

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
WO-LT-0004

Excel Worksheet		
<u>Name</u>	<u>Description</u>	<u>Printed Page Number</u>
Index Sheet	Excel Workbook Index	1
Civil	Civil Comments	2-4
Structural	Structural Comments	5
Water/Wastewater	Water/Wastewater Comments	6-13
Electrical	Site Electrical Distribution Comments	14-16

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
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Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
CIVIL COMMENTS						
C1	CTJ	Drawings C-105 & 106	There are drainage openings on the perimeter wall identified on the plans, however no information is provided regarding the size of these openings.	no code	no response	Partially Addressed
C2	CTJ	C-109 & 110	There are no details and/or sections provided for SWM areas 1, 2 & 3. Are they vegetated, gravel or concrete-lined? If vegetated, then riprap protection may be required at the inlet pipes.	no code	no response	Partially Addressed
C3	CTJ	C-109 & 110	There appear to be walkways and stairs leading to the SWM areas. There are no details for the stairs. Also, since the SWM area are designed to detain a significant depth of water, consider providing railings or fencing.	no code	no response	Not Addressed
C4	CTJ	C-109 & 110	The SWM areas do not appear to have any type of emergency overflow spillways. Portions of the site and possibly buildings could become flooded if there were any significant blockage in the storm drain system.	no code	no response	Not Addressed
C5	CTJ	C-109	Finish grades at the north side of building 5 (Multipurpose) are up to 1m higher than the building FF. Is the building foundation stepped or is there a retaining wall? If not, the grades should be lowered.	no code	no response	Not Addressed
C6	CTJ	C-109	Finish grades at the northwest corners of buildings 7 (DFAC) and 10-11 (Heating & Generator) are set at the building FF. These grades should be lowered.	no code	no response	Addressed
C7	CTJ	C-110	The 68.5m contour adjacent to the north side of building 2 (Office) is higher than the building FF. The grading adjacent to the building should be lowered.	no code	no response	Not Addressed
C8	CTJ	C-110	The 69m contour adjacent to the northwest corner of building 3 (Office) is higher than the building FF. The grading adjacent to the building should be lowered.	no code	no response	Not Addressed
C9	CTJ	C-110	There are no details or elevations provided for the outlet of the proposed retention basin.	no code	no response	Plan shows that the basin will drain based on existing grades
C10	CTJ	C-114	What type of gates are proposed in detail views 1 and 2? If they are slide gates, show which direction they will open. When open, gate 1 will block access to the guard booth.	no code	no response	Addressed
C11	CTJ	C-115	The enlarged utility clearance views show a distance of 1.5m between the sanitary sewer and domestic water lines. This should be changed to 3m to coordinate with detail 4 on sheet C-509.	no code	no response	Still not correct
C12	CTJ	C-119 & C-120	How is roof drainage handled? Downspouts or internal roof drains?	no code	no response	Not Addressed

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C13	CTJ	C-120	For the drainage opening in the perimeter wall adjacent to the retention basin, what is the size of the opening? This opening is not detailed in the drawing set. Also, how is the perimeter wall security maintained?	no code	no response	Partially Addressed
C14	CTJ	C-128	Note number 8 references a phasing plan for building construction. This plan was not provided for review.	no code	no response	Addressed
C15	CTJ	C-129 & C-130	Provide inlet protection at low level inlets for the riser inlets (RI) at SWM areas 1, 2 & 3.	no code	no response	Addresses
C16	CTJ	C-201 thru C-203	Show all utilities on profile sheets to identify conflicts.	no code	no response	Not Addressed
C17	CTJ	C-502	Provide storm drain pipe trench detail.	no code	no response	Addresses
C18	CTJ	C-503	For trench drain detail, show how pipe exits trench drain.	no code	no response	Addresses
C19	JWH	Specification Section 14000	Who is "Owners Representative"? This party needs to be identified and must have authority over the site. The specifications put a lot of responsibility on the Owner's Representative and the Owner's Representative needs to be clear about what they will be expected to do. (Typ Throughout Specifications)	no code	no response	Addresses
C20	JWH	14000	1.6 E Verify that the requirement for professional engineers can be met.	no code	no response	Addresses
C21	JWH	24116	1.3 A. Verify that regulations are available to define "legally dispose."	no code	no response	Addresses
C22	JWH	24116	1.5 F. Verify that licensed landfills are available to accept waste.	no code	no response	Addresses
C23	JWH	24116	1.7 C 1&3 Confirm that these conditions can be met by the owner's representative.	no code	no response	Addresses
C24	JWH	24116	1.7 C 2. Consider requiring the contractor to develop a waste management plan for material disposal, identifying disposal of hazardous vs. non hazardous materials.	no code	no response	Addresses
C25	JWH	311000	3.3 A Ref "Section 015639 Temporary Tree and Plant Protection." - section not included in specifications.	no code	no response	Addresses
C26	JWH	311000	3.3 A Responsibilities for action shifted from Owner's Representative to Owner. Specification should be consistent regarding the Point of Contact for the contractor. Correct throughout specification.	no code	no response	Addresses
C27	JWH	312000	3.8 C&D Provides conflicting direction regarding Trench Bottom.	no code	no response	Addresses
C28	JWH	312000	3.8 F 3. Specify which section of division 1 applies.	no code	no response	Addresses
C29	JWH	321313	Concrete pavement/road section details on the plans would be helpful.	no code	no response	Addresses
C30	JWH	321313	Make spec clear as to what type of reinforcement is being used, galvanized, epoxy of plain steel. Confirm that coated tie wire is available and practical. Eliminate unused products from spec.	no code	no response	Addresses

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C31	JWH	321313	3.8 Detectable warnings - define location and purpose of the warnings on the plan. Are these required/common in Afghanistan?	no code	no response	Not Addressed
C32	JWH	334100	1.5 A&B Calls for the Contractor to supply plans and profiles showing combined utilities. These should be shown on the drawings.	no code	no response	Not Addressed
C33	JWH	334100	1.5 C Calls for product certificates for cast iron pipe, include other pipe materials.	no code	no response	Not Addressed
C34	JWH	334100	2.9 Stormwater Detention Structures- Cast in Place. We presume these are detention basin outlet structures - call out on the plans. Provide details.	no code	no response	Addresses
C35	JWH	334100	3.3 Eliminate materials that are not being used.	no code	no response	Not Addressed
C36	JWH	334100	3.4 Cleanout Installation - are these included on the plans, if so provide call outs.	no code	no response	Not Addressed
C37	JWH	334100	3.6 C&D Clarify these spec's, rim grade should be flush with pavement not manhole.	no code	no response	Not Addressed
C38	JWH	334100	3.11 A&B Section 221413 "Facility Storm Drainage Piping" not provided	no code	no response	Not Addressed
C40	JWH	334100	3.11 D Describe the connection to "Sanitary Waste Interceptors."	no code	no response	Not Addressed
C41	JWH	334100	3.13 B. 6. Elaborate on "Force Main."	no code	no response	Not Addressed
C42	CTJ	Narrative	There are calculations showing the capacity of the storm drain piping, however there are no calculations regarding sizing of the SWM areas or the Retention Basin.	no code	no response	Not Addressed
C43	CTJ	Narrative	Additionally, there are no calculations indicating the peak water elevation for the SWM areas and Retention Basin during the design storm.	no code	no response	Not Addressed
C44	CTJ	Narrative	Provide calculations for the time to infiltrate stormwater within the retention basin below the elevation of the outlet.	no code	no response	Not Addressed
C45	JWH	C-102	Notes indicating "See Note 3" should read See Note 5.	no code	no response	Not Addressed
C46	JWH	C-113 (NEW COMMENT)	No Coordinates provided for Building 21 or the pump house.			
C47	JWH	C-122 (NEW COMMENT)	No information is provided on the size of the water tank, No structural detail provided for the tank.			
C48	JWH	C-509 C-511 (NEW COMMENT)	Two bollard details are provided. Eliminate any that are not being used and match the detail title to the callout on the plans "Security Bollard".			

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STRUCTURAL COMMENTS						
S1	FRS	General	Structural review based upon provided sheets C-501, C-503, C-506, C-509, C-511. No drawings or specifications were provided.	no code	no response	Site drawings, specifications and calculations provided - comment closed.
S2	FRS	C-501	Longitudinal joints appear to be saw cut, while transverse joints appear to be formed. A jointing layout plan should be included.	no code	no response	general note 2 indicates joint layout requirements - comment closed.
S3	FRS	C-503	Detail 2 Headwall - Show longitudinal reinforcement in footing and 90deg hook vertical headwall bars into footing. Suggest a roughened construction joint at top of footing.	no code	no response	Not addressed.
S4	FRS	C-503	Show additional reinforcing steel around opening to compensate for bars interrupted by pipe.	no code	no response	Not addressed.
S5	FRS	C-503	Detail 3 - Call out reinforcing in concrete.	no code	no response	Now called out - comment closed
S6	FRS	C-506	Section 1 - Call out waterstop material and size. What is drawn appears to be a hydrophilic strip. Is the material compatible with sewage corrosives?	no code	no response	Not addressed.
S7	FRS	C-506	Will ACI 350 crack control requirements be met in the 250mm wall and only one layer of reinforcing?	no code	no response	Not addressed.
S8	FRS	C-506	Detail 1 - Provided a top cover plate capable of supporting a design truck wheel load or provided a 1550 mm curb or bollards to prevent this loading. Appears the 0.15 KG/M2 load rating is too low.	no code	no response	Not addressed. C-127 does not indicate bollards or vehicular travel impediments around valve chamber and well.
S9	FRS	C-506	Detail 2 - Call out concrete strength.	no code	no response	Indicated within specifications - comment closed.
S10	FRS	C-511	Provide 75 clear cover on all reinforcement cast against earth.	no code	no response	Not addressed, but should be increased to comply with ACI 318M-05 7.7.1.
S11	FRS	C-511	Where is the CMU horizontal reinforcement called out?	no code	no response	Spacing/size indicated on drawing - comment closed.
S12	FRS	C-513 / Perimeter Wall Structural Calcs (NEW COMMENT)	Drawing C-513 shows design criteria for allowable soil bearing pressure as 2,000psf while final geotech report by Omran Geotechnical Co. dated April 20, 2010 recommends 1,500psf. To conform with the geotech recommendations, structural wall calculations would need to be revised to limit the calculated soil pressures.			
S13	FRS	C-513 (NEW COMMENT)	There is no indication or note that reflects the geotechnical recommendation, "Soil improvement under the foundation level suggested for site. Suggest remove of natural soil about 30 to 45 cm below foundation level. Replace and compact with select material." Concern for long term settlements and structural damage.			
S14	FRS	Specifications (NEW COMMENT)	There is no specification section for cast-in-place reinforced concrete, reinforcement, embedment's and formwork.			

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WATER/WASTEWATER COMMENTS						
WW1	NJB	General	Recommend dividing site into more than 2 sheets so utilities can be shown at larger scale.	no code	no response	Not addressed
WW2	NJB	Narrative - Civil/Utilities	No calcs provided showing water demands, potable water storage capacity, distribution flows/pressures.	no code	no response	Not addressed
WW3	NJB	Narrative - Civil/Utilities	What is basis for 40,000 gpd WWTP? Total flows from pg. 1 of sanitary sewer pipe sizing calcs total 42,585 gpd. What is the organic loading basis for the WWTP?	no code	no response	Not addressed
WW4	NJB	C-102	Recommend adding fence around WWTP.	no code	no response	Not addressed
WW5	NJB	C-102	Recommend adding fence around wellhead and storage tank since it is outside of perimeter wall.	no code	no response	Ok
WW6	NJB	C-103	Potable and heating hot water lines shown going through guard tower at SW corner of Building 13.	no code	no response	Not addressed
WW7	NJB	C-115	Horizontal separation between potable water and sanitary sewer pipe shown at 1.5m, at least 3m separation should be provided.	no code	no response	Ok
WW8	NJB	C-121	Show valving for potable water pipe in addition to heating hot water pipe.	no code	no response	Partially addressed
WW9	NJB	C-121	Gate valves orientation should be parallel to flow not perpendicular.	no code	no response	Not addressed
WW10	NJB	C-121	Why is half of potable water loop 150mm and the other half 200mm? (no hydraulic calcs are provided in the narrative)	no code	no response	Not addressed, now 75mm and 200mm
WW11	NJB	C-121	DI pipe will likely be hard to obtain.	no code	no response	Not addressed
WW12	NJB	C-122	There should be a valve on the intake line to the pump house.	no code	no response	Not addressed
WW13	NJB	C-122	The size of the tee at the discharge from the pump house should be called out.	no code	no response	Ok
WW14	NJB	C-122	Show valving for potable water pipe in addition to heating hot water pipe.	no code	no response	Partially addressed
WW15	NJB	C-122	Gate valves orientation should be parallel to flow not perpendicular.	no code	no response	Not addressed
WW16	NJB	C-122	Is the potable water line to the north of the courts/fields 150mm or 200mm? Please clarify.	no code	no response	Ok
WW17	NJB	C-122	There should be a 200mm to 150mm reducer shown for the transition between pipe sizes.	no code	no response	Ok
WW18	NJB	C-122	As noted above, DI pipe will likely be difficult to obtain.	no code	no response	Not addressed
WW19	NJB	C-123	Same comments on showing valves, valve orientation, and pipe material as on C-122.	no code	no response	Not addressed
WW20	NJB	C-123	Use (2) 45 bends in place of 90 bend on service to Buildings 1, 8, and 13.	no code	no response	Not addressed
WW21	NJB	C-124	Call out grease traps and oil water separators.	no code	no response	Not addressed
WW22	NJB	C-124	Specify size and material of sanitary sewers.	no code	no response	Not addressed
WW23	NJB	C-124	Discharge from WWTP and bypass around WWTP should be shown.	no code	no response	Not addressed
WW24	NJB	C-124	Has analysis been done to show that WWTP will not flood?	no code	no response	Not addressed

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WATER/WASTEWATER COMMENTS						
WW25	NJB	C-125	Specify size of grease trap serving Building 7.	no code	no response	Grease trap removed. Why?
WW26	NJB	C-125	Specify size of oil/water separator serving Building 10-11.	no code	no response	Not addressed
WW27	NJB	C-125	Move label/leader for grease trap so it does not cross text for Building 10-11.	no code	no response	Ok
WW28	NJB	C-125	Clean up service connection for Building 12. Unclear if there are 2 connections.	no code	no response	Ok
WW29	NJB	C-125	Legend states 200mm sewer, but labels on sewers show some 150mm sewers.	no code	no response	Not addressed
WW30	NJB	C-125	Call out size of sanitary lateral to Building 7 grease trap and to connection to main sewer.	no code	no response	Lateral removed.
WW31	NJB	C-125	Call out size of sanitary lateral to Building 10-11 oil/water separator.	no code	no response	Not addressed
WW32	NJB	C-125	Call out size of sanitary lateral to Building 10-11 around oil/water separator.	no code	no response	Not addressed
WW33	NJB	C-125	Call out wye for connection after oil/water separator.	no code	no response	Not addressed
WW34	NJB	C-125	Specify material of sewers.	no code	no response	Not addressed
WW35	NJB	C-126	Specify size of oil/water separator serving Building 13.	no code	no response	Not addressed
WW36	NJB	C-126	Call out wetwell and valve box for sanitary pump station.	no code	no response	Not addressed
WW37	NJB	C-126	Discharge from WWTP and bypass around WWTP should be shown.	no code	no response	Not addressed
WW38	NJB	C-126	Call out wye for connection after oil/water separator.	no code	no response	Not addressed
WW39	NJB	C-126	Legend states 200mm sewer, but labels on sewers show some 150mm sewers.	no code	no response	Not addressed
WW40	NJB	C-126	Specify material of sewers.	no code	no response	Not addressed
WW41	NJB	C-126	Elevations in Sanitary MH Schedule should be m not mm.	no code	no response	Ok
WW42	NJB	C-126	Pipe lengths in Sanitary Pipe Schedule should be m not mm.	no code	no response	Ok
WW43	NJB	C-126	SM-15 should be added to schedules.	no code	no response	Not addressed
WW44	NJB	C-126	Provide pipe diameter and length from SM-14 to WWTP.	no code	no response	Not addressed
WW45	NJB	C-127	Show continuation to SMH-13 for sewer north of SMH-14.	no code	no response	Not addressed
WW46	NJB	C-127	How is sludged pumped? Need to show more detail.	no code	no response	Not addressed
WW47	NJB	C-127	Guard tower shown adjacent to perimeter walls in SE corner of site. Previously shown at SW corner of Building 13.	no code	no response	Not addressed
WW48	NJB	C-127	Provide detail of sewer through new 3m tall CMU wall.	no code	no response	Ok
WW49	NJB	C-127	Provide detail of sewer outfall to existing drainage ditch.	no code	no response	Not addressed
WW50	NJB	C-127	Layout of WWTP is unclear. Cannot see pad and plant.	no code	no response	Not addressed
WW51	NJB	C-127	Reason for bypass around WWTP (wetwell to SMH-15) unclear. Bypass could be through the WWTP. If meant as overflow for pump station, collection system would likely surcharge before overflow because inlet inv is 3.2m below overflow inv.	no code	no response	Not addressed
WW52	NJB	C-504	Specify units in Details 1, 6, and 7.	no code	no response	Details 1 & 6 Ok, Detail 7 not addressed
WW53	NJB	C-504	Show utility marker tape in Detail 6.	no code	no response	Not addressed
WW54	NJB	C-504	Move leader of pipe label to pipe for Detail 6.	no code	no response	Ok
WW55	NJB	C-504	Expand WWF in Detail 7 since no legend.	no code	no response	Not addressed

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WATER/WASTEWATER COMMENTS						
WW56	NJB	C-505	Specify units on all dimensions on details (e.g. units are not provided for wall thickness, step height, etc. in Detail 1).	no code	no response	Not addressed
WW57	NJB	C-505	Missing text in Detail 1 A-A "ladder rungs see."	no code	no response	Ok
WW58	NJB	C-505	Detail 1 A-A lists the distance from the last step to the bottom is 600 [mm] and Detail 3 indicates that dimension is 500 mm max. Clarify.	no code	no response	Not addressed
WW59	NJB	C-505	No info provided on bedding under MH.	no code	no response	Not addressed
WW60	NJB	C-505	No detail for grouting and water stop between MH top and base slabs and walls.	no code	no response	Not addressed
WW61	NJB	C-505	Add detail showing pipe penetration through MH and reinforcement around penetration.	no code	no response	Not addressed
WW62	NJB	C-505	Specify material for MH steps in Detail 3.	no code	no response	Not addressed
WW63	NJB	C-505	Recommend rounding dimensions in Detail 3 to more practical metric dimensions (e.g. 152 -> 150).	no code	no response	Not addressed
WW64	NJB	C-505	Show utility marker tape in Detail 5.	no code	no response	Not addressed
WW65	NJB	C-505	Move leader of pipe label to pipe for Detail 5.	no code	no response	Ok
WW66	NJB	C-505	Recommend providing less detail or allowing equivalent for MH frame and cover because it is unlikely what is shown will be available locally.	no code	no response	Not addressed
WW67	NJB	C-505	Recommend adding second cleanout detail for the end of the line.	no code	no response	Not addressed
WW68	NJB	C-505	Specify fill material around top of cleanout (above concrete) in Detail 9.	no code	no response	Not addressed
WW69	NJB	C-506	Consider maintaining size of pump discharge line at 100 mm until 100 x 200 mm reducer at WWTP connection (less fittings).	no code	no response	Not addressed
WW70	NJB	C-506	Direction of arrow in wet well plan view for emergency overflow is reversed.	no code	no response	Not addressed
WW71	NJB	C-506	Add detail showing pipe supports.	no code	no response	Not addressed
WW72	NJB	C-506	Unlikely that Bilco doors will be found locally may want to change structure dimensions to more standard size so doors can be fabricated.	no code	no response	Not addressed
WW73	NJB	C-506	Specify schedule of PVC piping.	no code	no response	Not addressed
WW74	NJB	C-506	Recommend rounding dimensions to more practical metric dimensions (e.g. 152.4 mm -> 150 mm).	no code	no response	Not addressed
WW75	NJB	C-506	Add concrete fillets in corners of wetwell to prevent solids from accumulating in corners.	no code	no response	Not addressed
WW76	NJB	C-506	Note 4 refers to the Geotech Report for foundation design parameters and installation/construction procedures. All requirements should be covered in plans and specifications.	no code	no response	Ok
WW77	NJB	C-506	Clarify "qualifying agency" in Note 9 or remove note.	no code	no response	Ok
WW78	NJB	C-506	Recommend providing pump schedule to provide design basis and to assist contractor as Flowserve Model 4mSX7 is unlikely to be available locally.	no code	no response	Not addressed

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WATER/WASTEWATER COMMENTS						
WW79	NJB	C-506	Pump sized based on a peaking factor of 9 from ADF. Peaking factor was calculated based on daily flow over 8 hours. That does not seem realistic. Would expect at least usage would be comparable to office complex in US and daily flow could be used to calculate peaking factor.	no code	no response	Not addressed
WW80	NJB	C-506	300mm between LWL and bottom of tank is provided, which would appear insufficient to submerge and cool pump (note info on Flowserve model 4msx7 could not be found).	no code	no response	Not addressed
WW81	NJB	C-506	Wet well is undersized. Approx 1 CUM of effective storage provided. Pumps will cycle on and off too frequently. Recommend increasing depth/size of wetwell. Alternatively, if overall depth is concern, consider adding intermediate pump station or reducing slope of sewers.	no code	no response	Not addressed
WW82	NJB	C-506	Show junction box, how and where the float switches are hung, and type of float switch.	no code	no response	Not addressed
WW83	NJB	C-506	No info provided on control panel.	no code	no response	Not addressed
WW84	NJB	C-507	Provide structural plans for pad.	no code	no response	Not addressed
WW85	NJB	C-507	Note 11 refers to the Geotech Report for foundation design parameters and installation/construction procedures. All requirements should be covered in plans and specifications.	no code	no response	Ok
WW86	NJB	C-507	Clarify "qualifying agency" in Note 16 or remove note.	no code	no response	Ok
WW87	NJB	C-507	Specify units [m] of elevations.	no code	no response	Not addressed
WW88	NJB	C-507	Change all units in metric (e.g. 4" supernatant line and basis of design table).	no code	no response	Not addressed
WW89	NJB	C-507	Provide details for the control panel. The box at the top of sheet states the control panel is shown mounted on top of the tank, but it is not.	no code	no response	Not addressed
WW90	NJB	C-507	What is the meaning of Note 9?	no code	no response	Not addressed
WW91	NJB	C-507	Fill and backfill material should be in accordance with plans and Earthwork spec. Revise Note 12.	no code	no response	Not addressed
WW92	NJB	C-507	Clarify where the finished grade is in relation to the WWTP in View A-A. On the influent side it is shown even with the top of the WWTP and there is also earth hatch and finished grade text at bottom of tank. On the effluent side the WWTP is shown as 15 cm above ground surface.	no code	no response	Not addressed
WW93	NJB	C-507	View A-A shows access ladder buried.	no code	no response	Not addressed
WW94	NJB	C-507	There is a discrepancy in the invert elev for the influent line. View A-A shows the CL at 1866.47 [m] and Detail 1 shows the top of the 200 mm pipe at 1865.74 [m]. Please clarify.	no code	no response	Not addressed
WW95	NJB	C-507	No elevations are provided for alarm on, lag pump on, lead pump on, blower on, and pump/blower off.	no code	no response	Not addressed
WW96	NJB	C-507	WWTP specified is special order and without more information on design standards (basis for organic loading) tank volumes cannot be verified.	no code	no response	Not addressed
WW97	NJB	461000	No information on float switch provided.	no code	no response	Not addressed

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WW98	NJB	461000	Same comment as WW80-81. Insufficient working volume provide in station operation and submergence for pump.	no code	no response	Not addressed
WW99	NJB	461000	Same comment as WW79. Consider using smaller peaking factor to size pump.	no code	no response	Not addressed
WW100	NJB	461000	Same comment as WW72. Consider allowing more generic access doors.	no code	no response	Not addressed
WW101	NJB	460000	Inconsistent fonts.	no code	no response	Ok
WW102	NJB	460000	Reduce the number of significant digits for metric values. Contractor will construct based on metric not English units.	no code	no response	Not addressed
WW103	NJB	460000	As noted in WW3, the design flow should be at least 42,600 gpd per the SS calcs.	no code	no response	Not addressed
WW104	NJB	460000	Organic loading is too low at 0.03 lb/d. Per UFC 3-240-09FA, the BOD loading rate is 0.1 lb/capita/d for non-resident personnel for an 8 hour shift and 0.2 lb/capita/d for 24 hours. Thus, for a population of 2649, the BOD load should be at least 264 lb/d. This would impact all tank volumes.	no code	no response	Not addressed
WW105	NJB	460000	Add requirement to meet effluent standards.	no code	no response	Not addressed
WW106	NJB	460000	Specify PCS PP-40-ESC-SP or equal. It is our understanding that USAID contracting requires this.	no code	no response	Not addressed
WW107	NJB	460000	Should specify different coatings for below/above ground portion of plant and interior/exterior. Buried exterior is adequate as is. Others surfaces should be coated with epoxy. Add polyurethane finish for exposed surfaces.	no code	no response	Not addressed
WW108	NJB	460000	Specify required freeboard for aeration chamber.	no code	no response	Not addressed
WW109	NJB	460000	Recommend 2 airlift sludge returns per hopper.	no code	no response	Not addressed
WW110	NJB	460000	Recommend add requirement for air diffuser system to deliver 200% of oxygen demand required to meet treatment requirements.	no code	no response	Not addressed
WW111		460000	Min chlorine contact time is 30 min. Explain basis for 68 min.	no code	no response	Not addressed
WW112	NJB	460000	Add requirement for manufacturer's field rep to be present during installation and start-up and commissioning.	no code	no response	Not addressed
WW113	NJB	460000	Add requirement to provide O&M services for first year of operation and provide training to facility staff.	no code	no response	Not addressed
WW114	NJB	460000	Add requirement to provide O&M Manual.	no code	no response	Not addressed
WW115	NJB	460000	Add requirement to perform hydrostatic leak test.	no code	no response	Not addressed
WW116	NJB	333000	Does not address pressure pipe, joints, fittings (pump station to WWTP).	no code	no response	Not addressed
WW117	NJB	333000	1.6 Project Conditions does not seem applicable.	no code	no response	Not addressed
WW118	NJB	333000	2.2 There are no pipes greater than 375mm. Remove.	no code	no response	Not addressed
WW119	NJB	333000	2.4 Drawings do not indicate normal traffic vs. heavy traffic MHs. Either identify difference on plans or remove from spec.	no code	no response	Not addressed
WW120	NJB	333000	2.4 Spec inconsistent with what is shown on drawings (wall thickness, base thickness, frames and covers, etc).	no code	no response	Not addressed

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
WO-LT-0004

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
WATER/WASTEWATER COMMENTS						
WW121	NJB	333000	2.7 Backwater valves not shown on drawings.	no code	no response	Ok
WW122	NJB	333000	2.8B Specify schedule of PVC.	no code	no response	Not addressed
WW123	NJB	333000	3.3C Only 100-200mm sewers on drawings.	no code	no response	Not addressed
WW124	NJB	333000	3.5E Drawings indicate 800mm min cover.	no code	no response	Ok
WW125	NJB	333000	3.9 None shown on drawings.	no code	no response	Ok
WW126	NJB	333000	3.10A Drawings show PVC cleanouts in earth.	no code	no response	Not addressed
WW127	NJB	333000	3.10B Drawings do not show concrete block for cleanouts in earth.	no code	no response	Not addressed
WW128	NJB	333000	3.12 Delete references to "authorities having jurisdiction" as that is not applicable and specify requirements for project.	no code	no response	Not addressed
WW129	NJB	333000	3.12 C There is no concrete pipe shown on the drawings.	no code	no response	Not addressed
WW130	NJB	333000	3.12 Add requirement for deflection testing and hydrostatic testing of pressure sewers.	no code	no response	Not addressed
WW131	NJB	331100	Delete all references to fire protection.	no code	no response	Not addressed
WW132	NJB	331100	1.1A Revise to reflect what is applicable to this project: water distribution piping, valves, and fittings outside of the building.	no code	no response	Not addressed
WW133	NJB	331100	1.1B There is no WTP shown on drawings. Delete.	no code	no response	Not addressed
WW134	NJB	331100	1.1C There is no utility to provide products to the site. Remove.	no code	no response	Not addressed
WW135	NJB	331100	1.1 Should this cover the heating hot water distribution pipe too? Or is that covered elsewhere?	no code	no response	Not addressed
WW136	NJB	331100	1.2 Delete all references for fire protection.	no code	no response	Not addressed
WW137	NJB	331100	1.3 Most this is not applicable to this project. Remove extraneous items.	no code	no response	Not addressed
WW138	NJB	331100	1.4A, E, F, H Delete - not applicable.	no code	no response	Not addressed
WW139	NJB	331100	1.4 Delete references to "authorities having jurisdiction."	no code	no response	Not addressed
WW140	NJB	331100	1.5B Delete reference to hydrants.	no code	no response	Not addressed
WW141	NJB	331100	1.5H Delete - not applicable	no code	no response	Not addressed
WW142	NJB	331100	1.6 Delete - not applicable	no code	no response	Not addressed
WW143	NJB	331100	1.7 Delete - not applicable	no code	no response	Not addressed
WW144	NJB	331100	2.2-2.5 Drawings indicate DI pipe. Spec references PVC, mechanical joint connections (DIP), transition couplings, etc. <u>Need to select pipe material and revise drawings/specs.</u> As noted in WW10, DIP will likely be hard to obtain. Recommend using HDPE pipe as it is the easiest to obtain locally.	no code	no response	Ok
WW145	NJB	331100	2.4 Delete - not applicable	no code	no response	Not addressed
WW146	NJB	331100	2.6A.3., B.2, and C Delete - not applicable	no code	no response	Not addressed
WW147	NJB	331100	2.7 Add requirement for bituminous paint coating.	no code	no response	Not addressed
WW148	NJB	331100	2.9 Delete - not applicable	no code	no response	Not addressed
WW149	NJB	331100	2.11 Delete - not applicable	no code	no response	Not addressed
WW150	NJB	331100	2.12 Delete - not applicable	no code	no response	Not addressed
WW151	NJB	331100	2.14 Delete - not applicable	no code	no response	Not addressed
WW152	NJB	331100	2.15 Delete - not applicable	no code	no response	Not addressed

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
WO-LT-0004

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
WATER/WASTEWATER COMMENTS						
WW153	NJB	331100	3.1 Unclear why included here. Should have separate well spec and include any source water quality testing there.	no code	no response	Not addressed
WW154	NJB	331100	3.3E Edit to only include piping used for this project.	no code	no response	Not addressed
WW155	NJB	331100	3.3F Delete - not applicable	no code	no response	Not addressed
WW156	NJB	331100	3.4A There are no valves shown on piping less than 100mm. Revise accordingly.	no code	no response	Not addressed
WW157	NJB	331100	3.4B Drawings do not indicate where different valve types are to be used. Either revise drawings or spec.	no code	no response	Not addressed
WW158	NJB	331100	3.6A, B Delete - not applicable	no code	no response	Not addressed
WW159	NJB	331100	3.6D Drawings indicate 800mm min cover. Revise accordingly.	no code	no response	Not addressed
WW160	NJB	331100	3.7 Delete references to fire protection.	no code	no response	Not addressed
WW161	NJB	331100	3.9 Delete - not applicable	no code	no response	Not addressed
WW162	NJB	331100	3.10 Delete - not applicable	no code	no response	Not addressed
WW163	NJB	331100	3.11 Not shown on drawings. Update drawings or delete.	no code	no response	Not addressed
WW164	NJB	331100	3.12 Delete - not applicable	no code	no response	Not addressed
WW165	NJB	331100	3.13C There is no existing water system to connect to. Revise in accordance with this project.	no code	no response	Not addressed
WW166	NJB	331100	3.13D Delete reference to fire suppression piping.	no code	no response	Not addressed
WW167	NJB	331100	3.13F Misplaced? No electrical equipment shown for water system.	no code	no response	Not addressed
WW168	NJB	331100	3.14B Require to hold at test pressure for 2 hours rather than 1 hour.	no code	no response	Not addressed
WW169	NJB	331100	3.14 Add requirement for leakage test (can be conducted at same time as pressure test).	no code	no response	Not addressed
WW170	NJB	331100	3.16A Delete reference to existing systems.	no code	no response	Not addressed
WW171	NJB	331100	Add requirement for utility marking tape.	no code	no response	Not addressed
WW172	NJB	SS calculations	Similar to comment WW79 above, would recommend use of smaller peaking factor.	no code	no response	Not addressed
WW173	NJB	General	No plans showing well, potable water storage tank, or pump house provided.	no code	no response	Not addressed
WW174	NJB	General	No structural drawings provided for grease interceptor and oil/water separators.	no code	no response	Not addressed
WW175	NJB	General	No specs provided for well, well pump, booster pump station, and disinfection system (if provided).	no code	no response	Not addressed

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
WO-LT-0004

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
SITE ELECTRICAL COMMENTS						
E1	EN	E-001	Coordinate symbols with drawings. Example - PDS shown on one-lines is not included. Site lighting fixtures do not match lighting plan.	no code	no response	Not complete
E2	EN	ESL-01	Indicate branch circuiting for site lighting.	no code	no response	Complete. However, branch circuit homeruns are not labeled with panel of origin.
E3	EN	ESL-01	Provide site lighting fixture schedule.	no code	no response	Complete.
E4	EN	ESL-01	Provide pole base details.	no code	no response	Complete. Provide RGS conduit for sweeps into and up through the pole base. Transition to PVC beyond the pole base.
E5	EN	ESL-01	How will site lighting be controlled?	no code	no response	Complete. Fixture schedule indicates individual photocell per each fixture. Consider running lighting circuits through a multipole contactor controlled by a single photocell.
E6	EN	ESL-01	Provide drawing scale.	no code	no response	Not complete
E7	EN	ESP-01	Provide ductbank details.	no code	no response	Not complete
E8	EN	ESP-01	Provide manhole details.	no code	no response	Not complete
E9	EN	ESP-01	Provide pad details for substations.	no code	no response	Not complete
E10	EN	ESP-01	How will the new 15 kV system be fed?	no code	no response	Will the system be fed at 15 kV or 20 kV? Will the existing 15 kV cables be used to carry 20 kV? What is the existing insulation value?
E11	EN	ESP-01	Provide drawing scale.	no code	no response	Not complete
E12	EN	E-701	Spec service switchgear as unit sub-station or unit power centers.	no code	no response	Equipment is shown as a separate transformer and distribution switchboard. Why? Wouldn't unitized equipment be less costly to install?
E13	EN/ML	E-701	500 kVA transformers should be protected on the secondary side with 1000A circuit breaker. If protected at this level Ground Fault Protection (GFP) is required per NEC 230.95.	no code	no response	Feeders are shown as 1000A, but main breakers are 800A. If the intent is to leave them as 800A then reduce the feeder size accordingly.
E14	EN/ML	E-701	Review loads. Provide a load letter. Could transformers be reduced to 300 kVA with forced fan cooling?	no code	no response	Not complete
E15	EN/ML	E-701	Define if service laterals or underground feeders are intended between USS and buildings. Provide NEC compliant service bonding.	no code	no response	Service should be considered to end at the distribution switchboard for each transformer. Provide an equipment ground conductor with each feeder and connect this to a grounding electrode system at each building. Do not bond the neutral conductor at each building.
E16	EN	E-701	Transfer switches should be specified as 4 wire with switched neutral conductors.	no code	no response	Not required if GFI is not to be provided on the service.
E17	EN	E-701	Delete drawing scale.	no code	no response	Not complete
E18	EN	E-701	Indicate feeder sizes for coordination with site power plans.	no code	no response	Complete
E19	EN	E-701	Indicate what is being provided under this package - substations, building panels, conduits, conductors?	no code	no response	Not complete
E20	EN	EST-01	Provide drawing scale.	no code	no response	Could not locate drawing.

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
WO-LT-0004

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
SITE ELECTRICAL COMMENTS						
E21	EN	EST-01	Provide manhole details.	no code	no response	Could not locate drawing.
E22	EN	EST-01	Provide ductbank details. How many conduits are included? Sizes?	no code	no response	Could not locate drawing.
E23	EN	EST-01	Where does service come from?	no code	no response	Could not locate drawing.
E24	EN	260553	3.2.O. - Choose label types.	no code	no response	Not complete
E25	EN	261200	2.2. - Transformers are indicated as silicon filled on drawings, but dry-type is specified. Clarify.	no code	no response	Complete. Cast coil is now specified.
E26	EN	262913	2.3.A.1. - Will oil tight devices be required?	no code	no response	Could not locate spec section.
E27	EN	263213	1.2.A. - Load banks are not specified. Outdoor enclosures are not specified, but drawings indicate generator will be indoors.	no code	no response	Could not locate spec section.
E28	EN	263213	3.2.C. - Select isolator types.	no code	no response	Could not locate spec section.
E29	EN	263213	2.2.G - Select switched neutral type - switched or overlapping.	no code	no response	Could not locate spec section.
E30	EN	263213	2.2.K. - Select battery charger rating.	no code	no response	Could not locate spec section.
E31	EN	263213	2.3.H. - Verify if closed transition transfer is required.	no code	no response	Could not locate spec section.
E32	EN	263213	2.2.D. & E. - Select impulse ratings and for TVSS	no code	no response	Could not locate spec section.
E33	EN	Specs	Specifications for sub-stations is missing.	no code	no response	Not complete
E34	ML	0 E-701	Tapping MV in manholes and feeding pad mounted transformers seems to me to be a poor design choice. Use loop fed primaries on the USS.	no code	no response	Complete
E35	ML	0 E-701	The design choice involving the installation of four separate meters seems to me to be poorly considered. Using a single meter at medium voltage and feeding all four USS transformers from that point has many advantages. Putting the purchase of transformers in the hands of the MoPH would just be one of the advantages.	no code	no response	Complete
E36	ML	0 E-701	Which panel boards are service entrances? Grounding electrode systems are shown from wiring troughs instead of clearly defined service entrance enclosures. Why do some buildings, like 002, seem to have two feeders entering from a wire trough that doesn't have a disconnect near to one of the panel boards? Where is the SE? Why do other buildings, like 13, have a 60-A feeder to them and don't seem to have a SE disconnect at all at the building?	no code	no response	Not complete
E37	ML	0 ESP-01	The existing customer on the site has their primary switch inside the building labeled "Existing Store" in section K-3 on your drawing. The 15-kV feeder needs to run to that location. The cable should enter the northeast corner of that building. It should not run underneath the existing building in section J-3.	no code	no response	Complete

Design Review Back Check
MoPH
Drawings Dated November 8, 2010
WO-LT-0004

Comment #	Reviewer	Reference	Comment	Response Code	Response	Back-Check
SITE ELECTRICAL COMMENTS						
E38	EN	0 E-701 (New Comment)	New Comment: Review tap rules. Feeders tapped from wireways must comply with 10' tap rule, or be not less than 1/3 the ampacity of the feeder conductor if not more than 25'.			
E39	EN	0 E-701 (New Comment)	New Comment: Review tap rules. Panel EG-PP1 is fed from 2 taps via the ATS. The ATS-B01 is rated 150A but is fed from a 200A CB at the distribution board. Provide enclosed circuit breakers on both the normal and emergency feeds to the ATS.			
E40	En	Design Analysis (New Comment)	New Comment: There are several references to Office Buildings under Standby Power. These references should be corrected to the proper building.			