



## **NYSDOT DESIGN BUILD**

### Post Procurement Roles & Responsibilities

NYS AGC Conference  
December 10, 2015

## **TRAINING OBJECTIVES**

### **Understand:**

- Activities, Roles & Responsibilities during post procurement phases of Design – Build Projects
  - What's the Same? What's different?

### **Also that:**

- Design – Build is another tool that NYSDOT uses to deliver Transportation Projects;
- The Department hires a contractor team to perform work in accord with a contract agreement;
- The Department, the Contractor and the Designers need to work together to produce a successful project.

**QUESTIONS ARE ENCOURAGED**

## WHAT HAPPENS NEXT?

### Getting Ready:

#### After NTP:

- Department PM arranges 'Pre-Work Conference'
- Design-Builder arranges 'Design Workshop'

#### Design-Builder Prepares and Submits:

- Management Plans
- Baseline Progress Schedule

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## WHAT HAPPENS NEXT?

### Design-Builder Management Plans:

- Quality Control Plan (DB 113)
- Safety Plan (DB 107-7.5)
- Over-all Design-Build Team Organization Plan (Part 3, Section 2.3.5)
- Design Management Plan (Part 3, Section 2.3.6)
- Construction Management Plan (Part 3, Section 2.3.7)
- Workforce Participation Plan. (DB 102-9.4B)

After reviews, revisions and approvals; above are combined into the '**Project Management Plan**'

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## DESIGN-BUILDERS QUALITY CONTROL PLAN

**The Design - Builder shall ensure the Quality of all work.**

### **QCP Ref: DB Section 113**

- Prepared by the Design-Builder
- Approved by the Department
- Updated as necessary

### **Mmanagement & Quality Requirements**

- Design - DB Section 111
- Construction – DB Section 112

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## D/B CONSTRUCTION QUALITY

### **Design-Builder Quality Control Plan to include:**

- Inspection & Documentation
- Sampling & Testing
- Qualified / Certified Personnel
- D-B Quality Assurance / Management Reviews

### **Inspection and Documentation consistent with:**

- NYSDOT Manual of Uniform Recordkeeping
- NYSDOT Contract Administration Manual
- NYSDOT Materials Inspection Manual
- NYSDOT Construction Inspection Manual

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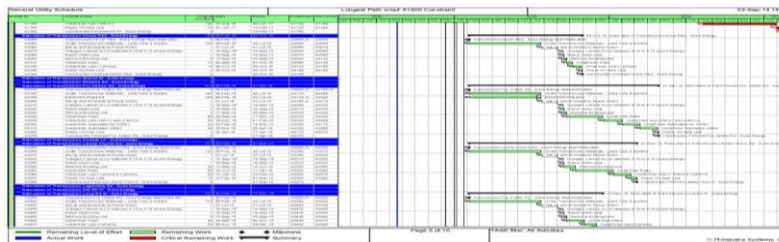
## Non-Conformance Reporting – Ref 105-16

- Non-Conformance Report (NCR) is issued when the work does not meet requirements.
- NCR must be issued within 24 hours of non-conformance identification (Ref – Appendix 112C – Section 4.9)
- Should be Issued by D-B QC staff
- Can be issued by anyone on the project.
- Must be resolved within 2 weeks (105-16) or a plan for resolution of non-conforming work (105-4)
- D-B QC staff maintains log of NCR's and resolution

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## Progress Schedules

- Initial Baseline Progress Schedule (Submitted with Proposal)
- Baseline Progress Schedule (After Award – Accepted)
- Progress Schedule (Updates and Revisions)
- Look-Ahead Schedule (3 Week)
- Recovery Schedule
- As-Built Progress Schedule (Last Progress Schedule)



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## Project Schedules

- **Project Schedules**
  - Part 2, DB Section 108
  - Part 5, Special Provision SP-3 Critical Path Method Schedule
- **NYSDOT provides Primavera P6 and Server**
- **Design-Build Team to include a Project Scheduler**
- **Acceptance**
  - The Schedule meets the Contract Requirements
  - Schedule consistent with DQAE and CQAE records of completed work
- **Acceptance Does Not:**
  - Approve assumptions
  - Attest to validity
  - Amend the Contract

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## Price, Progress and Payment (DB-109)

- **All Lump Sum Pay Items**
- **Proposal Form SP – Schedule of Prices**
- **Work Payment Schedule (Form WPS), defines payment for completed Work areas as a percentage of Construction Lump Sum**
- **Separate Payment for Engineering, Const Inspection and Materials**
- **Mobilization - paid in first invoice**
- **'Force Account' pay item for necessary adjustments.**



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# Price, Progress and Payment (DB-109)

New York State Department of Transportation

**FORM SP  
SCHEDULE OF PRICES FORMAT**

Proposer: \_\_\_\_\_

Item #	Item Name	Price (1)
800.06000115	Design Build – Construction Work	
800.04000015	Design Build – Force Account Work	\$XXX,000.00
	Subtotal A	
800.05000015	Design Build – Site Mobilization (Maximum 4% of Subtotal A)	
	Subtotal B (Sum of Subtotal A and Site Mobilization)	
800.01000015	Design Build – Design Services	
800.02000015	Design Build – Construction Inspection Services	
800.03000015	Design Build – Quality Control Services	
	<b>TOTAL PROPOSAL PRICE</b>	

- Notes:**
- Proposers shall complete Form SP using the excel spreadsheet located on the Department's Project Web Site.
  - Subtotal B will be the sum of the 51% DB self work requirement less any Self Performance Specialty Items included in Part 5 – Special Provisions.
- Instructions:**
- Enter Lump Sum Price for each Price Item in the white, non-shaded, cells.

PROJECT NAME (FOOTER)      Form SP      Instructions to Proposers, Appendix E  
 PN xxxx-xx, Contract D900xxx      Draft XXXXXX NN, 20NN

# Price, Progress and Payment (DB-109)

New York State Department of Transportation

**FORM WPS  
WORK PAYMENT SCHEDULE**

WORK PAYMENT SCHEDULE		
WORK ITEM	MAXIMUM PERCENT OF LUMP SUM PRICE	PERCENT OF LUMP SUM PRICE (To be completed by 0-6/1)
Demolition and Removal of Existing Bridge Elements	6%	
Demolition and Removal of Existing Approach Slabs	2%	
Construct Pier and Abutment Foundations	15%	
Construct Pier(s)	11%	
Construct Abutments and Wing Walls	12%	
Fabricate and Install Bearings and Superstructure	21%	
Construct Reinforced Concrete Bridge Deck Slab	18%	
Construct Reinforced Concrete Approach Slabs	3%	
Demolish and construct USGS Gaging station	2%	
Reconstruction of the bridge approaches between the project Tie-ins	10%	
Miscellaneous (WZTC, Landscaping, etc.)	7%	
Fabricate and Install Bridge Rail	5%	
Fabricate and Install Guide Railing	3%	
Punch list work, Site Cleanup and Restoration	2% (fixed)	2% (fixed)
Final Acceptance (Per DB §109-12.1)	1% (fixed)	1% (fixed)
Final Agreement (Per DB §109-12.2)	2% (fixed)	2% (fixed)

(1) Percent of Lump Sum Price to be completed by Proposer. Total percent for all Work Items shall equal 100%.

PROJECT NAME (FOOTER)      Form WPS      Instructions to Proposers, Appendix E  
 PN xxxx-xx, Contract D900xxx      Draft XXXXXX NN, 20NN

## Contract Payments (DB 109-5)

- **Payments made monthly**
- **To be eligible for payment**
  - Safety Plan approved
  - Quality Control Plan approved
  - CPM Schedule accepted
  - QC processes followed and documented
  - QA processes completed
- **In accordance with the items in the Payment Schedule**
- **Materials Partial Payment (DB 109-6.3)**
- **Pay for Work that:**
  - Has been completed
  - Meets contract requirements
  - Released for construction
  - Design quality process performed
  - Construction quality process followed
  - Non-conformance(s) resolved
  - Construction documentation complete
- **Do Not Pay for Work that:**
  - Is not completed in accordance with the Contract Requirements

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## Payment Adjustments (DB 109-7)

- **Payment Limitations and Partial Suspension of Payments (DB 109-7.1)**
- **Liquidated Damages (DB 108-5, Special Provision SP-6 and Form SCD)**
  - Project Completion
  - Intermediate Milestones (if any)
  - Impacts to Traffic (Drivers First)
- **Early Completion Bonus (Project Completion)**
- **WZTC Non-Conformance (DB 109-7.2)**
  - **Substantial deficiencies in WZTC Compliance**
- **No Adjustments for Cost of Fuel, Asphalt and Steel**
- **Non-Conforming Work**

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## Monthly Progress Report (DB 108-1.3)

### What's Included

- Quality Certification
- Safety Report
- Security Report (If required)
- Baseline Progress Schedule Update
- Order on Contract Status Report
- Subcontract Report / DBE Utilization
- Contract Payment to Subs
- Payment calculations
- Updated Contract Submittals List
- Summary of hazardous and contaminated materials activities
- Statement of equipment, materials and labor used

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## Quality Oversight Model

### Design-Builders Organization

- Design & Construction
  - Project Executive
  - DB Project Manager
  - Design Manager
    - Design Personnel
  - Construction Manager
    - Construction Personnel
      - Superintendent(s)
      - Foreman
      - Tradesmen
      - Etc...
- Quality Organization
  - Executive Committee
  - Quality Manager
    - Design Quality Control Engineer (DQCE)
    - Construction Quality Control -Engineer (CQCE)
      - Resident Engineer
        - Independent Quality Control Firm
        - Materials Testing Firm

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## Design-Builder Quality Organization

### Quality Manager (QM)

- The designated representative of the Design-Builder who is responsible for the overall Quality Program of the Design-Builder, including the quality of management, design, and construction
- Reports to Design-Builder Senior Management
- Interfaces with:
  - Design QC Engineer
  - Construction QC Engineer
  - NYSDOT Design QA Engineer
  - NYSDOT Construction QA Engineer
- Examples of Work includes:
  - Prepares and Manages the DB Quality Control Plan
  - Ensures Design and Construction QC Engineers Comply with Quality Control Plan
  - Performs DB QC Oversight of Subcontractor Quality Plans

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## Design-Builder Quality Organization

### Construction Quality Control Engineer (CQCE)

- Design-Builder's designated representative leading Construction QC activities.
- CQCE oversees field Quality Control operations, which are conducted under the Resident Engineer and the Independent Quality Control Firm.
- CQCE, or his/her designees, has the authority to actively monitor the quality of materials and workmanship and to make necessary improvements to the quality of Work, including the suspension of the Work if required
- Responsible for the Construction QC organization
- Reports directly to the Design-Builder's Quality Manager
- Maintains open and frequent communication with the NYSDOT's Construction QA Engineer

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## Design-Builder Quality Organization

Resident Engineer  
(RE)

- **Oversees and Manages**
  - QC Inspection & Testing
  - Project Quality Documentation
  - Field QC staff
  - Independent Quality Control and Materials Testing firm
- **Prepares**
  - Daily Diary of activities
- **Communication**
  - Non-conformance within Design-Build Organization (QC and Construction Staff)
  - Is relied upon to note potential issues to D/B before they impact work

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## Quality Oversight Model

### **NYSDOT Organization**

- **Commissioner**
- **NYSDOT Design-Build Program Director**
- **NYSDOT Project Manager**
  - **Design Quality Assurance Engineer (DQAE) (Consultant)**
  - **Construction Quality Assurance Engineer (CQAE) (NYSDOT)**
    - **Construction Field Staff (Quality Assurance Inspectors)**

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## NYS DOT Organization Chart

### NYS DOT Project Manager

- **Reports to Design-Build Program Director**
- **Principal Contact with Design-Builder for Issue resolution**
- **Interfaces with:**
  - Design-Builder Project Manager
  - Design and Construction Quality Assurance Engineers
  - Regional Staff (**advisory role**)
- **Access to all Contract Records, Schedules, Payments, Etc.**
- **Reviews and Approves:**
  - DB Quality Control Plan
  - Progress Payments (or Delegated to CQAE)
  - Final Project Acceptance (Coordinated with RCE)
  - Construction QA staff
- **Reviews and Recommends:**
  - Changes to DB Schedule
  - DB Contract Scope Changes
  - Cost changes



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## NYS DOT Organization Chart

### Construction Quality Assurance Engineer

- **Reports to NYS DOT's Project Manager**
- **Role on the project is closest to that of an EIC**
  - Oversee, manage, and direct construction QA field staff
  - Principle field contact with Design-Builder
- **Interfaces with,**
  - **Design-Builder Construction QC Engineer / Resident Engineer**
  - **NYS DOT Design QA Engineer (Often)**
  - **Regional Staff** (oversee and coordinate Independent Assurance Sampling and Testing)
- **Verifies DB Construction Quality Control Plan is followed**
- **Examples of Work includes:**
  - Verifying Satisfactory Closure of Contract Issues
  - Performs Oversight of Construction QC Engineer's Activities and Performance
  - Manages QA Inspections, Sampling, Review of Records (DWR's, MURK, Certified Payrolls, Etc.)
  - Maintains Diary for Q-Contract on Site Manager



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## NYS DOT Organization Chart

### Construction Quality Assurance Inspectors

- Report to Construction Quality Assurance Engineer
- Interfaces with:
  - NYS DOT Design QA Engineer or staff
  - Design-Builder Construction Quality Control Staff (Construction Inspectors)
  - NYS DOT Technical Approval Staff
- Examples of Work includes:
  - Review Design-Builder's QC Sampling, Testing, Reports, Etc. (if appropriate)
  - Performing QA Inspection and Testing Activities
  - Documenting daily activities (entering DWR's within Q-Contract)
  - Monitoring / Audits of Design-Builder work and QC activities
  - Quality Control Point Audits
  - May assist in review of D/B Monthly Report

## Site Manager use on Design – Build

- Document Progress of Work
- Construction Accounting

### ➤ “D-Contract”

- Maintained by Design-Builder
  - Payment and Change Orders
  - Accessible to PM and CQAE
  - Includes:
    - QC Daily Work Reports (DWR's)
    - QC / RE Daily Diary
    - QC Test Results
    - Materials Acceptance

### ➤ “Q-Contract”

- Maintained by NYS DOT
  - Quality Assurance
  - Verification
  - Includes:
    - QA Daily Work Reports (DWR's)
    - CQAE Daily Diary
    - QA Test Results

## SITE MANAGER – CHANGE ORDERS (OOC's)

- **MAINTAINED IN SITE MANAGER 'D-CONTRACT'**
  - D-B'er enters items / quantities for QC testing
- **PAYMENT ADJUSTMENTS USE THE SAME TOOLS AS D-B-B (REF: DB-109)**
  - Agreed Price
  - Force Account
- **CONTRACT INCLUDES A 'FORCE ACCOUNT' ITEM**
  - Use this first!
  - Authorized Extra Work Items only.
- **TO DATE, NO COST INCREASE D-B CHANGE ORDERS HAVE BEEN REQUIRED!**

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## Site Manager Payment and Approval Chains

### Design Build Payment - Regional Approval Chain

#	Construction Role	Site Manager Role
1	DB CI Office Engineer	Asst PM
2	DB CI Resident Engineer	PM (Project Manager)
3	DOT DB PM or DOT Constr QA Eng.	DOT Design Build PM or DB Const QAE

### Design Build Order on Contract – Regional Approval Chain

(Override Always)

#	Construction Role	Site Manager Role
1	DB CI Resident Engineer	PM (Project Manager)
2	DOT Construction QA Engineer	DB Construction QAE
3	Regional Construction Order on Contract	Regional Construction Order on Contract
4	DOT Project Manager	DOT Design Build PM
5	RCE	RCE (Regional Construction Engineer)

#### Notes:

1. All Estimates and Orders on Contract are processed within the D-Contract.
2. Normal MO & OSC Approvals after Regional Approvals.

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## Contract Overview

### Importance of the Entire RFP

#### RFP Part 2 – Section 100 Key Section 100 Provisions

- DB 105 – Control of Work
- DB 108 – Prosecution & Progress
- DB 109 – Progress & Payment
- DB 112 – Construction Quality
- DB 113 – Quality Control Plan



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## Contract Overview

### Project Specific Provisions

- RFP Part 3 - Project Requirements
- RFP Part 4 - Utility Requirements
- RFP Part 5 - Special Provisions
- RFP Part 6 - RFP Plans
- RFP Part 7 - Engineering Data
- RFP Part 8 - Special Specifications



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## Departments Role

### NYSDOT's Role

- **Quality Assurance (Ref DB 112-3)**
  - Periodic Inspection
  - Control Points & Hold Points
  - Audit and Verify QC Processes
  - Observe Testing
  - Perform Sampling and Testing for Quality Assurance
- **Offsite Materials Inspection**
- **Offsite Fabrication QA**
- **Independent Assurance**
- **Public Involvement / coordination / information / etc...**
- **Partnering Approach (Formal or Informal)**
- **Monthly Report & Payment Review and Approval**
- **Final Acceptance (Ref DB 112-9)**

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## Top 3 - Things to Remember

1. **The Quality Control Plan is the Bible for QC & QA**
  - How do we do this?
  - What do we do when something goes wrong?
2. **The D-B Team is Responsible for Design & Construction**
  - Take issues back through the D-B Organization.
  - What does the QC Plan say?
3. **Work as part of the Team**
  - Common Goals for Project Success (Partnering)
  - Facilitate Solutions – suggestive, helpful, non-directive
  - Use Department resources in advisory role (Materials, Geo-tech, Structures, etc..)

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## Assessment of Training

1. Updated project schedules are required to be submitted only:

- A. On a monthly basis
- B. On a weekly basis
- C. When significant changes occur in the work
- D. If progress is behind schedule

▪ **Answer: A**

Project schedule updates are submitted with the Monthly Report.

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## Assessment of Training

1. Contract Payments are:

- A. Submitted by the Design-Builder and approved by the Project Manager.
- B. Determined by NYSDOT staff using quantities of completed work in Site Manager.
- C. Based on complete and verified force account records.
- D. Calculated based on the percent of time completed in the approved project

▪ **Answer: A**

Submitted by the DB and approved by the PM

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## Assessment of Training

7. On a Design-Build project, Construction Quality Control is the responsibility of:
- A. The DB Contractor in accord with NYSDOT's MURK
  - B. The Department field staff in accord with NYSDOT's MURK
  - C. The D-B Contractor in accord with the approved Quality Control Plan
  - D. The Department field staff in accord with the approved Quality Control Plan

▪ **Answer: C**

The D-B in accord with the Quality Control Plan

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## Assessment of Training

8. On Design-build projects, the Resident Engineer reports to:
- A. The Department Project Manager
  - B. The Departments Construction Quality Assurance Engineer
  - C. The D-B Contractors' Project Superintendent
  - D. The D-B Contractors' Quality Manager

▪ **Answer: D**

The Resident Engineer reports to the Design-Builders' Quality Manager

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## Assessment of Training

9. Site Manager is a software tool used to:

- A. Document Quality Control activities
- B. Document Quality Assurance activities
- C. Document Materials Acceptance
- D. All of the above

▪ **Answer: D**

All of the above

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## Questions?

