

STRUCTURAL ABBREVIATIONS:

Table of structural abbreviations including ACI, ADD'L, AISC, AISI, ASTM, ARCH, B, BLDG, BOTT, C, CFMR, CFMF, CFS, CIP, CIP, CJ, CLR, CMU, COEFF, COL, CONC, CONT, COORD, CRSI, CSJ, DIA, DIAG, DIM, DWG, DWL, EA, EF, ELEC, ELEV, EMBED, EQUIV, ETC, EW, EXP, EXT, FTG, GA, GB, HORIZ, h, HRS, IBC, INFO, INT, kg, km, kN, kPa, L#, LONG, LLV, m, MAX, MECH, MFG, MID, MIN, MISC, mm, MPa, MTL, MWFRS, N, N/A, #, NTS, OC, OPNG, P or PL, PRE-ENG, RB, REINF, REQ'D, SIM, SPECS, STD, STRUCT, SW, T, T/, T/ELEV, T/SLAB, T&B, THK, TYP, UFC, UON, VERT, W, W/.

GENERAL NOTES:

- 1.0 THIS PROJECT HAS BEEN DESIGNED FOR THE WEIGHTS AND MATERIALS INDICATED ON THE SHEETS AND FOR THE LIVE LOADS INDICATED IN THE DESIGN DATA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGING, BRACING, SHEETING AND SHORING, ETC.
1.1 COORDINATE THESE SHEETS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL SHEETS. ALL DIMENSIONS SHOWN ON THE SHEETS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
1.2 THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETC WITH EQUIPMENT SELECTED. THE CONTRACTOR SHALL MAKE ANY REQUIRED MODIFICATIONS AT NO ADDITIONAL COST.
1.3 THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SHEETS FOR SLEEVES, CURBS, INSERTS OR OPENINGS, ETC. NOT HEREIN INDICATED.
1.4 WORK NOT INCLUDED ON THE SHEETS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE SHEETS SHALL BE REPEATED.
1.5 IN CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS THE MOST RIGID REQUIREMENTS SHALL GOVERN.
1.6 SEE ARCHITECTURAL SHEETS FOR LOCATIONS OF MASONRY AND NON-LOAD BEARING PARTITIONS. PROVIDE COMPRESSIBLE FIRESAFING AT TOP OF WALL AS REQUIRED BY ARCHITECTURAL SHEETS.
1.7 COORDINATE FINISHED FLOOR DATUM ELEVATION 0.0m WITH THE CIVIL SHEETS.
2.0 FOUNDATION NOTES
2.1 THE GEOTECHNICAL ANALYSIS FOR THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AWARDED THE WORK. AN ASSUMED ALLOWABLE SOIL BEARING VALUE OF 72 kPa HAS BEEN USED IN THE STRUCTURAL ANALYSIS OF THE BUILDING HEREIN AND SHALL BE CONFIRMED AND VERIFIED AS PART OF THE GEOTECHNICAL INVESTIGATION. VALUES WHICH DO NOT MEET THE REQUIREMENTS INDICATED ON THE BASIS OF DESIGN SHEET SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR CONSIDERATION AND DETERMINATION ON THE NEXT APPROPRIATE COURSE OF ACTION.
2.2 SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS TO THOSE OUTLINED IN THE GEOTECHNICAL INVESTIGATION FOR EXCAVATION AND PREPARATION OF THE FOUNDATION AND THE SLAB ON GRADE SUBGRADE INCLUDING COMPACTION PROCEDURES.
2.3 EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 0.25mm POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HRS OF THE EXCAVATION OF THE FOOTING.
2.4 FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE GENERAL CONTRACTOR BEFORE FURTHER CONSTRUCTION IS ATTEMPTED. SEE PROJECT SPECIFICATIONS.
2.5 NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL. FROST DEPTH ASSUMED TO BE 800mm.
2.6 ALL SLAB-ON-GRADE, TRENCH BOTTOMS AND OTHER ON-GRADE INTERIOR HORIZONTAL SURFACES SHALL BE PLACED OVER A 0.25mm POLYETHYLENE VAPOR RETARDER OVER A 100mm #57 STONE WATER CAPILLARY BARRIER PLACED ON SUBGRADE PROPERLY PREPARED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. (UON)
2.7 PRIOR TO START OF FOUNDATION OR SLAB-ON-GRADE CONSTRUCTION, EXISTING SUBGRADES SHALL BE COMPACTED TO MINIMUM OF 95% MAXIMUM DRY DENSITY OBTAINED THRU ASTM D 1557 MODIFIED PROCTOR TESTING.
2.8 SEE PLUMBING, ELECTRICAL & CIVIL SHEETS FOR REQUIRED UNDERSLAB UTILITIES.
2.9 SEE ARCHITECTURAL SHEETS FOR ALL WATERPROOFING DETAILS AND MATERIALS.
2.10 IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH 18 MPa CONCRETE. DO NOT ATTEMPT TO REPLACE AND RE-COMPACT SOIL.

CONCRETE

- 3.1 CONCRETE SHALL HAVE THE UNIT WEIGHT OF 2400 kg/m³ AND A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 28 MPa AT 28 DAYS. ALL CONCRETE SHALL HAVE A WATER-CEMENT RATIO OF 0.45. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. ENTRAIN AIR TO PRODUCE TOTAL AIR CONTENT ACCORDING TO THE SPECIFICATIONS FOR CONCRETE EXPOSED TO FREEZING TEMPERATURES (EXTERIOR FOOTINGS, SLAB TURNDOWNS, EXTERIOR SLABS AND SLABS-ON-GRADE, EXTERIOR RETAINING WALLS, AND EXTERIOR GRADE BEAMS.)
3.2 NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
3.3 MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301M-05.
3.4 ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI) 318M MANUAL (metric), "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND REQUIREMENTS OUTLINED IN THE CONTRACT SPECIFICATIONS. WHEN THERE IS A CONFLICT BETWEEN ACI AND THE SPECIFICATIONS, THE MORE STRINGENT SHALL GOVERN.
3.5 CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 20mm x45 DEGREE CHAMFER UON.
3.6 CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615M-96a, GRADE 420 MPa, REINFORCING BARS SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT, UNLESS INDICATED ON THE CONTRACT DOCUMENTS. ALL LAP SPLICES SHALL BE CLASS "B" UON.
3.7 HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED WITH A CLASS B TENSION SPLICE AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 300mm OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR.
3.8 SLABS-ON-GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AS SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS CAN BE USED AT CONTROL JOINT LOCATIONS AT CONTRACTORS OPTION. SEE SLAB PLANS & JOINT DETAILS FOR ADDITIONAL INFORMATION. FOR AREAS NOT SHOWN ON DWGS, THE MAXIMUM SPACING OF CONSTRUCTION/ CRACK CONTROL JOINTS SHALL BE 4800mm.
3.9 ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318M, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315M, LATEST EDITION. BASED ON IN COUNTRY REINFORCEMENT AVAILABILITY, IT IS THE CONTRACTOR'S OPTION TO ROUND DESIGNATED ODD NUMBERED REINFORCEMENT SIZES UP (1) ONE BAR SIZE.
3.10 ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE ON THE SHEETS.
3.11 ADDITIONAL BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS AS SHOWN ON THE SHEETS.
3.12 SEE ARCHITECTURAL SHEETS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES.
3.13 THE CONTRACTOR SHALL COORDINATE ADDITIONAL WALL/SLAB OPENINGS NOT SHOWN ON STRUCTURAL SHEETS. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL SHEETS.
3.14 UNLESS NOTED OTHERWISE, ALL CURBS SHALL BE REINFORCED WITH AT LEAST (1)-#13 CONTINUOUS AND #13 AT 300mm O.C. DOWELS TO STRUCTURE BELOW.
3.15 THE CONTRACTOR SHALL VERIFY ALL OPENINGS, PAD SIZES, AND ANCHOR BOLTS WITH EQUIPMENT SELECTED.
3.16 FOR ALL WALLS & PIERS, PROVIDE DOWELS INTO FOOTING AT EACH VERT REINF BAR, UON DOWEL SIZE SHALL BE SAME AS VERT REINF.
3.17 PROVIDE CONCRETE POUR STOPS OR FORMED AS REQUIRED FOR INSTALLATION OF ALL CONCRETE WORK.
3.18 PROVIDE ADDITIONAL (2)-#13 x 600mm REINFORCING BARS IN SLAB-ON GRADE AT ALL RE-ENTRANT CORNERS. PLACE BARS AT MID-DEPTH OF SLAB WITH A CLEARANCE OF 50mm FROM CORNER UON.
3.19 COLD-WEATHER PLACEMENT: COMPLY WITH ACI 306.1 AND AS FOLLOWS. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES. SUBMIT A COLD WEATHER CONCRETING PLAN FOR APPROVAL.
3.20 PROVIDE BONDING COMPOUND PER ASTM C 1059-99: SPECIFICATION FOR LATEX AGENTS FOR BONDING FRESH CONCRETE (GROUT) TO HARDENED CONCRETE.
3.21 THE FORMED SURFACES FOR REINFORCED CONCRETE SHALL ACHIEVE A "CLASS A" FINISH WHEN RECEIVING PAINT OR A "CLASS B" FINISH WHEN RECEIVING PLASTER OR TILE AS PER SPECIFICATION SECTION 03 31 00 CAST-IN-PLACE STRUCTURAL CONCRETE.
3.22 AT INTERSECTING GRADE BEAMS AND SHEAR WALLS, PROVIDE CORNER BARS AT INTERSECTIONS WITH SAME QUANTITY, SIZE AND SPACING AS HORIZONTAL BARS WITH LEG LENGTH = 50db.
3.23 REFER TO S-800 SERIES REINFORCING BAR PLACEMENT DRAWINGS DEFINING LENGTHS, BENDS, AND SPACINGS FOR ALL STRUCTURAL CONCRETE. THE S-800 SERIES DRAWING ARE BASED ON THE S-400, S-500, S-600, AND S-700 SERIES DRAWING SCHEDULES, DETAILS, AND DIAGRAMS.

CONCRETE MASONRY (NOT USED)

- 5.0 COLD-FORMED METAL FRAMING
5.1 ALL COLD-FORMED METAL FRAMING MEMBERS SHALL CONFORM TO ASTM A1003M, STRUCTURAL GRADE ST340 (MPa), WITH A GALVANIZED COATING OF Z275 OR BETTER IN ACCORDANCE WITH ASTM A653M.
5.2 ALL COLD-FORMED METAL FRAMING MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
a. MINIMUM METAL THICKNESS: TRACK = 1.37mm; STUD/OTHER = 1.09mm
b. MINIMUM FLANGE WIDTH: TRACK = 38mm; STUD/OTHER = 35mm
c. MINIMUM MEMBER DEPTH: ALL SECTIONS = 152.2mm
d. PURLIN (HAT CHANNEL) DEPTHxWIDTH(FLAT TOP)xTHICK = 25mmx42mmx1.59mm
5.3 ALL CONNECTIONS SHALL BE MADE WITH CORROSION RESISTANT (ASTM A153M), SELF-DRILLING, SELF-TAPPING STEEL DRILL SCREWS IN ACCORDANCE WITH ASTM C1513. SCREWS SHALL HAVE A LOW PROFILE HEAD BENEATH ROOF DECK, AND STANDARD HEAD ALL OTHER LOCATIONS.
5.4 FABRICATE COLD FORMED METAL FRAMING AND ACCESSORIES PLUMB, SQUARE AND TRUE TO LINE, WITH CONNECTIONS SECURELY FASTENED ACCORDING TO AISI STANDARD FOR COLD FORMED STEEL FRAMING.
5.5 CUT FRAMING MEMBERS BY SAWING OR SHEATHING, DO NOT TORCH CUT.
5.6 INSTALL FRAMING MEMBERS IN ONE-PIECE LENGTHS UNLESS SPLICE CONNECTIONS ARE INDICATED FOR TRACK OR TENSION MEMBERS
5.7 INSTALL TEMPORARY BRACING AND SUPPORTS TO SECURE FRAMING DURING CONSTRUCTION. MAINTAIN BRACING AND SUPPORTS IN PLACE UNTIL THE STRUCTURE HAS BEEN COMPLETED WITH ALL CONNECTIONS AND PERMANENT BRACING SECURED.

STRUCTURAL DESIGN CRITERIA

- 6.1 ALL DESIGNS SHALL CONFORM TO THE PROVISIONS OF THE IBC 2006 AND UFC AS APPLICABLE.
6.2 DESIGN LOADS (PER IBC 2006 & UFC 3-310-01)
6.2.1 DEAD LOADS (PER IBC 2006 & UFC 3-310-01)
MECH/ELEC/PLUMBING 0.20 kPa
MISCELLANEOUS 0.15 kPa
COLD-FORMED FRAMING 0.20 kPa
INSULATION 0.10 kPa
METAL ROOF PANEL 0.14 kPa
0.79 kPa
FLOOR PARTITION ALLOWANCE 0.96 kPa
6.2.2 LIVE LOADS (PER IBC 2006 & UFC 3-310-01)
ROOF 1.00 kPa
SLAB ON GRADE 4.80 kPa
6.2.3 SNOW LOADS (PER IBC 2006 & UFC 3-310-01)
GROUND SNOW LOAD (Pg) 1.2 kPa
SNOW IMPORTANCE FACTOR (I) 1.0
SNOW EXPOSURE FACTOR (Ce) 1.0
THERMAL FACTOR (Ct) 1.0
6.2.4 WIND LOADS (PER IBC 2006)
BASIC WIND SPEED 137 km/h
WIND IMPORTANCE FACTOR 1.0
WIND EXPOSURE CATEGORY D
DIRECTIONALITY COEFFICIENT (Kd) 0.85
TOPOGRAPHIC FACTOR (Kzt) 1.0
6.2.5 SEISMIC LOADS (PER IBC 2006 & UFC 3-310-04)
OCCUPANCY USE CATEGORY II
SEISMIC IMPORTANCE FACTOR (Ie) 1.0
SEISMIC SITE CLASS D
Sa = 1.5 (REDUCED FROM 2.4 PER ASCE 7-05 CH 12.8.1.13)
S1 = 1.20
S0s = 1.0
S01 = 1.20
SEISMIC DESIGN CATEGORY E
SEISMIC RESISTING SYSTEM:
-BEARING WALL SYSTEM:
SPECIAL REINFORCED CONCRETE SHEAR WALLS
RESPONSE MODIFICATION FACTOR (R) 6
RESPONSE COEFFICIENT (Cs) 0.167
SEISMIC ANALYTICAL PROCEDURE = EQUIV LATERAL FORCE
SEISMIC BASE SHEAR 40 kN



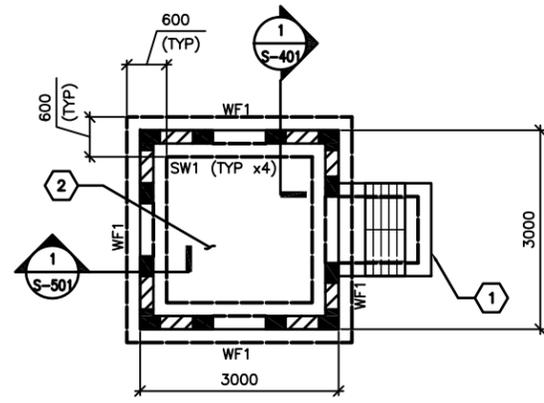
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STANDARD DESIGN PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
GENERAL NOTES & DESIGN CRITERIA
Sheet reference number: S-001

APPROVED:
A/E DESIGNER OF RECORD
SEAL:



1
S-101 FOUNDATION/SLAB PLAN
SCALE: 1:50

FOUNDATION/SLAB PLAN NOTES:

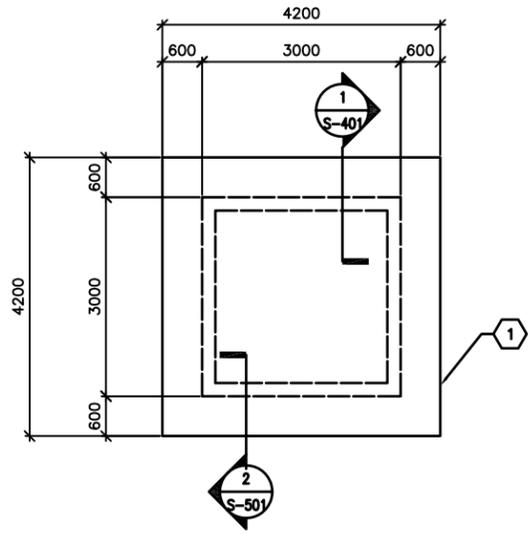
1. REFER TO SHEET S-001 FOR STRUCTURAL NOTES AND DESIGN CRITERIA.
2. FINISH FIRST FLOOR ELEVATION SHALL BE (DATUM 0.00) ALL PLUS OR MINUS DIMENSIONS INDICATED ON PLAN OR REFERRED TO IN NOTES RELATE TO FINISH FLOOR ELEVATION.
3. SLAB-ON-GRADE IS 150 WITH #13 @ 300 OC EW LOCATED 38 FROM T/SLAB.
4. BOTTOM OF WALL FOOTINGS SHALL BE -950 UNLESS OTHERWISE INDICATED.
5. WALL FOOTING INDICATED BY WF# ON PLAN. REFER TO FOOTING SCHEDULE ON S-601.
6. CONCRETE SHEAR WALL INDICATED BY SW#. REFER TO CONCRETE SHEAR WALL SCHEDULE ON S-601.
7. SEE MECHANICAL AND ELECTRICAL SHEETS FOR CONCRETE PAD LOCATIONS, SIZES, AND THICKNESS NOT SHOWN. SEE SHEET S-701 FOR DETAILS.

FOUNDATION/SLAB PLAN KEY NOTES: (X)

1. CONC PAD (ENTRANCE)-SEE ARCH DWGS FOR INFORMATION
2. REINF CONC SLAB-ON-GRADE

FOUNDATION/SLAB PLAN LEGEND:

REINF CONC SHEAR WALL



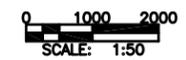
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S-101 ROOF FRAMING PLAN
SCALE: 1:50

ROOF FRAMING PLAN NOTES:

1. REFER TO SHEETS S-001 FOR STRUCTURAL NOTES AND DESIGN CRITERIA.
2. TOP OF SLAB ELEVATION = 2800 UNLESS NOTED OTHERWISE.
3. ROOF SLAB IS 200 WITH #13 @ 300 OC EW T&B.
4. COORDINATE WITH ARCHITECTURAL SHEETS FOR COLD-FORMED STEEL OVERBUILD FRAMING ABOVE ROOF SLAB.
5. COLD-FORMED METAL OVERBUILD ROOF FRAMING NOT SHOWN FOR CLARITY. SEE OVERBUILD ROOF FRAMING DETAILS AND SECTIONS ON SHEET S-701.
6. OVERHANG AREAS OF ROOF SLAB CONTAIN ROOF VENT PENETRATIONS. REFERENCE ARCHITECTURAL DRAWINGS FOR INFORMATION.

ROOF FRAMING PLAN KEY NOTES: (X)

1. CONC ROOF SLAB (BELOW ROOF OVERBUILD)



UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS (mm)

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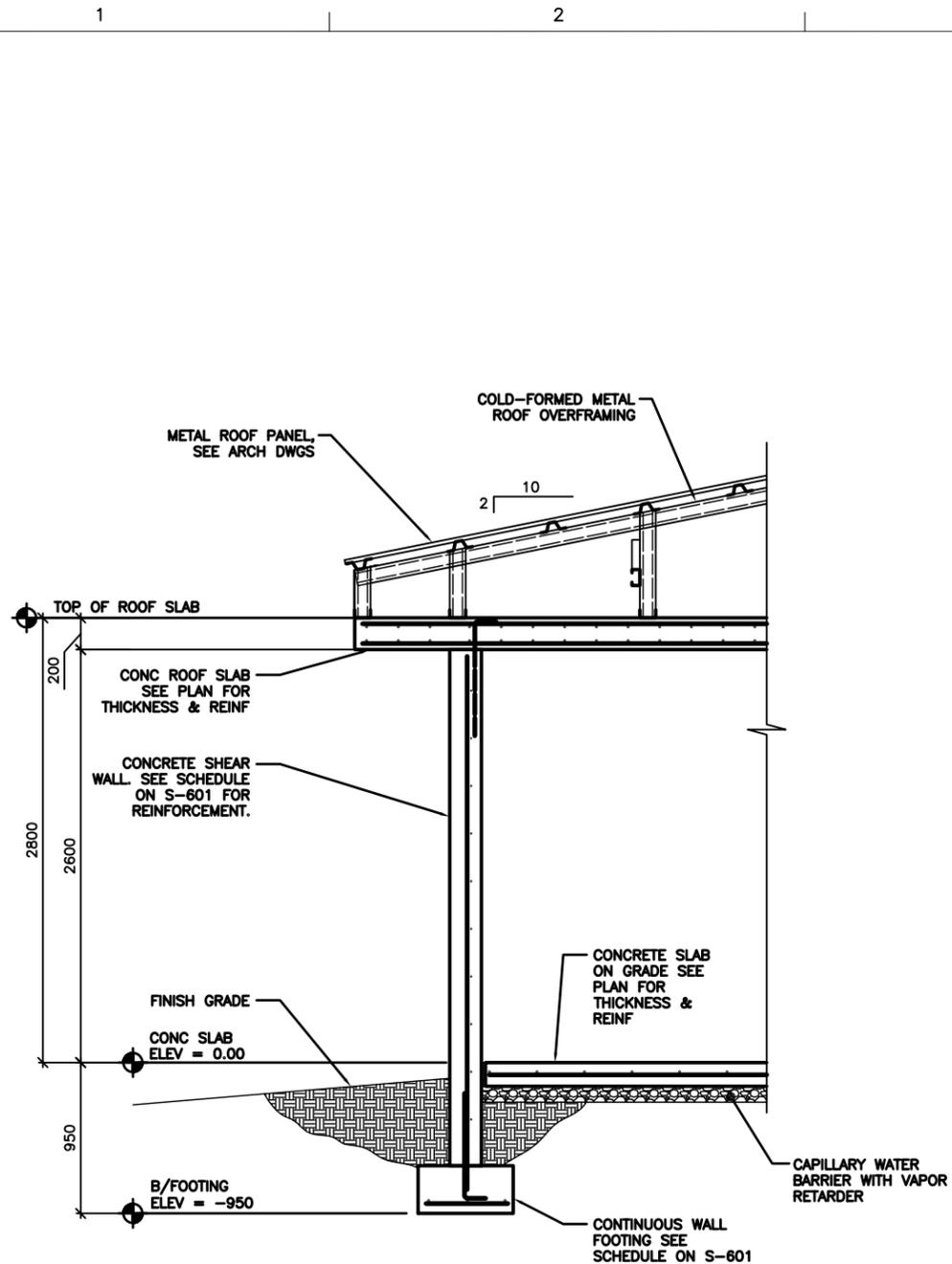


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STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
FOUNDATION/SLAB &
ROOF FRAMING PLANS

Sheet
reference
number:
S-101



1
S-101
TYPICAL WALL SECTION
AT EXTERIOR WALL
SCALE: 1:20



UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS (mm)

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STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
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BUILDING SECTIONS

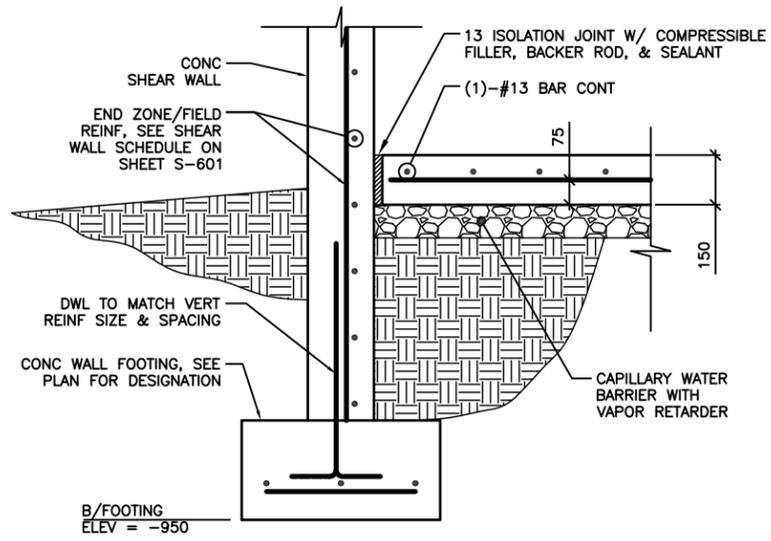
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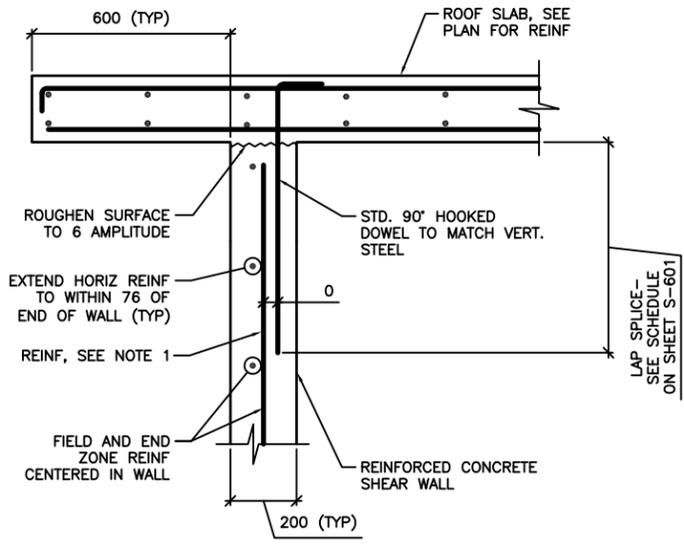
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B

A



1 SECTION
S-101 SCALE: 1:10



NOTES:
 1. TERMINATE "FIELD" VERT REINF & END ZONE REINF 50 CLEAR FROM TOP OF ROOF SLAB.
 2. SEE SHEET S-601 FOR SCHEDULED FIELD AND END ZONE REINF.

2 SECTION
S-101 SCALE: 1:10



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STANDARD DESIGN
 VARIOUS PROJECTS
 VARIOUS LOCATIONS, AFGHANISTAN
 FUEL OPERATORS BUILDING
 SECTIONS

Sheet reference number:
S-501

0 200 400
 SCALE: 1:10
 UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS (mm)

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CONCRETE REINFORCEMENT TENSION DEVELOPMENT/LAP SPLICE SCHEDULE					
f'c = 28 MPa					
BAR SIZES	LAP CLASS	UNCOATED BARS			
		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#10 TO #19	A	50 BAR DIA	74 BAR DIA	38 BAR DIA	57 BAR DIA
	B	64 BAR DIA	96 BAR DIA	50 BAR DIA	74 BAR DIA
#22 TO #57	A	62 BAR DIA	93 BAR DIA	48 BAR DIA	71 BAR DIA
	B	80 BAR DIA	121 BAR DIA	62 BAR DIA	93 BAR DIA

NOTES:

- TABULATED TENSION DEVELOPMENT LENGTH VALUES ARE TAKEN FROM CRSI DESIGN HANDBOOK 2008 10TH ED.
- TENSION DEVELOPMENT & TENSION LAP SPLICE LENGTHS ARE EXPRESSED AS MULTIPLES OF BAR DIAMETERS.
- TABULATED VALUES ARE BASED ON MINIMUM YIELD STRENGTH OF REINFORCEMENT, f_y , OF 420MPa.
- CONCRETE IS NORMAL WEIGHT (2400kg/m³) AND 28 DAY COMPRESSIVE STRENGTH = 28MPa.
- TABULATED VALUES FOR BEAMS & COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS.
- CASES 1 & 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL MEMBER, CONCRETE COVER, AND CENTER-TO-CENTER SPACING OF THE BARS ARE DEFINED IN THE TABLE BELOW.
- LAP SPLICE LENGTHS (MINIMUM 300mm) ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS: CLASS A = 1.0(TENSION DEVELOPMENT LENGTH) & CLASS B = 1.3(TENSION DEVELOPMENT LENGTH)
- TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 300mm OF CONCRETE CAST BELOW THE BARS.
- IT SHALL BE PERMISSIBLE TO CALCULATE WALL AND SLAB REINFORCEMENT TENSION DEVELOPMENT/SPLICE LENGTHS IN ACCORDANCE WITH ACI 12.2.3 OR TABLE 5.3(b) OF CRSI 2008 IN LIEU OF VALUES TABULATED ABOVE.

BEAMS, COLUMNS	CASE 1	CONCRETE COVER AT LEAST 1 BAR DIA AND CENTER-TO-CENTER SPACING AT LEAST 2 BAR DIA
	CASE 2	CONCRETE COVER LESS THAN 1 BAR DIA OR CENTER-TO-CENTER SPACING LESS THAN 2 BAR DIA
ALL OTHERS	CASE 1	CONCRETE COVER AT LEAST 1 BAR DIA AND CENTER-TO-CENTER SPACING AT LEAST 3 BAR DIA
	CASE 2	CONCRETE COVER LESS THAN 1 BAR DIA OR CENTER-TO-CENTER SPACING LESS THAN 3 BAR DIA

CONCRETE COVER SCHEDULE	
MINIMUM CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS LISTED BELOW: (SEE ACI 318M-05, SECTION 7.7 FOR CONDITIONS NOT NOTED). DIMENSIONS FOR BAR PLACEMENT GIVEN IN SECTIONS AND DETAILS SHALL SUPERSEDE MINIMUM COVER REQUIREMENTS GIVEN HERE. DIMENSIONS ARE IN mm. PROVIDE STANDARD BAR CHAIRS AND SUPPORT BARS @1200mm MAXIMUM AS REQUIRED TO MAINTAIN CONCRETE PROTECTION SPECIFIED.	
FOOTINGS (EARTH FORMED):	70
COLUMNS / PIERS (TO TIES)	40
GRADE BEAMS OR SLAB TURNED DOWN EDGES:	
TOP	40
BOTTOM (EARTH FORMED)	70
SIDES (EARTH FORMED)	70
SIDES (BOARD FORMED)	40
	#16 BAR & SMALLER
	#19 THRU #36 BAR
	50
ELEVATED BEAMS & SLABS:	
BEAM TIES & STIRRUPS (NOT EXPOSED TO WEATHER)	40
BEAM TIES & STIRRUPS (EXPOSED TO WEATHER)	50
FLOOR SLABS (NOT EXPOSED TO WEATHER)	20
FLOOR SLABS (EXPOSED TO WEATHER)	
#19 & LARGER	50
#13 & SMALLER	40
ROOF SLAB BARS	25
SLABS ON GRADE	
NOT EXPOSED TO WEATHER (FROM TOP)	20
EXPOSED TO WEATHER (FROM TOP)	40
UTILITY TUNNEL WALLS, RETAINING WALLS AND SHEAR WALLS. (NO SURFACES SHALL BE EARTH FORMED)	
EARTH SIDE AND FRONT SIDE (EXPOSED TO WEATHER)	
#16 BAR AND SMALLER	40
#19 THRU #36 BAR	50

CONCRETE SHEAR WALL SCHEDULE					
MARK	TYPE	WALL LENGTH (L) (mm)	WALL REINFORCEMENT		REMARKS
			END ZONE (EACH END)	FIELD	
SW1	E	1100	(2)-#13 @ 100mm OC	#13 @ 300mm OC	-----

NOTES:

- WORK THIS SCHEDULE WITH SHEAR WALL DETAILS ON SHEETS S-702
- SEE PLAN FOR LOCATION OF SHEAR WALL(S).
- WALL "FIELD" REINFORCEMENT LISTED APPLIES TO VERTICAL & HORIZONTAL BARS.
- WALL "FIELD" REINFORCEMENT SHOULD BE CENTERED IN WALL.
- VERTICAL "FIELD" BARS MAY BE OMITTED IN LOCATION OF "END ZONE" REINFORCEMENT.

STANDARD HOOKS IN TENSION PER (ACI 318M-05)	
HOOK DEVELOPMENT LENGTH (mm)	
BAR SIZE	f'c 28 MPa
#10	180
#13	250
#16	300
#19	380
#22	430
#25	480
#29	560
#32	610
#36	690

HOOK EXTENSION PER ACI 318M-05

HOOK DEVELOPMENT LENGTH, Ldh

NOTES:

- CONCRETE IS NORMAL WEIGHT CONCRETE.
- BAR YIELD STRENGTH, f_y = 420 MPa
- SIDE COVER REQUIREMENTS OF ACI SECT. 12.5.3 ARE ASSUMED TO NOT BE MET.
- TIE OR STIRRUP REQUIREMENTS OF ACI SECT. 12.5.3 ARE ASSUMED TO NOT BE MET.
- REDUCTION FOR EXCESS REINFORCEMENT IS NOT TAKEN.
- HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.

WALL FOOTING SCHEDULE						
MARK	FOOTING SIZE (mm)			FOOTING REINFORCING		REMARKS
	LENGTH	WIDTH	THICKNESS	LONGITUDINAL	TRANSVERSE	
WF1	---	600	300	(4)-#19	#13 @ 450mm	-----



Rev.	Date	Description
0	2/23/10	

Designed by: KWP/MNY	Checked by: RCC	Drawn by: CWV	Submitted by: LHM	Submitted by: BAKER
Date: 2/23/10	Design file no.	Drawing code:	File name: ANAF08E-01	Plot date: 04/20/10
U.S. ARMY CORPS OF ENGINEERS AFGHANISTAN ENGINEER DISTRICT APO AE 96338 Michael Baker Jr., Inc A unit of Michael Baker Corporation Alameda Business Park 100 Alameda Drive, Suite 1510B www.mbakercorp.com				

STANDARD DESIGN VARIOUS PROJECTS VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
SCHEDULES

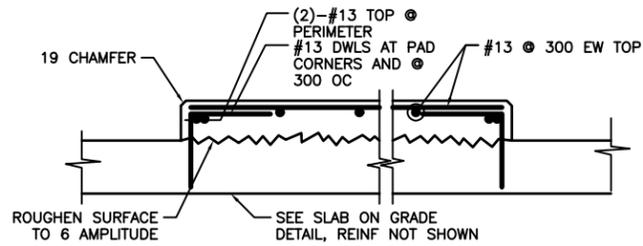
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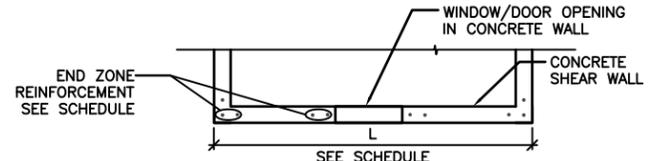
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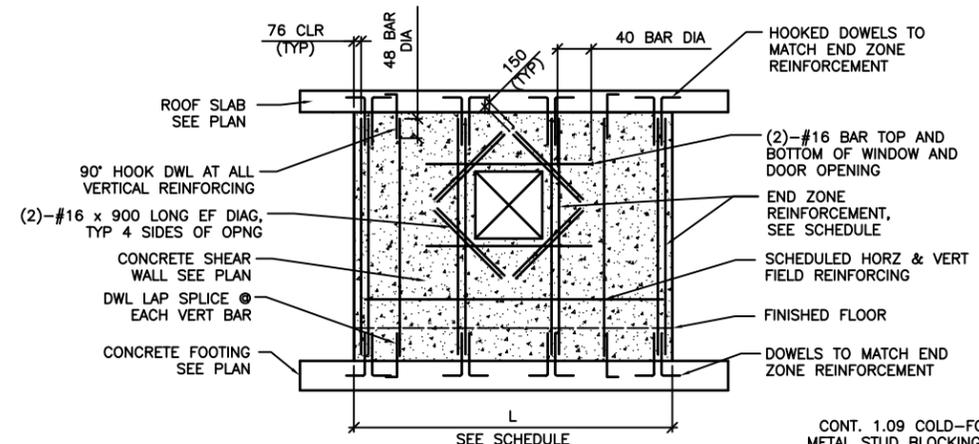
Sheet reference number:
S-601



1 INTERIOR EQUIPMENT PAD DETAIL
SCALE: NTS



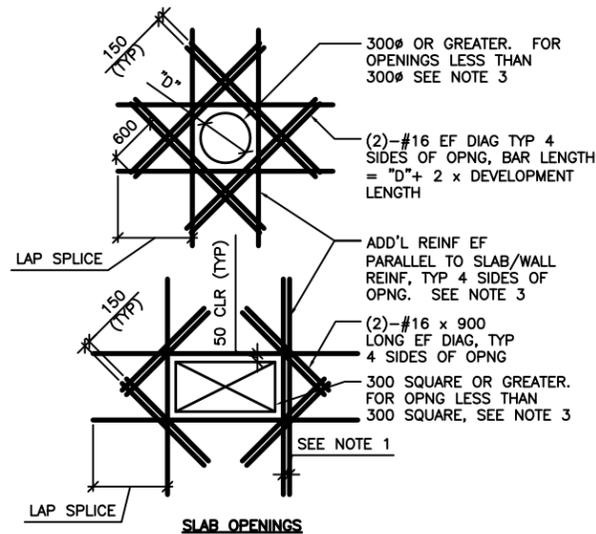
SHEAR WALL PLAN



SHEAR WALL ELEVATION

2 TYPE "E" SHEAR WALL DETAIL
SCALE: NTS

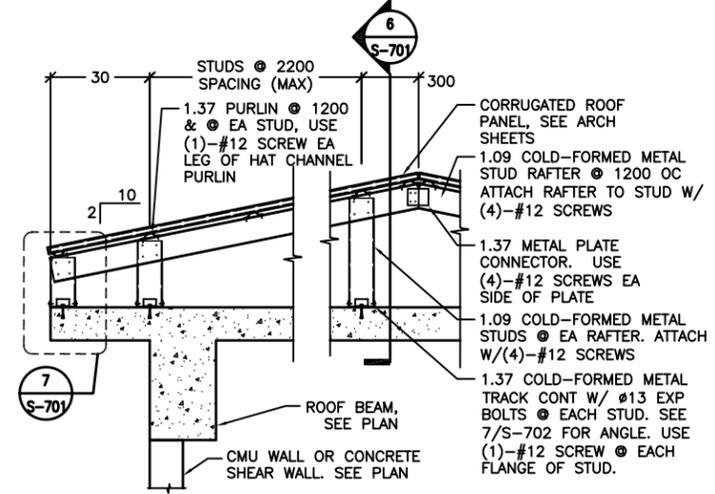
- DETAIL NOTES:**
1. FIELD REINFORCEMENT IN SHEAR WALL NOT COMPLETELY SHOWN FOR CLARITY.
 2. MINIMUM CONC CLEAR DISTANCE FOR END ZONE REINF = 76
 3. SEE CONC SHEAR WALL SCHEDULE ON SHEET S-601
 4. CENTER FIELD REINF IN WALL
 5. WINDOW OPENING SHOWN. DOOR OPENING REINFORCEMENT SIMILAR



SLAB OPENINGS

- DETAIL NOTES:**
1. WHERE MORE THAN ONE ADDITIONAL BAR IS REQUIRED PARALLEL TO THE EXISTING SLAB/WALL REINFORCING THE ADDITIONAL REINFORCING BARS SHALL BE SPACED AT 100 ON CENTER.
 2. ADDITIONAL REINFORCING PARALLEL TO THE SLAB/WALL REINFORCING SHALL BE #16 BARS THAT PROVIDE A STEEL AREA ON EACH SIDE OF THE OPENING EQUAL TO 1/2 THE AREA OF THE REINFORCING CUT BY THE OPENING.
 3. FOR OPENINGS WITH SIDES OR DIAMETERS LESS THAN 300 SPREAD THE SLAB/WALL REINFORCING TO CLEAR THE OPENING.

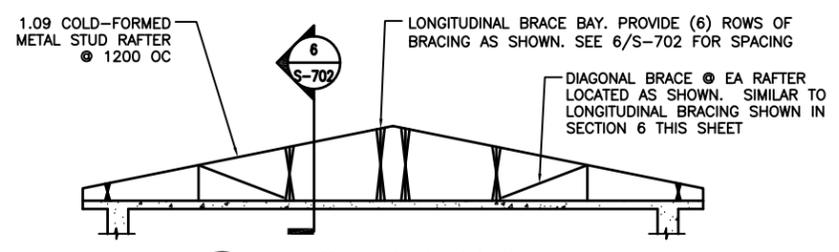
4 ADD'L CONCRETE REINFORCEMENT DETAILS
SCALE: NTS



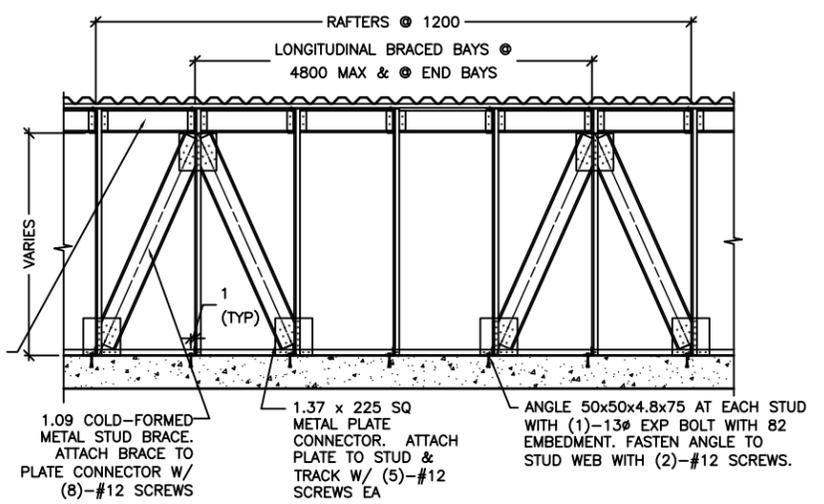
7

- DETAIL NOTES:**
1. ALL GABLE END VERTICAL STUDS SHALL BE ORIENTED 90° TO INTERIOR STUDS & SPACED @ 600 OC. GABLE END RAFTER SHALL BE 1.37 METAL TRACK SPANNING CONTINUOUSLY OVER GABLE END STUDS. INSET GIRTS AT GABLE END SHALL BE 1.09 COLD-FORMED METAL STUDS @ 1200 OC ATTACHED VIA 1.37 THICKNESS CLIP ANGLE W/ (2) #12 SCREWS EA LEG.
 2. ALL INTERIOR, NON-GABLE END VERTICAL STUDS GREATER THAN 2400 IN LENGTH SHALL BE BACK-TO-BACK W/ #12 SCREWS @ 200 OC STAGGERED.

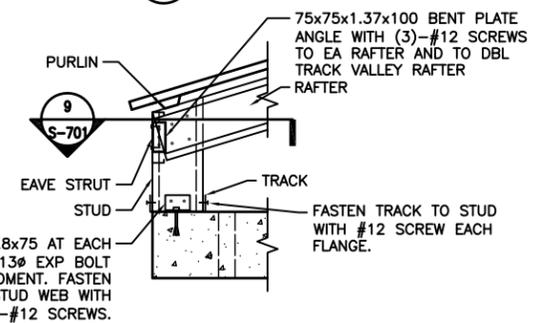
5 TYPICAL OVERBUILT ROOF FRAMING DETAIL
SCALE: NTS



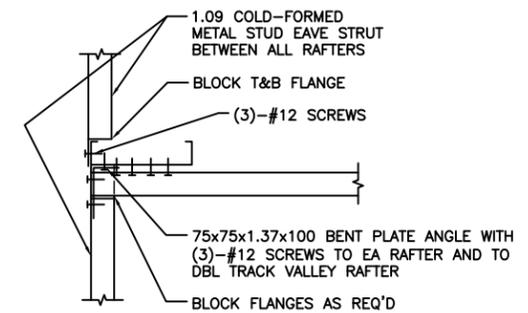
3 TYPICAL ROOF BRACE LAYOUT
SCALE: NTS



6 SECTION
SCALE: NTS



9 SECTION
SCALE: NTS



7 DETAIL
SCALE: NTS

8 SECTION
SCALE: NTS

UNLESS OTHERWISE NOTED, LINEAR DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS (mm)

APPROVED:
A/E DESIGNER OF RECORD
SEAL:



Rev.	Date	Description
0	2/23/10	Design file no.
		Drawing code
		Prep code
		Plot date
		Plot scale
		Plot code

Designed by: KWP/MNY
Checked by: RCC
Reviewed by: LHM
Submitted by: BAKER

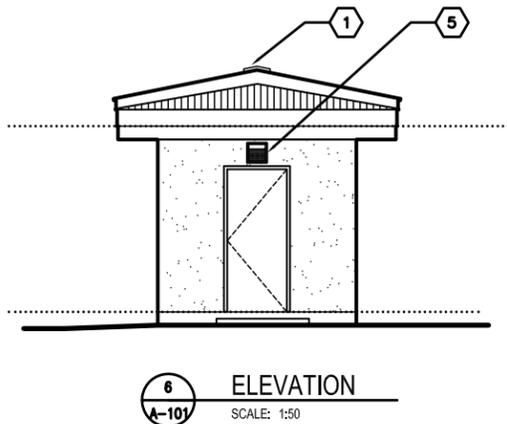
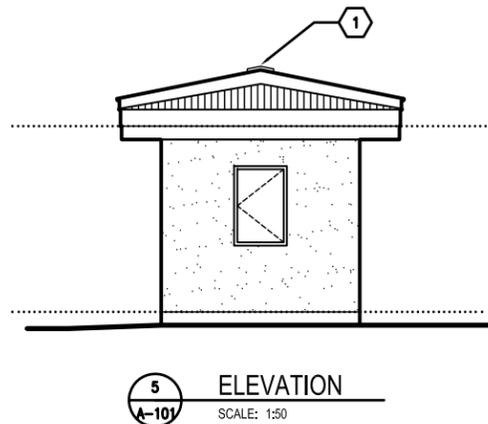
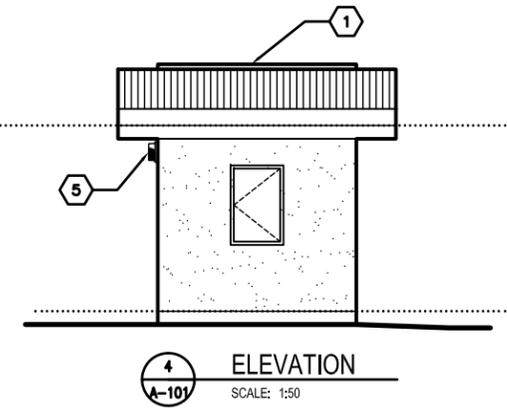
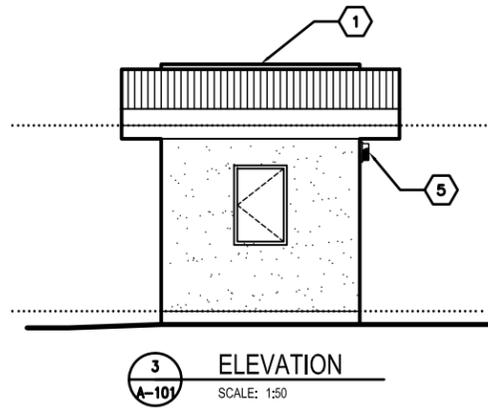
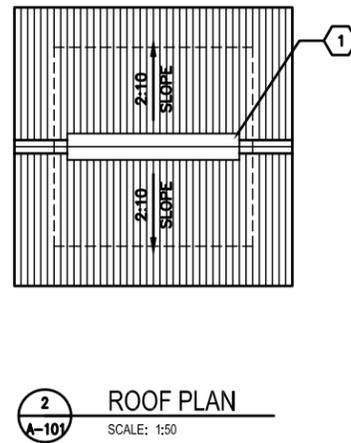
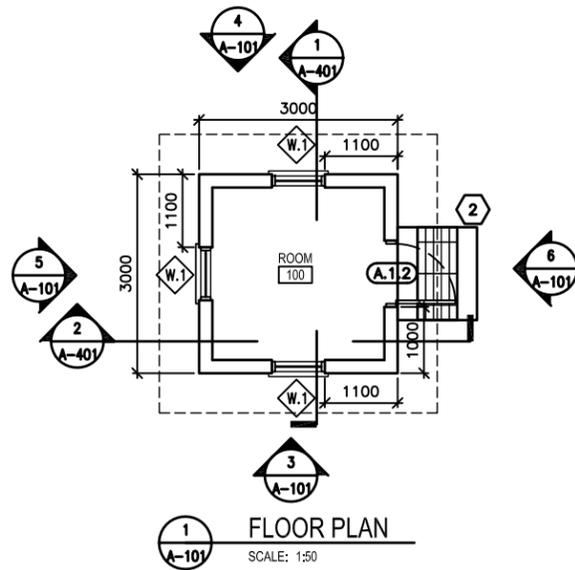
U.S. ARMY CORPS OF ENGINEERS
AFGHANISTAN ENGINEER DISTRICT
APO AE 96338

Michael Baker Corp.
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100 Arapahoe Drive
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STANDARD DESIGN VARIOUS PROJECTS VARIOUS LOCATIONS, AFGHANISTAN FUEL OPERATORS BUILDING

TYPICAL DETAILS

Sheet reference number: **S-701**



ROOF PLAN GENERAL NOTES:

- A. THE APPROXIMATE LOCATION OF ROOF DEVICES AND PENETRATIONS ARE SHOWN ON THE ROOF PLAN FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UNDERSTANDING THE ACTUAL LOCATION OF THESE AND ALL OTHER ITEMS PRIOR TO BEGINNING CONSTRUCTION. COORDINATE ALL ROOF PENETRATIONS WITH STRUCTURAL, MECHANICAL AND PLUMBING WORK.
- B. UNLESS OTHERWISE NOTED, NOTES, DETAILS OR FEATURES INDICATED FOR ONE CONDITION SHALL BE APPLICABLE FOR ALL ALIKE AND SIMILAR CONDITIONS.
- C. STOCKPILING OF MATERIALS, EQUIPMENT AND ANY OTHER ITEMS ON THE ROOF IS PROHIBITED.
- D. ROOFS SHALL BE CORRUGATED METAL ROOF PANELS ON COLD-FORMED METAL FRAMING ON CONCRETE SLAB.

ROOF PLAN KEY NOTES:

- 1. CONTINUOUS METAL RIDGE VENT SEE DETAIL 4/A-501.

ELEVATION GENERAL NOTES:

- A. COORDINATE SIZE AND LOCATION OF OPENINGS FOR MECHANICAL ITEMS WITH MECHANICAL DRAWINGS.
- B. PROVIDE STRUCTURAL LINTELS AS REQUIRED - SEE STRUCTURAL DRAWINGS
- C. ALL EXTERIOR WALL FINISHES SHALL BE STUCCO OVER CMU AND CONCRETE SUBSTRATES.
- D. ROOF SHALL BE CORRUGATED METAL ROOF PANELS ON COLD-FORMED METAL FRAMING ON CONCRETE SLAB.

ELEVATION KEY NOTES:

- 1. CONTINUOUS METAL RIDGE VENT - SEE DETAIL 4/A-501.
- 2. NOT USED
- 3. NOT USED
- 4. NOT USED
- 5. EXTERIOR LIGHT FIXTURE - SEE ELECTRICAL.

FLOOR PLAN GENERAL NOTES:

- A. DIMENSIONS ARE SHOWN TO OUTER EDGE OF EXTERIOR STRUCTURAL COLUMNS, STRUCTURAL COLUMN GRID, EDGE OF INTERIOR PARTITIONS, EDGE OF WINDOW OPENINGS, AND TO HINGE SIDE OF DOOR FRAME OPENINGS.
- B. HINGE SIDE OF OPENINGS FOR DOORS AND FRAMES SHALL BE LOCATED 200 MM FROM THE ADJACENT WALL, UNLESS NOTED OTHERWISE.
- C. COSMETIC REPAIR OF MINOR DEFECTS: REPAIR OR FILL MORTAR JOINTS AND MINOR DEFECTS, INCLUDING BUT NOT LIMITED TO SPALLS, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND PRIOR TO COATING APPLICATION. SURFACES TO BE PAINTED SHALL BE CLEAN AND FREE OF FOREIGN MATTER BEFORE APPLICATION OF PAINT. CLEANING SHALL BE SCHEDULED SO THAT DUST AND OTHER CONTAMINANTS WILL NOT FALL ON NEWLY PAINTED SURFACES.
- D. CONCRETE, PLASTER AND MASONRY SURFACES SHALL BE ALLOWED TO CURE FOR AT LEAST 30 DAYS BEFORE PAINTING. CONCRETE SLABS-ON-GRADE SHALL BE ALLOWED TO CURE 90 DAYS BEFORE STAINING OR SEALING.
- E. DO NOT USE PAINT MATERIALS CONTAINING LEAD CONTENT IN EXCESS OF 0.009 PERCENT OF THE WEIGHT OF THE TOTAL NONVOLATILE CONTENT OF THE PAINT OR THE WEIGHT OF THE DRIED PAINT FILM.
- F. DO NOT USE ANY ASBESTOS CONTAINING MATERIALS (ACM) IN PROJECT. ACM IS DEFINED AS 1% OR MORE BY VOLUME.
- G. DO NOT USE PAINT MATERIALS CONTAINING MERCURIAL FUNGICIDES.
- H. FACTORY PRIMED METAL DOORS AND FRAMES SHALL RECEIVE TWO COATS OF PAINT.
- I. FILL REMAINING SPACE AT PENETRATIONS IN FIRE-RATED FLOORS, PARTITIONS AND CEILINGS WITH APPROPRIATE FIRESTOPPING MATERIALS.
- J. ALL CEILING FINISHES SHALL BE PAINTED PLASTER APPLIED TO STRUCTURE.
- K. ALL WALL FINISHES SHALL BE PAINTED PLASTER APPLIED TO STRUCTURE.
- L. ALL FLOOR FINISHES SHALL BE SEALED CONCRETE.

FLOOR PLAN KEY NOTES:

- 1. LINE OF ROOF OVERHANG ABOVE.
- 2. CONCRETE STOOP WITH GRATE - SEE DETAIL 1/A-503.

LEGEND:

- (XXX) DOOR FRAME AND HARDWARE TYPE, SEE SHEET A-601
- (A) WINDOW TYPE, SEE SHEET A-601
- (X) KEY NOTE

ABBREVIATIONS:

- ELEC ELECTRICAL
- MECH MECHANICAL
- JAN JANITOR
- CLOS CLOSET
- COMM COMMUNICATIONS



Rev.	Date	Description	Mark
0	2/23/10	Design file no.	
		Drawing code	
		File name: AAF02BA-101	
		Plot date: 04/20/10	
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Designed by: KFC	Checked by: AAR	Drawn by: NLJ	Reviewed by: LHM	Submitted by: BAKER
U.S. ARMY CORPS OF ENGINEERS AFGHANISTAN ENGINEER DISTRICT APO AE 96338 Michael Baker Jr., Inc A unit of Michael Baker Corporation 100 Alameda Drive, Suite 15108 www.mbakercorp.com				

STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
FLOOR PLAN, ROOF PLAN
& ELEVATIONS

APPROVED:

A/E DESIGNER OF RECORD
SEAL:

Sheet reference number:
A-101

LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM), UNLESS OTHERWISE NOTED
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SCALE: 1:50

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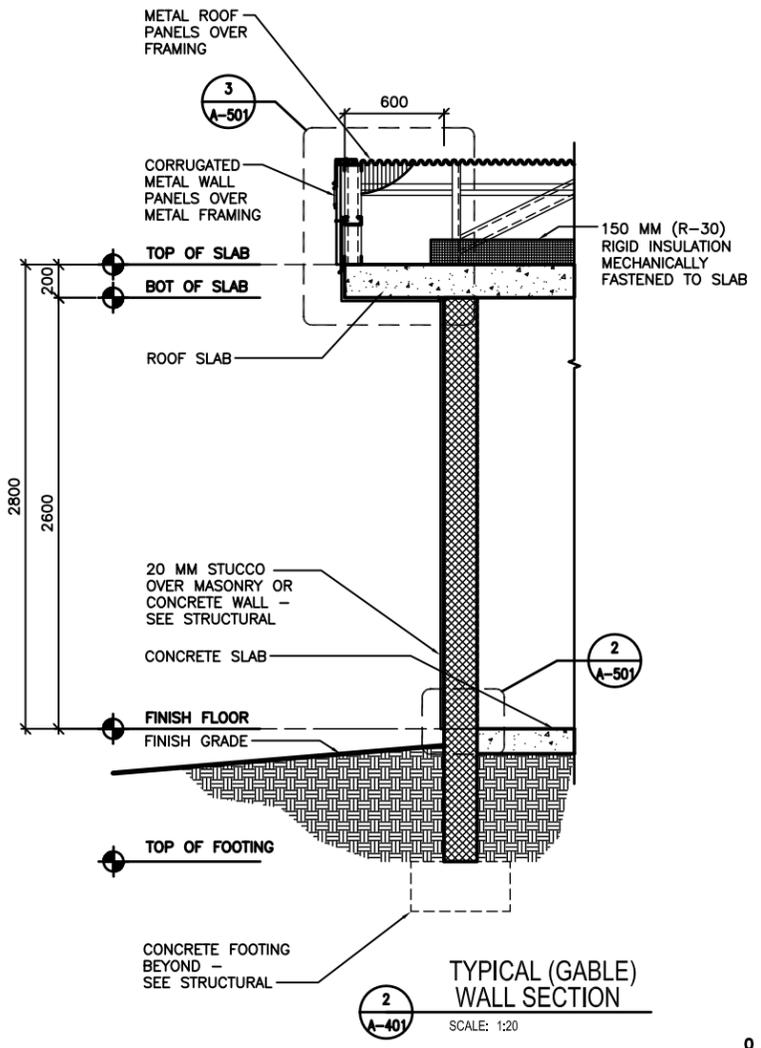
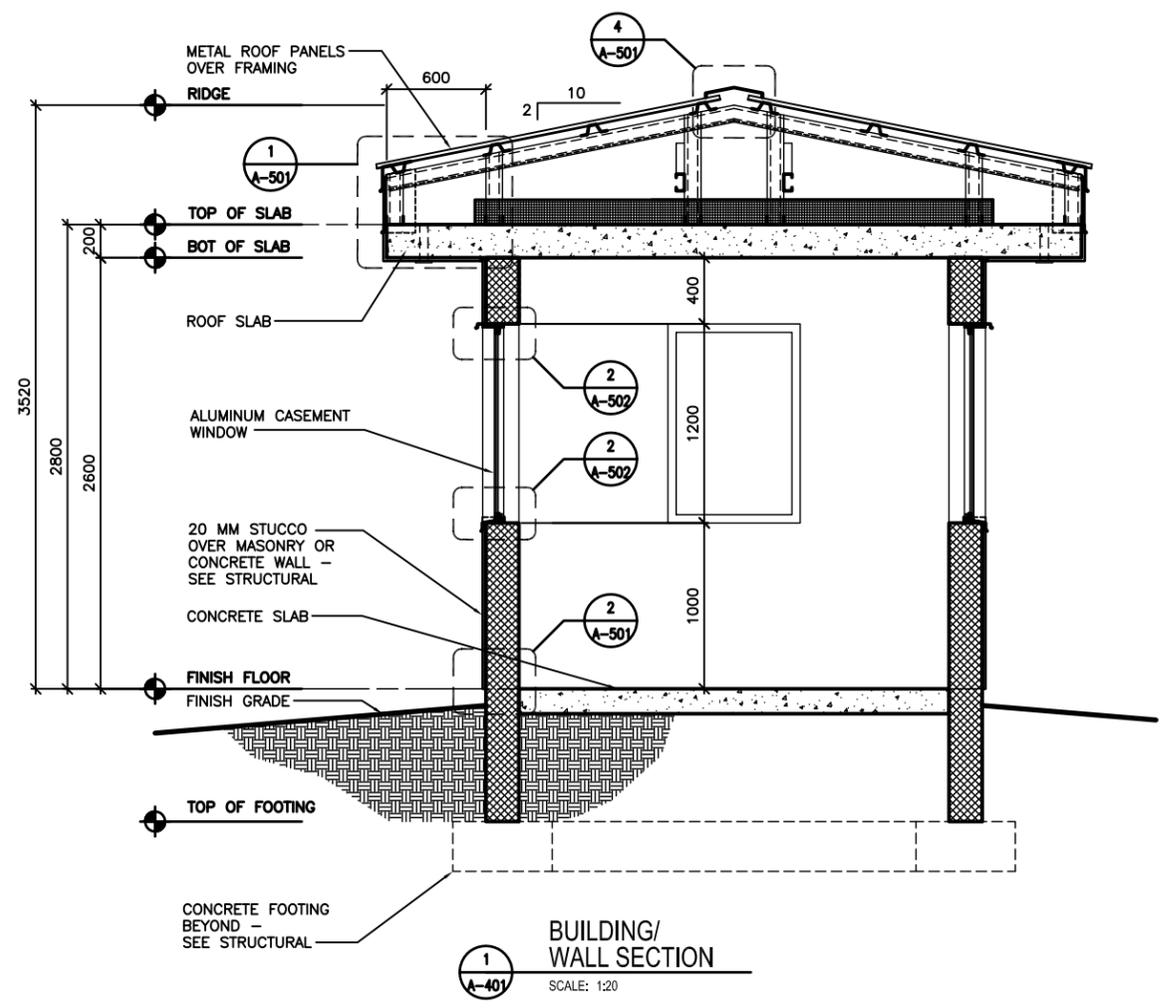


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Date	2/23/10	Design file no.		Drawing code		File name	AWP/08A-401
						Plot date	6/2/2010
						Plot scale	X07

STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
WALL SECTIONS

Sheet
reference
number:
A-401



LINEAR DIMENSIONS SHOWN
ARE IN MILLIMETERS (MM),
UNLESS OTHERWISE NOTED

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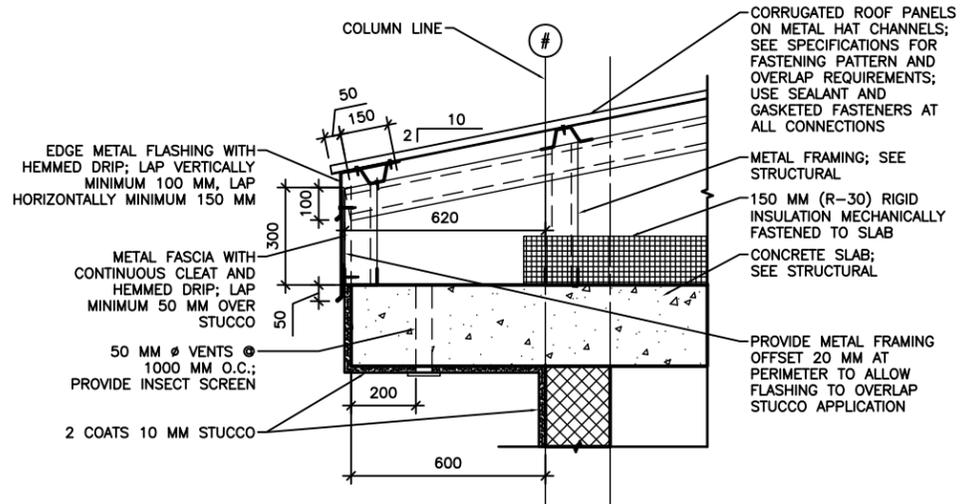


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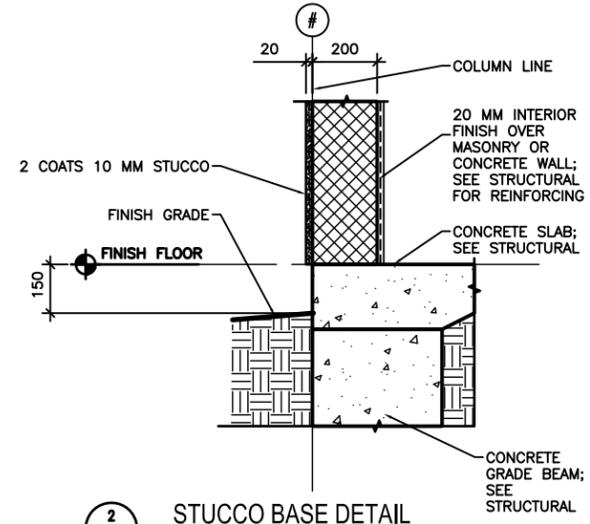
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Designed by: KRC Dwn by: AAR Ckd by: NLJ Reviewed by: LHM Submitted by: BAKER	U.S. ARMY CORPS OF ENGINEERS AFGHANISTAN ENGINEER DISTRICT APO AE 96338 Michael Baker Jr., Inc. A unit of Michael Baker Corporation 4000 Moon Township, PA 15108 www.mbakercorp.com

STANDARD DESIGN
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
EXTERIOR
DETAILS

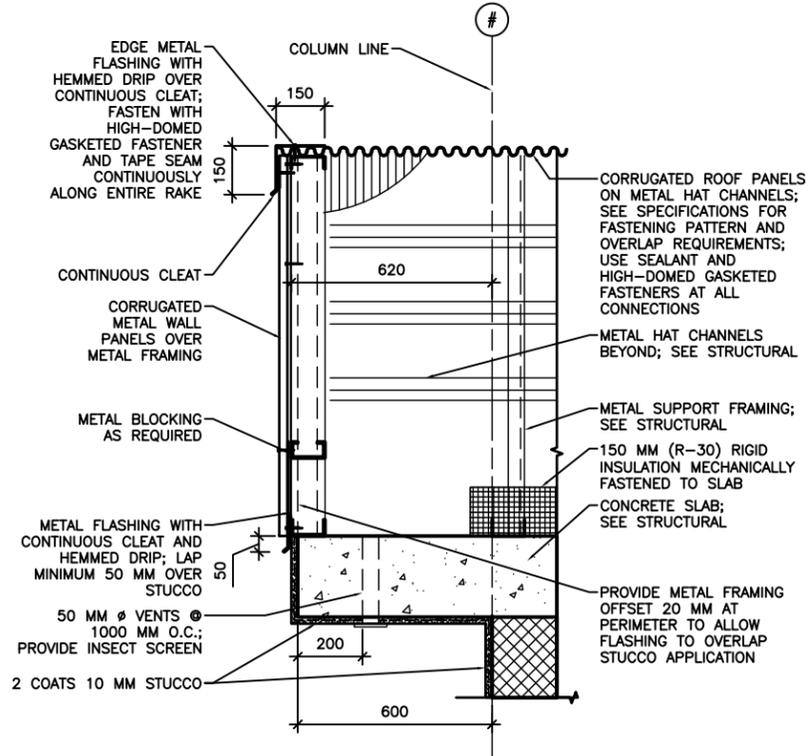
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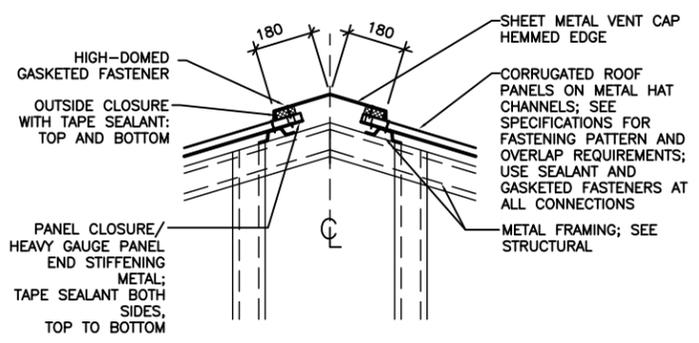
1 EAVE DETAIL
SCALE: 1:10



2 STUCCO BASE DETAIL
SCALE: 1:10



3 RAKE/EAVE DETAIL
SCALE: 1:10



4 RIDGE VENT DETAIL
SCALE: 1:10

LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS (MM), UNLESS OTHERWISE NOTED



APPROVED: _____
A/E DESIGNER OF RECORD
SEAL: _____

1

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Rev.	Date	Description	Appr.	Date
0	2/23/10			

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Date: 2/23/10	Design file no.	Drawing code:	File name: AAF08A502
			Plot date: 6/12/10
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STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
HEAD, JAMB & SILL
DETAILS

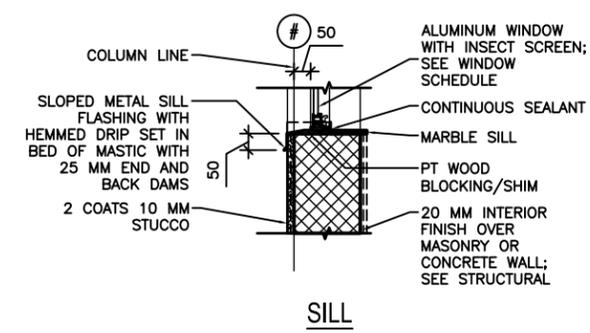
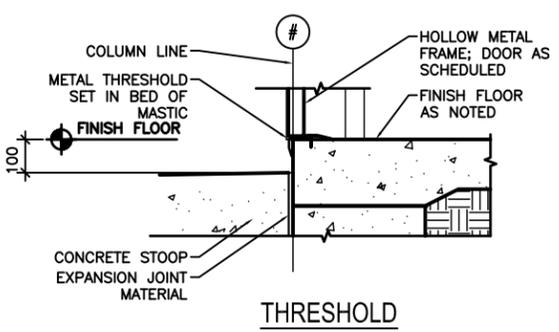
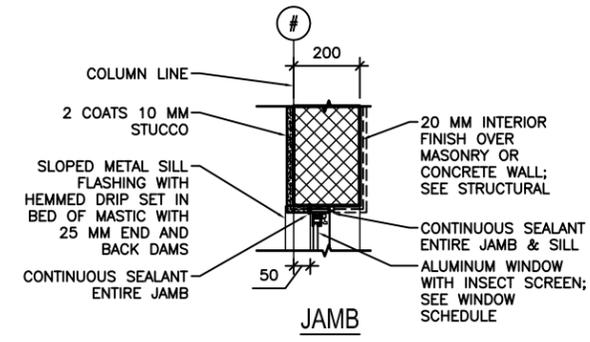
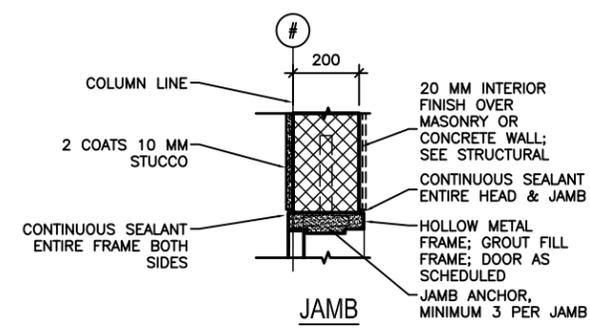
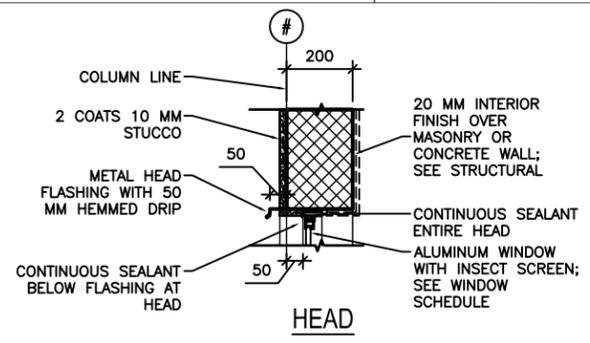
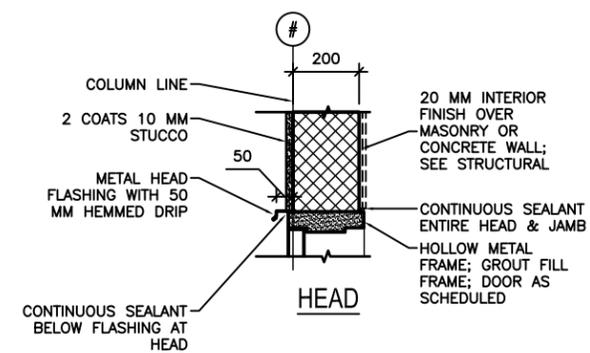
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D

C

B

A



1 EXTERIOR DOOR DETAILS
SCALE: 1:10

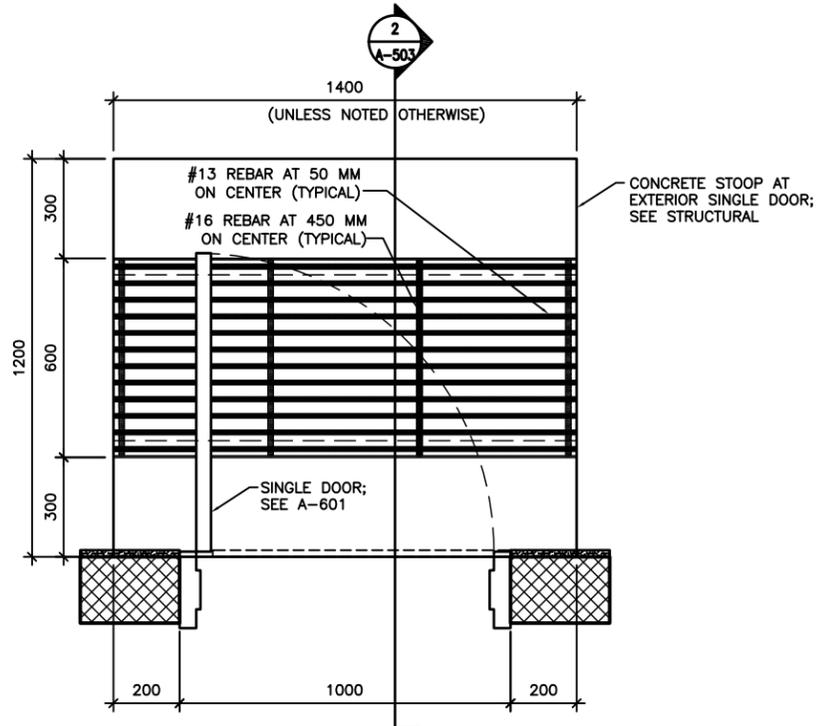
2 EXTERIOR WINDOW DETAILS
SCALE: 1:10

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UNLESS OTHERWISE NOTED

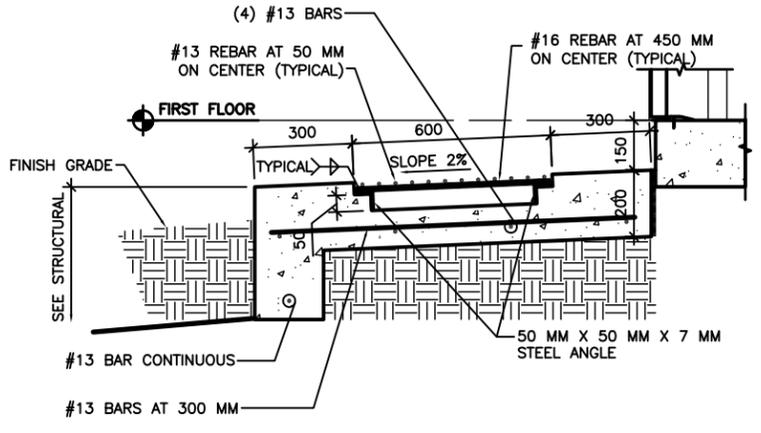


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A/E DESIGNER OF RECORD
SEAL:



1 DOOR STOOP PLAN (WITH GRATE)
A-503 SCALE: 1:10



2 DOOR STOOP DETAIL
A-503 SCALE: 1:10

Rev.	Date	Description	Mark	Appr.
0	2/23/10	Design file no.		
		Drawing code:		
		File name: AAF08A-503		
		Plot date: 04/20/10		
		Plot scale: X07		

Designed by: KFC	Checked by: NLJ	U.S. ARMY CORPS OF ENGINEERS AFGHANISTAN ENGINEER DISTRICT APO AE 96338
Drawn by: AAR	Reviewed by: LHM	Michael Baker Corp., Inc. A unit of Michael Baker Corporation 100 Airside Drive, Suite 15108 www.mbakercorp.com
Submitted by: BAKER		

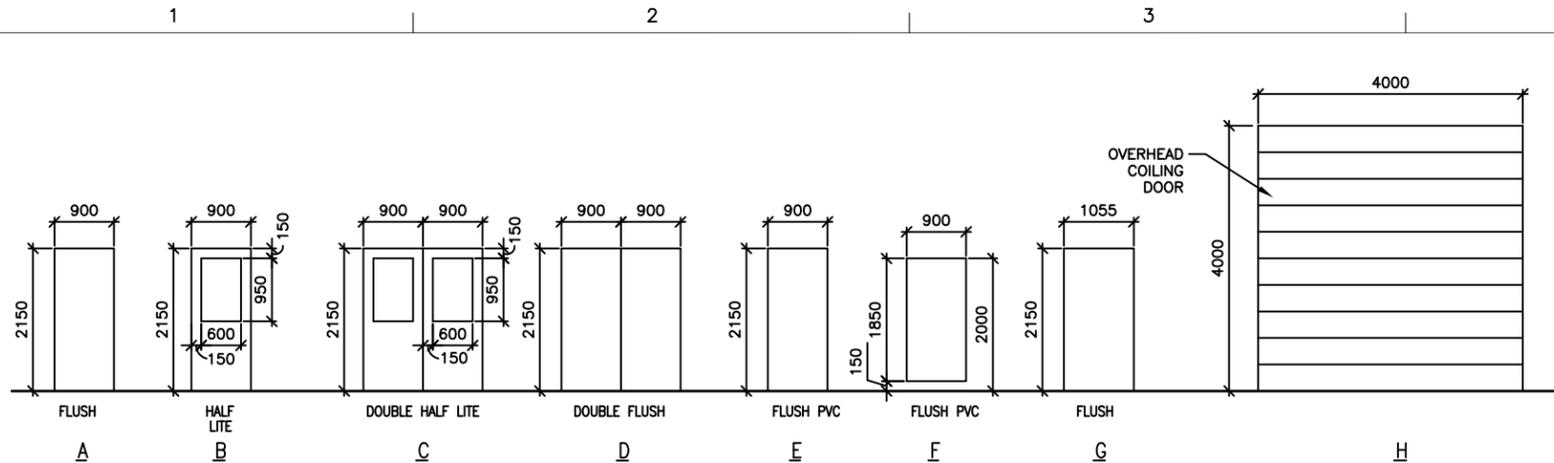
STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
STOOP
DETAILS

APPROVED:

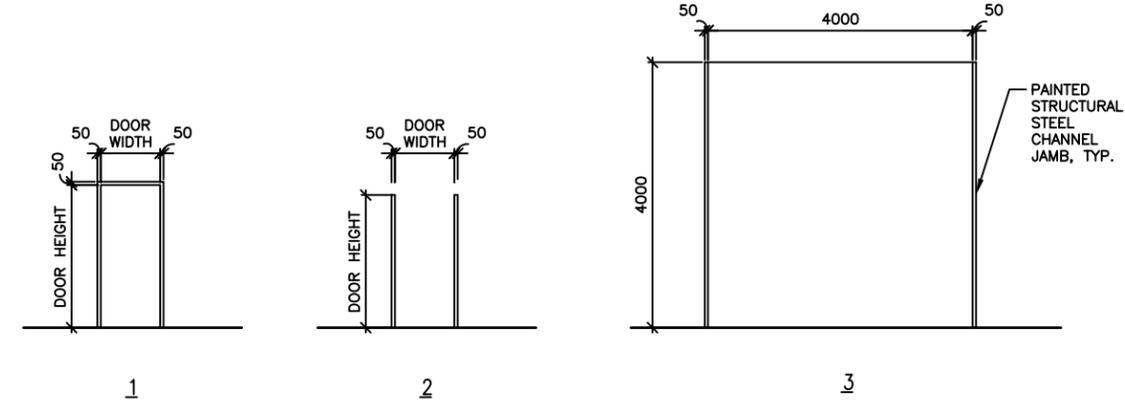
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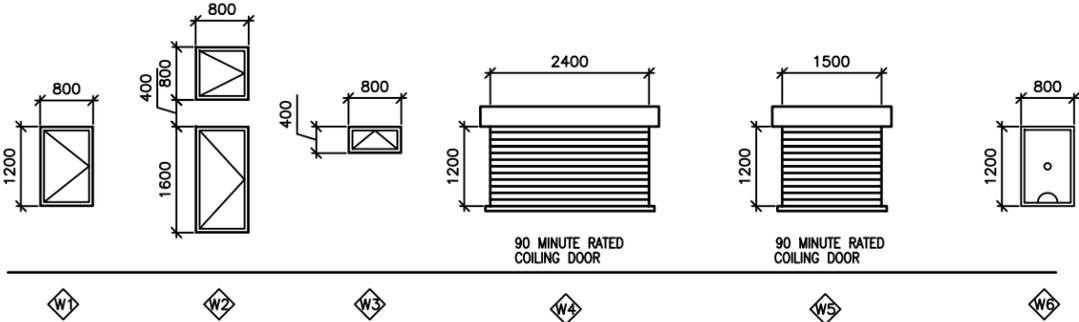
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SCALE: 1:10



1 DOOR TYPES
A-601 SCALE: 1:50



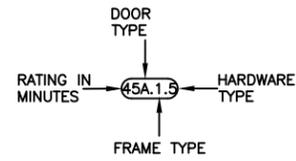
2 FRAME TYPES
A-601 SCALE: 1:50



3 WINDOW TYPES
A-601 SCALE: 1:50



4 DOOR TAG
A-601 SCALE: NTS



5 RATED DOOR TAG
A-601 SCALE: NTS

WINDOW TYPE NOTES:

1. ALL EXTERIOR WINDOWS SHALL BE ALUMINUM WITH INSECT SCREENS. WINDOWS SHALL BE COMMERCIAL GRADE.
2. ALL EXTERIOR WINDOWS SHALL BE OPERABLE.

DOOR TAG NOTES:

1. THE DOOR TAG INDICATES THE DOOR TYPE, FRAME TYPE AND HARDWARE SET FOR EACH DOOR.
2. THE DOOR TAG FOR RATED DOORS INCLUDES THE RATING OF THE DOOR IN MINUTES.

EXTERIOR DOOR HARDWARE TYPES:

- HW-1 1-1/2 PR HINGES, A5112 114 X 114
1 EA RIM EXIT DEVICE, TYPE 1
1 EA CYLINDER, E09221A, GRADE 1
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
1 EA THRESHOLD, J32130
3 EA DOOR SILENCERS, L03011
- HW-2 1-1/2 PR HINGES, A5112 114 X 114
1 EA LOCKSET, F13 ENTRY LOCK W/LEVER HANDLES, GRADE 1
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
1 EA THRESHOLD, J32130
3 EA DOOR SILENCERS, L03011
- HW-3 3 PR HINGES, A5112 114 X 114
2 EA RIM EXIT DEVICE, TYPE 1
2 EA CYLINDER, GRADE 1
2 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
1 EA DOOR COORDINATOR, TYPE 21
1 EA ASTRAGAL
1 EA THRESHOLD, J32130
2 EA DOOR SILENCERS, L03011
- HW-4 3 PR HINGES, A5112 114 X 114
1 EA LOCKSET W/LEVER HANDLES, GRADE 1, F13
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
2 EA MAGNETIC HOLDER PIN, ATTACHED TO DOOR LEAF
2 EA MAGNETIC HOLDER RECEIVER, ATTACHED TO STOOP
2 EA LEVER EXTENSION FLUSH BOLTS, L04081
1 EA ASTRAGAL
1 EA THRESHOLD, J32130
2 EA DOOR SILENCERS, L03011

DOOR AND HARDWARE NOTES:

1. INTERIOR AND EXTERIOR METAL DOORS AND FRAME COLORS SHALL MATCH ADJACENT WALL COLORS AS SELECTED BY THE CONTRACTING OFFICER.
2. FRAMES, EXCEPT FIRE-RATED FRAMES, SHALL BE MOUNTED AND ADJUSTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FRAMES SHALL BE FASTENED WITH MINIMUM OF THREE ANCHORS PER JAMB AT EQUAL INTERVALS.
3. DIMENSIONS SHOWN ON DOOR TYPES DETAIL ARE BASED UPON MODULAR MASONRY (OR ROUGH OPENING), HEIGHT OF 2200 MM FOR STANDARD PERSONNEL DOORS. CONTRACTOR SHALL COORDINATE WITH DOOR SUPPLIER TO ENSURE THAT DIMENSIONS OF DOORS AND FRAMES PROVIDED ARE COMPATIBLE WITH DOOR OPENING DIMENSIONS.
4. HARDWARE SHALL BE HEAVY DUTY, COMMERCIAL GRADE, STAINLESS STEEL WITH A SATIN OR BRUSHED FINISH.
5. HARDWARE TYPES INCLUDE BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BMHA) NUMBER.
6. DOORS IN 2 HOUR RATED PARTITIONS SHALL BE 1.5 HOUR (90 MINUTE) RATED DOORS IN ACCORDANCE WITH NFPA 101, TABLE 8.3.4.2.
7. DOORS AT STAIR ENCLOSURES SHALL BE 1 HOUR (60 MINUTE) RATED AT 1 HOUR WALL IN ACCORDANCE WITH NFPA 101, TABLE 8.3.4.2.
8. DOORS IN 1 HOUR RATED WALLS SHALL BE 3/4 HOUR (45 MINUTE) RATED DOORS IN ACCORDANCE WITH NFPA 101, TABLE 8.3.4.2.
9. DOORS IN 1 HOUR RATED CORRIDOR WALLS SHALL BE 1/3 HOUR (20 MINUTE) IN ACCORDANCE WITH NFPA 101, TABLE 8.3.4.2.
10. PROVIDE DOOR STOPS TO PROTECT WALLS ON LOCATIONS WHERE DOOR SWING WILL STRIKE WALL.

THIS SHEET IS STANDARD AND IS INCLUSIVE OF ALL THE DOOR/WINDOW/ HARDWARE TYPES FOR THE ENTIRE RMTC CONTRACT. NOT ALL DOOR/ WINDOW/ HARDWARE TYPES ARE USED FOR ANY PARTICULAR BUILDING DESIGN. CONTRACTOR SHALL REFER TO THE FLOOR PLAN FOR THE TYPES BEING USED.

INTERIOR DOOR HARDWARE TYPES:

- HW-5 1-1/2 PR HINGES, A8133 114 X 114
1 EA LOCKSET W/LEVER HANDLES, F08, GRADE 1
1 EA WALL STOP, L02101 OR L02161
3 EA DOOR SILENCERS, L03011
- HW-6 1-1/2 PR HINGES, A8112 114 X 114
1 EA LOCKSET W/LEVER HANDLES, F08, GRADE 1
1 EA WALL STOP, L02101 OR L02161
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
3 EA DOOR SILENCERS, L03011
- HW-7 1-1/2 PR HINGES, A8133
1 EA LOCKSET W/LEVER HANDLES, F13 GRADE 1
1 EA WALL STOP, L02101 OR L02161
2 EA MOP PLATE, J103
3 EA DOOR SILENCERS, L03011
- HW-8 1-1/2 PR HINGES, A8112
1 EA LOCKSET W/LEVER HANDLES, F13 GRADE 1
1 EA WALL STOP, L02101 OR L02161
2 EA MOP PLATE, J103
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
3 EA DOOR SILENCERS, L03011
- HW-9 1-1/2 PR HINGES, A5112 114 X 114
1 EA RIM EXIT DEVICE, TYPE 1
1 EA CYLINDER, E09221A, GRADE 1
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
3 EA DOOR SILENCERS, L03011
- HW-10 3 PR HINGES, A5112 114 X 114
1 EA LOCKSET W/LEVER HANDLES, GRADE 1, F13
2 EA LEVER EXTENSION FLUSH BOLTS, L04081
1 EA ASTRAGAL
2 EA DOOR SILENCERS, L03011
- HW-11 1-1/2 PR HINGES, A8112 114 X 114
1 EA LOCKSET W/LEVER HANDLES, F13, GRADE 1
1 EA WALL STOP, L02101 OR L02161
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
3 EA DOOR SILENCERS, L03011
1 EA ROBE HOOK
- HW-12 1-1/2 PR HINGES, A8133
1 EA LATCHSET W/LEVER HANDLES, F76 GRADE 1
1 EA WALL STOP, L02101 OR L02161
2 EA MOP PLATE, J103
3 EA DOOR SILENCERS, L03011
1 EA ROBE HOOK
- HW-13 3 PR HINGES, A5112 114 X 114
1 EA LOCKSET W/LEVER HANDLES, GRADE 1, F13
1 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
2 EA LEVER EXTENSION FLUSH BOLTS, L04081
1 EA ASTRAGAL
2 EA DOOR SILENCERS, L03011
- HW-14 3 PR HINGES, A5112 114 X 114
2 EA RIM EXIT DEVICE, TYPE 1
2 EA CYLINDER, GRADE 1
2 EA OVERHEAD CLOSER, C02061, LOW RESISTANCE
1 EA DOOR COORDINATOR, TYPE 21
1 EA ASTRAGAL
2 EA DOOR SILENCERS, L03011



Rev.	Date	Description
0	2/23/10	Design file no.

Designed by: KFC	Checked by: AAR	Drawn by: NLJ	Reviewed by: LHM	Submitted by: BAKER
U.S. ARMY CORPS OF ENGINEERS AFGHANISTAN ENGINEER DISTRICT APO AE 96338 Michael Baker Jr., Inc. A unit of Michael Baker Corporation 100 Arapahoe Drive Suite 15108 www.mbakercorp.com				

STANDARD DESIGN VARIOUS PROJECTS VARIOUS LOCATIONS, AFGHANISTAN FUEL OPERATORS BUILDING WINDOW AND DOOR SCHEDULES

APPROVED:

A/E DESIGNER OF RECORD
SEAL:

Sheet reference number:
A-601

POWER

- DISTRIBUTION PANELBOARD
- NEW PANELBOARD - SURFACE
- NEW PANELBOARD - RECESSED
- GENERATOR
- TRANSFORMER (DRAWN TO SIZE)
- JUNCTION BOX
- JUNCTION BOX - CEILING
- FUSIBLE SAFETY SWITCH
- MOTOR
- MOTOR STARTING SWITCH - 220V, 20A RATED UNLESS OTHERWISE NOTED
- EMERGENCY POWER OFF BUTTON
- ELECTRIC WATER HEATER
- CEILING FAN - REFER TO SPECIFICATION SECTION 26 20 00

RECEPTACLES

- DUPLEX 20A TYPE CEE 7/7 "SCHUKO STYLE" UNSWITCHED RECEPTACLE
- DUPLEX 20A TYPE CEE 7/7 "SCHUKO STYLE" UNSWITCHED RECEPTACLES - 10mA GROUND FAULT INTERRUPTER TYPE
- DUPLEX 20A TYPE CEE 7/7 "SCHUKO STYLE" UNSWITCHED TYPE WITH WEATHERPROOF COVER - 10mA GROUND FAULT INTERRUPTER TYPE
- DUPLEX 20A TYPE CEE 7/7 "SCHUKO STYLE" UNSWITCHED RECEPTACLES - EXPLOSION PROOF
- INDICATES MOUNT DEVICE ABOVE COUNTERTOP OR AT 1070mm ABOVE FINISHED FLOOR WHERE NO COUNTER IS TO BE INSTALLED.

LIGHTING

- LIGHTING FIXTURE - SEE FIXTURE SCHEDULE FOR MORE INFORMATION
- EMERGENCY LIGHTING FIXTURE - SEE FIXTURE SCHEDULE FOR MORE INFORMATION
- DOWNLIGHT
- LIGHTING FIXTURE ON NORMAL/EMERGENCY
- WALL MOUNTED LIGHT FIXTURE
- EXIT SIGN - DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS
- REMOTE HEAD FOR BATTERY PACK
- SINGLE POLE SWITCH - 20A RATED
- 3-WAY SWITCH - 20A RATED
- 4-WAY SWITCH - 20A RATED

RECEPTACLES

- LIGHTING CONTACTOR
- POLE MOUNTED SITE LIGHTING FIXTURE - NUMBER OF FIXTURES PER POLE AS INDICATED ON DRAWINGS
- EXTERIOR DIRECTIONAL LIGHTING FIXTURE
- SMALL CASE LETTERS REPRESENTS LAMP(S) / SWITCHES.

TELECOMMUNICATIONS

- TELEPHONE OUTLET(S) @ 45cm AFF. U.N.O. WITH 20mm RACEWAY TERMINATED TO TELEDATA TERMINAL BOARD.
- DATA OUTLET(S) @ 45cm AFF. U.N.O. WITH 20mm RACEWAY TERMINATED TO TELEDATA TERMINAL BOARD.

TELECOMMUNICATIONS (CONTINUED)

- COMBINATION TELEPHONE/DATA OUTLET(S) @ 45cm AFF. U.N.O. WITH 27mm RACEWAY TERMINATED TO TELEDATA TERMINAL BOARD.
- WALL MTD. TELEPHONE OUTLET WITH 20mm RACEWAY TO TELEDATA TERMINAL BOARD.
- INDICATES NUMBER OF TELEPHONE OUTLET(S) AND ASSOCIATED CABLING
- INDICATES NUMBER OF DATA OUTLET(S) AND ASSOCIATED CABLING
- INDICATES NUMBER OF TELEPHONE OUTLETS AND ASSOCIATED CABLING WITH 1 OUTLET AND CABLE DEDICATED FOR FAX

SINGLE LINE SYMBOLS

- SWITCH
- BREAKER
- FUSE
- TRANSFORMER
- GROUND
- CONTACT (NORMALLY OPEN)
- CONTACT (NORMALLY CLOSED)
- TRANSFER SWITCH
- CURRENT TRANSFORMER
- INDICATES NEW ELECTRICAL EQUIPMENT
- INDICATES NEW CONTROL WIRING AND CONDUIT
- EQUIPMENT OUTLINE

MISCELLANEOUS

- BRANCH CIRCUIT WIRING, SURFACE MOUNTED ON WALLS
- BRANCH CIRCUIT WIRING - 6mm²
- BRANCH CIRCUIT WIRING - UNDER FLOOR
- HOME RUN BACK TO PANEL
- CONDUIT TURNED DOWN
- CONDUIT TURNED UP
- LOW VOLTAGE WIRING AND CONDUIT
- INDICATES CONTINUATION OF LINE

FIRE ALARM

- FIRE ALARM CONTROL PANEL WITH BATTERY BACKUP
- FIRE ALARM PULL STATION

FIRE ALARM (CONTINUED)

- FIRE ALARM STROBE - WALL MOUNTED
- FIRE ALARM AUDIBLE/STROBE - WALL MOUNTED
- FIRE ALARM HORN/STROBE - WALL MOUNTED
- SMOKE DETECTOR
- HEAT DETECTOR CEILING MOUNTED
- DUCT DETECTOR - PROVIDED BY EC, INSTALLED BY MC AND CONNECTED BY EC

DENOTATIONS & ABBREVIATIONS

- ABOVE FINISHED FLOOR
- CEILING MOUNTED
- EMERGENCY
- ELECTRICAL CONTRACTOR
- EMERGENCY POWER OFF
- EXPLOSION PROOF
- FIRE ALARM
- FLUSH FLOOR MOUNTED
- FLUORESCENT
- FIBER OPTIC
- FUSED SAFETY SWITCH
- GROUND FAULT INTERRUPTER
- GENERAL CONTRACTOR
- ISOLATED GROUND
- KEY
- LOW VOLTAGE
- MOTOR
- MECHANICAL CONTRACTOR
- NORMAL/EMERGENCY
- NON-FUSED SAFETY SWITCH
- PAGING SYSTEM
- PLUMBING CONTRACTOR
- SINGLE LINE
- TELEPHONE

DENOTATIONS & ABBREVIATIONS (CONT.)

- TAMPER PROOF
- UNDERGROUND ELECTRIC
- WALL MOUNTED
- WEATHERPROOF WITH GROUND FAULT INTERRUPTION
- WATER TIGHT

GENERAL PROJECT NOTES:

- G1. UNLESS OTHERWISE NOTED, PROVIDE ALL EQUIPMENT SHOWN ON THE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL SYMBOLS SHOWN ON THE PLANS WITH THE SYMBOL LIST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INTENT OF ANY SYMBOL THAT IS SHOWN ON THE PLANS AND NOT INDICATED ON THE SYMBOL LIST WITH THE ENGINEER PRIOR TO BID.
- G2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE CONSTRUCTION AREA THREE (3) WORKING DAYS NOTICE BEFORE COMMENCING DIGGING. NOTIFY THE LOCAL AUTHORITY HAVING JURISDICTION AND WAIT THE REQUIRED TIME BEFORE COMMENCING TO DIG.
- G3. THE CONTRACTOR SHALL COORDINATE CONDUIT RUNS, LIGHTING FIXTURES AND OTHER EQUIPMENT LOCATIONS WITH THE OTHER TRADE CONTRACTORS TO AVOID CONFLICTS.
- G4. WHERE VOLTAGES AND FREQUENCIES ON THE DRAWINGS AND IN THE SPECIFICATIONS DIFFER FROM THE LOCAL ONES, ALL WORK SHALL BE PERFORMED USING THE LOCAL VOLTAGES AND FREQUENCIES.
- G5. THE MINIMUM WIRE SIZE ON THE PROJECT SHALL BE 4mm². THE MINIMUM CONDUIT SIZE SHALL BE 20mm. THE MINIMUM BREAKER SIZE SHALL BE 20 AMPS.
- G6. THE CONTRACTOR SHALL PUT A MAXIMUM OF 6 DUPLEX RECEPTACLES ON A 20A SINGLE POLE CIRCUIT.
- G7. WHERE THE 1010 SCOPE REVIEW, 1015 TECHNICAL REVIEW, DRAWINGS, AND SPECIFICATIONS DIFFER FROM AMERICAN CODES OR STANDARDS, THE 1010, 1015, DRAWINGS, AND SPECIFICATIONS SHALL RULE.
- G8. ALL CONDUIT AND DEVICES SHALL BE SURFACE MOUNTED UNLESS OTHERWISE INDICATED.
- G9. CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES TO ENSURE ALL WORK IS COMPLETED IN A PROFESSIONAL, WORKMAN-LIKE MANNER.



Rev	Date	Description	Mark	Appr.
0	2/23/10	Design file no.		
		Drawing code		
		File name		
		Plot date		
		Plot code		

Designed by JRG	Checked by EJB	Reviewed by JRG	Submitted by BAKER
U.S. ARMY CORPS OF ENGINEERS AFGHANISTAN ENGINEER DISTRICT APO AE 96338 Michael Baker Jr., Inc A unit of Michael Baker Corporation Attn: Business Park 100 Arside Drive, #14 Harrisburg, PA 17108 www.mbakercorp.com			

STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
ELECTRICAL SYMBOLS & ABBREVIATIONS

APPROVED:

A/E DESIGNER OF RECORD
SEAL:

Sheet
reference
number:
E-001

1

2

3

4

5

FIXTURE MARK 'C'



FIXTURE MARK 'G'



LIGHT FIXTURE SCHEDULE

FIXTURE MARK	STYLE NUMBER AND TYPE	NUMBER AND TYPE OF LAMPS	VOLTAGE	MOUNTING	NOTES
C	INCANDESCENT ONE PIECE W/ APPROVED LENS STABILIZED HIGH IMPACT POLY CARBONATE.	(1) A19 - 100W INCANDESCENT	220V - 1ø 50HZ	WALL MOUNTED ABOVE EXTERIOR DOORS	
G	WRAP AROUND SURFACE/PENDANT MOUNTED FLUORESCENT FIXTURE WITH PRISMATIC ACRYLIC LENS AND ELECTRONIC BALLAST	(2) 32W 3500K	220V - 1ø 50HZ	SURFACE MOUNTED	FURNISHED WITH ELECTRONIC BALLAST, VIRGIN ACRYLIC WRAP AROUND LENS.
G2	SAME AS FIXTURE 'G' WITH EMERGENCY BALLAST	(2) 32W 3500K	220V - 1ø 50HZ	SURFACE MOUNTED	FURNISHED WITH ELECTRONIC BALLAST, VIRGIN ACRYLIC WRAP AROUND LENS, EMERGENCY BALLAST WITH SELF TEST SWITCH.
	WEATHERPROOF BATTERY POWERED EMERGENCY LIGHT WITH 90 MINUTE MINIMUM RUN TIME.	(1) 12W/12V HALOGEN LAMP	220V - 1ø 50HZ	EXTERIOR WALL MOUNTED AT TOP OF DOOR HEIGHT	



Rev	Date	Description	Mark	Appr.	Date
0	2/23/10				

Designed by: JRG	Checked by: EUB	Reviewed by: JRG	Submitted by: BAKER
Date: 2/23/10	Design file no.:	Drawing code:	File name: Prot site: Prot code:

STANDARD DESIGN
VARIOUS PROJECTS
VARIOUS LOCATIONS, AFGHANISTAN
FUEL OPERATORS BUILDING
ELECTRICAL LIGHT FIXTURE SCHEDULE

APPROVED:

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Sheet
reference
number:
E-601

D

C

B

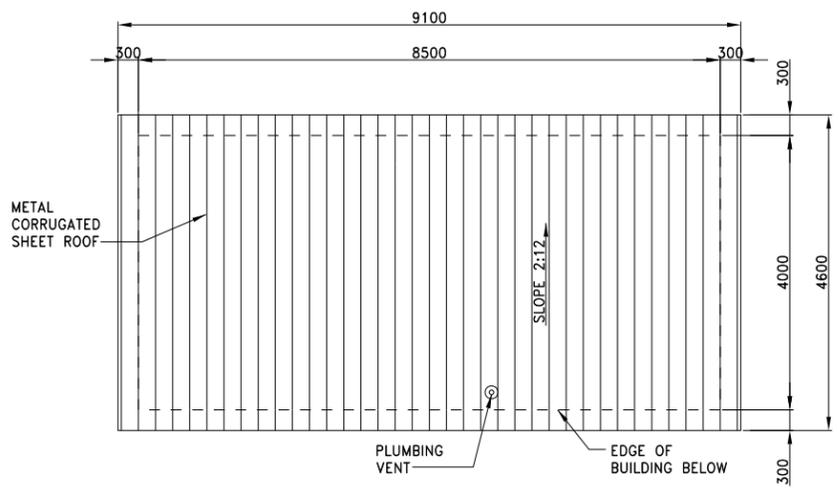
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***ANA REGIONAL BRIGADE
HERAT, AFGHANISTAN***

***TASK ORDER NO. 0004
WASTEWATER SYSTEM (900)***

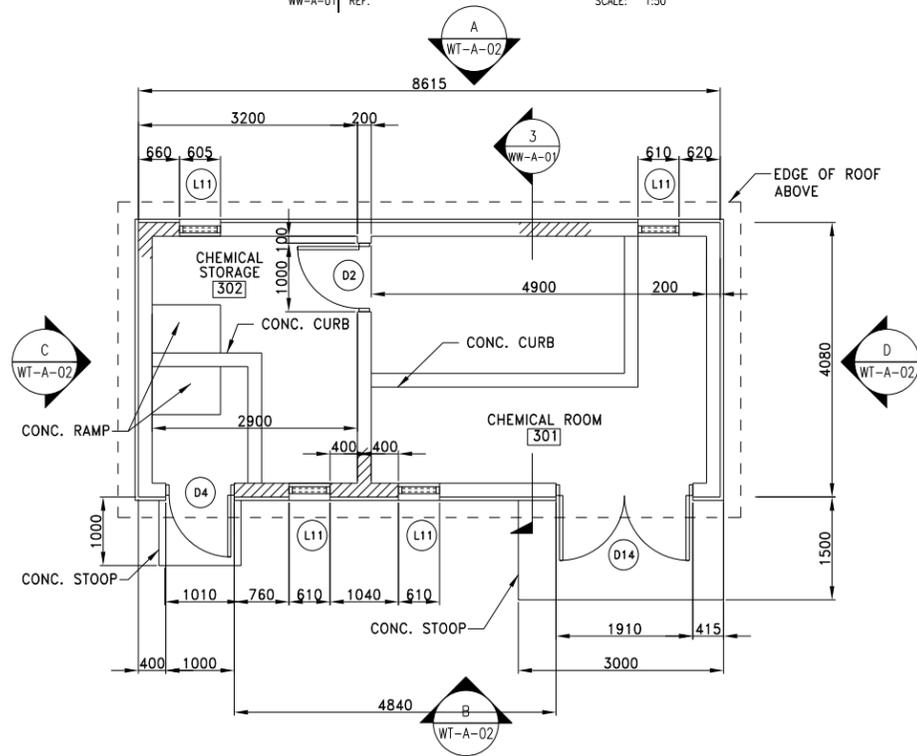
FOR REFERENCE ONLY

Client:  U.S. ARMY CORPS OF ENGINEERS TRANSATLANTIC PROGRAMS CENTER	Contractor: 	Designer: DMJMH+N		ISSUER: 
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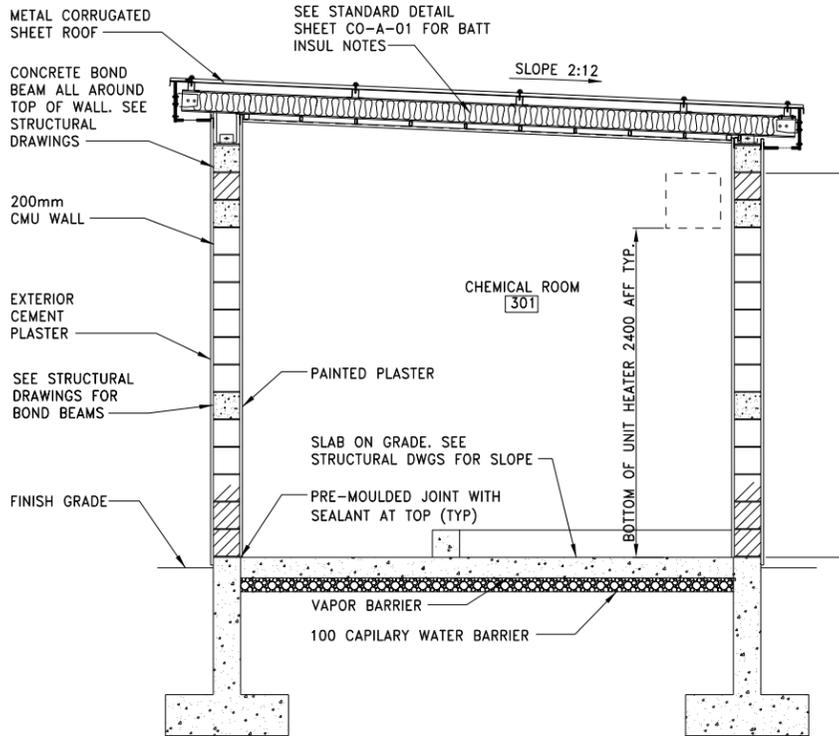
2 ROOF PLAN

WW-A-01 REF. SCALE: 1:50



1 FLOOR PLAN

WW-A-01 REF. SCALE: 1:50



3 SECTION

WW-A-01 REF. SCALE: 1:25

WALL SYMBOLS:

CMU TO STRUCTURAL ROOF DECK

FINISHING SCHEDULE LEGEND FLOOR

- F1 SEALED CONCRETE
- F2 PROTECTIVE COATING

WALL

- W1 WHITE PAINT FINISH

CEILING

- C1 PAINTED GWB

FINISH SCHEDULE

Room No.	USAGE	FLOOR	WALL	CEILING
301	CHEMICAL ROOM	F2	W1	C1
302	CHEMICAL STORAGE	F2	W1	C1

- 1-SEE DRAWING CO-A-03 FOR OPENING SCHEDULES AND TYPES.
- 2-ALL WALLS TERMINATE AT ROOF DECK LEVEL UNLESS NOTED OTHERWISE.
- 3-ALL DIMENSIONS ARE FACE OF CMU UNLESS NOTED OTHERWISE.
- 4-ALL VERTICAL DIMENSIONS ARE FROM GROUND FLOOR FINISHED SLAB. THIS ELEVATION IS +0000.
- 5-SEE DRAWINGS CO-A-01, CO-S-02 AND CO-A-02 FOR STANDARD DETAILS.
- 6-SEE CIVIL DRAWINGS FOR BUILDING COORDINATES AND FINISH FLOOR ELEVATIONS.
- 7-SEE DRAWING WT-A-01 FOR WALL SYMBOLS, FINISH SCHEDULE LEGEND AND FINISH SCHEDULE.
- 8-SEE DRAWING CO-A-02 FOR THRESHOLD TYPE AND REQUIREMENTS



DWG. NO.	DRAWING TITLE	REVISIONS				
	REFERENCE DRAWINGS					
1	OCT. - 2005	AS BUILT				
REV.	Date	DESCRIPTION	Prep.	Drawn	Check	Appr.

CLIENT: U.S. ARMY CORPS OF ENGINEERS
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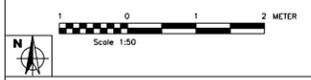
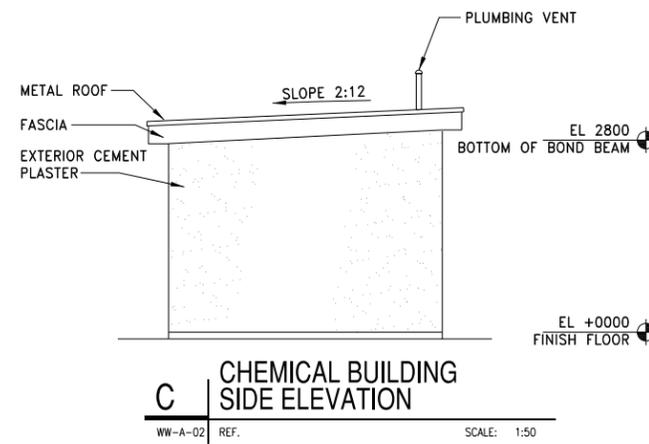
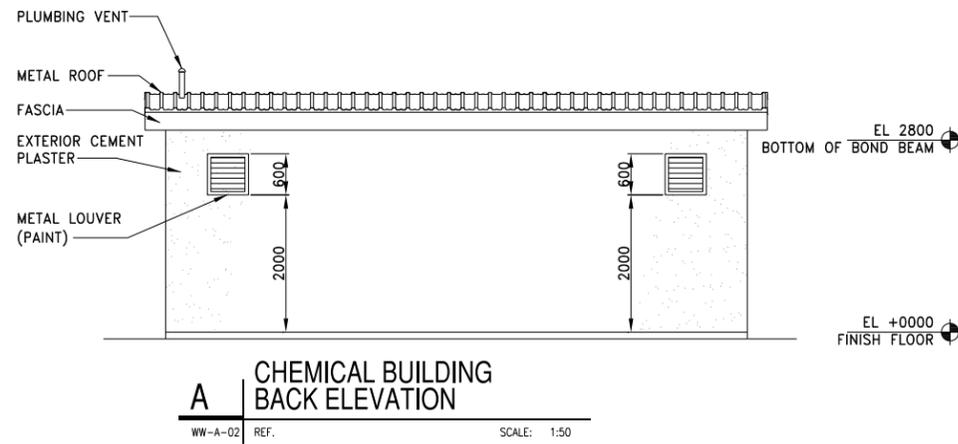
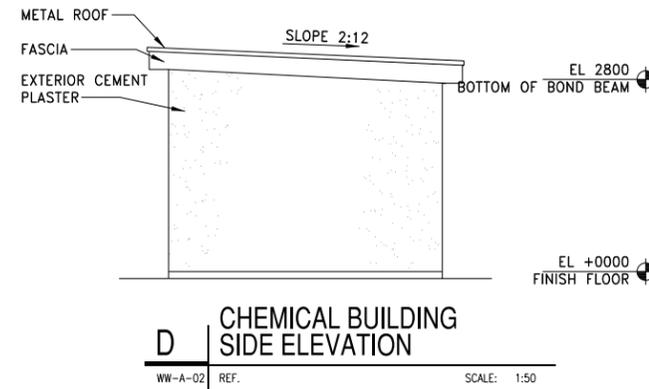
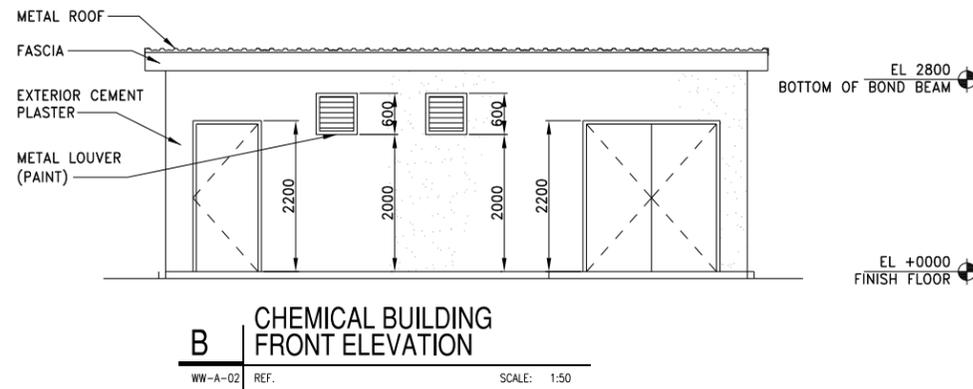
DESIGNER: DMJMH-IN
1001 N. 19th Street - Suite 1100 Arlington, VA 22209-4000
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PROJECT: ANA BRIGADE FACILITIES HERAT AFGHANISTAN

TITLE: WASTEWATER SYSTEM (900) CHEMICAL BUILDING PLANS AND SECTION

AS BUILT

ACTION	NAME	DATE	DOCUMENT NO.	Task
Prepared By	XXXXXX		CAD FILE: A444444.dwg	WW-A-01
Drawn By	XXXXXX			
Checked By			Scale: AS NOTED	
Approved By			Scale: AS NOTED	



DWG. NO.	DRAWING TITLE	REVISIONS	REMARKS
	REFERENCE DRAWINGS		
1	OCT. - 2005	AS BUILT	
REV.	Date	DESCRIPTION	Prep. Draw. Check. App.

CLIENT : U.S. ARMY CORPS OF ENGINEERS
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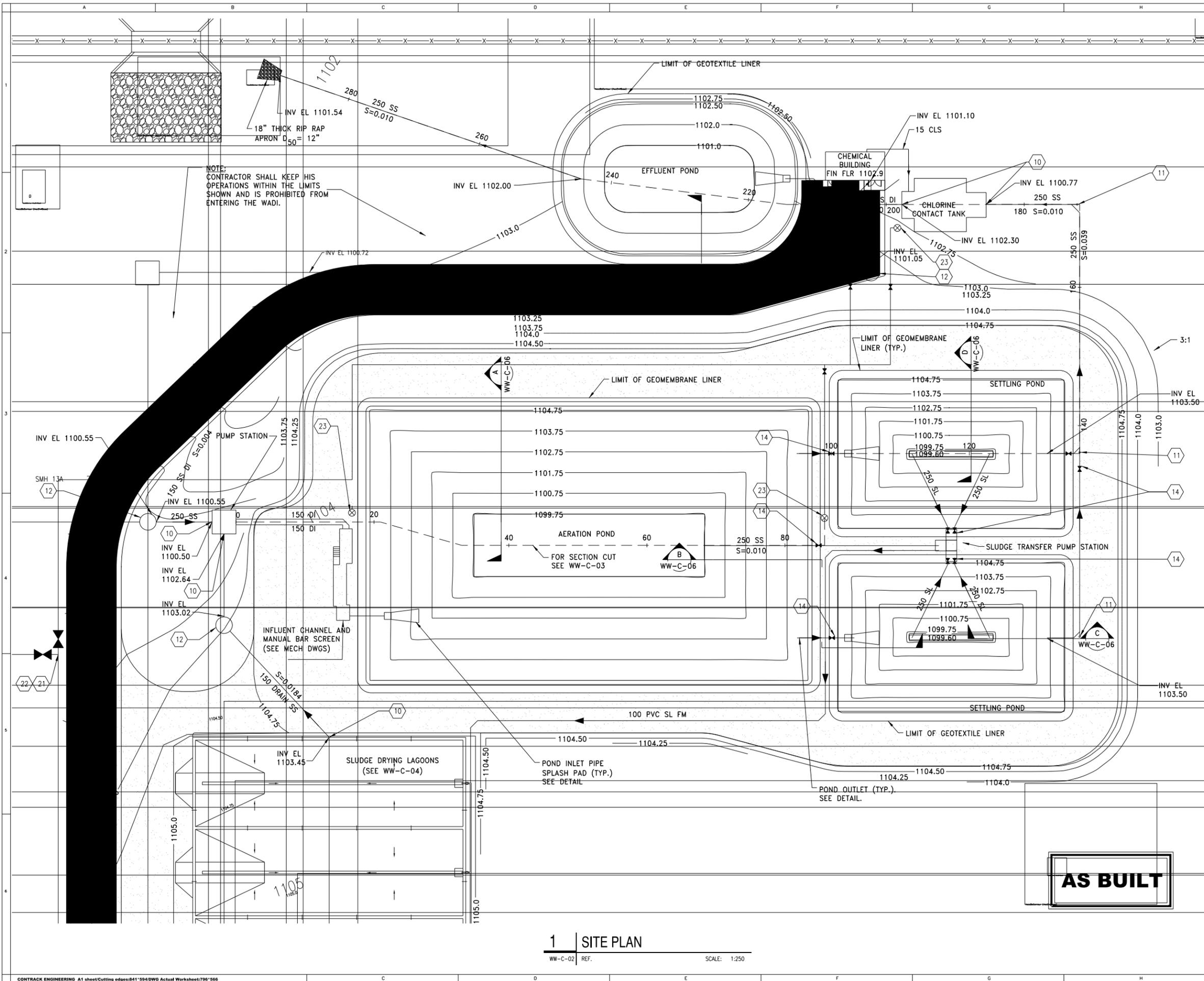
DESIGNER : **DMJMHN**
1000 N. 23rd Street, Suite 1100
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PROJECT : **ANA BRIGADE FACILITIES
HERAT
AFGHANISTAN**

TITLE : **WASTEWATER SYSTEM
CHEMICAL BUILDING
BUILDING ELEVATIONS**

ACTION	NAME	DATE	DOCUMENT NO.:	Task
Prepared By:	XXXXX		CAD FILE:	WW-A-02
Drawn By:	XXXXX		ADIF003.DWG	
Checked By:			Scale	DWG. IN
Approved By:			AS NOTED	MM
				Sheet Of Sheets
				Rev. 3

AS BUILT



GENERAL NOTES:

1. THE COORDINATES TO LOCATE EACH BUILDING ARE GIVEN TO THE OUTSIDE FACE OF BUILDING.

GRADING NOTES:

1. SEE "TYPICAL BUILDING" DETAIL ON SHEET SW-C901 FOR TYPICAL GRADING REQUIREMENTS AT EACH BUILDING.
2. PROVIDE STRAIGHT GRADE BETWEEN SPOT ELEVATIONS ON ROADWAYS.
3. ACTUAL LOCATION ON YARD SHALL BE DONE IN THE FIELD AND SHALL BE MINIMUM OF 1 METER FROM STRUCTURE IN AREAS WHERE THERE IS NO VEHICLE TRAFFIC.
4. ALL DRAINAGE CHANNELS ARE TRAPEZOID CHANNELS UNLESS OTHERWISE NOTED.

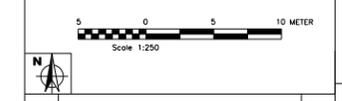
UTILITY NOTES:

SEWER NOTES:

- 10 BUILDING SEWER POINT OF CONNECTION.
- 11 CONSTRUCT CLEANOUT PER DETAIL ON DRAWING SW-C902.
- 12 CONSTRUCT SANITARY SEWER MANHOLE PER DETAILS ON DRAWING SW-C903.
- 13 SEWER LINE CONCRETE ENCASMENT 2.7M EACH SIDE OF WATER LINE CROSSING.
- 14 INSTALL GATE VALVES PER DETAIL ON DRAWING SW-C902.
SS SHALL BE PVC UNLESS OTHERWISE INDICATED

WATER NOTES:

- 20 BUILDING WATER POINT OF CONNECTION.
- 21 INSTALL GATE VALVES PER DETAIL ON DRAWING SW-C902.
- 22 CONSTRUCT THRUST BLOCKS PER DETAIL ON DRAWING SW-C902.
- 23 FREEZELESS YARD HYDRANT PER DETAIL ON DRAWING SW-C901.
- 24 BLOW OFF VALVE PER DETAIL ON DRAWING SW-C907.
- 25 VACUUM / AIR RELEASE VALVE PER DETAIL ON DRAWING SW-C907.



DWG. NO.	DRAWING TITLE	REVISIONS

REV.	Date	AS BUILT	DESCRIPTION	Prep.	Draw.	Check.	App.
1	OCT. 2005	AS BUILT					

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DESIGNER JOB #: 151709

PROJECT: **ANA BRIGADE FACILITIES
HERAT
AFGHANISTAN**

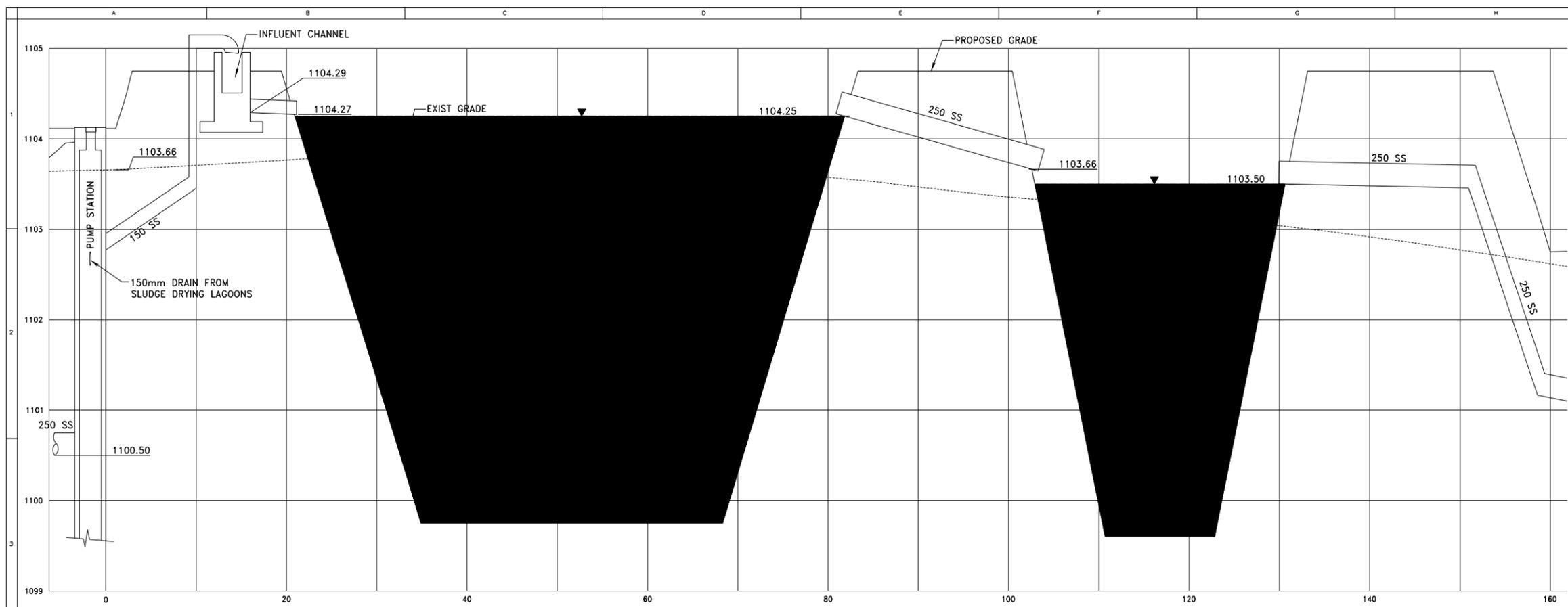
TITLE: **WASTEWATER SYSTEM
SITE PLAN**

ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	R. Adams	8-23-04	CAD FILE:	WW-C-02
Drawn By:	J. HORTON		Scale:	AS NOTED
Checked By:	J. HORTON		DWG. NO.:	
Approved By:	R. HORTON		Sheet Of:	3

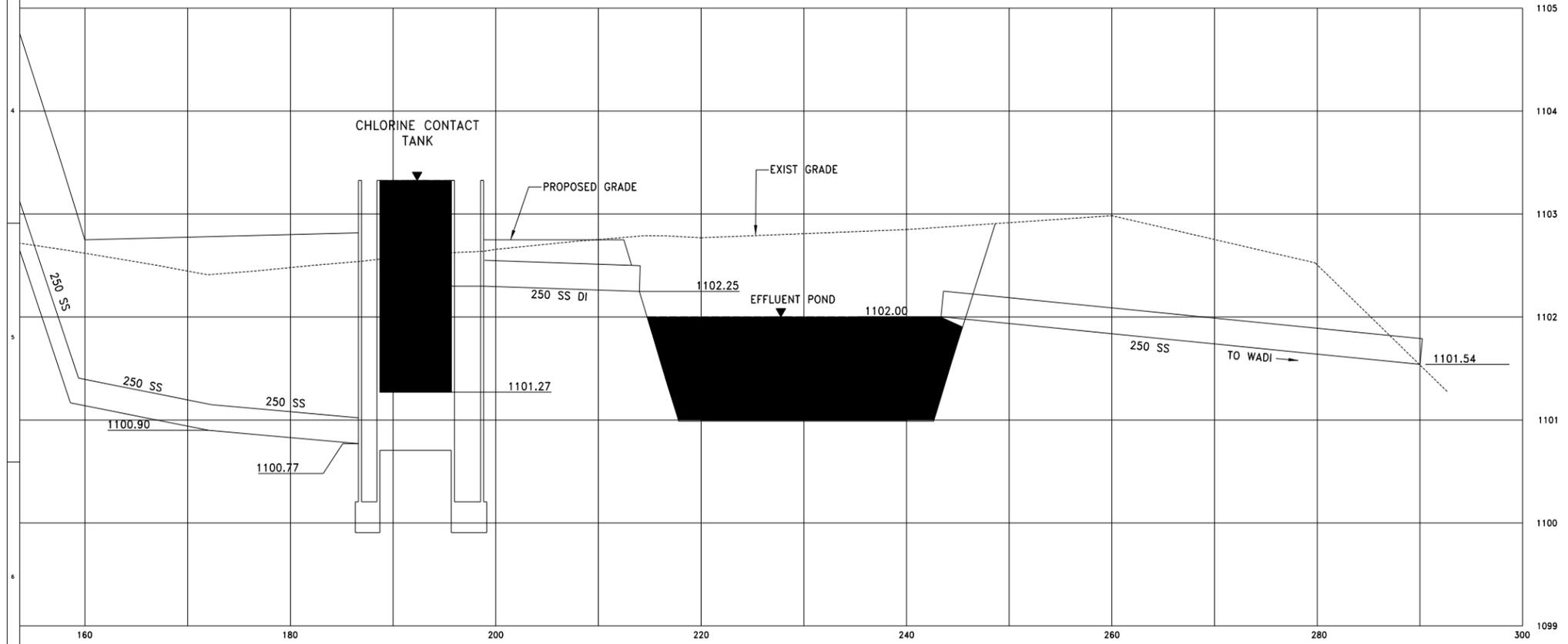
AS BUILT

1 | SITE PLAN

WW-C-02 REF. SCALE: 1:250



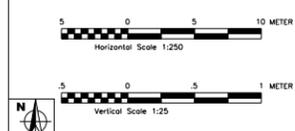
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1 SECTION (CONTINUED)
 WW-C-02 REF. SCALE: 1:250 HORIZ 1:25 VERT

GENERAL NOTES:

1. FOR PLAN, SEE DRAWING WW-C-02.



DWG. NO.	DRAWING TITLE	REVISIONS	REMARKS
1	OCT. - 2005	AS BUILT	

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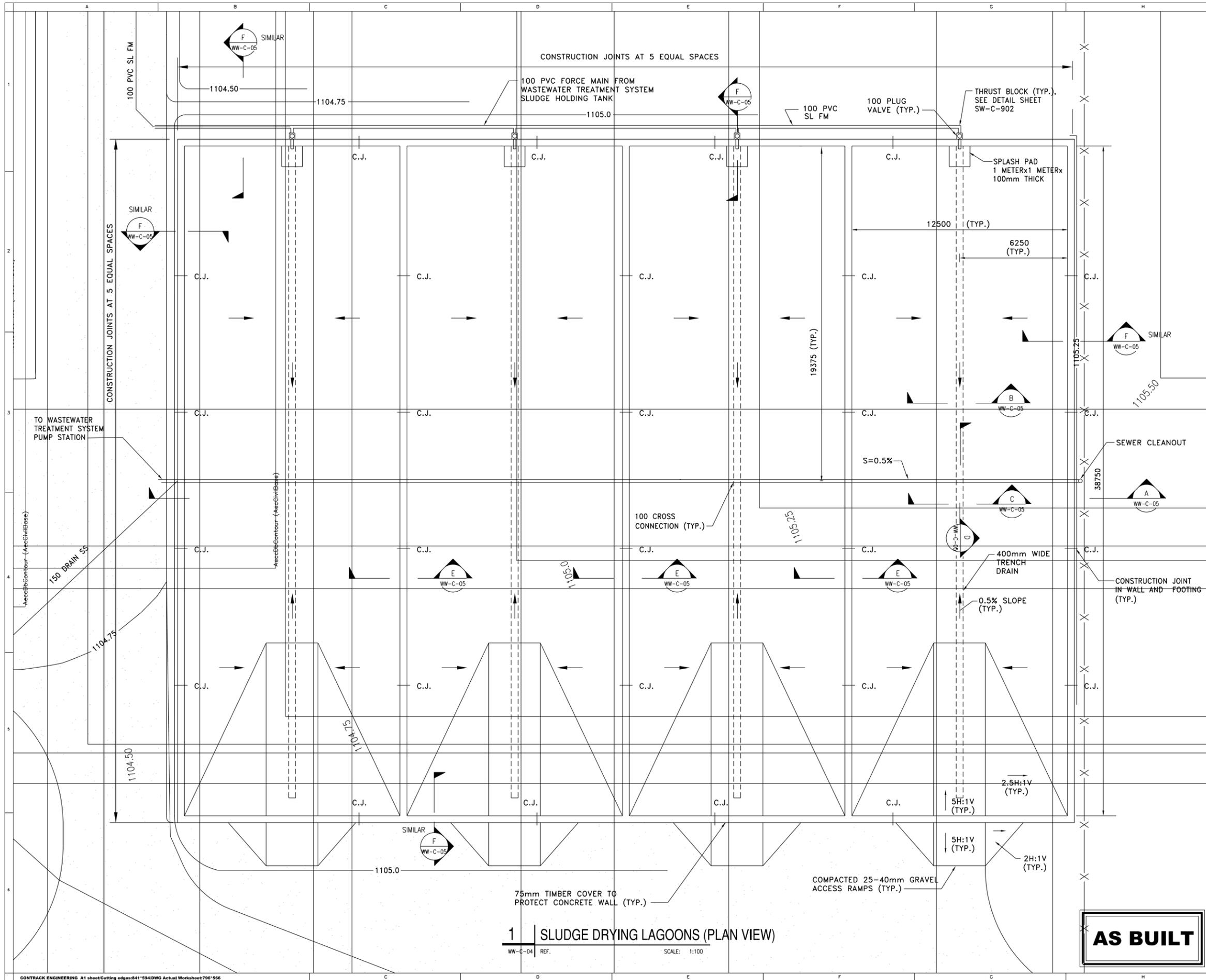
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PROJECT: **ANA BRIGADE FACILITIES
 HERAT
 AFGHANISTAN**

AS BUILT

ACTION	NAME	DATE	DOCUMENT NO.	Task
Prepared By:	R. ADAMS		CAD FILE:	WW-C-03
Drawn By:	S. MAPOLONG		SCALE:	AS NOTED
Checked By:	J. HORTON		DWG. IN:	Sheet Of Sheets
Approved By:	R. HORTON		AS NOTED	1/3



GENERAL NOTES:

1. FOR PLAN, SEE DRAWING WW-C-01.



DWG. NO.	DRAWING TITLE	REVISIONS
1	OCT. 2005	AS BUILT

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PROJECT: **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

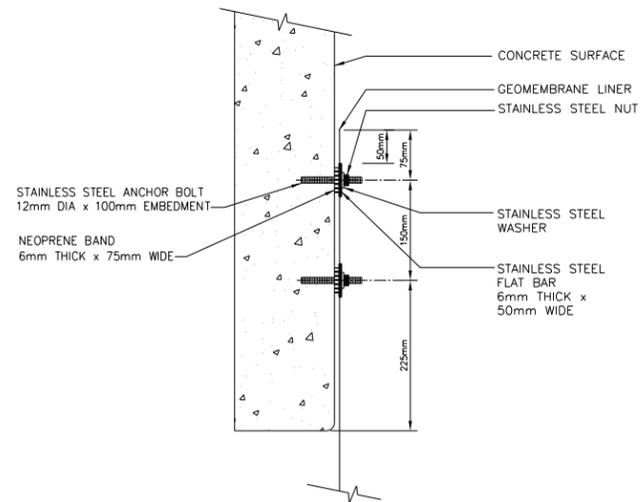
TITLE: **WASTEWATER SYSTEM SLUDGE DRYING LAGOONS PLAN**

ACTION	NAME	DATE	DOCUMENT NO.	Scale	DWG. IN	Sheet	Of	Sheets	Rev.
Prepared By	K. ANDERSON		CAD FILE:						
Drawn By	C. BENDISER		WW-C-04						
Checked By	J. HORN								
Approved By	B. HORN								

AS BUILT

1 | SLUDGE DRYING LAGOONS (PLAN VIEW)

WW-C-04 REF. SCALE: 1:100

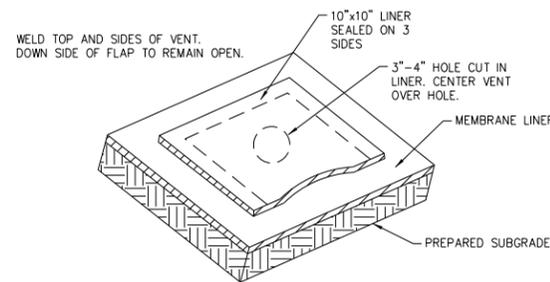


LINER TO CONCRETE CONNECTION NOTES:

1. THE NEOPRENE BAND AND STAINLESS STEEL FLAT BAR WILL BE CONTINUOUS AROUND THE CONCRETE STRUCTURE.
2. PROVIDE 150mm OVERLAP FOR NEOPRENE BAND. NO OVERLAP REQUIRED FOR STAINLESS STEEL FLAT BAR.
3. CONCRETE EDGES AND CORNERS TO BE SMOOTH AND ROUNDED TO PREVENT LINER DAMAGE.
4. BOLTS WILL BE INSTALLED AT A SPACING OF 150mm ALONG THE LENGTH OF THE CONCRETE STRUCTURE.
5. BOLTS TO BE INSTALLED 100mm BACK FROM CORNERS OF THE CONCRETE.
6. PROVIDE WATERTIGHT CONNECTION OF GEOMEMBRANE WITH CONCRETE.
7. ALL STAINLESS STEEL TO BE TYPE 316.

1 | TYPICAL CONNECTION OF GEOMEMBRANE WITH CONCRETE DETAIL

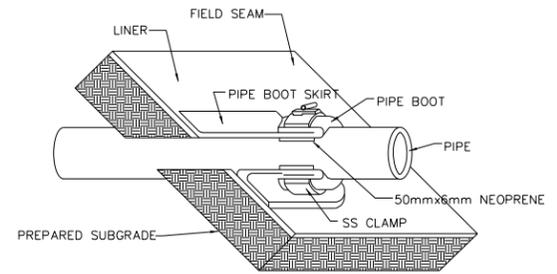
WW-C-07 REF. SCALE: NTS



NOTE:
LOCATE AT 8M INTERVALS AROUND EACH POND AND 300mm IN ELEVATION BELOW THE TOP OF THE BERM.

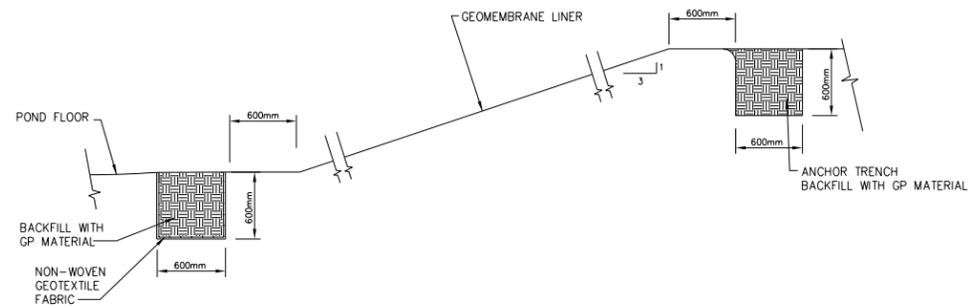
2 | TYPICAL FLAP TYPE VENT DETAIL

WW-C-07 REF. SCALE: NTS



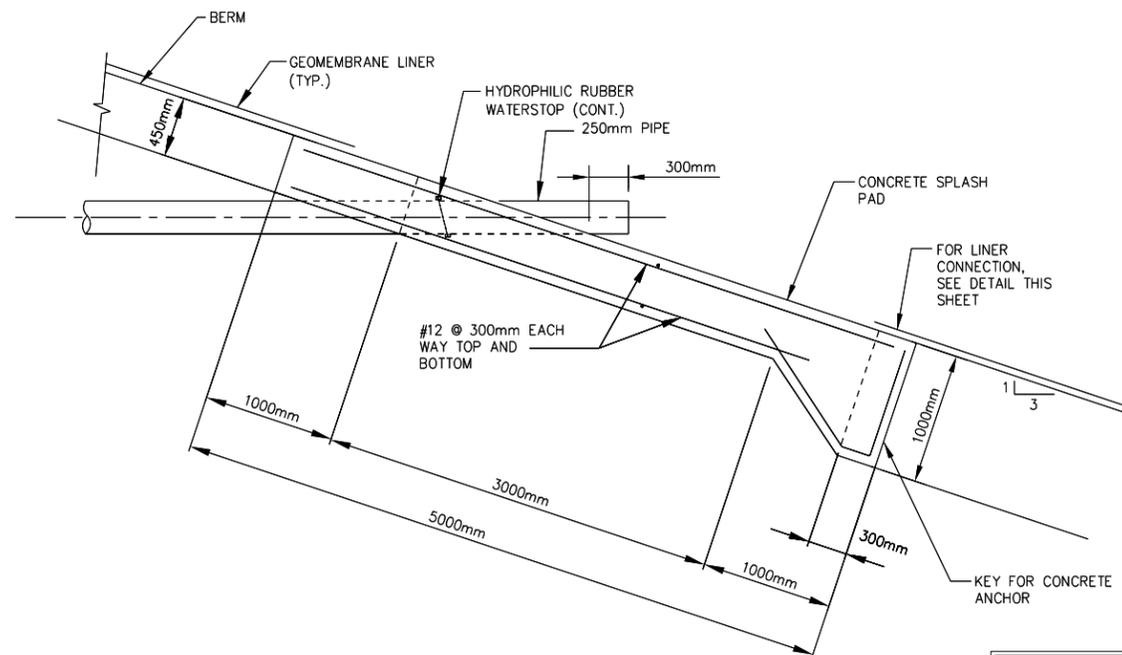
3 | TYPICAL OUTLET PIPE BOOT DETAIL

WW-C-07 REF. SCALE: NTS



4 | TYPICAL ANCHORING TRENCHES AT BERMS AND POND FLOORS

WW-C-07 REF. SCALE: NTS



5 | TYPICAL SECTION OF INLET PIPE AT SPLASH PAD

WW-C-07 REF. SCALE: 1:25

AS BUILT

GENERAL NOTES:

1. FOR PLAN, SEE DRAWING WW-C-02.



DWG. NO.	DRAWING TITLE	REVISIONS
	REFERENCE DRAWINGS	
1	OCT. - 2005	AS BUILT
REV.	Date	DESCRIPTION

CLIENT: U.S. ARMY CORPS OF ENGINEERS
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PROJECT: **ANA BRIGADE FACILITIES
HERAT
AFGHANISTAN**

TITLE: **WASTEWATER TREATMENT PLANT
DETAILS**

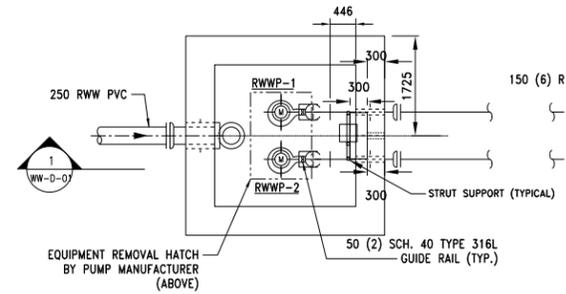
ACTION	NAME	DATE	DOCUMENT NO.	Task
Prepared By:	J. HESTER	10/21/04	CAD FILE:	WW-C-07
Drawn By:	C. BONDGE			
Checked By:	J. HESTER		SCALE	DWS: IN
Approved By:	B. HORTON		AS NOTED	Sheet Of Sheets

Sheet 07 of 07

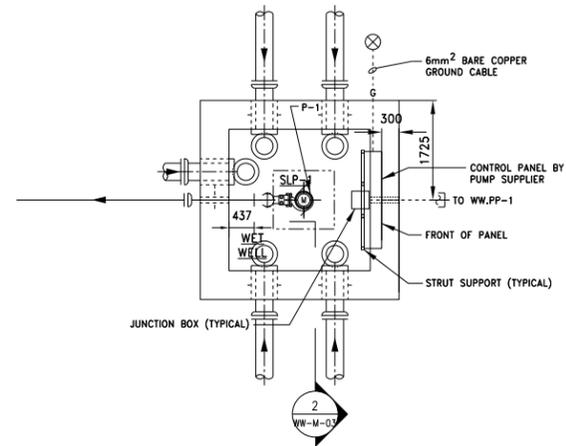
WW-C-07

CONTRACT ENGINEERING A1 sheet/Cutting edges:841*594/DWG Actual Worksheet:796*566

WW-C-07.dwg 8/12/2010 12:41:09 PM



3 INFLUENT PUMP STATION
POWER PLAN
WW-E-03 REF. SCALE: 1:50



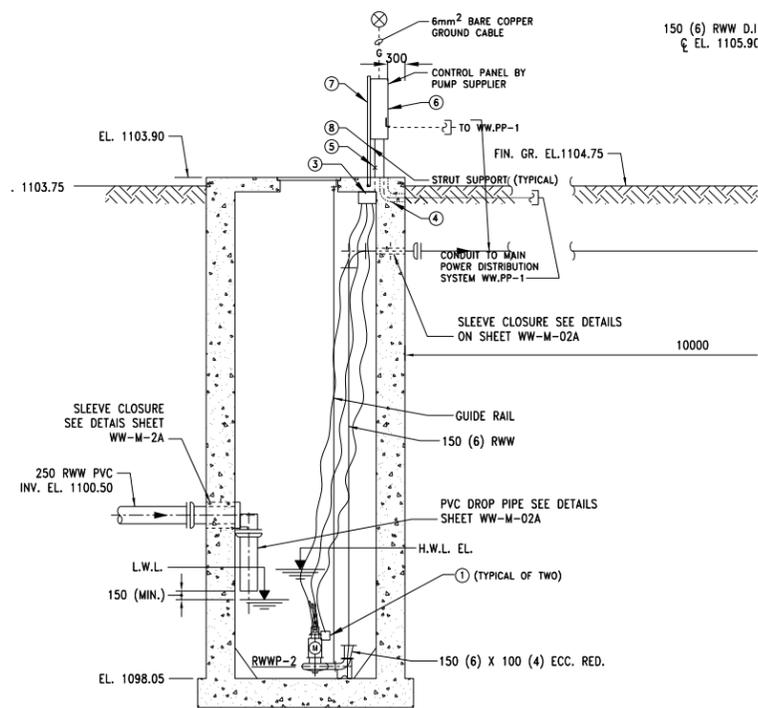
1 SLUDGE TRANSFER STATION
POWER PLAN
WW-E-03 REF. SCALE: 1:50

NOTES:

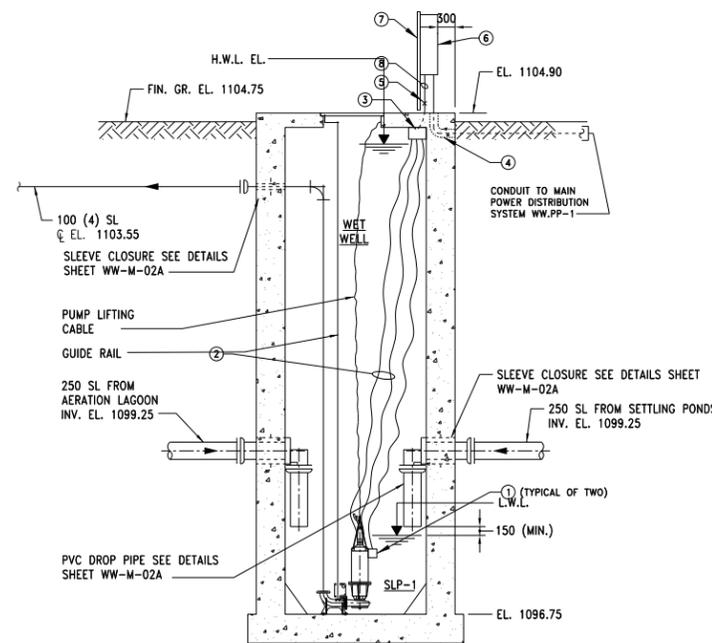
1. FOR GENERAL NOTES SEE DRAWING CO-E-01.
2. COORDINATE CONDUIT SIZE WITH JUNCTION BOX CONDUIT OPENING SIZE. RUN PUMP AND FLOAT SWITCHES CABLES THROUGH JUNCTION BOX AND CONDUIT UP TO CONTROL PANEL WITH NO SPLICE IF POSSIBLE.

LEGEND:

- ① FLOAT SWITCH
- ② PUMP POWER AND CONTROL CABLES (PROVIDED BY PUMP SUPPLIER)
- ③ EXPLOSION PROOF JUNCTION BOX (PROVIDED BY PUMP SUPPLIER)
- ④ THROUGH WALL SEAL (TYPICAL FOR EACH CONDUIT).
- ⑤ EXPLOSION PROOF SEAL FITTING RATED FOR CLASS 1, DIVISION 1 AREA (TYPICAL FOR EACH CONDUIT).
- ⑥ CONTROL PANEL BY PUMP SUPPLIER
- ⑦ STRUT SUPPORT
- ⑧ CONDUIT SEE NOTE 2. TWO PER JUNCTION BOX, 50mm (MIN.) PER JUNCTION BOX.



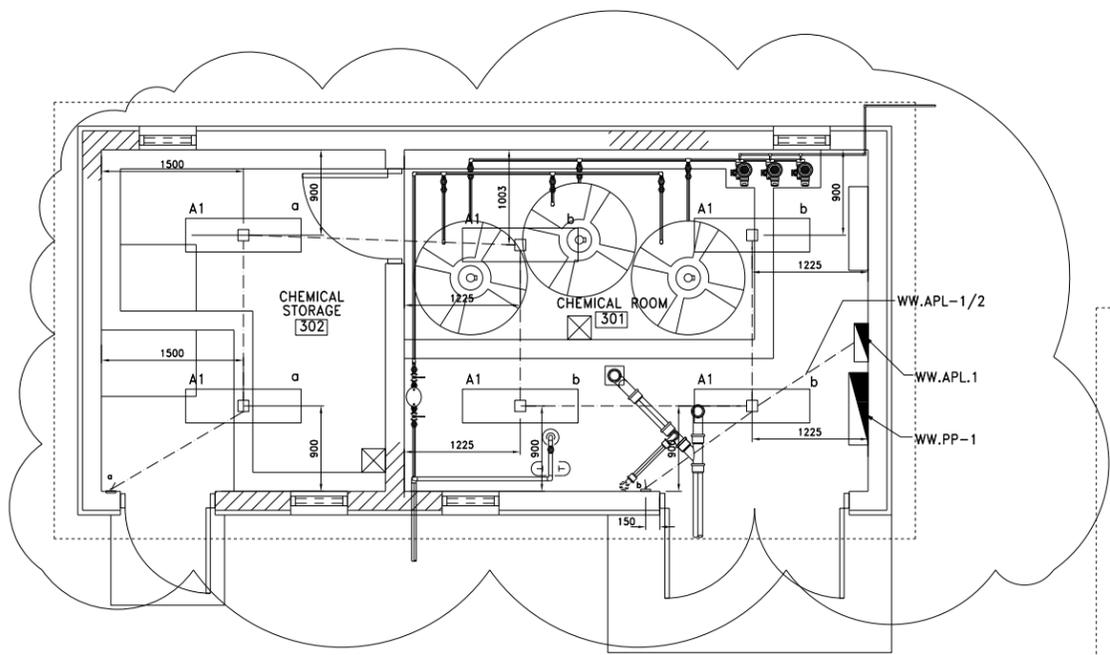
4 INFLUENT PUMP STATION
POWER PLAN SECTION
WW-E-03 REF. SCALE: 1:50



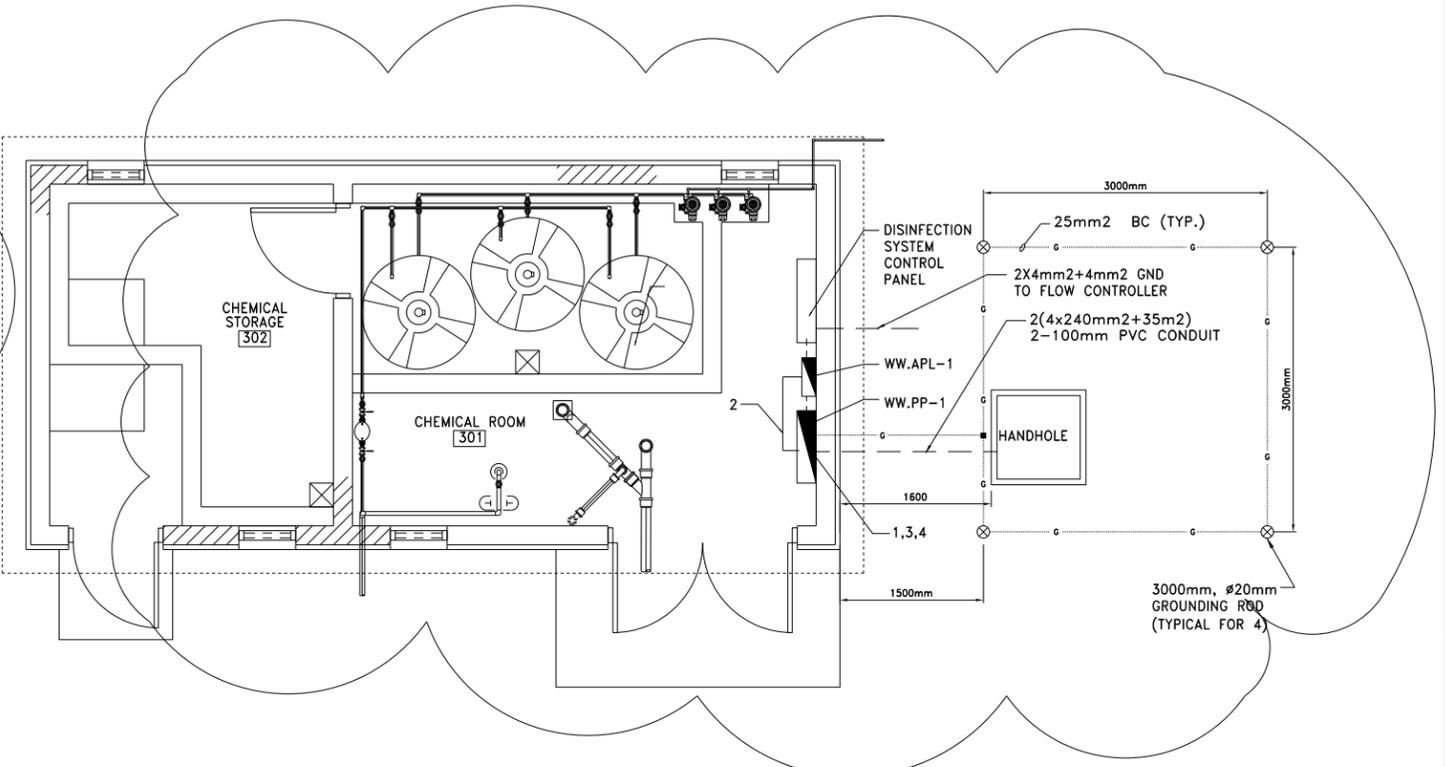
2 SLUDGE TRANSFER STATION
POWER PLAN SECTION
WW-E-03 REF. SCALE: 1:50

AS BUILT

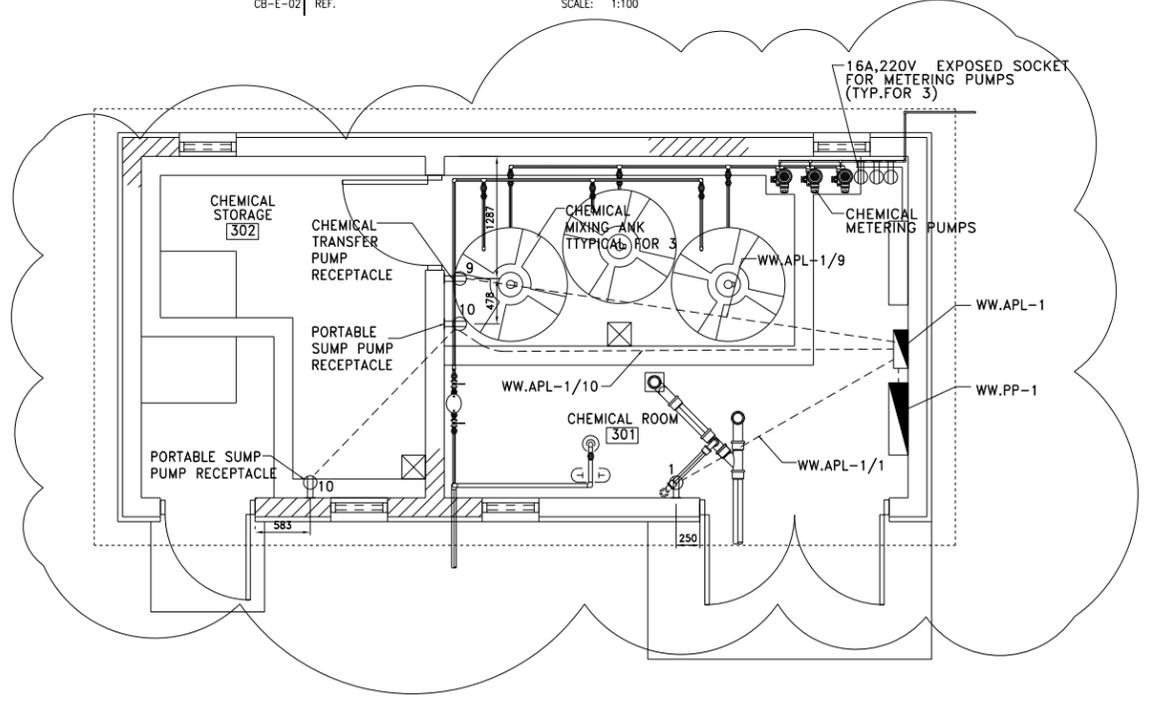
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REFERENCE DRAWINGS		
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REV.	Date	DESCRIPTION
REVISIONS		
CLIENT: U.S. ARMY CORPS OF ENGINEERS TRANSATLANTIC PROGRAMS CENTER		
CONTRACTOR: CONIRACK		DESIGNER: CONIRACK
DESIGNER JOB #: 151709		DESIGNER:
DMJMHN		
PROJECT: ANA BRIGADE FACILITIES HERAT AFGHANISTAN		
TITLE: WASTEWATER SYSTEM INFLUENT & SLDGGE PUMPS POWER PLAN		
ACTION	NAME	DATE
Prepared By:	F.R.	9/21/04
Checked By:	R.L.	9/21/04
Approved By:	R.L.	9/21/04
Scale:	MM	Sheet Of Sheets: 3
Task:	WW-E-03	



1 CHEMICAL BUILDING LIGHTING PLAN
 CB-E-02 REF. SCALE: 1:100



3 CHEMICAL BUILDING & GROUNDING PLAN
 CB-E-02 REF. SCALE: 1:100

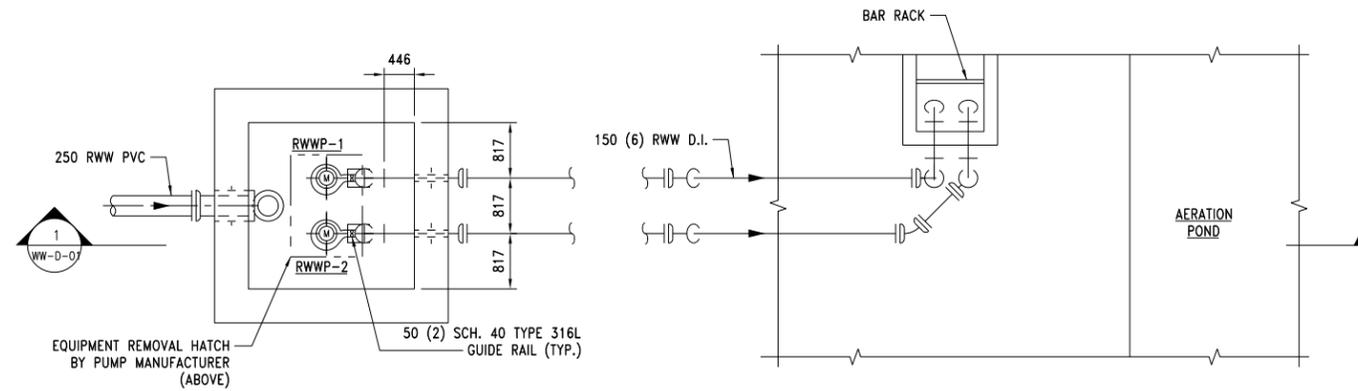


2 CHEMICAL BUILDING POWER PLAN
 CB-E-02 REF. SCALE: 1:100

- PP OUTLET**
- ① 4x16mm²+6mm² GND IN Ø50mm CONDUIT TO INFLUENT PUMP CONTROL PANEL
 - ② 4x35mm²+10mm² GND IN Ø50mm CONDUIT TO WW.APL-1
 - ③ 4x120mm²+25mm² GND IN Ø100mm CONDUIT TO AAPPATION MIXERS CONTROL PANEL
 - ④ 4x16mm²+10mm² GND IN Ø50mm CONDUIT TO SLUDGE TRANSFER PUMP CONTROL PANEL

AS BUILT

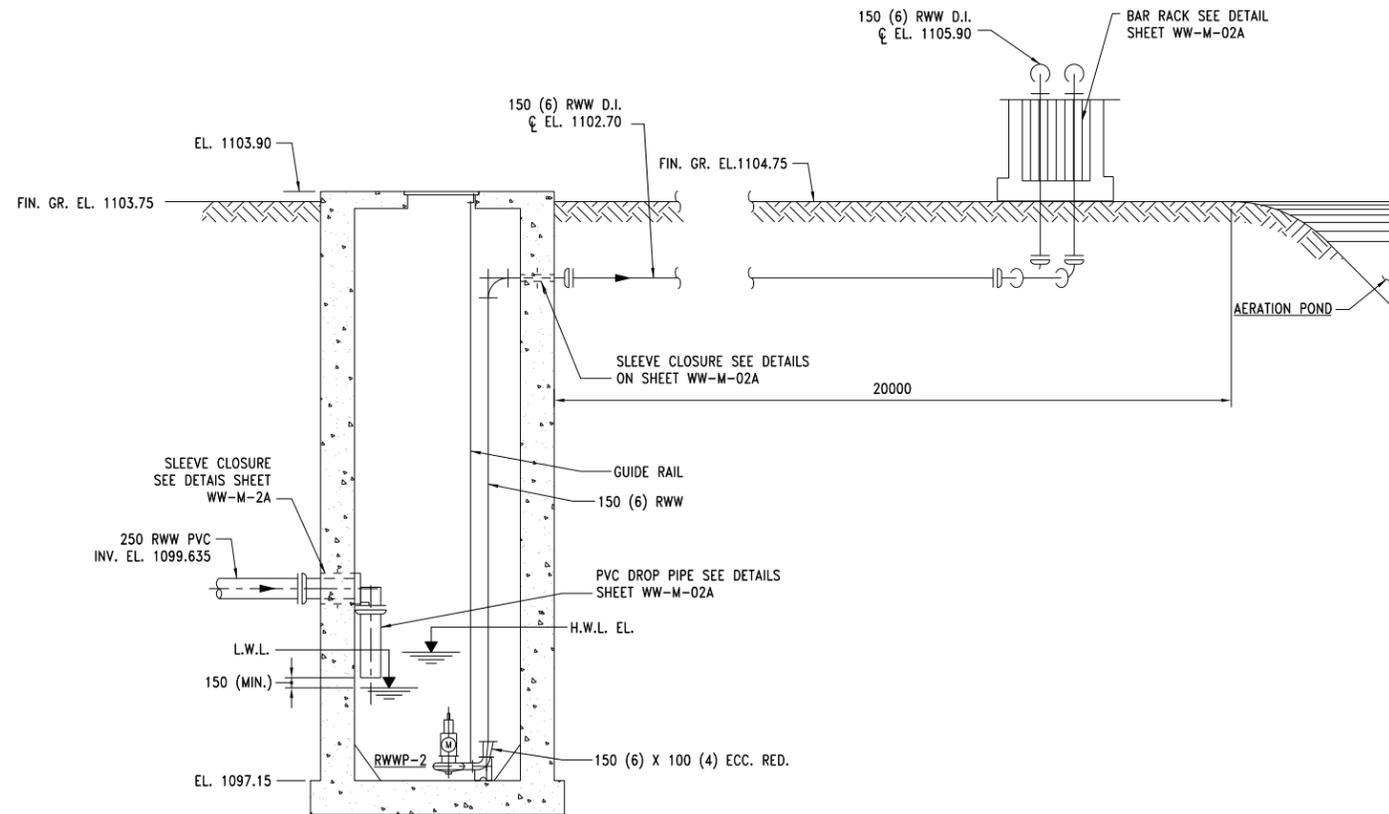
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1	SEP - 2005	AS BUILT N/F N/A A/A				
REV.	Date	DESCRIPTION	Prep.	Draw.	Check.	Appr.
CLIENT :						
DESIGNER :						
PROJECT :						
ANA BRIGADE FACILITIES HERAT AFGHANISTAN						
TITLE :						
WASTEWATER SYSTEM CHEMICAL BUILDING LIGHTING & POWER PLANS						
ACTION	NAME	DATE	DOCUMENT NO.	Task		
Prepared By:	R.S.	9/21/04	CAD FILE:		WW-E-04	
Drawn By:	R.S.	9/21/04	Scale	DWG. IN	Sheet Of	Sheets
Checked By:	R.S.	9/21/04	Scale	DWG. IN	Sheet Of	Sheets
Approved By:	R.S.	9/21/04	Scale	DWG. IN	Sheet Of	Sheets



- GENERAL NOTES**
1. PROVIDE SUPPORTS FOR GUIDE RAILS AT 10'-0" MAX. SPACING, SUPPORTS TO BE TYPE 316L STAINLESS STEEL WITH TYPE 316L STAINLESS STEEL HARDWARE.
 2. MINIMUM PUMP REMOVAL HATCH DIMENSIONS. ENLARGE TO SUIT EQUIPMENT FURNISHED.
 3. ALL COATINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 4. PIPE PENETRATIONS TO BE LOCATED 12" MIN. FROM JOINTS IN WET WELL.
 5. MAKE ALL FORCE MAIN PENETRATIONS IN WET WELL GAS TIGHT.

2 | PROCESS PLAN

WW-M-01 REF. SCALE: 1:50



1 | PROCESS SECTION

WW-M-01 REF. SCALE: 1:50

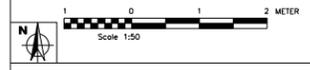
WET WELL SCHEDULE

INSIDE DIMENSION	BOTTOM ELEVATION	HATCH DIMENSIONS (L X W)	GRADE ELEVATION	INFLUENT RAW WASTEWATER DIA.	INFLUENT RAW WASTEWATER INV. EL.	REMARKS
2450 x 2450	1098.05	---	1103.75	250 (10)	1100.55	

WET WELL OPERATING LEVELS

HIGH WATER LEVEL ALARM LSHH-1	LEAD PUMP ON LSH-1	LAG PUMP ON LSH-2	LEAD PUMP OFF LSH-1	LAG PUMP OFF LSL-2	LOW WATER LEVEL ALARM LSL-1	REMARKS
1100.75	1100.17	1100.47	1099.02	1099.02	1098.87	

AS BUILT



DWG. NO.	DRAWING TITLE	REMARKS
	REFERENCE DRAWINGS	

REV.	Date	DESCRIPTION	Prep.	Draw.	Check.	App.
1	OCT. -2005	AS BUILT				

CLIENT : U.S. ARMY CORPS OF ENGINEERS
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Tel: (703)877-2000 Fax: (703)867-2089

PROJECT : **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

TITLE : **WASTEWATER SYSTEM PUMP STATION PLAN, SECTION & SCHEDULES**

ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	JC	07/2004	CAD FILE:	WW-M-01
Drawn By:	JC			
Checked By:	DM		Scale:	DWG. NO.
Approved By:	AS SHORIN		MM	Sheet Of: 3

PROCESS PIPING SCHEDULE																			
LEGEND	SYSTEM DESIGN CONDITIONS				PIPING					INSULATION		VALVING			TEST REQUIREMENTS		SPEC. SECTION NUMBER	REMARKS	
	SYSTEM	TEMP. (DEG. C)		PRESSURE (PSI)		MATERIAL	DIAMETER RANGE	SCH./ CLASS	LINING/COATING	JOINT TYPE	TYPE	THICKNESS (INS.)	BLOCK	CHECK	THROTTLING	PRESSURE (PSI)			MEDIUM
		OPER.	MAX.	WORK.	MAX.														
CLS	DISINFECTION	15	32	30	80	PVC	ALL	SCH. 80	---	FLANGED / SOLVENT	---	---	DIAPHRAM	BALL	---	100	WATER	11303	SODIUM HYPOCHLORITE SOLUTION
RWW	RAW WASTEWATER	15	32	8	8	DUCTILE IRON PVC	ALL	SEE SPECS.	---	FLANGED - GROOVED BURIED: PUSH-ON RESTRAINED PUSH - ON	---	---	---	---	---	20	WATER	15221	
RW	RAW WATER	15	32	16	18	DUCTILE IRON PVC	ALL	SEE SPECS.	---	FLANGED - GROOVED BURIED: PUSH-ON RESTRAINED PUSH - ON	---	---	GATE	SWING	---	50	WATER	15221	
SW	SERVICE WATER	15	32	16	18	DUCTILE IRON / PVC	ALL	SEE SPECS.	---	FLANGED	---	---	BALL	---	---	50	WATER	15221	
CW	CLEAN WATER	15	32	16	18	PVC	ALL	SEE SPECS.	---	FLANGED / SOLVENT	---	---	---	---	---	50	WATER	15221	
V	VENT PIPING	---	---	---	---	PVC	ALL	SCH. 80	---	FLANGED / SOLVENT	---	---	---	---	---	---	AIR	15221	
WS	WASTE SEWER	---	---	---	---	PVC	ALL	SCH. 80	---	PUSH - ON	---	---	---	---	---	20	WATER	15221	
SL	SLUDGE	15	32	16	18	PVC	ALL	SEE SPECS.	---	FLANGED BURIED: PUSH-ON	---	---	---	---	---	50	WATER	15221	

PROCESS PUMP SCHEDULE																	
TAG NO.	NUMBER OF UNITS	NAME	LOCATION	TYPE	RATING POINT				MIN. SUCTION/ DISCHARGE IN (MM)	PUMP RPM MAX.	SEAL TYPE	MOTOR DATA			DRIVE TYPE	SPECIFICATION SECTION	REMARKS
					CAPACITY (L/S)	HEAD (M)	MIN. EFF. %	SHUTOFF HEAD (M)				KW	RPM (MAX.)	ENCL. TYPE			
SLP-1 & 2	2	SLUDGE PUMP	SLUDGE TRANSFER PS	SUBMERS CHOPPER	16	16	46	18	6 / 4	1450	TANDEM MECHANICAL	11	1500	EXPLOSION PROOF	CLOSE-COUPLED	11310	380V / 3 PH/ 50 HZ 1 INSTALLED 1 UNINSTALLED SPARE
RWWP-1 & -2	2	RAW WASTEWATER PUMP	LIFT STATION	SOLIDS HANDLING SUBMERS	43	8.6	74	16.8	4 / 4	1450	TANDEM MECHANICAL	5.5	1500	EXPLOSION PROOF	CLOSE-COUPLED	11304	380V / 3 PH/ 50 HZ
P-1 & 2	2	BOOSTER PUMPS	BOOSTER PUMP STATION	HORIZONTAL END SUCTION	21.6	35.4	66	46.5	-	-	TANDEM MECHANICAL	12	-	TEFC	DIRECT	11302	380V / 3 PH/ 50 HZ
P-3	1	JOCKEY PUMP	BOOSTER PUMP STATION	HORIZONTAL END SUCTION	3.72	42.5	40	48.8	-	-	TANDEM MECHANICAL	4	-	TEFC	DIRECT	11302	380V / 3 PH/ 50 HZ
P-4 & 5	2	WELL PUMP	WELL PUMP	VERTICAL TURBINE	22.3	76	-	-	-/6	3000	TANDEM MECHANICAL	23.8	3000	SUMB.	DIRECT	11214	380V / 3 PH/ 50 HZ NOTE 1

NOTES: 1. 76m ASSUMED FOR DUTY HEAD.
IF WATER TABLE DEPTH VARIES FROM APPROX. 70m BELOW GRADE, RESIZING OF THE WELL PUMP WILL BE NECESSARY.

DWG. ABBREV.	ITEM	SYMBOL
	PIPE: 150 (6) & SMALLER	
	PIPE: 200 (8) & LARGER	
	FLANGE	
PO	PUSH ON JOINT	
	GROOVED COUPLING (PIPE 150 (6) & SMALLER)	
	GROOVED COUPLING (PIPE 200 (8) & LARGER)	
	SLEEVE COUPLING	
	RESTRAINED SLEEVE COUPLING	

DWG. ABBREV.	ITEM	SYMBOL
WS	WATER SURFACE	
	DIRECTION OF FLOW	
WALL CASTINGS		
FLG x PO	FLANGE AND PUSH ON JOINT	
ACTUATORS		
	EQUIPMENT MOTOR	

GENERAL PROCESS ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
G	CENTERLINE
CLS	SODIUM HYPO SOLUTION
CONC.	CONCRETE
CONT.	CONTINUATION
CPVC	CHLORINATED POLYVINYLCHLORIDE
DEG. C.	DEGREES CELSIUS
D.I.	DUCTILE IRON
DIA.	DIAMETER
DN.	DOWN
DWG'S.	DRAWINGS
ECC.	ECCENTRIC
EL.	ELEVATION
ELL.	ELBOW
ENCL.	ENCLOSURE
EQUIP.	EQUIPMENT
FIN. GR.	FINISHED GRADE
FLG.	FLANGE
F.O.B.	FLAT ON BOTTOM
F.O.S.	FLAT ON SIDE
F.O.T.	FLAT ON TOP
H.P.	HIGH POINT
HP	HORSE POWER
H.W.L.	HIGH WATER LEVEL
INS.	INCHES
INV.	INVERT
LE	LEVEL ELEMENT
LIT	LEVEL INDICATOR TRANSMITTER
L.P.	LOW POINT

GENERAL PROCESS ABBREVIATIONS CON'T

L/S	LITER PER SECOND
L.W.L.	LOW WATER LEVEL
LxW	LENGTH x WIDTH
MAX.	MAXIMUM
M	METER
MIN.	MINIMUM
MM	MILLIMETER
NO.	NUMBER
NTS	NOT TO SCALE
OPER.	OPERATING
P	PRESSURE GAUGE
PE	PLAIN END
PI	PRESSURE INDICATOR
PIT	PRESSURE INDICATOR TRANSMITTER
PO	PUSH-ON
PSH	PRESSURE SWITCH HIGH
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYLCHLORIDE
REF.	REFERENCE
REQ'D.	REQUIRED
RPM	REVOLUTIONS PER MINUTE
SCH.	SCHEDULE
SH.	SHEET
SPEC.	SPECIFICATIONS
S.S.	STAINLESS STEEL
STR.	STRUCTURAL
TEMP.	TEMPERATURE
TYP.	TYPICAL
W/	WITH
WORK.	WORKING
W.S.	WATER SURFACE

GENERAL NOTES

- ALL DIMENSIONS LOCATING EQUIPMENT ARE FROM FINISHED WALL SURFACES OR COLUMN CENTERLINES.
- FOR CONTINUATION OF PIPING OUTSIDE STRUCTURES, SEE CIVIL DRAWINGS.
- WALL AND FLOOR SLEEVES SHALL BE LARGE ENOUGH TO ACCOMMODATE FLANGES IF REQUIRED. FLOOR SLEEVES SHALL PROJECT AT LEAST 100MM ABOVE FINISHED FLOOR UNLESS OTHERWISE SHOWN, REFER TO DETAILS. IF SLEEVES ARE TO BE SEALED, PROVIDE GROOVED COUPLING PIPING CONNECTION TO FACILITATE INSTALLATION AND REMOVAL OF PIPING.
- ALL PIPE PENETRATIONS THROUGH INTERIOR AND EXTERIOR WALLS AND FLOORS SHALL BE SEALED WATERTIGHT. ROOF PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH ARCHITECTURAL DETAILS.

AS BUILT



REV.	Date	AS BUILT	DESCRIPTION	Prep.	Draw.	Check.	App.
1	OCT. - 2005						

CLIENT: U.S. ARMY CORPS OF ENGINEERS
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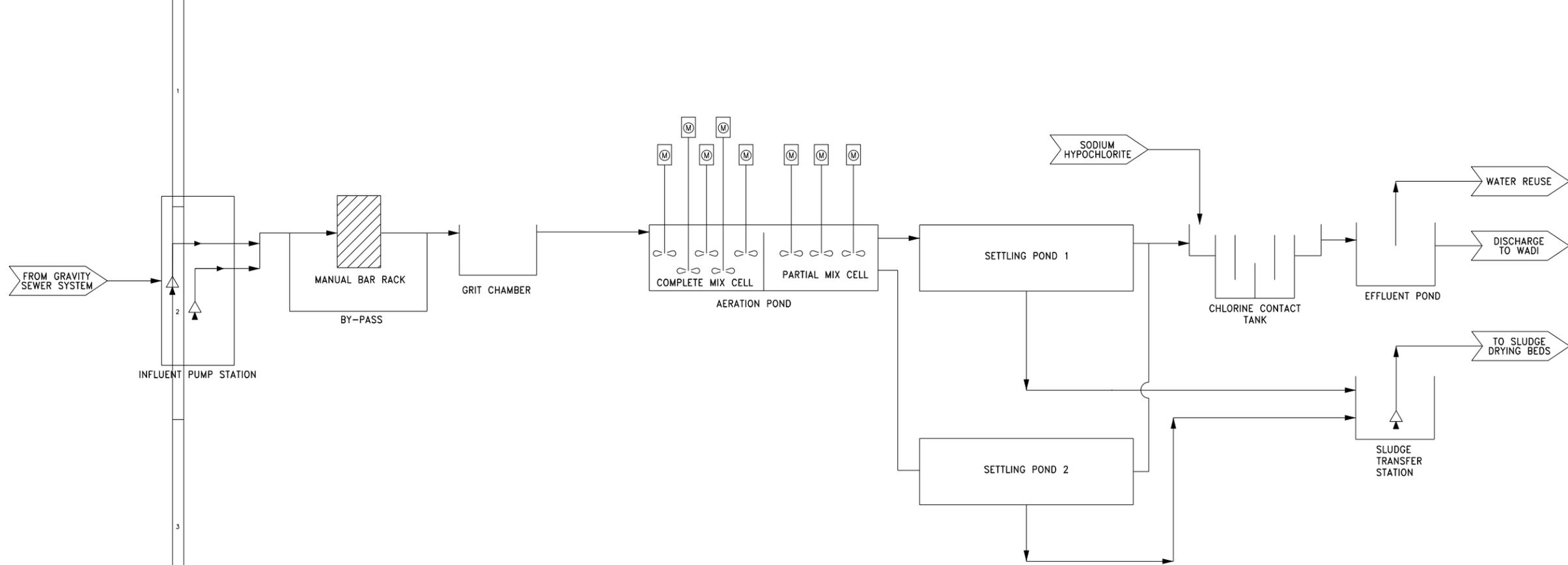
DESIGNER JOB #: 151709

DMJMH*IN
2005 2006 2007 2008 2009 2010
Tel: (410)871-2000 Fax: (410)871-2009

PROJECT: ANA BRIGADE FACILITIES
HERAT
AFGHANISTAN

TITLE: WASTEWATER SYSTEM
PROCESS SCHEDULES AND
GENERAL NOTES

ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	JC	7/24/04	CAD FILE:	WW-M-01A
Drawn By:	JC			
Checked By:	SM		Scale: AS SHOWN	DWG. NO: MM
Approved By:				Sheet Of: 3



CHEMICAL METERING PUMP SCHEDULE

TAG NO.	NUMBER OF UNITS	SERVICE	LOCATION	RATING POINT			TYPE	DRIVE TYPE	MOTOR DATA			SECTION SPEC. NO.	SERVICE CONDITIONS	REMARKS
				CAPACITY (LPH)	HEAD (M)	MAX. PUMP SPEED (RPM)			H.P.	RPM (MAX.)	ENCL. TYPE			
CMP-1 & 2	2	SODIUM HYPOCHLORITE	WATER BOOSTER PUMP STATION	3.7	105.5	—	DIAPHRAGM	SOLENOID	0.029	—	NEMA 4	11303	15% pH=13.5	
CMP-3,4 & 5	3	SODIUM HYPOCHLORITE	CHEMICAL BUILDING	18	17.6	—	DIAPHRAGM	SOLENOID	0.087	—	NEMA 4	11303	15% pH=13.5	

PREFABRICATED SLIDE GATE SCHEDULE

TAG NO.	NUMBER OF UNITS	LOCATION	GATE SIZE W(M) x H(M)	GATE TYPE	HEAD TYPE	HEAD (MAX. WATER TO GATE ϕ) (M)	OPERATING LEVEL TO GATE INVERT (M)	FRAME TYPE	CLOSURE TYPE	OPERATOR TYPE	REMARKS
PG-1	1	INFLUENT CHANNEL	0.6 x 1.0	SELF CONTAINED	SEATING	0.85	1.05	EMBEDDED	FLUSH BOTTOM	HANDWHEEL	

AS BUILT



REV.	Date	DESCRIPTION	Prep.	Drawn	Check	App.
1	OCT - 2005	AS BUILT				

CLIENT: U.S. ARMY CORPS OF ENGINEERS
TRANSATLANTIC PROGRAMS CENTER

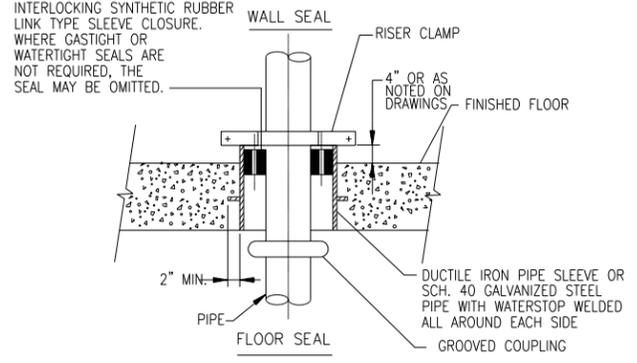
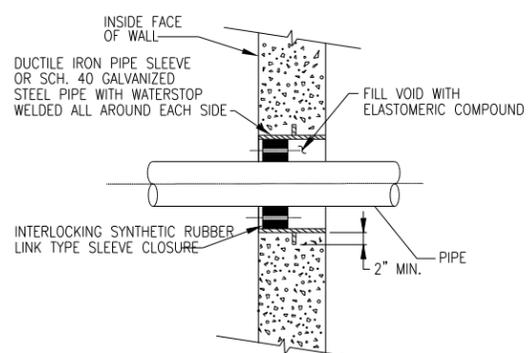
CONTRACTOR: **CONIRACK**
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DESIGNER: **DMJMHN**
1021 W. 14th Street - Suite 1100 - Irving, TX 75038-8803
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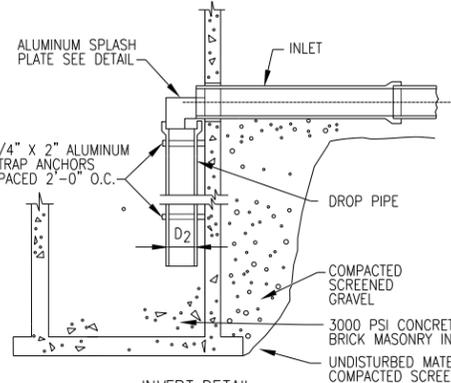
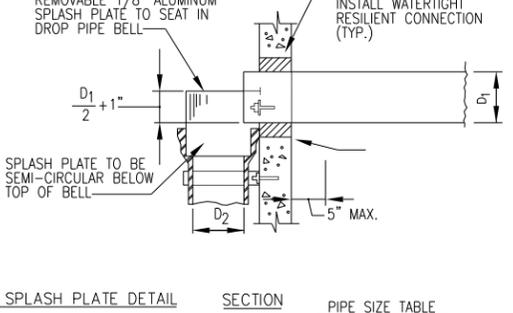
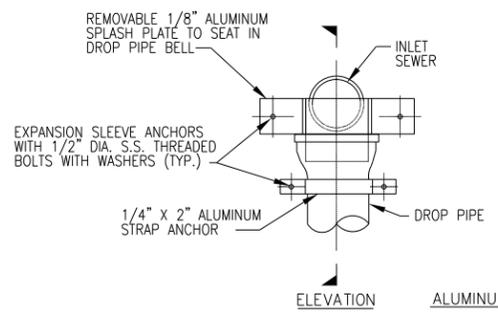
PROJECT: **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

TITLE: **WASTEWATER SYSTEM PROCESS FLOW DIAGRAM AND PROCESS SCHEDULES**

ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	JC	7/14/04	CAD FILE:	WW-M-02
Checked By:	SM		Scale:	Sheet Of Sheets
Approved By:			Scale:	Rev.



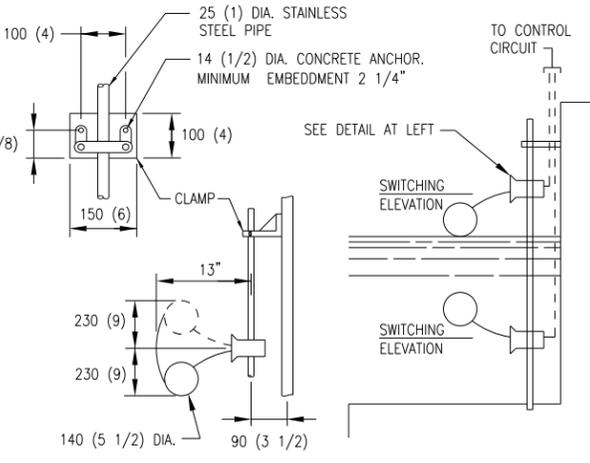
LINK TYPE WALL AND FLOOR SLEEVE CLOSURE
NTS



PIPE SIZE TABLE

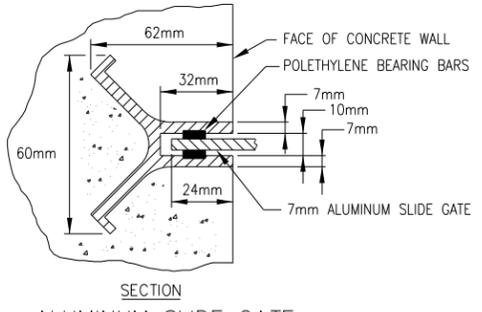
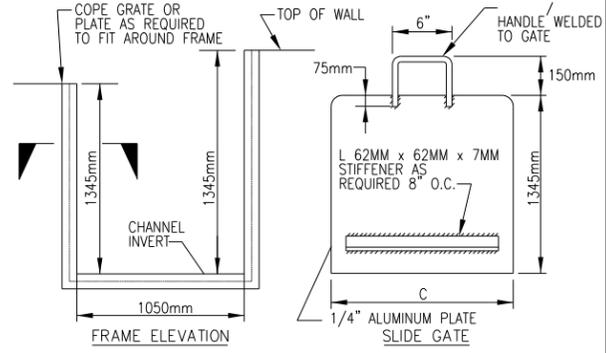
PIPE SIZES (IN)	INLET SEWER D1	DROP PIPE D2
12	10	10
10	8	8
8	8	8
6	6	6
4	4	4

INSIDE DROP INLETS FOR DI PIPE SEWERS
12 INCH DIAMETER AND SMALLER

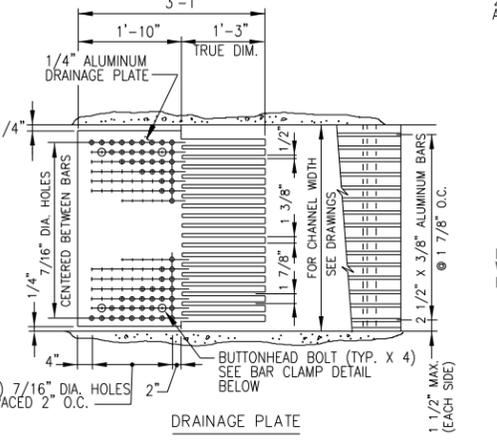
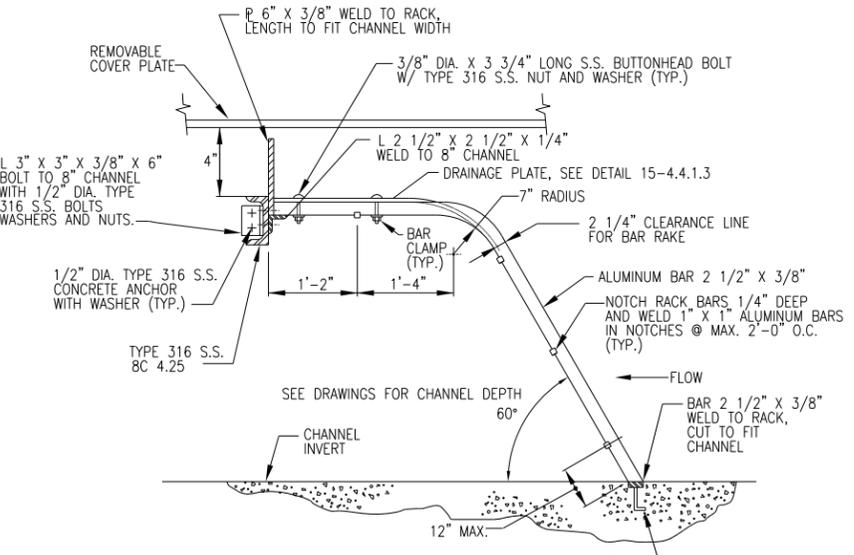


NOTE:
TWO LEVEL SWITCHES ARE SHOWN. ACTUAL NUMBER REQUIRED FOR EACH LOCATION IS AS SPECIFIED.

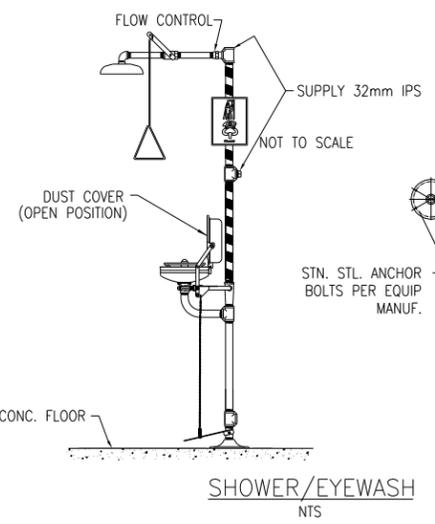
FLOAT TYPE LEVEL SWITCH
NTS



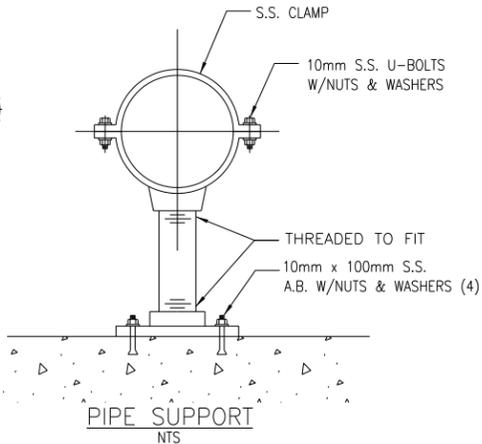
SECTION
ALUMINUM SLIDE GATE



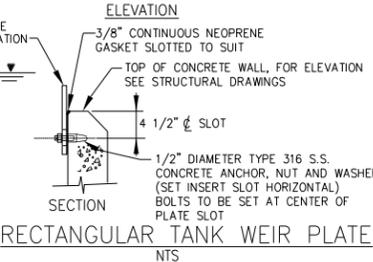
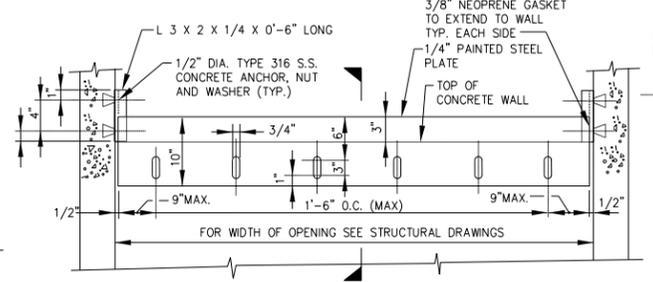
BAR RACK AND DRAINAGE PLATE DETAIL
NTS



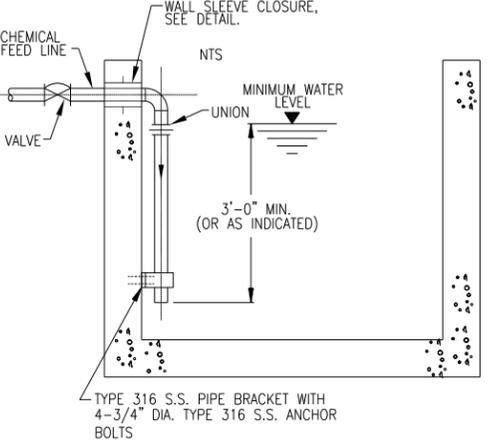
SHOWER/EYEWASH
NTS



PIPE SUPPORT
NTS



SECTION
RECTANGULAR TANK WEIR PLATE
NTS



TANK CHEMICAL DIFFUSER-OPEN END
(WALL PENETRATION)
NTS

AS BUILT



DWG. NO. DRAWING TITLE REVISIONS

REV.	DATE	DESCRIPTION	PREP.	CHK.	APP.
1	OCT. - 2005	35% DESIGN SUBMITTAL			

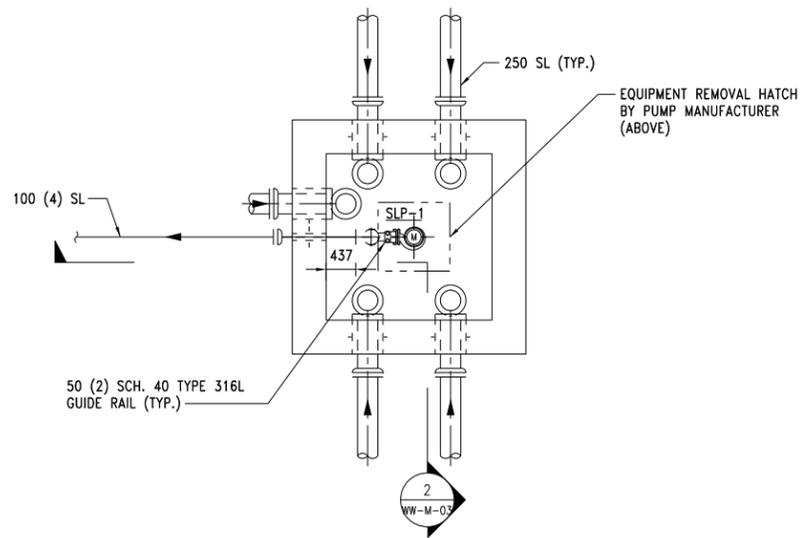
CLIENT: U.S. ARMY CORPS OF ENGINEERS
TRANSATLANTIC PROGRAMS CENTER

CONTRACTOR: **CONIRACK**
DESIGNER: **DMJMHN**

PROJECT: **ANA BRIGADE FACILITIES
HERAT
AFGHANISTAN**

TITLE: **WASTEWATER SYSTEM
DETAILS**

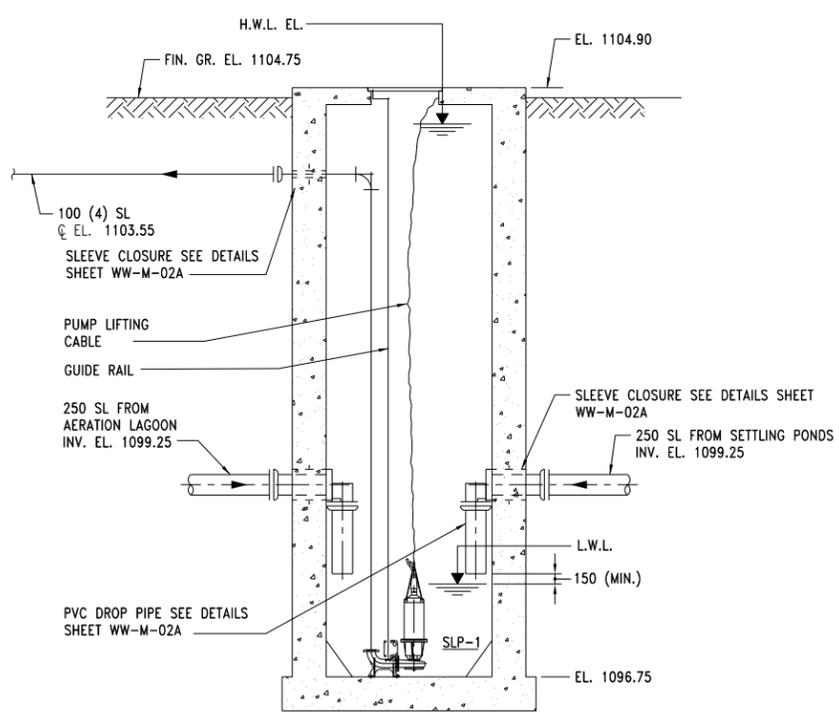
ACTION	NAME	DATE	DOCUMENT NO.	REV.	WWM-02A
Prepared By:	JC	7/24/04	CAD FILE:		
Drawn By:	JM		Scale:		
Checked By:	JM		DWG. NO.:		
Approved By:			Sheet Of:	3	



1 | **PROCESS PLAN**

WW-M-03 | REF. SCALE: 1:50

- GENERAL NOTES**
1. PROVIDE SUPPORTS FOR GUIDE RAILS AT 3 METERS MAX. SPACING, SUPPORTS TO BE TYPE 316L STAINLESS STEEL WITH TYPE 316L STAINLESS STEEL HARDWARE.
 2. MINIMUM PUMP REMOVAL HATCH DIMENSIONS. ENLARGE TO SUIT EQUIPMENT FURNISHED.
 3. ALL COATINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 4. PIPE PENETRATIONS TO BE LOCATED 300mm MIN. FROM JOINTS IN WET WELL.
 5. MAKE ALL FORCE MAIN PENETRATIONS IN WET WELL GAS TIGHT.



2 | **PROCESS SECTION**

WW-M-03 | REF. SCALE: 1:50

WET WELL SCHEDULE & OPERATING LEVELS								
INSIDE DIMENSION	BOTTOM ELEVATION	HATCH DIMENSIONS (L x W)	GRADE ELEVATION LSH-1	INFLUENT RAW WASTEWATER DIA.	INFLUENT RAW WASTEWATER INV. EL.	PUMP OFF LSL-1	LOW WATER LEVEL ALARM LSL-1	REMARKS
2450 x 2450	1096.75	—	1104.75	250 (10)	1099.25	1099.25	1099.10	PUMP WILL BE STARTED MANUALLY



DWG. NO.	DRAWING TITLE	REVISIONS				
REFERENCE DRAWINGS						
7	25 MARCH, 2005	FINAL DESIGN SUBMITTAL				
6	4 FEBRUARY, 2005	100% DESIGN SUBMITTAL				
5	23 DECEMBER, 2004	100% DESIGN SUBMITTAL				
4	8 DECEMBER, 2004	100% DESIGN SUBMITTAL				
3	27 OCTOBER, 2004	99% SUBMITTAL REVISED				
2	15 OCTOBER, 2004	99% SUBMITTAL REVISED				
1	28 SEPTEMBER, 2004	99% DESIGN SUBMITTAL				
0	28 AUGUST, 2004	32% DESIGN SUBMITTAL				
REV.	Date	DESCRIPTION	Prep.	Draw.	Check.	App.

CLIENT : U.S. ARMY CORPS OF ENGINEERS
TRANSATLANTIC PROGRAMS CENTER

CONTRACTOR : **CONIRACK**
1001 N. 19th Street - Suite 1000 Arlington, VA 22209-4202
Tel: (703) 261-8800 Fax: (703) 261-8808

DESIGNER : **CONIRACK**
South Tower 22nd Floor Cannon Office Building
Washington, DC 20037
Tel: (202) 462-1000 Fax: (202) 462-1000

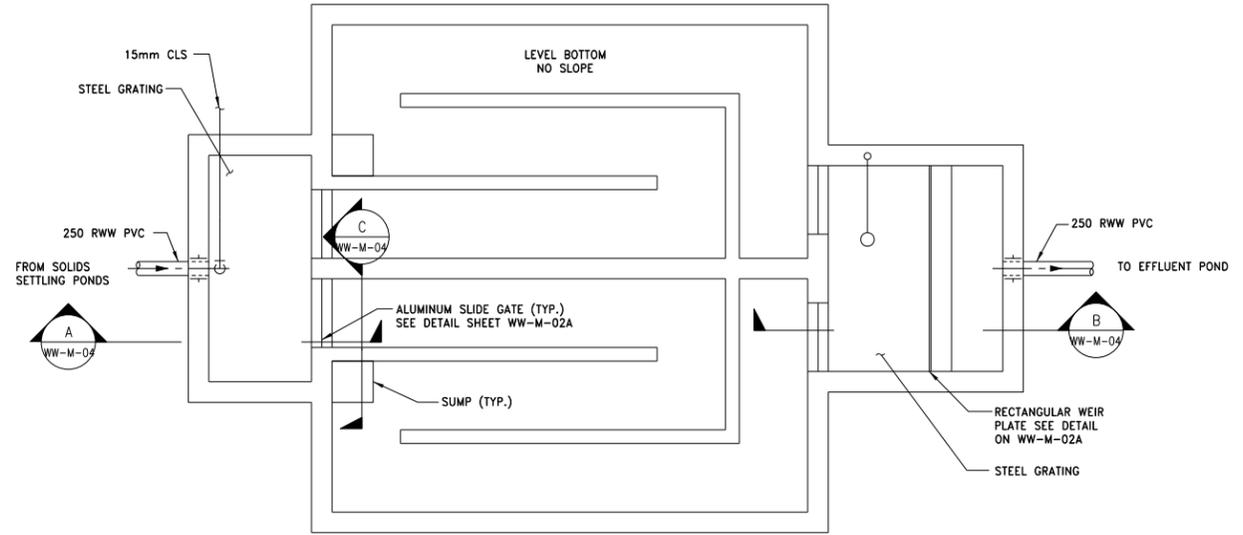
DESIGNER JOB #: 151709

DESIGNER : **DMJMH*N**
2025 WILSON BLVD. SUITE 1100
FALLS CHURCH, VA 22034
Tel: (703) 877-2000 Fax: (703) 867-2000

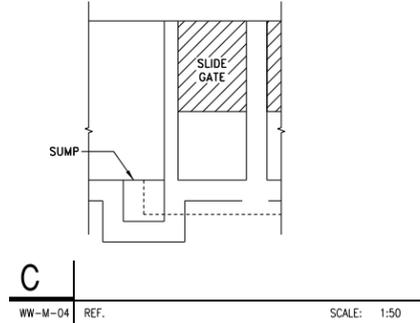
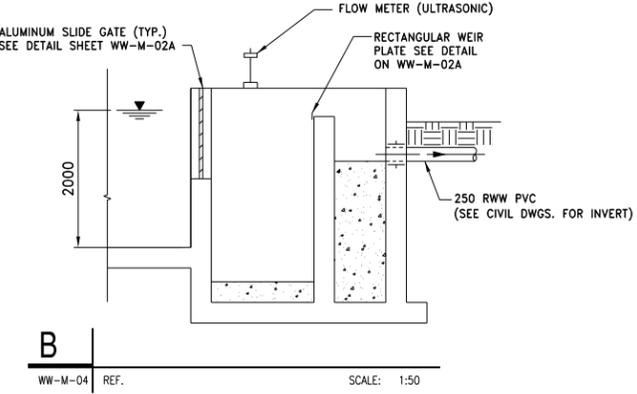
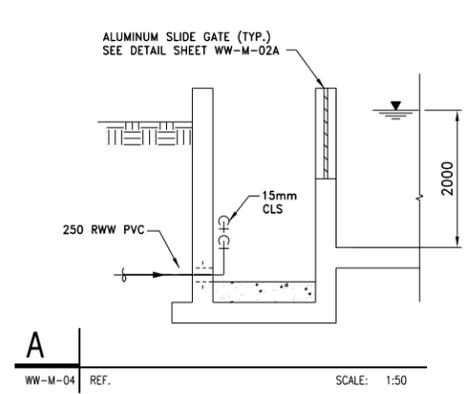
PROJECT : **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

TITLE : **WASTEWATER SYSTEM SLUDGE TRANSFER PUMP STATION PLAN, SECTION & SCHEDULES**

ACTION	NAME	DATE	DOCUMENT NO.	Task:
Prepared By:	CE	2/14/04	CAD FILE:	WW-M-03
Drawn By:	DM		Scale:	
Checked By:	DM		DWG. IN:	
Approved By:	AS SHORIN		MM	Sheet Of: 3



1 | CHLORINE CONTACT TANK
 WW-M-04 REF. SCALE: 1:50



DWG. NO.	DRAWING TITLE	REMARKS
	REFERENCE DRAWINGS	

REV.	DATE	DESCRIPTION	Prep.	Draw.	Check.	Appr.
1	OCT. - 2005	AS BUILT				

CLIENT : U.S. ARMY CORPS OF ENGINEERS
 TRANSATLANTIC PROGRAMS CENTER

CONTRACTOR : **CONIRACK**
 1000 N. 10TH STREET, SUITE 100
 WILSON, NC 27611-1000
 Tel: (703)558-8800 Fax: (703)558-8808

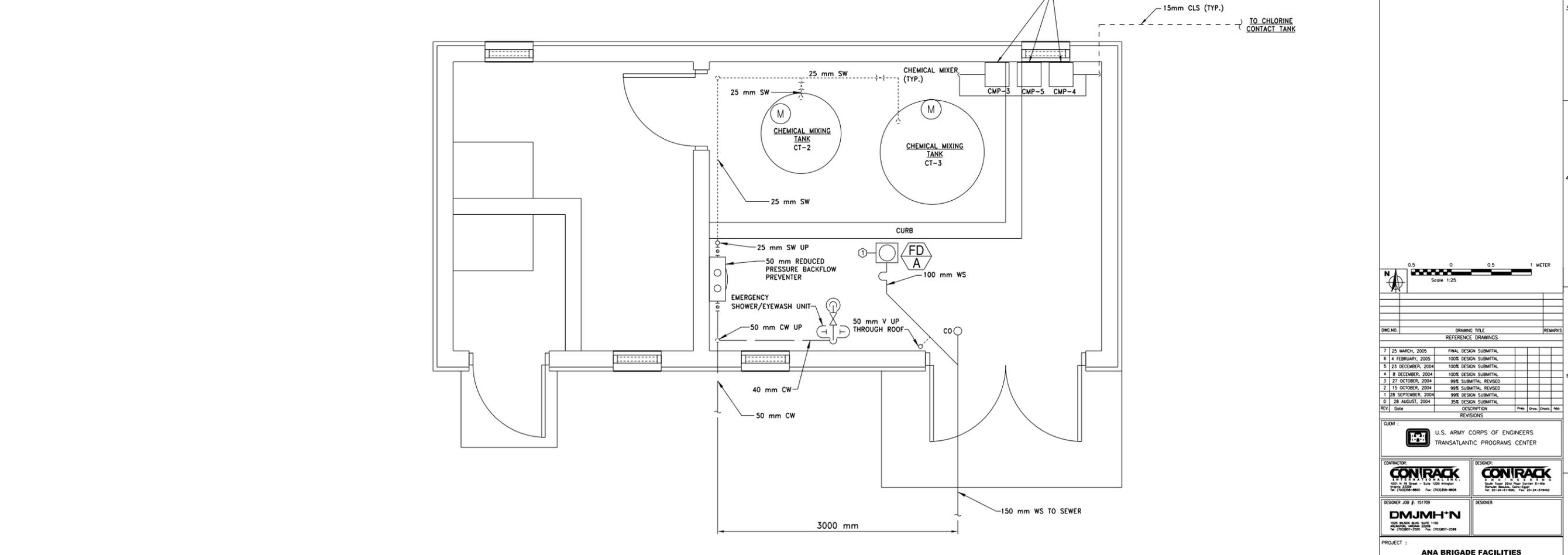
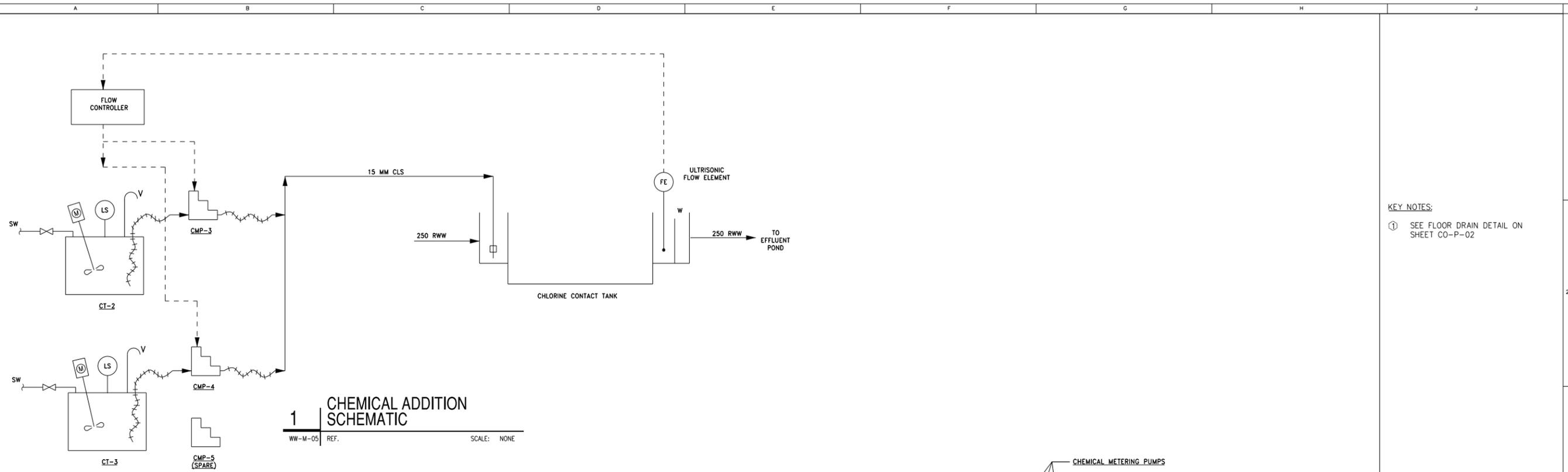
DESIGNER : **DMJMHN**
 1000 N. 10TH STREET, SUITE 100
 WILSON, NC 27611-1000
 Tel: (703)558-8800 Fax: (703)558-2989

PROJECT : **ANA BRIGADE FACILITIES
 HERAT
 AFGHANISTAN**

TITLE : **WASTEWATER SYSTEM
 CHLORINE CONTACT TANK
 PLAN AND SECTIONS**

ACTION	NAME	DATE	DOCUMENT NO.:	Task
Drawn By:	MC	7/26/04	CAD FILE:	WW-M-04
Checked By:	PH		Scale	DWG. IN
Approved By:			AS SHOWN	MM

AS BUILT



KEY NOTES:
 ① SEE FLOOR DRAIN DETAIL ON SHEET CO-P-02



DWG. NO.	DRAWING TITLE	REVISIONS
7	25 MARCH, 2005	FINAL DESIGN SUBMITTAL
6	4 FEBRUARY, 2005	100% DESIGN SUBMITTAL
5	23 DECEMBER, 2004	100% DESIGN SUBMITTAL
4	8 DECEMBER, 2004	100% DESIGN SUBMITTAL
3	27 OCTOBER, 2004	99% SUBMITTAL REVISED
2	15 OCTOBER, 2004	99% SUBMITTAL REVISED
1	28 SEPTEMBER, 2004	99% DESIGN SUBMITTAL
0	28 AUGUST, 2004	30% DESIGN SUBMITTAL

CLIENT : U.S. ARMY CORPS OF ENGINEERS
 TRANSATLANTIC PROGRAMS CENTER

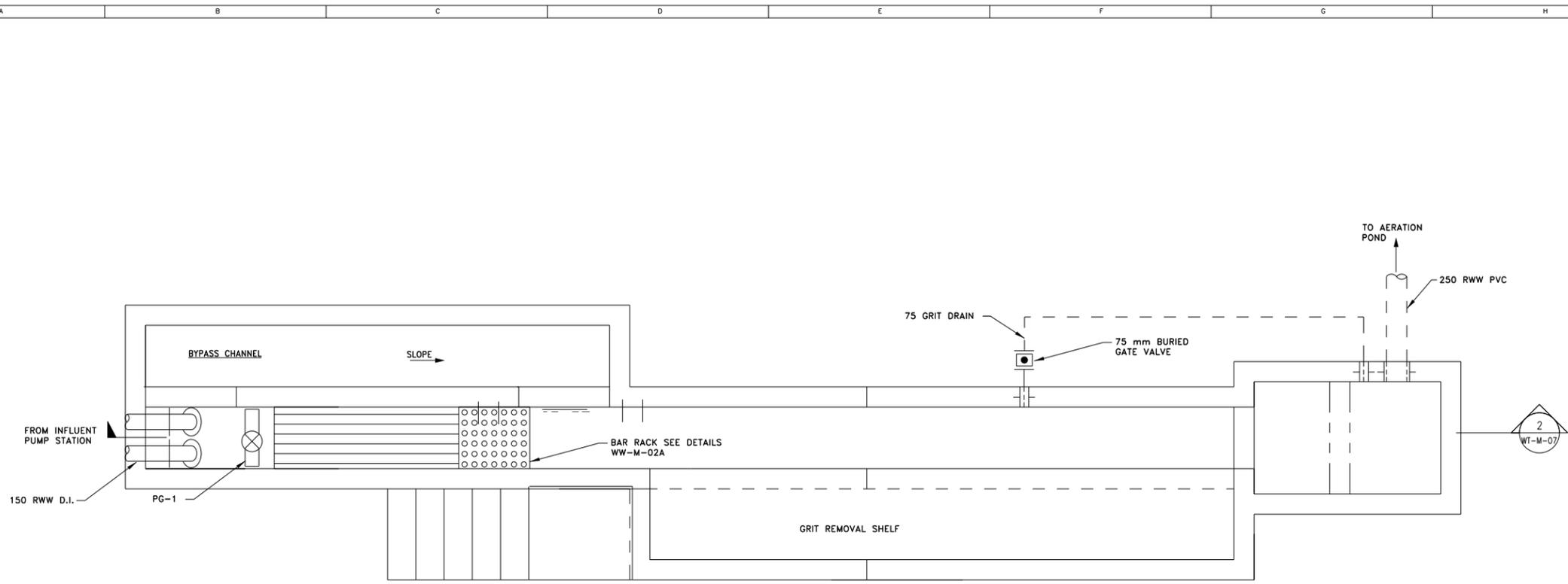
CONTRACTOR : **CONIRACK**
 1000 N. 23rd Street, Suite 1000, Arlington, VA 22209-4400
 Tel: (703)558-8800 Fax: (703)558-8808

DESIGNER : **DMJMHN**
 1000 N. 23rd Street, Suite 1000, Arlington, VA 22209-4400
 Tel: (703)558-8800 Fax: (703)558-2989

PROJECT : **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

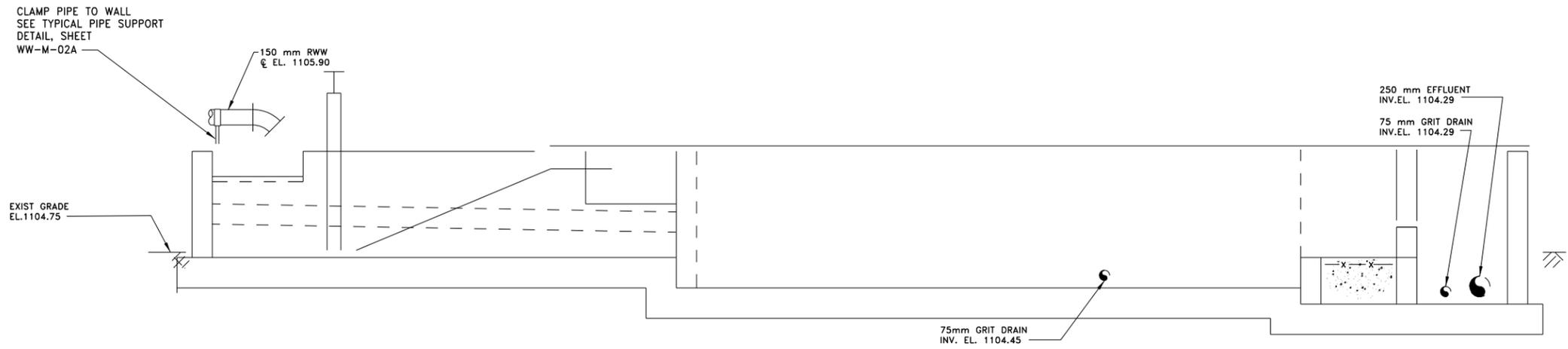
TITLE : **WASTEWATER SYSTEM CHEMICAL BUILDING PLAN**

ACTION	NAME	DATE	DOCUMENT NO.:	Task
Revised By:	MC	7/26/04	CAD FILE:	WW-M-05
Checked By:	Plr		Scale	AS SHOWN
Approved By:			DWG. IN	Sheet Of Sheets
			MM	3



1 INFLUENT CHANNEL & MANUAL BAR SCREEN
 WT-M-07 REF. SCALE: N.T.S.

- NOTES:**
- FLOOR SLOPE = 1/8" PER FOOT.
 - PROVIDE INSULATION FOR WELL HOUSE.
 - PROVIDE FRENCH DRAIN OR RUN TO SEWER.
 - CONNECT PUMP DISCHARGE TO 150mm RAW WATER MAIN.
 - CONNECT TO ELECTRICAL POWER.
 - CONNECT CONTROL WIRING TO WTP.



2 SECTION
 WT-M-02 REF. SCALE: N.T.S.



DWG. NO.	DRAWING TITLE	REVISIONS
7	23 MARCH, 2005	FINAL DESIGN SUBMITTAL
6	14 FEBRUARY, 2005	100% DESIGN SUBMITTAL
5	23 DECEMBER, 2004	100% DESIGN SUBMITTAL
4	8 DECEMBER, 2004	100% DESIGN SUBMITTAL
3	27 OCTOBER, 2004	99% SUBMITTAL REVISED
2	15 OCTOBER, 2004	99% SUBMITTAL REVISED
1	28 SEPTEMBER, 2004	99% DESIGN SUBMITTAL
0	28 AUGUST, 2004	35% DESIGN SUBMITTAL

CLIENT:
 U.S. ARMY CORPS OF ENGINEERS
 TRANSATLANTIC PROGRAMS CENTER

CONTRACTOR:
CONIRACK
 1211 N. 10th Street, Suite 1000, Irving, TX 75039-2000
 Tel: (972) 250-8800 Fax: (972) 250-8808

DESIGNER:
CONIRACK
 1211 N. 10th Street, Suite 1000, Irving, TX 75039-2000
 Tel: (972) 250-8800 Fax: (972) 250-8808

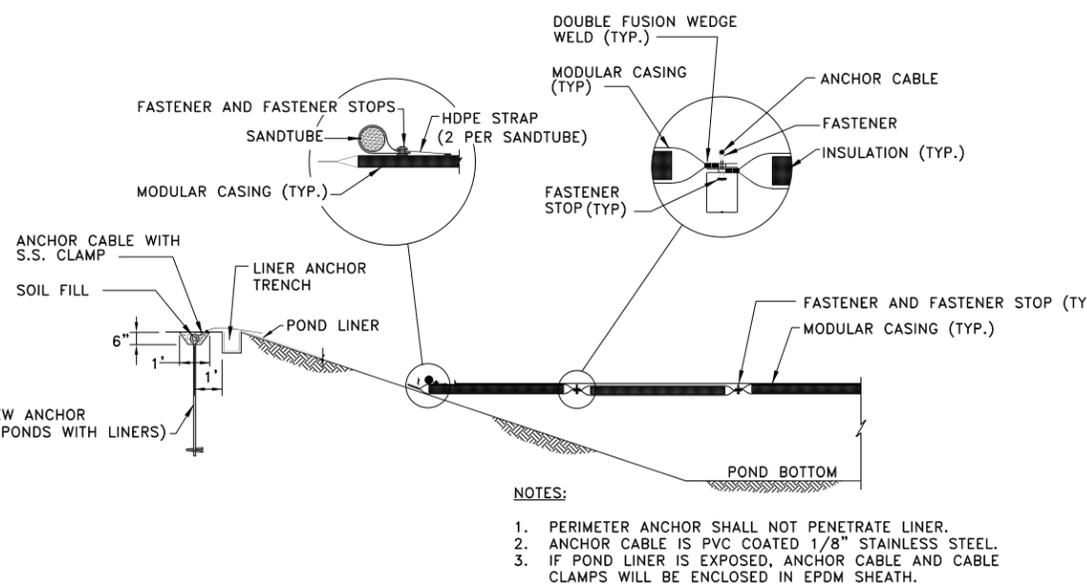
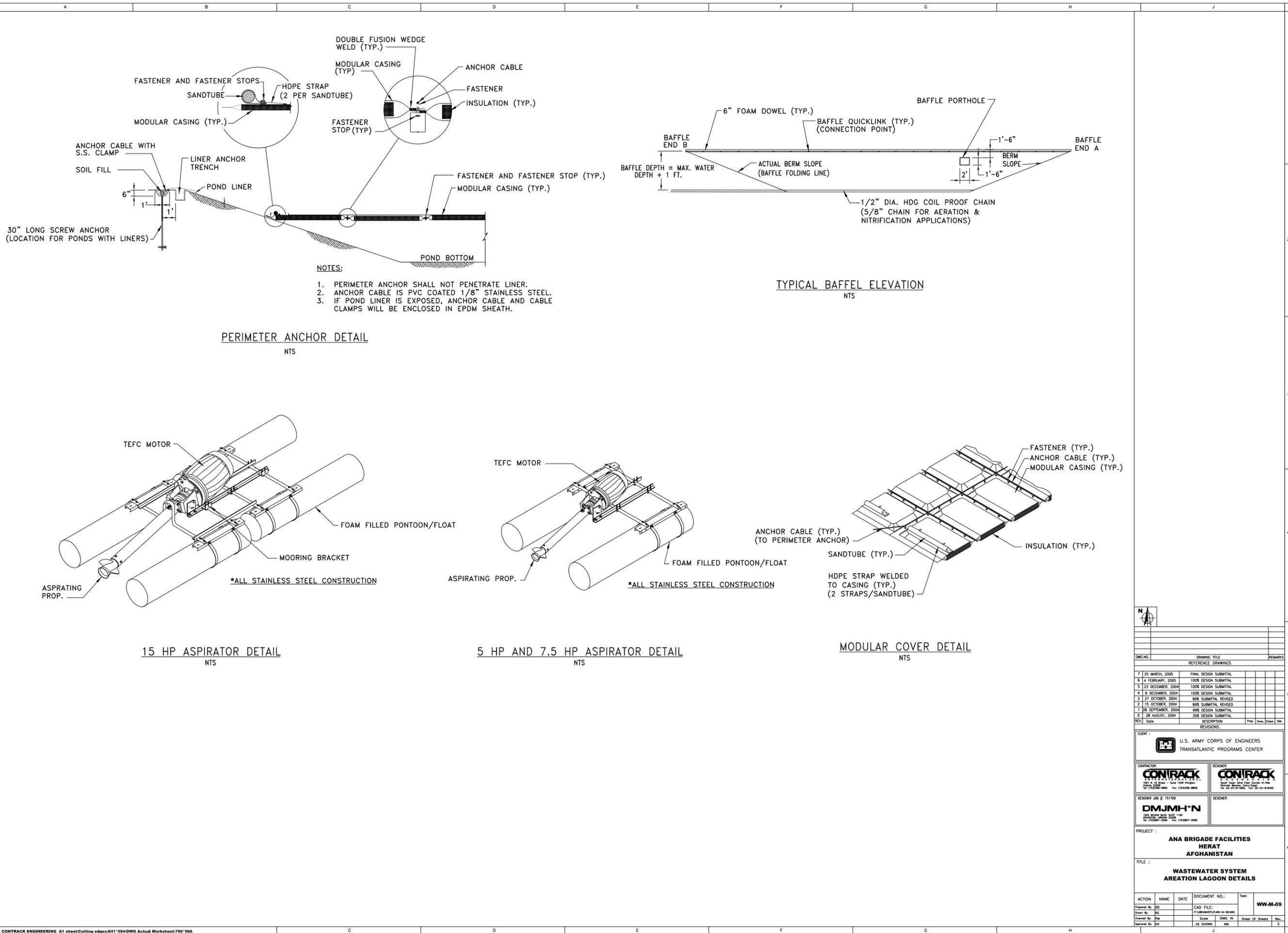
DESIGNER JOB #: 151709

DMJM-H-N
 1525 W. 10th Street, Suite 1100, Irving, TX 75039-2000
 Tel: (972) 250-8800 Fax: (972) 250-8808

PROJECT:
 ANA BRIGADE FACILITIES
 HERAT
 AFGHANISTAN

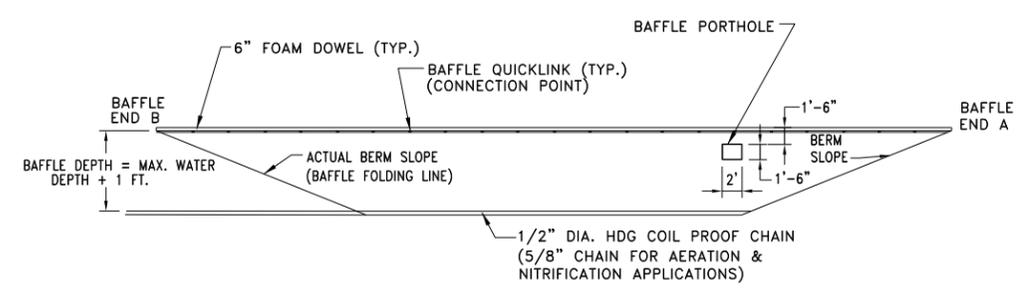
TITLE:
 INFLUENT CHANNEL & MANUAL BAR SCREEN
 PLAN AND SECTION

ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	J.P.K.	01-22-04	03-002-WT-M-03	WW-M-07
Drawn By:	J.P.K.	01-22-04	EL0003/002/WT-M-03	
Checked By:	J.P.K.	01-22-04	Scale: DMS, IN	
Approved By:	J.P.K.	01-22-04	Scale: 1/32	

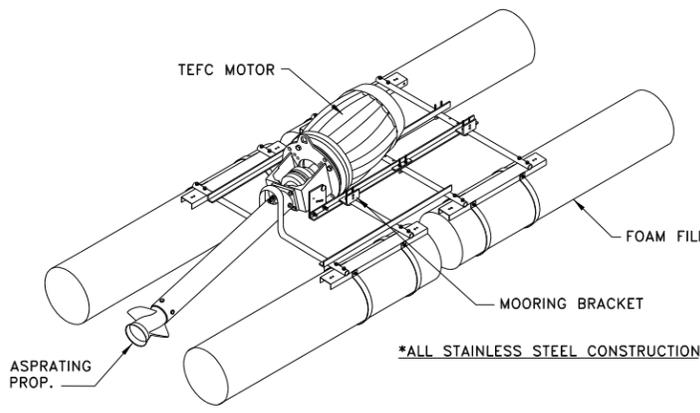


- NOTES:
1. PERIMETER ANCHOR SHALL NOT PENETRATE LINER.
 2. ANCHOR CABLE IS PVC COATED 1/8" STAINLESS STEEL.
 3. IF POND LINER IS EXPOSED, ANCHOR CABLE AND CABLE CLAMPS WILL BE ENCLOSED IN EPDM SHEATH.

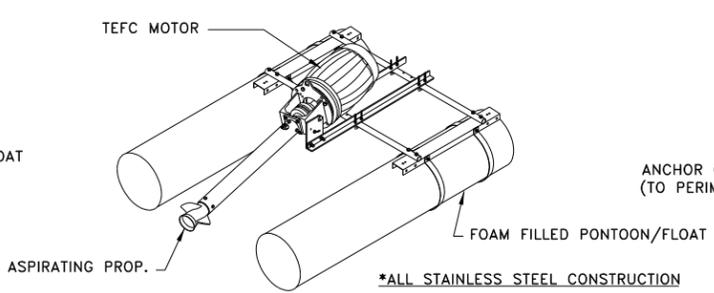
PERIMETER ANCHOR DETAIL
NTS



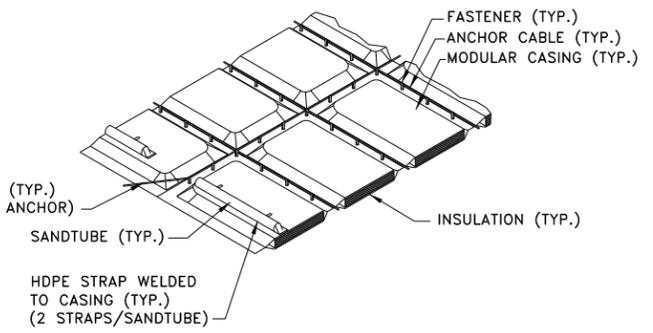
TYPICAL BAFFLE ELEVATION
NTS



15 HP ASPIRATOR DETAIL
NTS

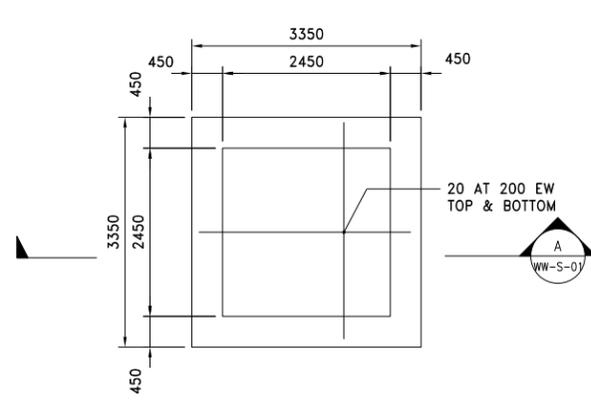


5 HP AND 7.5 HP ASPIRATOR DETAIL
NTS

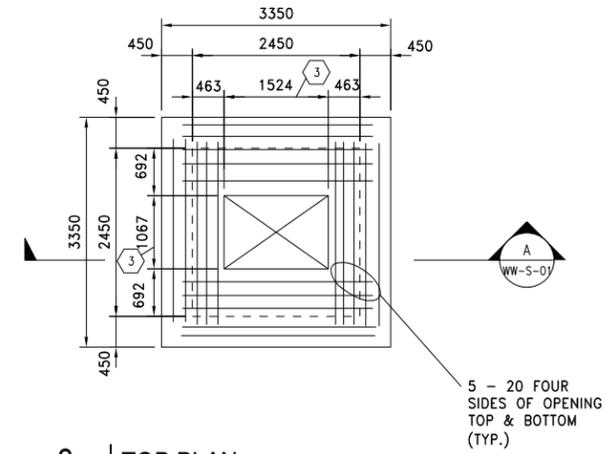


MODULAR COVER DETAIL
NTS

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DWG. NO.	DRAWING TITLE	REVISIONS																										
7	25 MARCH, 2005	FINAL DESIGN SUBMITTAL																										
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1	26 SEPTEMBER, 2004	90% DESIGN SUBMITTAL																										
0	28 AUGUST, 2004	50% DESIGN SUBMITTAL																										
<p>CLIENT : U.S. ARMY CORPS OF ENGINEERS TRANSATLANTIC PROGRAMS CENTER</p>																												
<p>CONTRACTOR : CONIRACK 100 N. 18 Street - Suite 1200 Arlington, VA 22209-4000 Tel: (703) 596-8800 Fax: (703) 596-8808</p>																												
<p>DESIGNER : DMJMHN 100 N. 18 Street - Suite 1100 Arlington, VA 22209-4000 Tel: (703) 597-2000 Fax: (703) 597-2009</p>																												
<p>PROJECT : ANA BRIGADE FACILITIES HERAT AFGHANISTAN</p>																												
<p>TITLE : WASTEWATER SYSTEM AREATION LAGOON DETAILS</p>																												
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ACTION	NAME	DATE	DOCUMENT NO.	Task																								
Prepared By	DD		CAD FILE:	WW-M-09																								
Drawn By	HC		PLANS/DETAILS/REV-10-03-04																									
Checked By	JK		Scale	DWG. NO.																								
Approved By	JK		AS SHOWN	Sheet Of Sheets																								

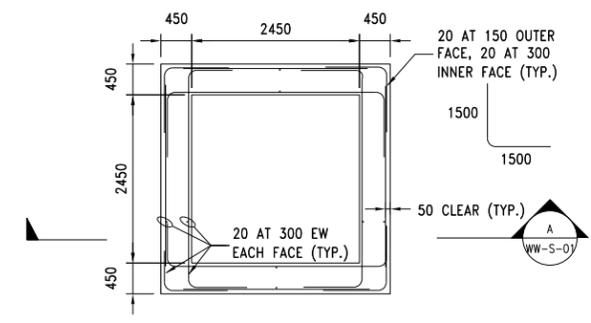


1 FOUNDATION PLAN
WW-S-01 REF. SCALE: 1:50

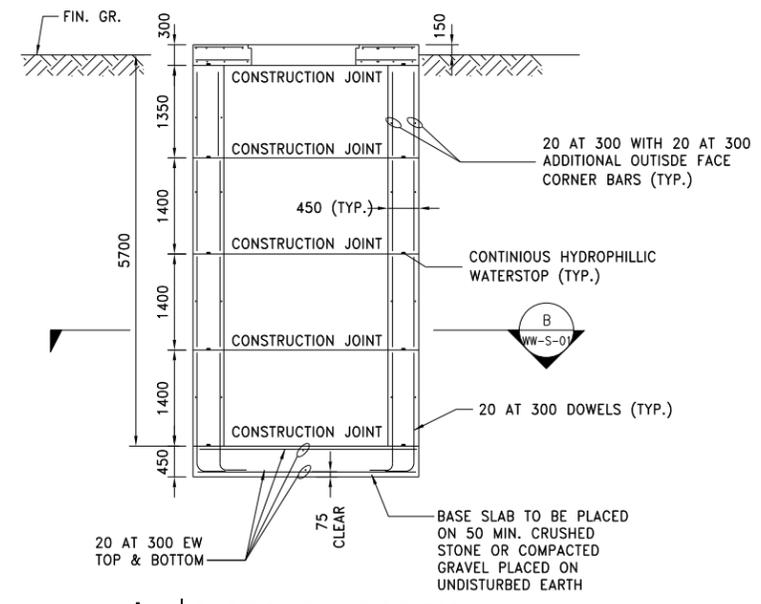


2 TOP PLAN
WW-S-01 REF. SCALE: 1:50

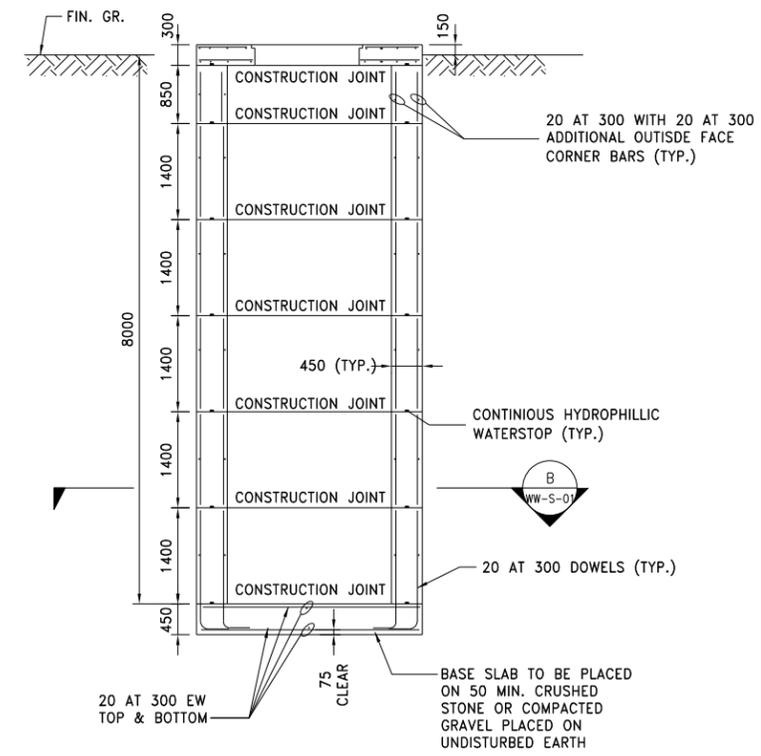
- STRUCTURAL NOTES**
1. CONCRETE STRENGTH TO BE 280 KG/SQ. CM AT 28 DAYS.
 2. REINFORCING STEEL TO BE 4218 KG/SQ. CM MINIMUM YIELD STRENGTH.
 3. HATCH SIZE TO BE COORDINATED WITH PUMP MANUFACTURER.



B SECTION
WW-S-01 REF. SCALE: 1:50



A SECTION PUMP STATION
WW-S-01 REF. SCALE: 1:50



A SECTION AT SLUDGE TRANSFER PUMP STATION
WW-S-01 REF. SCALE: 1:50



REV.	Date	DESCRIPTION	Prep.	Drawn	Check	Appr.
7	25 MARCH, 2005	FINAL DESIGN SUBMITTAL				
6	4 FEBRUARY, 2005	100% DESIGN SUBMITTAL				
5	23 DECEMBER, 2004	100% DESIGN SUBMITTAL				
4	8 DECEMBER, 2004	100% DESIGN SUBMITTAL				
3	27 OCTOBER, 2004	99% SUBMITTAL REVISED				
2	15 OCTOBER, 2004	99% SUBMITTAL REVISED				
1	28 SEPTEMBER, 2004	99% DESIGN SUBMITTAL				
0	28 AUGUST, 2004	35% DESIGN SUBMITTAL				

CLIENT: U.S. ARMY CORPS OF ENGINEERS
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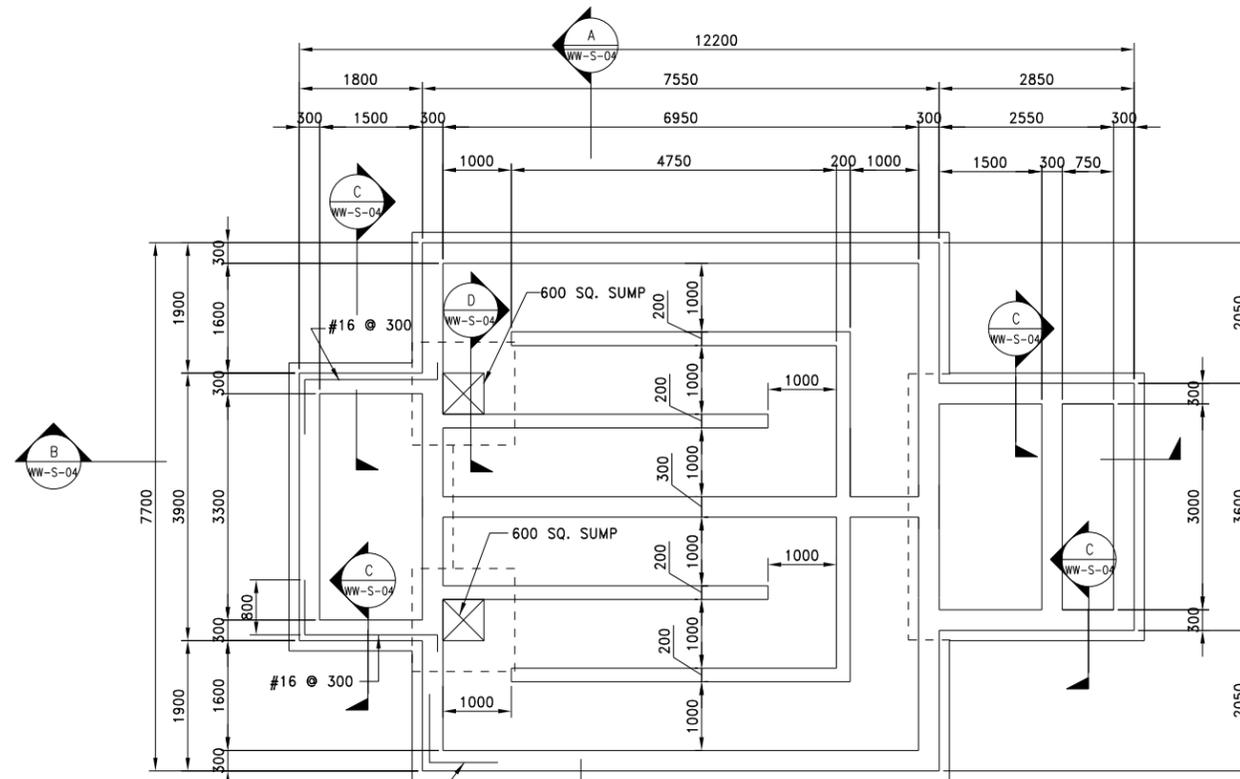
CONTRACTOR: **CONIRACK**
1201 N. 19th Street - Suite 1220 Arlington, VA 22209-4000 Fax: (703) 261-8888

DESIGNER: **DMJM-H**
1000 Wilson Blvd. Suite 1100 Arlington, VA 22209-4110 Fax: (703) 261-2000

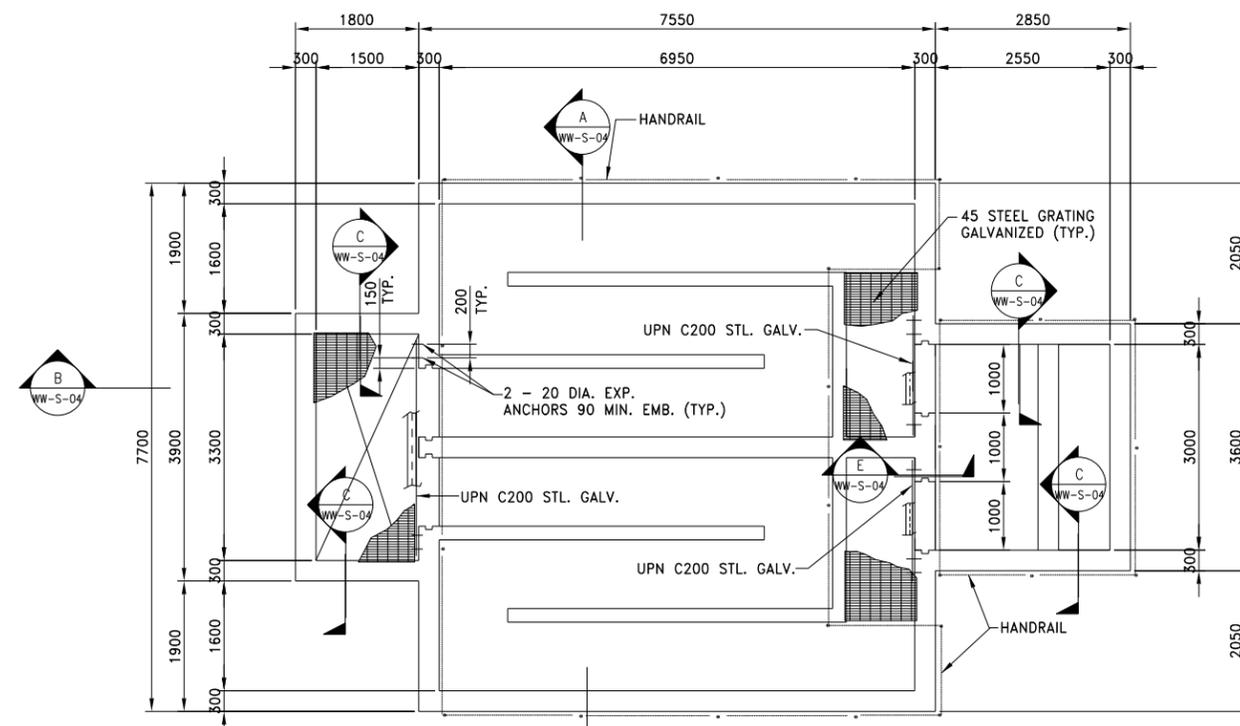
PROJECT: **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

TITLE: **WASTEWATER SYSTEM PUMP & SLUDGE TRANSFER PUMP STATIONS PLAN & SECTION**

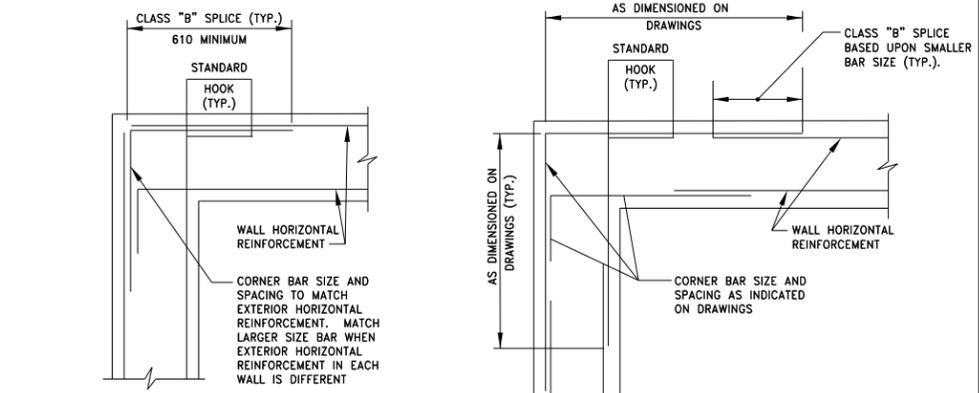
ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	MEM	12AUG04	CAD FILE:	WW-S-01
Checked By:	JMF		Scale:	
Approved By:	AS		DWG. IN:	Sheet Of Sheets
			AS SHOWN:	3



1 FOUNDATION PLAN
WW-S-03 REF. SCALE: 1:50



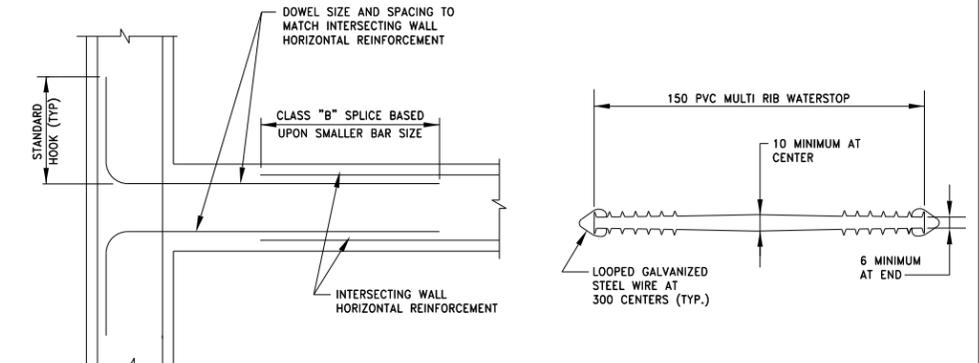
2 TOP PLAN
WW-S-03 REF. SCALE: 1:50



3 WALL CORNER REINFORCEMENT
WW-S-03 REF. SCALE: NTS

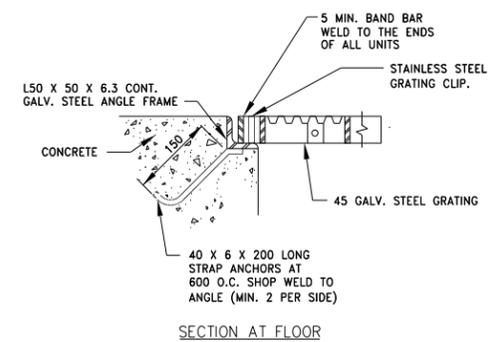


4 WALL CORNER WITH ADDL. CORNER BARS
WW-S-03 REF. SCALE: NTS

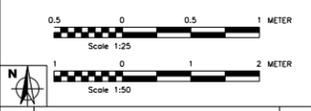


5 INT. OF TWO WALLS WITHOUT C.J.
WW-S-03 REF. SCALE: NTS

6 WATERSTOP
WW-S-03 REF. SCALE: NTS



7 GALVANIZED STEEL GRATING
WW-S-03 REF. SCALE: NTS



REV.	Date	DESCRIPTION	Prep.	Drawn	Check	Appr.
1	OCT. - 2005	AS BUILT				

CLIENT: U.S. ARMY CORPS OF ENGINEERS
TRANSATLANTIC PROGRAMS CENTER

CONTRACTOR: **CONIRACK**
1201 N. 18th Street - Suite 1222 Arlington, VA 22209-4000
Tel: (703) 261-2200 Fax: (703) 261-2200

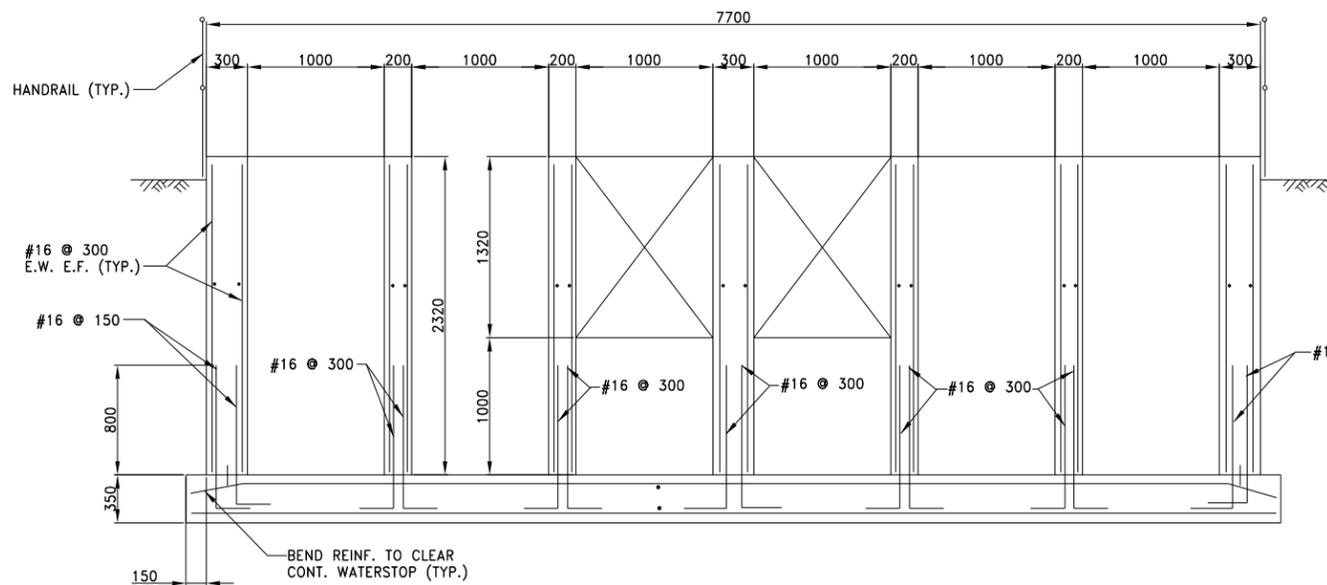
DESIGNER: **DMJM-H**
1875 McLean Blvd. Suite 1100 McLean, VA 22102-4710
Tel: (703) 261-2200 Fax: (703) 261-2200

PROJECT: **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

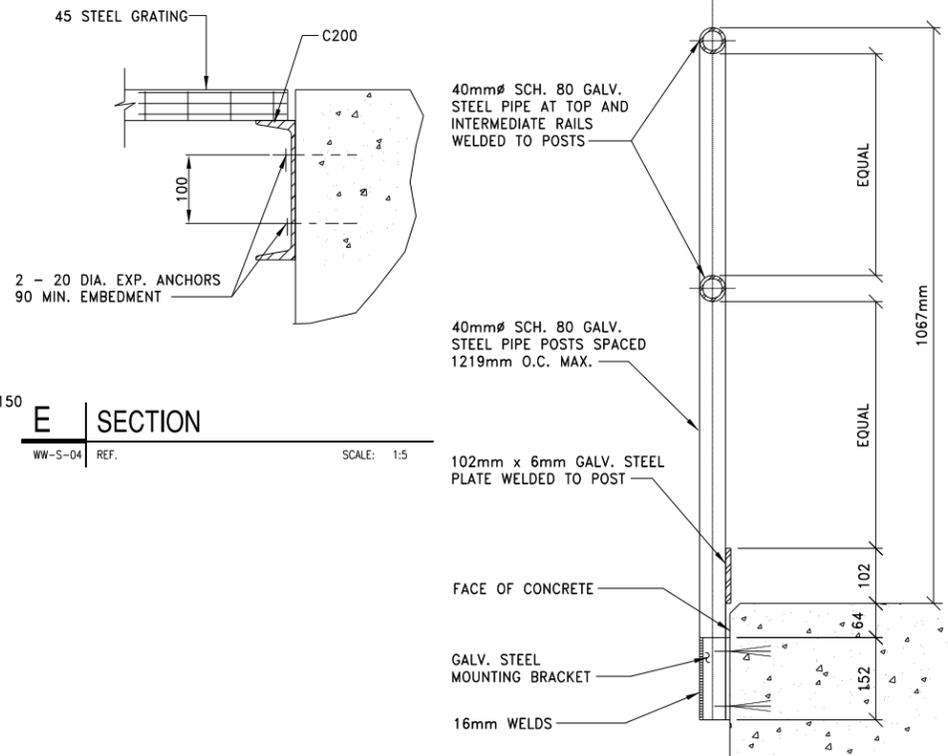
TITLE: **CHLORINE CONTACT TANK PLAN AND SECTIONS**

AS BUILT

ACTION	NAME	DATE	DOCUMENT NO.	Task
Prepared By:	JW		CAD FILE:	WW-S-03
Checked By:	JW		Scale:	
Approved By:			AS NOTED	MM

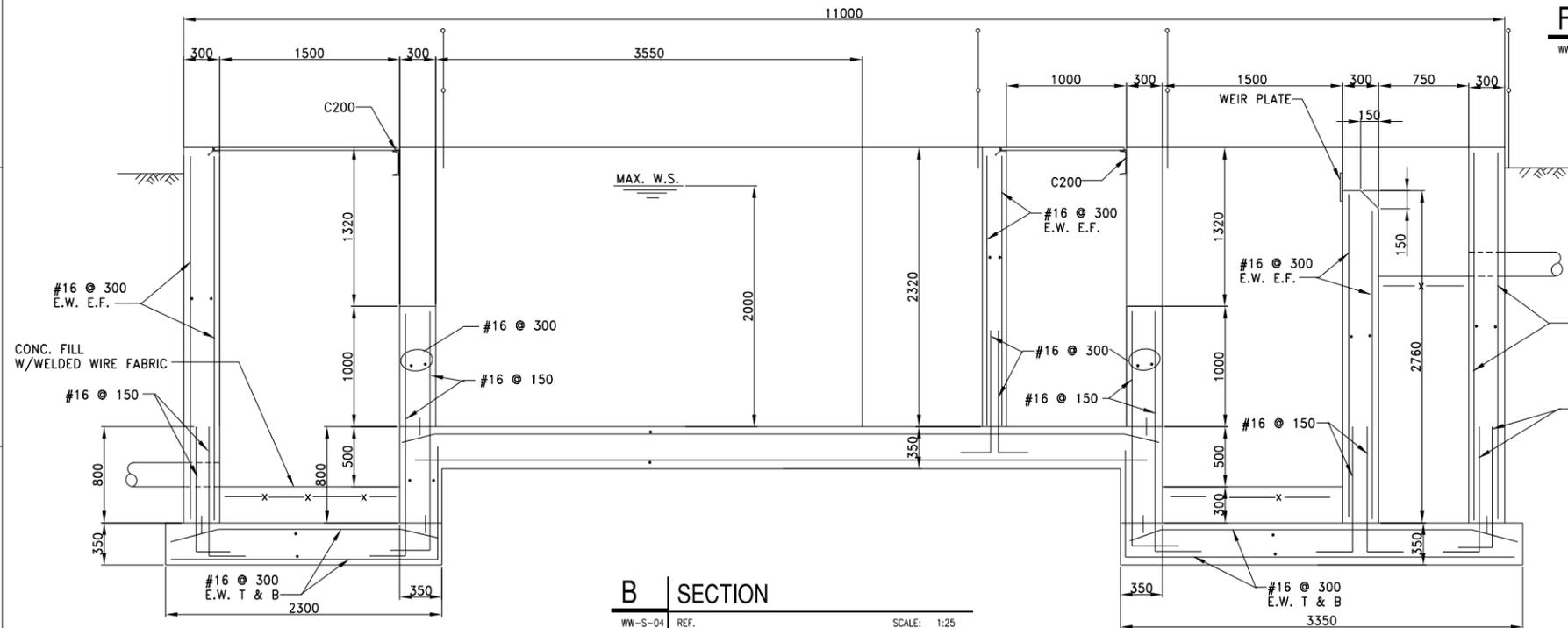


A SECTION
WW-S-04 REF. SCALE: 1:25

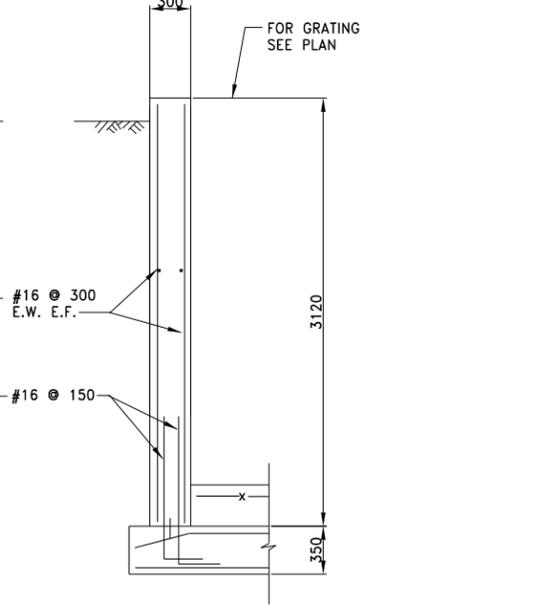


E SECTION
WW-S-04 REF. SCALE: 1:5

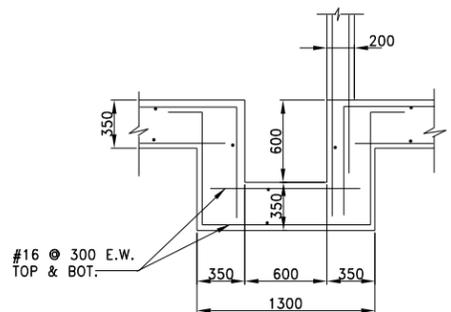
F SIDE MOUNTED GALVANIZED STEEL RAILING
WW-S-04 REF. SCALE: 1:4



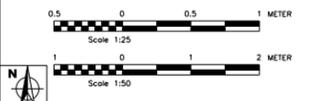
B SECTION
WW-S-04 REF. SCALE: 1:25



C SECTION
WW-S-04 REF. SCALE: 1:25



D SECTION
WW-S-04 REF. SCALE: 1:25



REV.	Date	DESCRIPTION	Prep.	Drawn	Check	Appr.
1	OCT. - 2005	AS BUILT				

CLIENT: U.S. ARMY CORPS OF ENGINEERS
TRANSATLANTIC PROGRAMS CENTER

CONTRACTOR: **CONIRACK**
1201 N. 19th Street - Suite 1222 Arlington, VA 22209-4000
Tel: (703) 261-2000 Fax: (703) 261-2000

DESIGNER: **DMJMH-N**
1875 MILPARK BLVD. SUITE 1100
MURFREESBORO, TN 37130
Tel: (615) 897-2000 Fax: (615) 897-2000

PROJECT: **ANA BRIGADE FACILITIES HERAT AFGHANISTAN**

TITLE: **CHLORINE CONTACT TANK SECTIONS**

AS BUILT

ACTION	NAME	DATE	DOCUMENT NO.:	Task:
Prepared By:	JMN		CAD FILE:	WW-S-04
Checked By:	JMN		Scale:	AS NOTED
Approved By:			DWG. IN:	Sheet Of Sheets
			1/1	3

#16 @ 300
EACH WAY CENTERED
IN WALL (TYP. ALL WALLS)

FINISH GRADE

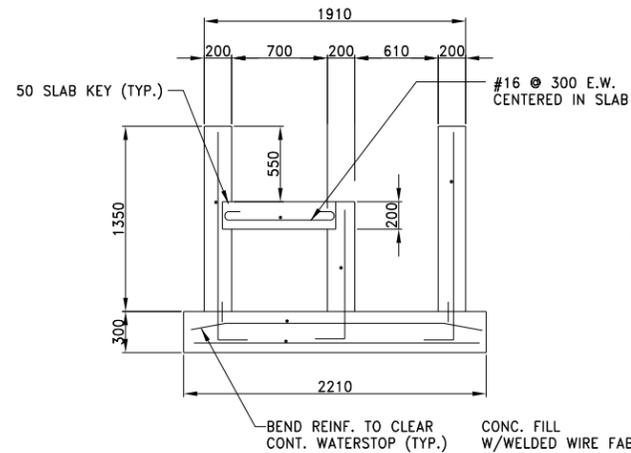
BEND REINF. TO CLEAR
CONT. WATERSTOP (TYP.)

PROVIDE 900 DEEP MIN. (4 225 LAYERS)
OF FREE DRAINING NON-FROST SUSCEPTIBLE
GRANULAR MATERIAL CONTAINING NOT MORE
THAN 5% (BY WEIGHT) PASSING NO. 200 SIEVE.
EACH LAYER SHALL BE COMPACTED TO 95% OF DRY DENSITY

A SECTION

WW-S-05 REF.

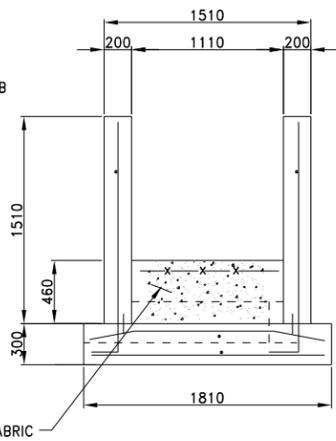
SCALE: 1:25



B SECTION

WW-S-05 REF.

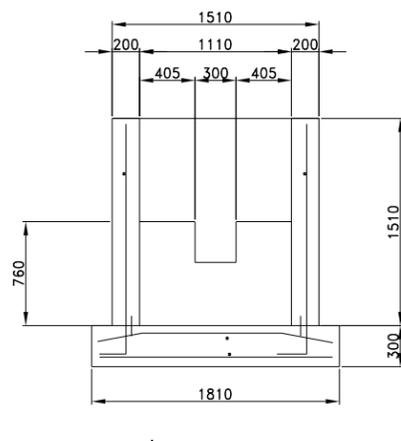
SCALE: 1:25



C SECTION

WW-S-05 REF.

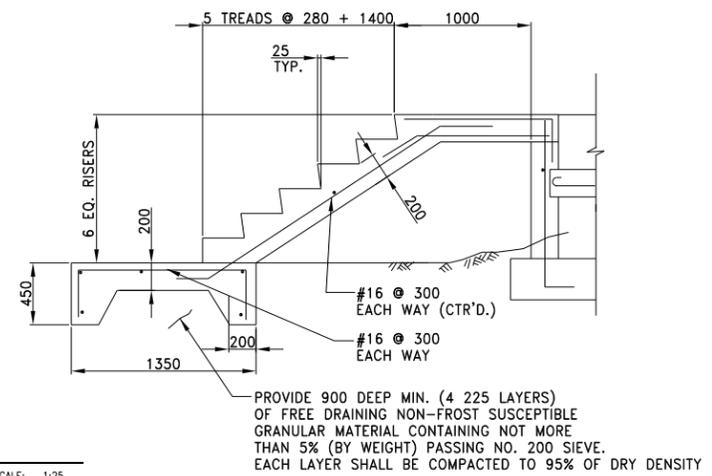
SCALE: 1:25



D SECTION

WW-S-05 REF.

SCALE: 1:25



E SECTION

WW-S-05 REF.

SCALE: 1:25

0.5 0 0.5 1 METER
Scale 1:25

1 0 1 2 METER
Scale 1:50

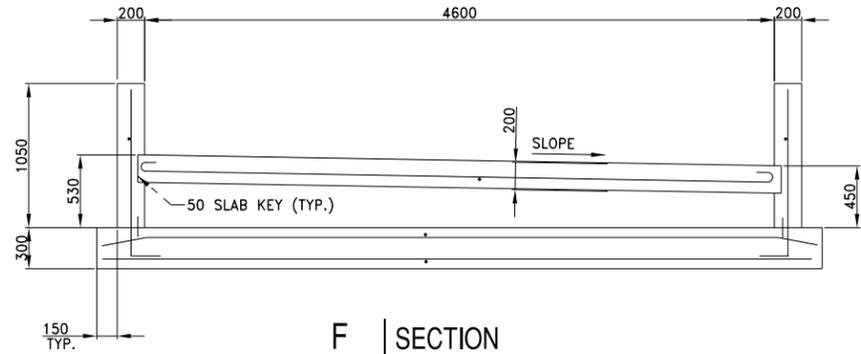


REV.	Date	DESCRIPTION	Prep	Draw	Check	Appr.
1	OCT. - 2005	AS BUILT				

CLIENT:	U.S. ARMY CORPS OF ENGINEERS TRANSATLANTIC PROGRAMS CENTER
CONTRACTOR:	CONIRACK
DESIGNER:	CONIRACK
DESIGNER JOB #:	151709
DESIGNER:	DMJMH-N

PROJECT:	ANA BRIGADE FACILITIES HERAT AFGHANISTAN		
TITLE:	INFLUENT CHANNEL & MANUAL BAR SCREEN SECTIONS		
ACTION	NAME	DATE	DOCUMENT NO. / Task
Prepared By:	JM		WW-S-06
Checked By:	JM		
Approved By:	JM		

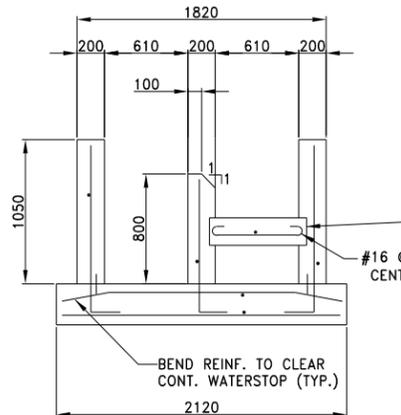
AS BUILT



F SECTION

WW-S-05 REF.

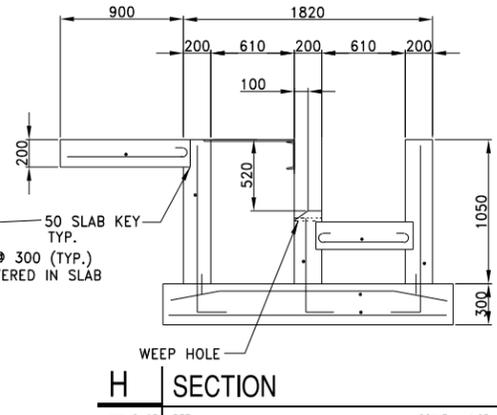
SCALE: 1:25



G SECTION

WW-S-05 REF.

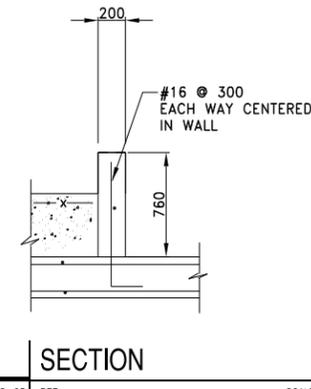
SCALE: 1:25



H SECTION

WW-S-05 REF.

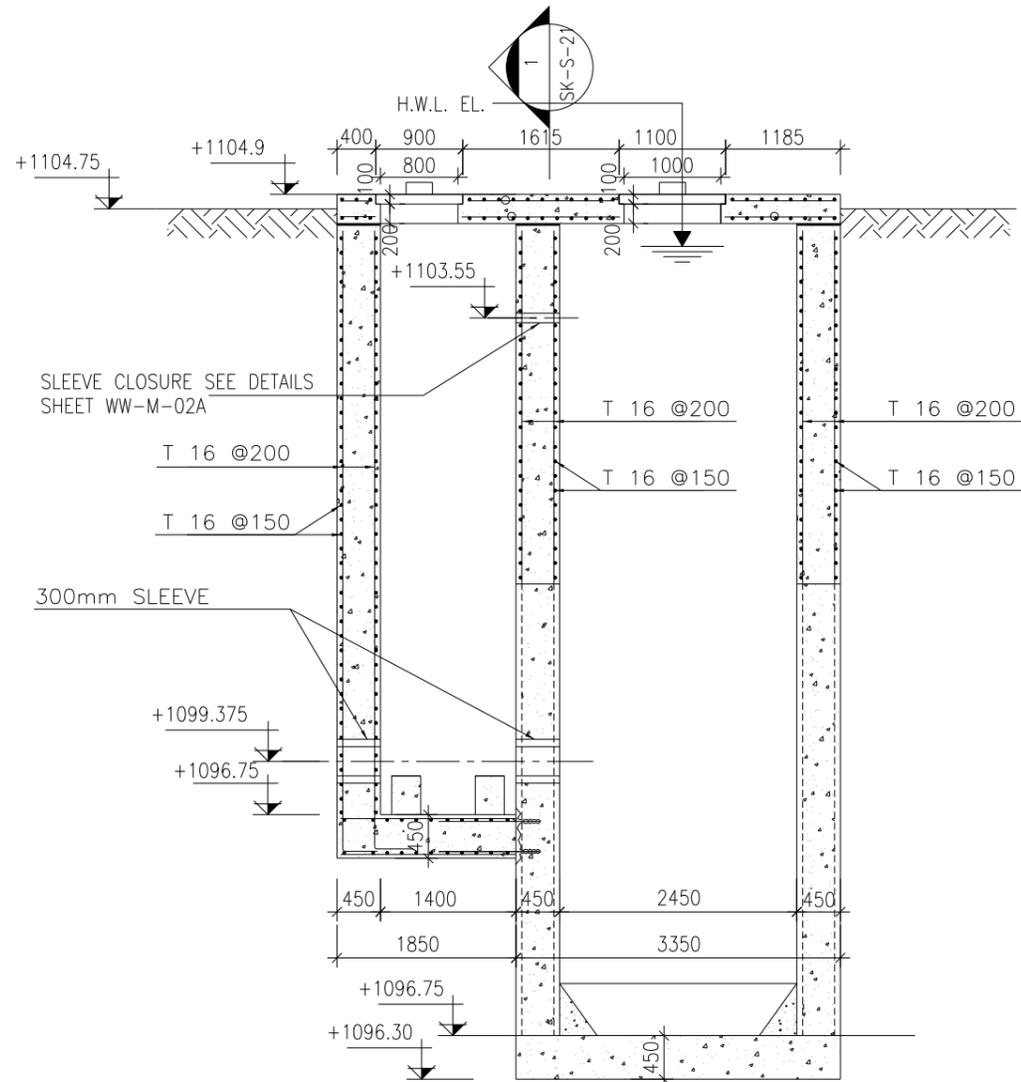
SCALE: 1:25



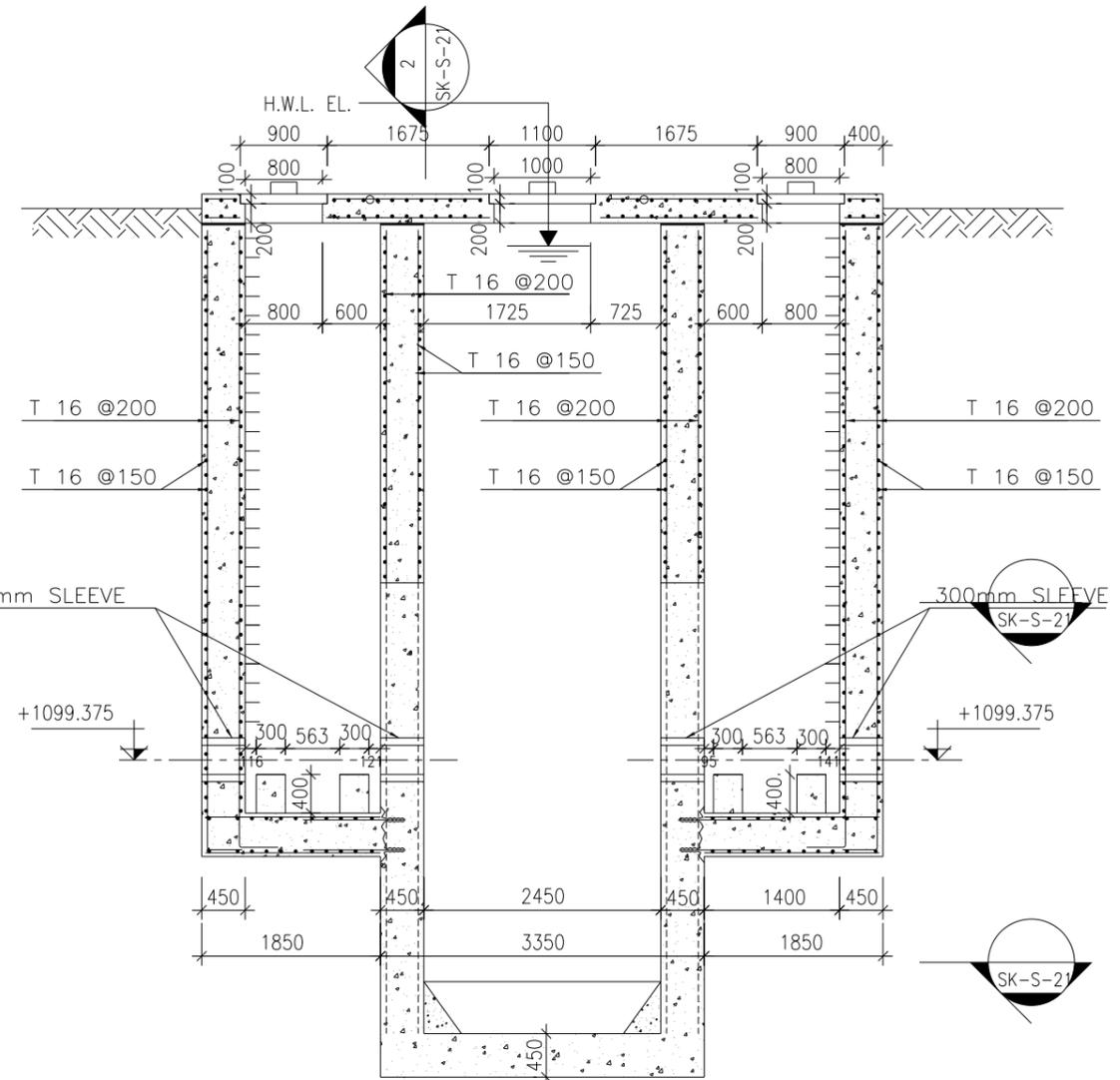
J SECTION

WW-S-05 REF.

SCALE: 1:25



2 SECTION ELEVATION (B-B)
SK-S-20 SCALE: 1:25



1 SECTION ELEVATION (A-A)
SK-S-21 SCALE: 1:25

NOTES:

- 1- DO NOT SCALE DRAWINGS.
- 2- THIS DWG. SHOULD BE READ IN CONJUNCTION WITH THE ORIGINAL DWGS..
- 3- THIS DWG. SHOULD BE READ REVISED WITH THE DETAILED DWGS. OF THE SUPPLIER OF THE FUEL TANKS.
- 4- REFERE TO DWG NO. (CO-C-01), FOT THE TYPICAL DETAILS.
- 5- ALL NOTES IN THE GENERAL DWGS. SHOULD BE FOLLOWED.
- 6- REEFER TO THE TYP. DWG. FOR THE LADDER DETAIL

AS BUILT

DWG. NO.		DRAWING TITLE	
		REFERENCE DRAWINGS	
REV.	Date	DESCRIPTION	Prep. Dwn. IC
1	OCT - 2005	AS BUILT	
REVISIONS			
CLIENT :			
U.S. ARMY CORPS OF ENGINEERS TRANSATLANTIC PROGRAMS CENTER			
CONTRACTOR:		DESIGNER:	
 CONIRACK 1325 WILSON BLVD. SUITE 1100 ARLINGTON, VIRGINIA 22202 Tel: (703) 597-5500 Fax: (703) 597-5599		 CONIRACK 1325 WILSON BLVD. SUITE 1100 ARLINGTON, VIRGINIA 22202 Tel: (703) 597-5500 Fax: (703) 597-5599	
DESIGNER JOB # 131709		DESIGNER:	
 DMJMH-N 1325 WILSON BLVD. SUITE 1100 ARLINGTON, VIRGINIA 22202 Tel: (703) 597-5500 Fax: (703) 597-5599			
PROJECT :			
ANA BRIGADE FACILITIES HERAT AFGHANISTAN			
TITLE :			
WASTE WATER TREATMENT PLANT SLUDGE TANK REINFORCEMENT DETAILS (1)			
ACTION	NAME	DATE	DOCUMENT NO.:
Prepared By:	IC		CAD FILE:
Drawn By:	IC		P:\PROJ\09\A\11-08.Dwg
Checked By:	IC		Scale:
Approved By:	IC		DWG. No.
			AS NOTED
			Sheet 01

