Home & Personal Care - USA

100 Faberge Blvd., Raeford, North Carolina 28376

Project Name: North Carolina Plant Project No. R5008L - Project Merlin Liquids Process Upgrade

ALLIANCE
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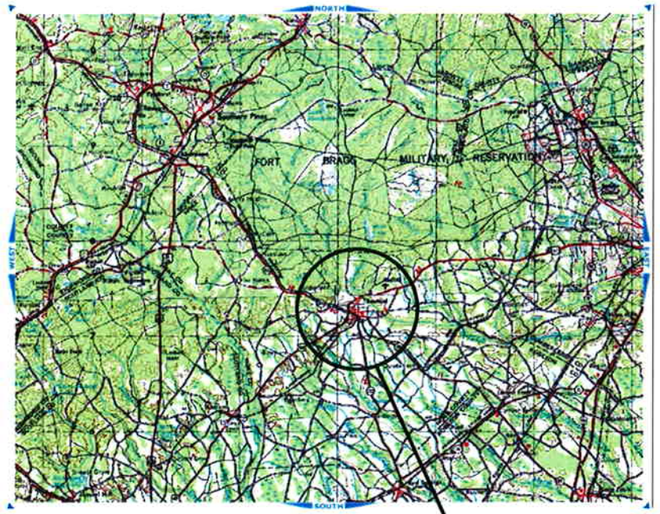


STRUCTURAL DRAWING LIST			
SHEET No.	REVISION	DATE	SHEET TITLE
R5008L-01-G001	0	5/31/06	COVER SHEET
R5008L-01-S000	0	5/31/06	GENERAL NOTES & SCHEDULES
R5008L-01-S001	0	5/31/06	PROCESS PLATFORM GENERAL TYPICAL STEEL DETAILS
R5008L-01-SD01	0	5/31/06	EXISTING CONDITIONS & DEMOLITION PLAN
R5008L-01-S101	0	5/31/06	PROCESS PLATFORM STRUCTURAL COLUMN FOOTING PLAN
R5008L-01-S102	0	5/31/06	PROCESS PLATFORM STRUCTURAL FRAMING PLAN
R5008L-01-S201	0	5/31/06	PROCESS PLATFORM 3D ELEVATION
R5008L-01-S301	0	5/31/06	PROCESS PLATFORM CROSS SECTIONS
R5008L-01-S302	0	5/31/06	TANK LUG SUPPORT SECTION
R5008L-01-S401	0	5/31/06	PROCESS PLATFORM ENLARGED PLAN – CONCRETE PLAN
R5008L-01-S501	0	5/31/06	SECTIONS AND DETAILS – CONCRETE (1 of 2)
R5008L-01-S502	0	5/31/06	SECTIONS AND DETAILS – STEEL (2 of 2)

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	NO SCALE	R5008L-01-0-G001

GENERAL NOTES:

1. GENERAL CONTRACTOR SHALL VERIFY EXISTING FEATURES, CONDITIONS, STRUCTURAL MEMBERS, DIMENSIONS, AND ELEVATIONS PRIOR TO PURCHASING OR FABRICATING MATERIALS AND EQUIPMENT.
2. GENERAL CONTRACTOR SHALL CHECK AND VERIFY DIMENSIONS AND GENERAL PROJECT AREA CONDITIONS (NEW AND EXISTING). GENERAL CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO START OF WORK. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR WORK FITTING AS INTENDED BY THE DRAWINGS AND SPECIFICATIONS.
3. THE STRUCTURE SHOWN HEREIN HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATION OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE.
4. THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. THE STRUCTURAL DRAWINGS ARE NOT INTENDED FOR USE AS SHOP ERECTION DRAWINGS. REPRODUCTION OF THESE DRAWINGS IN LIEU OF PREPARATION OF SHOP ERECTION DRAWINGS IS NOT ACCEPTABLE. SHOP DRAWINGS SHALL BE THOROUGHLY DETAILED AND SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO START OF ERECTION.
6. PROVIDE ADEQUATE STRUCTURAL FRAMING AS APPROVED BY THE ENGINEER FOR ALL REQUIRED MECHANICAL OPENINGS THROUGH SLABS, WALLS, FLOOR DECK, ETC. SUPPORT ALL MECHANICAL EQUIPMENT. OPENINGS SHALL NOT BE PERMITTED THROUGH BEAMS UNLESS SPECIFICALLY DETAILED BY THE ENGINEER. GENERAL CONTRACTOR TO COORDINATE WITH TANK MANUFACTURER FOR SUPPORT AND INSTALLATION REQUIREMENTS.
7. WHERE SUBMITTALS ARE REQUIRED TO BE REVIEWED BY THE ENGINEER, A PERIOD OF TWENTY-ONE (21) DAYS, MEASURED FROM THE DATE RECEIVED BY THE ENGINEER, SHALL BE SCHEDULED FOR THE REVIEW OF EACH SUBMITTAL.
8. WHERE SPECIFIC PROPRIETARY PRODUCTS ARE INDICATED, THEY ARE TO BE TAKEN AS THE REPRESENTATIVE STANDARD OF QUALITY.
9. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED, FOLLOW ALL MANUFACTURER'S PUBLISHED INSTRUCTIONS.
10. WHERE USED HEREIN, THE SYMBOL (±) DOES NOT IMPLY ANY DEGREE OF PRECISION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BY DIRECT MEASUREMENT PRIOR TO THE START OF WORK.

STRUCTURAL DESIGN CRITERIA:

1. APPLICABLE CODES
   - A. INTERNATIONAL BUILDING CODE (IBC) – 2003 EDITION INCLUDING ALL PERTINENT AMENDMENTS
   - B. A.I.S.C. MANUAL OF STEEL CONSTRUCTION, NINTH EDITION 1989.
   - C. A.W.S. D1.1
   - D. A.C.I. 318
   - E. ASCE 7, LATEST EDITION.
   - F. CRSI MANUAL OF STANDARD PRACTICE, LATEST EDITION.
2. DESIGN LOADS
   - A. FLOOR LIVE LOADS:
     ELEVATED CONCRETE FLOORS 60 PSF
   - B. ROOF LIVE LOADS: NOT APPLICABLE
   - C. SNOW LOAD: NOT APPLICABLE
   - D. WIND LOAD: NOT APPLICABLE
   - E. SEISMIC LOAD:
     SEISMIC IMPORTANT FACTOR =1.25
     SEISMIC USE GROUP = II
     SS/S1 = 0.35/0.15
     SITE CLASS = C
     SDS/SD1 = 0.28/0.16
     SEISMIC RESPONSE COEFFICIENT = 0.12
     R=3.0
     SEISMIC FORCE RESISTING SYSTEM = ORDINARY STEEL MOMENT FRAME
     ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE
     BASE SHEAR = 0.12 X STRUCTURE MASS

DESIGN CRITERIA (CONTINUED)

- F. FLOOD LOADS: NOT APPLICABLE
- G. SPECIAL LOADS:
  6,000 GALLON TANK
  (a) EMPTY = 10,000 POUNDS
  (b) CONTENT = 55,000 POUNDS

  3,000 GALLON TANK
  (a) EMPTY = 10,500 POUNDS
  (b) CONTENT = 30,000 POUNDS
- H. FUTURE LOADS:
  UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR THE ADDITION OF FUTURE MACHINES, EQUIPMENT, OR FLOORING.

CONCRETE:

1. UNLESS OTHERWISE NOTED (UON) ON THESE DRAWINGS, MINIMUM REINFORCEMENT COVER SHALL BE AS FOLLOWS:

   FOOTINGS 3" CLEAR
   SLABS ON GRADE 2" CLEAR
   ELEVATED SLABS ¾" CLEAR
2. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONFORMANCE WITH CRSI MANUAL OF STANDARD PRACTICE AND ACI DURING THE PLACEMENT OF THE CONCRETE.
3. UNLESS OTHERWISE NOTED (UON) ON THESE DRAWINGS, SPLICES FOR REINFORCEMENT SHALL BE AS FOLLOWS:

   WELDED WIRE FABRIC ---------- WIRE SPACING PLUS 6"
   REINFORCING BARS---------- 60 BAR DIAMETERS
4. DOWELS SHALL BE PLACED BEFORE CONCRETE IS POURED AND NOT PUSHED INTO THE WET CONCRETE MASS.
5. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
6. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED BARS.
7. NON-SHRINK GROUT SHALL BE A HIGH-PERFORMANCE, NON-SHRINK, PREPACKAGED, PROPRIETARY, CEMENTITIOUS GROUT HAVING A 28-DAY COMPRESSIVE STRENGTH OF 6000 PSI, SUCH AS SIKAGROUT 212, BY SIKA CORPORATION, OR EQUAL. FOLLOW ALL MANUFACTURER'S PUBLISHED INSTRUCTIONS.

STRUCTURAL STEEL:

1. FABRICATION AND ERECTION OF ALL STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHAPES SHALL BE A.S.T.M A992 (GRADE 50) OR A.S.T.M A572, GRADE 50. STEEL PLATES AND ANGLES SHALL BE A.S.T.M. A36. STRUCTURAL STEEL FOR ROUND PIPE MEMBERS SHALL BE A.S.T.M. A53, TYPE E, GRADE B, OR A.S.T.M. A501. STRUCTURAL STEEL FOR RECTANGULAR TUBE MEMBERS SHALL BE A.S.T.M. A500, GRADE B. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST A.I.S.C. SPECIFICATIONS.
3. ALL WELDS SHALL BE MADE USING E 70XX ELECTRODES CONFORMING TO THE AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE" D1.01-90 WITH LATEST REVISIONS. MINIMUM FILLET WELD SIZE IS 1/4" FOR STRUCTURAL STEEL.
4. STEEL DETAILER SHALL DESIGN CONNECTIONS FOR BEAM REACTIONS SHOWN ON FRAMING PLANS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE FRAMING PLANS OR DETAILS, THE STRENGTHS OF THE FRAMED CONNECTIONS SHALL NOT BE LESS THAN THE ALLOWABLE SHEAR CAPACITY OF THE SECTION FOR BEAMS AS SHOWN IN THE TABLES IN PART 2 OF THE AISC MANUAL. ALL CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH THE A.I.S.C. MANUAL OF STEEL CONSTRUCTION.

SCHEDULE OF SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED FOR ALL OF THE FOLLOWING CONSTRUCTION ACTIVITIES
CONCRETE
REINFORCING STEEL
SOIL BEARING CAPACITY
SOIL COMPACTION
BACKFILL
GROUT
STRUCTURAL STEEL
WELDING

STRUCTURAL STEEL (CONTINUED):

5. BOLTED BEAM CONNECTIONS SHALL BE SIMPLE FRAMED SHEAR CONNECTIONS USING A.S.T.M. A325X BOLTS (U.N.O.) AND SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A.S.T.M. A325 OR A490 BOLTS. UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE CONNECTIONS FOR BEAMS SHALL BE DETAILED USING THE MAXIMUM NUMBER OF SINGLE ROW BOLTS OF STANDARD, SPACING PER AISC MANUAL OF STEEL CONSTRUCTION. DIRECT TENSION INDICATOR BOLTS SHALL BE PERMITTED. MINIMUM BOLT SIZE SHALL BE 3/4" DIAMETER UNLESS NOTED OTHERWISE.
6. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL BE CLEANED TO SSPC-SP2 AND SHOP PAINTED WITH ONE COAT OF SHOP PRIMER PAINT. DRY PAINT THICKNESS SHALL BE A MINIMUM F 1.5 MILS THICK.
7. ANCHOR RODS SHALL CONFORM WITH ASTM 1554. UNLESS NOTED OTHERWISE, ANCHOR RODS SHALL HAVE A MINIMUM YIELD STRENGTH OF 36 KSI.
8. STEEL FABRICATOR SHALL PROVIDE COMPLETE ERECTION AND FABRICATION DRAWINGS SHOWING ALL MEMBERS AND CONNECTIONS.
9. UNLESS NOTED OTHERWISE, ALL COLUMNS SHALL BE PLUMB AND ALL BEAMS SHALL BE LEVEL.

COATINGS

1. PRIMER SHALL BE A ZINC-RICH WELDABLE PRIMER, SUCH AS CARBOWELD, OR EQUAL, COLOR GRAY.
2. APPLY A COATING OF HIGH-BUILD EPOXY SUCH AS TNEMEC SERIES 69, OR EQUAL, AFTER COMPLETION OF ALL ALIGNMENT, RACKING, WELDING, BOLTING, ASSOCIATED INSPECTIONS, AND RESOLUTION OF ANY ISSUES RESULTING FROM INSPECTIONS. FOLLOW ALL MANUFACTURER'S PUBLISHED INSTRUCTIONS. SUBMIT COLOR SAMPLES TO OWNER FOR COLOR SELECTION.

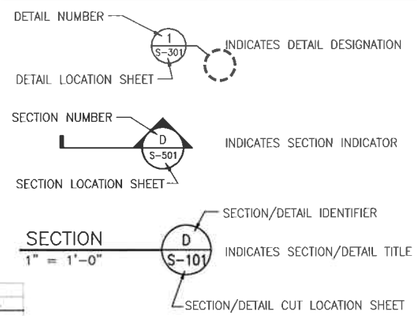
CONSTRUCTION

1. THIS STRUCTURE HAS BEEN DESIGNED FOR THE WEIGHTS AND DIMENSIONS OF THE SPECIFIC TANKS LISTED HEREIN. SUBSTITUTIONS MAY REQUIRE REANALYSIS AND /OR REDESIGN OF THE STRUCTURE AND SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER. FAILURE TO COLLABORATE MAY RESULT IN UNSAFE STRUCTURAL LOADING. CONTRACTOR SHALL COORDINATE ALL ACTUAL MACHINE BASE PLATE AND BOLT HOLE LOCATIONS WITH DESIGN BEAM AND COLUMN LOCATIONS PRIOR TO FABRICATION OF STRUCTURAL STEEL.
2. THE REFERENCE ELEVATION FOR THIS WORK IS TAKEN AS 0.00' AT THE TOP OF THE EXISTING FLOOR SLAB IN THE WORK AREA SHOWN ON THE DRAWINGS.
3. STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED SO AS TO AVOID INTERFERENCE WITH EXISTING BUILDING FRAMING AND SUPPORT STRUCTURES.
4. ALL DIMENSIONS ARE TO CENTERLINE OF STEEL UNLESS OTHERWISE NOTED.

BACKFILL

1. ALL BACKFILL SHALL BE PLACED USING SOILS APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS INDICATED HEREIN.
2. EXCEPT WHERE NOTED OTHERWISE BACKFILL SHALL BE PLACED IN 8-INCH LOOSE LIFTS.
3. PARTICULAR CARE SHALL BE EXERCISED WHERE BACKFILL IS PLACED ADJACENT TO WALLS AND INSIDE THE ZONE OF INFLUENCE, DEFINED AS A PLANE STARTING AT THE INTERSECTION OF THE FACE OF THE WALL AND THE TOP OF THE FOOTING AND SLOPING UPWARD AT A SLOPE OF 1.5 HORIZONTAL TO 1.0 VERTICAL. INSIDE THE ZONE OF INFLUENCE, BACKFILL SHALL BE PLACED IN 6-INCH LOOSE LIFTS AND COMPACTED WITH EQUIPMENT WEIGHING NO MORE THAN 2000 POUNDS.

LEGEND:



REGULATIONS AND CODES

1. ALL WORK SHALL PROCEED IN ACCORDANCE WITH CURRENT FEDERAL, STATE, AND LOCAL LAWS, REGULATIONS, AND ORDINANCES, AND WITH CURRENTLY ADOPTED CODES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
2. INTERNATIONAL BUILDING CODE (IBC).
   OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR GENERAL INDUSTRY (29 CFR PART 1910).
   OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR PART 1926).
   LOCAL CITY AND COUNTY CODES, ORDINANCES, AND REGULATIONS.
   LOCAL AMENDMENTS TO ADOPTED NATIONAL AND INTERNATIONAL CODES.
   INTERNAL PROCEDURES AND PROGRAMS ADMINISTERED BY THE OWNER.
   CODES PERTAINING TO SPECIFIC MATERIALS AS INDICATED HEREIN AND IN THE ABOVE DOCUMENTS.
3. UNLESS OTHERWISE NOTED, REFERENCES TO CODES IN THESE DRAWINGS ARE INTENDED TO INDICATE THE MOST RECENTLY PUBLISHED VERSION.

SPECIAL INSPECTIONS

THE OWNER SHALL EMPLOY AN APPROVED AGENCY (OR INDEPENDENT TESTING AGENCY OR SPECIAL INSPECTOR) WHO SHALL PERFORM SPECIAL INSPECTIONS FOR EACH OF THE CONSTRUCTION ACTIVITIES DESIGNATED HEREIN FOR SPECIAL INSPECTION. THE TESTING AGENCY OR SPECIAL INSPECTOR SHALL SUBMIT TO THE OWNER DOCUMENTATION CERTIFYING THE CORRECT INSTALLATION OF SUBJECT MATERIALS IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. SEE THE INTERNATIONAL BUILDING CODE (IBC) FOR FULL DETAILS CONCERNING SPECIAL INSPECTIONS. CONSTRUCTION ACTIVITIES WHICH REQUIRE SPECIAL INSPECTION ARE INDICATED IN THE ENCLOSED "SCHEDULE OF SPECIAL INSPECTIONS."

PRECONSTRUCTION MEETING

TWO WEEKS PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL CONTACT MR. GENE FARACH, P.E., PRINCIPAL ENGINEER, ALLIANCE ENGINEERING, AT 410.636.9555 EXTENSION 210, TO SCHEDULE A PRECONSTRUCTION MEETING AT THE SITE. THE PRECONSTRUCTION MEETING SHALL BE CONDUCTED PRIOR TO THE START OF WORK. THE PURPOSE OF THE PRECONSTRUCTION MEETING WILL BE TO ENSURE THAT THE OWNER AND CONTRACTOR FULLY UNDERSTAND ALL CONSTRUCTION REQUIREMENTS, INSPECTION REQUIREMENTS, AND TESTING REQUIREMENTS; TO IDENTIFY ALL PERSONS WHO WILL BE PERFORMING SPECIAL INSPECTIONS; AND TO ADDRESS ANY QUESTIONS CONCERNING DESIGN REQUIREMENTS, CONSTRUCTION REQUIREMENTS, AND INSPECTION REQUIREMENTS.

ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
AFF	ABOVE FINISH FLOOR
AWS	AMERICAN WELDING SOCIETY
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
BOT	BOTTOM
BM	BEAM
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CJ	CONSTRUCTION JOINT
DET	DETAIL
DIM	DIMENSION
EXIST	EXISTING
EL	ELEVATION
ELEV	ELEVATOR
EA	EACH
EXP JT	EXPANSION JOINT
FT	FOOT OR FEET
FLG	FLANGE
FP	FULL PENETRATION
FS	FAR SIDE
GRTG	GRATING
GWT	GROUNDWATER TABLE
GAB	GRADED AGGREGATE BASE
IN	INCH
KSF	KIPS PER SQUARE FOOT
KIP	ONE THOUSAND POUNDS
MPH	MILES PER HOUR
N/A	NOT APPLICABLE
NS	NEAR SIDE
OC	ON CENTER
PVC	POLYVINYL CHLORIDE
PSF	POUNDS PER SQUARE FOOT
REINF	REINFORCING
RTU	ROOF TOP UNIT
RET	RETURN
SHA	STATE HIGHWAY ADMINISTRATION
SCHED	SCHEDULE
STL	STEEL
SECT	SECTION
SPCS	SPACES
TOS	TOP OF STEEL
T&B	TOP AND BOTTOM
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL

SCHEDULE OF MOMENT CONNECTIONS

Note: "FP" stands for Full Penetration Groove Weld.

LOCATION	ELEVATION	DETAIL	COMPONENTS 1	COMPONENTS 2	COMPONENTS 3	COMPONENTS 4	COMPONENTS 5	DIMENSIONS A	B	C	D	E	F	G	WELD SIZES S1	S2	S3	S4	S5	S6	S7
COLS C3, C4	10	550	SHEAR TAB	STIFFENER				6	32 1/16	34	1	7 7/16	N/A	13/16	1/2	1/2	1/2	FP	1/2		
COLS C3, C4	10	552	FIN PLATE	STIFFENER				6	32 1/16	12 5/8	N/A			13/16	1/2	FP	1/2				
COLS C5, C6	10	554	SHEAR TAB	STIFFENER				6	32 1/16	34	1	7 7/16	N/A	13/16	1/2	FP	1/2	FP	FP		
COLS C5, C6	10	556	FIN PLATE	STIFFENER				6	32 1/16	12 5/8	N/A			13/16	1/2	FP	1/2				
COLS C3, C4	15	554	SHEAR TAB	STIFFENER				6	32 1/16	34	1	7 7/16	N/A	13/16	1/2	FP	1/2	FP	FP		
COLS C3, C4	15	556	FIN PLATE	STIFFENER				6	32 1/16	12 5/8	N/A			13/16	1/2	FP	1/2				
COLS C1, C2	15	522	CAP PLATE 1 3/8 X 16 X 16	1" STIFFENER											1/2	1/2	3/8				
AS NOTED	15	536													1/2	FP					

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
PACK		
PLANT		
AE FIRM		

DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	5/6/2006	ISSUED FOR BID	AAB	EF

ALLIANCE CONSULTANTS, PC
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(804) 275-1400

ACAD FILE: 230324-S000.dwg LAST UPDATE: 5/17/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO.: 06230324

Unilever ENGINEERING

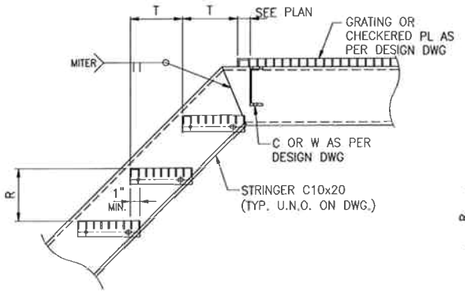
Home & Personal Care - USA

100 Faberge Blvd., Raeford, NC 28376

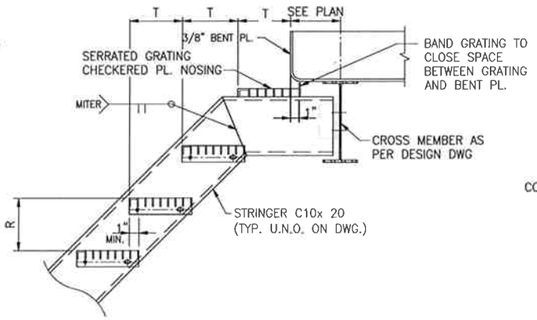
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

GENERAL NOTES & SCHEDULES

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-0-S000



1 TOP CONNECTION DETAIL AT GRATING PLATFORMS
NO SCALE



2 TOP CONNECTION DETAIL AT CONCRETE PLATFORMS
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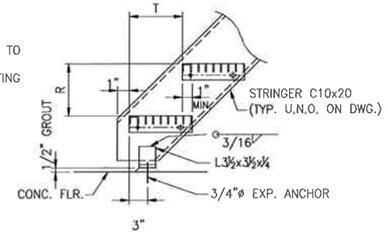

3 TYPICAL STAIR BASE DETAIL
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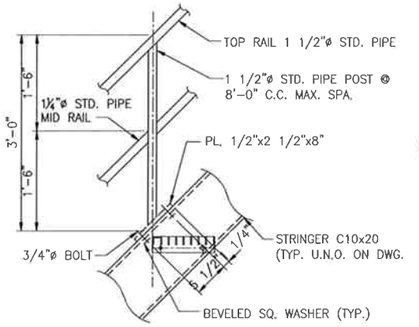
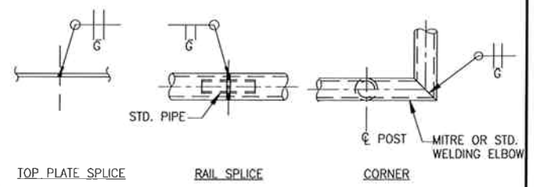


4 TYPICAL STAIR HANDRAIL DETAIL
NO SCALE



5 TYPICAL HANDRAIL SPLICE DETAIL
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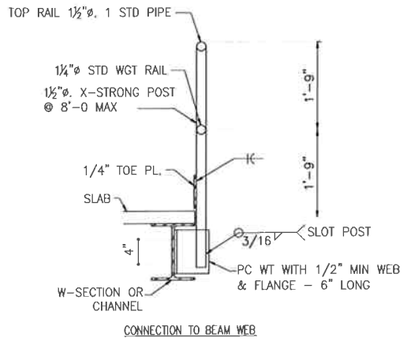
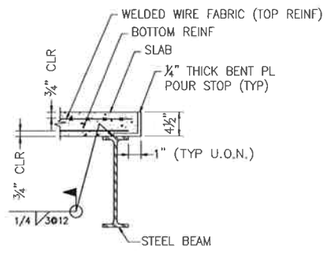
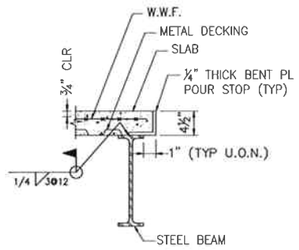


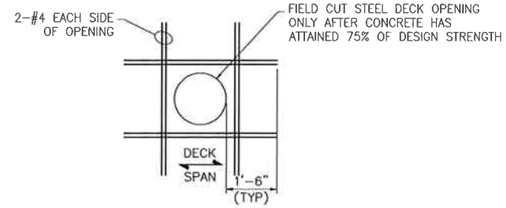
6 HANDRAIL CONNECTION DETAIL
NO SCALE



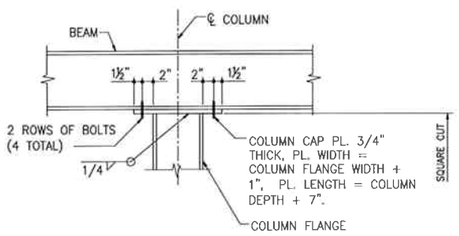
7 TYPICAL SLAB EDGE DETAIL w/o METAL DECKING DETAIL
NO SCALE



7A TYPICAL SLAB EDGE w/ METAL DECK DETAIL
NO SCALE



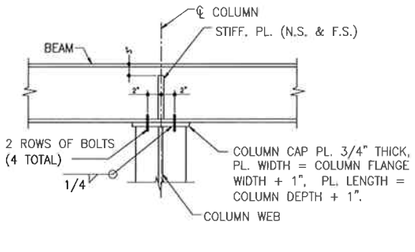
8 TYPICAL FLOOR OPENING IN CONCRETE ON STEEL DECK
NO SCALE



NOTES:

MEMBERS FRAMING INTO BEAM NOT SHOWN, SEE FRAMING PLANS.

COLUMN CAP PL. TO SLOPE AS REQUIRED TO RECEIVE BEAM. DETERMINE SLOPE FROM TOP OF STEEL ELEVATIONS SHOWN ON FRAMING PLANS AND DETAILS.



NOTES:

MEMBERS FRAMING INTO BEAM NOT SHOWN, SEE FRAMING PLANS.

COLUMN CAP PL. TO SLOPE AS REQUIRED TO RECEIVE BEAM. DETERMINE SLOPE FROM TOP OF STEEL ELEVATIONS SHOWN ON FRAMING PLANS AND DETAILS.

9 TYPICAL W-COLUMN CAP PLATE DETAIL
NO SCALE

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
PACK		
PLANT		
AE FIRM		
DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	5/6/2006	ISSUED FOR BID	AAB	EF

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ACAD FILE: 230324-S001.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO.: 06230324

Unilever ENGINEERING

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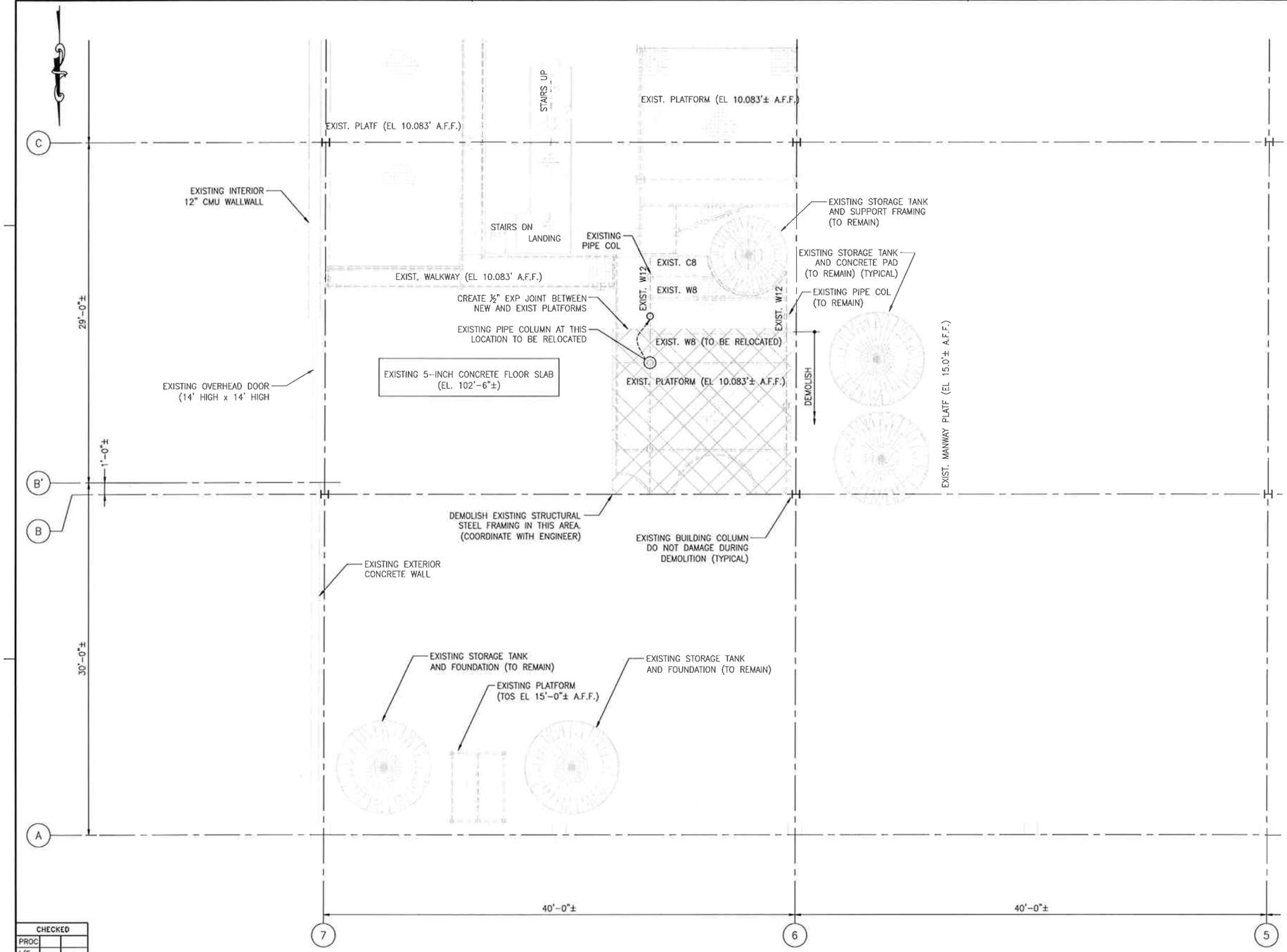
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL
TYPICAL STEEL DETAILS

DRAWN	APP'D	DATE	SCALE	DWG. NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-S-001



EXISTING CONDITIONS NOTES:

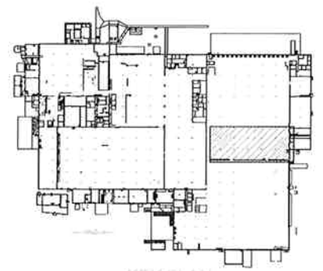
1. EXISTING COLUMN AND FOUNDATION CONDITIONS TAKEN FROM DRAWING S-3 TITLED, "RAEFORD NORTH CAROLINA FOUNDATION PLAN", BY ROBERT G. PIPER AND ASSOCIATES, STRUCTURAL ENGINEERS, DATED 8/20/70.

DEMOLITION NOTES:

1. REMOVE EXISTING STRUCTURAL FRAMING SUPPORT ELEMENTS WITHIN THE WORK AREA DESIGNATED FOR DEMOLITION.
2. REMOVE ALL EXISTING HANDRAILS, AND STRUCTURAL FRAMING ASSEMBLIES HUNG BELOW FLOOR FRAMING WITHIN THE WORK AREA DESIGNATED FOR DEMOLITION. THE CONTRACTOR MUST MAKE ALL EFFORTS TO MINIMIZE DAMAGE TO EXISTING FRAMING LOCATED ADJACENT TO THAT DESIGNATED FOR DEMOLITION. ALL DAMAGES MUST BE REPAIRED OR REPLACED TO ORIGINAL CAPACITY AND STATE.
3. THE CONTRACTOR AT THE DIRECTION OF THE OWNER SHALL REMOVE OR RE-ROUTE ALL EXISTING UTILITIES LOCATED WITHIN THE WORK AREA DESIGNATED FOR DEMOLITION.
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS DESIGNATED FOR DEMOLITION PRIOR TO THE START OF WORK.
5. CONTRACTOR TO EXERCISE SPECIAL CARE WHEN REMOVING FLOORING AND FRAMING FROM EXISTING FRAMING BEAMS NOTED, "TO REMAIN." ANY DAMAGE TO THESE BEAMS MUST BE REPORTED TO THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. THE CONTRACTOR SHALL DESIGN AND CONSTRUCT ALL TEMPORARY SHORING, SUPPORTS, AND BRACING OF EXISTING EQUIPMENT, PLATFORMS, SLABS, WALLS, AND FOUNDATIONS AND SHALL SUBMIT DRAWINGS TO THE OWNER FOR SAME PRIOR TO THE START OF WORK. THE OWNER SHALL FORWARD THESE DRAWINGS TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL START WORK ONLY AFTER APPROVAL OF THE DRAWING BY THE ENGINEER.

LEGEND

INDICATES AREAS DESIGNATED FOR DEMOLITION WORK.



KEY PLAN

1 EXISTING / DEMOLITION PLAN
1/4" = 1'-0"

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
PACK		
PLANT		
AE FIRM		

DISC.	BY	DATE	NO.	DATE	REVISION	BY	APP.
			0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
			C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
			B	4/27/06	RE-ISSUED FOR BID	AAB	EF
			A	3/6/2006	ISSUED FOR BID	AAB	EF

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ACAD FILE: 230324-SD101.dwg LAST UPDATE: 5/30/06
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AEI PROJECT NO.: 06230324

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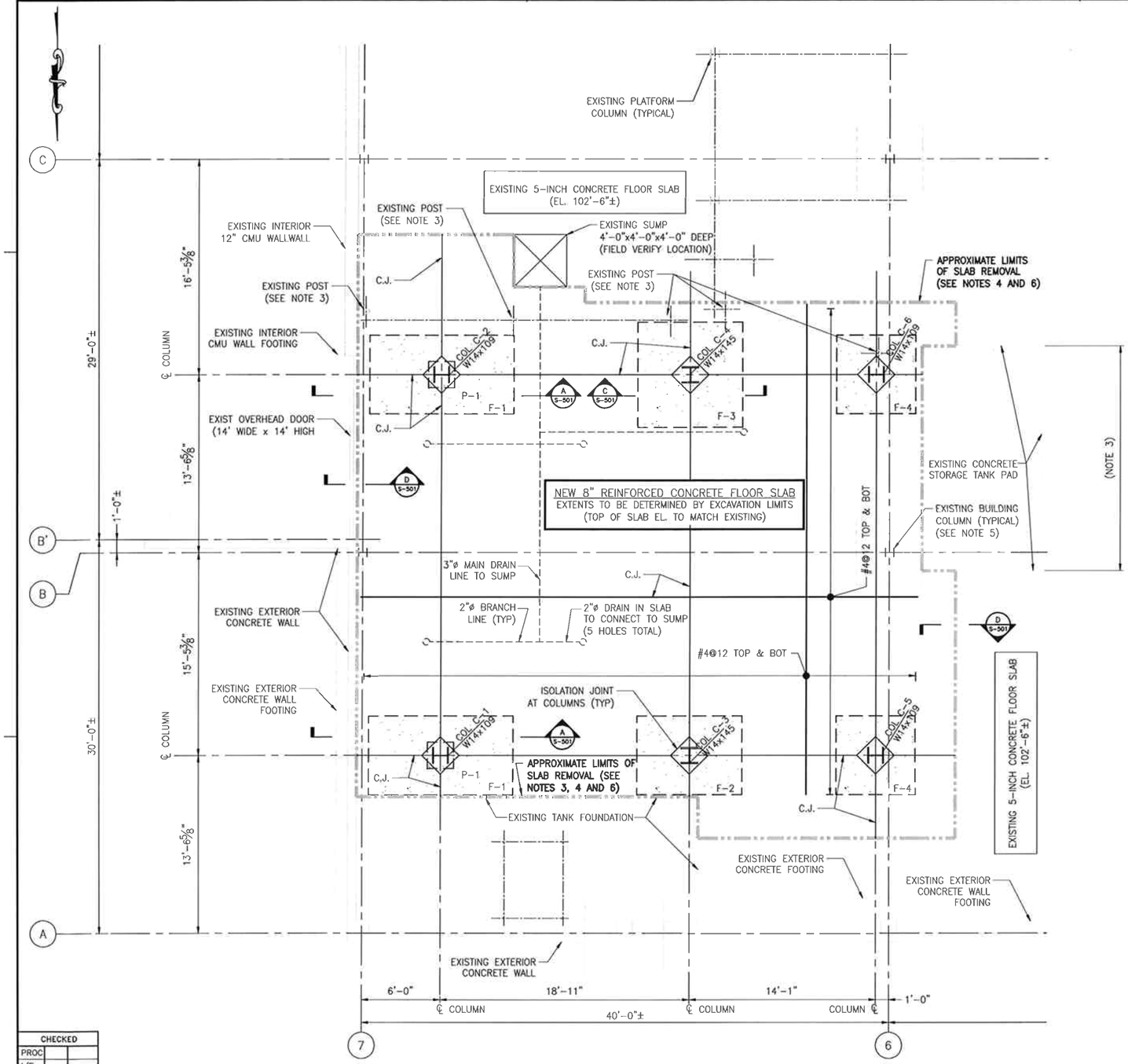
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-SD01



2 COLUMN FOOTING PLAN
1/4" = 1'-0"

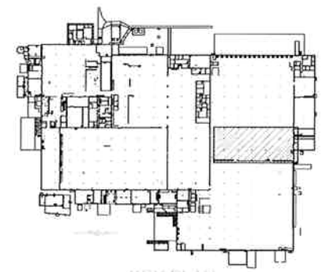
BASE PLATE SCHEDULE			
MARK	SIZE	NUMBER OF BOLTS	REMARKS
COL C-1	1'-10"x1'-10"x1" THICK	4 w/ LEVELING NUTS	ON NON-SHRINK GROUT
COL C-2	1'-10"x1'-10"x1" THICK	4 w/ LEVELING NUTS	ON NON-SHRINK GROUT
COL C-3	1'-10"x1'-10"x1" THICK	4 w/ LEVELING NUTS	ON NON-SHRINK GROUT
COL C-4	1'-10"x1'-10"x1" THICK	4 w/ LEVELING NUTS	ON NON-SHRINK GROUT
COL C-5	1'-10"x1'-10"x1" THICK	4 w/ LEVELING NUTS	ON NON-SHRINK GROUT
COL C-6	1'-10"x1'-10"x1" THICK	4 w/ LEVELING NUTS	ON NON-SHRINK GROUT

CONCRETE PIER SCHEDULE			
MARK	SIZE	REINFORCING	REMARKS
P-1	2'-6"x2'-6"x3'-1" DEEP	8-#6 VERT w/ #4 TIES	ALTERNATE TIES

CONCRETE FOOTING SCHEDULE			
MARK	SIZE	REINFORCING	REMARKS
F-1	6'-0"x11'-0"x1'-6" DEEP	12-#6 S.W./22-#5 L.W.	w/ PIER
F-2	6'-0"x8'-0"x1'-6" DEEP	12-#5 S.W./16-#5 L.W.	NO PIER
F-3	8'-0"x8'-0"x1'-6" DEEP	16-#5 EACH WAY	NO PIER
F-4	6'-0"x6'-0"x1'-6" DEEP	12-#5 EACH WAY	NO PIER

NOTES:

1. EXISTING COLUMN AND FOUNDATION CONDITIONS TAKEN FROM DRAWING S-3 TITLED, "RAEFORD NORTH CAROLINA FOUNDATION PLAN", BY ROBERT G. PIPER AND ASSOCIATES, STRUCTURAL ENGINEERS, DATED 8/20/70.
2. ALL CONCRETE FOR FOOTING AND SLABS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS, AND MAXIMUM WATER/CEMENT RATIO OF 0.45.
3. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING TO PREVENT DISTURBANCE TO OR MOVEMENT OF ALL EXISTING EQUIPMENT AND FACILITIES. COORDINATE WITH OWNER DURING PRECONSTRUCTION MEETING.
4. WHERE SPACE ALLOWS, REMOVE EXISTING SLAB AND SLOPE EXCAVATION AT 2H:1V.
5. DO NOT DISTURB OR UNDERMINE EXISTING BUILDING COMPONENTS.
6. CONTRACTOR SHALL EXTEND NEW 8-INCH SLAB TO LIMITS OF ACTUAL SLAB REMOVAL.


KEY PLAN

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ACAD FILE: 230324-S101.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO: 06230324

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
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PLANT		
AE FIRM		
DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	3/6/2006	ISSUED FOR BID	AAB	EF

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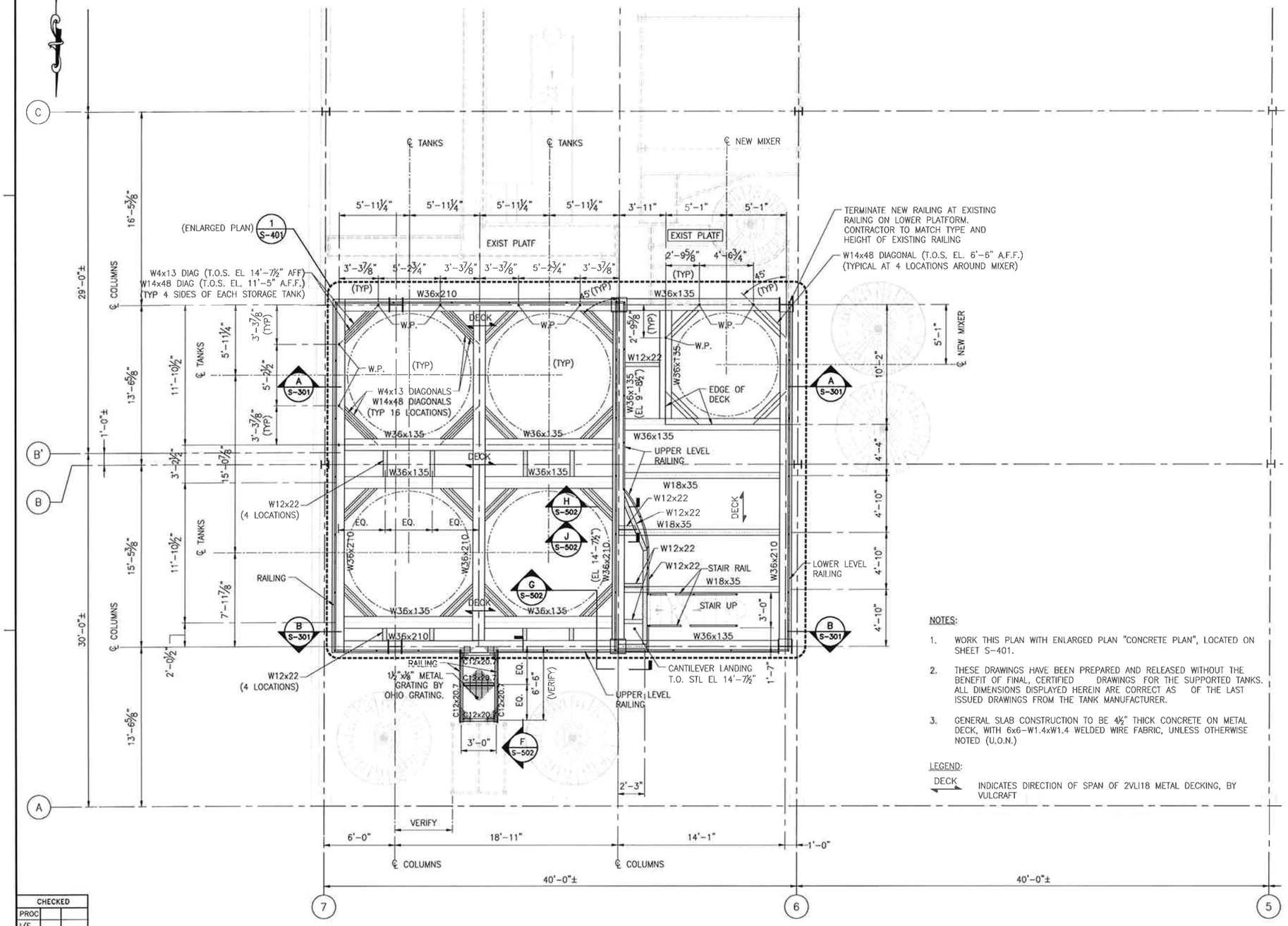
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

COLUMN FOOTING PLAN

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-0-S101

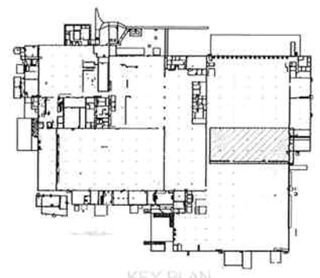


NOTES:

1. WORK THIS PLAN WITH ENLARGED PLAN "CONCRETE PLAN", LOCATED ON SHEET S-401.
2. THESE DRAWINGS HAVE BEEN PREPARED AND RELEASED WITHOUT THE BENEFIT OF FINAL, CERTIFIED DRAWINGS FOR THE SUPPORTED TANKS. ALL DIMENSIONS DISPLAYED HEREIN ARE CORRECT AS OF THE LAST ISSUED DRAWINGS FROM THE TANK MANUFACTURER.
3. GENERAL SLAB CONSTRUCTION TO BE 4½" THICK CONCRETE ON METAL DECK, WITH 6x6-W1.4xW1.4 WELDED WIRE FABRIC, UNLESS OTHERWISE NOTED (U.O.N.)

LEGEND:

DECK — INDICATES DIRECTION OF SPAN OF 2VLI18 METAL DECKING, BY VULCRAFT



KEY PLAN

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

CHECKED		
PROC		
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CIVIL		
MECH		
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PLANT		
AE FIRM		
DISC.	BY	DATE

Notice:
Drawings shall not be reproduced for shop erection drawings. The steel fabricator shall produce original shop drawings showing member sizes, details, connections, and dimensions. Shop drawings must be thoroughly detailed and clear for all different conditions. The engineer shall not be held liable for any discrepancies if the fabricator reproduces these drawings in lieu of preparation of shop erection drawings. Structural steel shop drawings shall be submitted for approval prior to fabrication (one reproducible and 2 copies total).

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB.	EF.
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB.	EF.
B	4/27/06	RE-ISSUED FOR BID	AAB.	EF.
A	3/6/2006	ISSUED FOR BID	AAB.	EF.

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ACAD FILE: 230324-S102.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO: 06230324

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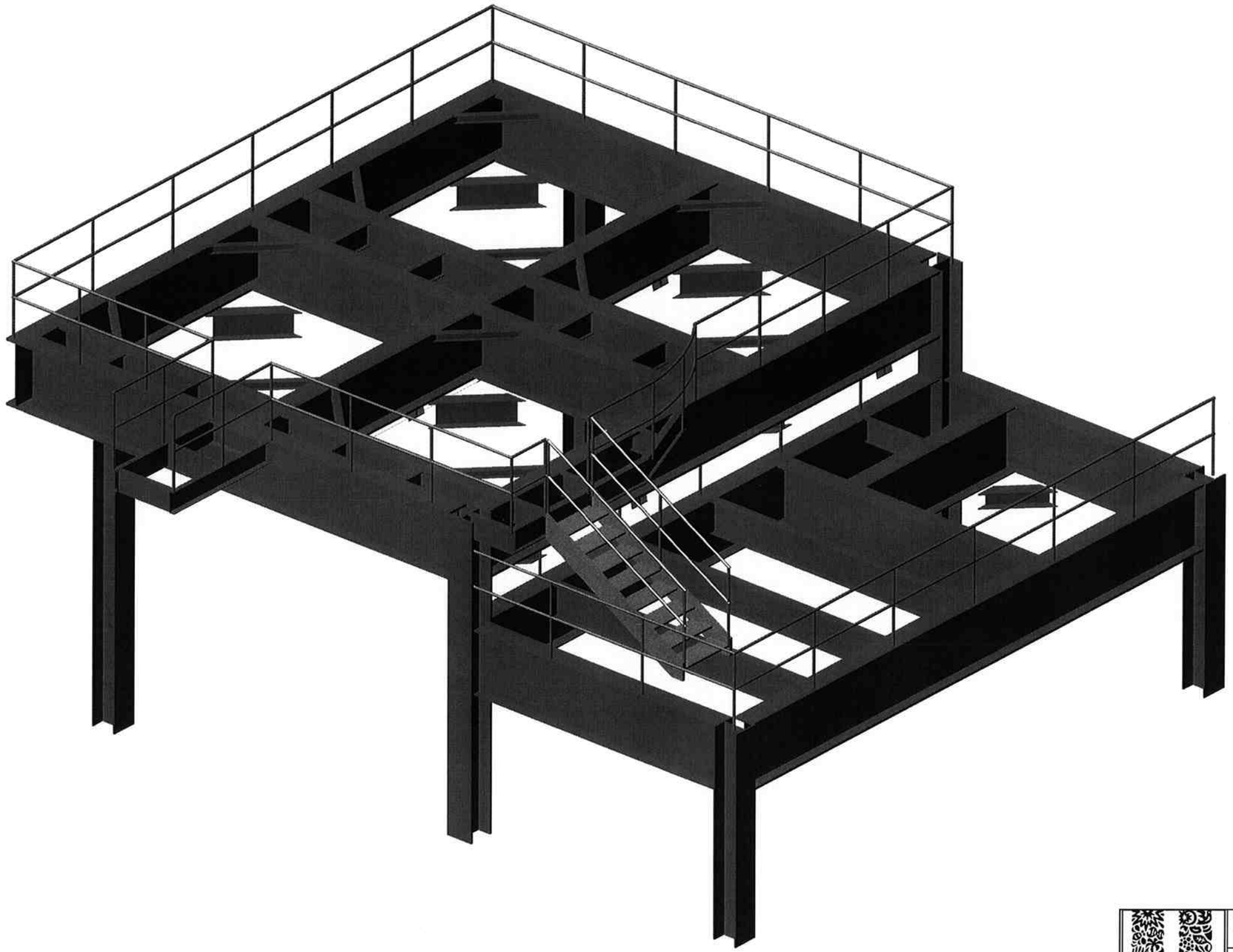
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL PLATFORM FRAMING PLAN

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-S102



PLATFORM ELEVATION – 3D VIEW
1/2" = 1'-0"

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
PACK		
PLANT		
AE FIRM		

DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	3/6/2006	ISSUED FOR BID	AAB	EF

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ACAD FILE: 230324-S201.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO.: 06230324

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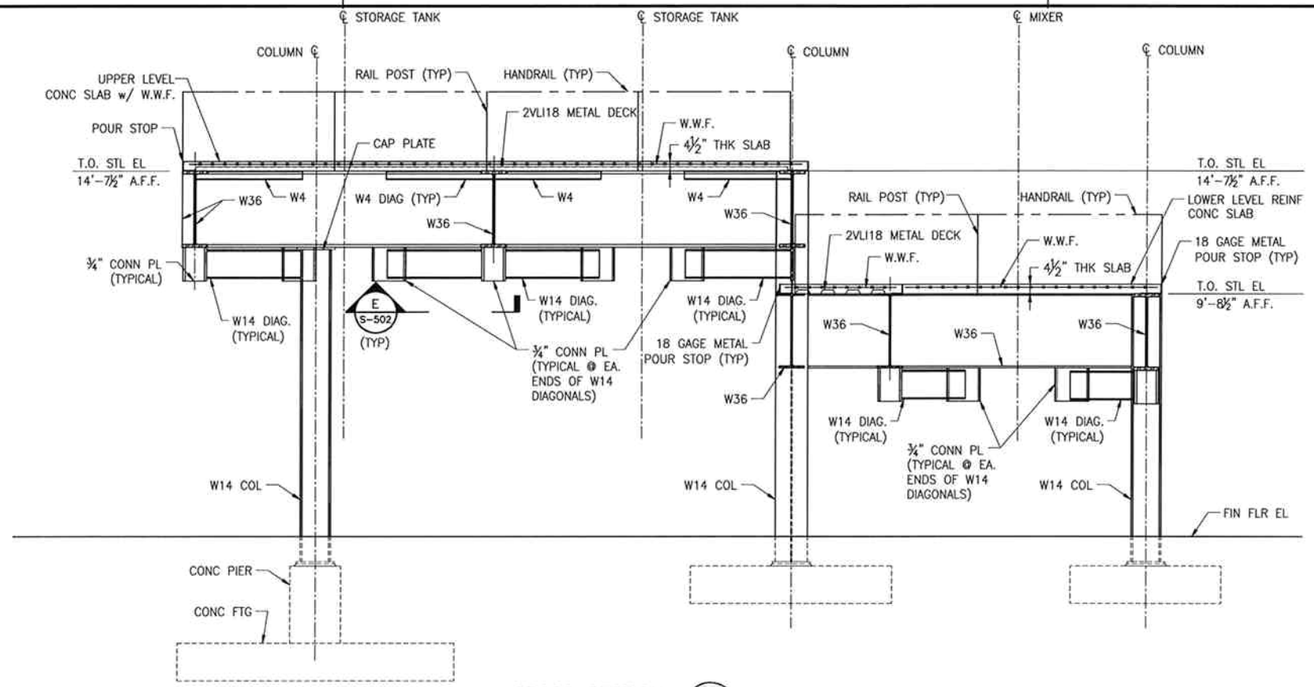
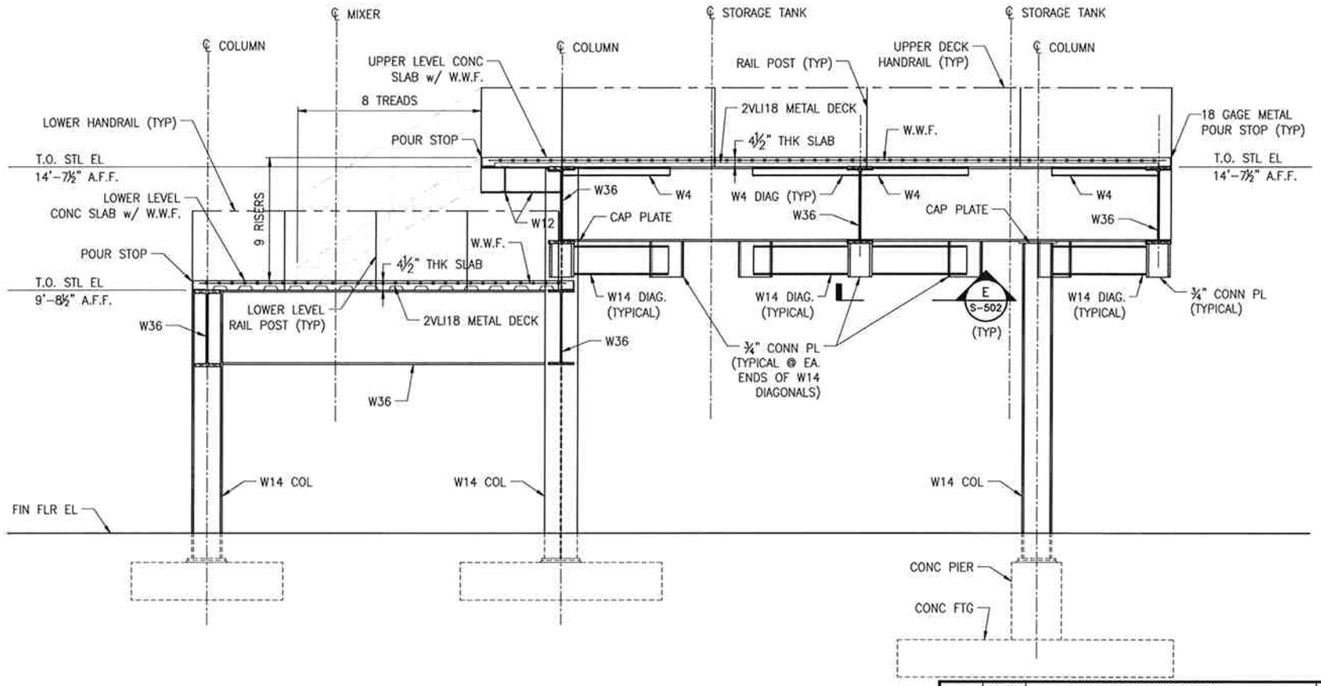
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL
PROCESS PLATFORM 3D ELEVATION

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-S201



CROSS SECTION A-A S-102
3/8" = 1'-0"



CROSS SECTION B-B S-102
3/8" = 1'-0"

CHECKED		
PROC		
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DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB.	EF.
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB.	EF.
B	4/27/06	RE-ISSUED FOR BID	AAB.	EF.
A	3/6/2006	ISSUED FOR BID	AAB.	EF.

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ACAD FILE: 230324-S301.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO.: 06230324

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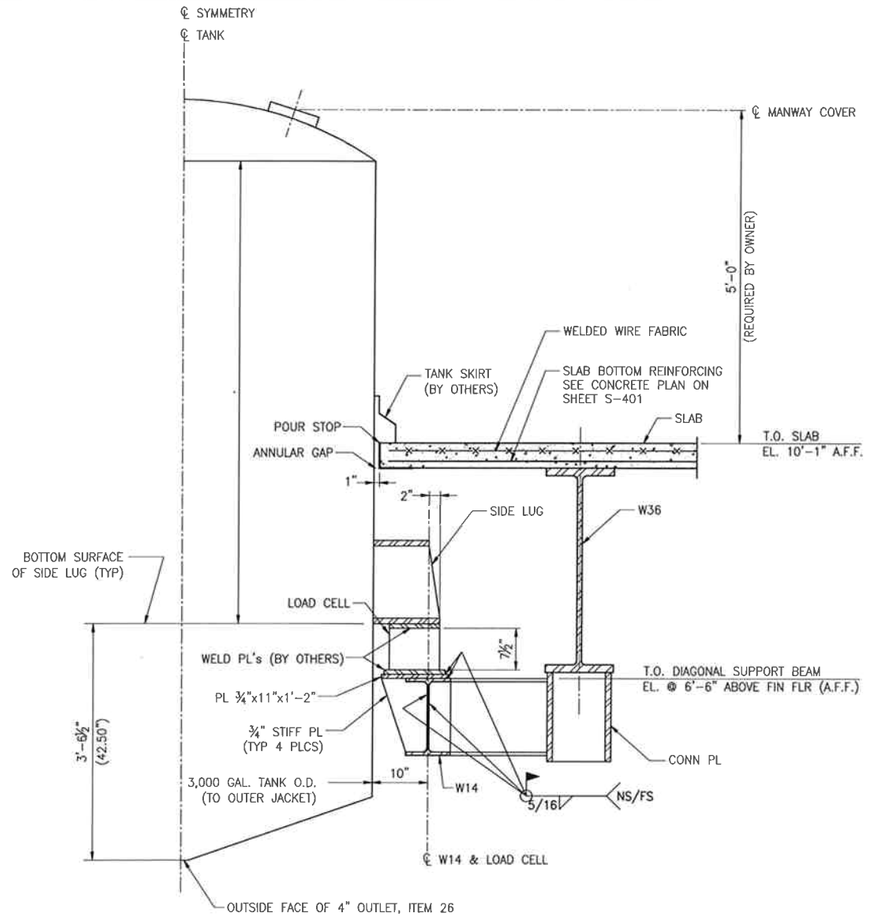
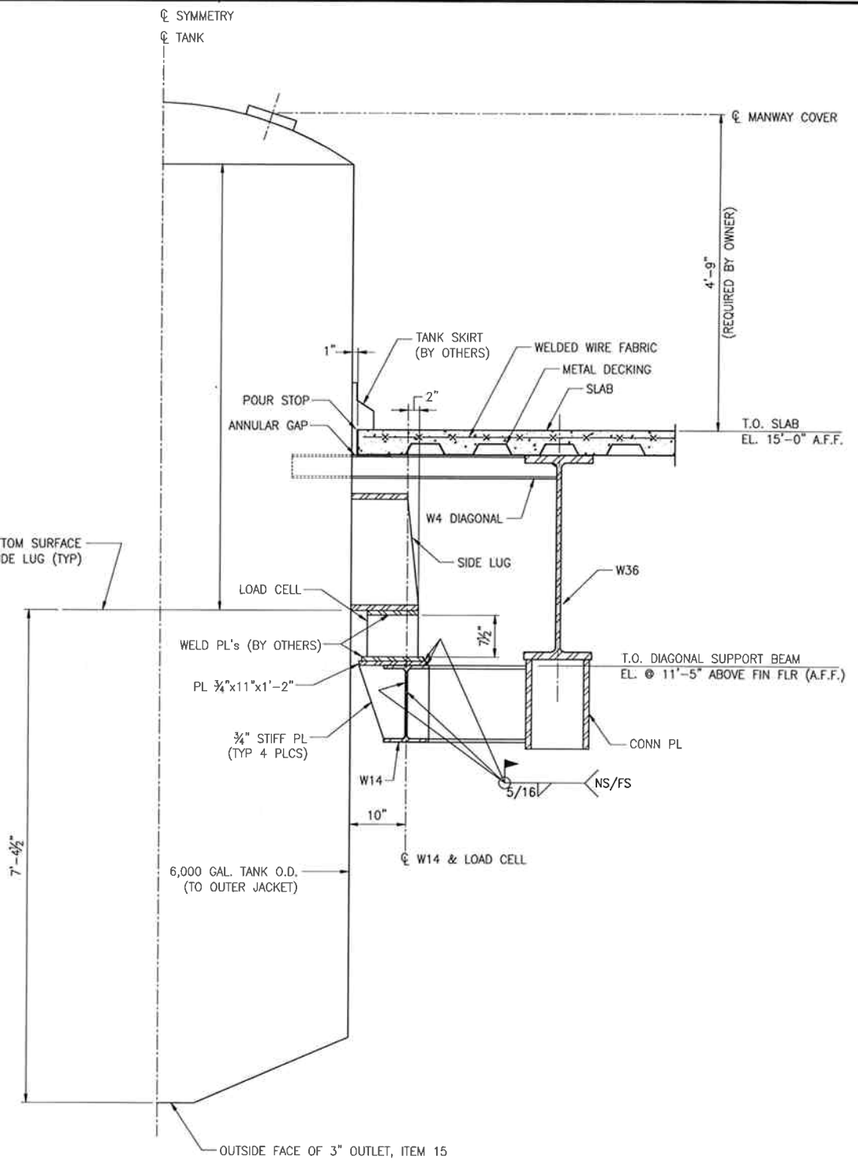
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL PROCESS PLATFORM CROSS SECTIONS

DRAWN	APP'D	DATE	SCALE	DWG.NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-S301



TYPICAL SECTION AT SUPPORT LUGS (3,000 GAL TANK)
1" = 1'-0"



TYPICAL SECTION AT SUPPORT LUGS (6,000 GAL TANK)
1" = 1'-0"

NOTES:

1. ALIGN CENTERLINE OF SUPPORT BEAM WITH LINE OF ACTION OF LOAD CELL.
2. WELD PLATES ARE 20mm THICK (TYPICAL)

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AE FIRM		
DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
C	5/2/06	RE-ISSUED FOR BID	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	3/6/2006	ISSUED FOR BID	AAB	EF

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ACAD FILE: 230324-S302.dwg LAST UPDATE: 5/17/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO.: 06230324

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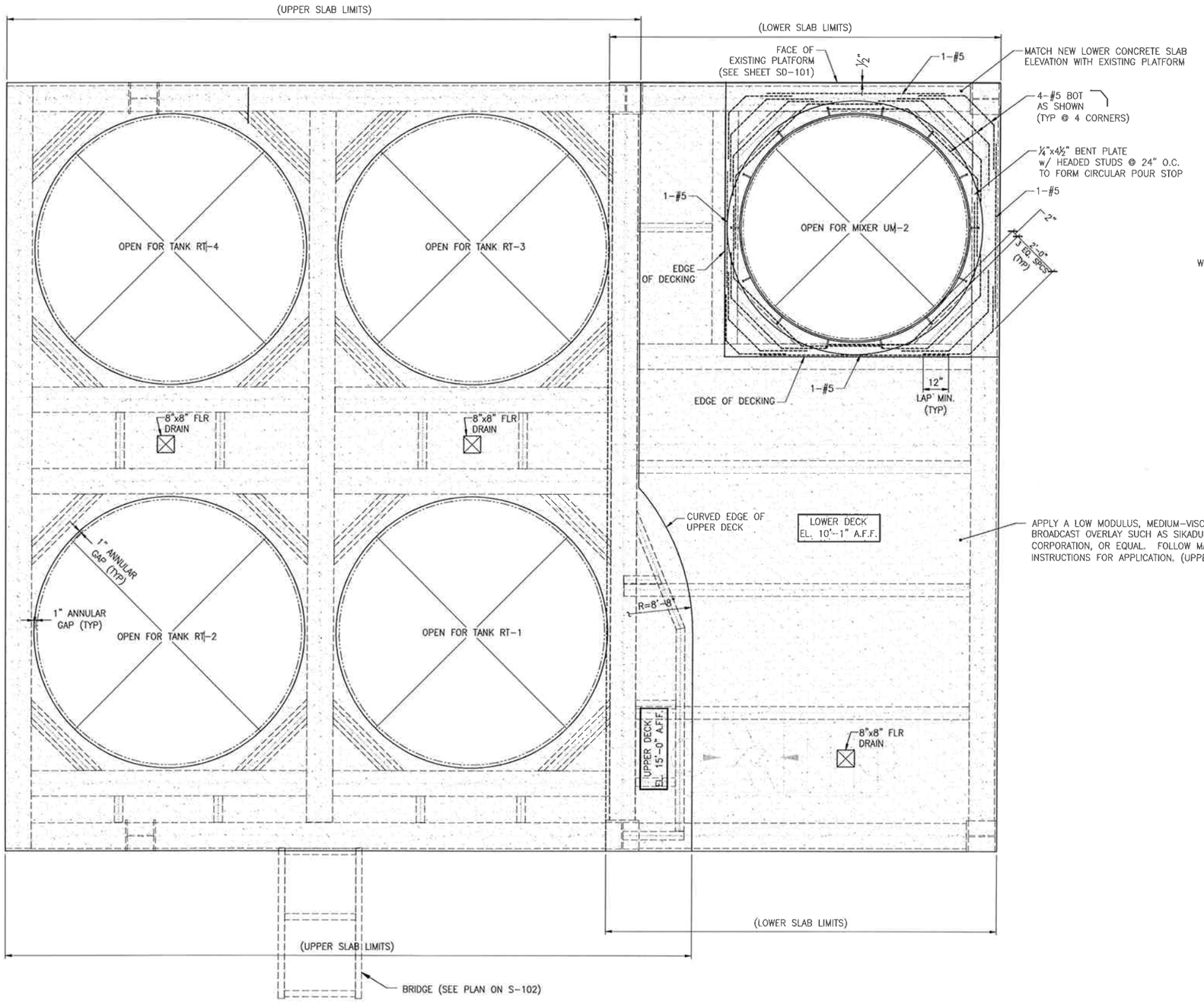
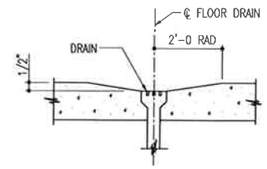
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL
TANK LUG SUPPORT SECTIONS

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-S302

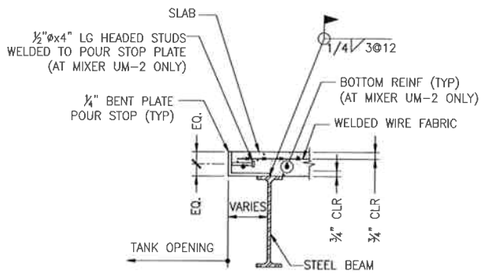


1 S-101 PLATFORM CONCRETE PLAN
1/2" = 1'-0"



NOTE: SET UP DRAIN AS REQD TO RECEIVE FLOOR FINISH, SEE ARCH DRAWINGS.

TYPICAL PITCHED SLAB AT FLOOR DRAINS DETAIL
NO SCALE



TYPICAL SLAB EDGE AT TANK OPENING DETAIL
NO SCALE

NOTES:

1. WORK THIS DRAWING WITH STRUCTURAL FRAMING PLAN, LOCATED ON SHEET S-101.
2. REFER TO SHEET S-301 FOR CROSS SECTIONS.
3. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE TO BE VERIFIED WITH CERTIFIED TANK DRAWINGS PRIOR TO INSTALLATION.
4. REFER TO SHEET S-001 FOR TYPICAL CONSTRUCTION DETAILS.

LEGEND

INDICATES EXTENT OF 4½" CONCRETE SLAB ON 2" COMPOSITE DECK.

INDICATES BOTTOM REINFORCING BARS.

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ACAD FILE: 230324-S401.dwg LAST UPDATE: 5/30/06
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AEI PROJECT NO.: 060230324

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PLANT		
AE FIRM		
DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	3/6/2006	ISSUED FOR BID	AAB	EF

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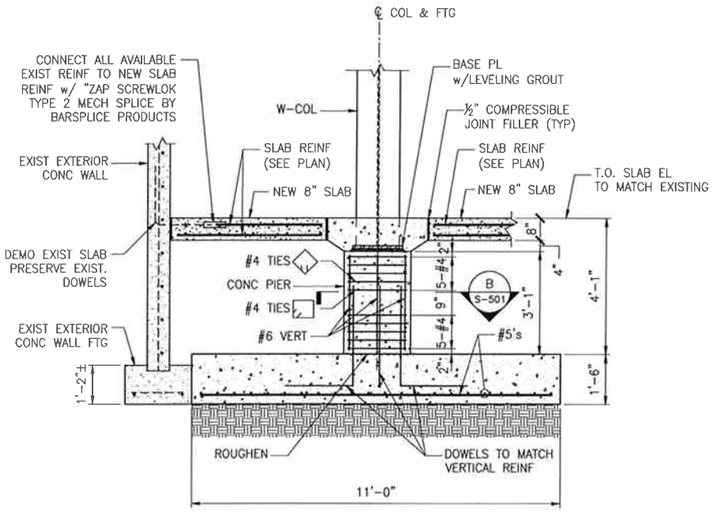
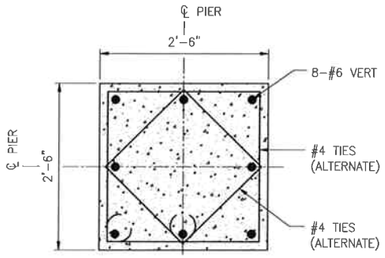
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL
PROCESS PLATFORM ENLARGED PLAN
CONCRETE PLAN

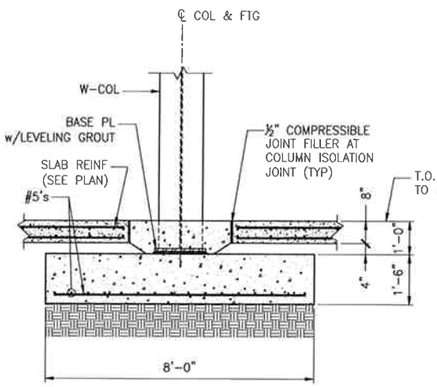
DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-1-S401



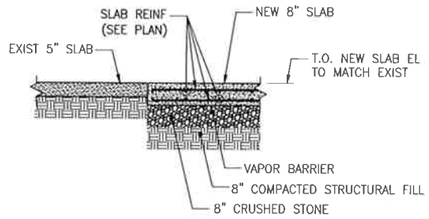
SECTION 1/2" = 1'-0" A S-101



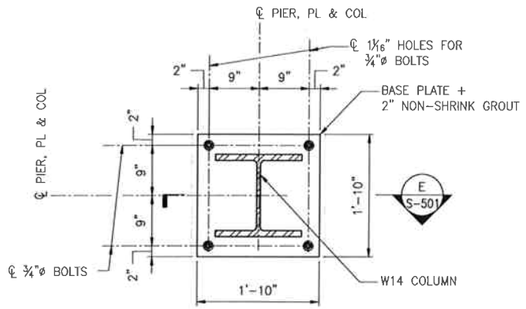
SECTION 1" = 1'-0" B S-501



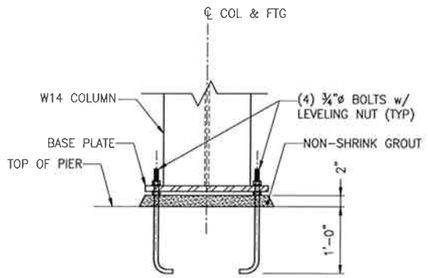
SECTION 1/2" = 1'-0" C S-101



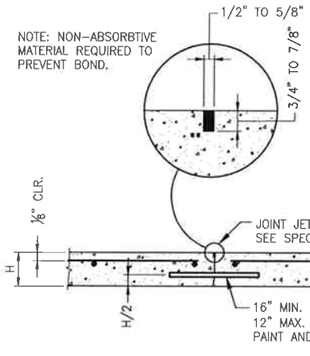
SECTION 1/2" = 1'-0" D S-101

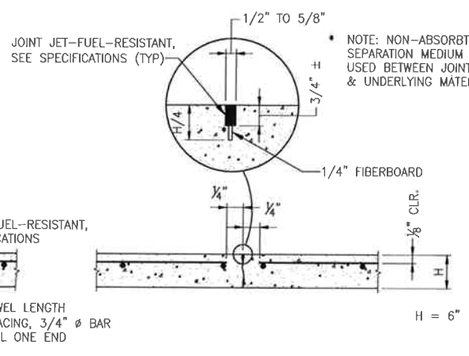


TYPICAL BASE PLATE DETAIL
1" = 1'-0"

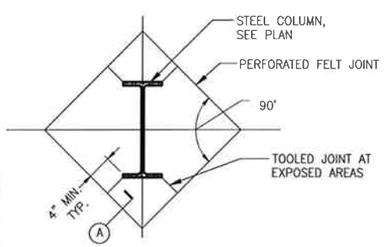


SECTION 1" = 1'-0" E S-501

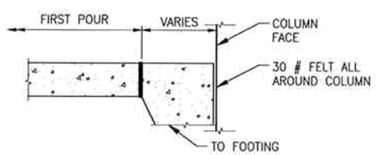




TYPICAL SLAB CONTROL JOINT DETAIL
NO SCALE



PLAN



SECTION A

TYPICAL FLOOR ISOLATION JOINT AT COLUMN
NO SCALE

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
PACK		
PLANT		
AE FIRM		
DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
C	5/17/06	ISSUED FOR DETAILING ONLY	AAB	EF
B	4/27/06	RE-ISSUED FOR BID	AAB	EF
A	3/6/2006	ISSUED FOR BID	AAB	EF

NO.	DATE	REVISION	BY	APP.

ALLIANCE CONSULTANTS, PC
Richmond, VA
(804) 275-1400

ACAD FILE: 230324-S501.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO.: 06230324

Unilever ENGINEERING

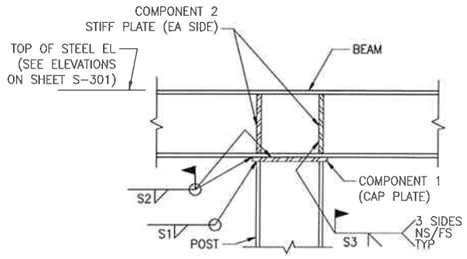
Home & Personal Care - USA

100 Faberge Blvd., Raeford, NC 28376

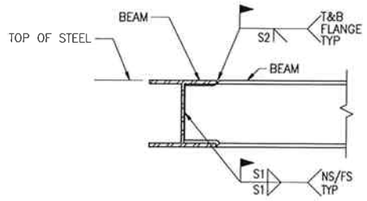
RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL
CONCRETE SECTIONS AND DETAILS

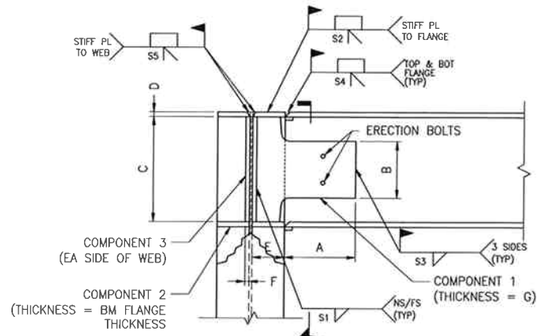
DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-0-S501



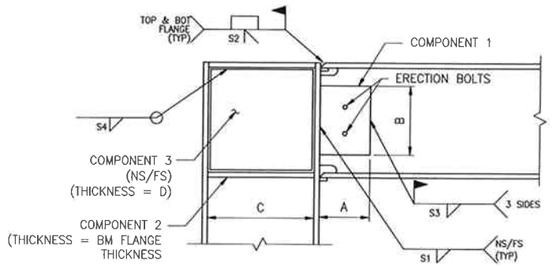
DETAIL 522 / 1 1/2" = 1'-0" / S-102



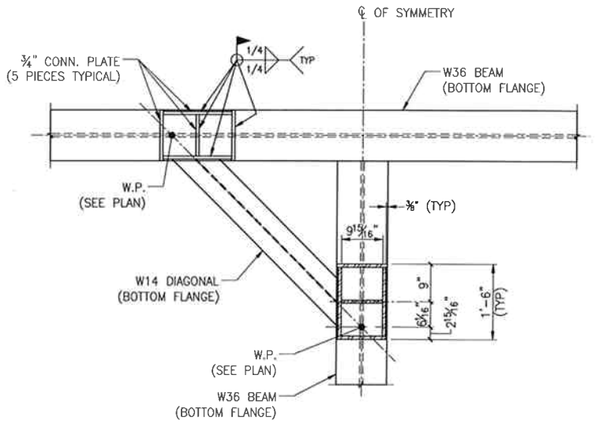
SECTION 536 / 1 1/2" = 1'-0" / S-102



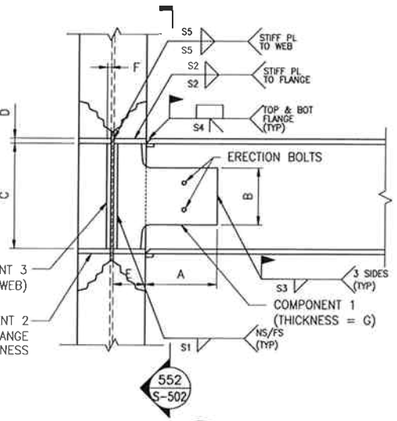
SECTION 554 / 1 1/2" = 1'-0" / S-102



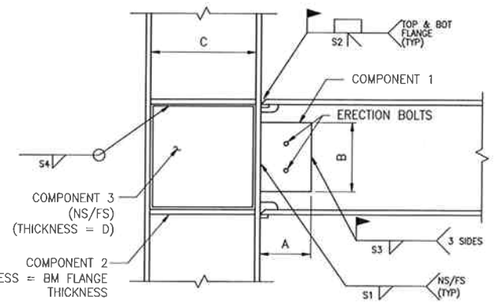
SECTION 556 / 1 1/2" = 1'-0" / S-502



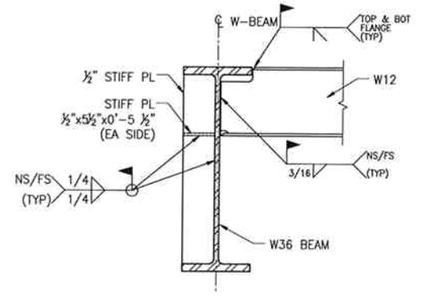
SECTION E / 3/4" = 1'-0" / S-301



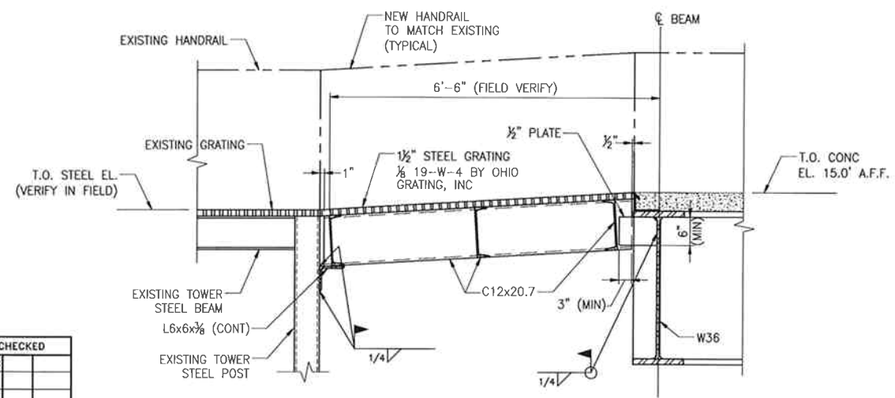
SECTION 550 / 1 1/2" = 1'-0" / S-102



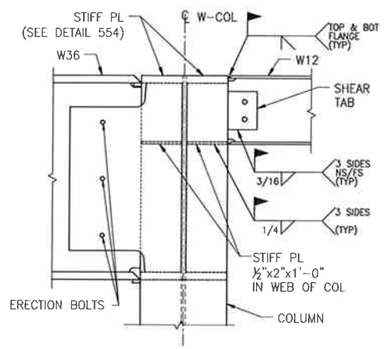
SECTION 552 / 1 1/2" = 1'-0" / S-502



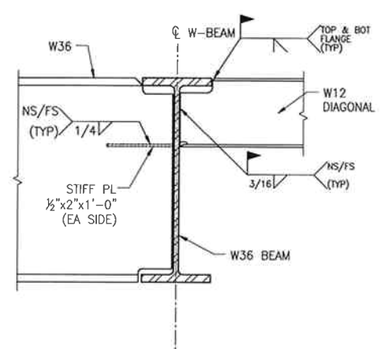
SECTION J / 1" = 1'-0" / S-102



SECTION F / 3/4" = 1'-0" / S-102



SECTION G / 1" = 1'-0" / S-102



SECTION H / 1" = 1'-0" / S-102

NOTES:

1. SEE "SCHEDULE OF MOMENT CONNECTIONS" FOR COMPONENTS, DIMENSIONS, AND WELD SIZES.

CHECKED		
PROC		
I/E		
CIVIL		
MECH		
DEVEL		
PACK		
PLANT		
AE FIRM		
DISC.	BY	DATE

NO.	DATE	REVISION	BY	APP.
0	5/31/06	ISSUED FOR CONSTRUCTION	AAB	EF
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ALLIANCE
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ACAD FILE: 230324-S502.dwg LAST UPDATE: 5/30/06
CHK'D. BY: EF APP'D. BY: EF
AEI PROJECT NO: 06230324

Unilever ENGINEERING

Home & Personal Care - USA

100 Faberge Blvd., Raeford, NC 28376

RAEFORD, NORTH CAROLINA PLANT PROJECT NO. R5008L
PROJECT MERLIN - PROCESS PLATFORM

STRUCTURAL STEEL SECTIONS AND DETAILS

DRAWN	APP'D	DATE	SCALE	DWG NO.
AAB	EF	3/6/06	AS NOTED	R5008L-01-0-S502