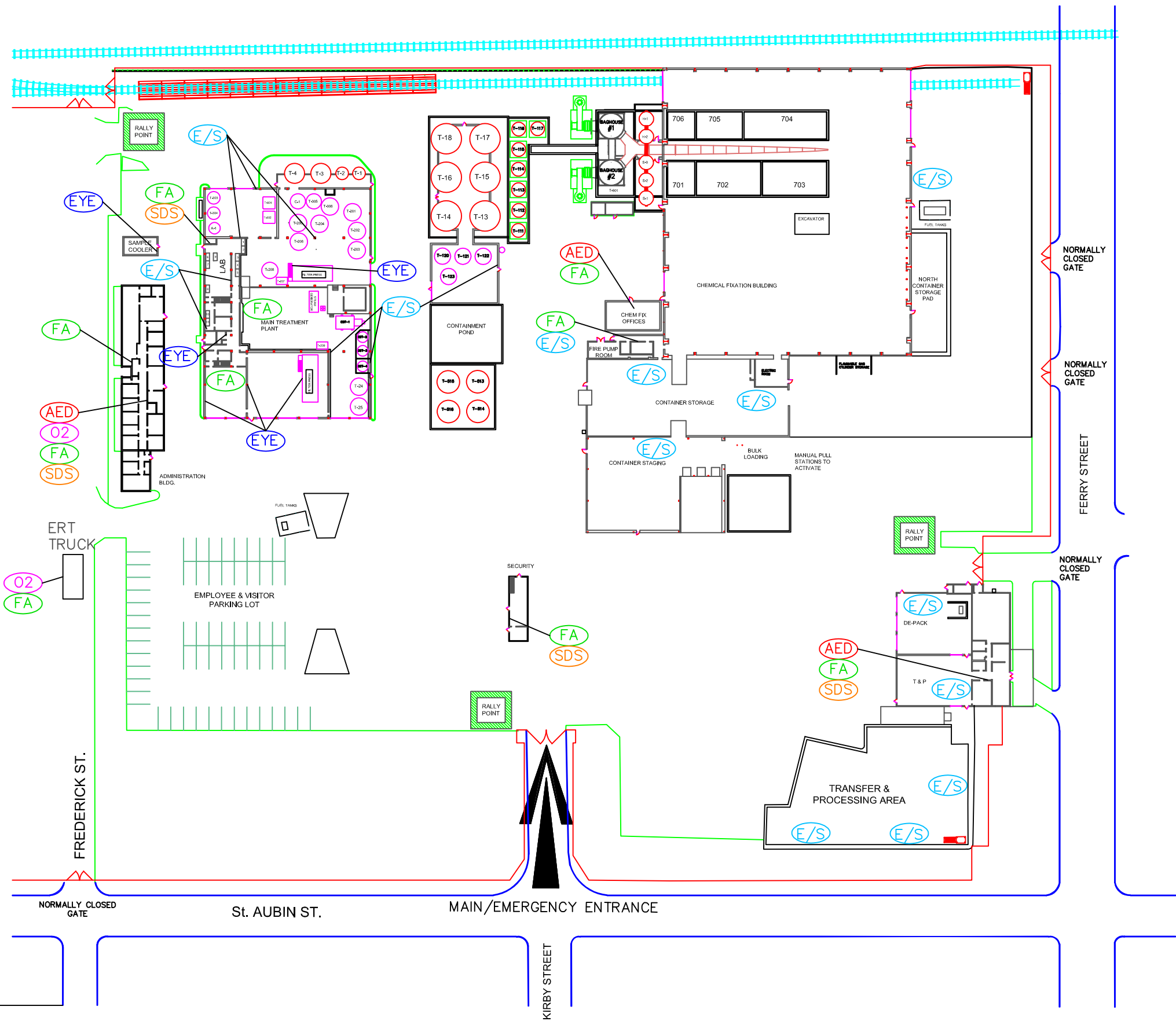
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EQ DETROIT

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SPILL EMERGENCY PREPAREDNESS

R-01



PLEASE NOTE: ALL LOCATIONS ARE APPROXIMATE

- AED — AUTOMATIC EXTERNAL DEFIBRILLATOR
- O2 — OXYGEN PAC
- E/S — EYE WASH / SAFETY SHOWER
- EYE — EYE WASH
- FA — FIRST AID KIT OR CABINET
- SDS — SAFETY DATA SHEET STATION

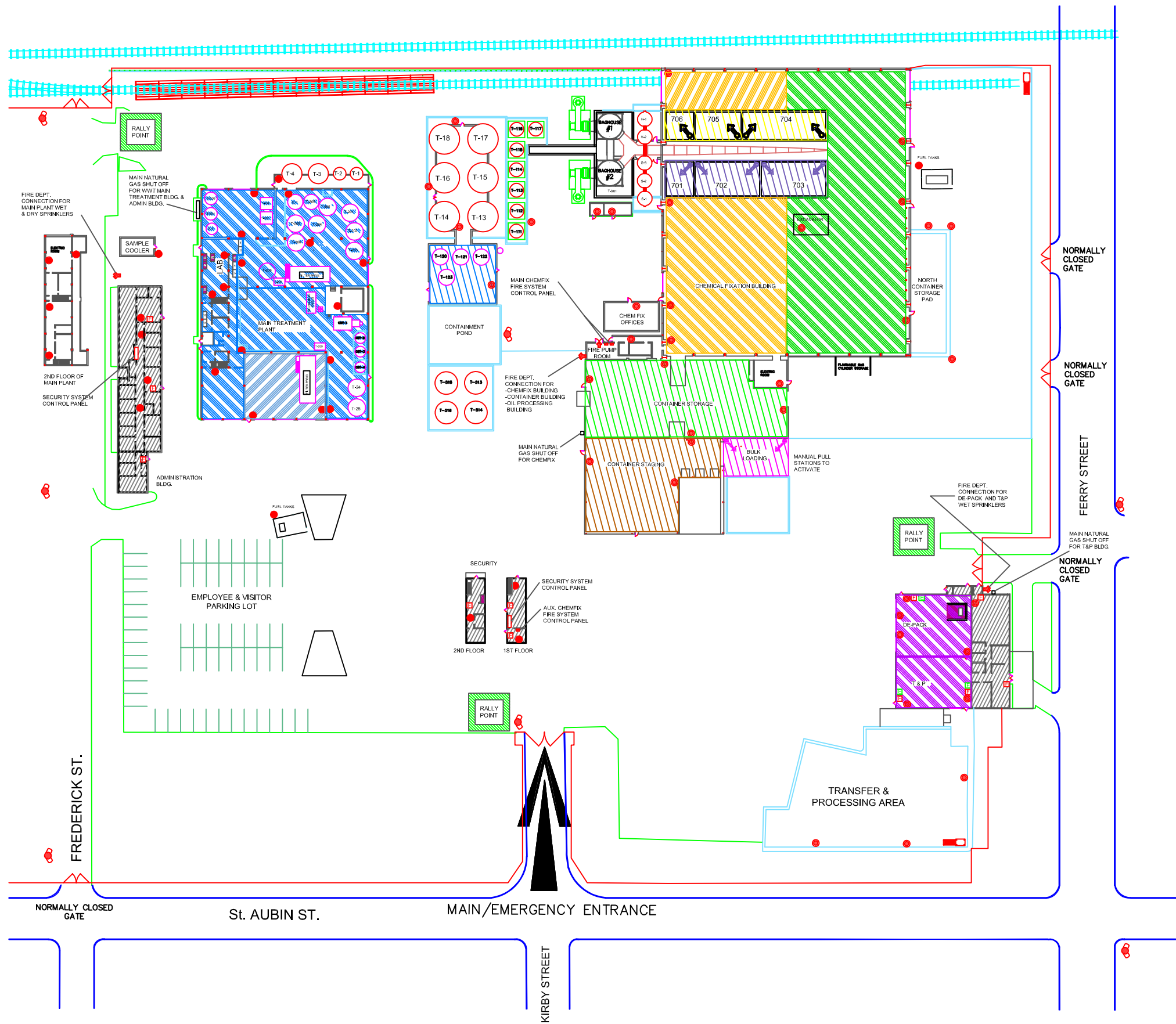
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EQ DETROIT

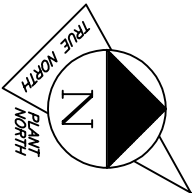
1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

MEDICAL EMERGENCY PREPAREDNESS

R-02



- EQ DETROIT SITE
EMERGENCY PROCEDURES:
1. ENSURE THE SAFETY OF YOURSELF AND OTHERS IN THE AREA.
 2. GATHER AS MUCH INFORMATION AS POSSIBLE (i.e. NATURAL OF EMERGENCY, HAZARDOUS SOURCES, AREA, AMOUNT, VICTIMS, ETC.)
 3. ESTABLISH CONTACT WITH A SUPERVISOR.
 4. NOTIFY EMERGENCY COORDINATOR OR ALTERNATE AND FOLLOW THEIR INSTRUCTIONS.



PLEASE NOTE: ALL LOCATIONS ARE APPROXIMATE

- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- FIRE EXTINGUISHER
- FIRE PULL STATION
- EMERGENCY PULL STATION

- MAIN PLANT WET SPRINKER ZONE
- MAIN PLANT DRY SPRINKER ZONE
- LAB PAC AND T&P WET SPRINKER ZONE
- CHEMICAL FIXATION NORTH DRY SPRINKLER ZONE
- CHEMICAL FIXATION SOUTH DRY SPRINKLER ZONE
- SMOKE DETECTOR ONLY
- CHEMICAL FIXATION WEST FOAM DELUGE ZONE
- CHEMICAL FIXATION EAST FOAM DELUGE ZONE
- CONTAINER STORAGE FOAM DELUGE ZONE
- CONTAINER STAGING FOAM DELUGE ZONE
- BULK LOADING FOAM DELUGE ZONE
- OIL PROCESSING FOAM DELUGE ZONE
- LAB HOOD DRY CHEMICAL

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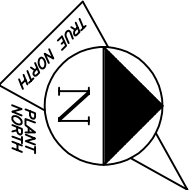
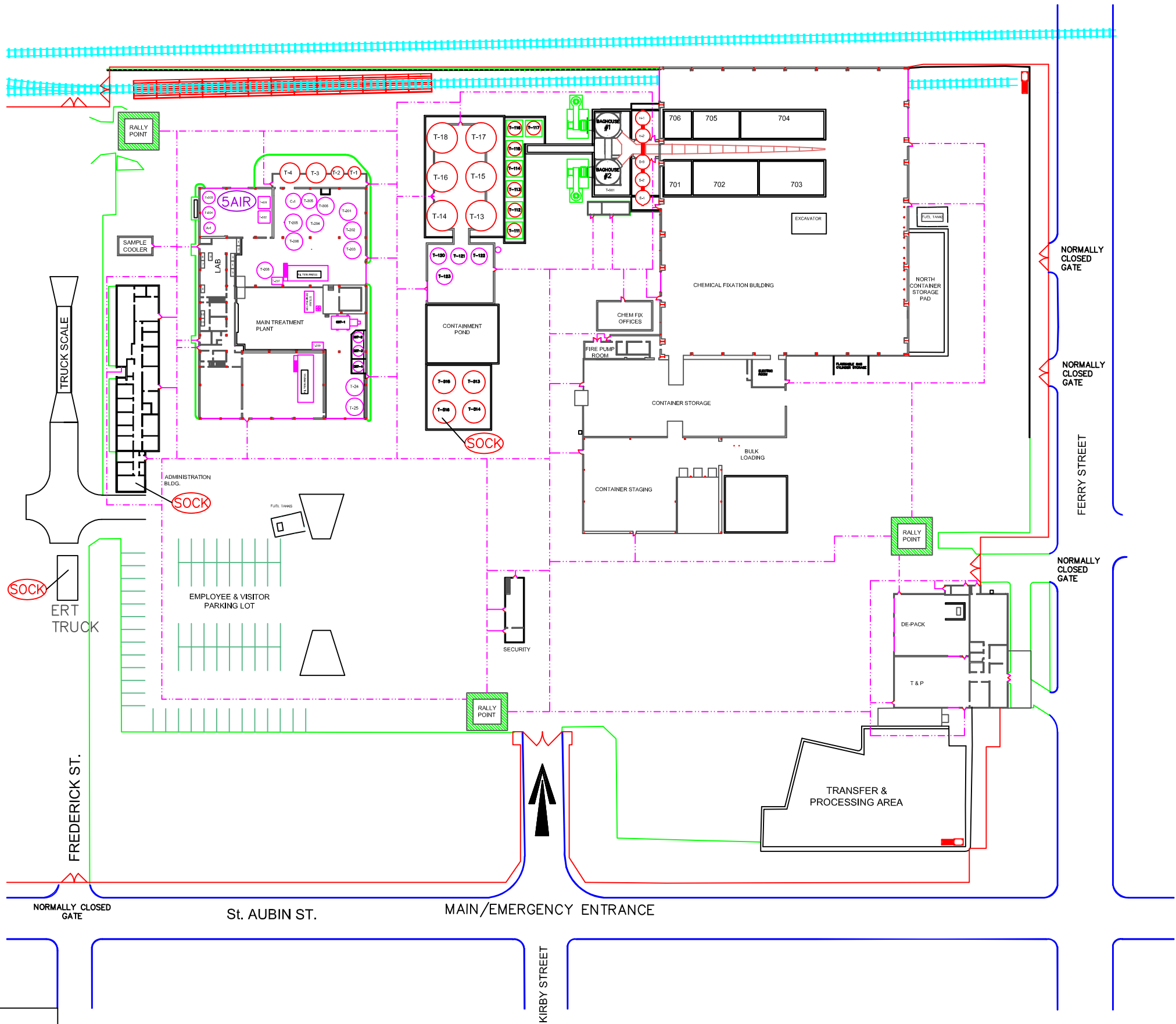
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FIRE EMERGENCY PREPAREDNESS

R-03



PLEASE NOTE: ALL LOCATIONS ARE APPROXIMATE

SOCK — WIND SOCK
- - - - - EVACUATION ROUTE

NUMBER	REFERENCE DRAWING

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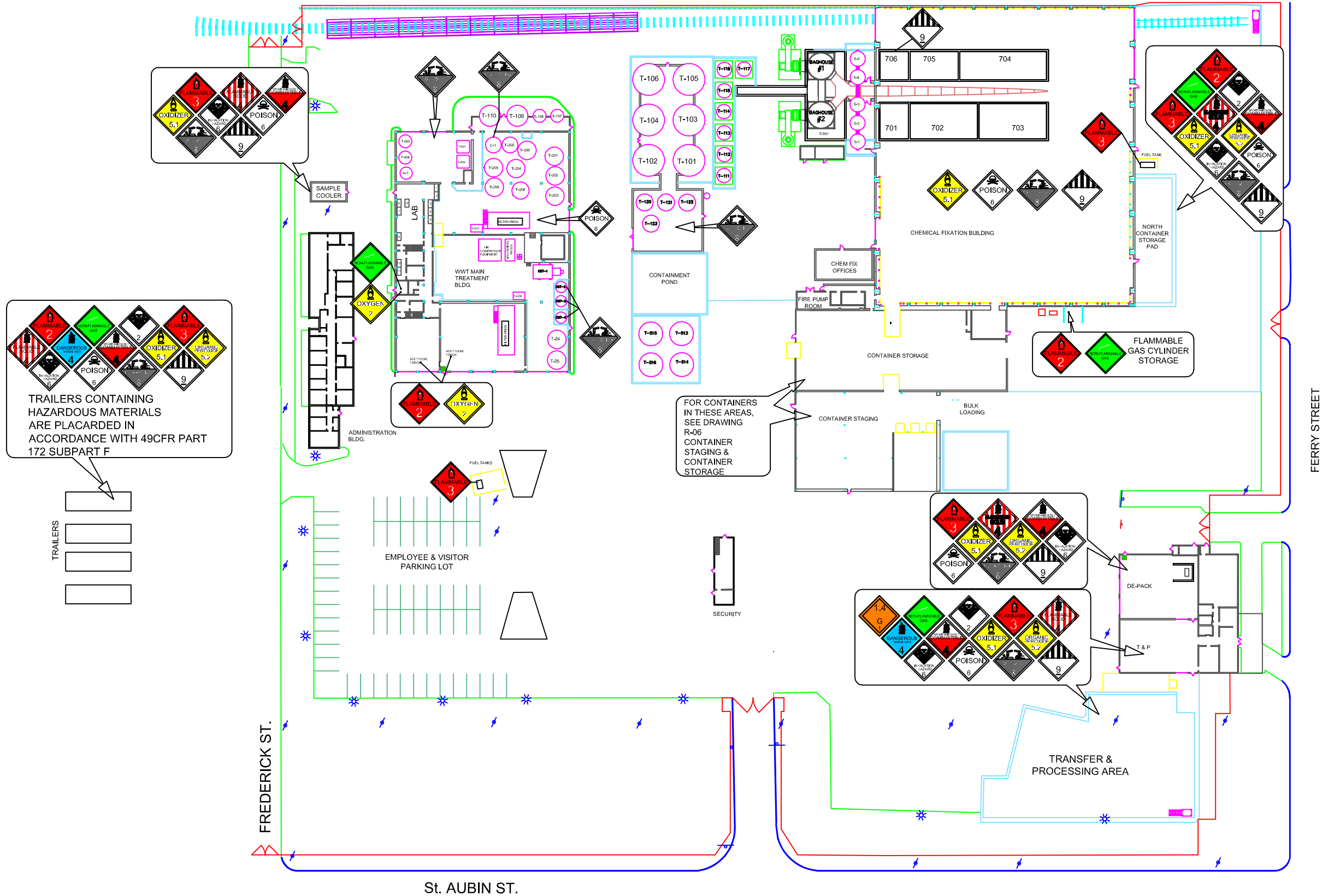
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EQ DETROIT

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EVACUATION PLAN

R-04



TRAILERS CONTAINING HAZARDOUS MATERIALS ARE PLACARDED IN ACCORDANCE WITH 49CFR PART 172 SUBPART F

FOR CONTAINERS IN THESE AREAS, SEE DRAWING R-06

FLAMMABLE GAS CYLINDER STORAGE

DE-PACK

T&P

TRANSFER & PROCESSING AREA

FERRY STREET

FREDERICK ST.

St. AUBIN ST.



NUMBER	REFERENCE DRAWING

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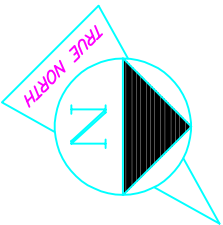
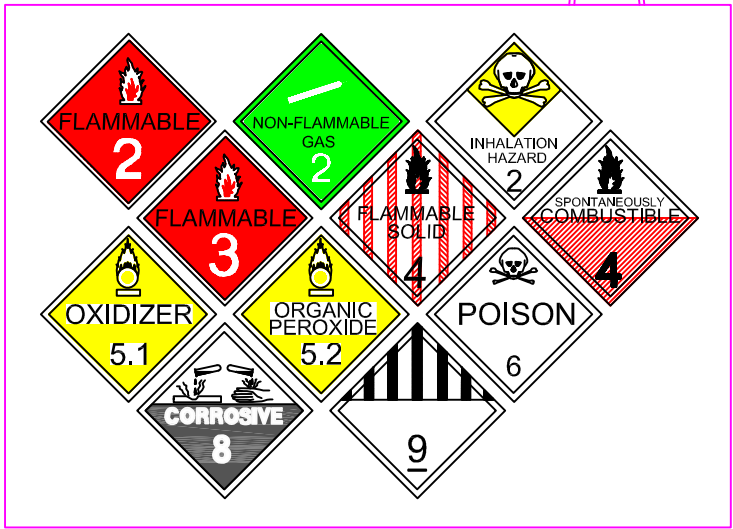
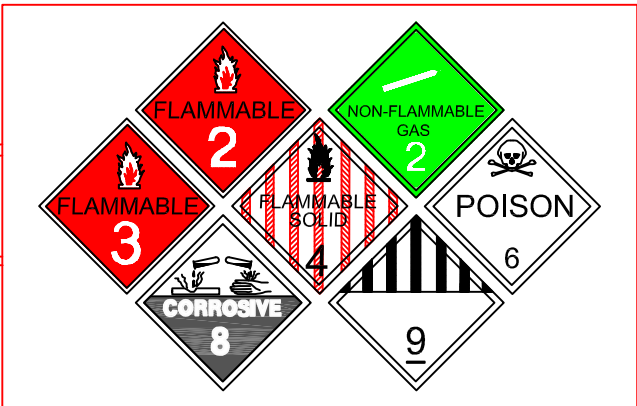
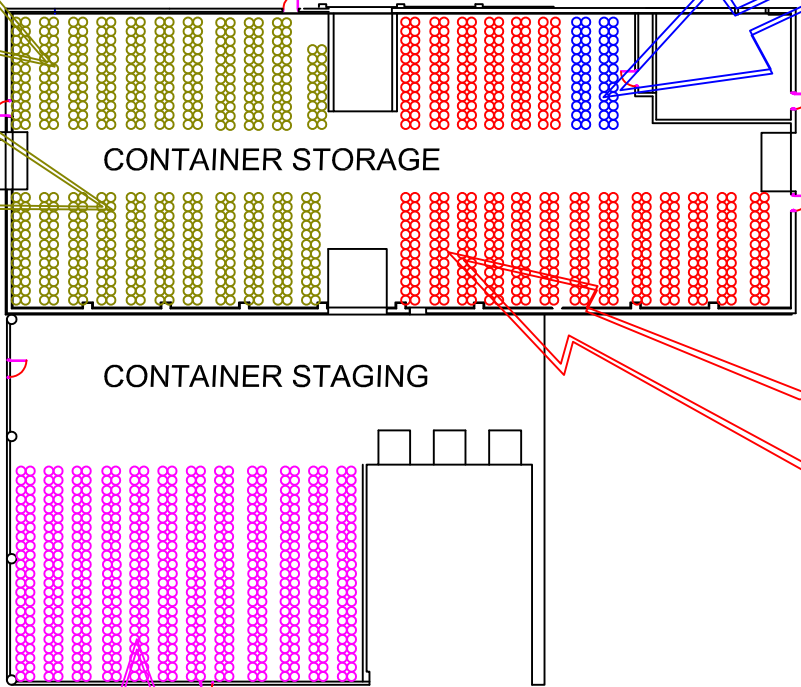
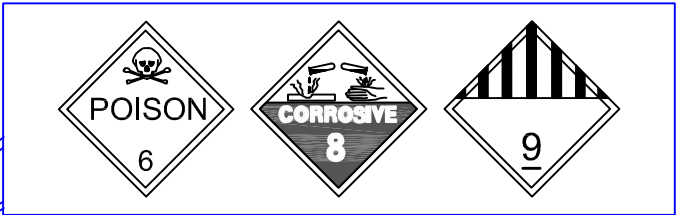
EQ DETROIT

1923 FREDERICK ST., DETROIT , MI 48211 (313) 347-1300

FACILITY SITE

AREA HAZARD CLASSIFICATION

R-05



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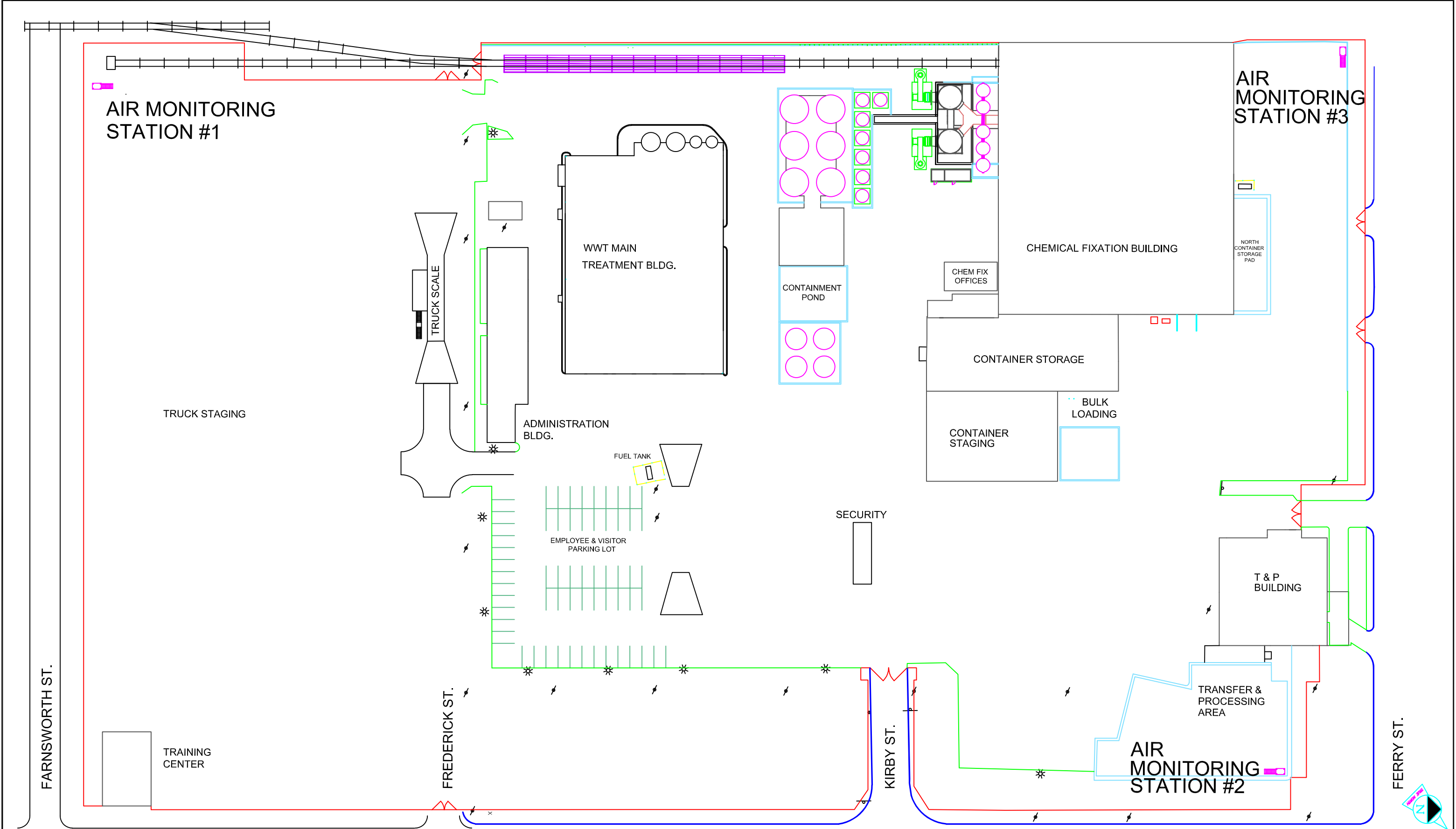
EQ DETROIT

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CONTAINER STORAGE / STAGING AREA

AREA HAZARD CLASSIFICATION

R-06



FARNSWORTH ST.

FREDERICK ST.

KIRBY ST.

FERRY ST.

ST. AUBIN ST.

NUMBER	REFERENCE DRAWING

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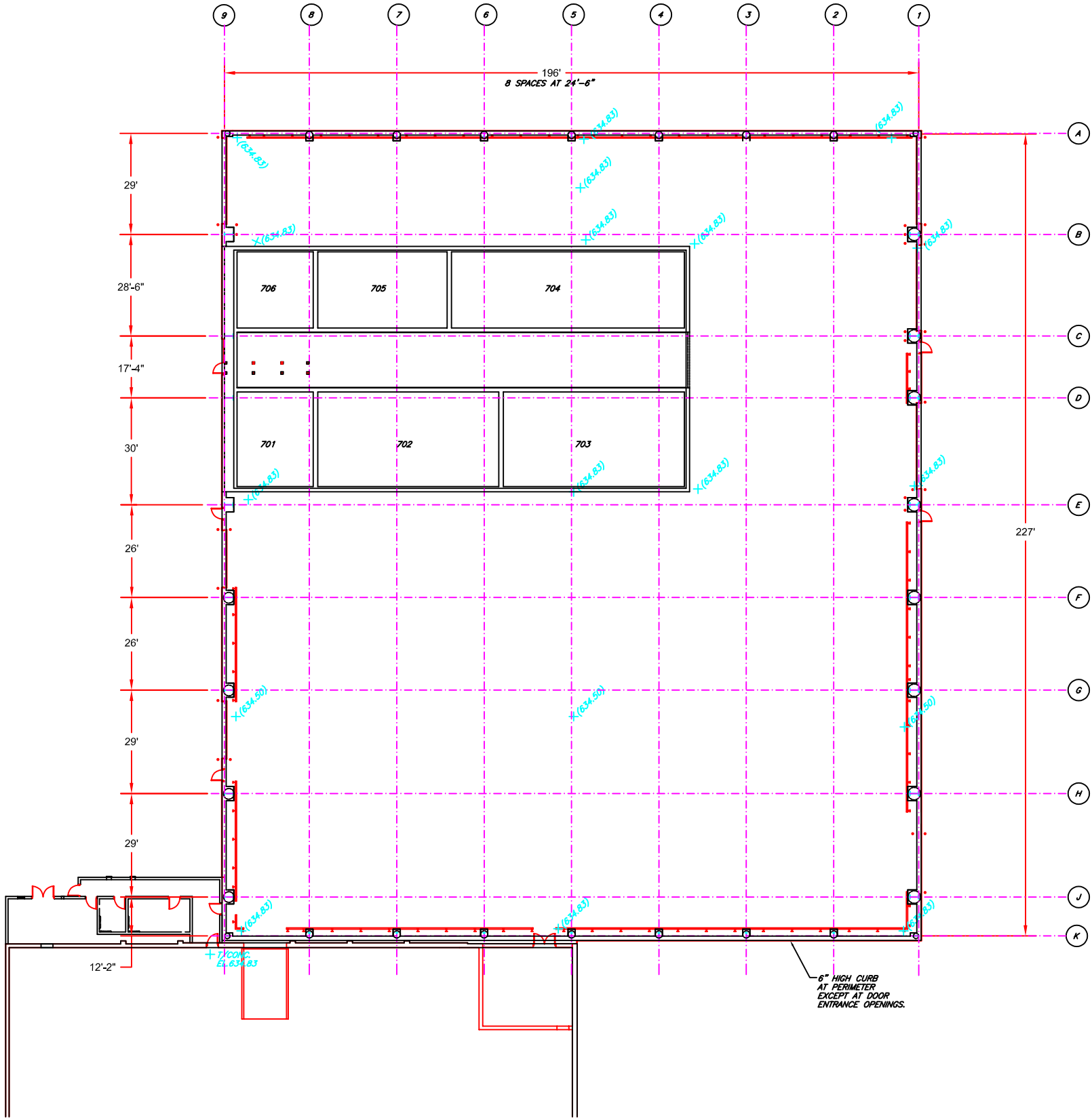
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AMBIENT AIR MONITORING STATION

R-07



STRUCTURAL NOTES

GENERAL:

- ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURES AND PLANT UTILITIES HAVE BEEN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF DESIGN AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE TO VERIFY ALL DIMENSIONS AND ELEVATIONS BEFORE PROCEEDING WITH ANY WORK. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WHICH WILL EFFECT THE PROGRESS OF THE WORK.
- NOTIFY FIBER OPTIC UTILITY OWNERS BEFORE PERFORMING ANY EXCAVATION OR FOUNDATION WORK IN THE VICINITY OF THESE BURIED LINES. (REFER TO CIVIL DRAWINGS FOR LOCATION.)
- SHALLOW FOUNDATIONS SHALL BE PLACED ON UNDISTURBED NATURAL SOIL WITH AN ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF. IF UNACCEPTABLE SOIL CONDITIONS ARE ENCOUNTERED, THE ENGINEER SHALL BE CONSULTED FOR DIRECTION WITH REGARD TO FOUNDATION CONSTRUCTION.
- DRILLED PIER FOUNDATIONS SHALL EXTEND DOWN TO THE NATIVE SILTY CLAY WITH AN ALLOWABLE SOIL BEARING PRESSURE OF 10,000 PSF.
- REFER TO NTH CONSULTANT'S "GEOTECHNICAL INVESTIGATION – PROPOSED ADDITION TO CITY ENVIRONMENTAL FREDERICK STREET FACILITY, DETROIT MICHIGAN" PROJECT NO. 34-4634-00 REPORT, DATED DECEMBER 6, 1994, FOR FOUNDATION RECOMMENDATIONS, AS WELL AS THE SITE SOIL CONDITIONS.
- THE FLOOR SLAB SUB-BASE SHALL BE PLACED ON NATURAL SUBGRADE MATERIAL AFTER THE TOPSOIL HAS BEEN STRIPPED AND THE SUBGRADE PROFILED. IF UNDERCUTTING IS REQUIRED TO REMOVE UNSUITABLE SUBGRADE MATERIAL OR IF THE NATURAL SUBGRADE IS BELOW THE DESIGN LEVEL, COMPACTED GRANULAR FILL SHALL BE USED TO ACHIEVE THE DESIRED SUBGRADE ELEVATION. FILL MATERIAL SHALL BE AS SHOWN ON THE DRAWINGS, AND SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM STANDARD D-1557 (MODIFIED PROCTOR).
- GRADE BEAM EXCAVATIONS MAY BE TRENCHED IF THE EXCAVATION SIDES WILL STAND WITHOUT CAVING DURING CONCRETE PLACEMENT. OTHERWISE, THE GRADE BEAMS SHALL BE FORMED WITH VERTICAL SIDES.
- TESTING OF FOUNDATION SUBGRADE, FOUNDATION AND FLOOR SLAB CONCRETE, GRANULAR BACKFILL, AND OTHER TESTING REQUIRED WILL BE BY THE CONTRACTOR AND COORDINATED WITH THE ENGINEER. THE ENGINEER SHALL BE ADVISED OF AND APPROVE OF THE TEST RESULTS PRIOR TO THE PERFORMANCE OF ANY TEST-DEPENDENT WORK BY THE CONTRACTOR.

STRUCTURAL STEEL:

- THE TYPE OF CONSTRUCTION AND ASSOCIATED DESIGN ASSUMPTIONS SHALL BE IN ACCORDANCE WITH AMERICAN INSTITUTE OF STEEL CONSTRUCTION TYPE 2 STRUCTURAL STEEL CONSTRUCTION UNLESS DETAILED OTHERWISE.
- ALL STRUCTURAL STEEL SHALL CONFORM TO:
STEEL SHAPES, BARS AND PLATES ASTM A36
STEEL TUBING AND PIPE ASTM A501,A500, GRADE B OR A53 GRADE B
- WELDING ELECTRODES: AWS E70XX.
- HIGH STRENGTH BOLTS: ASTM A325, WITH FLAT WASHERS UNDER TURNED ELEMENTS.
- ANCHOR BOLTS: ASTM A307.

CAST-IN-PLACE CONCRETE:

- ALL REINFORCING IN FOOTINGS AND WALLS SHALL BE CONTINUOUS AROUND CORNERS AND INTERSECTIONS.
- PROVIDE 3/4" BEVELED EDGES ON ALL PERMANENTLY EXPOSED SURFACES OF CONCRETE SURFACES.
- MINIMUM COMPRESSIVE STRENGTHS (F'_c):
3,500 PSI FOR FOOTINGS AND FOUNDATIONS
4,000 PSI FOR SLABS ON GRADE.
- MINIMUM CEMENT CONTENT: 5-1/2 SACKS PER CUBIC YARD FOR 3,500 PSI, 6.0 SACKS PER CUBIC YARD FOR 4,000 PSI.
- AGGREGATES: COURSE - M.D.O.T.6A: FINE M.D.O.T.2NS.
- STEEL REINFORCEMENT: ASTM 615, GRADE 60, F_y = 60,000 PSI.
- ALL CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI "SPECIFICATIONS FOR STRUCTURAL CONCRETE" 301-84.
- WELDED WIRE FABRIC (FLAT SHEET) SHALL CONFORM TO ASTM A-185.

DESIGN DATA:

SUPERIMPOSED DESIGN LOADS

MECHANICAL ROOM/TOILET ROOMS	
SNOW L.L.	30 PSF
ROOF D.L.	15 PSF
MISC. MECH & ELEC. D.L.	5 PSF
LIQUID TANK COVER	
SNOW L.L.	30 PSF
ROOF D.L.	15 PSF
MISC. MECH & ELEC. D.L.	10 PSF

SPECIFIC CONCENTRATED POINT LOADS DUE TO HEAVY MECHANICAL EQUIPMENT ARE SUPPORTED BY STEEL FRAMING AS DETAILED ON DRAWINGS. MEZZANINES & CATWALKS 100 PSF

DRILLED PIER FOUNDATION:

- CONTRACTOR IS RESPONSIBLE FOR PROVIDING LINE AND GRADE FOR CONSTRUCTION.
- TOWER FOUNDATION SHALL BE A DRILLED TYPE PIER.
- PIER FOUNDATION SHALL BE FOUNDED ON SOLID UNDISTURBED SOIL. BOTTOM SHALL BE EXCAVATED TO A LEVEL PLANE AND CLEARED OF LOOSE MATERIAL. NO WATER SHALL BE STANDING IN BOTTOM OF THE PIER EXCAVATION AT THE TIME OF PLACING THE CONCRETE.
- ALL REINFORCING STEEL SHALL BE TIES AND FORMED INTO A CAGE PRIOR TO SETTING INTO POSITION IN THE EXCAVATED PIER.
- ALL CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
- MAXIMUM FREE DROP OF CONCRETE SHALL BE 6 FEET PROVIDED IT IS DIRECTED THROUGH A HOPPER OR OTHER SIMILAR DEVICE TO PREVENT THE SEGREGATION OF THE MATERIAL. CONCRETE SHALL NOT HIT SIDES OF SOIL OR REINFORCING.

NUMBER	REFERENCE DRAWING

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REV	DATE:	DESCRIPTION:
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SCALE: NONE SHEET:	
PROJECT No.	
DRAWN: AEO	DATE: 01-JUNE-2020
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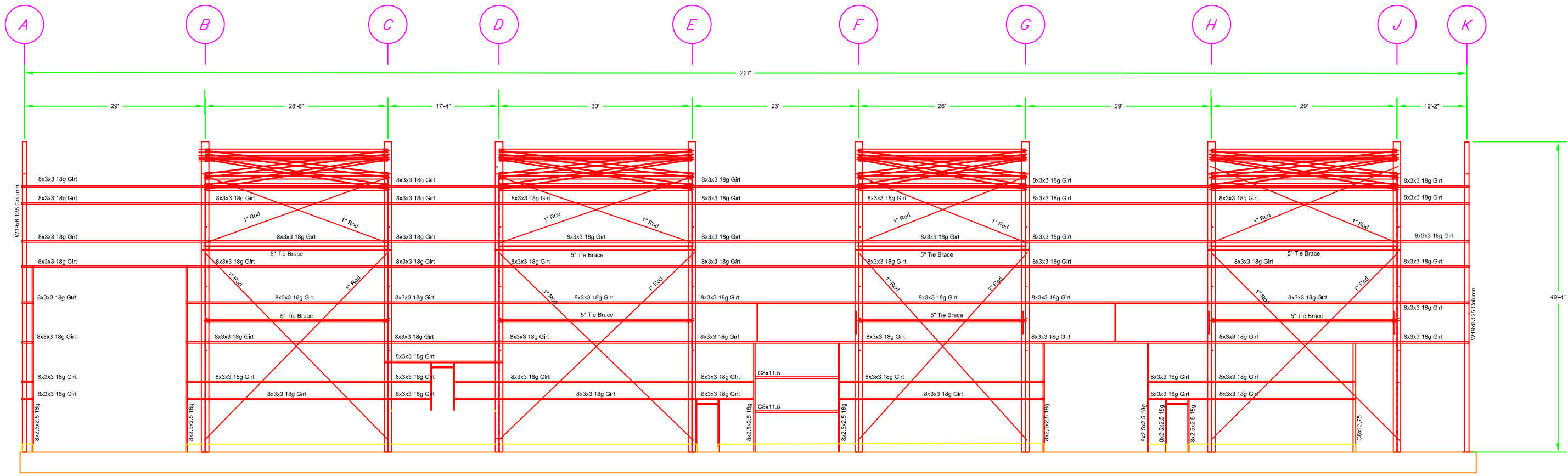
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CHEMICAL FIXATION BUILDING

OVERALL STRUCTURAL PLAN

S-01



ELEVATION LOOKING NORTH

NUMBER	REFERENCE DRAWING

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PROJECT No.	
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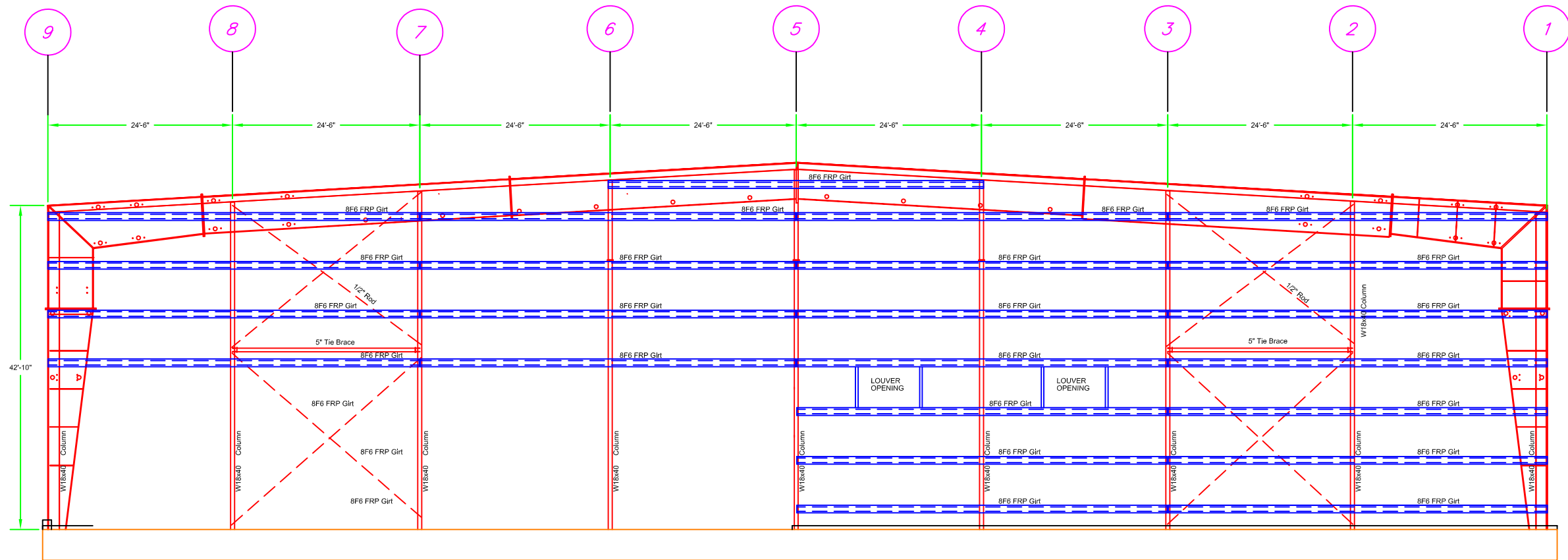
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CHEMICAL FIXATION BUILDING

BUILDING STRUCTURAL DETAIL - SOUTH ELEVATION

S-02



ELEVATION LOOKING WEST

NUMBER	REFERENCE DRAWING

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SCALE: NONE SHEET:	
PROJECT No.	
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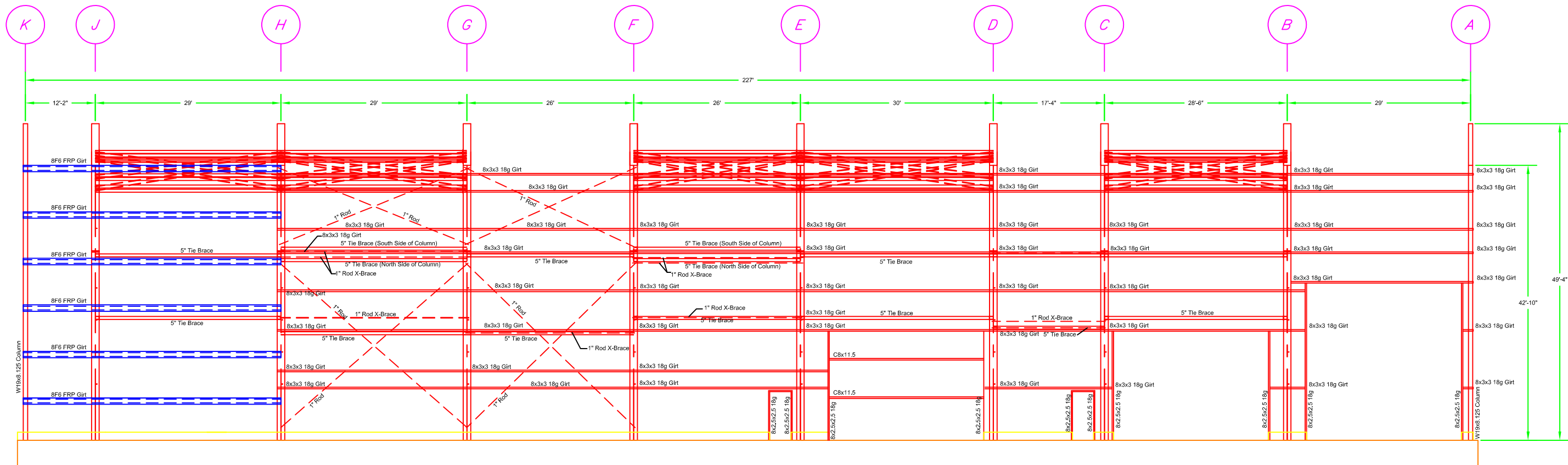
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CHEMICAL FIXATION BUILDING

BUILDING STRUCTURAL DETAIL - EAST ELEVATION

S-03



ELEVATION LOOKING SOUTH

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PROJECT No.	
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CHEMICAL FIXATION BUILDING

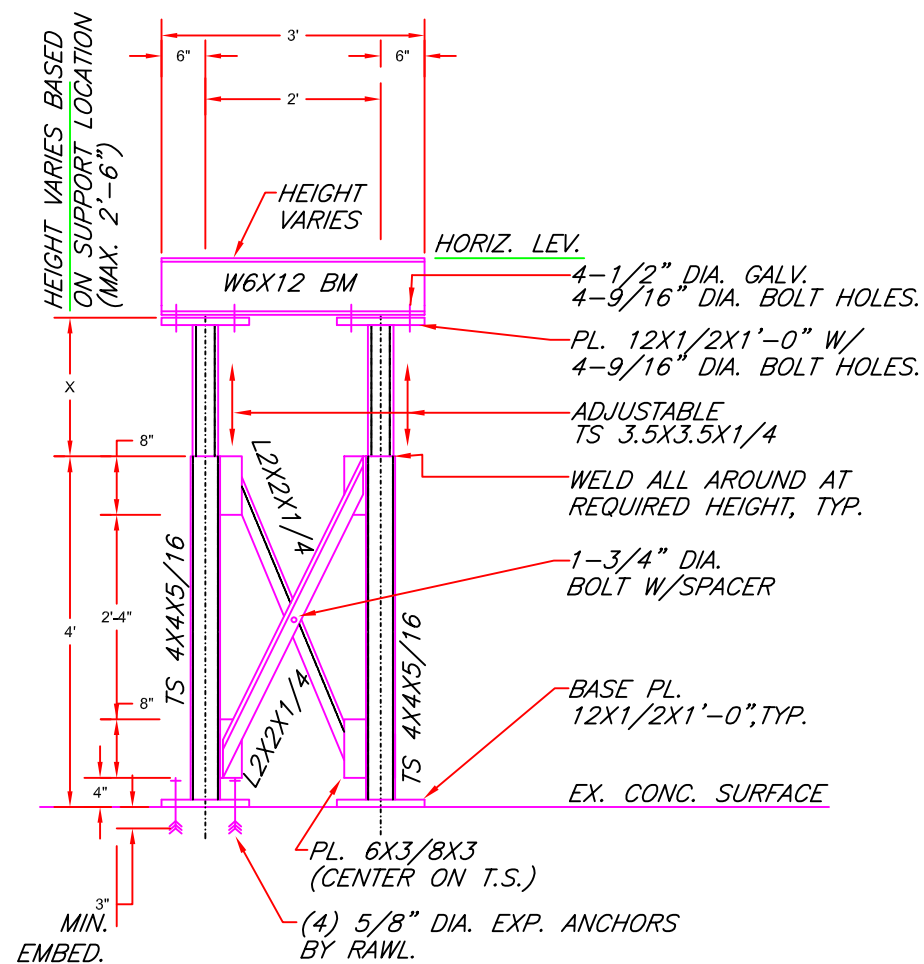
BUILDING STRUCTURAL DETAIL - NORTH ELEVATION

S-04

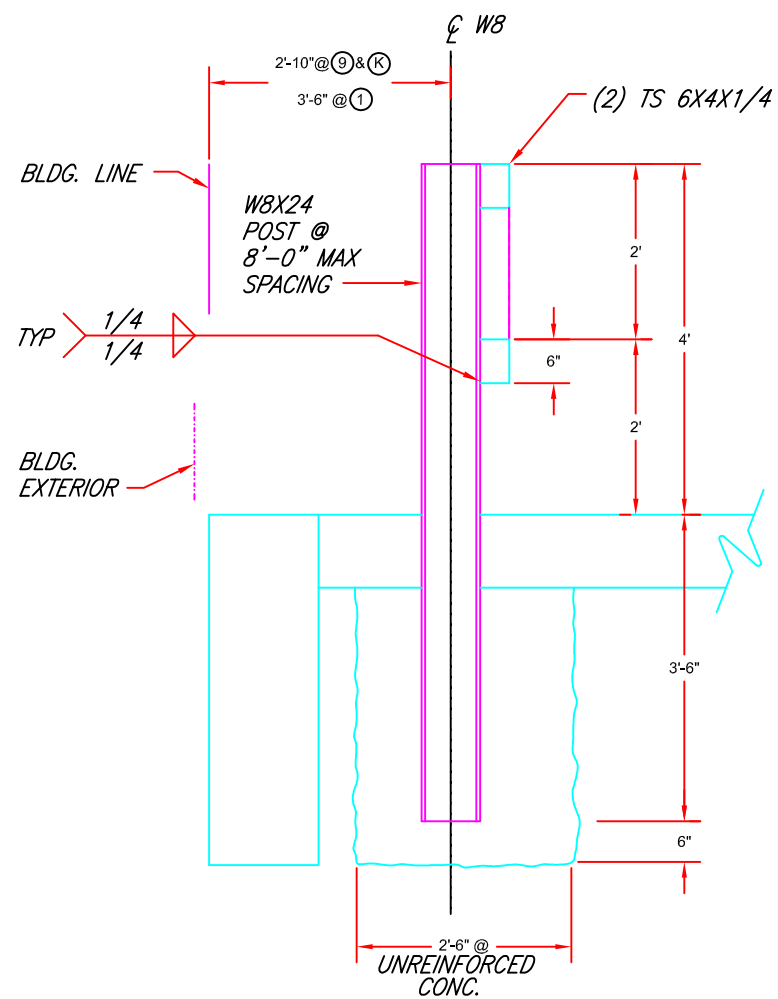


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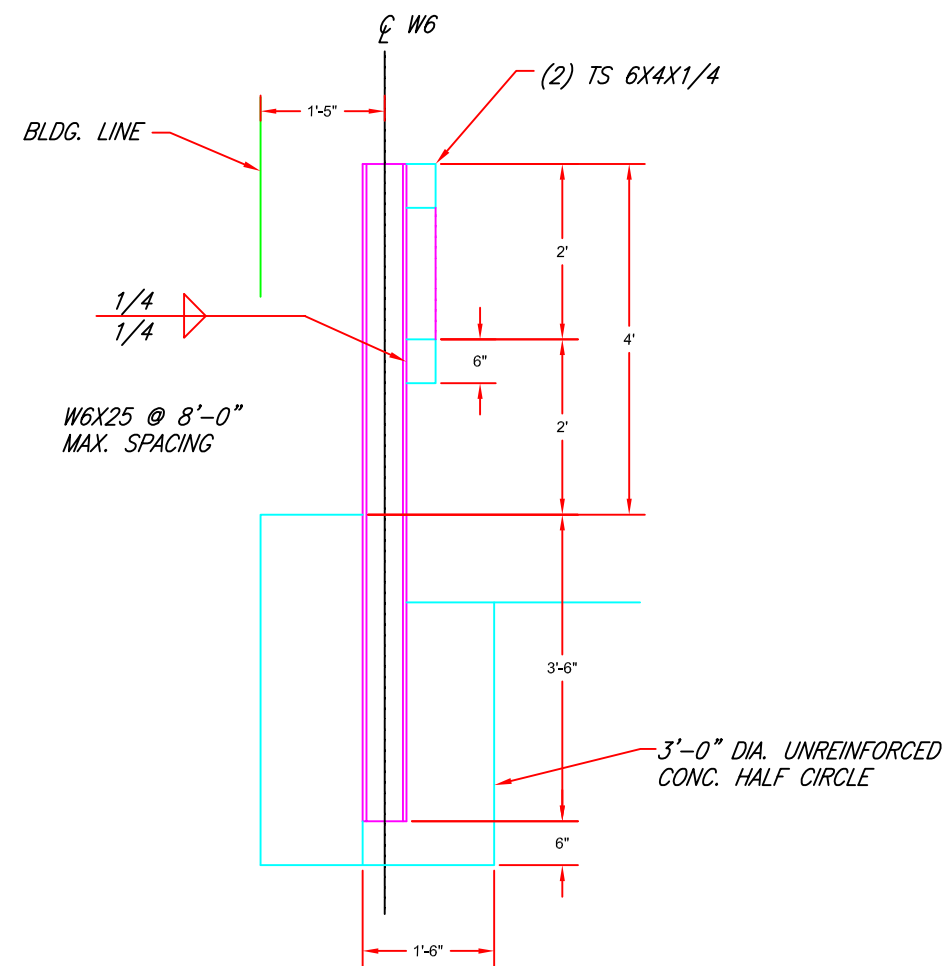
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TYPICAL SCREW
SUPPORT DETAIL CONVEYOR



BUILDING WALL
GUARD RAIL DETAILS



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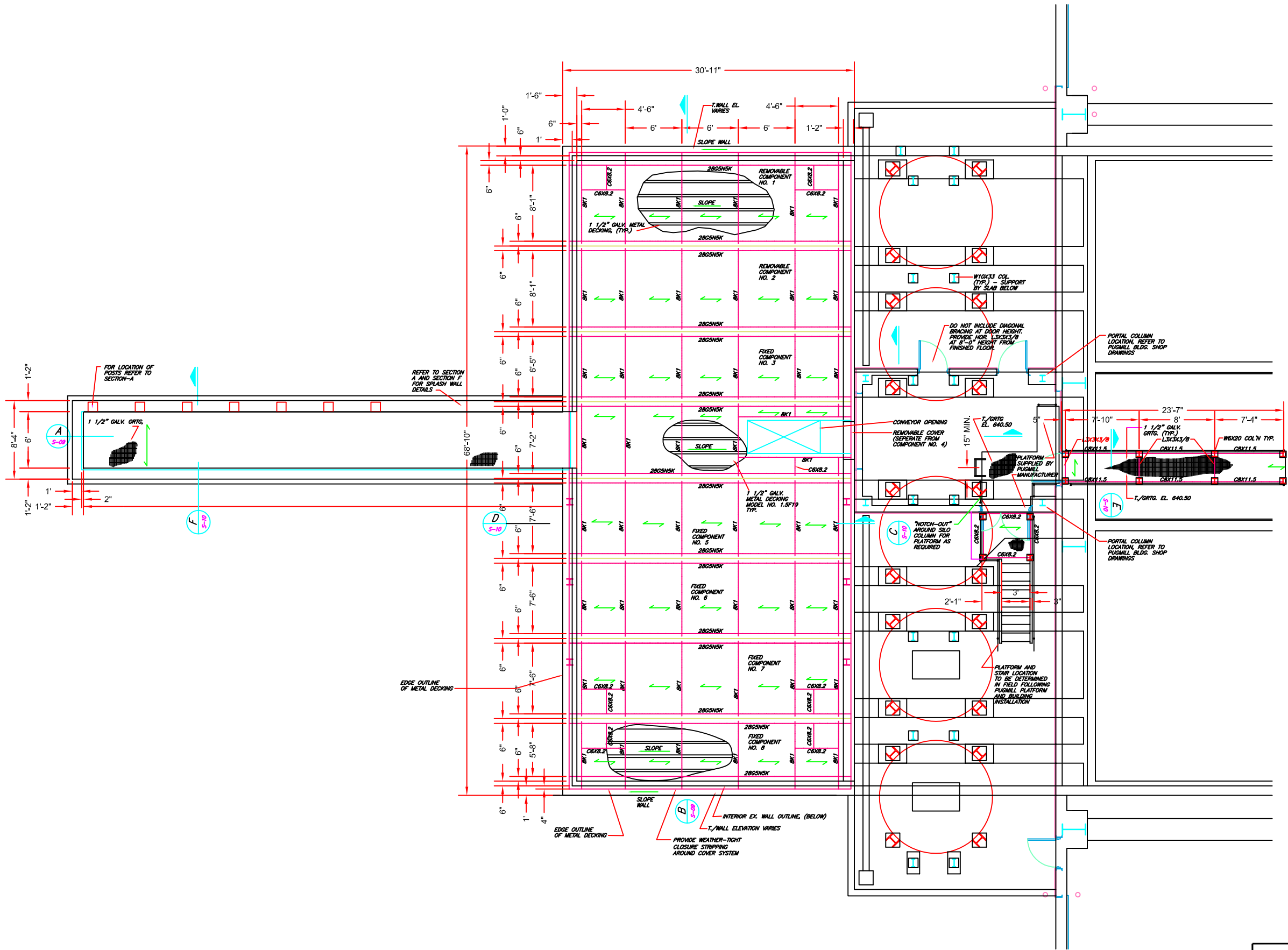
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CHEMICAL FIXATION BUILDING

MISCELLANEOUS STRUCTURAL DETAILS

S-06



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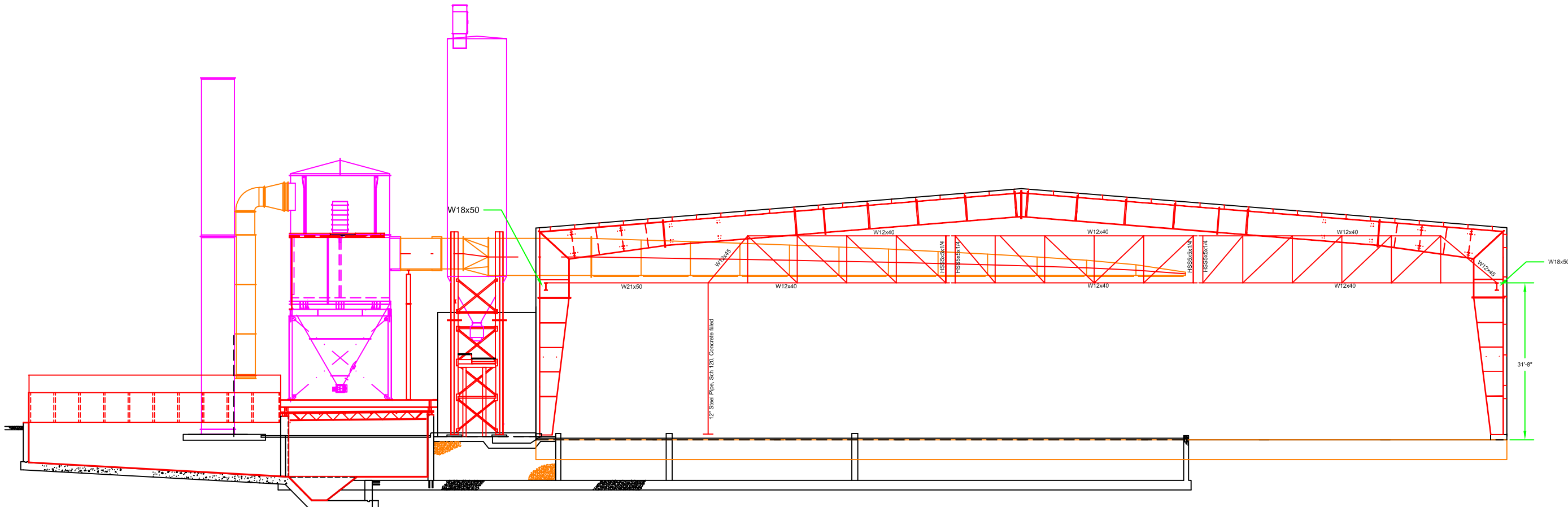
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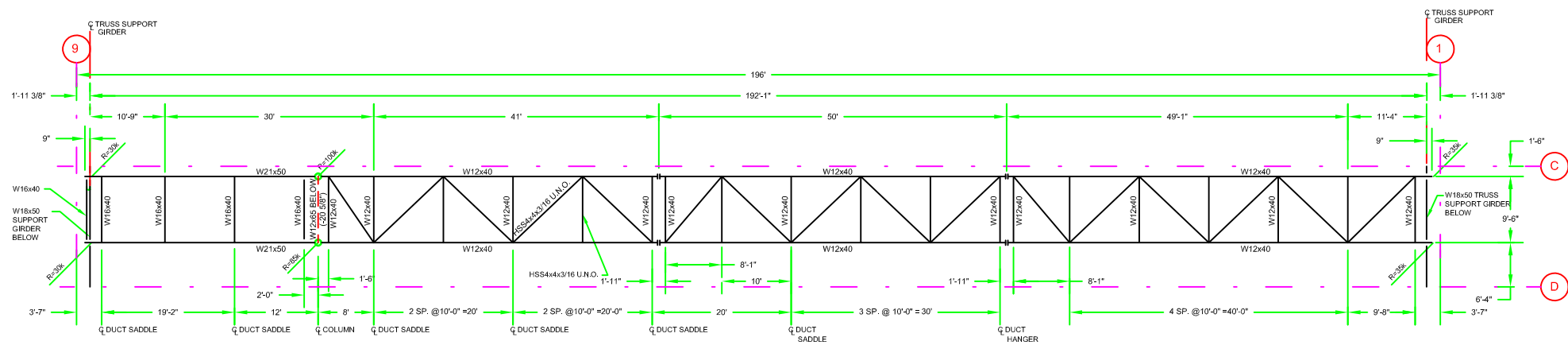
CHEMICAL FIXATION BUILDING

AIR POLLUTION CONTROL SYSTEM & SILO STRUCTURAL PLAN

S-07



East Elevation



BOTTOM CHORD PLAN

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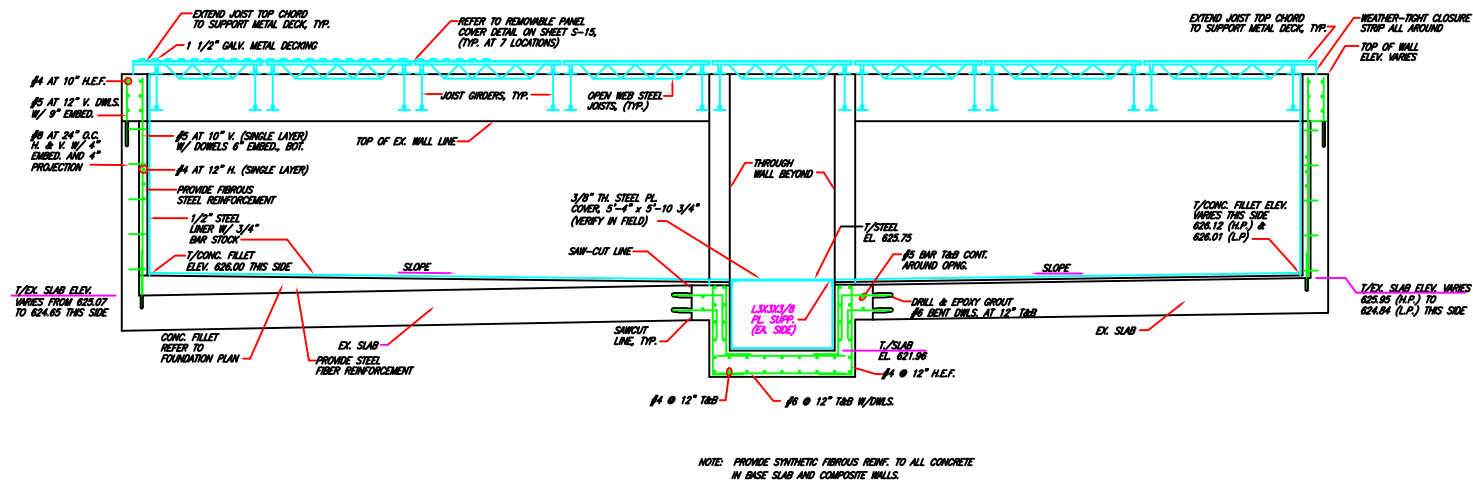
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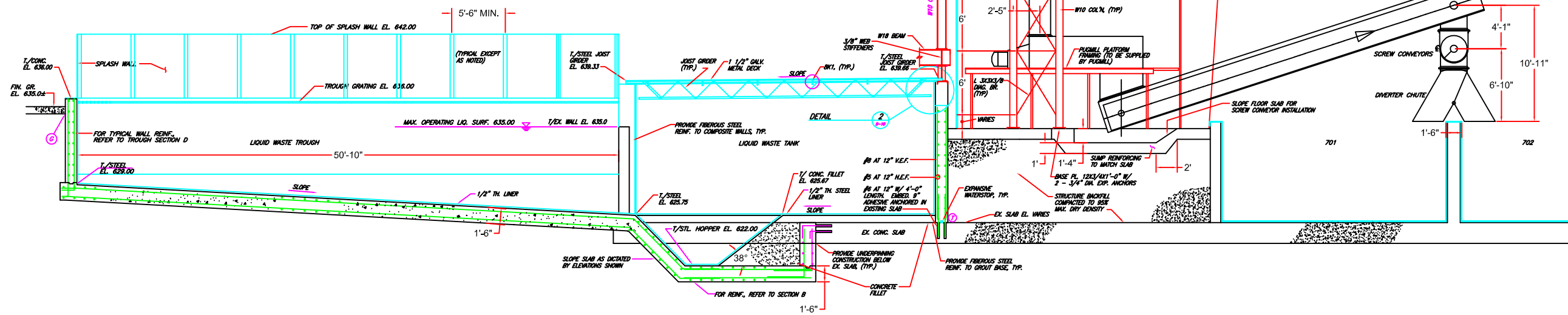
CHEMICAL FIXATION BUILDING

APCS DUCT SUPPORT STRUCTURAL PLAN

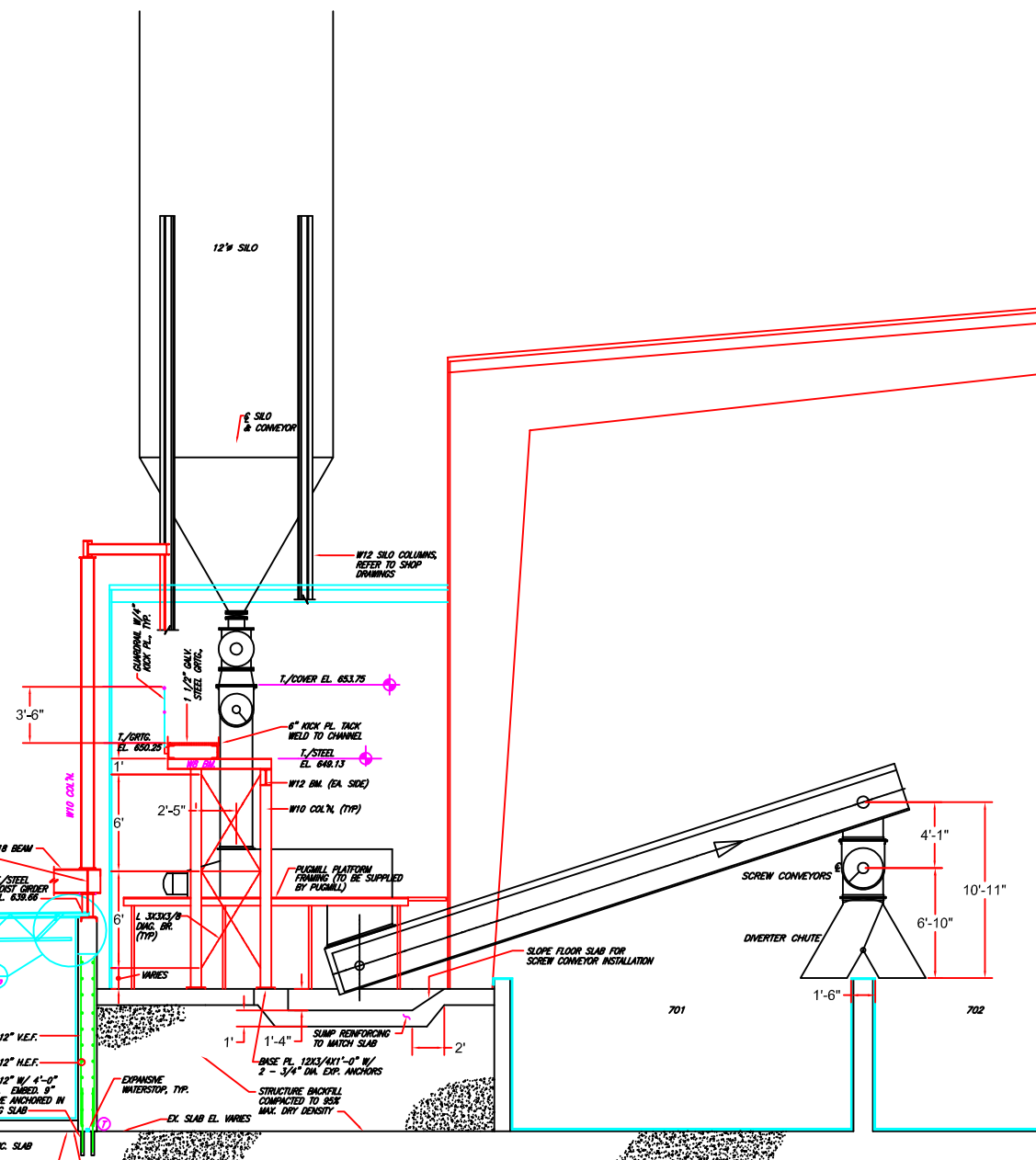
S-08



SECTION
S-04 AND C-02



SECTION
S-04 AND C-02



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CHEMICAL FIXATION BUILDING

AIR POLLUTION CONTROL SYSTEM & SILO STRUCTURAL DETAILS

S-09

