



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

24 JUN 2014

CESAD-RBT

MEMORANDUM FOR COMMANDER JACKSONVILLE DISTRICT (CESAJ-EN-QC/
[REDACTED])

SUBJECT: Approval of Review Plan for the Beach Renourishment, Venice Beach Hurricane and Storm Damage Reduction Project, Sarasota County, Florida

1. References:

a. Memorandum, CESAJ-EN-QC, 21 May 2014, subject: Approval of Review Plan for Beach Renourishment, Venice Beach Hurricane and Storm Damage Reduction (HSDR) Project in Sarasota County, Florida (Enclosure).

b. EC 1165-2-214, Civil Works Review, 15 December 2012.

2. The enclosed Review Plan (RP) for the Beach Renourishment, Venice Beach HSDR Project has been reviewed by this office. Some minor edits to the Review Plan were coordinated with [REDACTED] of your organization. The enclosed RP, with the coordinated edits incorporated, is approved in accordance with reference 1.b above.

3. We concur with the conclusion of the District Chief of Engineering that a Type II Independent External Peer Review is not required for this beach renourishment effort. The primary basis for this concurrence is that failure or loss of this beach renourishment project would not pose a significant threat to human life.

4. The District should take steps to post the approved RP to its web site and provide a link to CESAD-RBT. Before posting to the web site, the names of Corps/Army employees should be removed. Subsequent significant changes to this RP, should they become necessary, will require new written approval from this office.

5. The SAD point of contact is [REDACTED]

Encl


DONALD L. WALKER
COL, EN
Commanding



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-EN-QC

21 May 2014

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT)

SUBJECT: Approval of Review Plan for Beach Renourishment, Venice Beach Hurricane and Storm Damage Reduction (HSDR) Project in Sarasota County, Florida

1. References.

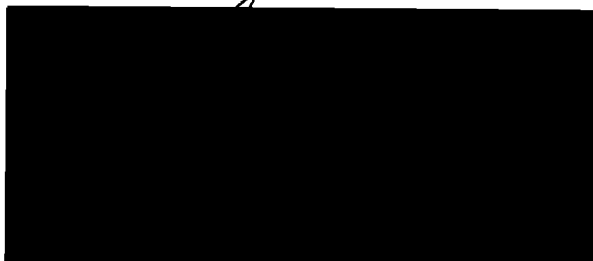
- a. EC 1165-2-214, Civil Works Review, 15 December 2012.
- b. WRDA 2007 H. R. 1495 Public Law 110-114, 08 November 2007

2. The scope of this review plan addresses the Periodic Nourishment Implementation Documents which include Plans, Specifications and Design Documentation Report (DDR). The Review Plan complies with applicable policy, provides Agency Technical Review and has been coordinated with the CESAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by CESAD.

I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that Type II Independent External Peer Review (IEPR) of the subject project is not required. The recommendation to exclude Type II IEPR is based on the EC 1165-2-214 Risk Informed Decision Process as presented in the Review Plan.

3. The district will post the CESAD approved Review Plan to its website and provide a link to the CESAD for its use. Names of Corps/Army employees will be withheld from the posted version, in accordance with guidance.

FOR THE COMMANDER:



Encl

PROJECT REVIEW PLAN

Beach Renourishment Venice Beach Hurricane and Storm Damage Reduction Project

SARASOTA COUNTY, FLORIDA

Jacksonville District

May 2014

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.



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1. PURPOSE AND REQUIREMENTS

a. Purpose

This Review Plan defines the scope and level of review activities for the Venice Beach Hurricane and Storm Damage Reduction (HSDR) Project in Sarasota County, Florida. As discussed below, the review activities consist of a District Quality Control (DQC) effort, an Agency Technical Review (ATR), and a Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review. Also as discussed below, an Independent External Peer Review (IEPR) is not recommended. This project is in the Periodic Nourishment Phase and the related documents are implementation products that consist of renourishment Plans and Specifications (P&S) and Design Documentation Report (DDR). The scope of work consists of the renourishment of a previously successful project. Upon approval, this review plan will be included into the Project Management Plan for this project as an appendix to the Quality Management Plan.

b. References

- (1). ER 1110-2-1150, "Engineering and Design for Civil Works Projects", 31 August 1999
- (2). ER 1110-1-12, "Engineering and Design Quality Management", 31 March 2011
- (3). ER 415-1-11, "Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review", 1 January 2013
- (4). WRDA 1986; PL99-662 dated November 17, 1986 (Project Authorization);
- (5). EC 1165-2-214, "Civil Works Review", 15 December 2012
- (6). Sarasota County, Florida Shore Protection Project GDM 1991, PAC 1992
- (7). Project Management Plan, Sarasota County, FL – Venice Beach, Hurricane and Storm Damage Reduction (HSDR), Project 113092
- (8). CECW Memorandum, "Programmatic Review Plan for Routine Operation and Maintenance Products", 20 December 2012
- (9). Project Information Report, Rehabilitation Effort for the Sarasota Co., Venice Segment, Beach Erosion Control and Hurricane Protection, 25 August 2006
- (10). 02611-SAJ Quality Control of In-House Products: Civil Works PED, 21 November 2011
- (11). 08550-SAJ, BCOES Reviews, 21 September 2011

c. Requirements

This review plan was developed in accordance with EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The EC provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and other work products. The EC outlines three levels of review: District Quality Control, an Agency Technical Review, and an Independent External Peer Review, and states that a Biddability, Constructability, Operability, Environmental, and Sustainability Review shall also be included in the Review Plan.

d. Review Management Organization (RMO)

The South Atlantic Division is designated as the RMO.

2. PROJECT INFORMATION

a. Project Location and Name

The Venice Hurricane and Storm Reduction Project is located in Sarasota County, Florida. The project is on the southwest coast of Florida, south of Tampa. The project shoreline extends for 3.2 miles along the gulf coast of Manasota Key from Venice Inlet south to Florida Department of Environmental Protection (DEP) monument R-133.

b. Project Authorization

The Sarasota County Shore Protection Project was authorized by the Water Resources Development Act of 1986 under the provisions of Public Law 99-662 dated November 17, 1986. The authorized project provides for initial restoration of 3.7 miles of shoreline on Manasota Key and 2.4 miles of shoreline on Longboat Key, with future renourishment as needed and justified. The Feasibility report addressed the coastal morphology and erosional stresses within Sarasota County. The report divided the county into twelve reaches with economic justification to 5 reaches: Reach 2 on Longboat Key, Reaches 4 & 5 on or near Lido Key, Reach 6 on Siesta Key, and & 10 (Manasota Key). The Venice project is within Reach 10 and was further subdivided into three sub-reaches: 10a (Venice), 10b (Brohard), 10c (Caspersan). The BECS84 study determined that Reach 10a erosional damage was caused by a lack of a bypassing bar around Venice Inlet with secondary material bypassing probably occurring in deeper water. With the lack of sediment supply from the north and littoral drift predominantly to the south, natural sediment supply to the south would likely not occur without the need for reestablishing the foreshore berm with offshore sediment. Lastly, the study determined the nourishment cycle of to be every 8 years.

In 1991, a General Design Memorandum (GDM91) was prepared due to modifications to the authorized project – Erosion Rate. The GDM reduced the project length from 5.6 miles to 3.2 miles by removing Caspersan Beach from the project, 10c. A *1992 Sarasota County, Florida Shore Protection Project Post Authorization Change (PAC92) Report* summarized the changes in scope, costs, benefits, design, cost allocation, and environmental impacts for the project. The GDM91 and PAC92 reports both determined an optimal nourishment interval of 10 years based on the erosion rate and construction costs at that time.

The volume of beach quality material needed for future nourishments were not found to be available in the previously used borrow areas; a new source will be identified. It was discovered that the wastewater treatment facility near R-129 was removed in 2005, and in 2010 a public park used for recreation opened up in its place. Because this expensive piece of infrastructure has been removed from the project area, the southern segment of the project from R-129 to R-133 is no longer economically justified based on HSDR purposes. Engineering Regulation (ER) 1105-2-100 requires that each reach of a project be incrementally justified. At the request of the non-Federal Sponsor, the southern segment of the project will be kept as a separable element at 100% cost to the non-Federal Sponsor. There have been no significant changes to the infrastructure in the damage inventory along the shoreline from R-116 to R-129. Therefore, no changes to the footprint took place.

c. Project History

The initial construction of the project was completed in two phases. The total cost of initial construction was \$20,142,000 with placement of nearly 1.9 million cubic yards (CY) of beach quality sand. Borrow areas for the initial construction were offshore shoals near Manasota Key. The first renourishment was completed in August 2005 which placed 670,000 cubic yards of sand on the beach from borrow areas offshore Casey Key. Also in 2005 work included extending existing storm water outfalls to be beyond the fill template. Table 1-1 provides a summary of the completed nourishment events. All previous construction efforts were covered under the PAC92 authorization. Also, Phase 2 is considered the completion of initial construction and thus the period of Federal participation is 50 years from the completion of initial construction or 2046.

Table 1-1: Completed Nourishment Events

Event	Project Restoration		1 st Renourishment
	Phase 1	Phase 2	
Completion Date	Aug – Nov. 1994	Dec. 1995 - May 1996	August 2005
FDEP R-Monuments	R-116 to R-123	R-123 to R-133	R-116 to R-133
Shoreline Length (mi)	1.44	1.87	3.31
Quantity (CY)*	890,000	1,033,000	672,208
* Data shown was attained from monitoring reports			

d. Current Project Description

The beach renourishment project consists of extending the foreshore berm using the hydraulic placement of beach quality material onto Venice Beach, Florida. The project begins south of Venice Inlet (R-116) and extends to the southern end of Brohard Beach (R-133), a distance of 3.3 miles of critically eroded shoreline. The construction template for material to be placed will utilize the identified Construction Baseline (CBL) shown on the drawings to determine berm crest width and sloped berm crest width. A 50-foot flat berm crest at Elevation 7.9' NAVD88 will be constructed for about 2.4 miles. The remaining project will require a 20-foot flat berm from the established CBL. From the flat berm crest, the placement fill will continue gulfward but on a 1 vertical on 30 horizontal sloped berm crest. The final foreshore slope of the fill will match existing grade on a 1 vertical to 15 horizontal from the sloped berm crest.

Beach Quality Sediment to be used for the nourishment will be from four designated borrow areas located approximately 10 nautical miles west to southwest from the middle of the project site. Access to the beach from offshore will be provided through designated pipeline corridors as shown on the drawings.

To extend the life of the project, five existing stormwater outfalls will be extended through the project fill, as well as, specific locale dune enhancements. There are also two waterways which pass through the project placement area: Flamingo Ditch and Deertown Gully. Flamingo Ditch currently has a box culvert which will be demolished as shown on the drawings with project fill strategically placed as to allow natural flow to occur to the gulf. Deertown Gully will only require strategic placement of fill material. Other project work includes, but is not limited to, beach tilling, construction vibration controls and monitoring, turbidity monitoring, sea turtle trawl sweeping and relocation, endangered species observers, sea turtle monitoring or coordination, and beach fill remediation.

3. DISTRICT QUALITY CONTROL

The project P&S and DDR will be prepared by the Jacksonville District using ER 1110-1-12 procedures and undergo DQC. District Quality Control and Quality Assurance activities for the project implementation documents (P&S and DDR) are stipulated in ER 1110-1-12, Engineering & Design Quality Management and 02611-SAJ, Quality Control of In-House Products: Civil Works PED.

4. AGENCY TECHNICAL REVIEW

a. Risk Informed Decision on Appropriate Level of Review

Nourishment of Venice Beach is not considered routine because the beach fill material is coming from borrow areas not previously used. This factor requires additional design and analysis over what was previously designed. Based on the answers to the following questions from EC 1165-2-214, Para 15.b, and the additional design requirement, an ATR of the implementation documents will be performed.

- (1). Does it include any design (structural, mechanical, hydraulic, etc)?
Yes. New sand borrow area and reduced beach template will be used, resulting in additional design and analysis over what was performed for previous beach fills.
- (2). Does it evaluate alternatives? *No.*
- (3). Does it include a recommendation? *No.*
- (4). Does it have a formal cost estimate?
Yes, an Independent Government Estimate for the contract will be developed.
- (5). Does it have or will it require a NEPA document?
Yes. The project will require updated NEPA documentation.
- (6). Does it impact a structure or feature of a structure whose performance involves potential life safety risks?
No. There is no life safety risks associated with this renourishment project.
- (7). What are the consequences of non-performance?
The renourishment beach fill is a sacrificial fill section. Failure or non-performance of the nourishment would not in itself pose any safety issues as project monitoring triggers its replacement such that the project function is maintained.
- (8). Does it support a significant investment of public monies? *Yes. The project is cost shared between the Government and local sponsor.*
- (9). Does it support a budget request?
No. The project implements appropriated funds.
- (10). Does it change the operation of the project? *No.*
- (11). Does it involve ground disturbances?
Yes, dredging and beach placement are in areas that have been disturbed in accordance with authorized purposes in the past. Equipment will be used to place material to design grade and perform beach tilling, as in past contracts.
- (12). Does it affect any special features, such as cultural resources, historic properties, survey markers, etc, that should be protected or avoided?
No. All project areas have appropriate clearances from cultural and environmental resources.
- (13). Does it involve activities that trigger regulatory permitting such as Section 404 or stormwater/NPDES related actions?
Yes. This activity will only require a Joint Coastal Permit (JCP) from the Florida Department of Environmental Protection (FDEP) with the Corps as the permittee. If the Local Sponsor is the permittee this activity will require a JCP from FDEP and a Department of Army Permit.

- (14). Does it involve activities that could potentially generate hazardous wastes and/or disposal of materials such as lead based paints or asbestos? *No.*
- (15). Does it reference use of or reliance on manufacturers' engineers and specifications for items such as prefabricated buildings, playground equipment, etc? *No.*
- (16). Does it reference reliance on local authorities for inspection/certification of utility systems like wastewater, stormwater, electrical, etc? *No.*
- (17). Is there or was there expected to be any controversy surrounding the Federal action associated with the work product? *No.*

b. Agency Technical Review Scope.

Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-214 and ER 1110-1-12. An ATR will be performed on the P&S pre-final submittals.

ATR will be conducted by individuals and organizations that are external to the Jacksonville District. The ATR Team Leader is a Corps of Engineers employee outside the South Atlantic Division. The required disciplines and experience are described below.

ATR comments are documented in the DrCheckssm model review documentation database. DrCheckssm is a module in the ProjNetsm suite of tools developed and operated at ERDC-CERL (www.projnet.org). At the conclusion of ATR, the ATR Team Leader will prepare a Review Report that summarizes the review. The report will consist of the ATR Certification Form from EC 1165-2-214 and the DrCheckssm printout of the comments.

c. ATR Disciplines.

As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills and abilities; and experience levels. Civil Engineering and Construction team members may be combined if a qualified individual is available.

ATR Team Leader. The ATR Team Leader will be from outside SAD and should have a minimum of 15 years of experience with Navigation and/or Shore Protection Projects. ATR Team Leader may be a co-duty to one of the review disciplines.

Civil Engineering/Dredging Operations. The team member should be a registered professional engineer with 7 years of dredging operations and/or civil/site work project experience that includes dredging and disposal operations, embankments, groins, channels, revetments and shore protection project features.

Construction Management. The team member should have construction management experience with beach renourishment of beach quality material.

Geotechnical Engineering and Engineering Geology. The team member should be a registered professional. Team Member needs to possess a minimum of 7 years experience with geologic and geotechnical analyses that are used to support the development of Plans and Specifications for navigation and shore protection projects with rock structures.

NEPA Compliance. The NEPA compliance reviewer should be a senior environmental resources specialist with experience in NEPA compliance activities associated with coastal storm damage reduction projects. Draft or Final NEPA and other environmental documents will be submitted to the ATR team with the DDR and Plans and Specifications to aid in performing ATR.

5. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY (BCOES) REVIEW

The value of a BCOES review is based on minimizing problems during the construction phase through effective checks performed by knowledgeable, experienced personnel prior to advertising for a contract. Biddability, constructability, operability, environmental, and sustainability requirements must be emphasized throughout the planning and design processes for all programs and projects, including during planning and design. This will help to ensure that the government's contract requirements are clear, executable, and readily understandable by private sector bidders or proposers. It will also help ensure that the construction may be done efficiently and in an environmentally sound manner, and that the construction activities and projects are sufficiently sustainable. Effective BCOES reviews of design and contract documents will reduce risks of cost and time growth, unnecessary changes and claims, as well as support safe, efficient, sustainable operations and maintenance by the facility users and maintenance organization after construction is complete. A BCOES Review will be conducted for this project. Requirements and further details are stipulated in ER 1110-1-12, ER 415-1-11, and 08550-SAJ, BCOES Reviews.

6. INDEPENDENT EXTERNAL PEER REVIEW

a. General.

EC 1165-2-214 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases). The EC defines Section 2035 Safety Assurance Review (SAR), Type II Independent External Peer Review (IEPR). The EC also requires Type II IEPR be managed and conducted outside the Corps of Engineers.

b. Type I Independent External Peer Review (IEPR) Determination.

A Type I IEPR is associated with decision documents. A Type I IEPR is not applicable to the implementation documents covered by this Review Plan.

c. Type II Independent External Peer Review (IEPR) Determination (Section 2035).

The Venice Beach Hurricane and Storm Damage Reduction (HSDR) Project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review and, therefore, the District Engineering Chief, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR review under Section 2035 and/or EC 1165-2-214 be performed for this project. The factors following factors and their applicability to this project were used in determining this recommendation.

- (1). The failure of the project would pose a significant threat to human life.
The project will perform periodic nourishment that will re-establish an authorized beach section. The beach is designed to protect structures through its sacrificial nature and is continually monitored and renourished in accordance with program requirements and constraints. Failure or loss of the beach fill will not pose a significant threat to human life.
In addition, the prevention of loss of life within the project area from hurricanes and severe storms is via public education about the risks, warning of potential threats and evacuations before hurricane landfall.
- (2). The project involves the use of innovative materials or techniques.
The project will utilize standard methods and procedures used by the Corps of Engineers on other similar works.
- (3). The project design lacks redundancy.
The beach fill design for the project is in accordance with the USACE Coastal Engineering Manual. The manual does not employ the concept of redundancy for beach fill design.

- (4). The project has unique construction sequencing, or a reduced, or overlapping design construction schedule.

The standard design and quality control schedules and procedures will not be compromised. Construction schedules do not have unique sequencing and activities are not reduced or overlapped. The construction methods associated with these renourishment contracts have been used successfully by the Corps of Engineers on other similar projects.

7. MODEL CERTIFICATION AND APPROVAL

The project does not use any engineering models that have not been approved for use by USACE.

8. BUDGET AND SCHEDULE

- (1). Project Milestones. (dates subject to change based on funding)

- Final LRR and EA Approved: *Pending*
- P&S: DQCR: *April 29, 2014*
- P&S: PQCR: *May 23, 2014*
- P&S ATR: *June 16, 2014*

- (2). ATR Estimated Cost. \$19,000 - \$25,000

9. POINTS OF CONTACT

Jacksonville District points of contact names, titles, and responsibilities are listed below.

Per guidance, the names of the following individuals will not be posted on the Internet with the Review Plan.

Review Manager

[REDACTED]

Project Information (PM) & (ETL),

[REDACTED]

[REDACTED]

South Atlantic Division,
Review Management Office Representative

[REDACTED]

ATTACHMENT A

ACRONYMS AND ABBREVIATIONS

<u>ABBREVIATIONS</u>	<u>DEFINED</u>
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability
DQC	District Quality Control
EC	Engineering Circular
ER	Engineering Regulation
ETL	Engineering Technical Lead
NEPA	National Environmental Policy Act
IEPR	Independent External Peer Review
MLW	Mean Low Water
NGVD	National Geodetic Vertical Datum
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
P&S	Plans and Specifications
PDT	Project Delivery Team
PMP	Project Management Plan
QA	Quality Assurance
QCP	Quality Control Plan
QMS	Quality Management System
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
SAD	South Atlantic Division
SAJ	South Atlantic Jacksonville
SAR	Safety Assurance Review (also referred as Type II IEPR)
WRDA	Water Resources Development Act

Attachment B

ATR Report Outline and COMPLETION OF AGENCY TECHNICAL

Venice Beach Hurricane and Storm Damage Reduction (HSDR) Project in Sarasota County, Florida

Review of Plans and Specifications (P&S), Design Documentation Report (DDR)

ATR REPORT OUTLINE (Unneeded items, such as ATR Team Member Disciplines that are not identified as needed in the Review Plan, shall be deleted from the ATR Report.)

1. Introduction:
2. ATR Team Members:
 - Environmental Engineer.
 - Hydrogeology and Geology.
 - Water Management.
 - Hydrology and Hydraulics.
 - Geotechnical Engineering.
 - Structural Engineering.
 - Mechanical and Electrical Engineering.
 - Civil Engineering.
 - NEPA Compliance.
 - ATR Team Leader.
3. ATR Objective:
4. Documents Reviewed:
5. Findings and Conclusions:
6. Unresolved Issues:

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Venice Beach Hurricane and Storm Damage Reduction (HSDR) Project in Sarasota County, Florida, including the design documents, plans and specifications and DDR. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214 and ER 1110-1-12. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks.

NAME

Date

ATR Team Leader

NAME

Date

Project Manager

NAME

Date

Review Management Office Representative

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

NAME

Date

Chief, Engineering Division (CESAJ-EN)