

SPECIAL PROVISIONS

ROUTE U.S. 46 FROM MAIN STREET TO VICINITY OF FREDERICK STREET

CONTRACT NO. 069058057

WIDENING, GRADING, PAVING AND DRAINAGE

**TOWNSHIP OF SOUTH HACKENSACK
BOROUGH OF LITTLE FERRY
COUNTY OF BERGEN**

FEDERAL PROJECT NO. NHP-8112(147)

AUTHORIZATION OF CONTRACT

The Contract is authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements thereto, and Title 23 of the United States Code - Highways.

SPECIFICATIONS TO BE USED

The 2007 Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation as amended herein will govern the construction of this Project and the execution of the Contract.

These Special Provisions consist of the following:

Pages 1 to 120 inclusive.

General wage determinations issued under Davis-Bacon and related acts, published by US Department of Labor, may be obtained from the Web Determinations online web site at <http://www.wdol.gov/dba.aspx#0> Select state, county and construction type heading: HIGHWAY where the Project is to be performed then click Search.

Pay the prevailing wage rates determined by the United States Secretary of Labor and the New Jersey Department of Labor. If the prevailing wage rate prescribed for any craft by the United States Secretary of Labor is not the same as the prevailing wage rate prescribed for that craft by the New Jersey Department of Labor, pay the higher rate.

State wage rates may be obtained from the New Jersey Department of Labor & Workforce Development (Telephone: 609-292-2259) or by accessing the Department of Labor & Workforce Development's web site at http://lwd.dol.state.nj.us/labor/wagehour/wagehour_index.html. The State wage rates in effect at the time of award are part of this Contract, pursuant to Chapter 150, Laws of 1963 (NJSA 34:11-56.25, et seq.).

If an employee of the Contractor or subcontractor has been paid a rate of wages less than the prevailing wage, the Department may suspend the Work, and declare the Contractor in default.

The following FHWA funded project Attachments that are located at the end of these Special Provisions:"

1. Required Contract Provisions, Federal-Aid Construction Contracts (Form FHWA-1273).
2. Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).
3. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order

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11246).

4. State of New Jersey Equal Employment Opportunity for Contracts Funded by FHWA.
5. Disadvantaged Business Enterprise Utilization Attachment, FHWA Funded Contracts
- 5(A) The Incentive Program, Disadvantaged Business Enterprise Utilization Attachment for FHWA Funded Contracts.
6. Equal Employment Opportunity Special Provisions.
7. Special Contract Provisions for Investigating, Reporting, and Resolving Employment Discrimination and Sexual Harassment Complaints.

DIVISION 100 – GENERAL PROVISIONS

SECTION 101 – GENERAL INFORMATION

101.01 INTRODUCTION

THE FOLLOWING IS ADDED:

Pursuant to NJSA 27:1B-21.6 and USC (United States Code) Title 23 Section 115, the Department intends to enter into a contract for the advancement of the Project. However, sufficient funds for the Project may not have been appropriated, and only amounts appropriated by law may be expended. Payment under the Contract is restricted to the amounts appropriated for a fiscal year (FY).

Governing bodies have no legal obligation to make such an appropriation. There is no guarantee that additional funds will be appropriated. Failure by governing bodies to appropriate additional funds will not constitute a default under, or a breach of, the Contract. However, if the Department terminates the Contract or suspends work because funds have not been appropriated, the parties to the Contract will retain their rights for suspension and termination as provided in 108.13, 108.14 and 108.15; except as indicated below.

Do not expend or cause to be expended any sum in excess of the amount allocated in the current fiscal year's Capital Program (as specified below). The Department will notify the Contractor when additional funding has been appropriated. Any expenditure by the Contractor which exceeds the amount appropriated is at the Contractor's risk and the Contractor waives its right to recover costs in excess of that appropriated amount.

The approved 2014 Capital Program has an item with \$10.130 million for the construction of the Project.

The Federal FY begins October 1 of the previous calendar year and the State FY begins July 1 of the previous calendar each year.

101.03 TERMS

THE FOLLOWING TERMS ARE CHANGED.

pavement structure. The combination of pavement, base courses, and when specified, a subbase course, placed on a subgrade to support the traffic load and distribute it to the roadbed (see Figure 101-1). These various courses are defined as follows:

1. **pavement.** One or more layers of specified material of designed thickness at the top of the pavement structure.
2. **base course.** One or more layers of specified material of designed thickness placed on the subgrade or subbase.
3. **subbase.** One or more layers of specified material of designed thickness placed on the subgrade.

101.04 INQUIRIES REGARDING THE PROJECT

1. Before Award of Contract.

THE FIRST PARAGRAPH IS CHANGED TO:

Submit inquiries and/or view other questions/answers by following the format prescribed on the project's electronic bidding web page.

THE SECOND PARAGRAPH IS CHANGED TO:

The deadline for submitting inquiries is 12:00 noon, 7 days before the opening of bids.

2. After Award of Contract.

North Region
Ms. Chrissa Roessner, Regional Construction Engineer
200 Stierli Court

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Mt. Arlington, NJ 07856-1322
Telephone: 973-601-6670

SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

102.02 BIDDER REGISTRATION AND DOWNLOADING OF THE PROPOSAL DOCUMENTS

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The Bidder shall not alter or in any way change the software.

102.03 REVISIONS BEFORE SUBMITTING A BID

THE SECOND PARAGRAPH IS CHANGED TO:

The Bidder shall acknowledge all addenda posted through the Department's website. The addenda acknowledgement folder is included in the Department's electronic bidding file. The Department has the right to reject the bid if the Bidder has not acknowledged all addenda posted.

102.04 EXAMINATION OF CONTRACT AND PROJECT LIMITS

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
PAVEMENT CORE RECORD**

PROJECT/ROUTE & SECTION: **Route 46**

DRILLER: **Vahid Ganji, Advanced Infrastructure Design, Inc.**

COUNTY/TOWNSHIP: **Bergen County, Little Ferry Borough & South Hackensack Township**

DATE STARTED: 12/03/2002

DATE COMPLETED: 12/10/2002

CORE NUMBER	C-2	C-3	C-4	C-5	C-6	C-7	C-8
ROUTE	Route 46	Route 46	Route 46	Route 46	Route 46	Main St	Route 46
DIRECTION (N, E, S, W)	WB	WB	WB	WB	WB	WB	EB
MILE POST (MP or Station)	69.89	69.88	69.23	69.76	69.44	4+00	69.35
LANE NO. (Left to Right)	2	2	2	2	1	1	2
SHOULDER (Inside or Outside)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CORE DIAMETER (Inches)	4	4	4	4	4	4	4
TOTAL CORE DEPTH (Inches)	5-3/4	12-1/4	12-1/2	13-1/2	14-1/4	10-1/2	12-3/4
CORE DRILLED TO	Dark grey macadam base course	Brown silt	Reddish brown sandy silt	Reddish brown sandy silt	Reddish brown sandy silt	Brown gravelly sand	Reddish brown sandy silt
SURFACE TYPE (AC/PC)	AC	AC	AC	AC	AC	AC	AC
AC THICKNESS (Inches)	5 3/4	3	3-1/2	3-3/4	4-1/2	3	4
PC THICKNESS (Inches)		9-1/4	9	9-3/4	9-3/4	7-1/2	8-3/4

CORE NUMBER	C-9	C-10	C-12	C-13	C-14	C-15	C-20
ROUTE	Route 46	Route 46	Route 46	Route 46	Route 46	Phillips Ave.	Liberty St.
DIRECTION (N, E, S, W)	EB	EB	EB	EB	WB	NB	NB
MILE POST (MP or Station)	69.48	69.78	69.16	69.98	69.43	22+00	100' Lt of Rt 46 BL
LANE NO. (Left to Right)	2	2	1	1	2	1	1
SHOULDER (Inside or Outside)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CORE DIAMETER (Inches)	4	4	4	4	4	4	4
TOTAL CORE DEPTH (Inches)	13-1/2	5	13	14	5	2-3/4	7
CORE DRILLED TO	Reddish brown sandy silt	Reddish brown sandy silt	Reddish brown sandy silt	DGABC	Reddish brown sandy silt	Grey mac over gray sand	Grey mac over gray silt
SURFACE TYPE (AC/PC)	AC	AC	AC	AC	AC	AC	AC
AC THICKNESS (Inches)	3-3/4	5	3-1/2	14	5	2-3/4	7
PC THICKNESS (Inches)	9-3/4	--	9-1/2	--	--	--	--

CORE NUMBER	C-21	C-23	C-24				
ROUTE	Liberty St	Phillips Ave.	Main St.				
DIRECTION (N, E, S, W)	SB	SB	EB				
MILE POST (MP or Station)	200' Rt of Rt 46 BL	19+00	2+00				
LANE NO. (Left to Right)	1	1	1				
SHOULDER (Inside or Outside)	N/A	N/A	N/A				
CORE DIAMETER (Inches)	4	4	4				
TOTAL CORE DEPTH (Inches)	5	3-1/2	12-3/4				
CORE DRILLED TO	Grey mac over grey brown sand	Grey mac over brown sand gravel	Reddish brown silty sand				
SURFACE TYPE (AC/PC)	AC	AC	AC				
AC THICKNESS (Inches)	5	3-1/2	3-1/4				
PC THICKNESS (Inches)	--	--	9-1/2				

* Lane 1 is the left lane in the direction of travel.

The pavement information shown herein was used by the Department for design and estimate purposes.

2. Utility Agreements.

THE LAST SENTENCE IS DELETED.

3. Existing Plans and As-Built.

Existing Plans and As-builts used are as follows:

- a. Route 6 Section 1F
From Route 2 to Hackensack River
Bergen County, August 1933
- b. Route 6 Section 1F
From Route 2 to Hackensack River
Bergen County, August 1933
- c. Route U.S. 46 Section 16 F
From Industrial Avenue to Hackensack River Bridge
Resurfacing
Boroughs of Teterboro, Little Ferry & Township of Hackensack
Bergen County, June 1968
- d. Route U.S. 46 Section 16 B
From Main Street to 500 feet East of Phillips Avenue

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Widening, Resurfacing, and Jughandle

- e. Route 46 Section 16 K
Traffic Circle Revision at County Route 124
Borough of Little Ferry, Bergen County, May 1984
- f. Route 6 Section 1F
From Route 2 to Hackensack River
Bergen County, August 1933
- g. Route 5 and 6US 46, Section 16
General Property Parcel Map
Bergen County, August 1933
- h. Route U.S. 46 Little Ferry Circle Contract No. 070950373
- i. Route 80 Magic, Contact 1A (ITS)
- j. Route 80 ITS Communications Network

THE LAST SENTENCE IS DELETED.

102.09 PROPOSAL BOND

THE FIFTH PARAGRAPH IS CHANGED TO:

The Department will not accept Proposal Bonds that do not comply in all respects with the provisions of N.J.A.C. 16:44-7.3(e) and that are not substantiated by a valid power of attorney executed by the Surety.

102.10 SUBMISSION OF BIDS

THE SECOND PARAGRAPH IS CHANGED TO:

The Bidder shall ensure delivery of its bid with all required components and attachments, including, but not limited to the following:

1. Schedule of Items.
2. Proposal Electronic Bidding File with Bidder's Certification.
3. For wholly State funded contracts, acknowledgement of compliance with the registrations specified in 102.01.
4. For wholly State funded contracts, acknowledgement of compliance with N.J.S.A. 19:44A-20.13, *et seq.*
5. Proposal Bond form.
6. Other related documents as specified in the Contract.
7. On the Disclosure of Investment Activities in Iran (Form DC-16) provided by the Department, certify pursuant to N.J.S.A. 52:32-58, that neither the bidder, nor one of its parents, subsidiaries, and/or affiliates (as defined in N.J.S.A. 52:32-56(e)(3)), is listed on the Department of the Treasury's List of Persons or Entities Engaging in Prohibited Investment Activities in Iran and that neither is involved in any of the investment activities set forth in N.J.S.A. 52:32-56(f). If the bidder is unable to so certify, the bidder shall provide a detailed and precise description of such activities to the Department.

102.15 DISQUALIFICATION OF BIDDERS

PART (10) IS CHANGED TO:

10. Disqualification, suspension, or debarment of an individual, firm, partnership, corporation, or any combination as required by N.J.A.C. 16:44-11.1.

SECTION 104 – SCOPE OF WORK

104.03.03 Types of Changes

3. Changes in the Character of Work.

a. Differing Site Condition.

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will make payment for increased costs resulting from a Type 1 or Type 2 Differing Site Condition as a change in the character of work; however, the Department will not consider making payment for a differing site condition unless the resulting change in cost exceeds \$7,500. Except, if the Contractor incurs cost as the result of multiple differing site conditions, with the cost of each separate differing site condition having a value of at least \$1,500 but not more than \$7,500, the Department will consider making payment for such costs if the aggregate cost of the multiple differing site conditions exceeds \$7,500. If the change in cost exceeds these amounts, the Department will base the modification on the total cost of the change, and the Department will not deduct the threshold amount of \$7,500 from the cost of the change.

104.03.04 Contractual Notice

THE SECOND PARAGRAPH IS CHANGED TO:

Immediately provide written notice to the RE of a circumstance that is believed to be a change to the Contract. If notice is not provided on Contractual Notice (Form DC-161), include the following in the initial written notice:

1. A statement that this is a notice of a change.
2. The date when the circumstances believed to be a change were discovered.
3. A detailed and specific statement describing the nature and circumstances of the change.
4. If the change will or could affect costs to the Department.
5. If the change will or could affect Contract Time as specified in 108.11.01.C.

In addition to the hard copy of the notice, email the notice to the RE. It is not necessary to attach listed documents to the email.

104.03.08 Force Account

7. Equipment.

a. Contractor-Owned Equipment.

PART 1 IS CHANGED TO:

- 1 The Department will calculate the “rental” hourly rates by dividing the monthly rate by 176. The Department will not use weekly, daily, or hourly rates. The Department will apply rental hourly rates for every hour the equipment is in active use, except that for any 30-day period, the Department will limit the total amount paid for each piece of equipment to a maximum of the monthly rate.

THE FOLLOWING PART IS ADDED

6. The Department will make payment for costs for transporting equipment to and from the work site, if said costs are solely required as a direct result of the Force Account activity.

THE SECOND PARAGRAPH IS CHANGE TO:

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The payment established is full payment for all equipment costs, including the cost of fuel, repairs, maintenance, depreciation, storage and incidentals.

10. Subcontractors.

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will make payment for markup on subcontracted work at the rate of 5 percent applied on the total amount of all costs for subcontracted force account work up to \$500,000 and 2% applied on the total amount of all costs for subcontracted force account work over \$500,000.

104.03.09 Delay Damages

1. Non-Productive Activity.

e. Equipment.

THE FIRST SENTENCE IS CHANGED TO:

If as the result of the delay, equipment cannot be used for any active work, and is directed by the RE to remain on the work site during the delay, the Department will make payment as specified in 104.03.08.7.a.5.

SECTION 105 – CONTROL OF WORK

105.05 WORKING DRAWINGS

THE SECOND PARAGRAPH IS CHANGED TO:

Ensure that working drawing submissions also conform to the Department design manuals and other Department standards for the proposed work. After Award, the Department will provide additional formatting information, the number of copies required, and the address of the receiving designated design unit.

THE THIRD PARAGRAPH IS CHANGED TO:

Submit working drawings on 22 × 36-inch sheets. The Department may approve the use of 8-1/2 x 11 inch sheet on a case by case basis. Submit design calculations required for the working drawings on 8-1/2 × 11-inch paper. Submit 7 copies of the working drawings to the designated design unit for review with a copy of the transmittal letter to the RE. For railroad-carrying structures, submit 4 additional copies to the designated design unit. Submit an additional copy for each outside testing agency or authority involved in the Project.

THE NINTH PARAGRAPH IS CHANGED TO:

Submit working drawings for certification or approval as specified in Table 105.05-1. This list is not all inclusive. Ensure that the working drawings submitted for approval are signed and sealed by a Professional Engineer. The working drawings submitted for certification are not required to be signed and sealed by a Professional Engineer unless they alter the original Contract

TABLE 105.05-1 IS CHANGED TO:

Table 105.05 1 – Working Drawing Submission Category	
Certified	Approved
Breakaway I-Beam GA Sign Support Posts	Catalog Cuts (related to landscape Items)
Bridge Drainage	Change in Structural Steel Details
Bridge Railing and Fencing Anchorage System	Change of Prestressed Concrete Strand Patterns

Catalog Cuts	Demolition Plans
Composite Piles	Erection Plans
DMS Sign Support Structure	High Load Multi-Rotational (HLMR) Bearings
DMS Standard Ground Mounted	Isolation Bearings
Elastomeric Bearings Pads	ITS System Drawings, including Block Diagrams
Electrical Items Not Pre-Qualified	Machinery and Electrical Items for Movable Bridges
Expansion Deck Joint Assembly Systems	Mechanically Stabilized Earth (MSE) Walls
Modular Expansion Joint Assembly	Other work shown on the Plans as conceptual
Precast Prestressed Concrete Beams and Piles Fabrication	Precast Concrete Arch Structures
Reinforced Elastomeric Bearings	Precast Concrete Box Culverts
Sign Legends	Prefabricated Modular Walls
Sign Support Structures	Stay-In-Place Forms
Structural Steel Fabrication	Temporary Sheet piling and Cofferdams
	Temporary Shielding
	Temporary Structures
	Value Engineering Plans

THE FIRST PARAGRAPH UNDER PART 1 OF TENTH PARAGRAPH IS CHANGED TO:

1. **Certified Working Drawings.** For working drawings requiring certification, include 2 blank blocks directly above the title block. Designate one block for design unit certification, and designate the other block for the Contractor's approval stamp and a signed statement stating that the Contract has not been altered. The Department will require 30 days for review and certification or rejection and return of certified working drawings.

105.07.01 Working in the Vicinity of Utilities

A. Initial Notice.

The corporations, companies, agencies, or municipalities owning or controlling the utilities, and the name, title, address, and telephone number of their local representative are as listed below:

ELECTRIC DISTRIBUTION

Mr. James E. Lizer
Public Service Electric & Gas Company
Pallisades Division Electric Distribution
325 County Avenue
Secaucus, NJ 07094
Telephone: (201) 330-6582

ELECTRIC TRANSMISSION

Mr. Jose Obarrio
Public Service Electric and Gas Company
Transmission Department
4000 Hadley Road M/C 429
South Plainfield, NJ 07080
Telephone: (908) 412-7671

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Fax: (908) 412-0235

GAS

Mr. Len Pannucci, Team Leader
Public Service Electric and Gas Company
80 Park Plaza
Newark, NJ 07102
Telephone: 973-430-5135
Fax: 973-643-1658
Mr. Jorge Silva, Project Sponsor
Telephone: 973-430-7333

TELECOMMUNICATIONS

Ms. Sandra Cruger
Verizon – N.J. Inc.
1500 Teaneck Road
Teaneck, NJ 07666
Telephone: (201) 541-9969
Fax: (201) 541-7343

WATER

Mr. Owen Blake, PE
Senior Project Engineer
United Water
700 Kinderkamack Road
Oradell, NJ 07649
Telephone: (201) 634-4239
Fax: (201) 225-5113

SANITARY SEWER

Mr. William Holly
Superintendent, Department of Public Works
Little Ferry Municipal Building
215-217 Liberty Street
Little Ferry, NJ 07643
Telephone: (201) 641-1140

AND

Mr. Larry Paladino
Superintendent, Department of Public Works
227 Phillips Avenue
South Hackensack, NJ 07606
Telephone: (201) 440-1815 x119

CABLE

Mr. Michael Malik
Construction Manager, Time Warner Cable
200 Roosevelt Place
Palisades Park, NJ 07650
Telephone: (201) 592-7600 Ext. 339
Fax: (201) 592-7736

AND

Mr. Dan Gannon
Cablevision
40 Potash Road
Oakland, NJ 0463
Telephone: (201) 6514030
Fax: (201) 337-6145

Bidders are advised to verify the above information as its accuracy and completeness is not guaranteed by the Department.

B. Locating Existing Facilities.

PART (2) IS CHANGED TO:

2. For the Department's fiber optic network, Obtain and complete the fiber optic markout request form as specified in the Special Provisions. Submit a fiber optic markout request form to the Traffic Operations location specified in the Special Provisions for the markout. The Traffic Operations will complete the markout within 15 days of the receipt. Provide the RE a copy of the markout, and maintain the markout until construction operations in the vicinity of the Department's fiber optic network are completed.

Fiber Optic Markout Form is available at:
<http://www.state.nj.us/transportation/eng/elec/ITS/requests.shtm>

Bureau of Traffic Operations, North Region (TOCN)
670 River Drive
Elmwood Park, NJ 07407-1347
Telephone: 732-697-7360

3.

Bureau of Electrical Maintenance, North Region
200 Stierli Court
Mt. Arlington, NJ 07856-1322
Telephone: 973-770-5065

C. Protection of Utilities.

THE SECOND PARAGRAPH IS CHANGED TO:

Protect and support existing Department electrical and ITS facilities and ensure that there is no interruption of service. Use hand tools only while working within two feet of the fiber optic network. At least 30 days before beginning the work, submit a plan to the RE for approval showing the method of support and protection. When access to Traffic Operation Centers, communication hubs, ITS cabinets or any other ITS facilities is required to perform work, submit a request for access to ITS facilities. Ensure that the request for access is made at least five working days before any work is scheduled, using the online form as specified in the Special Provisions.

<http://www.state.nj.us/transportation/eng/elec/ITS/access.shtm>

THE FOURTH PARAGRAPH IS CHANGED TO:

Access within railroad right-of-way is restricted. Before beginning work within the railroad ROW or on railroad facilities, obtain the railroad's written approval for access, the method of construction, and the schedule of the work. Provide a copy of the submittal and approval to the RE. Comply with the railroad's requirements for working within the railroad right-of-way.

THE FOLLOWING IS ADDED TO THE SIXTH PARAGRAPH

Ensure that the work is performed following the railroad's access and safety restrictions.

105.07.02 Work Performed by Utilities

Company Name & Address	Contact Person	Number of Day/s Advance Notice
Public Service Electric & Gas Company Pallisades Division Electric Distribution 325 County Avenue Secaucus, NJ 07094	Mr. James Lizer Telephone: (201) 330-6582	90 days
Public Service Electric and Gas Company (Gas) 80 Park Plaza Newark, NJ 07102	Mr. Jorge Silva Telephone: 973-430-7333	6 weeks
Verizon – N.J. Inc. (Telephone) 1500 Teaneck Road Teaneck, NJ 07666	Ms. Sandra Cruger Telephone: (201) 541-9969	90 days
United Water (Water) 700 Kinderkamack Road Oradel, NJ 07649	Mr. Owen Blake Telephone: (201) 634-4239	48 hours for material pickup. 2 weeks to schedule water main sterilization and 1 week for results.
Time Warner Cable (Cable TV) 200 Roosevelt Place Palisades Park, NJ 07650	Mr. Michael Malik Tel: (201) 592-7600 Ext. 339	30 days
Department of Public Works (Sanitary Sewer) Borough of Little Ferry 215-217 Liberty Street Little Ferry, NJ 07643	Mr. William Holly Tel: (201) 641-1140	30 days

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

Utility Work and Time Frames

General Notes:

1. The Resident Engineer will provide the companies with the notices called for in the schedules.
2. The Contractor's Surveyor will provide the utility with survey control. The State and the utility shall jointly verify the location of the facilities prior to construction.
3. Utility schedules are based on the project traffic control and staging plans for each utility mobilization. Utility service demands, field and weather conditions may alter these schedules. Contractor changes to the traffic control and staging plan requires reestablishing utility schedules.
4. Where joint facilities are proposed, the utility shall coordinate its work with the joint owners.
5. Existing facilities can only be removed after the relocated facilities have been constructed and are in operation.
6. Distances, Stations, offsets, lengths, or units, on the utility plans are approximate (plus or minus).

General Utility Staging Notes

1. The Contractor is responsible for the coordination of all utility work within the project limits.

2. The Contractor is to ensure that all utility facilities are in service prior to beginning any construction that would impact existing facilities.
3. The Contractor is responsible for the coordination of service connections with all roadway and utility work within the project limits. Services installed shall be located to avoid conflict with all proposed work.
4. The Contractor is to ensure that the existing gas mains being replaced are purged and abandoned by the owner prior to performing construction activities which may impact them.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY (ELECTRIC DISTRIBUTION)

WORK TO BE PERFORMED BY UTILITY:

1. MAIN ST STA. 4+48 LT - INSTALL NEW POLE BEHIND CURB LINE AT STA. 4+48 LT AND RECONNECT SECONDARY SERVICE LINE.
2. MAIN ST STA. 5+33 RT TO STA. 5+58 LT - REMOVE EXISTING POLE AT STA. 5+57 LT AND REMOVE THE EXISTING 50 LF SECONDARY SERVICE LINE.
3. MAIN ST STA. 8+07 LT TO STA. 8+87 RT - INSTALL NEW POLE BEHIND PROPOSED CURB LINE AT STA. 8+07 LT AND RECONNECT SECONDARY SERVICE LINE.
4. ROUTE 46 STA. 69+07 LT - INSTALL NEW POLE BEHIND PROPOSED CURB LINE AT STA. 69+07 LT AND RECONNECT SECONDARY SERVICE LINE.
5. ROUTE 46 STA. 70+69 LT TO STA. 70+83 RT (ALONG WEST SIDE OF LIBERTY ST) - INSTALL 3 NEW POLES BEHIND PROPOSED CURB LINE AT STA. 70+72 LT, STA. 71+14 LT, AND STA. 70+80 RT. INSTALL 240 LF NEW 13 KV DISTRIBUTION AND 240 LF NEW 26 KV SUB TRANSMISSION.
6. ROUTE 46 STA. 71+93 RT TO STA. 76+98 LT - INSTALL 4 NEW POLES BEHIND PROPOSED CURB LINE AT STA. 73+22 RT, STA. 79+90 LT, STA. 75+06 LT, STA. 76+07 LT, AND INSTALL 530 LF NEW 13 KV DISTRIBUTION.
7. ROUTE 46 STA. 73+64 LT TO STA. 73+90 LT (ALONG EAST SIDE OF SUMMIT PLACE) - INSTALL 1 NEW POLE BEHIND PROPOSED CURB LINE AT STA. 73+90 LT (COVERED UNDER ITEM #6) AND RECONNECT SECONDARY SERVICE LINE.
8. ROUTE 46 STA. 74+58 RT TO STA. 75+47 RT - INSTALL 2 NEW POLES BEHIND PROPOSED CURB LINE AT STA. 74+58 RT AND STA. 75+47 RT (COVERED UNDER ITEM #9) AND RECONNECT SECONDARY SERVICE LINE.
9. ROUTE 46 STA. 75+06 LT TO STA. 75+35 RT (EAST SIDE OF CHARLES ST) TO STA. 77+89 RT (EAST SIDE OF GARDEN ST) - INSTALL 6 NEW POLES BEHIND PROPOSED CURB LINE AT STA. 75+06 LT (COVERED UNDER ITEM #6), STA. 77+00 RT, STA. 77+54 RT, STA. 77+99 RT, AND 535 LF 13 KV DISTRIBUTION. COMPANY TO REMOVE EXISTING POLE AT STA. 75+40 RT.
10. ROUTE 46 STA. 76+38 RT TO STA. 76+98 LT - INSTALL 1 NEW POLE BEHIND PROPOSED CURB LINE AT STA. 76+40 RT (COVERED UNDER ITEM #9) AND RECONNECT SECONDARY SERVICE LINE.
11. ROUTE 46 STA. 79+65 RT (WEST SIDE OF BRANDT ST) TO STA. 80+93 LT - INSTALL 2 NEW POLES BEHIND PROPOSED CURB LINE AT STA. 79+98 RT AND STA. 80+87 RT, AND 255 LF 13KV DISTRIBUTION.

12. ROUTE 46 79+54 LT TO STA. 79+96 RT - INSTALL 1 NEW POLE BEHIND PROPOSED CURB LINE AT STA. 79+98 RT (COVERED UNDER ITEM #11) AND RECONNECT 80 LF SECONDARY SERVICE LINE.
13. ROUTE 46 STA. 81+60 RT TO STA. 82+26 RT - INSTALL 1 NEW POLE BEHIND PROPOSED CURB LINE AT STA. 81+60 RT AND RECONNECT SECONDARY SERVICE LINE.
14. ROUTE 46 STA. 82+54 RT - INSTALL 1 NEW POLE BEHIND PROPOSED CURB LINE AT STA. 82+54 RT.
15. ROUTE 46 STA. 57+74 RT TO STA. 58+58 RT – INSTALL 2 NEW POLES BEHIND PROPOSED CURB LINE TO PROVIDE 5' OF ADDITIONAL HEIGHT AND RAISE PRIMARY AND SECONDARY SERVICES IN ORDER TO PROVIDE MINIMUM CLEARANCE TO PROPOSED TRAFFIC SIGNAL.
16. ROUTE 46 STA. 82+21 LT – INSTALL 1 NEW POLE BEHIND PROPOSED CURB LINE TO PROVIDE 5' OF ADDITIONAL HEIGHT AND RAISE PRIMARY AND SECONDARY SERVICES IN ORDER TO PROVIDE MINIMUM CLEARANCE TO PROPOSED TRAFFIC SIGNAL.
17. ROUTE 46 STA. 49+00 RT TO STA. 56+10 RT. – INSTALL HIGHWAY LIGHTING ON 8 EXISTING UTILITY POLES.

DURATION:

STAGE 1: PSE&G WILL PERFORM ITEMS 1-7, 15-17 AND REQUIRES 4 WEEKS.

STAGE 2: PSE&G WILL PERFORM ITEMS 8-14 AND REQUIRES 4 WEEKS.

SCHEDULE:

PSE&G REQUIRES 90 DAYS LEAD TIME FOR MATERIAL ORDER, ENGINEERING LAYOUT AND CONSTRUCTION SCHEDULING.

GENERAL NOTES:

1. ALL AERIAL FACILITIES MUST CLEAR PROPOSED TRAFFIC SIGNALS (TEMPORARY AND PERMANENT) AND LIGHTING STANDARDS IN ACCORDANCE WITH THE VERTICAL AND HORIZONTAL DISTANCES OUTLINED IN N.J.S.A. 16:25 UTILITY ACCOMMODATION POLICY.
2. THE STATE'S CONTRACTOR WILL PROVIDE THE UTILITY WITH NOTICES CALLED FOR IN THE SCHEDULES.
3. THE STATE'S CONTRACTOR WILL PROVIDE THE UTILITY WITH SURVEY CONTROL. THE STATE'S CONTRACTOR AND THE UTILITY SHALL JOINTLY VERIFY THE LOCATION OF THE FACILITIES PRIOR TO INSTALLATION.
4. POLES SHALL BE PLACED AS CLOSE TO THE RIGHT-OF-WAY AS PRACTICAL. A MINIMUM OF 1.5' (18") FROM FACE OF CURB TO FACE OF POLE.
5. UTILITY SCHEDULES ARE ESTIMATED TIME FRAMES FOR THIS UTILITY OWNER ONLY AND DO NOT INCLUDE WORK PERFORMED BY OTHER UTILITY OWNERS SHARING JOINT FACILITIES.
6. UTILITY SCHEDULES ARE BASED ON THE PROJECT TRAFFIC CONTROL AND STAGING PLAN FOR EACH UTILITY MOBILIZATION. UTILITY SERVICE DEMANDS, FIELD AND WEATHER

CONDITIONS MAY ALTER THESE SCHEDULES. STATE (CONTRACTOR) CHANGES TO THE TRAFFIC CONTROL AND STAGING PLAN REQUIRED REESTABLISHING UTILITY SCHEDULES.

7. WHERE JOINT FACILITIES ARE PROPOSED, THE UTILITY SHALL COORDINATE ITS WORK WITH THE JOINT OWNERS.
8. EXISTING FACILITIES CAN ONLY BE REMOVED AFTER THE RELOCATED FACILITIES HAVE BEEN INSTALLED AND ARE IN OPERATION.
9. DISTANCES, STATIONS, OFFSETS, LENGTHS OR UNITS ON THE UTILITY AGREEMENT PLAN ARE APPROXIMATE (PLUS OR MINUS).
10. NO 26/ 13/ 4KV LINES WILL NOT BE DE-ENERGIZED IF TEMPERATURES ARE FORECASTED TO EXCEED 85 DEGREES FAHRENHEIT.
11. THE STATE'S CONTRACTOR TO PROVIDE POSITIVE PROTECTION FOR UTILITY POLES THAT ARE AT RISK FROM THROUGH HIGHWAY TRAFFIC AND CONTRACTOR WORK ACTIVITIES.
12. ALL OUTAGE REQUESTS MUST BE IN WRITING AND A MINIMUM OF TEN WORKING DAYS. REQUESTS CAN BE CANCELLED DUE TO OPERATING CONDITIONS.
13. PSE&G, IF LAST ON POLE WILL REMOVE ABANDONED POLE AND FACILITIES.
14. HIGHWAY LIGHTING PRESENT ON EXISTING UTILITY POLES TO BE RELOCATED WILL BE MOVED TO NEW POLE BY PSE&G. THE FOLLOWING UTILITY POLES HAVE EXISTING HIGHWAY LIGHTING: ULP# P587LF, UP#877, ULP#60496LF,UP#P5876_3, AND UP#61402.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY (GAS)

WORK TO BE PERFORMED BY STATE CONTRACTOR:

1. ROUTE 46 STA. 58+05 LT AND STA. 62+99 LT- INSTALL 500 LF OF 6-INCH GAS MAIN.
2. ROUTE 46 STA. 58+33 RT AND STA. 62+30 RT- INSTALL 416 LF OF 4-INCH GAS MAIN.
3. ROUTE 46 STA. 64+61 LT TO 68+32 LT - INSTALL 375 LF OF 6-INCH GAS MAIN.
4. ROUTE 46 STA. 70+75 RT (ALONG WEST SIDE OF LIBERTY ST) - INSTALL 190 LF OF 12-INCH STEEL GAS MAIN; AT LIBERTY ST. NORTHEAST CORNER INSTALL 60 LF OF 2-INCH GAS MAIN.
5. ROUTE 46 STA. 70+80 LT (ALONG WEST SIDE OF LIBERTY ST) - INSTALL 35 LF OF 6-INCH GAS MAIN.
6. ROUTE 46 STA. 73+68 LT TO STA. 75+49 LT - INSTALL 40 LF OF 6-INCH GAS MAIN, INSTALL 180 LF OF 4-INCH GAS MAIN.
7. ROUTE 46 STA. 75+34 RT (ALONG EAST SIDE OF CHARLES ST) TO STA. 82+49 RT - INSTALL 755 LF OF 4-INCH GAS MAIN.
8. ROUTE 46 STA. 83+50 LT TO STA. 83+72 LT - INSTALL 25 LF OF 4-INCH GAS MAIN.

WORK TO BE PERFORMED BY STATE CONTRACTOR:

PSE&G (GAS CREW) WILL PURGE EXISTING MAINS, TEST AND TIE-IN NEW GAS MAINS WITH CONTRACTOR ASSISTANCE.

ROUTE U.S. 46 FROM MAIN STREET TO VICINITY OF FREDERICK STREET
FEDERAL PROJECT NO. NHP-8112(147)

SCHEDULE:

PSE&G REQUIRES 6 WEEKS ADVANCE NOTICE FOR GAS MAIN SHUT DOWN AND TO ORDER MATERIAL THAT WILL BE SUPPLIED TO STATE'S CONTRACTOR.

GENERAL NOTES:

1. PSE&G SHALL HAVE ACCESS TO ITS FACILITIES AT ALL TIMES.
2. STATE'S CONTRACTOR SHALL PROVIDE THE COMPANY WITH THE NOTICES CALLED FOR IN THE SCHEDULE.
3. THE STATE'S CONTRACTOR WILL PROVIDE THE UTILITY WITH SURVEY CONTROL. THE STATE'S CONTRACTOR AND THE UTILITY SHALL JOINTLY VERIFY THE LOCATION OF THE FACILITIES PRIOR TO INSTALLATION
4. MATERIALS TO BE SUPPLIED BY PSE&G. INSTALLATION BY STATE'S CONTRACTOR UNLESS OTHERWISE NOTED. STATE'S CONTRACTOR SHALL CONTACT AND REQUEST PSE&G TO PROVIDE VALVE BOXES AND COVERS.
5. THE STATE'S CONTRACTOR WILL PROVIDE SITE CLEARING BEFORE EACH OF THE WORK ACTIVITIES AND FINAL GRADING.
6. PURGING, TESTING AND TIE-IN OF NEW GAS MAIN ARE TO BE DONE BY PSE&G AUTHORIZED PERSONNEL ONLY.
7. PSE&G WILL PROVIDE THE STATE WITH A LIST OF APPROVED CONTRACTORS TO INSTALL AND WORK ON COMPANY FACILITIES.
8. THE STATE'S CONTRACTOR WILL ASSIST PSE&G BY DIGGING PROVIDING THE EXCAVATIONS FOR THE MAIN DISCONNECTS AND TIE IN. THE CONTRACTOR WILL BACKFILL THE EXCAVATIONS AND APPROACH ROADWAYS.
9. PSE&G WILL INSPECT ALL CONTRACTOR INSTALLATIONS PRIOR TO ACCEPTANCE.
10. PSE&G FACILITIES CANNOT BE TAKEN OUT OF SERVICE BETWEEN OCTOBER 15 THROUGH APRIL 15.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY (ELECTRIC TRANSMISSION)

WORK TO BE PERFORMED BY STATE CONTRACTOR:

1. ROUTE 46 STA. 55+45 LT AND STA. 55+52 LT- RESET 2 ELECTRIC MANHOLE FRAMES AND CASTINGS TO PROPOSED ROADWAY GRADE.
2. ROUTE 46 STA. 79+99 LT AND STA. 80+09 LT- RESET 1 ELECTRIC VALVE AT STA. 79+99 LT AND RESET 2 ELECTRIC MANHOLE FRAMES AND CASTINGS TO PROPOSED GRADE AT STA. 80+02 LT AND STA. 80+09 LT.

SCHEDULE:

PSE&G REQUIRES 4 WEEKS ADVANCE NOTICE FOR TO PROVIDE INSPECTOR.

VERIZON

ROUTE U.S. 46 FROM MAIN STREET TO VICINITY OF FREDERICK STREET
FEDERAL PROJECT NO. NHP-8112(147)

WORK TO BE PERFORMED BY UTILITY:

1. ROUTE 46 STA. 70+79 RT (ALONG WEST SIDE OF LIBERTY ST) - RECONNECT AERIAL TELEPHONE CABLE TO NEW POLE AT STA. 70+80 RT. POLE BY OTHERS. VERIZON TO REMOVE ABANDONED POLE.
2. ROUTE 46 STA. 71+08 LT (ALONG EAST SIDE OF LIBERTY ST) - INSTALL 26 LF CONDUIT 9 MTD.
3. ROUTE 46 STA. 71+08 RT (ALONG EAST SIDE OF LIBERTY ST) - INSTALL 26 LF CONDUIT 9 MTD.
4. ROUTE 46 STA. 71+93 RT TO STA. 73+22 RT - RECONNECT AERIAL TELEPHONE CABLE TO NEW POLE AT STA. 73+22 RT. POLE BY OTHERS. VERIZON TO REMOVE ABANDONED POLE.
5. ROUTE 46 STA. 72+19 LT TO STA. 72+60 LT - INSTALL 1 NEW POLE BEHIND PROPOSED CURBLINE AT STA. 72+56 LT AND 40 LF CONDUIT 9 MTD.
6. ROUTE 46 STA. 73+90 LT TO STA. 76+98 LT - RELOCATE EXISTING COPPER TO NEW POLES AT STA. 73+90 LT, STA. 75+06 LT, AND STA. 76+07 LT. POLES BY OTHERS. VERIZON TO REMOVE 3 ABANDONED POLES.
7. ROUTE 46 STA. 75+40 RT TO STA. 75+35 RT (ALONG EAST SIDE OF CHARLES ST) - RECONNECT AERIAL TELEPHONE CABLE TO NEW POLE AT STA. 75+47 RT. POLE BY OTHERS. VERIZON TO REMOVE ABANDONED POLE.
8. ROUTE 46 STA. 76+38 RT TO STA. 77+98 RT - RECONNECT AERIAL TELEPHONE CABLE TO NEW POLES AT STA. 76+40 RT, STA. 77+54 RT, AND STA. 77+99 RT. POLES BY OTHERS. VERIZON TO REMOVE 3 ABANDONED POLES.
9. ROUTE 46 STA. 79+54 LT TO STA. 79+96 LT - RECONNECT 78 LF AERIAL TELEPHONE CABLE TO NEW POLE AT STA. 79+98 RT. POLE BY OTHERS. VERIZON TO REMOVE ABANDONED POLE.

DURATION:

STAGE 1: VERIZON WILL PERFORM ITEMS 1, 2, 5 & 6 AND REQUIRES 2 WEEKS.

STAGE 2: VERIZON WILL PERFORM ITEMS 3, 4, 7, 8 & 9 AND REQUIRES 2 WEEKS.

SCHEDULE:

VERIZON REQUIRES 90 DAYS LEAD TIME FOR MATERIAL ORDER AND CONSTRUCTION SCHEDULING.

GENERAL NOTES:

1. STATE'S CONTRACTOR SHALL PROVIDE THE COMPANY WITH THE NOTICES CALLED FOR IN THE SCHEDULES.
2. WHERE JOINT FACILITIES ARE PROPOSED, THE COMPANY SHALL COORDINATE ITS WORK WITH THE JOINT OWNERS.
3. AERIAL FACILITIES BELONGING TO CABLE COMPANIES TO BE INSTALLED ON VERIZON OR JOINT POLES.

4. THE STATE'S CONTRACTOR WILL PROVIDE THE UTILITY WITH SURVEY CONTROL. THE STATE'S CONTRACTOR AND THE UTILITY SHALL JOINTLY VERIFY THE LOCATION OF THE FACILITIES PRIOR TO INSTALLATION.
5. POLES SHALL BE PLACED AS CLOSE TO THE RIGHT-OF-WAY AS PRACTICAL. A MINIMUM OF 1.5 (18") FROM FACE OF CURB TO FACE OF POLE.
6. ALL AERIAL FACILITIES MUST CLEAR PROPOSED TRAFFIC SIGNALS (TEMPORARY AND PERMANENT) AND LIGHTING STANDARDS IN ACCORDANCE WITH THE VERTICAL AND HORIZONTAL DISTANCES OUTLINED IN N.J.S.A. 16:25 UTILITY ACCOMMODATION POLICY.
7. ALL DISTANCES, STATIONS, OFFSETS AND LENGTHS ARE APPROXIMATE (PLUS OR MINUS).
8. EXISTING CUSTOMER SERVICES WILL BE REPLACED OR RELOCATED BY THE COMPANY AS NEEDED.
9. VERIZON IF LAST ON POLE WILL REMOVE ABANDONED POLE AND FACILITIES.

UNITED WATER

WORK TO BE PERFORMED BY CONTRACTOR:

1. MAIN STREET STA. 7+55 LT - RELOCATE FIRE HYDRANT BEHIND CURB LINE AND RESET WATER MAIN SHUT OFF BOX TO PROPOSED PAVEMENT GRADE.
2. ROUTE 46 STA. 55+64 LT TO 61+37 LT - INSTALL 600 LF 12-INCH DUCTILE IRON WATER MAIN AND RESET 2 WATER MAIN VALVE SHUT OFF BOXES TO PROPOSED ROADWAY GRADE AT STA. 57+10 LT AND STA. 57+86 LT.
3. ROUTE 46 STA. 62+19 LT TO STA. 63+30 LT - RESET 2 WATER MAIN VALVE SHUT OFF BOXES TO PROPOSED PAVEMENT GRADE AT STA. 62+19 LT AND STA. 63+30 LT.
4. ROUTE 46 STA. 64+61 LT TO STA. 68+19 LT - INSTALL 372 LF 12-INCH DUCTILE IRON WATER MAIN. RELOCATE 1 FIRE HYDRANT BEHIND PROPOSED SIDEWALK AT STA. 66+47 LT, AND RESET 1 WATER MAIN VALVE SHUT OFF BOX TO PROPOSED ROADWAY AT STA. 66+46 LT.
5. ROUTE 46 STA. 70+82 LT (ALONG WEST SIDE OF LIBERTY ST) - INSTALL 35 LF 12-INCH DUCTILE IRON WATER MAIN.
6. ROUTE 46 STA. 70+70 LT TO STA. 71+24 LT - RESET 3 WATER MAIN VALVE SHUT OFF BOXES TO PROPOSED ROADWAY GRADE AT STA. 70+70 LT, STA. 70+82 LT, AND STA. 72+24 LT.
7. ROUTE 46 STA. 70+84 RT (ALONG WEST SIDE OF LIBERTY ST) - INSTALL 35 LF 12-INCH DUCTILE IRON WATER MAIN.
8. ROUTE 46 STA. 73+53 LT (ALONG WEST SIDE OF SUMMIT PL) - INSTALL 30 LF 6-INCH DUCTILE IRON WATER MAIN.
9. ROUTE 46 STA. 75+20 RT - RESET WATER MAIN VALVE SHUT OFF BOX TO PROPOSED ROADWAY GRADE.
10. ROUTE 46 STA. 77+84 RT - RESET WATER MAIN VALVE SHUT OFF BOX TO PROPOSED ROADWAY GRADE.

11. ROUTE 46 STA. 79+72 RT - RESET WATER MAIN VALVE SHUT OFF BOX TO PROPOSED ROADWAY GRADE.
12. ROUTE 46 STA. 82+32 LT (ALONG WEST SIDE OF GRAND ST) - INSTALL 50 LF 12-INCH DUCTILE IRON WATER MAIN AND RESET 2 WATER MAIN VALVE SHUT OFF BOXES TO PROPOSED ROADWAY GRADE BOTH AT STA. 82+32 LT.
13. ROUTE 46 STA. 82+22 RT TO STA. 82+33 RT - INSTALL 35 LF 6-INCH DUCTILE IRON WATER MAIN.

SCHEDULE:

UNITED WATER REQUIRES 48 HOURS NOTICE FOR MATERIAL PICK UP.

GENERAL NOTES:

1. STATE'S CONTRACTOR SHALL PROVIDE THE COMPANY WITH THE NOTICES CALLED FOR IN THE SCHEDULES.
2. THE STATE'S CONTRACTOR AND THE UTILITY SHALL JOINTLY VERIFY THE LOCATION OF THE FACILITIES PRIOR TO INSTALLATION.
3. EXISTING CUSTOMER SERVICES WILL BE REPLACED OR RELOCATED BY THE STATE'S CONTRACTOR AS NEEDED.
4. THE STATE'S CONTRACTOR WILL REMOVE ALL ABANDONED WATER MAINS AND FACILITIES.
5. ALL CONSTRUCTION WORK WILL BE PERFORMED BY STATE'S CONTRACTOR AND APPROVED BY UNITED WATER OF NEW JERSEY.
6. INSPECTION OF WATER INSTALLATIONS WILL BE PERFORMED BY UNITED WATER OF NEW JERSEY.
7. UNITED WATER OF NEW JERSEY WILL PROVIDE THE STATE WITH A LIST OF APPROVED CONTRACTORS.
8. A UNITED WATER OF NEW JERSEY INSPECTOR MUST BE PRESENT FOR ALL WATER MAIN WORK BY STATE'S CONTRACTOR.

BOROUGH OF LITTLE FERRY (SANITARY SEWER)

WORK TO BE PERFORMED BY STATE CONTRACTOR:

1. ROUTE 46 STA. 70+86 LT (LIBERTY ST) AND STA. 70+87 LT - RESET 2 SANITARY SEWER MANHOLE FRAMES USING NEW CASTINGS TO PROPOSED ROADWAY GRADE.
2. ROUTE 46 STA. 72+69 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.
3. ROUTE 46 STA. 74+68 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.
4. ROUTE 46 STA. 76+18 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.

5. ROUTE 46 STA. 77+62 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.
6. ROUTE 46 STA. 79+11 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.
7. ROUTE 46 STA. 82+17 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.
8. ROUTE 46 STA. 85+23 LT - RESET SANITARY SEWER MANHOLE FRAME USING NEW CASTING TO PROPOSED ROADWAY GRADE.

SCHEDULE:

LITTLE FERRY BOROUGH REQUIRES 30 DAYS ADVANCE NOTICE TO ATTEND ANY MEETINGS AND 5 DAYS NOTICE TO PROVIDE INSPECTION SERVICES.

GENERAL NOTES:

1. STATE'S RESIDENT ENGINEER SHALL PROVIDE THE BOROUGH WITH THE NOTICES CALLED FOR IN THE SCHEDULES.
2. ALL DISTANCES, STATIONS, OFFSETS AND LENGTHS AND ARE APPROXIMATE (PLUS OR MINUS).
3. ALL WORK ON EXISTING SEWER FACILITIES WILL BE PERFORMED BY THE STATE'S CONTRACTOR.
4. SEWER MAINS AND SERVICES WILL REMAIN OPERATIONAL AT ALL TIMES.
5. EXISTING CUSTOMER SERVICES WILL BE REPLACED OR RELOCATED BY THE STATE'S CONTRACTOR AS NEEDED.

TIME WARNER CABLE

WORK TO BE PERFORMED BY UTILITY:

1. ROUTE 46 STA. 69+07 LT TO STA. 71+69 LT - INSTALL 2 NEW POLES BEHIND PROPOSED CURB LINE AT STA. 69+99 LT AND STA. 71+69 LT. RECONNECT 265 LF AERIAL COAX CABLE TO NEW POLES AT STA. 69+07 (POLE BY OTHERS), STA. 69+99 LT, AND STA. 71+69 LT.
2. ROUTE 46 STA. 72+60 LT TO STA. 75+89 LT - RECONNECT 350 LF AERIAL COAX CABLE TO POLES AT STA. 72+56 LT (POLE BY OTHERS), 73+90 LT (POLE BY OTHERS), 75+06 LT (POLE BY OTHERS), AND STA. 76+07 LT (POLE BY OTHERS).
3. ROUTE 46 STA. 77+99 RT (CROSSING AT GARDEN ST.) TO STA. 77+89 LT - RECONNECT 65 LF AERIAL COAX CABLE TO POLES AT STA. 77+99 RT (POLE BY OTHERS) AND STA. 77+89 RT (EXISTING POLE TO REMAIN).

DURATION:

STAGE 1: TIME WARNER WILL PERFORM ITEMS 1 & 2 AND REQUIRES 1 WEEK.

STAGE 2: TIME WARNER WILL PERFORM ITEM 3 AND REQUIRES 1 WEEK.

SCHEDULE:

TIME WARNER REQUIRES 30 DAYS LEAD TIME FOR MATERIAL ORDER AND CONSTRUCTION SCHEDULING.

GENERAL NOTES:

1. STATE'S RESIDENT ENGINEER SHALL PROVIDE THE COMPANY WITH THE NOTICES CALLED FOR IN THE SCHEDULES.
2. WHERE JOINT FACILITIES ARE PROPOSED, THE COMPANY SHALL COORDINATE ITS WORK WITH THE JOINT OWNERS.
3. AERIAL FACILITIES BELONGING TO CABLE COMPANY TO BE INSTALLED ON VERIZON POLES/ PSE&G POLES / TWC POLES.
4. ALL AERIAL FACILITIES MUST CLEAR PROPOSED TRAFFIC SIGNALS (TEMPORARY AND PERMANENT) AND LIGHTING STANDARDS IN ACCORDANCE WITH THE VERTICAL AND HORIZONTAL DISTANCES OUTLINED IN N.J.S.A. 16:25 UTILITY ACCOMMODATION POLICY.
5. ALL DISTANCES, STATIONS, OFFSETS AND LENGTHS ARE APPROXIMATE (PLUS OR MINUS).
6. EXISTING CUSTOMER SERVICES WILL BE REPLACED OR RELOCATED BY THE COMPANY AS NEEDED.

SECTION 106 – CONTROL OF MATERIAL

106.03 FOREIGN MATERIALS

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

For steel and iron products incorporated into the Project, provide a certification from the manufacturer stating the country where the steel or iron product was melted and manufactured including application of coatings which protect or enhance the value of the material. Ensure that 4 copies of the manufacturer's certification are provided with each delivery of steel and iron products. Retain 1 copy and submit 3 copies to the RE. Ensure that the certification includes, materials description, quantity of material represented by the certification, country of manufacture, and notarized signature of a person having legal authority to bind the supplier. If a Certification of Compliance as specified in 106.07 contains a statement regarding the country of manufacture, a separate certification is not necessary.

106.04 MATERIALS QUESTIONNAIRE

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

For ITS systems as specified in Section 704, obtain approval of system working drawings including individual components and Electrical material instead of submitting a materials questionnaire.

106.07 CERTIFICATION OF COMPLIANCE

THE ENTIRE TEXT IS CHANGED TO:

106.07.01 Certification of Compliance

Submit manufacturer's Certifications of Compliance stating that the materials and/or assemblies fully comply with the requirements of the Contract when required by the Contract or requested by the Department.

Ensure that Manufacturer's Certification of Compliance contains the following information:

1. Project Name.
2. Name of the Contractor.

3. Material description.
4. Quantity of material represented by the certification.
5. Means of identifying the consignment, such as label marking or seal number.
6. Date and method of shipment.
7. A statement that the material conforms to the Contract material requirements and that representative samples have been sampled and tested.
8. If the submission is for an assembly of materials, a statement that the assembly conforms to the Contract.
9. Signature of a person having legal authority to bind the supplier.
10. Typed or printed name of the person who signed the certification.

Before incorporating the materials into the Project, obtain 3 copies of the manufacturer's Certifications of Compliance for materials, components, and manufactured items that are accepted by certification. Retain 1 copy and submit 2 copies to the RE. With the Certification of Compliance, provide a transmittal identifying the Item for which it is submitted. For products that contain steel or iron, attach additional documents as required by the certification procedures as specified in 106.07.02. The Contractor may submit the Certifications of Compliance electronically to the RE in a scanned document. Include the transmittal and all backup documentation in the scanned document.

The Department has the right to sample and test materials or assemblies accepted on the basis of Certifications of Compliance at any time. The Department will reject materials or assemblies, whether in place or not, if found not to be in conformance with the Contract requirements.

The Department will not make payment for an Item for which material is accepted on the basis of a Certification of Compliance until the RE has received the required Certification of Compliance and has inspected and accepted the material or assembly.

106.07.02 Certification for iron and steel

- A. Precast Concrete Steel and Concrete Pipe Certification of Compliance.** For precast concrete and concrete pipe items, a Buy America Compliance Plan is required to confirm that the material meets the Buy America requirements as specified in 106.03. The ME will periodically audit compliance with the program at the precast plant. If the precast concrete item is not inspected by ME, submit a Certification of Compliance for the precast concrete item as required in 106.07.01. When a Certification of Compliance is submitted, ensure that the Certification of Compliance contains a statement that the reinforcing steel used in the precast concrete item complies with the Buy America requirements as specified in 106.03.
- B. Incidental Steel or Iron Components and Manufactured Products.** Incidental steel and iron components such as lifting hooks, tie wire, chairs, nuts, bolts and screws are not required to be certified for compliance with Buy America requirements. For manufactured products that are not made predominantly of steel, the steel components are not required to be certified for compliance with Buy America requirements.
- C. Step Certification of Compliance.** For products that contain steel or iron components and are not covered in 106.07.02.A or 106.07.02.B, step Certification of Compliance is required to confirm that the item meets the Buy America requirements as specified in 106.03. A step certification is a process under which each handler (e.g., supplier, fabricator, manufacturer, processor, coating facility) of the iron and steel components certifies that the steel and iron components were of domestic origin and that their step in the process was domestically performed.

Every step in the process from melting to coating must be performed in the United States in order for the steel or iron component to be considered domestic and must be documented by step certification. If a domestic source for a steel or iron component cannot be found, submit a request for waiver to the Department. Do not purchase non-domestic steel or iron components without the express written consent of the Department.

Ensure that 3 copies of the Contractor's Certification of Compliance (Form DC-17) and the step Certifications of Compliance are provided for items containing steel or iron. Retain 1 copy and submit 2 copies to the RE. The Contractor may submit the DC-17 and the step certifications electronically in a scanned document.

Ensure that step Certifications of Compliance contain the following information:

1. Name of the Company supplying the material.
2. Name and location of the Company the material was shipped to.
3. Material description.

4. Quantity of material represented by the Certification.
5. Means of identifying the consignment, such as label marking or seal number.
6. Date and method of shipment.
7. A statement that the material conforms to the Contract material requirements and to the Buy America requirements in 106.03.
8. A statement that all steel or iron components in the material or assembly were “melted and manufactured in the US”, unless there is non-domestic steel or iron in the material or assembly.
9. If there is non-domestic steel or iron in the assembly, describe in detail the non-domestic steel or iron material and the quantity. Attach a copy of the Department’s approval for the use of non-domestic steel or iron components.
10. Signature of a person having legal authority to bind the supplier.
11. Typed or printed name of the person who signed the certification.

The Department will not make payment for work containing steel or iron materials until the RE has received the required DC-17 and step Certifications of Compliance and has inspected and accepted the material or assembly.

106.09 SUBSTITUTES FOR PROPRIETARY ITEMS

No substitution is permitted.

SECTION 107 – LEGAL RELATIONS

107.04 NEW JERSEY CONTRACTUAL LIABILITY ACT

THE FOURTH PARAGRAPH IS CHANGED TO:

For purposes of determining the date of “completion of the contract” pursuant to N.J.S.A. 59:13-5, “completion of the contract” occurs on the date that the Contractor provides written notice to the Department of Acceptance or conditional Acceptance of the Proposed Final Certificate or the 30th day after the Department issues the Proposed Final Certificate, whichever event occurs first.

107.09 INDEPENDENT CONTRACTOR

THE ENTIRE SUBSECTION IS CHANGED TO:

The relationship of the Contractor to the State is that of an independent contractor. Conduct business consistent with such status. Do not hold out or claim to be an officer or employee of the Department by reason hereof. Do not make a claim, demand, or application to or for the rights or privileges applicable to an officer or employee of the Department, including, but not limited to, Workers Compensation Insurance, unemployment insurance benefits, social security coverage, or retirement membership or credit.

107.12.01 Satisfying the Notice Requirements

THE FOLLOWING IS ADDED TO THE SECOND PARAGRAPH:

Upon request, provide the RE with 3 copies of all documentation submitted in support of the claim.

107.12.02 Steps

3. Step III, Claims Committee.

THE SECOND PARAGRAPH IS CHANGED TO:

The Claims Committee will not review a claim or combination of claims valued less than \$250,000 until after the receipt of conditional release as specified in 109.11. If the Contract is 75 percent complete or greater as measured by Contract Time or Total Adjusted Contract Price, the Claims Committee will not review a claim or combination of claims valued more than \$250,000 until after receipt of conditional release as specified in 109.11. If the Claims Committee does not review a claim or combination of claims before Completion, the Claims Committee will review the claim or combination of claims at a single session of the Claims Committee after the receipt of the conditional release as specified in 109.11 and all claims have been reviewed

at Steps I and II of the Claims Resolution Process. When reviewing a combination of claims, the Claims Committee will not review any individual claim valued less than \$20,000.
THE FOLLOWING SUBSECTION IS ADDED

107.17 COMMUNICATION WITH THE NEWS MEDIA

Do not communicate with the news media or issue a news release without obtaining a prior written approval from the Department.

SECTION 108 – PROSECUTION AND COMPLETION

108.01 SUBCONTRACTING

1. Values and Quantities.

THE FOLLOWING IS ADDED TO FIRST PARAGRAPH

1.

There are no Specialty Items in this Project.

Specialty Items are as listed below:

Above ground highway lighting items.

Electrical wire items.

ITS items, except for foundations, standards, and junction boxes.

THE THIRD PARAGRAPH IS CHANGED TO:

If a partial quantity of work for a unit price Item is subcontracted, the Department will determine the value of the work subcontracted by multiplying the price of the Item by the quantity of units to be performed by the subcontractor.

THE FOURTH PARAGRAPH IS CHANGED TO:

If only a portion of work of an Item is subcontracted, the Department will determine the value of work subcontracted based on the value of the work subcontracted as indicated in the subcontract agreement and as shown in a breakdown of cost submitted by the Contractor.

108.02 COMMENCEMENT OF WORK

THE SUBPART 4 IN THE FIRST PARAGRAPH IS CHANGED TO:

4. Progress schedule as specified in 153.03

108.06 NIGHT OPERATIONS

2. Visibility Requirements for Workers and Equipment.

THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that workers wear a 360° high-visibility retroreflective safety garment meeting ANSI/ISEA Class 3, Level 2 standards.

108.07.02 Changes to the Traffic Control Plan (TCP)

THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Submit requests for changes to the TCP to the RE for approval at least 30 days before the change is needed.

108.08 LANE OCCUPANCY CHARGES

THE SECOND PARAGRAPH IS CHANGED TO:

ROUTE U.S. 46 FROM MAIN STREET TO VICINITY OF FREDERICK STREET
FEDERAL PROJECT NO. NHP-8112(147)

The RE will keep record of each occurrence as well as the cumulative amount of time that a lane is kept closed beyond the lane closure schedule and provide the record to the Contractor. The Department will calculate the lane occupancy charge by multiplying the length of time of the delayed opening, in minutes, by the rate of \$10 per minute per lane, unless otherwise specified in the Special Provisions. The total amount per day for the lane occupancy charge that the Department will collect will not exceed \$10,000.00.

THE FOLLOWING IS ADDED:

The rate to calculate the Lane Occupancy Charge is as follows:

<u>Route 46</u>	<u>Rate</u>
Overrun of "One Lane Maintained" Time Limits	\$10 / minute

108.09 MAINTENANCE WITHIN THE PROJECT LIMITS

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

6. Access to ITS devices and their respective controllers and meter cabinets is maintained throughout the duration of the project.

108.10 CONTRACT TIME

- A. Complete all work required for Substantial Completion on or before December 14, 2015.
- B. Achieve Completion on or before February 15, 2016.

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

Drainage construction east of Summit Place (Route 46 Station 73+50) is not permitted until the stormwater pumping station is operational. The stormwater pumping station is to be constructed under the "Route U.S. 46 Little Ferry Circle" project (Contract No. 069950373). It is estimated that the stormwater pumping station will be operational by July 1, 2015.

108.11.01 Extensions to Contract Time

B. Types of Delays.

1. Non-Excusable Delays.

THE FOLLOWING IS ADDED:

For work performed by Utilities, delays up to 30 percent of the estimated duration specified in 105.07.02 are considered non-excusable. The duration includes both the advance notice and the completion of the work by the Utility.

For delays caused by Railroads, delays up to 30 percent of the estimated availability specified in 105.07 are considered non-excusable.

2. Excusable, Non-Compensable Delays.

b. Utilities.

THE FOLLOWING IS ADDED:

For delays caused by Railroads, when the availability to access is reduced by more than 30 percent greater than the estimated availability specified in 105.07.

108.12 RIGHT-OF-WAY RESTRICTIONS

THE FOLLOWING IS ADDED:

The Department has obtained all Right-of-Way parcels, however the following issues are pending for the parcels listed:

Parcel	Approx. Station/Offset	Status	Anticipated Availability
53A & SA53B	76+00 Rt.	Sign Relocation Pending	9/1/14
58A & SA58B	84+00 Rt.	Sign Relocation Pending	9/15/14
65	68+50 Lt.	Sign Relocation Pending	8/29/14
67A, SA67B & SA67C	72+00 Lt.	Sign Relocation Pending	9/15/14

Given the project's start of construction date is after the anticipated availability dates, the does not appear to be any impact to the Contractor. Any delays in sign relocations should not impact the Contractor's construction staging.

The Department's Northern Right of Way Division to determine which properties near the project limits would be suitable to temporarily store vehicles displaced by the Contractor's construction activities.

108.14 DEFAULT AND TERMINATION OF CONTRACTOR'S RIGHT TO PROCEED
THE FOLLOWING IS ADDED AFTER THE 2ND PARAGRAPH:

If the Department directs the Surety to complete the Contract, and the Surety elects to use a completion-contractor to perform the Work, the Surety must promptly submit to the Department a request for approval of the proposed completion-contractor as a subcontractor as per Section 108.01. The Department has the right to reject a request by the Surety to use the Contractor as the completion-contractor, either directly or under the direction of a consultant to the Surety. In addition, the Department has the right to reject a request by the Surety to contract with employees of the Contractor, directly or under the direction of a consultant to the Surety, to complete the Contract. The Department's right to reject contained in this paragraph is based on the sole discretion of the Department.

108.19 COMPLETION AND ACCEPTANCE
THE FOLLOWING IS ADDED:

No Incentive Payment for Early Completion is specified for this project.

108.20 LIQUIDATED DAMAGES

Liquidated damages are as follows:

- A. For each day that the Contractor fails to complete the work as specified in Subsection 108.10 of these Special Provisions, for Interim Completion, the Department will assess liquidated damages in the amount of \$3,500.
- B. For each day that the Contractor fails to complete the work as specified in Subsection 108.10 of these Special Provisions, for Substantial Completion, the Department will assess liquidated damages in the amount of \$5,500.
- C. For each day that the Contractor fails to achieve Completion as specified in Subsection 108.10 of these Special Provisions, the Department will assess liquidated damages in the amount of \$1,000.

THE FOLLOWING IS ADDED:

When the Contractor may be subjected to more than one rate of liquidated damages established in this Section, the Department will assess liquidated damages at the higher rate.

SECTION 109 – MEASUREMENT AND PAYMENT

109.01 MEASUREMENT OF QUANTITIES
THE SECOND PARAGRAPH IS CHANGED TO:

The Department will designate Items as Measured Items or as Proposal Items by having a suffix of M or P in the Item number respectively. The Department will measure quantities of Measured Items for payment.

109.02 SCOPE OF PAYMENT

THE THIRD SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The Department will not make additional or separate payment for work or portion of work unless specifically provided for in the "Measurement and Payment" Subsection.

109.05 ESTIMATES

THE SECOND PARAGRAPH IS CHANGED TO:

The RE will provide a summary of the Estimate to the Contractor. Before the issuance of each payment, certify, on forms provided by the Department, that:

1. Each subcontractor or supplier has been paid the amount due from the previous progress payment and shall be paid the amount due from the current progress payment and that full payment for any retainage withheld from a subcontractor has been or will be made within 30 days after the subcontractor's work has been satisfactorily completed; or
2. There exists a valid basis under the terms of the subcontractor's or supplier's contract to withhold payment from the subcontractor or supplier, and therefore payment is withheld.

THE TENTH PARAGRAPH IS CHANGED TO:

The RE has the right to not process an Estimate when, in the judgment of the RE, the Work is not performed or proceeding as specified in the Contract or following the Department giving the Contractor and Surety notice of default as specified in 108.14.

109.09 AUDITS

THE FOLLOWING IS ADDED:

Pursuant to N.J.S.A. 52:15C-14(d), relevant records of private vendors or other persons entering into contracts with the Department are subject to audit or review by the New Jersey Office of the State Comptroller. Therefore, the Contractor shall maintain all documentation related to products, transactions or services under the Contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

DIVISION 150 – CONTRACT REQUIREMENTS

SECTION 151 – PERFORMANCE BOND AND PAYMENT BOND

151.03.01 Performance Bond and Payment Bond

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Submit the broker's fees, the certified rate schedule, paid invoices and the report of execution for the bond to the RE.

151.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM'S PAY UNIT IS REVISED TO:

<i>Item</i>	<i>Pay Unit</i>
PERFORMANCE BOND AND PAYMENT BOND	DOLLAR

SECTION 152 – INSURANCE

152.03.01 Owner's and Contractor's Protective Liability Insurance

A. Policy Requirements.

THE FOURTH SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that policies are underwritten by companies with a current A.M. Best rating of A- with a Financial Size Category of VII or better.

B. Types

3. Owner's and Contractor's Protective Liability Insurance.

THE ENTIRE TEXT IS CHANGED TO:

Procure a separate Owner's and Contractor's Protective Liability Insurance Policy with a minimum limit of liability in the amount of \$4,000,000 per occurrence as a combined single limit for bodily injury and property damage. Ensure the policy is endorsed to include Severability of Interest/Separation of Insureds clause. Ensure the policy names the State, its officers, employees, and agents as additional insured. Provide documentation from the insurance company that indicates the cost of the Owner's and Contractor's Protective Liability Insurance Policy.

Ensure the policy is endorsed to include per project aggregate.

152.03.03 Pollution Liability Insurance

SUBPART 9 IS ADDED: TO THIRD PARAGRAPH

9. Per project aggregate.

152.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS' PAY UNITS ARE REVISED TO:

<i>Item</i>	<i>Pay Unit</i>
OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLLAR
RAILROAD PROTECTIVE LIABILITY INSURANCE	DOLLAR
POLLUTION LIABILITY INSURANCE	DOLLAR

THE LAST PARAGRAPH IS CHANGED TO:

The Department will make initial payment for OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE, RAILROAD PROTECTIVE LIABILITY INSURANCE, and POLLUTION LIABILITY INSURANCE at the lesser of the bid amount, or actual costs as documented from paid invoices. If the Bid amount is greater than the

amount indicated on the documented paid invoices, the Department will make payment for any remainder, up to the Bid amount, with the final monthly Estimate.

SECTION 153 – PROGRESS SCHEDULE

153.03.01 CPM PROGRESS SCHEDULE

THE THIRD PARAGRAPH IS CHANGED TO:

The Contractor may propose alternate staging. Ensure that proposed alternate staging does not interfere with work done by Others without written concurrence from the affected Others. The Department may reject the proposed alternate staging if it causes an increase to the cost of work done by Others. The Contractor is responsible for the cost of changes or additional work required as a result of completing the work according to the proposed alternate staging.

1. Preliminary Schedule Submission.

THE SECOND PARAGRAPH IS CHANGED TO:

The RE may require 3 color paper copies of the preliminary schedule, Gantt Chart, as specified in 153.03.02.2.e, and a network diagram (PERT) printed on 36 × 22-inch plans detailing the activity relationships.

2. Baseline Schedule Submission.

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The RE may require the Contractor to submit 3 color paper copies of the baseline schedule.

THE SECOND PARAGRAPH PART 3 IS CHANGED TO:

3. The RE may require 3 color paper copies of the tabular reports, as specified in 153.03.02.2, and a printed network diagram (PERT) on 36 × 22-inch sheets detailing the activity relationships.

153.03.02 CPM Progress Schedule Updates

THE LAST PARAGRAPH IS CHANGED TO:

If the project falls behind schedule for nonexcusable delays, so that the schedule indicates that the Work will not be completed by the Completion date, as specified in 108.10, take the necessary steps to improve progress. Under such circumstances, the RE may direct the Contractor to increase the number of shifts, begin overtime operations, work extra days including weekends and holidays, and supplement its construction plant. Furthermore, the RE may require the Contractor to submit for approval a recovery schedule showing how the Contractor proposes to meet the directed acceleration.

2. Tabular Reports.

THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The RE may require 3 color paper copies of the longest path sort, total float sort, responsibility sort, area sort, and Gantt chart.

153.03.03 Bar Chart Progress Schedule and Updates

A. Schedule.

THE THIRD SENTENCE OF THE THIRD PARAGRAPH IS CHANGED TO:

Provide 3 color paper copies of a bar chart progress schedule or similar type that is acceptable to the RE for approval as follows:

THE FOLLOWING IS ADDED:

If the project falls behind schedule for nonexcusable delays, so that the schedule indicates that the Work will not be completed by the Completion date, as specified in 108.10, take the necessary steps to improve progress. Under such circumstances, the RE may direct the Contractor to increase the number of shifts, begin overtime operations, work extra days including weekends and holidays, and supplement its construction plant. Furthermore, the RE may require the

Contractor to submit for approval a recovery schedule showing how the Contractor proposes to meet the directed acceleration.

153.04 MEASUREMENT AND PAYMENT

THE THIRD PARAGRAPH IS CHANGED TO:

If the Contractor's CPM Progress Schedule update is not approved by the date of the progress meeting for the following update, the Department will assess liquidated damages to recover the Department's increased administrative costs. The Department will assess damages for each delinquent update as follows:

SECTION 155 – CONSTRUCTION FIELD OFFICE

155.03.01 Field Office

4. Communication Equipment.

- a. Telephones.** Provide 2 cordless phones with auto-switching.
- c. Cell Phones.** Provide 3 cellular phones. Ensure the cellular phone plan provides for unlimited mobile to mobile in-network usage, unlimited push-to-talk/ walkie-talkie usage and an anticipated monthly usage of 900 any-time minutes for each phone. Ensure the phones are on the same plan. Ensure the cellular phone plan has a home rate with no roaming charges within the state. Ensure each cellular phone has the following features:
 - 1. Push to Talk / Walkie-Talkie capable
 - 2. Camera with 1 megapixel picture capability
 - 3. Battery life capable of 180 minutes of continuous use and 72 hours of standby use
 - 4. Equipped with a hands-free headset
 - 5. Base charger and car charger
- d. Computer System.** Provide a computer system meeting the following requirements:
 - 2 computer configurations each meeting the following:
 - 1. Processor having a clock speed of 3.5 GHz or faster, 4 GB RAM, 512 MB Video RAM, 200 Gigabyte hard drive designated as drive C, one DVD (+/-) Writer Drive, one CD-R Recordable Drive. Ensure the system is USB 2.0 compatible and has at least two front USB ports Include Keyboard, optical mouse and 2 piece desktop speakers.
 - 2. Wired Router with appropriate number of ports and cables and a print server. Ensure there is at least one wired Ethernet switch.
 - 3. High-speed broad band connection and service with a minimum speed of 3 Megabits per second (mbps) with dynamic IP address for the duration of the project.
 - 4. 19 inch or larger Flat Screen LCD monitor with tilt/swivel capabilities.
 - 5. 250 Gigabyte or larger external drive with backup software for MS-Windows, and fifteen corresponding formatted data cartridges corresponding to the tape drive size.
 - 6. 1 Flatbed USB version 2.0 or greater Color Scanner with automatic document feed.
 - 7. Uninterruptible power supply (UPS).
 - 8. Surge protector for the entire computer configuration to be used in conjunction with the UPS.
 - 9. Computer workstation, chair, printer stand, and/or table having both appropriate surface and chair height.
 - 10. One can of compressed air and screen cleaning solution every other month of the duration of the contract.

If more than one computer configuration is specified, provide one network interface card for the base computer configuration and hardware connections between computer configurations as directed by the RE.

Also provide:

15 USB 16 GB Flash/Jump memory drives
50 CD-R 700 MB (or larger) recordable CD's compatible with the CD drive.
1 CD/DVD Holder (each holds 50)

1 color laser printers and supplies as follows:

1. Minimum of 192 Megabytes of expanded memory, printer cable, and legal size paper tray.
2. One set of printer ink cartridges every other month for the duration of the construction project for each printer.

Software as follows:

1. Microsoft Windows, latest version with future upgrades for the duration of the entire project.
2. Microsoft Office Professional, latest version.
3. Norton's System Works for Windows, latest version, or compatible software package with future upgrades and latest virus patches.
4. Anti-Virus software, latest version with monthly updates for the duration of the contract.
5. Visio Professional Graphics Software for Windows, latest version
6. Primavera Project Management, latest version
7. Adobe Acrobat Professional, latest version, or compatible software for Scanner

THE THIRD PARAGRAPH IS CHANGED TO:

When the computer system is no longer required by the RE, the Department will remove and destroy the hard drive, and return the computer system to the Contractor. The Department will retain other data storage media.

6. Office Equipment. Provide the following:

PART (1) IS CHANGED TO:

1. A copier with automatic document feed, 15 pages per minute copy speed, variable reduce/enlarge capability, and letter, legal, and ledger size capabilities. Erase the copier hard drive before removing the copier from the field office and provide the RE with a certification stating that the copier hard drive has been erased.

PART (1) AND (2) ARE CHANGED TO:

2. 1 digital camera(s). Ensure each digital camera has auto-focus, with rechargeable batteries and charger, 256 MB memory card, USB Memory Card Reader compatible with camera and field office computer, 1.5 inch LCD monitor, 5 mega pixel resolution, 10X optical zoom lens, built in flash, image stabilization, computer connections, and a carrying case
3. 0 video camcorder(s). Ensure each video camcorder is a mini DVD camcorder with ____ optical zoom, 2" LCD monitor, USB 2.0 compatible and includes USB 2.0 connections.

7. Inspection Equipment.

1. 2 Calculators with trigonometric capability
2. 1 Date/ Received stamp and ink pad
3. 1 Electronic Smart level, 4 foot
4. 1 Electronic Smart level, 2 foot
5. 3 Carpenter rulers
6. 1 Steel tape, 100 feet
7. 1 Cloth tape, 100 feet
8. 1 Illuminated measuring wheel
9. 1 Plumb bob and cord
10. 1 Line level and cord
11. 1 Surface thermometer
12. 1 Concrete thermometer
13. 1 Digital infrared asphalt thermometer

14. 0 Direct Tension Indicator (DTI) Feeler Gage, 0.005 inch
15. 0 Sledge hammer, 8lb
16. 1 Self leveling laser level with range of 100 feet and an accuracy of ¼ inch per 100 feet
17. 3 Hard hats - orange, reflectorized hard hats according to ANSI Z89.1.
18. 3 Safety garments – orange, reflectorized, 360° high visibility safety garments according to ANSI/ISEA Class 3, Level 2 standards. To be replaced yearly for the duration of the contract.
19. 3 Sets of rain gear with reflective sheeting
20. 3 Sets of hearing protection with a NRR rating of 22 dB
21. 3 Sets of eye protection according to ANSI Z87.1
22. 0 Sets of fall arrest equipment according to ANSI Z359.1 standards consisting of a full body harness, lanyard and anchor.
23. 1 Light meter - capable of measuring the level of luminance in foot-candles
24. 3 Lantern flashlight, 6V with monthly battery replacements
25. 0 Digital Psychrometer
26. 0 Chain Drag according to ASTM D4580-86
27. 1 Testing equipment and apparatus conforming to AASHTO T23, T119, T152
28. 3 Hard Bound Daily Diaries, 5-½" X 8" minimum with one day per page. To be provided yearly for the duration of the contract.
29. 300 Legal size hanging folders
30. 300 Legal size manila file folders – three tab

155.03.03 Telephone Service

THE CONTENT OF THIS SUBSECTION IS DELETED

155.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
TELEPHONE SERVICE	LUMP SUM

THE THIRD PARAGRAPH IS DELETED.

SECTION 156 – MATERIALS FIELD LABORATORY AND CURING FACILITY

156.03 PROCEDURE

156.03.01 Materials Field Laboratory

4. Communication Equipment.

- c. **Cell Phones.** Provide 6 cellular phones. Ensure the cellular phone plan provides for unlimited mobile to mobile in-network usage, unlimited push-to-talk/ walkie-talkie usage and an anticipated monthly usage of 900 any-time minutes for each phone. Ensure the phones are on the same plan. Ensure the cellular phone plan has a home rate with no roaming charges within the state. Ensure each cellular phone has the following features:
 1. Push to Talk / Walkie-Talkie capable
 2. Camera with 1 megapixel picture capability
 3. Battery life capable of 180 minutes of continuous use and 72 hours of standby use
 4. Equipped with a hands-free headset
 5. Base charger and car charger
- d. **Computer System.** Provide a computer system meeting the following requirements:
2 computer configurations each meeting the following:

1. Equipped with an Intel Pentium IV processor with Hyper Threading technology having a clock speed of 3.5 GHz or faster, 2 GB RAM, 512 MB Video RAM, 200 Gigabyte hard drive designated as drive C, one DVD (+/-) Writer Drive, one CD-R Recordable Drive. Ensure the system is USB 2.0 compatible and has at least two front USB ports.
2. Wireless Ethernet Hub Switch with appropriate number of ports and cables and a print server.
3. High-speed broad band connection and service with a minimum speed of 3 Megabytes per second (mbps) with dynamic IP address for the duration of the project.
4. 19 inch or larger Flat Screen LCD monitor with tilt/swivel capabilities.
5. 250 Megabyte or larger Zip Drive internal or external with backup software for MS-Windows and DOS, and fifteen corresponding formatted data cartridges corresponding to the tape drive size.
6. 1 Flatbed USB version 2.0 Color Scanner with automatic document feed.
7. Uninterruptible power supply (UPS).
8. Surge protector for the entire computer configuration to be used in conjunction with the UPS.
9. 1 computer workstations, chair, printer stand, and/or table having both appropriate surface and chair height.
10. One can of compressed air and screen cleaning solution every other month of the duration of the contract.

If more than one computer configuration is specified, provide one wireless network card for the base computer configuration and hardwire connections between computer configurations as directed by the RE.

Also provide:

- 10 USB 2 GB Flash/Jump memory drives
- 100 CD-R 700 MB (or larger) recordable CD's compatible with the CD drive and 100 recordable DVD's.
- 4 CD/DVD Holder (each holds 50)
- 1 color laser printers and supplies as follows:
 1. Minimum of 192 Megabytes of expanded memory, printer cable, and legal size paper tray.
 2. One set of printer ink cartridges every other month for the duration of the construction project for each printer.

THE THIRD PARAGRAPH IS CHANGED TO:

When the computer system is no longer required by the ME, the Department will remove and destroy the hard drive, and return the computer system to the Contractor. The Department will retain other data storage media.

6. Office Equipment. Provide the following:

PART (1) IS CHANGED TO:

1. A copier with automatic document feed, 15 pages per minute copy speed, variable reduce/enlarge capability, and letter, legal, and ledger size capabilities. Erase the copier hard drive before removing the copier from the field office and provide the RE with a certification stating that the copier hard drive has been erased.

156.03.05 Nuclear Density Gauge

THE LAST PARAGRAPH IS CHANGED TO:

Provide a nuclear density gauge for the exclusive use of the ME using one of the following methods:

1. Purchase a nuclear density gauge under the Contractor's New Jersey Department of Environmental Protection (NJDEP) License or the Contractors United States Nuclear Regulatory Commission (USNRC) license.
2. Lease a nuclear density gauge from a New Jersey Department of Environmental Protection (NJDEP) or United States Nuclear Regulatory Commission (USNRC) licensed third party on the Department's New Jersey Department of Environmental Protection (NJDEP) License.

The Contractor is barred from purchasing gauges on the Department's New Jersey Department of Environmental Protection (NJDEP) license. Perform calibration and servicing of the gauge, other than routine wipe tests, every 24 months. The ME may direct additional calibrations, when necessary. Supply a replacement gauge for the Department's use during the calibration and servicing period.

SECTION 157 – CONSTRUCTION LAYOUT AND MONUMENTS

157.03.01 Construction Layout

THE SEVENTH PARAGRAPH IS CHANGED TO:

Provide the Utilities with the layout needed to install relocated utility facilities and coordinate the Work. Ensure that relocated facilities do not conflict with proposed construction, including High Voltage Proximity Act conflicts.

THE FOLLOWING IS ADDED AFTER THE NINTH PARAGRAPH:

For each bridge and sign structure within the Project Limits, provide the RE as-built measurements of the vertical under clearance at each lane line, shoulder line, curb line and edge of pavement line under a structure to the nearest inch. For each bridge structure, provide vertical under clearance measurements at each fascia beam.

157.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM'S PAY UNIT IS REVISED TO:

<i>Item</i>	<i>Pay Unit</i>
CONSTRUCTION LAYOUT	DOLLAR

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will adjust payment for CONSTRUCTION LAYOUT based on the final contract amount and will calculate as follows:

$$CL = \frac{CL_B \times (C_F - E_F)}{C_O - E_O}$$

Where:

CL = Adjusted payment for CONSTRUCTION LAYOUT.

CL_B = Bid price for CONSTRUCTION LAYOUT.

C_O = Original Contract Price.

C_F = Final Contract Price.

E_F = Total of CL_B and the final cost for PERFORMANCE BOND AND PAYMENT BOND, Incentive/Disincentives for completion/interim completion, and claim settlements.

E_O = Total of CL_B

E_O = Total of CL_B, and PERFORMANCE AND PAYMENT BOND.

SECTION 158 – SOIL EROSION AND SEDIMENT CONTROL AND WATER QUALITY CONTROL

158.03.02 SESC Measures

8. Inlet Filters. Provide Type 1 and Type 2 inlet filters as follows:

a. Type 1.

THE ENTIRE TEXT IS CHANGED TO:

For a new inlet structure without a casting, mold welded steel wire fabric around the inlet walls. Extend the welded steel wire a minimum of 6 inches down each side of the structure. Secure geotextile to the

welded wire fabric. Place No. 2 coarse aggregate against the inlet structure to hold the inlet filter in place.

For an inlet structure with a casting and exposed exterior walls, place geotextile under the casting and extend it a minimum of 6 inches below the top of the exposed walls. Place No. 2 coarse aggregate around the drain hole opening.

For an existing inlet structure without exposed exterior walls, place geotextile under the grate and extend the geotextile for a minimum of 6 inches beyond the grate.

For an inlet with a curb piece and without exposed exterior walls, ensure that the opening in the curb piece has a height of 2 inches. If the opening is greater than 2 inches, achieve the 2 inch opening size by wrapping the geotextile around an appropriately sized piece of lumber. Place the lumber against the vertical opening.

19. Oil-Only Emergency Spill Kit.

THE SECOND SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Include Oil-only Emergency Spill Kit, Type 1 consisting of the following:

SECTION 159 – TRAFFIC CONTROL

159.02.01 Materials

THE FOLLOWING IS ADDED:

Provide temporary crash cushions, inertial barrier systems as specified in 611.02. Provide temporary compressive crash cushions as specified for compressive crash cushions in 611.02.

159.02.02 Equipment

THE FOLLOWING IS ADDED TO THE LIST OF EQUIPMENT REFERENCES:

Portable Variable Message Sign w/Remote Communication.....	1001.04
Portable Trailer Mounted CCTV Camera Assembly.....	1001.05

159.03.02 Traffic Control Devices

2. Construction Barrier Curb.

THE LAST PARAGRAPH IS CHANGED TO:

Provide top and side mounted flexible delineators on the construction barrier curb. For delineators located on the right side when facing in the direction of traffic, ensure that the retroreflective sheeting is white. For delineators located on the left side when facing in the direction of traffic, ensure that the retroreflective sheeting is yellow. Attach flexible delineators according to the manufacturer's recommendations.

Starting at the beginning of the construction barrier curb section mount top delineators at 100-foot intervals on tangent sections, curves of radii greater than 1,910 feet, and at 50-foot intervals on curves of radii of 1,910 feet or less.

Mount side delineators at the lead end of each barrier segment with the top of the delineator 3 inches from the top of the barrier.

5. Temporary Crash Cushion

THE SECOND SENTENCE IS CHANGED TO:

Install temporary compressive crash cushions as specified for compressive crash cushions in 611.03.02.

6. Traffic Control Truck with Mounted Crash Cushions.

THE LAST SENTENCE IS CHANGED TO:

Submit drawings to the RE detailing the manner of securing the ballast, signed and sealed by a Professional Engineer, certifying that it is capable of withstanding the impact forces for which the impact attenuator is rated.

THE FOLLOWING IS ADDED TO THE SECOND PARAGRAPH:

- 8. Portable Variable Message Sign w/Remote Communication (PVMSRC).** Place the PVMSRC at the location directed by the RE. Ensure that a designated representative familiar with the operation and programming of the unit is available on the Project for On-Site Configuration. Only display messages authorized by the Department for the Project and make the signs available for use remotely from the Traffic Operation Center (TOC) specified in 105.07.01.B. If the PVMSRC fails to function, repair the equipment within 48 hours of receiving notice from the Department that the PVMSRC is not functioning.

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

Integrate the PVMSRC for remote operation from TOC using Vanguard DMS software or the Department's central DMS control software at the time of installation as directed by the RE.

Provide for one week of testing by the TOC for remotely operating the PVMSRC before the start of construction operations that require lane or shoulder closures, or other impacts to traffic. At least 10 days before testing, submit to the RE for approval a plan for any work to be completed in the TOC. Submit a request to the RE at least 4 days in advance to access the TOC for any work.

159.03.06 Temporary Traffic Stripes and Temporary Traffic Markings

THE ENTIRE TEXT IS CHANGED TO:

Apply temporary traffic stripes and markings when the ambient and surface temperatures are at least 45 °F and rising and the surface temperature is no more than 140 °F. Apply the traffic paint in a wet film thickness of 6 ± 1 mil. Apply glass beads to the wet paint in a uniform pattern and at the rate of 12 pounds per gallon of paint. Ensure TRAFFIC STRIPES and TRAFFIC MARKINGS are applied within 14 days of placing temporary traffic stripes and markings unless directed by the RE.

159.03.08 Traffic Direction

A. Flagger.

THE LAST SENTENCE IS CHANGED TO:

Ensure that the flagger is equipped with a STOP/SLOW paddle and follows MUTCD flagging procedures.

B. Police.

THE FOURTH PARAGRAPH IS DELETED.

159.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

<i>Item</i>	<i>Pay Unit</i>
PORTABLE VARIABLE MESSAGE SIGN WITH REMOTE COMMUNICATION	UNIT.
PORTABLE TRAILER MOUNTED CCTV CAMERA ASSEMBLY	UNIT.
TEMPORARY CRASH CUSHION, COMPRESSIVE BARRIER, TYPE____, WIDTH____	UNIT
TEMPORARY CRASH CUSHION, LOW MAINTENANCE COMPRESSIVE BARRIER, TYPE____, WIDTH____	UNIT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
TEMPORARY CRASH CUSHION, ____	UNIT

THE SECOND PARAGRAPH IS CHANGED TO:

For traffic control devices measured by the linear foot or unit basis that are specified in 159.03.02, the Department will make payment for the maximum quantity in service at one time as required by the Contract. For CONSTRUCTION

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SIGNS, the Department will make payment for the maximum quantity of specific sign types in service at one time as required by the Contract. If a particular sign type has more than one unique text, each sign with a unique text will be considered to be a specific sign type. The Department will make payment for 50 percent of the Contract bid price for traffic control devices specified in 159.03.02 that are measured on a linear foot, square foot or unit basis upon approved placement. The Department will prorate the balance of payment over the duration of the Contract.

THE FOLLOWING IS ADDED

If after being notified by the Department that the PORTABLE VARIABLE MESSAGE SIGN WITH REMOTE COMMUNICATION or PORTABLE TRAILER MOUNTED CCTV CAMERA ASSEMBLY has failed to function and the equipment has not been restored to good working order within 48 hours, the Department will make payment reductions as follows:

For each occasion the equipment was not restored within 48 hours the Department will assess a liquidated damage of \$250 for every 48 hours period the equipment is not functioning.

The Department will make payment for TRAFFIC STRIPES and TRAFFIC MARKINGS as specified in 610.04.

SECTION 160 – PRICE ADJUSTMENTS

160.03.01 Fuel Price Adjustment

THROUGHOUT THIS SUBPART, TABLE 161.03.01-1 IS CHANGED TO TABLE 160.03.01-1

THE THIRD PARAGRAPH IS CHANGED TO:

If the as-built quantity of an Item listed in Table 160.03.01-1 differs from the sum of the quantities in the monthly Estimates, and the as-built quantity cannot be readily distributed among the months that the Item listed in Table 160.03.01-1 was constructed, then the Department will determine fuel price adjustment by distributing the difference in the same proportion as the Item's monthly Estimate quantity is to the total of the Item's monthly estimates.

THE 13 TH AND 15 TH LINE IN THE TABLE 160.03.01-1 IS CHANGED TO:

SOIL AGGREGATE BASE COURSE, ____ " THICK	1 Gallon per Cubic Yard
DENSE-GRADED AGGREGATE BASE COURSE, ____ " THICK	1 Gallon per Cubic Yard

THE 25 TH LINE IN THE TABLE 160.03.01-1 IS CHANGED TO:

HOT MIX ASPHALT _____ BASE COURSE	2.50 Gallons per Ton
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THE FOLLOWING ARE ADDED TO TABLE 160.03.01-1

Items	Fuel Usage Factor
NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	2.50 Gallons per Ton
COLOR-COATED NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	2.50 Gallons per Ton

160.03.02 Asphalt Price Adjustment

NOTE 1 OF THE THIRD PARAGRAPH IS CHANGED TO:

- The Department will determine the weight of asphalt binder for price adjustment by multiplying the percentage of new asphalt binder in the approved job mix formula by the weight of the item containing asphalt binder. If a Hot Mix Asphalt item has a payment unit other than ton, the Department will apply an appropriate conversion factor to determine the number of tons used.

THE FOURTH PARAGRAPH IS CHANGED TO:

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$$A = B \times [(MA - BA)/BA] \times C \times M \times G$$

Where:

A = Asphalt Price Adjustment

B = Bid Price for Tack Coat/Prime Coat

MA = Monthly Asphalt Price Index

BA = Basic Asphalt Price Index

C = Petroleum Content of the Tack Coat and Prime Coat in Percent by Volume:

Use 100% for cutbacks and Tack Coat 64-22

60% for Polymer Modified Tack Coat

60% for RS or similar type emulsions

M = Percentage of Bid Price Applicable to Materials Only: Use 82%

G = Gallons of Tack Coat and Prime Coat Furnished and Applied

160.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS' PAY UNITS ARE REVISED TO:

Item

FUEL PRICE ADJUSTMENT

ASPHALT PRICE ADJUSTMENT

Pay Unit

DOLLAR

DOLLAR

DIVISION 200 – EARTHWORK

SECTION 201 – CLEARING SITE

201.01 DESCRIPTION

THE FOLLOWING IS ADDED TO THE END OF THE FIRST PARAGRAPH:

This Section also describes the requirements for resetting monitoring well boxes.

201.03.01 Clearing Site

THE FOLLOWING IS ADDED:

Dispose of material and debris as specified in 201.03.09.

201.03.02 Clearing Site, Bridge and Clearing Site, Structure

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH.

Only the following equipment is permitted for the work:

- 1. Pneumatic or Electric Equivalent Hand Operated Hammers.**
 - a. When demolishing concrete not closer than 6 inches to structural members: hammers weighing no more than 90 lbs (exclusive of bit), equipped only with chisel point bits.
 - b. When demolishing concrete within 6 inches of structural members: hammers weighing no more than 30 lbs (exclusive of bit).
- 2. Saw Cutters.**
 - a. When cutting concrete within 6 inches of structural members: concrete cutters and concrete saws. While using water in the cutting operation, provide shielding beneath the cutting operation to prevent water leakage. Continuously collect slurry and dispose of as specified in 201.03.09. Ensure that the slurry does not enter the structure or highway drainage system.
- 3. Hydraulic Breakers.** Ram-hoe type breakers, hydraulic breakers, and demolition shears may be used with the following restrictions:
 - a. Submit required data to the RE for Department's analysis of stresses induced to the girders.
 - b. Delineate the centerline and limits of the top flange of girders before the equipment operation.
 - c. Do not use equipment within 6 inches of the delineated flanges.
 - d. Do not pull or twist the reinforcement steel.
- 4. Hydraulic Splitters.** Hydraulic splitters.
- 5. Other Equipment.** Obtain RE approval before use.

201.03.04 Removing Underground Storage Tanks

THE THIRD PARAGRAPH, SUBPART 2, LAST PARAGRAPH IS CHANGED TO:

Before backfilling, remove and dispose of contaminated water not associated with ground water. If directed, immediately backfill the excavated hole as required per N.J.A.C. 7:26E and obtain documentation for the quality of the fill. In addition, provide certification stating that it is virgin material from a commercial or noncommercial source or decontaminated recycled soil. Backfill the excavation as specified in 201.03.07.5 but use certified clean fill as noted above.

THE FOLLOWING SUBPART IS ADDED:

201.03.10 Reset Monitoring Well Box

Resetting of the monitoring well boxes can be performed by the Contractor as needed based on site grading. If the monitoring well within the box requires modification, this activity must be conducted by a NJDEP certified well driller.

Exercise care in resetting monitoring well boxes. After resetting, protect well boxes until the final surface has been graded or paved. Replace castings in kind that are too short. Replace castings that are damaged by construction operations or vehicular traffic in a manner satisfactory to the Resident, at no additional cost to the State. Reset monitoring well boxes to conform to the grade of the resurfaced or regraded area.

201.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS ADDED:

<i>Item</i>	<i>Pay Unit</i>
RESET MONITORING WELL BOX	UNIT

THE FOLLOWING IS ADDED:

The Department will not make payment for the Item CLEARING SITE in excess of \$110,000 until Completion.

SECTION 202 – EXCAVATION

202.02 MATERIALS

THE FIRST IN THE LIST IS CHANGED TO:

Coarse Aggregate (No. 57, or 67).....	901.03
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202.03.03 Excavating Unclassified Material

A. Excavating.

THE FIRST PARAGRAPH IS CHANGED TO:

The Department, as the generator, is solely responsible for the designation of excavated material. Unclassified excavation consists of excavation and management of material of whatever nature encountered, except for regulated material, pavement removal and acid producing soil.

202.03.04 Excavating Regulated Material

3. Temporarily Storing.

THE FIRST PARAGRAPH IS CHANGED TO:

Temporarily store regulated or hazardous material in stockpiles within the Project Limits and as shown on the Plans. Construct stockpiles on polyethylene sheeting. Contain stockpiles with haybales or silt fence placed continuously at the perimeter of the stockpiles. For hazardous material, if a stockpile area is not available within the Project Limits, sample and analyze materials in-situ for disposal. Excavate and place the hazardous regulated material directly into trucks, and haul it directly to the approved disposal facility.

202.03.07 Reuse or Disposal of Excess Material

A. Reuse.

THE THIRD PARAGRAPH IS CHANGED TO:

Upon RE's approval, reuse excavated soil to widen or flatten slopes of embankment, to fade embankments into

cuts, or as approved at other locations. Ensure that the excess material is not reused within a wetland, a transition area, a riparian zone, a flood hazard area or other regulated area without obtaining an appropriate NJDEP permit.

B. Disposal.

PARTS 1 AND 2 UNDER THE FIRST PARAGRAPH ARE CHANGED TO:

1. At least 10 days before disposing, submit the disposal procedure and location to the RE for approval. Do not dispose of excavation on property proposed to be used for parks, playgrounds, and other recreational purposes; residential facilities, and educational facilities; environmentally sensitive areas such as wetlands, and historic sites; or areas within sight of a State highway during all seasons.
2. Obtain the property owner's notarized authorization of the acceptance of the excess material and where it is being placed.

SECTION 203 – EMBANKMENT

203.02.01 Materials

THIS SUBPART IS CHANGED TO:

Provide materials as specified:

Soil Aggregate (I-7, I-9, I-10, I-11, I-13, and I-14) 901.11

203.03.01 Constructing Embankment

THE FOURTH PARAGRAPH IS CHANGED TO:

Before placing embankment or any other unbound aggregate material, such as subbase or dense graded aggregate, on existing pavement, break the pavement into pieces that are a maximum of 12 inches in all dimensions.

DIVISION 300 – SUBBASE AND BASE COURSES

SECTION 303 – ASPHALT-STABILIZED DRAINAGE COURSE

303.03.01 Asphalt-Stabilized Drainage Course

D. Spreading and Grading

THE SECOND SENTENCE IS CHANGED TO:

Place asphalt-stabilized drainage course at a laydown temperature between 210 °F and 275 °F.

DIVISION 400 – PAVEMENTS

SECTION 401 – HOT MIX ASPHALT (HMA) COURSES

401.02.01 Materials

EMULSIFIED ASPHALT UNDER TACK COAT IS REVISED TO:

Emulsified Asphalt, Grade RS-1, CRS-1, SS-1, SS-1h, Grade CSS-1 or CSS-1h 902.01.03

401.02.02 Equipment

THE LAST PARAGRAPH IS CHANGED TO:

When an MTV is used, install a paver hopper insert with a minimum capacity of 14 tons in the hopper of the HMA paver.

401.03.01 Preparing Existing Pavement

THE FOLLOWING IS ADDED AFTER THE FOURTH PARAGRAPH:

Sawcut at the limit of paving in driveways and at other limits requiring a neat edge between new and existing HMA.

D. Repairing HMA Pavement.

THE ENTIRE TEXT IS CHANGED TO:

If potholes are discovered, notify the RE immediately. The RE may immediately direct repairs of small areas. The RE may require further evaluation of a large area to determine the need for additional milling and paving.

Sawcut existing HMA pavement to a maximum depth of 10 inches, or to the full depth of bound layers, whichever is less. Sawcut lines parallel and perpendicular to the roadway baseline and 3 inches away, at the closest point, from the damaged area to be repaired.

Remove damaged and loose material to a depth of at least 3 and no more than 10 inches below the level of milling within the boundary of the sawcuts to form rectangular openings with vertical sides. Shape and compact the underlying surface to produce a firm, level base. Ensure that the remaining pavement is not damaged.

Apply polymerized joint adhesive or tack coat to the vertical surfaces of the openings. Spread and grade HMA in the opening as directed by the RE. Ensure that the temperature of the HMA when placed is at least 250 °F, and compact as specified in 401.03.03.F. Compact areas not accessible to rollers with a flat face compactor. Compact until the top of the patch is flush with the adjacent pavement surface.

Reuse removed material as specified in 202.03.07.A.

401.03.02 Tack Coat and Prime Coat

TABLE 401.03.02-1 IS CHANGED TO:

Table 401.03.02-1 Tack Coat Application			
Material	Spraying Temp, °F	Gallons per Square Yard	Season
Cut-Back Asphalt:			
RC-70	120 to 190	0.05 to 0.15	Oct 15 to Apr 15
Emulsified Asphalt:			
RS-1	70 to 140	0.05 to 0.15	All year
CRS-1	125 to 185	0.05 to 0.15	All year
SS-1, SS-1h	70 to 140	0.05 to 0.15	All year
CSS-1, CSS-1h	70 to 140	0.05 to 0.15	All year

TABLE 401.03.02-2 IS CHANGED TO:

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Table 401.03.02-2 Prime Coat Application			
Cut-Back Asphalt	Spraying Temp, °F	Gallons per Square Yard	Season
MC-30	85 to 150	0.1 to 0.5	Oct 15 to Apr 15
MC-70	120 to 190	0.1 to 0.5	Oct 15 to Apr 15
Emulsified Asphalt:			
CSS-1	70 to 140	0.1 to 0.50	All year

401.03.03 HMA Courses

D. Transportation and Delivery of HMA.

THE FIRST PARAGRAPH IS CHANGED TO:

Deliver HMA using HMA trucks in sufficient quantities and at such intervals to allow continuous placement of the material. Do not allow trucks to leave the plant within 1 hour of sunset unless nighttime lighting is provided as specified in 108.06. The RE will reject HMA if the HMA trucks do not meet the requirements specified in 1009.02. The RE will suspend construction operations if the Contractor fails to maintain a continuous paving operation. Before the truck leaves the plant, obtain a weigh ticket from a fully automatic scale. Before unloading, submit for each truckload a legible weigh ticket that includes the following:

1. Name and location of the HMA plant.
2. Project title.
3. Load time and date.
4. Truck number.
5. Mix designation.
6. Plant lot number.
7. Tare, gross, and net weight.

E. Spreading and Grading.

THE THIRD PARAGRAPH IS CHANGED TO:

The use of an MTV is optional for the construction of intermediate and surface course in the traveled way. If an MTV is used, ensure that the MTV independently delivers HMA from the HMA trucks to the HMA paver. Operate the MTV to ensure that the axle loading does not damage structures, roadway, or other infrastructure.

THE THIRD PARAGRAPH IS CHANGED TO:

Use an MTV for the construction of intermediate and surface course in the traveled way. Ensure that the MTV independently delivers HMA from the HMA trucks to the HMA paver. Operate the MTV to ensure that the axle loading does not damage structures, roadway, or other infrastructure.

Use an MTV for the construction of surface course in the traveled way. Ensure that the MTV independently delivers HMA from the HMA trucks to the HMA paver. Operate the MTV to ensure that the axle loading does not damage structures, roadway, or other infrastructure.

H. Air Void Requirements.

THE FOLLOWING IS ADDED TO THE THIRD PARAGRAPH:

Inside shoulders less than 6 feet in width will not be included in other lots unless requested by the RE.

THE FOLLOWING IS ADDED AFTER THE THIRD PARAGRAPH:

If areas of existing shoulders are found to be insufficient to support the proposed HMA pavement and the required compaction cannot be achieved, notify the RE immediately. The RE may either direct additional milling and paving to provide a suitable base to pave the proposed HMA or waive coring and air void requirements in such shoulder areas.

J. Ride Quality Requirements.

The Department will not test the longitudinal profiles of the final riding surface for pay adjustment.

401.03.04 Sawcutting and Sealing of Joints in HMA Overlays

THE TEXT OF THIS SUBPART IS DELETED.

THIS SUBPART IS INTENTIONALLY LEFT BLANK

401.03.05 Core Samples

THE LAST SENTENCE OF THE 2ND PARAGRAPH IS CHANGED TO THE FOLLOWING:

Apply an even coating of tack coat to sides of the hole. Place HMA in maximum lifts of 4 inches in the hole and compact each lift. Ensure that the final surface is 1/4 inch above the surrounding pavement surface.

401.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
SAWING AND SEALING JOINTS IN HOT MIX ASPHALT OVERLAY	LINEAR FOOT

THE FOLLOWING IS ADDED:

The Department will make a payment adjustment for HMA air void quality by the following formula:

$$\text{Pay Adjustment} = Q \times \text{BP} \times \text{PPA}$$

Where:

BP = Bid Price

Q= Air Void Lot Quantity

PPA= air void PPA as specified in 401.03.03H.

The Department will make a payment adjustment for HMA thickness quality by the following formula:

$$\text{Pay Adjustment} = Q \times \text{BP} \times \text{PPA}$$

Where:

BP = Bid Price

Q= Thickness Lot Quantity

PPA= thickness PPA as specified in 401.03.03I

The Department will make a payment adjustment for HMA ride quality, as specified in 401.03.03J.

DIVISION 450 – CONCRETE PAVEMENT REHABILITATION

SECTION 453 – FULL DEPTH CONCRETE PAVEMENT REPAIR

453.02.01 MATERIALS

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

Use Class V concrete for Full Depth Concrete Pavement Repair.

453.03.01 Full Depth Repair Using Concrete

C. Setting Forms, Joint Ties, and Dowels.

THE THIRD SENTENCE OF THE SEVENTH PARAGRAPH IS CHANGED TO:

Slowly withdraw the tube as the hole is filled.

DIVISION 600 – MISCELLANEOUS CONSTRUCTION

SECTION 601 – PIPE

601.03.01 Installing Pipe

E. Joining Pipe.

THE FIRST SENTENCE IS REPLACED:

Join rigid pipe using gaskets to form a watertight seal.

601.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

The Department will make payment for restoring the pavement structure for trenches in the traveled way and shoulder under various Items of the Contract.

SECTION 602 – DRAINAGE STRUCTURES

602.01 DESCRIPTION

THE FOLLOWING IS ADDED:

This Section also describes the requirements for constructing Trench Drains consisting of precast polymer concrete drain sections, poured in place concrete bedding, locking cast iron inlet frames and grates and a PVC pipe inlet connector.

602.02 MATERIALS

THE FOLLOWING IS ADDED:

Trench drains and accessories shall be as manufactured by one of the following, or approved equal:

Polydrain, as manufactured by
Abt Inc. PO Box 837
359 Murdock Road, Troutman, NC 28166,
Telephone 1-800-438-6057,

Aco drain, as manufactured by
Aco Polymer Products, Inc. PO Box 245
12080 Ravenna Road, Chardon, OH 44024
Telephone 1-800-543-4764,

Polycast, as manufactured by
Strongwell, Inc.
3621 Industrial Park Drive, Lenoir City, TN 37771
Telephone 1-800-346-3061.

Bedding concrete and concrete used for inlet connections and end caps shall be Class B concrete.

Use PVC drainage pipe as specified in 909.02.03 for connecting the trench drain to the designated inlet or manhole.

602.03 CONSTRUCTION

THE FOLLOWING IS ADDED:

602.03.09 Trench Drains

Trench drain channels shall have interlocking joints and horizontal ribs to ensure positive anchorage in the concrete encasement bedding. Properly fitting outlet pipe and end caps shall be included. Frames and grates shall be compatible with the selected precast channel system, and shall be capable of being locked to the channel section with removable lock downs.

Install trench drains in accordance with the manufacturer's installation instructions and details. Gray iron castings shall conform to 909.03.

602.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED

<i>Item</i>	<i>Pay Unit</i>
TRENCH DRAIN	LINEAR FOOT

The Department will measure "TRENCH DRAIN" by the linear foot measured along the top of the trench drain, including the thickness of the concrete end wall.

SECTION 606 – SIDEWALKS, DRIVEWAYS, AND ISLANDS

606.03.02 Concrete Sidewalks, Driveways, and Islands

H. Protection and Curing.

THE LAST SENTENCE IS CHANGED TO:

Ensure vehicles and other loads are not placed on sidewalks, islands, and driveways until the concrete has attained compressive strength of 3000 pounds per square inch, as determined from 2 concrete cylinders field cured according to AASHTO T 23.

SECTION 607 – CURB

607.03.01 Concrete Barrier Curb

D. Placing Concrete.

THE THIRD SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

To place concrete between November 1 to March 15, submit to RE for approval a plan detailing the method of protecting the concrete from salt for at least 30 days after placing.

607.03.02 Concrete Vertical Curb and Concrete Sloping Curb

D. Placing Concrete.

THE ENTIRE TEXT IS CHANGED TO:

Place concrete for vertical curb and sloping curb as specified in 607.03.01.D, except that consolidation may be achieved by hand spading or internal mechanical vibrators.

607.03.04 Concrete Vertical Curb and Concrete Sloping Curb, Dowelled

D. Placing Concrete.

THE ENTIRE TEXT IS CHANGED TO:

Place concrete for vertical and sloping curb as specified in 607.03.02.D.

SECTION 608 – NON-VEGETATIVE SURFACES

THE ENTIRE SECTION IS CHANGED TO:

608.01 DESCRIPTION

This Section describes the requirements for constructing non-vegetative surfaces of HMA; color-coated HMA; porous HMA; broken stone, and polyester matting.

608.02 MATERIALS

608.02.01 Materials

Provide materials as specified:

Broken Stone, Coarse Aggregate No. 3.....	901.03
HMA (9.5M64).....	902.02
Asphalt-Stabilized Drainage Course.....	902.06
Non-Vegetative Surface Coating.....	912.02.04
Herbicide.....	917.11.03
Polyester Matting.....	919.15

Provide Non-Vegetative Surface, Porous HMA conforming to the requirements of Asphalt-Stabilized Drainage Course.

608.02.02 Equipment

Provide equipment as specified:

HMA Compactor.....	1003.05
Vibratory Drum Compactor.....	1003.06
HMA Plant.....	1009.01
HMA Trucks.....	1009.02

608.03 CONSTRUCTION

608.03.01 Non-Vegetative Surface, HMA

Excavate as specified in 202.03.03. Shape and compact the underlying material to produce a firm, even surface. Obtain RE approval before finishing excavation. If the RE determines that the bottom of the excavation is unstable, undercut, backfill, and compact as directed by the RE.

Construct the non-vegetative surface, HMA before installing guide rail. Obtain RE approval for alternate methods of construction.

Deliver HMA as specified in 401.03.03.D. Construct non-vegetative surfaces 4 inches thick. Place and compact the material to produce a surface free of roller marks and ridges. Spread and grade the HMA as specified in 401.03.03.E. Ensure that the finished surface is smooth, even, and graded to drain away from the guide rail. Compact HMA as specified in 401.03.03.F. Spread, rake, and lute areas not accessible to pavers and rollers with hand tools and compact with dynamic compactors.

Repair non-vegetative surface damaged by guide rail installation with HMA. Use hand tampers around posts and other obstacles where mechanical compactors are not accessible.

608.03.02 Color-Coated Non-Vegetative Surface, HMA

Construct color-coated non-vegetative surfaces as specified in 608.03.01.

Uniformly apply the final color at the rate of 0.3 to 0.5 gallons per square yard by spraying, brushing, or squeegeeing over the HMA surface course. Ensure that the surface is clean and dry at the time of application. Reapply the coating to any missed spots or areas to obtain a uniform coating.

Avoid spilling the color coating on adjacent surfaces. If the color coating spills, immediately clean it with water before the coating dries. If the coating dries, repair as directed by the RE.

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The RE will not allow traffic on the color-coated surface until it is dry.

608.03.03 Non-Vegetative Surface, Broken Stone

Ensure that areas to receive non-vegetative surface, Broken Stone, are free from vegetation. Vegetation removal may require manual removal, herbicide treatment as specified in 608.03.06 or both.

Apply a pre-emergent herbicide to the area before placement of broken stone. Spread broken stone, aggregate size No. 3, in a uniform layer, to prescribed thickness.

608.03.04 Non-Vegetative Surface, Porous HMA

Ensure that areas to receive non-vegetative surface, Porous HMA, are free from vegetation. Vegetation removal may require manual removal, herbicide treatment as specified in 608.03.06 or both. Excavate as specified in 202.03.03. Shape and compact the underlying material to produce a firm, even surface. Obtain RE approval before finishing excavation. If the RE determines that the bottom of the excavation is unstable, undercut, backfill, and compact as directed by the RE.

Construct the non-vegetative surface, porous HMA before installing guide rail. Obtain RE approval for alternate methods of construction.

Construct porous HMA surface course to prescribed thickness according to the requirements of Section 303 except for the application of prime coat. Repair non-vegetative surface damaged by guide rail installation with porous HMA. Use hand tampers around posts and other obstacles where mechanical compactors are not accessible.

608.03.05 Non-Vegetative Surface, Polyester Matting

Install polyester matting according to the manufacturer's requirements by manufacturer certified workers.

Ten days before installation, submit to the RE a list of manufacturer certified workers and one copy of the "engineering package" including demonstration compact discs and samples of product components; such as foot prints, finished seams, etc. The manufacturer may elect to train the workers and Department inspectors on a test section on the worksite.

Ensure that the surface areas to receive the matting are smooth, firm, stable and free of rocks, clods, foliage, roots or other material which might prevent the matting from lying in direct contact with the ground surface, free of wrinkles or bulges. Existing non-vegetative surface or HMA that is in the same location as proposed polyester matting may be left in place as long as its surface area is properly prepared as previously stated. Mow grass as low as possible prior to installation of matting. Install the matting immediately following installation of guide rail posts and prior to installation of the guide rail hardware by lifting the matting above the posts and allowing it to drop to the ground with the posts passing through prefabricated openings.

Stake the matting along its edges in accordance with the manufacturer's recommendations.

Seal matting openings with a separate prefabricated piece of matting that will provide a snug fit around the post and completely cover the opening. Ensure that seams are sealed.

Ensure that the matting surface is vegetation-free from installation until final acceptance. Vegetation removal may require herbicide treatment, mechanical removal, or both, as specified in 608.03.06.

608.03.06 Post-Emergent Weed Control of Non-Vegetative Surfaces

Manually remove or spray vegetation growing on the non-vegetative surface with a post-emergent non-selective herbicide treatment for total control of vegetation on the non-vegetative surface area, as directed by the RE. Select post-emergent herbicides for control of targeted vegetation based on the manufacturer's recommendations and product label. Begin the work associated with vegetation removal as early as the conditions permit. Herbicides must be applied by, or under the direct supervision of, a Certified Commercial Pesticide Applicator, according to the manufacturer's recommendations. Restore areas where herbicide has been applied and not intended to its prior existing condition at no cost to the State. Do not apply herbicide in the rain or when wet weather is expected within 24 hours. Do not apply herbicide after rain until approved by the RE.

The RE will notify the ME after Acceptance for inclusion of the non-vegetative surface in its herbicide spraying program including the date that the herbicide was last applied on the project section.

608.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

<i>Item</i>	<i>Pay Unit</i>
NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	SQUARE YARD
COLOR-COATED NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	SQUARE YARD
NON-VEGETATIVE SURFACE, BROKEN STONE, ___ THICK	SQUARE YARD
NON-VEGETATIVE SURFACE, POROUS HOT MIX ASPHALT, ___ THICK	SQUARE YARD
NON-VEGETATIVE SURFACE, POLYESTER MATTING	SQUARE YARD

When the RE directs undercutting of unstable material in the excavation area, the Department will make payment, as specified in 104.03.03, for the additional excavation. The Department will also make payment, as specified in 104.03.03, for the additional bedding if there is not an excess of excavated material available for use as bedding.

SECTION 609 – BEAM GUIDE RAIL

609.03.01 Beam Guide Rail

THE SEVENTH PARAGRAPH IS CHANGED TO:

Install flexible delineators with white retroreflective sheeting on the right side of the direction of traffic. Install flexible delineators with yellow retroreflective sheeting on the left side of the direction of traffic. Mount flexible delineators on the blockout of beam guide rail using either a “U” channel base on the I-beam blockout or a flat base attached to a wood, polymer, or other solid top blockout. Attach the base to the blockout using an adhesive recommended by the manufacturer of the base and panel.

609.03.03 Terminals and Anchorages

THE FOLLOWING IS ADDED:

Excavate cut slope as specified in 202.03.03 within the limits of the buried guide rail terminal. Drive beam guide rail posts for buried guide rail terminal to the required position. Ensure that posts are driven plumb, properly spaced, and to the line and grade shown. Attach the beam guide rail element to the spacer at every post. Attach the beam guide rail element and plate to the terminal posts. Align the top edge of the beam guide rail element in a straight line. Where a vertical transition is required, ensure that the top edge of the beam guide rail element forms the chords of a smooth vertical curve. Backfill with excavated material as specified in 203.03.02C.

609.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS ADDED

<i>Item</i>	<i>Pay Unit</i>
BURIED GUIDE RAIL TERMINAL	UNIT

SECTION 610 – TRAFFIC STRIPES, TRAFFIC MARKINGS, AND RUMBLE STRIPS

610.02.01 Materials

THE FOLLOWING MATERIALS ARE RENAMED TO:

Traffic Stripes.....	912.03.01
Traffic Markings.....	912.03.02

610.03.01 Long-Life Traffic Stripes

THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

ROUTE U.S. 46 FROM MAIN STREET TO VICINITY OF FREDERICK STREET
FEDERAL PROJECT NO. NHP-8112(147)

610.03.01 Traffic Stripes

- A. Striping Plan.** At least 20 days before beginning the work, submit to the RE for approval a striping plan that includes:
1. Schedule of operations for applying traffic stripes.
 2. Number and type of equipment.
 3. Manufacturer's recommendations for use of the materials, including, but not limited to, mixing ratios and application temperatures.
 4. Details on the means and methods for surface preparation
 5. Details on the means and methods for premarking
 6. Details on the proposed test strip such as location, length etc

- B. Surface Preparation.** Immediately before striping the pavement surface, clean the surface of dirt, oil, grease, and foreign material, including curing compound on new concrete. Clean the surface 2 inches beyond the perimeter of the stripes to be placed.

- C. Striping Test Strip.** Before beginning striping operations, construct 1 or more striping test strips to demonstrate the Contractor's ability to meet the requirements specified in 610.03.01.D. For each striping test strip, apply striping to approximately 500 linear feet of pavement with the same striping procedure that will be used for the Project. Construct a test strip for each applicator unit and epoxy resin material used. Provide the RE with 50 test cards made of heavy stock paper measuring 8 inches by 2 inches, and two wet film thickness gauges. Construct additional test strips when major equipment repairs or adjustments are made or when the traffic stripes are determined to be defective. Construct additional test strips when traffic striping operations are performed on multiple, non-continuous occasions. Perform additional test strips as requested by the RE. When the test strip is in compliance, as determined by the RE, proceed with striping operations. Each test strip may remain in place and become part of the finished stripes subject to the requirements of 610.03.01.E.

- D. Applying Striping.** Mix epoxy resin with an automatic proportioning and mixing machine, and hot-spray the compound at a temperature of between 100 and 130 °F onto dry surfaces. Apply the compound with a wet film thickness of 20 ± 1 mil. Apply the material during dry weather conditions when the ambient temperature is a minimum of 45 °F and the surface temperature is a minimum of 50 °F. Adjust operations as required for the prevailing ambient and surface conditions to achieve a no-track drying time of 30 minutes or less.

Immediately after, or in conjunction with, the compound application, uniformly apply 12 pounds of large glass beads per gallon of epoxy resin to the compound. After applying the large glass beads, uniformly apply 12 pounds of small glass beads per gallon of epoxy resin to the compound.

Remove all compound that has been tracked or spilled outside of the intended placement areas.

- E. Performance.** Ensure that the traffic stripes, show no fading, lifting, cracking, chipping for any reason including but not limited to traffic wear, maintenance activities including snow plowing, until Acceptance. Ensure that 60 days after application, traffic stripes have a minimum retroreflectance value of:

375 millicandelas per square meter per lux for white traffic stripe

250 millicandelas per square meter per lux for yellow traffic stripe

- F. Defective work.** Replace traffic stripes that are determined by the RE before Acceptance to be defective or that are damaged during construction. Remove defective stripes as specified in 610.03.08.

Replace an entire 10-foot skip line if the RE determines the stripe to have a deficiency.

If the RE determines, based upon calculated and measured yields, that the striping has a wet film thickness of less than 19 mils, restripe the entire length with 20 mils of new compound.

Provide the RE with an LTL-X Reflectometer that has been certified by the manufacturer as being calibrated within the last two years. The RE will test the retroreflectance of traffic stripes. Replace traffic stripes that do not meet the retroreflectance values indicated in 610.03.01.E. Replace the entire length of striping where improper curing or discoloration has occurred. Discoloration is localized areas or patches of brown or grayish colored compound. Where improper curing or discoloration occurs intermittently in intervals of 100 feet or less throughout the striping

length, replace the entire length of striping from the beginning of the first occurrence until the end of the last occurrence, plus 5 feet on each end.

Replace the entire length of striping that has failed to bond to the pavement, or has chipped or cracked. Where more than 25 spots of chipping, cracking, or poor bonding have occurred within 1000 linear feet of striping, replace the entire 1000 foot length of striping as indicated in 610.03.01.E.

- G. Opening to Traffic.** Complete each application of all types of traffic stripes and allow to thoroughly dry before opening to traffic. At a minimum, delineate center lines on undivided roadways and broken lines between lanes before the traveled way is opened. The RE will determine when the traveled way can be opened to traffic.

610.03.02 Thermoplastic Traffic Markings

THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

610.03.02 Traffic Markings

- A. Marking Plan.** At least 20 days before beginning the work, submit to the RE for approval a marking plan that includes:
1. Schedule of operations for applying traffic markings,
 2. Number and type of equipment,
 3. Manufacturer's recommendations for use of the materials, including mixing ratios and application temperatures.
 4. Details on the means and methods for surface preparation
 5. Details on the means and methods for premarking
- B. Surface Preparation.** Immediately before marking the pavement surface, clean the surface of dirt, oil, grease, and foreign material, including curing compound on new concrete. Clean the surface 2 inches beyond the perimeter of the marking to be placed.
- C. Applying Traffic Markings.** Place preformed thermoplastic or hot extruded thermoplastic traffic markings on thoroughly dry surfaces and during dry weather conditions. Apply using equipment and procedures that produce markings of the specified color, width, and thickness with well-defined edges, uniform retroreflectivity, and proper bonding to the pavement. Apply the thermoplastic material as follows:
1. **Preformed Thermoplastic.** Melt the preformed thermoplastic tape to bond the traffic markings permanently in position according to the manufacturer's recommendations.

Meet the minimum initial retroreflectance value, as specified in 610.03.01.D for thermoplastic tape, by applying additional glass beads to the hot-wet material in a uniform pattern as necessary.
 2. **Extruded Thermoplastic.** Uniformly heat the thermoplastic material. When the ambient and surface temperatures are at least 50 °F, apply the melted material at a temperature of between 400 and 425 °F. Extrude the thermoplastic traffic markings on the HMA or concrete pavement ensuring a thickness of 90 ± 1 mils.

Immediately after, or in conjunction with the thermoplastic extrusion, uniformly apply glass beads to the wet material at a minimum rate of 10 pounds per 100 square feet of markings. Apply glass beads by mechanical means only.
- D. Performance.** Ensure that the traffic markings show no fading, lifting, cracking, chipping for any reason including but not limited to traffic wear, maintenance activities including snow plowing, until Acceptance. Ensure that 60 days after application, traffic markings have a minimum retroreflectance value of:
- 375 millicandelas per square meter per lux for white traffic markings
- 250 millicandelas per square meter per lux for yellow traffic markings
- E. Defective work.** Replace thermoplastic traffic markings that are determined by the RE before Acceptance to be defective or that are damaged during construction. Remove defective markings as specified in 610.03.08.

Replace the entire area of thermoplastic traffic markings determined to be less than the required thickness, to have incorrect color or width, to have failed to bond to the pavement, or to have chipped or cracked. The minimum replacement area is an individual word or symbol, or for longitudinal lines the entire length from where the deficiency first occurs to where it no longer exists.

The RE will determine initial retroreflectance as follows:

Provide the RE with an LTL-X Reflectometer that has been certified by the manufacturer as being calibrated within the last two years. The RE will test the retroreflectance of traffic markings. Replace traffic markings that do not meet the retroreflectance values indicated in 610.03.02.D.

- F. Opening to Traffic.** Complete each application of thermoplastic traffic markings and allow to thoroughly dry before opening to traffic. The RE will determine when the traveled way can be opened to traffic.

610.03.04 Removal of RPMs

THE ENTIRE TEXT IS CHANGED TO:

Remove RPMs as directed by the RE. Dispose of RPMs as specified in 201.03.09. If directed by the RE, fill the hole with HMA patch as specified in 159.03.07 except sawcutting is not required.

610.03.06 Ground Mounted Flexible Delineators

THE FIRST PARAGRAPH IS CHANGED TO:

Use white retroreflective sheeting for delineators located on the right side when facing in the direction of traffic. Use yellow retroreflective sheeting for delineators located on the left side when facing in the direction of traffic.

610.03.07 Rumble Strip

THE ENTIRE SUBPART IS CHANGED TO:

At least 20 days before constructing rumble strips, submit a plan for cutting rumble strips and debris collection/removal to the RE for approval.

Construct rumble strips on newly constructed pavement after it has cooled sufficiently to allow the cutting to be done cleanly without causing damage to the adjacent pavement.

Clean the area where rumble strips are to be constructed. Construct rumble strips by cutting indentations into the pavement perpendicular to the traveled way without disturbing the surrounding pavement. Collect cuttings and reuse or dispose of as specified in 202.03.07.

Ensure that the centerline rumble strips are constructed before placing TRAFFIC STRIPES. After cutting centerline rumble strips, ensure that the centerline TRAFFIC STRIPES are placed before opening the roadway to traffic.

610.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
RPM, BI-DIRECTIONAL, WHITE LENS	UNIT

THE FOLLOWING ITEMS ARE THE RENAMED ITEMS:

<i>Item</i>	<i>Pay Unit</i>
TRAFFIC STRIPES ____ "	LINEAR FOOT
TRAFFIC MARKINGS	SQUARE FOOT

THE FOLLOWING IS ADDED AT THE END OF THE SUBSECTION:

The Department will measure rumble strip by the linear foot measured in the longitudinal direction of the rumble strip without deducting the interval spacing between rumble strips and the gaps for RPM placement and make payment under the Item RUMBLE STRIP.

The Department will not include payment for traffic stripes in RUMBLE STRIP. The Department will make payment for traffic stripes placed in conjunction with constructing a centerline rumble strip under TRAFFIC STRIPES.

SECTION 611 – CRASH CUSHIONS

611.02 MATERIALS

THE FIRST SENTENCE IS CHANGE TO:

This section describes the requirements for providing and constructing inertial barrier systems and compressive crash cushions.

611.02 MATERIALS

THE SECOND PARAGRAPH IS CHANGED TO:

Ensure that the sand has a dry density of 90 to 100 pounds per cubic foot and a 3 percent maximum allowable moisture content. The RE may require the Contractor to test the moisture content of the sand according to AASHTO T 255 and to submit certified test results.

THE THIRD PARAGRAPH IS CHANGED TO:

Provide an inertial barrier system listed on the QPL. Provide a compressive crash cushion as shown on the Plans.

The list of the manufacturers / suppliers is as follows:

QuadGuard	Energy Absorption Systems, Inc.
QuadGuard Elite.....	Energy Absorption Systems, Inc.
QuadGuard Cz.....	Energy Absorption Systems, Inc.
REACT 350.....	Energy Absorption Systems, Inc.
REACT 350 WZ.....	Energy Absorption Systems, Inc.
SCI.....	SCI Products Inc.
TAU II	Barrier Systems Inc.
TRACC.....	Trinity Highway Products

611.03.02 Crash Cushion

THE TITLE OF THE SUBSECTION IS CHANGED TO:

611.03.02 Compressive Crash Cushion

THE SECOND SENTENCE IS CHANGED TO:

Install compressive crash cushions including foundations, backup supports and transitions according to the manufacturer's recommendations and as shown on the Plans.

611.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
CRASH CUSHION, ____	UNIT

THE FOLLOWING ITEMS ARE ADDED:

<i>Item</i>	<i>Pay Unit</i>
CRASH CUSHION, COMPRESSIVE BARRIER, TYPE____, WIDTH____	UNIT
CRASH CUSHION, LOW MAINTENANCE COMPRESSIVE BARRIER, TYPE____, WIDTH____	UNIT

SECTION 612 – SIGNS

612.02 MATERIALS

THE FOLLOWING IS DELETED FROM THE MATERIALS LIST.

Non-Breakaway Sign Supports 911.02.03

THE SECOND PARAGRAPH IS DELETED.

612.03.02 Type GA Breakaway and Non-Breakaway Support Guide Signs

THE SUBPART HEADING IS CHANGED TO:

612.03.02 Type GA Breakaway Support Guide Signs

612.03.02 Type GA Breakaway Support Guide Signs

C. Constructing Pedestals

THE SUBPART IS CHANGED TO:

Place reinforcement steel as specified in 504.03.01 before placing the concrete. Ensure that concrete placement complies with the limitations as specified in 504.03.02.C. Place concrete as specified in 504.03.02.D. Cure concrete as specified in 504.03.02.F.

D. Erecting Posts

THE SUBPART IS CHANGED TO:

Erect posts as specified in 512.03.01.G.

THE FOLLOWING IS ADDED:

F. Constructing Anchor, Hinge, Bracket and Coupling Assemblies..At least 10 days before beginning the work, submit the manufacturer's installation guide and installer's certification to the RE.

Ensure that the installer is certified by the manufacturer.

Ensure that the manufacturer's representative is present during the foundation pour and the installation of the first sign. Install anchor, hinge, bracket and coupling assemblies according to the manufacturer's recommendations. The RE may require the system manufacturer's representative to be present at all times during the installation to provide on-site technical support.

612.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
GUIDE SIGN, TYPE GA, NON-BREAKAWAY SUPPORTS	SQUARE FOOT

DIVISION 650 – UTILITIES

SECTION 651 – WATER

651.03 CONSTRUCTION

THE FOLLOWING IS ADDED:

The successful contractor will be required to purchase insurance in accordance with the Form Schedule A of UWNJ.

Below is a list of contractors approved to perform work on United Water New Jersey (UWNJ) facilities.

SCAFAR CONTRACTING COMPANY
225 Pacific Street
Newark, NJ 07114
Attn: Jim Scannella

J.F. CREAMER & SON, INC.
101 E. Broadway
Hackensack, NJ 07601-9800
Attn: Vince Valentini

No water main work shall be done unless a United Water New Jersey (UWNJ) inspector is present. Before backfilling, newly installed main shall be inspected by a water company representative to verify that installation was done in accordance to UWNJ Specifications.

All valves shall be operated by UWNJ personnel. Under no circumstance shall valves be operated by the contractor. All requests for valve operation shall be communicated to the water company through UWNJ inspector or by calling UWNJ System maintenance department at (201)-487-0011.

The contractor shall provide all pipe and fitting in accordance with the specifications. Shop drawings and cut sheets for material supplied by the contractor shall be submitted to UWNJ for approval before ordering. Material shall be inspected for compliance with specifications. Material deemed not in compliance with specifications will be rejected. It shall be the contractor's responsibility to replace rejected material with material acceptable to the water company.

Valves, valve boxes and hydrants shall be supplied by United Water. Material to be supplied by UWNJ shall be picked up by the contractor at UWNJ Yard at 135 Hackensack Avenue, Hackensack, NJ between the hours of 9.00 AM and 3.00 PM. UWNJ Yard personnel require at least forty eight (48) hours notice prior to material pickup. Material will be loaded on the contractor's vehicle by Yard personnel. The contractor shall be responsible for unloading the material at the job site.

Contractor shall perform pressure test on newly installed main. Test pressure shall be 50% over the working pressure and shall hold for at least one (1) hour. Working pressure shall be determined by UWNJ and provided to the contractor prior to the test. Test shall be witnessed by a Water Company representative.

Water main sterilization shall be performed by UWNJ. At least two (2) weeks advance notice is required. Sterilization, sampling and testing typically take one (1) week. If test results are negative the main will be placed in service within one (1) week.

Prior to installation, the contractor shall prepare and submit to the water company for their approval the line and grade of the new water main. Water mains and appurtenances shall be installed at locations and depths easily accessible to water company personnel for repairs and maintenance.

PIPING AND APPURTENANCES

A. Ductile Iron Pipe

Ductile Iron Pipe, Class 54 with push on joint, centrifugally cast conforming to ANSI/AWWA C151/A21.56-86 Specifications. Field Lok rubber gaskets, two bronze wedges per joint, to be placed in bags with joint lubricant to be supplied with pipe, ANSI/AWWA C111/A21.11-85 Specifications. Cement lined (Double Thickness) with paint seal coat, Tar coated on the outside conforming with ANSI/AWWA C104/A21.4-90 Specifications.

Manufacturers:

Griffin Pipe Products Co.
Atlantic States Cast Iron Pipe Co.
U.S. Pipe and Foundry Co.

B. Pipe Fittings

Ductile Iron and Gray Iron Full Body Fittings conforming to ANSI/AWWA C110/A21.10-93 Specifications. Ductile Iron Compact Fittings conforming to ANSI/AWWA C153/A21.53-88 Specifications. Plain rubber gaskets conforming to ANSI/AWWA C111/A21.11-85 Specifications. Cement lined (Double Thickness) with paint seal coat, Tar coated on the outside conforming with ANSI/AWWA C104/A21.4-90 Specifications.

Note: ALL FITTINGS ARE TO BE FURNISHED COMPLETE WITH EBAA MEGALUG

Manufacturers:

Griffin Pipe Products Co.
Atlantic States Cast Iron Pipe Co.
U.S. Pipe and Foundry Co.
Tyler Utilities

C. Polyethylene Tubing

Polyethylene Encasement for Ductile Iron Piping conforming to ANSI/AWWA C105/A21.5-88 Specifications.

Manufacturers:

Transil Wrap Company
Armin Corporation

SUBMITTAL OF SHOP DRAWINGS AND MANUFACTURERS CERTIFICATIONS

Prior to the delivery of any piping materials to the work site, the Contractor shall submit to the Company for its review and approval shop drawings of the fittings, valves, hydrants, curb stops, taps, valve boxes and appurtenances specified above. He shall also provide documentation from product manufacturers, foundries, distributors and suppliers certifying that the piping and appurtenances to be furnished have been manufactured and tested in accordance with the Company's specifications. If any submission, or delivery of equipment to the work site, is deemed by the Company not to be in accordance with its specifications, the Company will so advise the Contractor and the Contractor shall resubmit the document, or remove and replace the rejected equipment, until the governing specification, in the opinion of the Company, has been met.

PIPE LAYING

All pipe, fittings, valves, hydrants, and other accessories shall, at all times, be handled with care by the Contractor to avoid shock or damage.

No material shall be dropped on the ground or lowered into the trench without proper safeguards being provided.

All pipe, fittings, valves and hydrants shall be carefully lowered into the trench, piece by piece, in such manner as to prevent damage to pipe or pipe coatings.

Under no circumstances shall pipe or accessories be dropped or dumped into the trench.

Before lowering and while suspended, the pipe shall be inspected for defects. The ends should be dusted with talcum powder to detect cracks. Any defective, damaged, or unsound pipe shall be rejected.

When the bottom of the trench is found to be 'oft, and in the opinion of the Company cannot support the pipe, a further depth and width shall be excavated and refilled with approved material to the proper grade required, or some other approved means shall be adapted to assure a firm support for the pipe.

All foreign matter or dirt must be removed from the inside of pipe, fittings, valves and hydrants before they are lowered into the trench. An approved circular bristle brush, snugly conforming to the inside diameter of the pipe, must be passed through every piece of pipe and all bells and spigots must be wirebrushed and wiped clean. The interior of pipe and appurtenances must be kept clean during and after installation until the pipe section is jointed solid. Where M-J fittings are used and follower retainer glands are installed, care must be taken not to overstress set screws and crack pipe. At times when pipe laying is not in progress, the open ends of the pipe in the trench shall be closed by solidly set tapered wooden plugs, or other approved methods, so that no trench water or dirt can enter the pipe. These provisions shall apply during the lunch hour as well as overnight.

All pipe shall be laid upon sound soil, true and even, so that the barrel of the pipe will have a bearing for its full length. Unless otherwise directed, pipe shall be laid with bell ends facing in the direction of laying.

No pipe shall be laid in water, or when the trench conditions are unsuitable for such work.

The Contractor will not be permitted to support pipe, fittings, or valves on blocking either temporarily or otherwise except by permission of the Company.

Whenever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, to avoid obstructions, to plumb valve stems, or where long radius curves are permitted, the degree of deflection shall not exceed that given below except as may be approved by the Company.

Pipe Deflection - Inches per Foot of Pipe

<u>Type of Joint</u>	<u>Pipe Diameter -</u>	<u>6"</u>	<u>8"</u>	<u>12"</u>	<u>16"</u>
Mechanical			1	$\frac{3}{4}$	$\frac{3}{4}$
Rubber Sealed			$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$

JOINTING PIPE

Mechanical Joint:

Mechanical joints shall mean that the sealing gaskets are compressed by followers or retainers assembled with bolts.

The socket and plain end of the pipe shall be wire brushed and washed with soapy water. While the pipe is suspended, the follower and washed gasket shall be slipped over the plain end prior to inserting into the socket. The small side of the gasket and lip side of the follower shall face the socket. Insert the plain end of pipe into the socket, center the pipe and finger push the gasket into the socket until evenly seated. Slide follower into position and assemble bolts finger-tight. Pipe deflection, if required, should be made at this time. Tighten bolts with wrench, alternately and evenly, bottom, top and so on all around. It is essential that the gland be brought up evenly around the joint.

Overstressing of bolts to compensate for poor installation shall not be permitted.

For the most common bolt sizes, the range of torque should be kept between 70-90 foot pounds which can be obtained by a wrench 10 inches long. If sealing is not obtained, the joint must be disassembled and reassembled after thorough cleaning.

Rubber Sealed Joint:

Rubber sealed joints shall mean that the sealing gaskets are confined in the groove of the bell by inserting the spigot into the bell of the pipe. The sharp leading edge of cut plain ends shall be dulled by filing or grinding.

The socket and plain end of the pipe must be wire brushed, washed with soapy water and dried clean while suspended prior to inserting into the socket. The gasket must be washed clean, flexed, and entered evenly and smoothly into the socket with the groove of the gasket fitting the bead of the socket and the large end of the gasket facing into the pipe. Apply lubricant furnished, center plain end and push into place until contact is made in the socket. If assembly is not made with reasonable force, remove the pipe and check condition and position of gasket. If the joint is satisfactorily made, the pipe can be deflected if so required.

Bronze wedges shall be inserted at each joint as directed by the Company to assure the continuity required by electrical devices used to locate buried mains.

POLYETHYLENE ENCASEMENT FOR PIPING AND APPURTENANCES

In areas where soil conditions may be corrosive or elsewhere as directed by the Company, all piping, fittings and appurtenances shall be installed in a polyethylene pipe wrap sleeve. The pipe wrap shall be 8 mils in thickness and approximately 22 feet long and accommodate one length of pipe with a one foot overlap. The overlaps are to be secured to the pipe with Scotch Wrap Tape. All procedures in connection with the installation of the polyethylene sleeve shall conform to ANSI/AWWA C105/A21.5-88.

SETTING TAPPING SLEEVES, VALVES, VALVE BOXES, FITTINGS AND BLOWOFFS

The Contractor shall install the tapping sleeves and valves and will make the actual cut into the existing main. The procedures shall be carried out as follows:

Prior to installing the tapping sleeve, the Contractor shall clean the pipe thoroughly, with particular care being given to the area where the gaskets will seal. Install and block the back half of the sleeve under the pipe so the side flanges face up. Lubricate the side flange O-ring gaskets with pipe joint lubricant and lay them in the side flange grooves so an equal length of gasket extends beyond each end. Place outlet half on top and bolt both halves together. Tighten side flange bolts from the center out, until iron to iron contact is obtained between the side flanges. If iron to iron contact cannot be obtained, there is an obstruction which must be removed before proceeding further. Final bolt torque should be 80 to 90 foot-pounds. With a sharp knife, cut away the excess gasket material, leaving approximately 1/8" protruding evenly into the mechanical joint gasket seat. Lubricate and install the proper thickness mechanical joint gaskets for the pipe and install the split follower rings. The parting lines of the sleeve, the mechanical joint gaskets and the split follower rings must not coincide. Install bolts and nuts hand tight. Rotate the sleeve into final position, tighten the mechanical joint bolts alternately in pairs 180° apart to 75 to 90 foot pounds torque and install the tapping valve.

The mechanical joint tapping sleeve and valve assembly shall be field pressure tested by the Contractor in the presence and to the satisfaction of Company personnel. The Contractor shall provide the hand pump and pressure gauge required to test the assembly. The assembly shall be tested by closing the tapping valve and connecting a hand air pump to the pipe tap on the outlet neck of the sleeve, with a pressure gauge and valve mounted between the tap and the pump. Increase pressure to a point twenty-five (25) percent greater than the normal operating pressure at that location, but not less than 150 psi. When the test pressure has been reached, close the valve and observe the test gauge. Any loss of pressure is an indication of a leak, which must be located and eliminated. The duration time for the test shall be ten minutes for sleeves up to 20-inch and one-half hour for larger sleeves. If leakage occurs on the mechanical joints, tighten the MJ gland bolts uniformly until the leak stops. Starting 90° away from the leak, tighten the gland bolts alternately towards the leak. If the leak occurs on the side flange of the sleeve, the leak may be

occurring from where the side flange gasket contacts the MJ gasket. Tighten the MJ gland bolts starting 90° away from each flange and alternately tighten them toward the leak.

Company personnel will furnish the tapping valve. The Company will retain subsequent control of the tapping valve at all times.

Gate valves, pipe fittings and blowoffs shall be set and jointed to pipe in the manner heretofore specified for cleaning, laying and jointing pipe.

Cast iron valve boxes shall be firmly supported, with the bottom of the box at the level of the valve packing gland and maintained centered and plumb over the operating nut of the gate valve, with box cover flush with the surface of finished pavement or at such level as may be directed by the Company.

Drainage branches or blowoffs shall not be connected to any sewer or submerged in any stream or be installed in any other manner that will permit back-siphonage into the distribution system of the Company.

SETTING HYDRANTS AND INSTALLING SERVICES

Hydrants shall be located as shown on the Contract Plans or as designated by the Company.

They shall be set behind the curb line so that the barrel of the hydrant shall be 14 inches from the curb line or gutter face of the curb. All hydrants shall stand plumb, and shall have their large outlet (suction hose connection) facing toward the street at right angles to the curb line. They shall conform to the established grade, with the center of the large outlet 15 inches above the established grade of the sidewalk or curb, and with the break-away collar 3 inches above grade.

Each hydrant shall be connected to the main pipe with a 6-inch branch, controlled either by a tapping valve or by an independent 6-inch gate valve.

The bowl or elbow shall be well braced against undisturbed surfaces, under the elbow and just above the joint to the hydrant barrel, with substantial blocking. Also, the hydrant barrel shall be blocked one-third down the trench depth. The hydrant elbow, branch and valve shall be tied together by straps and tie rods.

The hydrant shall be set on one (1') foot of crushed stone or screened gravel. Additional screened gravel or crushed stone shall be placed around the barrel to a height one (1') foot above the drip opening.

No hydrant drainage pit or drain shall be connected to a sewer or storm water drain.

BACKFILLING

Selected permeable backfill material, free from rock or boulders or other unsuitable substances, shall be deposited by hand in the trench on both sides of the pipe for the full width of the trench and tamped in thin layers up to the elevation of the centerline of the pipe so as to furnish a hard bed for the lower half of the pipe.

From the centerline of the pipe to one (1') foot above the top of the pipe or appurtenance, the trench shall be backfilled and compacted by approved mechanical methods using selected backfill materials. Succeeding layers of backfill may contain coarser materials, and shall be free from brush or any other perishable or objectionable matter which would prevent proper consolidation. Each succeeding layer shall not exceed eight (8") inches in thickness and shall be thoroughly and mechanically compacted.

No rock, boulders or pavement shall be used in the backfill for at least one (1') foot above the top of the pipe, and no stones or boulders larger than ten (10") inches in their largest dimension shall be used in any of the backfilling. Stones shall be so distributed through the mass that all interstices will be filled with fine material.

Where poor soil such as ashes, muck or bog is encountered or when excavated rock or frozen soil is unsuitable for use as backfill material, the Contractor shall supply good dry, permeable earth as backfill material.

The work of backfilling the trench around the valve boxes must be done by hand and properly tamped to eliminate the possibility of the boxes being shifted, rendering the valves inoperative.

It is understood and agreed that the Contractor will assume all responsibility for proper backfilling of the trenches for the water main and service lines and the maintenance of the surface of the streets after backfill and save harmless United Water New Jersey Inc. from any and all claims for damages or otherwise, which may result from the opening and backfilling of such trenches or failure to greater than normal operating pressure, but not less than 150 PSI or more than 300 PSI, at the point of lowest elevation, for a duration of at least one (1) hour.

The Contractor shall conduct hydrostatic tests. The Contractor shall furnish materials and equipment required for tests, including force pumps, gauges, calibrated tank or barrel. The Contractor shall furnish all labor, materials and equipment required for installing temporary plugs, flanges or bulkheads, screw plugs for holes tapped in the pipes, connecting piping, tapping of pipes for pump and gauge connections and bracing the incomplete work.

The entire installation under test pressure will be thoroughly examined for evidence of leakage. Any cracked or defective pipe, fittings, valves or hydrants discovered shall be removed and replaced by the Contractor with sound material in the manner provided herein, and the test will be repeated until satisfactory.

No installation will be accepted until or unless the leakage is less than three quarters (3/4) U.S. gallon per twenty-four (24) hours per linear foot of joint. The length of joint being defined as the product of the nominal diameter of the pipe in feet, the number of joints in the section being tested, and the factor 3.

Should any test of combined sections of pipe laid disclose leakage greater than specified, or if individual sections show leakage greater than the specified limit, the Contractor shall, at his own expense, locate and repair the defective joints until the leakage is within the specified allowance.

651.04 MEASUREMENT AND PAYMENT

THE LAST PARAGRAPH IS DELETED.

THE FOLLOWING IS ADDED:

Separate payment will not be made for water main fittings, water main gate valves and boxes, wet tapping, line stopping, insertion valves, water main blow-off assembly, corporations or thrust blocks. All costs thereof shall be included in the price for the water pipe.

Separate payment will not be made for cutting and capping existing water mains. All costs thereof shall be included in the price for the water pipe.

Separate payment will not be made for removal of existing fire hydrants.

Separate payment will not be made for furnishing or installing pipe bedding material and pipe backfill material.

SECTION 652 – SANITARY SEWERS

652.02 MATERIALS

THE FOLLOWING IS ADDED AFTER THE TABLE:

PVC house connection pipe and fittings shall comply with ASTM Designation D3034-SDR35.

652.03.04 Sanitary Sewer Service Connection

THE SECOND SENTENCE IS CHANGED TO:

Notify the Utility and the affected customer at least 5 days in advance of performing work on any sewer service connections.

THE FOLLOWING IS ADDED:

Connection shall consist of a 45 degree PVC Branch Connection and a PVC 1/8 Bend at such a position on the main, to insure the proper alignment and grade from the existing connection.

PVC Branch connections and PVC Bends shall have four (4") inch inside diameters conforming to four (4") inch PVC pipe as specified above.

Connections from the PVC Bend to the end of the existing service connection shall be made with four (4") inch PVC pipe with suitable adapters to connect to the existing service connection.

The jointing and setting of the PVC Branch connections and PVC Bends shall be in accordance with the manufacturer's instructions and specifications.

652.03.07 Reset Sanitary Sewer Manhole

THE FOLLOWING IS ADDED:

Castings shall bear the words "Borough of Little Ferry" stamped or cast legibly thereon. Units not so furnished will not be accepted for use on the project.

The manhole frame and cover shall be mortared in place and if necessary shall be set to grade with brick and mortar.

652.04 MEASUREMENT AND PAYMENT

THE LAST PARAGRAPH IS DELETED.

SECTION 653 – GAS

THE ENTIRE TEXT OF THIS SECTION IS CHANGED TO THE FOLLOWING:

653.01 DESCRIPTION.

The work for these items shall consist of the Contractor hiring a prequalified gas Subcontractor to perform the work as specified within. For these items of work Subcontractor shall mean any of the qualified gas contractors listed under the construction requirements noted below and hired by the Contractor to perform the installation of gas mains and appurtenances for the gas utility company.

However, the Contractor shall perform construction layout, traffic control, sawcutting, pavement removal, removal of excess gas, excavation unclassified, temporary pavement, final pavement restoration, sidewalk or landscape restoration as necessary for this project.

This actual work shall consist of the construction of new gas lines, valves, vents, and appurtenances. The Subcontractor shall furnish all supervision, labor, tools and equipment to pick up and/or unload pipe, fittings and miscellaneous materials supplied by Public Service Electric and Gas Company (PSE&G). The Subcontractor shall excavate, sheet and dewater excavations, place and tamp backfill. The Subcontractor shall place backfill up to the bottom of the proposed pavement, sidewalk or in a landscape area the bottom of topsoil. The Subcontractor shall

fabricate, weld, lay, pig pipe and internally clean pipe. The Subcontractor shall also clean, sandblast, coat and wrap all buried pipe and joints, perform an air test, pour concrete pads for valves and line stops.

This work shall also include the Subcontractor assisting PSE&G crews to perform cutout, hot taps, line stops and make gas main tie-ins. Any material, equipment, or related work required for the completion of the pipe installation which is not indicated or specified herein, shall be provided at no additional cost. This shall also include the placement and removal of any temporary fencing or steel plates used to keep any gas excavation open overnight.

This work may also consist of the excavation and placement of gas, pipe bedding and the placement of a permanent gas, protective steel plate to protect an existing gas main that will remain in place.

This also does not preclude the Contractor from hiring the gas or some other Subcontractor to perform the work of construction layout, traffic control, sawcutting, pavement removal, removal of excess gas, excavation unclassified, temporary pavement, final pavement restoration, sidewalk or landscape restoration at no additional cost to the State.

653.02 MATERIALS

All material for gas work will be supplied by PSE&G except for the necessary gas, backfill, aggregates, minor accessories and concrete. Pipe and large fittings will be delivered directly to the job site by PSE&G. These materials shall also include the gas protective steel plate if required to protect an existing or proposed gas main. The Contractor shall be responsible for the delivery of the pipe within the jobsite unless, where possible, other delivery arrangements can be made in which the Contractor must then supply unloading equipment and personnel. Other material required to complete the work on this project may have to be picked up by the Contractor at PSE&G's Central Stockage Facility in Sayerville. Miscellaneous materials shall be picked up at PSE&G's Store Rooms located at pertinent District Headquarters and/or other PSE&G designation for delivery to the job site. The Contractor shall be responsible for the adequate storage and protection of the pipe after acceptance by a representative of the Subcontractor.

All nonstandard pipe elbows will be supplied by PSE&G as standard elbows. Cut the standard elbows, 45 or 90 degrees, to match the required elbow as shown on the Construction Drawings or as field conditions may warrant.

PSE&G shall make every reasonable effort to make available materials to be furnished by PSE&G to avoid delays in the Contractor's work. However, should PSE&G for any reason, fail to make available any such item, and delay shall result, the Contractor shall not be entitled to additional compensation on account of such delay.

The Contractor shall be held responsible for removing all surplus pipeline materials from the job site. All excess pipe, fittings and other miscellaneous materials furnished by PSE&G shall be returned to the pertinent District Headquarters and/or other PSE&G designation.

The concrete support pad for line stops and valves shall be Class B concrete as specified in Section 903.

Gas, earth excavation for tests pits shall be backfilled in accordance with Subsection 203.03.

Materials for gas, pipe bedding shall conform to Subsection 601.03.01, Subparagraph C for class B pipe bedding.

Materials for broken stone or washed gravel shall conform to Subsection 901.03.01 for broken stone and Subsection 901.03.02 for washed gravel.

Materials for gas, coarse aggregate, size no. 57 shall conform to Subsection 901.03 and Table 901.03.01.

Materials for gas, backfill shall conform to Subsection 203.02.01 for borrow excavation, selected material with a soil designation I – 13.

653.03 CONSTRUCTION

653.03.01 Gas Mains

1. **Prequalification.** Only a pre-qualified contractor approved by PSE&G may construct or relocate gas mains and appurtenances. The work restricted to pre-qualified contractors does not preclude the Contractor from performing sawcutting, pavement removal, removal of excess gas, and temporary or final pavement restoration associated with the work of constructing gas mains. Ensure that the work is performed according

to PSE&G's General Specifications. The following contractors are pre-qualified by PSE&G to perform all gas work called for in this project:

COLONNELLI BROS., INC.
409 South River Street
Hackensack, NJ 07601
(201) 440-1118 – Nino Colonnelli
Anna Aramini
Aaramini@Colonnelli.Com (P)
Fax: (201) 440-8282

J.F. CREAMER & SON, INC.
1701 East Linden Avenue
Linden, NJ 07036
Jorge Pires Oq (P)
Jpires@Jfcson.Com
(908) 925-3200 (X 272)
Jack Hanley
Jhanley@Jfcson.Com
Fax: (908) 925-3350

DICLEMENTE CONTRACTORS
3100 Dell Avenue
No. Bergen, NJ 07047
(201) 319-0900
Nydia@Dcccon.Com -Oq (P)
Fax: (201) 319-9312

ELK/CROWN PIPELINE
CONSTRUCTION COMPANY
3345 Delsea Drive
P.O. Box 39
Franklinville, NJ 08322
(856) 694-9200
Bob Williams – Oq (P)
Crownpipeline@Comcast.Net
Fax: (856) 694-9201

GRAY SUPPLY CORP.
199 Franklin Road
Randolph, NJ 07869
(973) 366-7272
(Fax) (973) 366-9592
Ben Heimburger – Oq (P)
(609) 971-3302
Ben.Gs@Comcast.Net
Heidi Herms – Oq
Hherms44@Aol.Com
Www.Graysupplycorp.Com

J.F. KIELY CONSTRUCTION CO.
700 McClellan Street

Long Branch, NJ 07740
(732) 222-4400
Fax: (732) 229-2353
Jim Pagano – Oq (P)
Jmpagano@Jfkiely.Com
Robert Patterson – Oq (B)
Rapateron@Jfkiely.Com

KEMSCO CONSTRUCTION, INC.
139 Harper Street
P.O. Box 10019
Newark, NJ 07101
(973) 733-2255
Ralph Serpe – Oq (P)
Cell: (973) 418-7851
Kemscoinc@Aol.Com
Fax: (973) 642-2928

LANTIER CONSTRUCTION CO.
145 Dey Grove Road
Monroe Twp., NJ 08831
(973) 628-9302
Billphillips798@Comcast.Net – Oq (P)
Bill's Cell: (732) 674-7981
Fax: (609) 784-8764

MILLER PIPELINE CORP.
378 Whitehead Avenue
South River, NJ 08882
Greg Ritsick
Mobile (484) 256-4619
Greg.Ritsick@Millerpipeline.Com (P)
Brad.Heck@Millerpipeline.Com (B)
Fax:(732)238-2265

NAPP GRECCO COMPANY
1500 McCarter Hwy.
Newark, NJ 07104
(973) 482-3500
Phil Testa – Oq (P)
Ptesta@Napp-Grecco.Com (P)
Mobile (973) 445-3084
Joseph Napp
Jnapp@Napp-Grecco.Com (B)
Fax: (973) 268-3639

ROMAN E&G CORP.
14 Ogden Street
Newark, NJ 07104
(973) 482-1113
Michael Lamorgese – Oq (P)
Romaneandg@Aol.Com (P)
Romanasphaltcorp@Aol.Com (B)

(973) 766-5369 – Joe’s Cell
Fax: (973) 482-2501

JOSEPH M. SANZARI, INC.
19 Wallace Street
Elmwood Park
Rich Egan – Oq (P)
Regan@Sanzaricompanies.Com
Cell (201) 538-6615

SKODA CONTRACTING
147 Gold Mine Road
Flanders, NJ 07836
(800) 507-9601
Fax: (973) 691-2005
Barry Stelmack – Oq (P)
B.Stelmack@Skodacontracting.Com
Frank Evans – Oq (B)
F.Evans@Skodacontracting.Com

WATERS & BUGBEE, INC.
75 South Gold Drive
Hamilton, NJ 08691
(609) 584-1100
Fax: (609) 584-2200
Dennis Brophy – Oq (P)
(609) 584-1100
Dbrophyjr@Watersandbugbee.Com

It is the responsibility of the Contractor to obtain any one or all of the qualified contractors listed when preparing his Proposal for the Project.

2. **Compliance with PSE&G Specifications and Standards.** All gas work on this contract shall be performed in accordance with PSE&G General Specifications 94-5000 and 2000-D-100 and Gas Distribution Standards Manual. Only the PSE&G qualified gas contractors may obtain a copy of these PSE&G documents for security reasons. Upon completion of the work, submit to PSE&G as-built drawings as per PSE&G’s criteria which include plans and profiles in MicroStation format. As-built drawings shall be submitted to and accepted by PSE&G before the RE will issue a Certificate of Completion in accordance with Subsection 108.19 to the Contractor.
3. **Scheduling of Work and Interruption to Utilities and PSE&G Operations.**
 - A. Provide the RE and PSE&G with a detailed schedule of the work to be performed in accordance with Subsection 153. This schedule shall include the number of crews to be working, work locations, and time of day work shall be performed (night shift, day shift, weekends, etc.). Coordinate closely with PSE&G once construction begins. Notify PSE&G, through the RE, at least two weeks prior to construction of any gas activities. Supply the labor and other resources necessary to meet the projected work schedule.
 - B. The work to be performed under this contract requires special attention to the scheduling and conduct of work in connection with the existing PSE&G (gas) utilities and the NJDOT’s operations. No work is to be performed on gas facilities from October 1 through April 31. This period can be extended based on weather conditions and system demand requirements as determined by PSE&G.

- C. Perform the work as specified herein in a diligent and timely fashion so as to minimize any adverse impact with PSE&G's activities and inconvenience to their operations and personnel. Coordinate construction operations, but most importantly gas construction activities, with PSE&G, affording all reasonable cooperation and taking all prudent precautions in order to prevent excess hardship, noise or other nuisance.
- D. Insofar as practicable, confine operations to the immediate area. Do not use any more space than reasonably required for gas work and perform the complete work returning each area to normal usage as soon as practicable.
- 4. **Safety.** All excavation work shall be performed in accordance with 29 CFR Part 1926, Occupational Safety and Health Standards – Excavation. Perform all work in compliance with the Minimum Federal Safety Standards for Gas Lines (Part 192, TITLE 49, Code of Federal Regulations). Work shall be in compliance with all State, County or Municipal Ordinances.
- 5. **Environmental.** Work shall conform to all Federal, State and Local environmental requirements, as well as to PSE&G Specifications and the Contract Special Provisions. All applicable permit requirements for physical site protection measures must be adhered to throughout construction. Assume full responsibility, during the construction period, for site dust control measures and for any and all pollutants caused by this work which may be detrimental to the environment.
- 6. **Gas, Excavation in General.** Provide traffic control, construction layout, sawcutting of the existing pavement or sidewalk where gas lines are to be installed and remove these materials. Remove and or use on the project any excess Gas Line Excavation not used as backfill. Remove any unsuitable excavation and miscellaneous debris that is determined to be unsatisfactory for the project. Develop a removal plan, have it approved by the RE follow the plan established for such removal. If the soil is determined to be contaminated, remove and dispose of the soil in accordance with Section 202 of the Specifications as approved by the RE. Any acceptable excess excavated materials may be used on the project as approved by the RE.
- 7. **Verification of Contract Documents.**
Examine the Drawings and Specifications before submitting a proposal, and identify the conditions under which the work is to be performed. Any items of work not listed below shall be at no additional cost to the State. Promptly bring to the attention of the State any errors or omissions found during the advertising period for this project.
- 8. **Roadway Lane Closings.** Roadway lane closings shall be required when work is being performed in the roadway. Coordinate and schedule the lane closures with the NJDOT, as appropriate, in accordance with the Traffic Control Plans, NJDOT Standard Traffic Control Plans and Section 159 of the Specifications. Before performing any work, ensure that all of the necessary traffic control devices are in place and functioning properly.
- 9. **Staging Areas.** Certain areas may be designated as construction lay down/staging areas. Provide whatever physical security is necessary to secure all material storage areas utilized. No additional payment shall be made for such security provisions.
- 10. **Temporary Fencing and Plates.** Temporary fencing and/or plates shall be required to secure excavations that are to remain open overnight. Supply and install temporary fencing and plates, as necessary. Plates shall be utilized when and where necessary or as directed by the RE or by PSE&G to secure excavations required to remain open over night. Install and maintain these plates in accordance with local Municipal, State and/or County specifications at no additional cost to the State.
- 11. **Site Supervision.** Have a competent person at the job site to determine the need for sheeting and shoring of the trench excavation. Additional payment will not be made for any sheeting or shoring required to perform the work.

12. **Quality Control.** PSE&G shall furnish an inspector on site to inspect the construction of the work. All work shall be done in a workmanship like manner and shall be subject to the requirements, inspections, and approval of the PSE&G inspector in coordination with the State's inspector and the RE. PSE&G's inspector shall also track materials taken from PSE&G storerooms. PSE&G's inspector shall immediately notify the RE of any work being performed that does not meet the requirements of the Contract Agreement between the State and PSE&G including but not limited to the Drawings, Permits and Specifications. The RE will be responsible for directing the Contractor to correct defective work to meet the requirements herein. The PSE&G inspector shall immediately notify the RE if the requirements of the Contract Agreement between the State and PSE&G remain unresolved or the correction of the defective work does not meet the requirements herein. If the PSE&G Engineer is not satisfied that the work meets the requirements of the Contract Agreement between the State and PSE&G, the PSE&G Engineer shall notify the RE and the Department's Utility Engineer in the Utility and Railroad Engineering Unit immediately. If the PSE&G Engineer is still not satisfied that the work meets the requirements of the Contract Agreement between the State and PSE&G, the PSE&G Engineer shall notify the Regional Construction Engineer and the Manager of the Utility and Railroad Engineering Unit immediately to resolve the problems.
13. **Damage.** All work shall be performed without damage to adjacent structures, property, and/or equipment. This includes, but is not limited to buildings, fences, roads, parking lots, bridges, culverts, drainage ditches, waterways, and wetlands. However, should damage occur, repair and restore the damaged item to its original condition at no additional cost to the State or PSE&G.
14. **Clean-Up.** The clean-up procedure of the job site is subject to the approval of the RE. Keep the site free from accumulations of waste materials and rubbish at all times. A waste receptacle and recyclable receptacle shall be provided and maintained on the job site. There shall not be any disposal of waste in the trench excavation for any gas work.
15. **Existing Utilities and Structures.**
- A. Determine the location, protection and permanent support requirements of all surface and subsurface structures encountered in the work area, including but not limited to underground electric, water, sewer or storm drains.
 - B. Notify the Engineer and the PSE&G Inspector when excavation is required within three meters of any gas, oil, water lines, telephone, electrical, or fiber optic cables. The notice shall be provided whether such lines belong to PSE&G, or are foreign; in order that PSE&G and Subcontractor may agree upon and approve an excavation method for their protection.
 - C. Provide prior notice to the PSE&G Inspector, through the RE, when crossing foreign lines. This allows the PSE&G Inspector time to notify the owner of any possible pipeline or other facility crossing and provide that owner the option to have a representative present at the time of excavation or other construction.
 - D. Be aware of the hazards of operating equipment in work areas that are adjacent to or under overhead power line rights of way, and take precautions to insure the safety of personnel and the integrity of the existing power line facilities.
 - E. All work shall be performed in accordance with NJSA 34:6-47 "High Voltage Proximity Act".
 - F. All street signs, mailboxes and similar items shall be appropriately removed and reinstalled in accordance with Section 201 as required.
16. **Restoration and Landscaping in General.** Temporary and final restoration or landscaping within the right-of-way shall be provided. Provide steel plates over gas excavations to remain open overnight. When the work is inside the right-of-way backfill up to the bottom of a temporary pavement box, permanent pavement box, sidewalk box or the bottom of topsoil. Place all materials in the temporary pavement box, the final pavement box, sidewalk box or topsoil and fertilizing and seeding. When the restoration area is outside the right-of-way provide construction layout, excavation and all other operations necessary up to a complete restoration of the areas impacted by the work to the satisfaction of the RE. Landscaping shall conform to the requirements under Division 800 of the Specifications. Provide fencing and/or steel plates for any gas excavations left open overnight. Final restoration shall conform to the Construction Drawings and Specifications for the project. Restore all areas impacted by their work, outside the right-of-way, to its original condition and satisfaction of the RE. Separate payment will not be made for this excavation, restoration or landscaping work which may also include replacement of sidewalks and driveways.

17. **Tie-in and Gas Out.** Have available all equipment and personnel needed to make simultaneous cutout and tie-in of both ends of the new pipe. PSE&G shall be responsible for purging and cutting the pipeline. Once started, the work shall continue until completed. Tie-in excavations shall be left open and/or plated as required, or until PSE&G has completed all of its work.
18. **Sheeting and Dewatering.** Design and install solid tight sheeting as required. Provide all dewatering required to perform the work as part of this contract in conformance with Subsection 158.03.02, Subparagraph 12.
19. **Pressure (Air) Test.** Perform an air pressure test on all new piping in the field including the tie-in pieces. The proper time, method, and sequence of operation for the testing of the line shall be in coordination with the RE at PSE&G's direction and under direct PSE&G supervision. The minimum test duration times are noted in the table below. The cost of this test, including but not limited to appropriate excavations, and the passing of a scraper barrel pig (steel mains) or poly pig (plastic mains), shall be included in the overall cost of the proposed items, noted below, for this work scheduled in the Proposal.

Pressure (Air) Test

Size	Material	Test Pressure	Duration (Hours)
4"	Steel	Based on field conditions	Based on length tested
6"	Steel	Based on field conditions	Based on length tested
8"	Steel	Based on field Conditions	Based on length tested

- A. Supply all required small fittings, valves, hoses, pipe, etc. to connect the test equipment. Supply two (2) compressors to attain the required test pressures, canvas or burlap to cover the exposed piping, qualified personnel and equipment required to install, operate, and remove equipment and temporary piping at no additional cost to the State.
 - B. A PSE&G representative shall supervise the test after the piping is pressurized. The section under test should be allowed to reach equilibrium before the test is started. If pressure loss is observed, locate and repair any and all leaks at no additional cost to the State.
 - C. All steel mains shall be pigged using a scraper barrel (pig) driven by compressed air to remove internal pipe debris prior to placing the main in service. Furnish the pig in a new or near-new condition and all other necessary equipment for its operation. All these costs shall be included in the cost of the pipe installation.
 - D. If deficiencies are found, they shall be corrected and re-tested as soon as possible. All work and material required to rectify the deficiencies shall be performed at no additional cost to the State.
20. **Installation of Gas Mains.** This work shall consist of all work required for the installation of gas mains. This work includes breaking out the pavement, excavating, laying the pipe, welding or fusing the pipe, installing elbows and associated fittings and appurtenances, cathodic protection, testing, and backfilling. When sufficient excavated material is not available provide and install gas backfill. Construct a temporary riding pavement final pavement or a landscaped surface as required. This work may also include any sheeting and dewatering associated with laying the pipe. PSE&G shall install the tie-in pieces as called for in the plans.
- A. Installation of the pipe shall conform to Section 601 where applicable and the contract documents.
 - B. All pipe shall be installed at the nominal cover of 0.91 meters (36"), except when crossing drains, culverts, etc. as shown on the Contract Drawings or as field conditions permit. Except for the placement of sand 152mm (6") below and 305mm (12") above the main, the trench shall be backfilled with excavated material. The use of quarry process stone or additional sand may be approved at the direction of the PSE&G Inspector. Backfill shall be well compacted under and around the sides of the pipe, and

thereafter in 152mm (6") lifts. Excess soil must be removed and disposed of at the Contractor's expense.

- C. Ensure the gas mains are installed within the established boundaries as shown on the Construction Plans.
- D. Insulating joints, valves, valve risers, miscellaneous fittings, locating wire, pipeline markers, test Stations, and/or any other necessary appurtenances shall be installed as directed by PSE&G in coordination with the Engineer and shall be incorporated into the price bid for the various items for gas pipe installation noted below. There shall be no additional compensation for this work.
- E. Cathodic protection on steel pipes shall be installed as shown on the Contract Plans or as specified. This includes pipe coating, anodes or rectifiers, insulating joints, and test stations. Install the anodes at a lower elevation than the pipe (in or below the water table where possible) and offset it as far as practical from the pipe. The anode shall not be placed so that some other metallic structure, such as conduit, cable, pipe, etc., is between the main and the anode. Backfill shall be the existing soil tamped into position around the anode. Do not backfill around the anodes installed with sand padding that may be used in the main trench.

21. Service Installations. The work associated with installing a gas service shall consist of all work required for the transfer/installation of a gas service, permanent or temporary. This work includes breaking out the existing pavement and its removal. Excavate the trench, lay the bedding, lay the pipe, fuse the pipe, assist the PSE&G tie into the main and backfill including final restoration and landscaping in areas outside of the right of way. Provide a temporary riding pavement, final pavement, sidewalk or a landscaped surface as required inside the right-of-way. Perform all associated work with the transfer service. This work includes the excavation of one (1) tie-in hole for direct burial and transfer installations and two (2) tie-in holes for insert installations. Any additional excavation pits required for service installation work will be paid for on a cubic yard basis under the pay item Gas Line Excavation, Unclassified.

- A. Only personnel trained by PSE&G and carrying an up-to-date qualification card shall make fused or mechanical connections on plastic service pipe.
- B. All service installations shall be 12.7mm through 31.8mm plastic tubing and 51mm, 76mm, 102mm, and 152mm plastic pipe. The services shall be installed by either inserting plastic in the existing service or by directly burying plastic tubing/pipe. PSE&G shall witness and record the pressure testing of the services. Pressure test the service as required and soap test all fuses and mechanical connections.
- C. Perform all work associated with the service installation by using direct burial plastic pipe. This shall include, but is not limited to, the following steps:
 - 1. Use pressure control equipment to shut the gas off at the service tee on the existing main prior to cutting the existing service pipe.
 - 2. Disconnect the service pipe inside the building before the meter. Support the meter set to avoid stress on the house piping.
 - 3. Excavate and install the replacement/new direct burial plastic service, including location wire, from the main to the building. This shall include a curb shut off behind the curb and a meter shut off at the head of the meter. Seal the hole in the foundation wall surrounding the service pipe with cement and/or water plug grout.
 - 4. Electrofuse/weld the self-tapping tee to the new main and connect it to the new plastic service using Electrofuse/mechanical fittings.
 - 5. Pressure test the service as required soap test all fuses and mechanical connections. When the air test is satisfactory, release pressure, tap self-tapping tee and gas out service through the hose from the meter shut off to the outside of the building until a 95% to 100% gas reading is obtained on a combustible gas indicator. Install tee cap and soap test.
- D. Perform all work associated with service installation by plastic insertion. Trenching or direct burial from the existing gas main to the point of insertion shall be paid for under the work performed for gas service insertion. This work shall include, but is not limited to, the following steps:
 - 1. Use pressure control equipment to shut the gas off at the service tee on the existing main prior to cutting the existing service pipe.
 - 2. Excavate and remove any curb shut off, offset, swing or service drip that may impede the insertion of the plastic pipe.
 - 3. Disconnect the service pipe inside the building before the meter. Support the meter set to avoid stress on the house piping.
 - 4. Ream the existing service, from the building to the main, with the appropriate sized reamer. Once the service is reamed, air blow the service from the house to the main.

5. Insert the plastic tubing from main to the house or building receiving the service. This shall include the installation of a curb shut off and a meter shut off valve at the head of the service. The meter shut off valve shall be left in the open position with the plug installed.
 6. Electrofuse/weld the self-tapping tee to the new main and connect it to the new plastic service using Electrofuse/mechanical fittings.
 7. Pressure test the service as required and soap test all fuses and mechanical connections. When the air test is satisfactory, release pressure, tap self-tapping tee and gas out service through the hose from the meter shut off to the outside of the building until a 95% to 100% gas reading is obtained on a combustible gas indicator. Install tee cap and soap test.
- E. Perform all work associated with the service transfer. This shall include, but is not limited to, the following steps:
1. Use pressure control equipment to shut the gas off at the service tee on the existing main prior to cutting existing service pipe.
 2. Disconnect the service pipe inside the building before the meter. Support the meter set to avoid stress on the house piping. Install plug in meter shut off valve and leave valve open.
 3. Electrofuse/weld the self-tapping tee to the new main and connect it to the existing service using Electrofuse/mechanical fittings.
 4. Pressure test the service as required and soap test all fuses and mechanical connections. When the air test is satisfactory, release pressure, tap self-tapping tee and gas out service through the hose from the meter shut off to the outside of the building until a 95% to 100% gas reading is obtained on a combustible gas indicator. Install tee cap and soap test.

22. Steel Gas Pipe.

- A. The steel pipe used for the installation shall be single and/or double random lengths. Provide adequate storage and protection of the pipe during construction.
- B. All welding shall be performed in accordance with the latest edition of API Standard 1104, "Standard for Field Welding of Pipelines".
- C. Before any pipe welding is performed, submit a copy of the welders' Performance Qualification Record in accordance with API 1104 showing that the welders have been tested and approved by an authorized PSE&G representative. Welders previously qualified by test may be accepted without requalification subject to approval of the PSE&G Inspector.
- D. Follow existing PSE&G Welding Procedures as detailed in the Gas Distribution Standards Manual.
- E. PSE&G may require preheat of welding at any time because of atmospheric conditions, pipe chemistry, and/or sections of heavy wall thickness.
- F. Tacking of ground clamps and other devices to the pipe is not permissible.
- G. Arc burn damage to pipe parent material shall be ground smooth when the depth of the physical defect is no greater than 8% of the nominal wall thickness of the pipe.
- H. When the depth of an arc burn physical defect is greater than 8% of the nominal wall thickness, the combination of physical and metallurgical defect shall be considered excessive and the defect and adjacent girth weld shall be removed from the pipeline at no cost to the State or PSE&G.
- I. Welding repairs shall not be made on gouges, scratches, arc burns or other defects in the parent metal of the pipe. Field repair for gouges and grooves in the parent metal of the pipe may be made by grinding. The grinding shall not reduce the wall thickness at any point to less than 92% of the nominal wall thickness of the pipe.
- J. A dent which contains a stress concentration, such as a scratch, gouge, groove or arc burn shall be removed by cutting out the damaged portion of the pipe.
- K. A minimum of five percent (5%) of the joints will be x-rayed by PSE&G and one hundred percent (100%) of all joints of the carrier pipe will be x-rayed on all bridge crossings. Unacceptable welds shall be removed or repaired at the Contractor's expense. PSE&G will make the necessary arrangements with the Contractor to x-ray the joints. Provide adequate space to perform the testing at the site of all welding operations.
- L. The Contractor's bid prices, provided by the Subcontractor, to install pipe shall also include costs to apply and/or repair pipe coating where necessary so that all pipe coatings pass the holiday detector test. Make provisions so the coating can be checked prior to lowering the new pipe section into the trench. Any damage to the pipe coating incurred during lowering shall be repaired at no additional cost to the State.
- M. All field welds and fittings shall be sealed with Raychem Unisleeve or with a double layer of cold applied, 102mm wide, corrosion protective tape in coordination with the RE at the direction of PSE&G. Raychem sleeves, primer and tape will be supplied by PSE&G.

- N. Payment will not be made for additional welds that are required due to unanticipated alignment changes not identified on the Contract Plans as approved by the PSE&G inspector in coordination with the RE or his inspector.
- 23. Gas, Excavation Unclassified.**
- A. Prior to beginning excavation complete the pavement sawcutting and pavement or sidewalk removal. Then perform excavation for pits required for line stop, flow stop, bagging and venting, hot taps, purging and the tie-in. Excavate for the pits and backfill to the bottom of the pavement box, sidewalk box or bottom of topsoil for work inside the right-of-way. Provide a temporary riding pavement, final pavement, sidewalk or a landscaped surface when gas main is complete and or the pit is no longer required. Provide sheeting and dewatering of the pits as required. PSE&G will perform line stop, flow stop, bagging and venting, hot taps, purging of the gas, and tie-in. Perform thrust restraint and bell joint encapsulation work as required.
 - B. The excavation pits may be left open and/or plated as required, or until PSE&G has completed its work. A temporary skid resistant structural steel plate shall be used as required. This structural plate shall conform to the requirements of Subsection 906.04 of the Standard Specifications.
 - C. Line stop, bag and vent, and tie-in pits shall be made accessible for a period of several weeks for PSE&G or as directed based on field conditions.
- 24. Thrust Restraints and Bell Joint Encapsulations.** Whenever excavation on a Cast Iron main system occurs, the use of Thrust Restraint devices and encapsulation devices is usually necessary. Thrust restraint and bell joint encapsulation pits shall be performed prior to excavating other pits. The number of devices is dependent upon field conditions and the location of the tie-in and live gas excavations. The final number and location of Thrust Restraint devices and encapsulation devices will be determined in the field by the Engineer as directed by PSE&G. The installation of a Thrust Restraint device and/or a Bell Joint Encapsulation device shall include all work necessary to complete the installation including but not limited to the excavating and stockpiling of the soil, hand locating all underground facilities, installing the thrust restraint device and/or the encapsulation device, backfill the trench with the stockpiled material (dispose of any excess material) and tamping in 6-inch lifts. Break and remove any existing pavement and restore the pavement with a temporary riding pavement or a landscaped surface as required. Separate payment for thrust restraints and bell joint encapsulation will not be made.
- 25. Line Stop and Tie-in Assistance.** Line Stop assistance shall consist supplying labor and equipment necessary to perform the work and handle the pipe, in coordination with the RE, as specified by the PSE&G line stop specialists in performing the line stop and also by PSE&G for the tie-in.
- A. Manpower required for 50mm (2") thru 406mm (16") pipe one (1) Forman two (2) Labors one (1) Machine Operator.
 - B. Equipment rubber tire backhoe
 - C. Manpower required for 508mm (20") thru 1066mm (42") pipe one (1) Forman three (3) Labors one (1) Machine Operator\Crane Operator.
 - D. Equipment required track hoe Komatzo 230 or greater\4 ton Crane or greater.
- 26. Hot Tap Preparation.** Hot Tap Preparation shall consist supplying labor and equipment to prepare the existing main for a hot tap that will be performed by PSE&G. This includes but is not limited to welding the spherical tee, three way tee, line stop fitting or other fitting on the existing steel main, installing the split sleeve collar, line stop fitting, or other fitting on the existing cast iron main. Notify the Engineer two weeks prior to welding the fitting so that PSE&G can supply an inspector and a qualified welder to oversee the welds. If PSE&G staff are not on site the work will not be approved.
- 27. Concrete Support Pad.** Construct a Class B concrete pad under the pipe being worked on for the line stop in advance to the Line Stop crew's arrival. The concrete pad shall be constructed to the specifications of the specialized line stop crew. Construct a concrete pad under valves as required to support the valve.
- 28. Fabrication of Tie-in Pieces.** Fabricate all tie-in pieces. This work includes measuring the existing pipe at the tie-in location and modifying a standard tie-in piece to fit connection requirements.

- 29. Gas, Protective Steel Plate.** In areas where the existing gas main will remain in place or where adequate cover cannot be maintained over the proposed main as shown on the Construction Drawings or as determined by the RE and PSE&G Inspector, excavate to the top of the main and center such excavation based on the width of the proposed steel plate. Place 75mm (3") of gas, pipe bedding to the width and length called for on the plans. Place the steel plates in 4' lengths and backfill with approved excavated materials from the excavation up to the bottom of the proposed pavement, sidewalk or in a landscape area the bottom of topsoil. Restore the pavement, construct the sidewalk or place topsoil and fertilize and seed the area excavated.

653.04 MEASUREMENT AND PAYMENT.

THE FOLLOWING IS ADDED:

Pay Item

GAS MAIN, TIE-IN ASSISTANCE

Pay Unit

MAN-HOURS

Separate payment will be made for final pavement, sidewalk or landscape restoration under the items for that work contained in the Proposal.

Separate payment will not be made for construction layout, traffic control, sawcutting, removal of excess gas, temporary pavement and its removal and all such costs for this work shall be included in the various gas bid items contained in the Proposal.

Separate payment will not be made for supplying the necessary small fittings, valves, hoses, pipe, etc. to connect the test equipment for Pressure (Air) Test and to perform the test itself and all costs shall be included in the various gas items contained in the Proposal.

Separate payment will not be made for temporary sheeting and dewatering excavation trenches or tie-in pits and all costs shall be included in the various gas items contained in the Proposal.

Separate payment will not be made for temporary fencing or temporary steel plates to keep trenches open overnight and all costs shall be included in various gas items contained in the Proposal.

Separate payment will not be made for restoration of areas outside the right-of-way line that are impacted by their operations.

Separate payment will not be made for the fabrication tie-in pieces of the various sizes and all costs shall be included in the various gas items contained in the Proposal.

Separate payment will not be made for thrust restraint and bell joint encapsulation of the various sizes and all costs shall be included in the various gas items contained in the Proposal.

653.04 MEASUREMENT AND PAYMENT

THE LAST PARAGRAPH IS DELETED.

DIVISION 700 – ELECTRICAL

SECTION 701 – GENERAL ITEMS

701.03.01 Existing Systems

THE FIFTH PARAGRAPH IS CHANGED TO:

If removal of existing above ground electrical material is required, deliver salvaged materials to the nearest Department electrical maintenance yard and unload the salvaged materials as directed. Dispose of salvaged materials rejected by the Department from the Project Limits as specified in 201.03.09.

Deliver and unload salvaged ITS materials to:

Bureau of Traffic Operations, North Region (TOCN)
670 River Drive
Elmwood Park, NJ 07407-1347
Telephone: 201-797-3575

THE FOLLOWING IS ADDED:

If new cable or wire is designated to be installed into existing conduit systems, clean and swab the conduit system prior to installing the cable or wire. After cleaning, test each conduit by pulling through a metal ball with a diameter at least 85 percent of the nominal inside diameter of the conduit to ensure the conduit is free of any obstruction or foreign material. If the ball fails to pass through the conduit, repair or replace the defective conduit as directed by the RE. Restore disturbed areas to original condition.

701.03.05 Rigid Nonmetallic Conduit

B. Installation.

THE LAST PARAGRAPH IS CHANGED TO:

Install true tape marked in 1-foot increments for the length of the rigid non-metallic conduit. Install a tracer wire continuously for the entire run of conduit, including through the junction boxes, mounting it on the wall. Splice the tracer wire only in the junction box. Seal the ends of rigid nonmetallic conduit carrying the tracer wire. If wire or cable is not scheduled to be installed within 6 months of conduit installation, cap and seal the other conduits leaving the true tape inside. Install warning tape in the trench above the conduit.

701.03.07 Flexible Nonmetallic Conduit

B. Installation.

THE SECOND PARAGRAPH IS CHANGED TO:

Terminate flexible nonmetallic conduit according to manufacturer's recommendations.

THE LAST PARAGRAPH IS CHANGED TO:

Install true tape marked in 1-foot increments for the length of the flexible non-metallic conduit. Install a tracer wire continuously for the entire run of conduit, including through the junction boxes, mounting it on the wall. Splice the tracer wire only in the junction box. Seal the ends of flexible nonmetallic conduit carrying the tracer wire. If wire or cable is not scheduled to be installed within 6 months of conduit installation, cap and seal the other conduits leaving the true tape inside. Install warning tape in the trench above the conduit.

701.03.15 Cable and Wire

A. Installing.

THE FOLLOWING IS ADDED

Test the existing tracer wire in the conduit for continuity. If there is no existing tracer wire in any of the conduits in the same trench, then install a continuous tracer wire between the adjacent junction boxes without any splice when installing the cable and wire as directed by the RE.

C. Connection and Coordination with Utility Services.

THE FOLLOWING IS ADDED:

Obtain and provide for utility services required for testing and operation of ITS systems until interim acceptance of each system or device. Upon successful completion of level C testing and acceptance of any device, provide the RE with a letter requesting transfer of utility services providing the latest copy of the utility bill from each utility company. Such transfers are to be effective beginning the next monthly billing cycle after completion of successful ITS system testing as specified in Section 704 and interim acceptance of the device or as directed by the RE.

701.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

If restoration of disturbed areas includes pavement, curb, sidewalk, driveway or island, the Department will make payment for such work as specified in 104.03.03.

When the RE directs the installation of a new conduit or a repair to the defective conduit, the Department will make payment for this work as specified in 104.03.03.

When the RE directs the Contractor to install a tracer wire in existing conduit, the Department will make payment for this work as specified in 104.03.03.

SECTION 702 – TRAFFIC SIGNALS

702.03 CONSTRUCTION

THE FOLLOWING IS ADDED:

After placing a new, temporary or interim traffic signal system into operation, inspect the traffic signal system every 2 months. Fill out a Contractor Maintenance Traffic Signal Inspection Report (Form EL-16C) when the traffic signal system becomes operational, when the traffic signal system is modified, and at every 2-month inspection.

Maintain as-built drawings of each signal modification. Place copies of the as-built drawings for each traffic signal system modification, Forms EL-16C, and Forms EL-11C in a plastic pocket mounted inside the cabinet door of each controller cabinet. Also provide a copy of all forms and as-built drawings to the RE.

If a new, temporary or interim traffic signal system fails or becomes damaged, repair and restore the traffic signal system to normal operation. Begin repair of the traffic signal system within 2 hours of receiving notice of damage or malfunction from the Department, State police, or local authorities. Ensure that workers assigned to such repair work continuously until the traffic signal resumes normal signal operation.

For each response to a system failure or damage, fill out a Contractor Maintenance Emergency Call Record (Form EL-11C) and place it in a plastic pocket mounted inside the cabinet door of each controller cabinet.

If the Contractor fails to respond to a failure or damage notification and begin work within 2 hours of notification, or does not continue to work until the traffic signal system resumes normal operation, the Department, in the interest of safety, will respond with its own forces to restore normal operation. If the Department mobilizes its forces to effect repairs, the Contractor agrees to pay the Department a sum of \$3000 for costs of mobilizing its forces and equipment. In addition, the Contractor must pay the Department the actual cost of material used for the repair and pay the actual costs of police traffic protection.

702.03.11 Temporary and Interim Traffic Signal Systems

THE FIRST THROUGH FIFTH PARAGRAPHS ARE DELETED:

SECTION 703 – HIGHWAY LIGHTING

703.03 CONSTRUCTION

THE FOLLOWING IS ADDED:

Maintain up-to-date as-built drawings of the highway lighting system and temporary highway lighting system. Place copies of the as-built drawings in a plastic pocket mounted inside the meter cabinet, and provide a copy to the RE

If the highway lighting system or temporary highway lighting system fails or becomes damaged, repair and restore the system to normal operation. Begin repair of the signal system within 2 hours of receiving notice of damage or malfunction from the Department, State police, or local authorities. Ensure workers assigned to such repair work continuously until the lighting system is restored to normal operation.

For each response to a system failure or damage, fill out a Contractor Maintenance Emergency Call Record (Form EL-11C) and place it in a plastic pocket mounted inside the cabinet door of each controller cabinet.

If the Contractor fails to respond to a failure or damage notification and begin work within 2 hours of notification, or does not continue to work until the lighting system is restored to normal operation, the Department, in the interest of safety, will respond with its own forces to restore normal operation. If the Department mobilizes its forces to effect repairs, the Contractor agrees to pay the Department a sum of \$3000 for costs of mobilizing its forces and equipment. In addition, the Contractor must pay the Department the actual cost of material used for the repair and pay the actual costs of police traffic protection.

SECTION 704 – INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

704.02.01 Materials

THE FOLLOWING IS ADDED AT THE END OF THE TABLE:

Provide materials as specified:

Ethernet Switch	918.15
Fiber Optic Cable	918.16
Fiber Optic Splice Enclosure.....	918.17
Fiber Optic Patch Panel.....	918.18
Terminal Server.....	918.19
Power Distribution Unit	918.20
Port Sharer.....	918.21

FIFTH PARAGRAPH IS CHANGED TO:

Submit the system working drawings in a complete package for approval. The complete package of the system working drawings includes but is not limited to the ITS System Block Diagrams, Fiber Assignment Diagrams, and Rack/Cabinet Equipment Layout Diagrams; Certified Structural Details & Calculations. All components must be approved in the system working drawings before use on the Contract. List the ITS and EE approval numbers of each component in the equipment list on the system block diagram when a pre-approved product from the QPL is proposed to be used. For all components that are proposed without a pre-approved number, submit eight copies of catalog cut sheets along with the working drawings. Submit all structural components that are not listed on QPL separately for structural review and approval with the required certification and include a copy of all approvals when submitting the system working drawings to meet the complete package requirement.

THE SIXTH PARAGRAPH IS DELETED.

THE FIRST SENTENCE OF THE LAST PARAGRAPH IS CHANGED TO:

ROUTE U.S. 46 FROM MAIN STREET TO VICINITY OF FREDERICK STREET
FEDERAL PROJECT NO. NHP-8112(147)

For materials furnished and installed, provide a minimum 2-year warranty from the latter date of Substantial Completion and Successful ITS System Testing against any imperfections in workmanship, components and materials.

704.03.01 General System (GS)

B. Installation.

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

When installing a new system or modifying an existing system, ensure the respective manufacturer certified field representative of ITS components and related equipment is on site to commission the equipment into operation. Restore the operation of the overall system to its original condition, the conditions specified in the Contract, or as directed by the RE.

The Department will allow existing system shutdowns for work at the Control Centers, Controllers, Communication Hub, and Field Terminals beginning at 10 P.M. daily and continuing through to 4 A.M. on weekdays, and 5 A.M. on Saturday and 6 A.M. on Sunday mornings.

Utilize manufacturer recommended connectors, sweeps, bells, and terminators to perform cutting and splicing of existing multiduct conduit to new junction boxes.

1. Junction Box ITS.

THE ENTIRE TEXT IS CHANGED TO:

- a. **Installation.** Excavate as specified in 202.03.02. Install junction boxes only in areas where the slope is not less than 22H: 1V. Place junction boxes on 10 inches of coarse aggregate No. 57. With each junction box, provide 6 coiling brackets, inserts and fasteners, and a ground rod and clamp. Backfill and compact using the directed method as specified in 203.03.02.D. Restore disturbed areas to the original conditions, the conditions specified in the Contract, or as directed by the RE.

4. Controller ITS.

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Identify each component by manufacturer and model number.

5. Communication Hub.

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Identify each component by manufacturer and model number.

6. Control Center System.

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Identify each component by manufacturer and model number.

THE FOLLOWING IS ADDED:

Ensure the ITS System Network working drawing is submitted in a format acceptable to the Department. Sample Working Drawings are available at:

<http://www.state.nj.us/transportation/eng/elec/ITS/pdf/sampledrawings.pdf>

Ensure the working drawing contains the following information:

- 1 Affected network nodes are shown in nodal format with Latitude/Longitude
- 2 Each node shows equipment type and the proposed communication links between them.
- 3 Distances between Ethernet switches and calculated dB loss between them.
- 4 A Communication Network Assignment Table specifying Equipment Location (Node, Site ID, Lat/Long, Plan sheet reference, Route, Mile Post), Equipment Information (Item No., Description, Function, VLAN No., Subnet Mask, and IP Address)

Supply and install equipment, software, software revisions, firmware, miscellaneous wiring and cabling, at the specified Control Centers to ensure the remote operation and control of all ITS field devices from the Traffic Operation Centers. Comply with building installation requirements, restrictions, access, and security

requirements in the performance of work. The material and work required for the integration of the various ITS installations into the various existing operating systems or subsystems used by the Department includes, but is not limited to, the following:

1. At least 6 days in advance of requiring access to the designated Control Center, submit a written notice to the RE requesting access.
 2. Ensure complete functionality with field devices. Coordinate with the Department for access, rack space, and LAN connections to Client Workstations, respectively.
 3. Ensure CCTV Controller Software is updated by reintegrating cameras and ensure video and control is available to all necessary Traffic Operations personnel.
 4. Ensure DMS signs are reintegrated and remotely operable by the DMS Controller Software.
 5. Secure and provide all necessary Network configurations and assignments as directed by the Department.
 6. Provide and install any other electronic equipment that may become necessary as a result of network protocol translation, electrical signal transmission degradation or communications media translation (fiber optic, coax, DSL interface, network interface, etc.)
 7. Provide for software support to integrate new ITS devices into new and existing platforms for all workstations and servers utilized by DOT operators. This includes any required work from each of the software suppliers for workstations located remotely from the Traffic Operation Centers. The Department will provide information regarding the respective system, on particulars for authorized remote users.
 8. Provide for the installation of network assignments for all field devices as well as enabling the network and device management protocols as directed by the Department.
 9. Ensure that network support requests through the RE to the Department are made at least 60 days prior to the installation of any device to be included in the network.
- a. **Control Center System, Location STMC.** Ensure cameras are reintegrated with the existing STMC video control system by coordinating with the NJTA, NJDOT Traffic Operations, and OIT/IT. Ensure DMS is reintegrated into existing Vanguard server for control and monitoring.
 - b. **Control Center System, Location Elmwood Park Node.** Ensure all cameras are integrated with the existing Elmwood Park Node video control system by coordinating with the NJDOT Traffic Operations and OIT/IT. Ensure DMS is reintegrated into existing MIST server for control and monitoring.
 - c. **Control Center System, Location S2D3FT1.** Modify the existing location by installing Ethernet switch, and fiber optic jumpers to make the required connections and provide communication paths for the ITS devices. Coordinate with NJDOT-MMN.

Securely mount the equipment and make the required connections. Ensure that a fully functional system is provided. Provide and install any other electronic equipment that may become necessary as a result of network protocol translation, electrical signal transmission degradation or communications media translation (fiber optic, coax, network interface, etc.).
 - d. **Control Center System, Location S2D3FT2.** Verify and document existing equipment layout and connections. Disconnect electric service connection and fiber optic cables. Relocate the cabinet to proposed location. Provide electric service connection and terminate fiber optic cables as shown on the plans. Coordinate with NJDOT-MMN.

Securely mount the equipment and make the required connections. Ensure that a fully functional system is provided. Provide and install any other electronic equipment that may become necessary as a result of network protocol translation, electrical signal transmission degradation or communications media translation (fiber optic, coax, network interface, etc.).
 - e. **Control Center System, Temporary Communications.** Provide temporary Verizon Wireless communications for site # 2, 3, and 4 to Elmwood Park Node. Provide all incidental equipment and material required for successful remote operation and communications.

At least 30 days before beginning the work, submit working drawings for approval that include a block wiring diagram illustrating the interconnection of the system components mounted to the designated pole standard or structure, electrical power injectors, receptacles, Ethernet cables, POE cables, radio/antenna cables, coaxial cables, etc. as required to complete the work. Identify each component by manufacturer and model number and ensure that all equipment rated for outdoor installation.

At sites #2, 3, and 4, provide a wireless modem model Sierra Wireless AirLink GX440 LTE or approved equal, power supplies, with LTE Cell/PCS-GPS/WIFI wireless antenna or approved equal, coaxial cable connecting the antenna to the modem.

Install the equipment in accordance with the instructions and requirements of Verizon Wireless. Coordinate with Verizon Wireless in order to establish the cellular communications path between the sites #2, 3, & 4 and the Elmwood Park Node. Coordinate with the NJDOT OIT/IT to establish IP network configurations. Configure the equipment according to the requirements of Verizon Wireless and NJDOT OIT/IT. Securely mount all equipment. Ensure that a fully functional and operational system is provided.

At Elmwood Park Node, perform equipment terminations and ensure video stream and PTZ data from field camera are decoded to analog video data/serial data and then converted back to digital streams/data via the encoders for communications to the Genetec servers at STMC. Ensure camera is integrated with the existing Elmwood Park Node video control system by coordinating with the NJDOT MMN and OIT/IT. Coordinate with MMN and the internet service provider (ISP) to increase bandwidth to accommodate the camera video and data streams (1 camera) from the field location to the Elmwood Park Node through Verizon Wireless. Integrate camera into the existing Genetec servers located at STMC Woodbridge. Integrate DMS into the existing Vanguard Server at Elmwood Park Node and Mist Server at STMC, Woodbridge. Upon completion of all the work required for permanent fiber optic communications, remove wireless modem, wireless antenna, video decoder, and equipment connections. Salvage and deliver all electronic devices and equipment to the MMN Elmwood Park Node listed in 701.03.01.

THE FOLLOWING IS ADDED:

- 7. ITS Conduits.** Install Flexible Nonmetallic Conduits as specified in 701.03.07 with the following exceptions:
- a. Do not install mechanical joints on conduit runs between junction boxes.
 - b. Obtain RE approval for fusion joints that may be permitted under special circumstances on conduit runs between junction boxes.
 - c. Provide an as-built list indicating the location of all joints to the RE.
 - d. Install a continuous tracer wire without any splice in the conduits and from junction box to a termination point in the field cabinet.
 - e. Ensure that all conduits and ducts entering a junction box, foundation, cabinet, hub, or building are terminated based on manufacturer's recommendation and are rodent proofed and sealed around cables, or plugged if conduit is built for future use.
 - f. Ensure that the ITS Conduits facilitate the various means of cable and wire installations including but not limited to pulling, jetting, and blowing of Fiber optic cable and electrical wires.
 - g. When lateral ITS conduits are installed under a roadway, install a Schedule 80 rated protective sleeve around the group of conduits.
 - h. Install conduits simultaneously with any curb work and prior to any resurfacing base coats being applied.
 - i. Install true tape marked in 1-foot increments for the length of the ITS Conduit.
 - j. Install warning tape in the trench above the conduit.

- k. Restore disturbed areas to the original conditions, the conditions specified in the Contract, or as directed by the RE.

8. Controller Modifications, DMS.

At least 30 days before beginning of the work, submit working drawings for approval that include a block diagram illustrating the interconnections of the system components. Identify each component by manufacturer and model number.

Modify the existing location by installing Ethernet switch, terminal server, and jumper cables as shown on the plans to make the required connections and provide communication paths for the ITS devices.

Securely mount the equipment and make the required connections. Ensure that a fully functional system is provided. Provide and install any other electronic equipment that may become necessary as a result of network protocol translation, electrical signal transmission degradation or communications media translation (fiber optic, coax, network interface, etc.).

C. Testing.

THE FIRST PARAGRAPH IS CHANGED TO:

Perform wiring and cable testing, as specified in 701.03.15.D, before performing any other testing. Complete the device and system testing as specified on the Department provided forms and instructions. Provide trained personnel to test the system and subsystems. This includes providing manufacturer certified representatives to ensure complete functionality of said systems and subsystems. The period of testing under this section and in the various testing forms available from the Department's website are in terms of business days. The test will be extended if there is any state holiday during the designated testing period. When a device fails during testing period, the testing period will be rescheduled to progress again after the problem is addressed for the testing time period specified.

1. Device Testing.

b. Level B.

THE FIRST SENTENCE IS CHANGED TO:

Demonstrate that each device is fully operational from the designated control center to the work site with the original equipment manufacturer software.

c. Level C.

THE FOLLOWING IS ADDED

Upon successful completion of level C testing of any device, the Department will accept the device on an interim basis and will pick up the cost of all associated utility services for that device as specified in section 701.03.15.

2. Project Testing.

THE FIRST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

After the Contractor's verification test, the Department will conduct a 14-day observational and functional test period of all systems on the Project.

D. Maintenance.

1. Regular Maintenance.

THE FIRST SENTENCE IS CHANGED TO:

Perform regular maintenance and repairs as specified in 108.09 after interim acceptance of a device and/or project testing until acceptance of the project and as follows:

- H. Networking Requirements.** Provide all ITS network devices as directed by both the Department and the State Office of Information Technology (OIT) to ensure the efficient operation, security and diagnostic capability of the ITS network being installed or modified. Provide trained personnel with the proper credentials (specifically with a Cisco Certified Network Professional certification) to properly interface and configure the ITS network to the State's network and to also interface with OIT and the Department's IT staff. The Cisco Certified Network

Professional certification (CCNP) is to have at least three (3) years of related experience in size, complexity, and scope of this contract. Provide credentials of the CCNP to the Department for approval. Obtain a Virtual Private Network (VPN) into the Department's network to set up and monitor the network under construction by CCNP. This includes, but is not limited to the following:

- providing necessary Layer 3 configurations
- obtaining and installing network assignments
- security provisions
- multiple Virtual Local Area Network's (VLAN's) for IP switches, routers and ITS devices as directed
- enabling Rapid Spanning Tree protocols
- Internet Group Management Protocol (IGMP)
- setting up VPNs, White lists, and Black lists
- NATting, multicasting,
- configuring routers for broadband services
- other settings as deemed necessary by the Department
- other hardware configurations that are required at the behest of the Department and OIT

Ensure the correct Fiber Optic Transceiver is utilized for each switch and the correct transceiver power is used based on distance and dB loss

Ensure all Internetwork Operating System (IOS) and protocols for the network devices are compatible across the network.

Ensure that the default IP addresses and passwords set from the manufacturer are changed for all electronic devices where applicable and forward that information to the RE for each device. This includes but is not limited to ITS devices, IP switches, routers, modems and wireless equipment.

Provide an Ethernet Networking Block Diagram on an Excel spreadsheet that includes the networking devices plus the descriptions of device type, Network Assignment, and corresponding switch port and other requirements as it pertains to Ethernet networking.

704.03.02 Camera Surveillance System (CSS)

B. Installation.

The Department will allow existing camera system shutdowns beginning at 10 P.M. daily and continuing through to 4 A.M. on weekdays, 5 A.M. on Saturdays, and 6 A.M. on Sunday mornings.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H.

704.03.03 Fiber Optic Cable

B. Installation.

The Department will allow existing system shutdowns beginning at 10 P.M. daily and continuing through to 4 A.M. on weekdays, and 5 A.M. on Saturday and 6 A.M. on Sunday mornings.

THE FOLLOWING IS ADDED TO THE SIXTH PARAGRAPH:

When installing fiber optic cable in existing conduits, install a tracer wire as specified in 701.03.15.A. Perform testing of existing tracer wires for continuity and perform splicing required to ensure access to the tracer wire from cabinet to cabinet.

THE FIRST SENTENCE OF THE LAST PARAGRAPH IS REVISED TO:

Splice a manufacturer recommended fiber optic breakout kit with connectors to each end of the strands for a cable that terminates at a device cabinet.

C. Testing

THE LAST PARAGRAPH IS CHANGED TO:

After completion of Level 1 and 2 tests, perform network communication system testing and demonstrate that the communication system is fully operational to meet the material specifications and project requirements. Complete the testing as specified on the Department provided forms and instructions.

F. Equipment Training.

704.03.07 Dynamic Message System (DMS)

B. Installation.

The Department will allow existing DMS system shutdowns beginning at 10 P.M. daily and continuing through to 4 A.M. on weekdays, 5 A.M. on Saturdays, and 6 A.M. On Sunday mornings.

704.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

<i>Item</i>	<i>Pay Unit</i>
CONTROLLER MODIFICATIONS, DMS	UNIT
CONTROL CENTER SYSTEM, LOCATION S2D3FT1	LUMP SUM
CONTROL CENTER SYSTEM, LOCATION S2D3FT2	LUMP SUM
CONTROL CENTER SYSTEM, TEMPORARY COMMUNICATIONS	LUMP SUM
CONTROL CENTER SYSTEM, LOCATION ELMWOOD PARK NODE	LUMP SUM
CONTROL CENTER SYSTEM, LOCATION STMC	LUMP SUM

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The Department will include payment of disconnecting, cutting, pulling, reinstalling (existing S-cable), installing (proposed D-cable), splicing, terminating, testing, and documenting, and existing tracer wire, under bid pay Item FIBER OPTIC CABLE TYPE A.

The Department will include payment to provide temporary communications including monthly service fee, power injectors, wireless modems, video decoders, port sharer, cables, power cords, etc., tree trimming, and miscellaneous work necessary for complete operation of the Verizon Wireless temporary communications under the pay Item CONTROL CENTER SYSTEM, TEMPORARY COMMUNICATIONS. All locations combined together are considered as one Lump Sum pay Item.

THE TABLE UNDER SECOND PARAGRAPH IS REVISED TO:

Work Completed	Payment
Installing the Item	60% of Total Contract Price
Successful completion of Level A testing	10% of Total Contract Price
Successful completion of Level B testing	10% of Total Contract Price
Successful completion of Level C testing	10% of Total Contract Price
Successful completion of Project testing	10% of Total Contract Price

DIVISION 900 – MATERIALS

SECTION 901 – AGGREGATES

901.11 SOIL AGGREGATE

1. Composition of Soil Aggregate.

THE FOLLOWING IS ADDED TO THE LAST PARAGRAPH:

For Designation I-14, the Contractor may use up to 30 percent steel slag by weight of the coarse aggregate portion of the soil aggregate. Obtain steel slag from a source listed on the QPL as specified in 901.01. Use steel slag that was produced as a co-product of the steel making process. Ensure that the steel slag consists of tough, durable pieces that are uniform in density and quality. Stockpile steel slag as specified in 901.02. Ensure steel slag for blending with I-14 Soil Aggregate does not exceed 0.50 percent expansion from hydration when tested according to ASTM D 4792.

SECTION 902 – ASPHALT

902.02.02 Composition of Mixtures

TABLE 902.02.02-2 IS CHANGED TO:

Table 902.02.02-2 Additional Fine Aggregate Requirements for HMA		
Tests	Test Method	Minimum Percent
Uncompacted Void Content of Fine Aggregate	AASHTO T 304, Method A	45
Sand Equivalent	AASHTO T 176	45

902.02.04 Sampling and Testing

B. Sampling.

THIS ENTIRE PART IS CHANGED TO:

The ME will take a random sample from each 700 tons of production for volumetric acceptance testing and to verify composition.. The ME will perform sampling according to AASHTO T 168, NJDOT B-2, or ASTM D 3665.

902.03.02 Mix Design

THE FOURTH PARAGRAPH IS CHANGED TO:

The ME will test 2 specimens to verify that the final JMF produces a mixture that has a minimum void content as specified in Table 902.03.03-1. The ME will determine percent air voids according to AASHTO T 209, and either NJDOT B-6 or AASHTO T 331.

902.03.03 Sampling and Testing

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material.

THE SECOND PARAGRAPH IS CHANGED TO:

During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. Conduct air voids and draindown tests as directed by the ME.

THE FOURTH PARAGRAPH IS CHANGED TO:

The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308 or NJDOT B-5. Perform testing for air voids according to AASHTO T 209 and either NJDOT B-6 or AASHTO T 331. Perform testing for draindown according to NJDOT B-7 or NJDOT B-8.

902.04.03 Sampling and Testing

THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material. Maintain the temperature of the mix between 300 °F and 330 °F. Perform and meet requirements for quality control testing as specified in 902.02.04.C.

THE SECOND PARAGRAPH IS CHANGED TO:

During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. Conduct draindown tests as directed by the ME.

902.05.01 Composition of Mixture

THE FIFTH PARAGRAPH IS CHANGED TO:

For fine aggregate, use stone sand conforming to 901.05.02. Ensure that the combined fine aggregate in the mixture conforms to the requirements in Table 902.02.02-2.

902.05.02 Mix Design

THE FIRST PARAGRAPH IS CHANGED TO:

Design the SMA to meet the requirements in Table 902.05.02-1 and Table 902.05.02-2. Prepare the JMF according to AASHTO R 46. Determine the JMF at 4 percent air voids and 75 gyrations of the Superpave gyratory compactor.

TABLE 902.05.02-2 IS CHANGED TO:

Table 902.05.02-2 SMA Mixtures Volumetrics For Design and Plant Production		
Property	Production Control Tolerances	Requirement
Air Voids	±1%	4.0%
Voids in Mineral Aggregate (VMA)	—	17.0% minimum
VCA _{mix}	—	Less than VCA _{dry}
Draindown @ production temperature	—	0.30% maximum
Asphalt Binder Content (NJDOT B-5)	±0.15%	6% minimum
Asphalt Binder Content (AASHTO T 308)	±0.40%	6% minimum
Tensile Strength Ratio (AASHTO T 283)	—	80% minimum

902.05.03 Sampling and Testing

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material.

THE SECOND PARAGRAPH IS CHANGED TO:

During production at the plant, the ME will take a sample from each 700 tons of production to verify composition and air voids. Conduct draindown, VCA_{mix}, VCA_{dry}, and VMA testing as directed by the ME. Perform tests according to AASHTO R 46.

THE FOURTH PARAGRAPH IS CHANGED TO:

The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308, or NJDOT B-5. The ME will determine bulk specific gravity of the compacted sample

according to AASHTO T 166 or AASHTO T 331. The ME will use the most current QC maximum specific gravity test result, obtained according to AASHTO T 209, in calculating the volumetric properties of the SMA. Perform testing for draindown according to AASHTO T 305.

902.06.03 Sampling and Testing

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Ensure that the mix meets the requirements as specified in 902.02.04.A, except that the temperature of the mix at discharge is required to be between 230 °F and 275 °F, otherwise the RE or ME will reject the material.

THE SECOND PARAGRAPH IS CHANGED TO:

During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. Conduct draindown tests as directed by the ME.

THE FOLLOWING SUBSECTIONS ARE ADDED

902.07 ASPHALT-RUBBER OPEN-GRADED FRICTION COURSE (AR-OGFC)

902.07.01 Composition of Mixture

Mix AR-OGFC in a plant listed on the QPL and conforming to the requirements for HMA plants specified in 1009.01. Ensure the HMA plant is equipped with asphalt-rubber binder blending equipment as specified in 1009.03.

Composition of mixture for AR-OGFC is coarse aggregate, fine aggregate and asphalt-rubber binder. Ensure that the mixture conforms to the following requirements:

1. Use aggregates that conform to 901.05. Use fine aggregate that is manufactured stone sand and conforms to Table 902.02.02-2.
2. Do not use RAP, CRCG, GBSM, or RPCSA.
3. Use asphalt-rubber binder that conforms to 902.07.02.

902.07.02 Asphalt-Rubber Binder

A. Materials. Use the following materials:

1. **Ground Crumb Rubber.** Ensure that the ground crumb rubber has a specific gravity of 1.15 ± 0.05 , is free of wire or other contaminating materials, and contains not more than 0.5 percent fabric. Use crumb rubber that is ambient ground and conforms to the gradation requirements specified in Table 902.07.02-1. Ensure that the moisture content is less than 0.75 percent. The Contractor may add up to four percent calcium carbonate by weight of the granulated rubber, to prevent the particles from sticking together.

Table 902.07.02-1 Ground Crumb Rubber Gradation	
Sieve Size	Percent Passing ^{1,2}
No. 8	100
No. 16	65 – 100
No. 30	20 – 100
No. 50	0 – 45
No. 200	0 – 5

1. Perform gradation according to AASHTO T 27 using a minimum 50 gram sample.
2. Ensure that the gradation is performed as specified in NJDOT B-11.

Submit to the ME a certification of compliance, as specified in 106.07, for the ground crumb rubber. In addition, ensure that the certificates confirm that the rubber is a crumb rubber, derived from processing whole scrap tires or shredded tire materials; and the tires from which the crumb rubber is produced are taken from automobiles, trucks, or other equipment owned and operated in the United States. Include with the

certifications verifications that the processing did not produce, as a waste product, casings, or other round tire material that can hold water when stored or disposed of above ground.

2. Asphalt Binder.

- a. Use asphalt binder that conforms to AASHTO M 320, Table 1; PG 64-22, PG 58-28 or an approved blend of both grades. The asphalt binder producer is required to provide the asphalt binder quality control plan annually to the ME for approval. Ensure that the quality control plan conforms to AASHTO R 26. Submit to the ME a certification of compliance, as specified in 106.07, for the asphalt binder. The ME will perform quality assurance sampling and testing of each asphalt binder lot as defined in the approved quality control plan.
- b. Use one or more of the following types of warm mix asphalt (WMA) additives or processes:
 1. Organic additives such as a paraffin wax or a low molecular weight esterified wax.
 2. Chemical additive that acts as a surfactant or dispersing agent.

Do not use controlled asphalt foaming systems or any other steam injection processes or steam introducing additives. WMA is a method of producing asphalt pavement at a mixing and compaction temperatures at least 30 °F lower than Hot Mix Asphalt (HMA) by using one or more of the types of WMA additives listed above. Submit information on the WMA additive or process with the Paving Plan required in 402.03.02.A. Include in the submission, the name and description of the additive or process, the manufacturer's recommendations for usage of the additive or process, recommendations for mixing and compaction temperatures, and details on at least one project on which the additive was successfully used in the United States on a crumb rubber modified asphalt mixture. In the details of a project, include tonnage, type of mix, dosage, mixing and compaction temperatures, available test results, and contact information for project. If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the additive will not negatively impact the grade of asphalt binder. The ME will evaluate the impacts to performance grade of the asphalt binder based upon certification from manufacturer in conjunction with laboratory data indicating the effects of the additive on the asphalt binder properties. Follow the manufacturer's recommendations for the dosage of WMA additive needed and approved blending method(s).

Ensure that a technical representative of the WMA additive manufacturer is on-site or available for consultation during the production and placement of the AR-OGFC with the warm mix additive.

- B. Mixing.** Using the asphalt-rubber binder blending equipment in 1009.03, produce the asphalt-rubber binder to contain at least 17 percent ground rubber by the weight of total asphalt binder (asphalt + crumb rubber). Ensure that the temperature of the asphalt cement is between 350 and 400 °F at the time of addition of the ground rubber. Ensure that there are no agglomerations of rubber particles in excess of two inches in the least dimension in the mixing chamber.

Document that the proportions are accurate and that the rubber has been uniformly incorporated into the mixture. Report as directed by the ME. Ensure that the crumb rubber and asphalt-cement are thoroughly mixed before beginning the one-hour reaction period. Rubber floating on the surface or agglomerations of rubber particles is evidence of insufficient mixing. Maintain the temperature of the asphalt-rubber binder immediately after mixing between 325 and 375 °F. Maintain the temperature of the asphalt-rubber binder for at least one hour before using.

- C. Properties.** Prepare asphalt-rubber binder using the "wet process." Physical properties are required to comply with the requirements of ASTM D 6114, Type II, except for the properties specified in Table 902.07.02-2.

Table 902.07.02-2 Asphalt-Rubber Binder Properties		
Property	Test Procedure	Requirement
Resilience: 77 °F; %, minimum	ASTM D 5329	25
Rotational Viscosity ¹ 350 °F; cP	NJDOT B-12	2000 – 4000
1. The viscotester used must be correlated to a Rion (formerly Haake) Model VT-04 viscotester using the No. 1 Rotor. The Rion viscotester rotor, while in the off position, is required to be completely immersed in the binder at a temperature from 350 ± 3 °F for a minimum heat equilibrium period of 60 seconds, and the average viscosity determined from three separate constant readings (± 500 cP) taken within a 30 second time frame with the viscotester level during testing and turned off between readings. Continuous rotation of the rotor may cause thinning of the material immediately in contact with the rotor, resulting in erroneous results.		

D. Handling and Testing. Once the asphalt-rubber binder has been mixed, thoroughly agitate during periods of use to prevent settling of the rubber particles. During production, maintain asphalt-rubber binder between 325 and 375 °F. Ensure that asphalt-rubber binder is not held at 325 °F or higher for more than 16 hours. Allow asphalt-rubber binder held for more than 16 hours to cool. To reuse, gradually reheat to between 325 and 375 °F. Do not cool and reheat more than one time. Do not store asphalt-rubber binder above 250 °F for more than four days.

For each load or batch of asphalt-rubber binder, provide the RE with the following:

1. The source, grade, amount, and temperature of the asphalt cement before the addition of rubber.
2. The source and amount of rubber and the rubber content expressed as percent by the weight of the asphalt cement.
3. Times and dates of the rubber additions and resultant viscosity test.
4. A record of the temperature, with time and date reference for each load or batch. The record begins at the time of the addition of rubber and continue until the load or batch is completely used. Take readings and record every temperature change in excess of 20 °F, and as needed to document other events that are significant to batch use and quality.

902.07.03 Mix Design

Submit binder and mix designs including JMF for each mixture performed by an AASHTO accredited lab with at least five successfully completed asphalt-rubber open-graded friction course projects greater than 5,000 tons each. Include a statement naming the source of each component and a report with the results for the criteria specified in Table 902.07.03-1. Include a report detailing the rotational viscosity of the asphalt-rubber binder at 60, 90, 135, 240, and 1440 minutes. Submit lab qualifications and references to the ME for approval prior to beginning work.

Design the mix to meet the criteria in Table 902.07.03-1.

Table 902.07.03-1 JMF Master Ranges and Mixture Requirements AR-OGFC	
Mixture Designations (% Passing¹)	
Sieve Sizes	AR-OGFC
1/2"	100
3/8"	90 – 100
No. 4	20 – 40
No. 8	5 – 10
No. 200	0 – 3.0
Minimum asphalt-rubber binder, % ²	8.4
Minimum % Air Voids, design	15
1. Aggregate percent passing to be determined based on dry aggregate weight.	
2. Asphalt-rubber binder content to be determined based on total weight of mix.	

Determine and verify the JMF according to NJDOT B-8. Ensure that the JMF is within the master range specified in Table 902.07.03-1.

Prepare compacted test specimens for submittal to the ME at least 30 days before the initial production date. Prepare these specimens from material mixed according to the final JMF, using 50 gyrations of the Superpave gyratory compactor according to AASHTO T 312.

The ME will test 2 specimens to verify stone-on-stone contact according to NJDOT B-8 and that the final JMF produces a mixture that has a minimum void content as specified in Table 902.07.03-1. The ME will determine percent air voids according to AASHTO T 209 and AASHTO T 331.

The ME will test 2 test specimens for abrasion and impact resistance using a modified L.A. Abrasion Test according to NJDOT B-8. The maximum allowable loss as calculated by this method is 30 percent.

Do not modify, which includes changing the asphalt cement supplier, the JMF unless the ME approves the modification.

902.07.04 Sampling and Testing

A. General Acceptance Requirements.

For AR-OGFC with WMA additive, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins meets the WMA additive manufacturer's recommendations. Do not allow the mixture temperature to exceed 300 °F at discharge from the plant.

- B. Quality Control Testing.** The HMA producer is required to provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician is required to perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified for the mix being produced. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

For each acceptance test, perform maximum specific gravity testing according to AASHTO T 209 on a test portion of the sample taken by the ME. Sample and test coarse aggregate, fine aggregate and mineral filler according to the approved quality control plan for the plant.

- C. Acceptance Testing.** During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308 or NJDOT B-5. Perform testing for air voids according to T 209 and either B-6 or T 331. Perform testing for draindown according to NJDOT B-8.

Conduct air voids and draindown tests as directed by the ME.

If the composition testing results are outside of the production control tolerances specified in Table 902.07.04-1 for an acceptance sample, determine if a plant adjustment is needed and immediately run a quality control sample. If the quality control sample is also outside of the control tolerances in Table 902.07.04-1, immediately take corrective action to bring the mix into compliance. Take additional quality control samples after the corrective action to ensure that the mix is within the production control tolerances. If two consecutive acceptance samples are outside the tolerances specified in Table 902.07.04-1, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project Limits before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

Table 902.07.04-1 Production Control Tolerances for AR-OGFC Mixtures	
Sieve Sizes	Production Control Tolerances from JMF¹
1/2"	±6.0
3/8"	±5.5
No. 4	±5.5
No. 8	±4.5
No. 200	±2.0
Asphalt-rubber binder, % (AASHTO T 308)	±0.40
Asphalt-rubber binder, % (NJDOT B-5)	±0.15
Minimum % Air Voids	1.0% less than design requirement
1. Production tolerances may fall outside of the wide band gradation limits in Table 902.07.03-1.	

902.08 HIGH PERFORMANCE THIN OVERLAY (HPTO)

902.08.01 Composition of Mixture

Mix HPTO in a plant that is listed on the QPL and conforms to the requirements for HMA Plants as specified in 1009.01. The composition of the mixture for HPTO is coarse aggregate, fine aggregate, and asphalt binder, and may also include mineral filler. Do not use Reclaimed Asphalt Pavement (RAP), Ground Bituminous Shingle Material, Remediated Petroleum Contaminated Soil Aggregate, or Crushed Recycled Container Glass (CRCG). Use asphalt binder and aggregates that meet the following requirements:

1. For the asphalt binder, use PG 76-22 as specified in 902.01.01.
2. Use coarse aggregate that is argillite, gneiss, granite, quartzite, or trap rock and conforms to 901.05.01.
3. For fine aggregate, use stone sand conforming to 901.05.02 and has an uncompacted void content of at least 45 percent when tested according to AASHTO T 304, Method A. In addition, the minimum sand equivalent is 45 percent when tested according to AASHTO T 176.
4. If necessary, use mineral filler as specified in 901.05.03.

902.08.02 Mix Design

At least 45 days before initial production, submit a job mix formula for the HPTO on forms supplied by the Department. Include a statement naming the source of each component and a report showing the results meet the criteria specified in Tables 902.08.03-1 and 902.08.03-2.

For the job mix formula for the HPTO mixture, establish the percentage of dry weight of aggregate passing each required sieve size and an optimum percentage of asphalt binder based upon the weight of the total mix. Determine the optimum percentage of asphalt binder according to AASHTO R 35 and M 323 with an Ndes of 50 gyrations. Before maximum specific gravity testing or compaction of specimens, condition the mix for 2 hours according to the requirements for conditioning for volumetric mix design in AASHTO R 30, Section 7.1. If the absorption of the combined aggregate is more than 1.5 percent according to AASHTO T 84 and T 85, condition the mix for 4 hours according to AASHTO R 30, Section 7.2 prior to compaction of specimens (AASHTO T 312) and determination of maximum specific gravity (AASHTO T 209). Ensure that the job mix formula is within the master range specified in, Table 902.08.03-1.

Ensure that the job mix formula provides a mixture that meets a minimum tensile strength ratio (TSR) of 85 percent when prepared according to AASTHO T 312 and tested according to AASHTO T 283 with the following exceptions:

1. Before compaction, condition the mixture for 2 hours according to AASHTO R 30 Section 7.1.
2. Compact specimens with 40 gyrations.
3. Extrude specimens as soon as possible without damaging.
4. Use AASHTO T 269 to determine void content.
5. Record the void content of the specimens.
6. If less than 55 percent saturation is achieved, the procedure does not need to be repeated, unless the difference in tensile strength between duplicate specimens is greater than 25 pounds per square inch.

7. If visual stripping is detected, modify or readjust the mix.

For each mix design, submit three gyratory specimens and one loose sample corresponding to the composition of the job mix formula, including the design asphalt content. The ME will use these samples for verification of the properties of the job mix formula. Compact the specimens to the design number of gyrations (Ndes). To be acceptable all three gyratory specimens must comply with the gradation and asphalt content requirements in Table 902.08.03-1 and with the control requirements in Table 902.08.03-2. The ME reserves the right to be present at the time of molding the gyratory specimens.

In addition, submit 6 gyratory specimens and a 5 gallon bucket of loose mix to the ME. Compact the additional gyratory specimens according to AASHTO T 312. Ensure that the 6 gyratory specimens are 77 millimeters high and have an air void content of 5.0 ± 0.5 percent. The ME will use the additional samples for performance testing of the HPTO mix. The ME will test the specimens using an Asphalt Pavement Analyzer according to AASHTO TP 63 at 64 °C, 100 pounds per square inch hose pressure, and 100 pound wheel load. The ME will approve the job mix formula if the average rut depth for the 6 specimens in the asphalt pavement analyzer testing is not more than 4 millimeters in 8,000 loading cycles. If the job mix formula does not meet the APA criteria, redesign the HPTO mix.

If unsatisfactory results for any specified characteristic of the work make it necessary, establish a new job mix formula for approval. In such instances, if corrective action is not taken, the ME may require an appropriate adjustment.

If a change in sources is made or a change in the properties of materials occurs, the ME will require that a new job mix formula be established and approved before production can continue.

902.08.03 Sampling and Testing

- A. General Acceptance Requirements.** The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

Ensure that the temperature of the HPTO at discharge from the plant or surge and storage bins is maintained between 300 and 330 °F.

Combine and mix the aggregates and asphalt binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

- B. Sampling.** The ME will take 5 stratified random samples of HPTO for volumetric acceptance testing from each lot of approximately 3500 tons of a mix. When a lot of HPTO is less than 3500 tons, the ME will take samples at random for each mix at the rate of one sample for each 700 tons. The ME will perform sampling according to AASHTO T 168, NJDOT B-2, or ASTM D 3665.

Use a portion of the samples taken for composition testing, unless composition is determined by hot bin analysis. If using hot bin analysis at a fully automated batch plant, take 5 samples from each lot corresponding to the volumetric acceptance samples, under the supervision of the ME.

- C. Quality Control Testing.** The HMA producer is required to provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician is required to perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified for the HPTO mix being produced. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

To determine the composition, perform ignition oven testing according to AASHTO T 308. For fully automated plants, the QC technician may determine composition using hot bin analysis according to NJDOT B-5. Use only one method for determining composition within a lot.

For each acceptance test, perform maximum specific gravity testing according to AASHTO T 209 on a test portion of the sample taken by the ME. Sample and test coarse aggregate, fine aggregate, mineral filler, and RAP according to the approved quality control plan for the plant.

- D. Acceptance Testing and Requirements.** The ME will determine volumetric properties at Ndes for acceptance from samples taken, compacted, and tested at the HMA plant. The ME will compact HPTO to 50 gyrations, using equipment according to AASHTO T 312. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result in calculating the volumetric properties of the HPTO.

The ME will determine the dust-to-binder ratio from the composition results as tested by the QC technician.

Ensure that the HMA mixture conforms to the requirements specified in Table 902.08.03-2, and to the gradation requirements in Table 902.08.03-1. If 2 samples in a lot fail to conform to the gradation or volumetric requirements, immediately initiate corrective action.

The ME will test a minimum of 1 sample per lot for moisture, basing moisture determinations on the weight loss of an approximately 1600-gram sample of mixture heated for 1 hour in an oven at 280 ± 5 °F. Ensure that the moisture content of the mixture at discharge from the plant does not exceed 1.0 percent.

- E. Performance Testing.** Provide 6 gyratory specimens and a 5 gallon bucket of loose mix to the ME. Compact the additional gyratory specimens according to AASHTO T 312. Ensure that the 6 gyratory specimens are 77 millimeters high and have an air void content of 5.0 ± 0.5 percent. The first sample is required to be taken in the first lot of production. Thereafter, every third lot is required to be sampled. The ME will use the samples for performance testing of the HPTO mix. The ME will test the specimens using an Asphalt Pavement Analyzer according to AASHTO TP 63 at 64 °C, 100 pounds per square inch hose pressure, and 100 pounds wheel load. If the HPTO mix exceeds the APA criteria of 4 mm in 8000 loading cycles, the ME may stop production until corrective action is taken. If the HPTO mix exceeds the APA criteria of 12 mm in 8000 loading cycles, the RE may require removal and replacement of the lot of HPTO.

Table 902.08.03-1 HPTO Grading of Total Aggregate	
Sieve Size	Percent Passing by Mass
3/8"	100
#4	65-85
#8	33-55
#16	20-35
#30	15-30
#50	10-20
#100	5-15
#200	5.0-8.0
Minimum Percent Asphalt by Mass of Total Mix	7

Table 902.08.03-2 Volumetric Requirements for Design and Control of HPTO					
	Required Density (% of Max. Sp. Gr.)		Voids in Mineral Aggregate (VMA)	Dust to Binder Ratio	Draindown AASHTO T 305
	N _{des} (50 gyrations)	N _{max} (100 gyrations)			
Design Requirements	96.5	≤ 99.0	≥ 18.0 %	0.6 - 1.2	≤ 0.1 %
Control Requirements	95.5 - 97.5	≤ 99.0	≥ 18.0 %	0.6 – 1.3	≤ 0.1 %

4. Compute Percent Pay Adjustment (PPA).

THE FIFTH PARAGRAPH IS CHANGED TO:

If the Department elects not to core, the Contractor may accept the PPA calculated by Equation 1 or 2, as appropriate, or, when approved by the Department, the Contractor may take cores as specified in Table 903.03.06-4. Take the cores within 90 days from the date of concrete placement. The Department will not award a positive pay adjustment based on core samples taken more than 90 days from the date of concrete placement. If electing to core, perform the coring as directed by the ME, and provide the cores to the ME for testing.

F. Acceptance Testing for Strength for Non-Pay-Adjustment Items.

THE FIFTH PARAGRAPH IS CHANGED TO:

If cores are taken, the Department will use the core results to determine the final disposition of the lot. If, based on the core results, the lot is determined to be at a quality level of PD < 75, the Department will compute the pay-adjustment as specified in 903.03.05.E. The Department will not award positive pay adjustment for non-pay-adjustment Items. If the lot is confirmed to be at a quality level of PD ≥ 75, the ME will reject the lot and the RE may do one of the following:

1. Require the Contractor to remove and replace the defective lot
2. Allow the Contractor to leave the defective lot in place and receive a PPA computed by Equation 2.
3. Allow the Contractor to submit a plan, for approval, for corrective action.

903.03.06 Tables

Table 903.03.06-2 Requirements for Structural Concrete Items

THE SEVENTH LINE UNDER CAST-IN-PLACE ITEMS IS CHANGED TO:

Table 903.03.06-2 Requirements for Structural Concrete Items				
	Concrete Class	Slump ¹ (inches)	Percent Air Entrainment for Coarse Aggregate ¹	
			No. 57 & No. 67	No. 8
Decks, Sidewalks, Curbs, Parapets, Concrete Patch	A	3 ± 1	6.0 ± 1.5	7.0 ± 1.5

903.05.04 Control and Acceptance Testing Requirements

THE SUPERScript REFERENCE NO. 4 UNDER TABLE 903.05.04-1 IS CHANGED TO:

4. For chloride permeability testing, the ME will mold 4 additional cylinders, taking 2 cylinders each from 2 randomly selected delivery trucks for testing at 56-days.

THE FOURTH PARAGRAPH IS CHANGED TO:

If, upon testing at 56 days, 1 or more individual test results exceed 2000 coulombs, the RE may:

1. Require that the Contractor remove and replace the defective lot, or
2. Allow the Contractor to submit a corrective action plan for approval.

SECTION 904 – PRECAST AND PRESTRESSED CONCRETE

904.01.02 Fabrication

THE ENTIRE SUBPART IS CHANGED TO:

Fabricate precast concrete at a plant as specified in 1011.01 and listed on the QPL.

1. **Placing Reinforcement Steel.** Before placing the concrete, place reinforcement steel in position as shown on the approved working drawings and as specified in 504.03.01. Firmly tie the reinforcement to prevent displacement during placing of the concrete.
2. **Placing Concrete.** Place concrete as specified in 504.03.02.D and 504.03.02.E. Before placing concrete, ensure that reinforcement steel and any other embedded materials are free of loose rust, frost, dirt, oil, or contaminants that may prevent a bond with the concrete. Consolidate concrete with internal vibrators. The fabricator may use external vibration to supplement internal vibration. If using SCC, minimize or eliminate the use of vibrators to prevent segregation.

904.01.06 Quality Control and Acceptance Requirements

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

904.02.02 Fabrication

THE SECOND SENTENCES IN THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate precast concrete at a plant as specified in 1011.01 and listed on the QPL.

904.02.06 Quality Control and Acceptance Requirements

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

STEP 2 IN THE THIRD PARAGRAPH IS CHANGED TO:

2. Dimensions not conforming to the tolerances specified in Table 904.02.02-1.

904.03.02 Fabrication

THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate precast concrete at a plant as specified in 1011.01 and listed on the QPL.

904.03.06 Quality Control and Acceptance Requirements

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

If the ME does not inspect the precast concrete item, submit certifications of compliance as specified in 106.07.

904.04.02 Fabrication

THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate prestressed concrete at a plant as specified in 1011.02 and listed on the QPL.

904.04.06 Quality Control, Quality Assurance, and Acceptance Requirements

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

If the ME does not inspect the precast concrete item, submit certifications of compliance as specified in 106.07.

SECTION 905 – REINFORCEMENT METALS

905.01 REINFORCEMENT STEEL

THE ENTIRE SUBPART IS CHANGED TO:

Provide reinforcement steel manufactured at an AASHTO NTPEP (National Transportation Product Evaluation Program) certified mill. For a list of NTPEP certified mills, see the following webpage: <http://data.ntpep.org/Module/REBAR/Overview.aspx>.

For reinforcement steel, submit a certification of compliance as specified in 106.07. Attach copies of the mill certifications for each heat of reinforcement steel. The ME will randomly sample and test heats of reinforcement steel for quality assurance. The ME will randomly inspect and sample galvanized and epoxy coated reinforcement steel for quality assurance.

905.01.03 Welded Wire Reinforcement

THE SECOND PARAGRAPH IS CHANGED TO:

When approved as an alternate to galvanized reinforcement bars, use galvanized welded wire reinforcement that meets the requirements of ASTM A 641, Table 1, Class 1.

905.01.05 Dowels

THE ENTIRE SUBPART IS CHANGED TO:

Use plain reinforcement bars according to ASTM A 615, Grade 60. Galvanize according to ASTM A 123.

905.03.03 Dowel Bars

THE FIRST PARAGRAPH IS CHANGED TO:

For dowel bars in transverse joints, use epoxy-coated, Grade 60, plain reinforcement steel according to ASTM A 615. If shown on the Plans, use dowel bars fitted with end caps. Ensure that the end caps are non-metallic and designed to prevent the entrance of grout or mortar into the expansion void.

SECTION 909 – DRAINAGE

909.02.01 Reinforced Concrete Pipe

THE FOLLOWING IS ADDED BEFORE THE FIRST SENTENCE:

Manufacture reinforced concrete pipe at a plant listed on the QPL.

THE LAST PARAGRAPH IS CHANGED TO:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested

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by the ME.

For concrete pipe that is less than 60 inches in diameter, submit a certification of compliance as specified in 106.07. The ME will randomly inspect and test small-diameter concrete pipe for quality assurance.

For concrete pipe that is 60 inches or more in diameter, notify the ME at least 2 weeks before shipping pipe to the Project. The ME will inspect and approve large-diameter pipe in the supplier's yard after manufacture. Perform 3-point loading in the supplier's yard as directed by the ME. If the ME does not inspect the concrete pipe, submit certifications of compliance as specified in 106.07.

909.02.02 HDPE Pipe

THE SECOND PARAGRAPH IS CHANGED TO:

Use HDPE pipe from a manufacturer who is an AASHTO NTPEP (National Transportation Product Evaluation Program) certified manufacturer. For a list of NTPEP certified manufacturer, see the following webpage: <http://data.ntpep.org/Module/PIPE/Overview.aspx>.

THE FOLLOWING SUBPART IS ADDED:

909.02.09 Fiberglass Pipe for Bridge Storm Drainage

Fabricate fiberglass pipe conforming to ASTM D2996, RTRP-12EA1-2122 and fiberglass pipe fittings conforming to ASTM D3840.

Ensure that all fiberglass pipe, fittings and adhesives use pigmented resin throughout the wall and the color is concrete gray or designated color with UV stabilized resin. Painted gel-coat or exterior coating is not acceptable.

Ensure that adhesives are in accordance with the pipe manufacturer and adhesive manufacturer's recommendations.

SECTION 911 – SIGNS, SIGN SUPPORTS, AND DELINEATORS

911.02.02 Breakaway Sign Supports for Ground Mounted Signs

THE ENTIRE SUBPART IS CHANGED TO:

Fabricate and construct breakaway sign supports for ground mounted signs using materials conforming to the requirements in Table 911.02.02-1.

Table 911.02.02-1 Materials for Breakaway Sign Supports			
Item	Test Method	Type or Grade	Galvanizing
Aluminum Materials (other than bracket)	911.01.01		
Bracket	B308	6061-T6	
Structural steel shapes	ASTM A709	Grade 36	ASTM A123
Steel Sheet	ASTM A1011	Grade 36	ASTM A 653
Bolts (except special bolt for coupling)	ASTM A325		ASTM A153
Special bolt for coupling	ASTM A449		ASTM A153
Cap Screw	ASTM A307		ASTM A153
Lock Washer	ANSI B18-21-1		ASTM A153
Nut	ASTM A563	Grade DH	ASTM A153
Coupling	AMS 6378 F		ASTM A153
Steel Hinge Plate	AISI 4130		ASTM 123
Anchor Rod	AISI 1045		
Anchor Coil	AISI 1008		
Anchor Washer	908.04		
Anchor Ferrule	908.04		

Submit mill certificates for the component materials.

911.02.03 Non-Breakaway Sign Supports for Ground Mounted Signs

THE TEXT OF THIS SUBPART IS DELETED.

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911.03 FLEXIBLE DELINEATORS

1. Delineator Dimensions.

b. Guide Rail Mounted.

THE ENTIRE TEXT IS CHANGED TO:

Ensure that the unit for beam guide rail mounted flexible delineators has a minimum width of 3 inches and a minimum thickness of 0.100 inch. Use units of a height that will ensure that the top of the reflective area is 5 ± 2 inches above the top of post.

Design the base of the unit to mount over the I-beam blockout or to the top of a wood or synthetic blockout, of the beam guide rail.

c. Barrier Curb Mounted.

THE ENTIRE TEXT IS CHANGED TO:

For barrier curb mounted flexible delineators, use a delineator that is $3\text{-}1/2 \times 3\text{-}1/2$ inches, with a minimum thickness of 0.100 inch, and that has a base that forms a “T” shape with the panel for mounting on the side of the barrier curb, and is flexible or hinged so as to return to its original position after being struck.

THE FOLLOWING IS ADDED:

- d. Construction Barrier Curb Mounted.** For construction barrier curb top mounted flexible delineators, use a delineator that is 6 x 12 inches with a minimum thickness of 0.100 inch. For construction barrier curb side mounted flexible delineators, use a delineator that is $3\text{-}1/2 \times 3\text{-}1/2$ inches with a minimum thickness of 0.100 inch, and that has a base that forms a “T” shape with the panel for mounting on the barrier curb and is flexible or hinged so as to return to its original position after being struck.

4. Retroreflective Sheeting.

b. Guide Rail Mounted.

THE ENTIRE TEXT IS CHANGED TO:

Ensure that the sheeting is a minimum of 3 inches square and is mounted on the upper portion of the delineator.

THE FOLLOWING IS ADDED:

- d. Construction Barrier Curb Mounted.** Ensure that the sheeting for top mounted flexible delineators is 6 x 12 inches and the sheeting for side mounted flexible delineators is $3\text{-}1/2 \times 3\text{-}1/2$ inches.

Submit a certification of compliance, as specified in 106.07, for delineators.

SECTION 912 – PAINTS, COATINGS, TRAFFIC STRIPES, AND TRAFFIC MARKINGS

912.03.01 Epoxy Traffic Stripes

THE SUBPART HEADING IS CHANGED TO:

912.03.01 Traffic Stripes

A. Epoxy Resin.

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THE FIRST SENTENCE IS CHANGED TO:

For pavement striping, use an epoxy resin that is a 2 component, 100 percent solids formulation conforming to the following requirements:

B. Glass Beads.

THE FIRST PARAGRAPH IS CHANGED TO:

Submit certifications of compliance as specified in 106.07 for each lot of glass beads used on the Contract. For each lot of glass beads, submit test results indicating the parts per million of lead, antimony and arsenic as determined by testing according to Environmental Protection Agency testing method 3052 and testing method 6010B or 6010C. Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 100 ppm of arsenic.

912.03.02 Thermoplastic Traffic Markings

THE SUBPART HEADING IS CHANGED TO:

912.03.02 Traffic Markings

THE ENTIRE SUBPART TEXT IS CHANGED TO:

For traffic markings, use either preformed or hot extruded thermoplastic conforming to AASHTO M 249, except that for preformed thermoplastic, the minimum thickness requirement is 90 mils. Use beads conforming to AASHTO M 247, Type 1, with a moisture resistant coating. Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 100 ppm of arsenic.

Submit certifications of compliance, as specified in 106.07, for each batch of materials used on the Contract. For each lot of glass beads, submit test results indicating the parts per million of lead, antimony and arsenic as determined by testing according to Environmental Protection Agency testing method 3052 and testing method 6010B or 6010C.

912.04.01 Latex Paint

THE ENTIRE SUBPART TEXT IS CHANGED TO:

For temporary traffic stripes, use latex traffic paint that is a fast-drying white, or non-lead yellow, ready-mixed pigmented binder emulsified in water and capable of anchoring reflective glass beads that are separately applied. Ensure that the color matches FED-STD-595B color chip No. 33538 for yellow and No. 37886 for white. Ensure that the paint has a maximum no-track time of 120 seconds when applied in a wet film thickness of 15 ± 1 mil, at 140 °F, and with 12 pounds per gallon of glass beads. In addition, ensure that the finished product meets the following:

1. Volume of solids is a minimum 61 percent.
2. Total solids are a minimum of 77.5 percent total non-volatiles by weight, when tested according to ASTM D 2369.
3. Weight per gallon is a minimum 14 ± 0.2 pounds per gallon for each color.
4. Hegman Grind is a minimum of 2 Hegman when tested according to ASTM D 1210.
5. Viscosity is between 70 and 95 Krebs Units at 77 °F, when tested according to ASTM D 562.

Use glass beads conforming to AASHTO M247, Type 1, with a moisture resistance coating. Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 100 ppm of arsenic.

Submit a certification of compliance, as specified in 106.07, for latex and glass beads. For each lot of glass beads, submit test results indicating the parts per million of lead, antimony and arsenic as determined by testing according to Environmental Protection Agency testing method 3052 and testing method 6010B or 6010C.

SECTION 913 – GUIDE RAIL, FENCE, AND RAILING

913.01.01 Rail Element

THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07.

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913.01.02 End Treatments

THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07.

913.01.03 Posts and Blockouts

THE FOURTH PARAGRAPH IS CHANGED TO:

Provide certifications of compliance, as specified in 106.07.

913.01.04 Rub Rail

THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07.

913.01.05 Miscellaneous Hardware

SUBPART 3 OF THE FIRST PARAGRAPH IS CHANGED TO:

3. Use plates for guide rail on bridges and buried guide rail terminals conforming to ASTM A 36 and galvanized according to ASTM A 123.

THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07. The ME may randomly inspect hardware for quality assurance.

SECTION 914 – JOINT MATERIALS

914.04.01 Preformed Elastomeric (Compression Type)

B. Joint Sealer.

THE LAST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

If splicing of a sealer is allowed, ensure that the sealer at the splice point has no significant misalignment at its sides or top and that misalignment at the bottom does not exceed half of the bottom wall thickness.

SECTION 918 – ELECTRICAL MATERIALS

918.01 CONDUIT AND FITTINGS

4. Flexible Nonmetallic Conduit.

THIS PART IS CHANGED TO:

Use coil able HDPE conduit made from virgin HDPE resin as per the minimum standard of PE345440E according to ASTM D3350. Ensure conduit is circular and of uniform cross sectional area and dimensions in accordance with ASTM F2160. Ensure conduit is of continuous length containing no welds or joints coiled on a reel. Additionally, conduit's inner and outer walls are to be smooth and the inner wall is to be lubricated with manufacturer's recommended lubricant. Conduit colors are to be integrally extruded throughout the conduit in the manufacturing process. Ensure conduit is permanently marked with a laser ink imprinter or heat embossed white lettering showing the diameter, size, sequential length marks, owners name, ASTM, SDR, and/or Schedule rating. Additional markings of date-of-manufacture, time, and batch-of-resin are to be identified and referenced to certifications and quality control test results. Ensure manufacturer provides certification of the properties specified and mark/label the reels with purchase order, project name and/or other information for tracking and receiving. Applicable material standards are required based on the following applications:

- a. **Direct Burial.** Use conduit material with a rating of Schedule 80 conforming to ASTM F2160, NEMA TC-7 EPEC-80 and certified for its intended use.
- b. **Innerduct.** Use conduit material with a rating of Schedule 40 conforming to ASTM F2160, NEMA TC-7 EPEC-40.

ITS conduits used for the installation of Fiber Optic Cable including tracer wire, are to be extruded integrally colored orange to indicate its use for Communications.

ITS conduits designated for electrical use are to be extruded integrally colored red to indicate its use for Electrical wiring.

Submit a certificate of compliance, as specified in [106.07](#), for all materials, components, and assemblies.

918.12 PEDESTALS, POLES, TRANSFORMER BASES, AND MAST BRACKET ARMS

THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate pedestals, poles, transformer bases, and mast bracket arms for traffic signal, highway lighting, and camera standards with materials according to the appropriate ASTM standard and the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

918.15 ETHERNET SWITCH

Ensure Ethernet Switches are compatible with existing architecture.

A. Standards and Certifications

- IEEE 802.3: 10 Base T
- IEEE 802.3u: 100 Ethernet Base TX, 100 Base FX
- IEEE 802.3ab: 1000 Base T
- IEEE 802.3z : 1000 Base LX
- IEEE 802.3x: Flow Control
- IEEE 802.1q: Virtual Local Area Network (VLAN) tagging
- IEEE 802.1d: Spanning Tree Algorithm
- IEEE 802.1w: Rapid Spanning Tree Algorithm
- IEEE 802.1x: Port Based Network Access Control
- IEEE 802.1p: Quality of Service (QOS), 8 level transmission priorities.
- IP Multicast: Filtering through Internet Group Management Protocol (IGMP) Snooping.
- Product Safety: Underwriters Laboratories (UL) Standard 1950 or 60950 or UL 508.
- Electromagnetic Emissions: Federal Communication Commission (FCC) Part 15, Class A.
- Environmental: National Electrical Manufacturers Association (NEMA) TS1/TS 2 – Environmental Requirements only.
- IP Routing (Type A Switch) Inter-VLAN IP routing for full Layer 3 routing between two or more VLANs. IP Unicast routing protocols including v6 – Static, RIP, RIPng, OSPF, IGRP, EIGRP, PIM, BGP, PBR, HSRP, Supports 1000 multicast groups, VRF, DHCP Snooping

B. Functional Requirements

- Minimum of 12K Media Access Control (MAC) addresses for Type Hub configuration (Type A Switch)
- Minimum of 8K MAC addresses for Type Field configuration (Type B Switch)**
- Port Mirroring
- MAC Based Port Trunking
- Store-and-forward Switching Method

Non-blocking full wire speed forwarding rate:

- 10 mbps: 14,880 pps (packets per second)
- 100 mbps: 148,800 pps (packets per second)
- 1000 mbps: 1,488,000 pps (packets per second)

C. Management

- Direct console port access via RS-232
- Management Application available through HTML Web Browser
- Remote configuration by Telnet
- SNMP v1, v2, v3 - Bridge Management Information Base (MIB), VLAN MIB, Private MIB, RMON MIB - for alarm monitoring & diagnostic.
- IGMP v1, v2, v3 (IGMP Snooping)
- Security ACL's (Not Applicable for Type B Switch)

D. Interface and Connectors

Designation	Typical Distance	Nominal Wavelength	Fiber Type	Connector	Optical Budget
1000Base-LX	5 km	1310 nm	10/125 SM	LC/SFP	11 dB
1000Base-LX	10 km	1310 nm	10/125 SM	LC/SFP	11.5 dB
1000Base-LX	20 km	1310 nm	10/125 SM	LC/SFP	20 dB
1000Base-LX	40 km	1310 nm	10/125 SM	LC/SFP	20 dB
1000Base-LX	40 km	1550 nm	10/125 SM	LC/SFP	17 dB
1000Base-LX	70 km	1550 nm	10/125 SM	LC/SFP	23 dB
100Base-FX	2 km	1310 nm	10/125 SM	SC/SFP	19 dB
100Base-FX	15 km	1310 nm	10/125 SM	SC/SFP	15 dB
100Base-FX	20 km	1310 nm	10/125 MM	SC/SFP	19 dB
100Base-FX	40 km	1310 nm	10/125 MM	SC/SFP	34 dB
100Base-FX	60 km	1310 nm	10/125 SM	SC/SFP	33 dB
10Base-T	300'	N/A	N/A	RJ-45	N/A
100Base-TX	300'	N/A	N/A	RJ-45	N/A
1000Base-T	300'	N/A	N/A	RJ-45	N/A

Number of ports and port specifications are to be as specified in the bid documents. Designer and Contractor are to ensure the correct Fiber Transceiver is utilized based on distance and dB loss between switches.

Provide connectors as follows:

- Copper: RJ-45 F Female 8 Position 8 Contact (8P8C)
- Fiber: SC, LC

E. Indicators

- LED Indicator showing Power Status.
- LED Indicators showing status and activity of each port.

F. Mechanical Specifications

- Maximum Dimension: 19" (W) X 10" (D) X 10" (H)
- Maximum Weight : 15 lbs
- Ensure unit is capable of being mounted in standard 19" rack without custom modifications.
- Contractor to ensure that the switch fits in the cabinet.

G. Environmental Specifications

Meet or exceed the following criteria as specified in NEMA TS2. Values listed below for reference only, as excerpted from most recent version of NEMA TS2.

- Operating Voltage: 120 VAC \pm 5VAC
- Operating Frequency: 60 Hz \pm 3 Hz
- Power Interruption: Comply with NEMA TS2
- Operating Humidity: 10% to 95% relative humidity non-condensing
- Transients, Input/Output: Comply with NEMA TS2
- Non-destruct Transient Immunity: Comply with NEMA TS2
- Vibration: Comply with NEMA TS2
- Shock: Comply with NEMA TS2

H. Electrical Power

Equip the power supply with a minimum of a six (6) foot power cord terminating in a standard three (3) prong line plug. Maximum power requirement must not exceed 80 watts for each unit. Two (2) power supplies are required for Type A switches.

I. Software

Provide Software License(s) with each unit.

J. Identification

Identify Ethernet Switch with a metal plate containing the serial number with bar code identification. Provide phenolic nameplate with switch designation shown on Contract Documents. Provide manuals and training documentation, and electronic version of custom configurations on compact disc media.

K. Standard Configuration

Unless otherwise specified in the contract plans, use the following port configuration:

Switch Type	Switch Function	Minimum # of Required Ports			Temperature	
		10 Base-T 100 Base -TX	100 Base-FX	1000 Base-LX	Operating Range	Storage Range
Type A	HUB	12	12	1	32°F to 104°F	0°F to 158°F
Type B	Field*	4	4	0	-40°F to 167°F	-13°F to 167°F
Type C	Broadband ISP**	4	0	0	-13°F to 140°F	-13°F to 149°F

T/TX ports to have user-selectable speed setting (10/100 Mbps).

In order not to conflict with existing term contracts, all switches are to be Cisco – No Substitutions Permitted.

*When Type B switch has a layer 3 configuration including IP routing requirements; it shall have a minimum 2K MAC addresses.

**Type C is a hardened Cisco 819-H(G) Series Integrated Services VPN Router to the latest revision with 4-Port 10/100 Mbps Managed Switch for a field environment. A Cisco Series 881 VPN router to the latest revision is to be used in an HVAC controlled environment.

L. List of Equipment

Provide the following with each Ethernet Switch:

- Documentation
- External power supply (if required)
- All required custom connections
- Mounting brackets/shelf (if required)

918.16 FIBER OPTIC CABLE

SECTION I - GENERAL

- 1-1 Ensure that the fiber optic cable used for outdoor applications is single mode single jacket single armor gel-free with loose buffer tubes and it meets or exceeds all applicable Standards.

When the fiber optic cable is not used for outdoor applications:

- Ensure that general use cable is resistant to the spread of fire and labeled OFN.
- Ensure that fiber optic cable installed in plenums, ducts or other space used for environmental air has fire-resistant and low smoke producing characteristics and is labeled OFNP.
- Ensure that fiber optic cable installed in risers, spaces used for vertical runs in a shaft or from floor to floor has fire-resistant characteristics capable of preventing the spreading of fire from floor to floor and is labeled OFNR.

1-2 Standards

- Electronic Industry Standards (EIA/TIA), EIA/TIA-455, EIA/TIA -472, EIA/TIA -598
- Fiber Optic Testing Parameters (FOTP)
- International Telecommunications Union (ITU), ITU G.652.D
- ASTM standards, ASTM D3349, ASTM D1248
- National Fire Protection Code (NFPA), NFPA 70, National Electrical Code (NEC)

1-3 Environmental

- Operating temperature range: -40 °F to +158 °F
- Installation temperature range: -22 °F to +158 °F
- Storage Temperature: -40 °F to +158 °F
-

SECTION II – CABLE CHARACTERISTICS

- 2-1 Ensure that the optical fibers are contained within loose, gel-free buffer tubes that are stranded around an all-dielectric central strength member.
- 2-2 Ensure that the cable core is a tensile strength member and is surrounded by a water swellable yarn.
- 2-3 Ensure that a high or medium density polyethylene outer jacket is provided for overall protection.
- 2-4 Ensure that the fiber optic cable includes the following components:
- Color coded single mode optical fibers.
 - Gel-free color coded buffer tubes.
 - Central strength member - glass reinforced plastic dielectric rod.
 - Filler rod - medium or high density polyethylene.
 - Stranding – buffer tubes stranded around central member and held in place with binders.
 - Water- swellable yarn and tape that is non-nutritive to fungus, electrically non-conductive, non-toxic, dermatological safe and compatible with all other cable components.
 - Core separator or binders - non-hygroscopic, non-wicking and dielectric with low shrinkage.
 - Tensile outer strength member - high tensile strength aramid yarns and fiberglass helically stranded. evenly around the cable core
 - Ripcord – minimum two ripcords, equally spaced (180° for 2)
 - Outer jacket - HDPE or MDPE, co-extruded colored stripe, coded and labeled.
 - Each optical fiber is to be distinguishable from others in the same buffer tube by means of color coding according to EIA/TIA -598-B color coding for fiber optic cable.
 - In cables containing multiple buffer tubes each buffer tube is to be distinguishable from others in the same cable by means of color coding according to EIA/TIA -598 color coding for fiber optic cable.

2-5 Mechanical Characteristics

- | | |
|---|---------------------------------|
| - Maximum tensile loading during installation: | 600 lbf (also called loaded) |
| - Maximum tensile loading for the unloaded application: | 130 lbf (also called installed) |
| - Minimum bending radius of during installation: | 20 times the cable diameter |
| - Minimum bending radius for unloaded application: | 10 times the cable diameter |

2-6 Fiber Characteristics

Parameters

Type:

Core diameter:

Cladding diameter:

Core to Cladding Concentricity:

Cladding Non-circularity:

Coating Diameter:

Proof/ Tensile Test:

Single Mode Fiber

Step Index

8.3 μm (nominal)

125 $\mu\text{m} \pm 0.7 \mu\text{m}$

$\leq 0.5 \mu\text{m}$

$\leq 1.0 \%$

245 $\mu\text{m} \pm 5 \mu\text{m}$

100 kpsi, minimum

Attenuation:

@ 1310 nm

@ 1550 nm

Attenuation at the Water Peak:

Chromatic Dispersion:

Zero Dispersion Wavelength

Zero Dispersion Slope

Maximum Dispersion:

Cut-Off Wavelength:

Mode Field Diameter:

Macro bending Loss

Measured on loose fiber of

100 turns of 75 mm diameter (tested

in accordance with EIA-455-62):

$\leq 0.64 \text{ dB/mile}$ (\leq or 0.4 dB/km)

$\leq 0.48 \text{ dB/mile}$ (\leq or 0.3 dB/km)

$\leq 2.1 \text{ dB/km}$ @ $1383 \pm 3 \text{ nm}$

1302 to 1322 nm

$0.092 \text{ ps/ (nm}^2 \cdot \text{km)}$

$\leq 3.5 \text{ ps/ (nm} \cdot \text{km)}$ for 1285-1330 nm

$\leq 18 \text{ ps/ (nm} \cdot \text{km)}$ for 1550 nm

$< 1260 \text{ nm}$

$9.2 \pm 0.4 \mu\text{m}$ at 1310 μm ,

$10.4 \pm 0.8 \mu\text{m}$ at 1550 μm

$\leq 0.05 \text{ dB @ 1310 nm}$

$\leq 0.10 \text{ dB @ 1550 nm}$

2-7 Buffer Tubes

- | | |
|---------------------------------|----------------------|
| - Minimum buffer tube diameter: | 0.078 inch |
| - Maximum buffer tube diameter: | 0.12 inch |
| - Fibers per tube: | 2 – 6 |
| - Tubes per cable: | 1 – 24 |
| - Water blocking protection: | Water-Swellable yarn |

2-8 Outer Jacket

- Materials- For fiber optic cable designated for outdoor use application: high density or medium density polyethylene as defined by ASTM D1248, Type II, Class C, Category 4, Grade J4, E7 and E8.
For fiber optic cable designated for other applications: Provide material meeting specifications under section 1-1.
- Minimum jacket thickness - 0.055 inch.
- Labeling:

Additional parameters required on the label are:

“NJDOT FIBER OPTIC CABLE”

FIBERS "FIBER"
 "SINGLE MODE"
 Manufacturer's name, Date of manufacture.

- Sequential Cable labeling is to be printed on the cable outer jacket every two feet or as designated in the contract documents. Use capital letters for labeling with a text height of 0.1 inch.
- Use contrasting color to the cable jacket for marking.
- Co-extruded stripe color-coded with 0.04 inch stripe width.
- Provide ultra-violet light protection.

2-9 Cable Armor

Cable Armor to provide rodent and corrosion resistance while minimizing the susceptibility to lightning damage. Use of stranded wires in conjunction with tape armor is not permitted.

Design and Test Criteria: ANSI/ICEA S-87-640

Material: Electrolytically chrome coated, low carbon steel tape, coated with Polymer material on both sides

Application: Corrugated Single armor applied longitudinally around outside of water-swallowable tape with overlapping seam

2-10 Cable Types

Number of fibers, number of buffer tubes, number of fibers per buffer tube, outer jacket stripe color and outer diameter are to be as shown below:

FIBER OPTIC CABLE TYPE	NUMBER OF FIBERS	NUMBER OF BUFFER TUBES	NUMBER OF FIBERS PER BUFFER TUBE	OUTER JACKET STRIPE COLOR	Nominal Outer Diameter (inch)
Type A	48	8	6	Green	0.63
Type B	36	6	6	Blue	0.55
Type C	24	4	6	Orange	0.52
Type D	18	3	6	White	0.52
Type E	12	2	6	Red	0.52
Type F	6	1	6	Red	0.52

918.17 FIBER OPTIC SPLICE ENCLOSURE

SECTION I - GENERAL

1-1 Standards

- Electronic Industry Standards (EIA/TIA)
- International Telegraph and Telephone Consultative Committee (CCITT)
- ANSI
- ASTM standards
- FDDI specifications
- UL

- 1-2 Ensure that the Splice Enclosure is a complete kit for fusion splicing the single mode optical fibers of loose tube fiber optic cables inside underground junction boxes in the field using fusion splicer.
- 1-3 Ensure that the Splice Enclosure is re-enterable and designed to hold spliced fibers packaged in a protective sieving and housing and pass through un-spliced fibers.
- 1-4 Ensure that Splice Enclosure is equipped with terminations for cable strength members and bonding wire.
- 1-5 Ensure that Splice Enclosure is in use for a minimum of three years under weather conditions similar to State of New Jersey and in underground junction boxes.

SECTION II - SPLICE ENCLOSURE CHARACTERISTICS

Mechanical:

- Nominal size: 8" Dia. x 28" Long
- Nominal weight: 5.0 to 9.0 lb

Environmental

- Ensure that Splice Enclosure has gasket-sealing technology that enables ease of installation and re-entry requiring no special tools.
- Ensure that Splice Enclosure does not allow water entry when sprayed for fifteen minutes from a distance of one meter with water at a flow rate of 25 liters per minute at any angle.
- Ensure that Splice Enclosure does not allow water entry when immersed in a six feet head for seven days.
- Ensure that the Splice Enclosure is manufacturer certified for below ground, junction box (pull box) installation.
- Storage and operation temperature: -40°F to + 158°F
- Installation temperature: -22°F to + 158°F

Other Requirements

- Rigid non-filled case molded out of polyester/polycarbonate blend.
- Ensure that splice enclosure provides strain relief around the cable jacket and cable strength member.
- Ensure that splice enclosure is rodent proof, water proof, re-enterable and consist of moisture proof case.
- Ensure that all hardware is corrosion resistant aluminum or stainless steel.
- Ensure that splice enclosure is capable of holding hardware made from corrosion resistant aluminum or stainless steel.
- Ensure that splice enclosure is able to re-enter and re-assemble without the use of special tools.
- Ensure the number of cable entries meet project requirement at each location. 2 to 6 cables entries for 0.5" to 1" dia. loose tube single mode fiber optic cables are required.
- Ensure that splice enclosure meets minimum fiber bending radius requirements.
- Ensure grounding strap is provided.
- Ensure that splice enclosure is capable of holding fusion splice trays and slack baskets to organize and store splices.
- Ensure that splice enclosure is equipped with the necessary mounting hardware.
- Ensure that splice enclosure has air valve for flash testing.

Splice tray specifications

- 12-fiber fusion splice trays compatible with fusion splicing single mode optical fibers.
- Ensure that number of splice trays is sufficient to splice all fibers.
- Ensure that it is compatible with splice enclosure.

does not exceed 11 inches in height and 18 inches in depth. Ensure that the patch panel is constructed from 24 gauge (minimum) sheet metal, painted gray.

- 2-6 Ensure that 24/48 port fiber patch panel has a clear front cover that is easily removable or opened to provide easy access for cable installation. Ensure that the cover is attached to panel enclosure via hinge or fastened thumbscrews. Ensure that the bottom/back panels provide openings for cable entrance, and provide for strain relief at each entrance point. Ensure that the patch panel provides drawers and other fixtures to maintain the minimum bending radius of fiber cables without strain placed on the cable.
- 2-7 Ensure that all SC connectors on the patch panel and plug end on jumper cables are capped with an approved cap.
- 2-8 Ensure that jumper cables (patch cables) are compatible with single mode fiber and provided with factory installed SC type single mode connectors. Ensure that the number of jumper cables is equal to the number of patch panel ports. Ensure that length of jumper cables connecting field equipment is as required for each connection. Ensure that spare jumper cables are 10 feet long. Ensure the fiber optic characteristics of the patch jumper cables meet the same requirements as the ITS Material Specifications for Fiber Optic Cable and manufacturers requirements.

918.19 TERMINAL SERVER

Ensure that the Terminal Servers conform to the following specifications:

1-1 Standards and Certifications

- IEEE 802.3 10 BaseT
- IEEE 802.3u 100 Base TX
- IEEE802.3u 100 Base FX
- EIA/TIA -232E; EIA/TIA-574
- Product Safety: Underwriters Laboratories (UL) Standard 1950 or 60950
- Electromagnetic Emissions: FCC Part 15, subpart B, Class A
- IEC 61000-4-5 Surge protection

1-2 Functional Requirements

- The Terminal Server is to be an IP addressable device that converts the serial RS-232/RS-422/RS-485 communication protocols to 10/100 Base T/TX Ethernet protocol.
- Supports Broadcast Storm Filtering.
- TCP, IP, UDP, Telnet, DHCP, HTTP, SNMP, TFTP.
- Memory: SDRAM-8Mbytes, Flash-4 Mbytes
- Speed: 230.4 Kbps
- Data Bits: 5-8
- Stop Bits: 1, 2
- Parity: Odd, Even, None

1-3 Management

- Direct console port access via RS-232
- HTML Web Browser, Telnet

1-4 Interface and Connectors

- Serial Connector: Software selectable RS-232/RS-422/RS-485 with DB9 Female Connector.

- Ethernet Network: Auto-detecting 10/100 Base-TX, RJ 45 Connector.

1-5 Indicators

- LED Indicator showing Power Status.
- LED Indicators showing status and activity of each port.

1-6 Mechanical Specifications

- Maximum dimension: 17.25" (L) X 10.8" (W) X 1.75" (H)
- Maximum weight: 8 lbs

1-7 Environmental Specifications

- Operating Temperature: -29°F to +165°F
- Storage Temperature: -40°F to +185°F
- Operating Humidity: 5% to 95% relative humidity non-condensing

1-8 Electrical Power

Equip the power supply with a minimum of a six (6) foot power cord terminating in a standard three (3) prong line plug. Maximum power requirement is not to exceed 20 watts for each unit.

1-9 Software

Provide Software License(s) with the unit.

1-10 Identification

Identify Terminal Server with a metal plate containing the serial number with bar code identification. Provide phenolic nameplate with switch designation shown on Contract Documents. Provide manuals and training documentation, and electronic version of custom configurations on compact disc media.

1-11 Standard Configuration

Type	Minimum Number of Required Ports	
	10 Base-T/100 Base –TX*	RS-232/RS-422/RS-485**
Type A	1	2
Type B	1	4
Type C	1	8
Type D	1	16

*Maximum distance for Ethernet UTP: 300' (Cat5e)

** Maximum distance for serial connections 3600'

1-12 List of Equipment

- Documentation
- External power supply (if required)
- All required custom connections
- Mounting brackets/shelf, mounting plates (if required)

918.20 POWER DISTRIBUTION UNIT (PDU)

• SECTION I - GENERAL

The PDU unit includes the following components:

- Nominal Input Voltage: 120V AC Single Phase
- Nominal Output Voltage: 120V
- Current Per Phase: 15A
- Input Connection: NEMA 5-15P
- Cord Length: 12'
- Output Connections: (8) NEMA 5-15R
- SNMP/HTTP Remote Monitoring: TCP/IP, UDP, DHCP, SNMP, HTTP
- Connectivity: RJ45, DB9/RS232
- Certifications: UL60950, FCC Class A
- Rack mount: 19", 1U
- Color: Black

918.21 PORT SHARER

The Port Sharer specification is for the listed components to be used in the Control Center pay Items. Each unit includes up to (8) serial RS-232 async signal user channels. The following functionality is included in the device:

- o Flow control – software
- o User channels – 8
- o Interface RS-232
- o Power – 115 AC @ 50 mA, 60W
- o Dimensions – 1.5"H x 5.5"W x 8.5"D
- o Connectors – RJ11
- o Model: Black Box TL159A or approved equal

SECTION 919 – MISCELLANEOUS

THE FOLLOWING IS ADDED:

919.15 POLYESTER MATTING

Provide polyester matting of commercial quality that is a composite of polyester base fiber and vinyl chloride resin and is permeable to air and water, but shall prevent sunlight from reaching the soil. Ensure that the matting resists ultraviolet light, mildew and algae. Ensure that the matting is self-extinguishing when removed from flame. Ensure that the matting has a minimum thickness of 1/4 inch.

DIVISION 1000 – EQUIPMENT

SECTION 1001 – TRAFFIC CONTROL EQUIPMENT

THE FOLLOWING SUBSECTION IS ADDED:

1001.04 PORTABLE VARIABLE MESSAGE SIGN WITH REMOTE COMMUNICATION

THE FOLLOWING IS ADDED:

Provide a NTCIP compliant portable variable message sign as described under 1001.02 with the exceptions noted below and each equipped with broadband cellular modem.

Ensure that the sign panel is capable of displaying three lines of text with variable size characters.

Ensure nine characters are displayed per line for posting travel times. For this nine character requirement, smaller size characters may be allowed that meets MUTCD guidelines.

Ensure that the panel is also capable of displaying eight (8) characters per line with a minimum character height of eighteen (18) inches.

SECTION 1009 – HMA PLANT EQUIPMENT

1009.01 HMA PLANT

A. Requirements for HMA Mixing Plants.

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

The HMA producer is required to have a quality control (QC) program plan approved annually by the ME as per Materials Approval Procedure MAP-102. The HMA producer is required to ensure that the QC plan conforms to the requirements outlined in the report entitled “Hot Mix Asphalt Quality Control Program Plan” prepared by the Department of Transportation and New Jersey Asphalt Paving Association. Failure to follow these requirements will result in rejection of HMA materials supplied by the HMA producer and removal of the HMA supplier from the QPL.

THE FOLLOWING SUBSECTION IS ADDED AFTER 1009.02:

1009.03 ASPHALT-RUBBER BINDER BLENDING EQUIPMENT

Provide equipment for preparation of Asphalt-Rubber Binder. Ensure that the unit is equipped with a crumb rubber feed system capable of continuously supplying the asphalt cement feed system, and is capable of fully blending the individual crumb rubber particles with the asphalt cement. Use an asphalt-rubber binder storage tank that is equipped with a heating system capable of maintaining the temperature of the binder between 325 and 375 °F during the reaction. Ensure the asphalt-rubber binder storage tank is also equipped with an internal auger mixing device, oriented horizontally in the tank, capable of maintaining a uniform mixture of the asphalt-rubber binder.

Ensure that the tanks for storage of asphalt-rubber binder are equipped to uniformly heat the material to the required temperature under effective and positive control at all times. Ensure that heating is accomplished so that no flame comes in contact with the heating tank.

Provide a circulating system of sufficient capacity for the binder to ensure continuous circulation between the storage tank and proportioning units during the entire operating period. Ensure that the discharge end of the binder circulating pipe is maintained below the surface of the binder in the storage tank to prevent discharge of hot binder into the open air.

Ensure that pipe lines and fittings are steam or oil jacketed, electrically or otherwise heated, and insulated to prevent heat loss.

Provide valves according to AASHTO T 40, except ensure that a sampling valve is also located in the lowest third of each storage tank.

If the plant has been equipped with a water injection type asphalt foaming system, ensure that the system will allow the proper amount of asphalt rubber binder to be supplied continuously or provide a by-pass to ensure that the proper amount of asphalt rubber binder is supplied to the mix.

SECTION 1011 – PRECAST AND PRESTRESSED CONCRETE PLANT EQUIPMENT

1011.03 ME'S OFFICE

THE SECOND PARAGRAPH SUBPART 2 &3 ARE CHANGED TO:

2. One high-speed broad band connection with a minimum speed of 3 megabits per second (mbps) with dynamic IP address (DSL, Cable, etc.).
3. Two desks and 2 chairs.

NJDOT TEST METHODS

NJDOT B-8 – DETERMINING JOB MIX FORMULA FOR MODIFIED OPEN-GRADED FRICTION COURSE MIXES

C. Procedure.

3. Relative VMA Asphalt Content.

THE FOURTH SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Determine the bulk specific gravity, G_{mb} from each specimen according to NJDOT B-6 or AASHTO T 331.

THE FOOTNOTE FOR G_{mb} IN THE SECOND EQUATION IS CHANGED TO:

G_{mb} = the bulk specific gravity of the specimen as determined by NJDOT B-6 or AASHTO T 331.

THE FOLLOWING TEST METHODS ARE ADDED:

NJDOT B-10 – OVERLAY TEST FOR DETERMINING CRACK RESISTANCE OF HMA

A. Scope. This test method is used to determine the susceptibility of HMA specimens to fatigue or reflective cracking. This test method measures the number of cycles to failure.

B. Apparatus. Use the following apparatus:

1. Overlay Tester. An electro-hydraulic system that applies repeated direct tension loads to specimens. The machine features two blocks, one is fixed and the other slides horizontally. The device automatically measures and records a time history of load versus displacement every 0.1 sec at a selected test temperature.

The sliding block applies tension in a cyclic triangular waveform to a constant maximum displacement of 0.06 cm (0.025 in.). This sliding block reaches the maximum displacement and then returns to its initial position in 10 sec. (one cycle).
2. Temperature Control System. The temperature chamber must be capable of controlling the test temperature with a range of 32 to 95 °F (0 to 35 °C).
3. Measurement System. Fully automated data acquisition and test control system. Load, displacement, and temperature are simultaneously recorded every 0.1 sec.
4. Linear Variable Differential Transducer (LVDT). Used to measure the horizontal displacement of the specimen (+/- 0.25 in.). Refer to manufacturer for equipment accuracy for LVDT.
5. Electronic Load Cell. Used to measure the load resulting from the displacement (5000 lb capacity). Refer to manufacturer for equipment accuracy for load cell.
6. Specimen Mounting System. Used two stainless steel base plates to restrict shifting of the specimen during testing. The mounting jig holds the two stainless steel base plates for specimen preparation.
7. Cutting Template.
8. Two Part Epoxy. Two part epoxy with a minimum 24 hour tensile strength of 600 psi (4.1 MPa) and 24 hour shear strength of 2,000 psi (13.8 MPa).
9. 10 lb weight (4.5 kg). Used to place on top of specimens while being glued to specimen platens.
10. ¼ inch Width Adhesive Tape. Placed over gap in plates to prevent the epoxy from bonding the plates together.
11. Paint or Permanent Marker. Used to outline specimens on platens for placement of epoxy.
12. 3/8-in. Socket Drive Handle with a 3-in. (7.6 cm) extension.

C. Procedure. Perform the following steps:

1. Sample Preparation.

- a. **Laboratory Molded Specimens** - Use cylindrical specimens that have been compacted using the gyratory compactor (AASHTO T 312). Specimen diameter must be 6 inches (150 mm) and a specimen height must be 4.5 inches +/- 0.2 inches (115 +/- 5 mm).

Note 1 - Experience has shown that molded laboratory specimens of a known density usually result in a greater density (or lower air voids) after being trimmed. Therefore, it is recommended that the laboratory technician produce molded specimens with an air void level slightly higher than the targeted trimmed specimen. Determine the density of the final trimmed specimen in accordance with AASHTO T 166.

- b. **Core Specimens** – Specimen diameter must be 6 inches +/- 0.1 inch (150 mm +/- 2 mm). Determine the density of the final trimmed specimen in accordance with AASHTO T166.

2. Trimming of Cylindrical Specimen. Before starting, refer to the sawing device manufacturer's instructions for cutting specimens.

- a. Place the cutting template on the top surface of the laboratory molded specimen or roadway core. Trace the location of the first two cuts by drawing lines using paint or a permanent marker along the sides of the cutting template.
- b. Trim the specimen ends by cutting the specimen perpendicular to the top surface following the traced lines. Discard specimen ends.
- c. Trim off the top and bottom of the specimen to produce a sample with a height of (1.5 inches +/- 0.02 inches (38 mm +/- 0.5 mm)).
- d. Measure the density of the trimmed specimen in accordance with AASHTO T 166. If the specimen does not meet the density requirement as specified for performance testing for the mix being tested, then discard it and prepare a new specimen.
- e. Air dry the trimmed specimen to constant mass, where constant mass is defined as the weight of the trimmed specimen not changing by more than 0.05% in a 2 hour interval.

3. Mounting Trimmed Specimen to Base Plates (Platens).

- a. Mount and secure the base plates (platens) to the mounting jig. Cut a piece of adhesive tape approximately 4.0 inches (102 mm) in length. Center and place the piece of tape over the gap between the base plates.
- b. Prepare the epoxy following manufacturer's instructions.
- c. Cover a majority of the base plates (platens) with epoxy, including the tape. Glue the trimmed specimen to the base plates.
- d. Place a 10 lb (4.5 kg) weight on top of the glued specimen to ensure full contact of the trimmed specimen to the base plates. Allow the epoxy to cure for the time recommended by the manufacturer. Remove the weight from the specimen after the epoxy has cured.
- e. Turn over the glued specimen so the bottom of the base plates faces upward. Using a hacksaw, cut a notch through the epoxy which can be seen through the gap in the base plates. The notch should be cut as evenly as possible and should just begin to reach the specimen underneath the epoxy. Great care should be taken not to cut more than 1/16 inch (1.58 mm) into the specimen.
- f. Place the test sample assembly in the Overlay Tester's environmental chamber for a minimum of 1 hour before testing.

4. Start Testing Device. Please refer to manufacturer's equipment manual prior to operating equipment.

- a. Turn on the Overlay Tester. Turn on the computer and wait to ensure communication between the computer and the Overlay Tester occurs.
- b. Turn on the hydraulic pump using the Overlay Tester's software. Allow the pump to warm up for a minimum of 20 minutes.

- c. Turn the machine to load control mode to mount the sample assembly.
- 5. Mounting Specimen Assembly to Testing Device.** Enter the required test information into the Overlay Tester software for the specimen to be tested.
 - a. Mount the specimen assembly onto the machine according to the manufacturer's instructions and the following procedural steps.
 - 1. Clean the bottom of the base plates and the top of the testing machine blocks before placing the specimen assembly into the blocks. If all four surfaces are not clean, damage may occur to the machine, the specimen, or the base plates when tightening the base plates.
 - 2. Apply 15 lb-in of torque for each screw when fastening the base plates to the machine.
- 6. Testing Specimen.**
 - a. Perform testing at a constant temperature recommended by the New Jersey Department of Transportation for the mixture in question. This is typically either 59 °F (15 °C) or 77 °F (25 °C).

Note 3 – Ensure the trimmed specimen has also reached the constant temperature required.
 - b. Start the test by enabling the start button on the computer control program. Perform testing until a 93% reduction or more of the maximum load measured from the first opening cycle occurs. If 93% is not reached, run the test until a minimum of 1,200 cycles.
 - c. After the test is complete, remove the specimen assembly from the Overlay Tester machine blocks.
- D. Report.** Include the following items in the report:
 - 1. Date and time molded or cored.
 - 2. NJDOT mixture identification.
 - 3. Trimmed specimen density.
 - 4. Starting Load.
 - 5. Final Load.
 - 6. Percent decline (or reduction) in Load.
 - 7. Number of cycles until failure.
 - 8. Test Temperature

NJDOT B-11- DETERMINING GRADATION OF CRUMB RUBBER FOR ASPHALT MODIFICATION

- A. Scope.** This method is used to determine the gradation of the crumb rubber for asphalt-rubber binder
- B. Apparatus.** Use the following apparatus:
 - 1. Oven capable of maintaining a temperatures of 140 ± 10 °F for drying sample to a constant weight.
 - 2. Rubber balls having a weight of 8.5 ± 0.5 grams, a diameter of 24.5 ± 0.5 mm, and a Shore Durometer "A" hardness of 50 ± 5 per ASTM Designation D 224
 - 3. No. 8, 16, 30, 50, 100, and 200 sieves conforming to AASHTO M 92.
 - 4. Mechanical sieve shaker conforming to AASHTO T 27.
 - 5. Balance conforming to AASHTO M 231 and having a minimum capacity of 100 grams with a precision of 0.1 gram.
- C. Procedure.** The crumb rubber for asphalt rubber binder is required to conform to the gradations specified below when tested in accordance with ASTM Designation C 136 except as follows:
 - 1. Obtain 100 ± 5 grams from the crumb rubber sample and dry to a constant weight at a temperature of not less than 135 °F nor more than 145 °F and record the dry sample weight.
 - 2. Place the crumb rubber sample and 5.0 grams of talc in a one pint jar, then shake it by hand for a minimum of one minute to mix the crumb rubber and the talc. Continue shaking or open the jar and stir until the particle agglomerates and clumps are broken and the talc is uniformly mixed.

3. Place one rubber ball on each sieve. After sieving the combined material for 10 ± 1 minutes, disassemble the sieves. Brush remaining material adhering to the bottom of a sieve into the next finer sieve. Weigh and record the weight of the material retained on the No. 8 sieve and leave this material (do not discard) on the scale or balance. Ensure that observed fabric balls remain on the scale or balance and are placed together on the side of the scale or balance to prevent the fabric balls from being covered or disturbed when placing the material from finer sieves on to the scale or balance. Add the material retained on the next finer sieve (No. 16 sieve) to the scale or balance. Weigh and record that weight as the accumulative weight retained on that sieve (No. 16 sieve). Continue weighing and recording the accumulated weights retained on the remaining sieves until the accumulated weight retained in the pan has been determined. Before discarding the crumb rubber sample, separately weigh and record the total weight of the fabric balls in the sample.
4. Determine the weight of material passing the No. 200 sieve (or weight retained in the pan) by subtracting the accumulated weight retained on the No. 200 sieve from the accumulated retained weight in the pan. If the material passing the No. 200 sieve (or weight retained in the pan) has a weight of 5 grams or less, cross out the recorded number for the accumulated weight retained in the pan and copy the number recorded for the accumulated weight retained on the No. 200 sieve and record that number (next to the crossed out number) as the accumulated weight retained in the pan. If the material passing the No. 200 sieve (or weight retained in the pan) has a weight greater than 5 grams, cross out the recorded number for the accumulated weight retained in the pan, subtract 5 grams from that number and record the difference next to the crossed out number. The adjustment to the accumulated weight retained in the pan is made to account for the 5 grams of the talc added to the sample. For calculation purposes, the adjusted accumulated weight is the same as the adjusted accumulated weight retained in the pan. Determine the percent passing based on the adjusted total sample weight and recorded to the nearest 0.1 percent.

D. Report. Report all test results on ME provided forms.

NJDOT B-12 – DETERMINING ROTATIONAL VISCOSITY OF ASPHALT RUBBER BINDER

A. Scope. This method presents procedures for sampling and testing of asphalt-rubber binder in the field using a hand held portable rotational analog or digital viscometer.

B. Apparatus. Use the following apparatus:

1. **Viscometer.** A hand held high range rotational viscometer. Analog models with indicator needles and scaled dial displays or digital read out viscometers may be used. Analog models that have been found acceptable include Rion Model VT-04E and Haake Model, VT-02. Digital models that have been found acceptable include Haake VT 2 Plus.
2. **Rotor.** A cylinder with a diameter of 24 ± 1.1 millimeters, height of 53 ± 0.1 millimeters, and a vent hole attached to a spindle or shaft with length of 87 ± 2 millimeters that is compatible with the selected viscometer. Acceptable rotors include Rion No. 1, Haake No 1, or an equivalent.
3. **Thermometer.** Digital with metal jacket probe accurate to 1°F .
4. **Sample Containers.** Clean 1 gallon metal cans with lids and wire bale.
5. **Viscosity Standard Oils.** Fluids calibrated in absolute viscosity centipoise (cP).
6. **Viscometer Holder.** Clean metal container or stand for safely storing the viscometer between tests.
7. **Level Surface.** Level surface not directly on the ground.
8. **Heat Source.** A controllable heat source (i.e. a hot plate, gas stove, or burner) to maintain the temperature of the asphalt-rubber sample at $350 \pm 3^\circ\text{F}$ while measuring viscosity.
9. **Personal Equipment.** Eye protection and heat resistant gloves.

C. Procedure. Perform the following steps:

1. **Calibration of Equipment.** Calibrate the equipment as follows:

- a. Verify the accuracy of the viscometer by comparing the viscosity results obtained with the hand held viscometer to 3 separate calibration fluids of known viscosities ranging from 1000 cP to 5000 cP. The

known viscosity value are based on the fluid manufacturer's standard test temperature or based on the test temperature versus viscosity correlation table provided by the fluid manufacturer.

- b. The viscometer is considered accurate if the values obtained are within 300 cP of the known viscosity.
 - c. Verify the calibration of the rotational viscometer using viscosity standards before use at each site.
- 2. Sampling Asphalt-Rubber Binder.** Provide new sample containers and ensure that they are clean before using. Before sampling, draw at least 1 gallon from an appropriate sample valve on the interaction tank and discard. Then reopen the sample valve and draw at least 3/4 of a gallon for testing.
- 3. Preparing Asphalt-Rubber Binder Samples for Testing.** Prepare the asphalt-rubber binder as follows:
- a. Immediately transport the sample to the testing area. Ensure that the testing area is close to the sampling location to reduce the potential for temperature loss.
 - b. Set the open asphalt-rubber binder sample container on the level surface on or over the heat source.
 - c. To prevent scorching or burning, manually stir the asphalt-rubber binder sample using a metal stir rod or the temperature probe.
 - d. Continue stirring until a consistent asphalt-rubber binder temperature of 350 ± 3 °F is achieved. Record the actual test temperature with the corresponding viscosity measurement.
 - e. Insert the viscometer spindle and rotor into the hot asphalt-rubber binder sample near the edge of the can. Ensure that the spindle and rotor are not inserted deeper than the immersion depth mark on the shaft and are not plugging the vent hole. During insertion, the spindle and rotor may be tilted slightly to keep the vent hole clear.
 - f. Allow the rotor to acclimate to the temperature of the asphalt-rubber binder for approximately 1 minute. During acclimation, stir the sample thoroughly and measure the temperature.
 - g. Orient the sample and the rotor so that the rotor is near the center of the sample, align the depth mark on the shaft with the asphalt-rubber binder surface, and level the viscometer in order to measure viscosity.
- 4. Testing.** Analog viscometers include a level bubble to help orient the device to ensure that the rotor and shaft remain vertical. Digital viscometers may not include a level bubble. If a level bubble is not included, attach a small adhesive bubble to the viscometer or use a framework with a level bubble.

Test the asphalt-rubber binder as follows:

- a. As soon as the viscometer is leveled and the depth mark is even with the asphalt-rubber binder surface, begin rotor rotation. When using a digital viscometer, activate the continuous digital display according to the manufacturer's recommendations. Read and record the peak viscosity value (The peak measurement typically represents the viscosity of the asphalt-rubber binder; report and log that value. As the rotor continues to turn, it "drills" into the sample and spins rubber particles out of its measurement area. This may cause thinning of the material in contact with the rotor erroneously indicating a drop in the apparent viscosity of the asphalt-rubber binder) from the graduated scale labeled with the corresponding rotor number or from the digital display.
 - b. After completing the first measurement, move the viscometer rotor away from the center of the sample can without removing it from the asphalt-rubber binder sample. Turn off the rotor rotation.
 - c. Stir the asphalt-rubber binder sample thoroughly.
 - d. Repeat Steps 1, 2, and 3. Take 3 measurements and average the results to determine the viscosity.
 - e. Return the viscometer to its holder with the rotor suspended in a suitable solvent. Before using the rotor again, wipe off the solvent and dry the rotor to avoid solvent contamination of the next sample.
- D. Calculations.** Some meters read in units of mPa·s (0.001 Pascal·seconds) or dPa·s (0.1 Pa·s), while others may read in centipoise (cPs) units. The conversion is $1 \text{ Pa} \cdot \text{s} = 1000 \text{ cPs}$.
- E. Report.** Include the following items in the report:

1. Date and time sampled.
2. Location of asphalt-rubber binding blending plant.
3. Test temperature and viscosity.
4. Rotor designation.
5. Viscometer model and serial n

ATTACHMENTS

FHWA ATTACHMENT NO. 1

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts

should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with

Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The

employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be

constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing

work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of

trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be

permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor

shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any

subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered

Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from

participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

FHWA ATTACHMENT NO. 2

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these Specifications:
 - a. Covered area means the geographical area in which the Project is located.
 - b. Director means Director, Office of Federal Contract Compliance Programs, United States Department of Labor or any person to whom the Director delegates authority.
 - c. Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, US Treasury Department Form 941.
 - d. Minority includes:
 - (1) Black (a person having origins in any of the black African racial groups not of Hispanic origin);
 - (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race);
 - (3) Asian and Pacific Islander (a person having originals in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan Native (a person having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participating or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. The Contractor shall implement the specific affirmative action standards provided in paragraphs 6a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
4. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these Specifications, Executive Order 111246, or the regulations promulgated pursuant thereto.
5. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the US Department of Labor.
6. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foreman, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment with specific attention to minority or female individual working at such sites or in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred back to the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the contractor a minority person or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the source compiles under 6b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

- j. Encourage present minority and female employees to recruit other minority persons and females and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
7. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (6a through p). The efforts of a Contractor association, joint contractor union, Contractor-Community, or other similar group of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 6A through p of these Specifications provided that the Contractor actively participates in the group, make every effort to assure that the group has a positive impact on the employment of minorities and females in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, make a good faith effort to meet its individual goals and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
8. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women both minority and nonminority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
9. The Contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
10. The Contractor shall not enter any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
11. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspensions, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246 as amended.
12. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 6 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the

Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

13. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (such as mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
14. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (such as those under the Public Works Employment Act of 1977 and the community Development Block Grant Program).
15. Noncompliance by the Contractor with the requirements of the Affirmative Action Program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

FHWA ATTACHMENT NO. 3

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The goals for minority and female participation, in the covered area, expressed in percentage terms for the Contractor's aggregate work force in each trade, on all construction work are as shown on Page 2.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4. (3) a, and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

2. The Contractor will provide the Department with written notification in triplicate within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification will list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
3. As used in this Notice and in the Contract resulting from this solicitation the covered area is the county or counties in which the Project is located.
4. If a project is located in more than one county, the minority work hours goal, only, will be determined by the county which serves as the primary source of hiring or, if workers are obtained almost equally from one or more counties, the single minority goal will be the average of the affected county goals.

WORK HOUR GOALS IN EACH TRADE FOR MINORITY AND FEMALE PARTICIPATION

COUNTY	MINORITY PARTICIPATION PERCENT	FEMALE PARTICIPATION PERCENT
Atlantic	18.2	6.9
Bergen	15	6.9
Burlington	17.3	6.9
Camden	17.3	6.9
Cape May	14.5	6.9
Cumberland	16	6.9
Essex	17.3	6.9
Gloucester	17.3	6.9
Hudson	12.8	6.9
Hunterdon	17	6.9
Mercer	16.4	6.9
Middlesex	15	6.9
Monmouth	9.5	6.9
Morris	17.3	6.9
Ocean	17	6.9
Passaic	12.9	6.9
Salem	12.3	6.9
Somerset	17.3	6.9
Sussex	17	6.9
Union	17.3	6.9
Warren	1.6	6.9

FHWA ATTACHMENT NO. 4

STATE OF NEW JERSEY EQUAL EMPLOYMENT OPPORTUNITY FOR CONTRACTS FUNDED BY FHWA

The parties to this Agreement do hereby agree that the provisions of NJSA 10:2-1 through 10:2-4 and NJSA 10:5-31 et seq (PL 1975, c 127, as amended and supplemented) dealing with discrimination in employment on public contracts, and the rules and regulations promulgated pursuant thereunto, are hereby made a part of this contract and are binding upon them.

During the performance of this contract, the Contractor agrees as follows:

- a. The Contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status or sex. The Contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status or sex. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Division of Civil Rights/Affirmative Action setting forth provisions of this nondiscrimination clause;
- b. The Contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status or sex;
- c. The Contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Division of Civil Rights/Affirmative Action, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. In the hiring of persons for the performance of work under this contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this contract, no contractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;
- e. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;
- f. There may be deducted from the amount payable to the contractor by the contracting public agency, under this contract, a penalty of \$50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and
- g. This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the contractor from the contracting public agency of any prior violation of this section of the contract.

The notices referred to in paragraphs a and c may be obtained at the preconstruction conference.

FHWA ATTACHMENT NO. 5

DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION ATTACHMENT FHWA FUNDED CONTRACTS

I UTILIZATION OF DISADVANTAGED BUSINESSES AS CONTRACTORS, MATERIAL SUPPLIERS AND EQUIPMENT LESSORS.

The New Jersey Department of Transportation (NJDOT) advises each contractor or subcontractor that failure to carry out the requirements set forth in this attachment shall constitute a breach of contract and, after the notification of the applicable federal agency, may result in termination of the agreement or contract by the Department or such remedy as the Department deems appropriate. Requirements set forth in this section shall also be physically included in all subcontracts in accordance with USDOT requirements.

II POLICY

It is the policy of NJDOT that Disadvantaged Business Enterprises, as defined in 49 CFR, Part 26; Titles I & V of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA); the Transportation Equity Act for the 21st Century (TEA-21); and Section V, Part B below, shall have equal opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR, Part 26, Subsections A, C and F apply to this agreement.

III CONTRACTOR'S DBE OBLIGATION

The NJDOT and its Contractor agree that Disadvantaged Business Enterprises, as defined in 49 CFR Part 26, Subpart A; and in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), and Section V, Part B below, have equal opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds provided under this agreement. In this regard, the NJDOT and all Contractors shall take all necessary and reasonable steps in accordance with 49 CFR, Part 26 to ensure that Disadvantaged Businesses are given equal opportunity to compete for and to perform on NJDOT federally funded contracts. The NJDOT and its Contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of USDOT assisted contracts.

IV COMPLIANCE

To signify and affirm compliance with the provisions of this attachment, the bidder shall complete the Schedule of DBE Participation (Form CR-266F) included in the bid package and all forms and documents required in Sections VII and VIII of these provisions which will be made a part of the resulting contract.

V GOALS FOR THIS PROJECT

- A. This Project includes a goal of awarding 18 percent of the total contract value to subcontractors, equipment lessors and/or material suppliers that qualify as Disadvantaged Business Enterprises (DBEs).
 - 1. Failure to meet the minimum goal placed on this project, or to provide a "good faith effort" to meet the minimum goal, may be grounds for rejection of the bid as being non-responsive.
 - 2. As a source of information only, a Disadvantaged Business Enterprise Directory is available from the Division of Civil Rights and Affirmative Action. Use of this listing does not relieve the Contractor of their responsibility to seek out other DBE's not listed, prior to bid. If a contractor proposes to use a DBE contractor not listed in the DBE Directory, the proposed DBE firm must submit a completed certification application to the Division of Civil Rights and Affirmative Action, fifteen (15) days prior to bid date.

B. DEFINITIONS

1. Disadvantaged Business Enterprise is a firm, "Owned and controlled" by socially and economically disadvantaged individuals that is also a small business concern, as defined pursuant to Section 3 of the Small Business Act and Small Business Administration Regulations (13 CFR, Part 121) which also does not exceed the revenue cap on averaged annual gross receipts applicable to the firm's particular Standard Industrial Classification (SIC Code).
2. Owned and Controlled is defined as a firm which is at least fifty-one (51%) percent owned by one or more disadvantaged individuals, or in the case of a publicly owned business, at least fifty-one (51%) percent of the stock is owned by one or more disadvantaged individuals, and whose management and daily business operations are controlled by one or more such individuals.
3. Any individual in one of the following groups who is also a U.S. Citizen or lawfully admitted permanent resident presumed to be socially and economically disadvantaged under the DBE Program.
 - (a) Black Americans – includes any persons having origins in any of the black racial groups of Africa;
 - (b) Hispanic Americans - includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture; or origin, regardless of race;
 - (c) Native American - includes persons who are American Indians, Eskimos, Aleuts or Native Hawaiians;
 - (d) Asian-Pacific Americans - includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau) the Commonwealth of the Northern Mariana Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia or Hong Kong;
 - (e) Subcontinent Asian Americans - includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
 - (f) Women - regardless of race;
 - (g) Other - Any additional groups whose members are designated as socially and economically disadvantaged by the Small Business Administration, at such time as the SBA designation becomes effective; or a determination made by the NJDOT's Division of Civil Rights and Affirmative Action, on a case-by-case basis;

VI COUNTING DBE PARTICIPATION

- A. Each DBE is subject to a certification procedure to ensure its DBE eligibility status prior to award of contract. In order to facilitate this process it is advisable for the bidder to furnish the names of proposed DBE's to the Department fifteen (15) days before bid opening. Once a firm is determined to be a bona fide DBE by the Division of Civil Rights and Affirmative Action, the total dollar value of the contract awarded to the DBE is counted toward the applicable DBE goal.
- B. The Contractor may count toward its DBE goal only expenditures to DBE's that perform a commercially useful function in the work of a contract. A DBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out its responsibility by actually performing, managing and supervising the work involved. To determine whether a DBE is performing a commercially useful function, the Contractor shall evaluate the amount of work subcontracted, industry practice and other relevant factors.
- C. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own workforce, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, you must presume that it is not performing a commercially useful function.

- D. If the prime Contractor is a certified DBE, payments made to the Contractor for work performed by the Contractor will be applied toward the DBE goal. Payments made to the Contractor for work performed by non-DBE's will not be applied toward the goal.
- E. The prime Contractor may count 60 percent of its expenditures to DBE suppliers who are not Manufacturers, provided that the DBE supplier performs a commercially useful function in the supply process. The contractor may count 100% of its expenditure to DBE suppliers who are also manufacturers. Manufacturers receive 100% credit toward the DBE goal.
- F. When a DBE subcontractor sublets part of the work of its contract to another firm, the value of the subcontract work may be counted towards the DBE goals only if the subcontractor itself is a DBE. Work that a DBE subcontractor subcontracts to a non-DBE firm, does not count toward DBE goals.

VII GOOD FAITH EFFORT

To demonstrate sufficient reasonable efforts to meet the DBE contract goals, a bidder shall document the steps it has taken to obtain DBE participation, including but not limited to the following:

- A. Attendance at a pre-bid meeting, if any, scheduled by the Department to inform DBE's of subcontracting opportunities under a given solicitation.
- B. Advertisement in general circulation media, trade association publications, as well as minority-focus media for at least 20 days before bids are due. If 20 days are not available, publication for a shorter reasonable time is acceptable.
- C. Written notification to DBE's that their interest in the contract is solicited;
- D. Efforts made to select portions of the work proposed to be performed by DBEs in order to increase the likelihood of achieving the stated goal;
- E. Efforts made to negotiate with DBE's for specific sub-bids including at a minimum:
 - 1. The names, addresses and telephone numbers of DBE's that were contacted;
 - 2. A description of the information provided to DBE's regarding the plans and Specifications for portions of the work to be performed; and
 - 3. A statement of why additional agreements with DBE's were not reached;
- F. Information regarding each DBE the bidder contacted and rejected as unqualified and the reasons for the bidder's conclusion;
- G. Efforts made to assist the DBE in obtaining bonding or insurance required by the Bidder or the Department.

NOTE: If the Division of Civil Rights and Affirmative Action determines that the apparent successful low bidder has failed to meet the requirements of this section, the bidder will be afforded the opportunity for administrative consideration prior to the award or rejection of the contract. As part of the administrative reconsideration process, the bidder will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. NJDOT will send the bidder a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to the USDOT.

VIII AFFIRMATIVE ACTION PLANS

- A. General contractors are required to submit their firm's Affirmative Action Program annually to the Division of Civil Rights and Affirmative Action. Until such time as these programs are submitted and approved, Contractors must have their programs in the Division of Civil Rights and Affirmative Action no later than seven (7) State business days after the date of receipt of bids.
- B. This program will include, but is not limited to the following:
 - 1. The name of the Contractor's D/ESBE Liaison Officer to administer the firm's Disadvantaged Business Program.

2. An explanation of the affirmative action methods used in seeking out and considering Disadvantaged Business Enterprises as subcontractors, material suppliers or equipment lessors.
 3. An explanation of affirmative action methods intended to be used in seeking out and considering Disadvantaged Business Enterprises as subcontractors, material suppliers or equipment lessors. This refers to the Contractor's ongoing responsibility, i.e., Disadvantaged Business Enterprise/Affirmative Action activities after the award of the contract and for the duration of said project.
- C. The following shall be submitted either with the bid or to the Division of Civil Rights and Affirmative Action no later than seven (7) State business days after the date of receipt of bids.
1. DBE Form CR-266F- Schedule of DBE Participation. List all DBE's participating in the contract listing the scope of work, dollar value and percent of total contract to be performed.
 2. Supplement to DBE Form CR-266F - A list of all subcontractors who submitted bids or quotes on this project.
 3. Request for Exemption - In the event that the bidder fails to meet the specified goal, they must submit within seven State business days of the bid, a written request for exemption to the goal. This request must include a written statement addressing Items A through G in Article VII of this attachment in addition to an accounting of the reason(s) why each item in the bid proposal was not subcontracted. Submittal of such request does not imply Departmental approval. An assessment of the material will be conducted by the Department's Division of Civil Rights and Affirmative Action.

IX AFFIRMATIVE ACTION AFTER AWARD OF THE CONTRACT

If at any time following the award of contract, the Contractor intends to sublet any portion(s) of the work under said contract, or intends to purchase material or lease equipment not contemplated during preparation of bids, said Contractor shall take affirmative action:

1. To notify the RE, in writing, of the type and approximate value of the work which the Contractor intends to accomplish by such subcontract, purchase order or lease.
2. To signify and affirm compliance with the provisions of this Section, the Contractor shall submit the Post-Award DBE Certification Form to the Regional Supervising Engineer with his application to sublet or prior to purchasing material or leasing equipment. Post Award DBE forms may be obtained from the RE.
3. To give disadvantaged firms equal consideration with non-minority firms in negotiation for any subcontracts, purchase orders or leases.
4. If a prime contractor fails to meet its original DBE obligation, they must request an exemption to the goal following criteria in Section VIII (C)(4) and provide a good faith effort thereof. This request must include a written statement addressing each of the Good Faith Efforts outlined in Section VII, A-G.

X CONSENT BY DEPARTMENT TO SUBLETTING

The Department will not approve any subcontract proposed by the Contractor unless and until said Contractor has complied with the terms of this attachment.

XI SELECTION AND RETENTION OF SUBCONTRACTORS

- A. The Contractor is further obligated to provide the RE with a listing of firms, organizations or enterprises solicited and those utilized as subcontractors on the proposed project. Such listing shall clearly delineate which firms are classified as disadvantaged.
- B. Efforts made to identify and retain a Disadvantaged Business Enterprise as a substitution subcontractor when the arrangements with the original DBE proved unsuccessful, shall be submitted in writing to the Department's D/ESBE Liaison Officer for approval. Work in the category concerned shall not begin until such approval is granted in writing.
- C. Notification of a subcontractor's termination will be sent to the Department by the Contractor through the RE. Said termination notice will include the subcontractor's ethnic classification and reason for termination.

XII CONCILIATION

In cases of alleged discrimination regarding these DBE provisions and guidelines, an investigation will be undertaken by the Federal Office of Contract Compliance in conjunction with the Division of Civil Rights and Affirmative Action of the New Jersey Department of Transportation and the Federal Highway Administration.

XIII DOCUMENTATION

- A. The Department or the federal funding agencies may at any time require such information as is deemed necessary in the judgment of the Department to ascertain the compliance of any bidder or contractor with the terms of these provisions.
- B. Record and Reports.
The Contractor shall keep such records as are necessary to determine compliance with its Disadvantaged Business Enterprise Utilization obligations. The records kept by the Contractor will be designed to indicate:
 - 1. The names of disadvantaged subcontractors, equipment lessors and material suppliers contacted for work on this project.
 - 2. The type of work to be done, materials to be utilized or services to be performed other than the work of the prime contractor on the project.
 - 3. The actual dollar value of work subcontracted and awarded to DBE's.
 - 4. The progress being made and efforts taken in seeking out and utilizing Disadvantaged Business Enterprises. This would include solicitations, quotes and bids regarding project work items, supplies, leases, etc.
 - 5. Documentation of all correspondence, contacts, telephone calls, etc., to obtain the services of Disadvantaged Business Enterprises on this project.
 - 6. Records of all DBE's and non-DBEs who have submitted quotes/bids to the Contractor on the project.
- C. Submit reports, as required by the Department, on those contracts and other business transactions executed with Disadvantaged Business Enterprises in such form and manner as may be prescribed by the Department.
- D. All such records must be maintained for a period of three (3) years following acceptance of final payment and will be available for inspection by the Department.

XIV PAYMENT TO SUBCONTRACTORS

The Contractor agrees to pay its subcontractors in accordance with the Specifications.

XV NON-COMPLIANCE

Failure by the bidder to comply with the Specifications may result in rejection of the bid. The Contractor may further be declared ineligible for future Department contracts.

FHWA ATTACHMENT NO. 5 (A)

INCENTIVE PROGRAM DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION ATTACHMENT FOR FHWA FUNDED CONTRACTS

I PURPOSE.

To ensure that certified Disadvantaged Business Enterprises (DBE's), as defined in 49 CFR Part 26, have the maximum opportunity to compete for and perform on Department construction projects.

II INTENT.

To encourage prime contractors to utilize the services of DBE's who have not previously been prime contractors or subcontractors on Department projects, and afford DBE's the opportunity to again experience in Department construction contract work.

III ELIGIBILITY.

Only prime contractors and DBE's certified prior to the date of bid, or prospective DBE's that have submitted to the Division of Civil Rights/Affirmative Action on or before the day of bid a completed "New Jersey Department of Transportation Disadvantaged Business Enterprise Disclosure Affidavit" (PR-131) and all required documentation and have never been either prime contractor or subcontractor on Department construction projects will be eligible for participation in this program. A list of those eligible DBE's will be available from the Division of Civil Rights/Affirmative Action. Any bidder who submits the name of a certified first-time DBE as part of its goal commitment is also eligible. Any DBE participating in the program must submit to the prime contractor a certification that they have never been either a prime contractor or subcontractor on a Department construction project under their present name or any other name. The prime contractor shall submit this certification with their required DBE submission.

IV INCENTIVE.

Prime contractors utilizing first-time DBE's will be given a credit toward their goal percentage identified in companion document "*Disadvantaged Business Enterprise Utilization Attachment For FHWA Funded Contracts*", dated September 1987, revised January 1989, September 1992 and May 1995, equal to the actual dollar amount subcontracted to a first time DBE with the total project credit limited to two percent (2%) of the total bid price but not to exceed \$200,000. This extra credit will reduce the goal percentage award as well as be applicable to the reduced goal percentage.

V PROGRAM REQUIREMENTS.

- A. A prime contractor may present any number of first time DBE's for each project. Credit will be given only for the actual amount subcontracted up to the limits established in IV above.
- B. The prime contractor shall be responsible for the entire DBE goal percentage established for the project.
- C. Failure to use a first time DBE shall cause the original goal award percentage prior to applying first time DBE credits to remain in effect.
- D. Failure to meet the goal award percentage, coupled with a lack of good faith effort as determined by the Division of Civil Rights/Affirmative Action, will be considered to be non-compliance on the part of the prime contractor who may be placed in show cause and subsequently be grounds for rejection of the bid as nonresponsive.

FHWA ATTACHMENT NO.6

EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS

1. General

- a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (Form FHWA-1273) and these Special Provisions which are imposed pursuant to Section 140 of Title 23 USC, as established by Section 22 of the Federal Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the Equal Employment Opportunity requirements set forth in the Required Contract Provisions.
- b. The Contractor will work with the State agencies and the Federal Government in carrying out Equal Employment Opportunity obligations and in their review of activities under the contract.
- c. The Contractor and all subcontractors holding subcontracts, not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of Equal Employment Opportunity. The Contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor. (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors).
- d. Noncompliance by the Contractor with the requirements of the Affirmative Action Program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

2. Equal Employment Opportunity Policy

The Contractor will accept as its operating policy the following statement which is designed to further the provisions of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and on-the-job training.

3. Equal Employment Opportunity Officer

The Contractor will designate and make known to the Department contracting officers an equal opportunity officer (hereinafter referred to as the EEO Officer) who will have the capability, authority and responsibility to effectively implement and promote an active contractor program of equal employment opportunity.

4. Dissemination of Policy

- a. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommended such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure compliance, the following minimum actions will be taken:

- (1) An initial project site meeting with key supervisory and office personnel will be conducted before or at the start of work, and then not less than once every 6 months, at which time the Contractor's equal employment opportunity program will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
 - (2) All new supervisory and office personnel will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the Contractor's equal employment opportunity obligations within 30 days following their reporting for duty with the Contractor.
 - (3) All personnel engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official concerning the Contractor's procedures for locating and hiring minority and female employees.
 - b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:
 - (1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - (2) The Contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, and/or other appropriate means.
5. Recruitment
- a. When advertising for employees, the Contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer". All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
 - b. The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants, including, but not limited to, State employment agencies, schools, colleges and minority-oriented organizations. To meet this requirement, the Contractor will, through his EEO Officer, identify sources of potential minority and female employees, and establish procedures with such sources whereby applicants may be referred to the Contractor for employment consideration.

In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with the equal employment opportunity contract provisions. (The US Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or females, or obligates the Contractor to do the same, such implementation violates Executive Order 11246, as amended).
 - c. The Contractor will encourage his present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures pertaining to the referral of applicants will be discussed with employees.
6. Personnel Actions
- Wages, working conditions and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be followed:
- a. The Contractor will conduct a project site inspection at the start of work, and periodically thereafter, to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

- b. The Contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The Contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with its obligations under this contract, and will resolve or attempt to resolve such complaints, within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform complainants of available avenues of appeal.

7. Training Special Provisions

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journey people in the type of craft or job classification involved.

The number of training positions will be 3, where feasible, consisting of at least 0 APPRENTICES and 3 TRAINEES. TRAINEE HOURS=1,200.

Apprentices are defined as registered members of an approved apprenticeship program recognized by the United States Department of Labor (USDOL) Bureau of Apprenticeship and Training (BAT) or a New Jersey State apprenticeship agency recognized by USDOL BAT (e.g., New Jersey Department of Education). Graduates of the Pre-Apprenticeship Training Cooperative Program shall be classified as apprentices. Trainees are defined as skilled, semi-skilled or lower level management individuals receiving training per one of the approved NJDOT "Revised Standard Training Guidelines" (available from the Division of Civil Rights).

Where feasible, at least 50% of the training positions will be assigned to Skilled Crafts which include but are not limited to Carpenters, Dockbuilders, Electricians, Ironworkers and Operating Engineers.

a. Contractor Submission and NJDOT Approval of the Initial Training Program.

At or after the preconstruction conference and prior to the start of work, the Contractor shall submit a training program to the RE for his or her review and comments prior to Division of Civil Rights review and approval. The Contractor's training program shall include:

- (1) the number of trainees or apprentices to be trained in all selected Training Positions,
- (2) the Standard Program Hours for all positions,
- (3) an estimate of the Minimum Available Hours actually feasible on the project toward completion of the Standard Program Hours per position,
- (4) a training schedule of Estimated Start Dates for the apprentices or trainees, developed and coordinated with the project's work progress schedule,
- (5) Training Guidelines for all positions, and
- (6) which training will be provided by the Contractor and which by Subcontractors.

The number of apprentices and trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeypeople in the various crafts within a reasonable area of recruitment. The Contractor shall submit timely, revised training programs as required throughout the project to ensure that feasible and Maximum Available Training is provided. Maximum Available Training is defined as bringing each apprentice or trainee onto the project when work first becomes available in his/her craft and providing all available training until hours are no longer available.

b. Assignment of Training to Subcontractors

In the event that portions of the contract work are subcontracted, the Contractor shall determine how many, if any, of the apprentices or trainees are to be trained by subcontractors, provided,

however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by these Training Special Provisions. The Contractor shall also ensure that these Training Special Provisions are made applicable to such subcontracts.

- c. Requirements for Recruitment, Selection and Approval of Apprentices and Trainees
 - (1) Apprentices or trainees should be in their first year of apprenticeship or training. The Contractor shall interview and screen trainee candidates to determine if their actual work experience is equivalent to or exceeds that offered by the training program prior to submitting candidates, via the RE, to the Division for review and approval or disapproval.
 - (2) Training and upgrading of minorities (e.g., Blacks, Asians or Pacific Islanders, Native Americans or Alaskan Natives, Hispanics) and females toward journeyman status is a primary objective of these Training Special Provisions. Accordingly, the Contractor shall make every effort to enroll minorities and females, by conducting systematic and direct recruitment through public and private sources likely to yield minority and female apprentices or trainees, to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.
 - (3) No employee shall be employed as an apprentice or trainee in any position in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor shall satisfy this requirement by including appropriate questions in the employment application or by other suitable means and by submitting an accurate and complete "Apprentice/Trainee Approval Memorandum." (Form CR-1) Regardless of the methods used, the Contractor's records should document the findings in each case.
 - (4) Skilled craft trainees may complete up to 3,000 total training hours on NJDOT projects, with an extension of an additional 1,000 hours permitted on a case-by-case basis. Semi-skilled and lower-level management trainees attain journeyman status upon completion of a training guideline and may complete up to three (3) different positions.
- d. Apprenticeship and Training Programs
 - (1) The minimum length and type of training for each position will be established in the training program selected by the Contractor and approved by NJDOT and the Federal Highway Administration. NJDOT will approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average apprentice or trainee for journeyman status in the craft concerned by the end of the training period.
 - (2) Apprenticeship programs registered with the US Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by USDOL BAT and training programs approved but not necessarily sponsored by the US Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided such programs are being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the NJDOT Division of Civil Rights prior to commencing work on the positions covered by the Contractor's training program. The Division will review guidelines developed by the Contractor for approval or disapproval in accordance with the Training Guideline Approval Process described in the "Revised Standard Training Guidelines". The Division will also review existing guidelines for revision based on the same process.
 - (3) It is the intention of these provisions that training be provided in construction crafts rather than clerk-typist or secretarial-type positions. Training is permitted in lower level management positions (e.g., timekeepers), where the training is oriented toward project site applications. Training in semi-skilled laborer positions is permitted provided that significant and meaningful training is available on the project site. Some offsite, classroom training (e.g., safety, first aid instruction) may be permitted as long as such training is an integral part of an approved training program and does not comprise a significant part of the overall training.
- e. Reimbursement of the Contractor for Providing Training

- (1) The Contractor will be credited for each apprentice or trainee employed on the construction site who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such apprentices or trainees as provided hereinafter. Payment will be made under the pay item Trainees at the bid price in the Proposal per person-hour of training given an employee on this contract in accordance with an approved training program. If approved, payment will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the Contractor from receiving other reimbursement. Offsite, classroom training reimbursement may only be made to the Contractor when the company does one or more of the following and the apprentices or trainees are concurrently employed on a Federal-aid project: contributes to the cost of the training and/or provides instruction to apprentices or trainees or pays their wages during the offsite, classroom training (e.g., safety, first aid instruction) period.
 - (2) The Contractor shall pay apprentices and trainees according to the project-specific New Jersey Department of Labor Prevailing Wage Rate Determination for the project.
- f. Documentation Required to be Signed by Apprentices or Trainees and provided to NJDOT
- (1) At the start of training, the Contractor shall provide the RE and each apprentice or trainee with an applicable "Training Guideline" and, at the conclusion of training, an accurate and complete "Training Certificate for Reporting Hours to NJDOT" (Form CR-3), showing hours of training satisfactorily completed.
 - (2) The Contractor shall maintain and submit an accurate and complete "NJDOT Contractor's 1409 Quarterly Training Report" (Form-CR-1409) to the RE within ten (10) days of the end of each training quarter (e.g., January 10, April 10, July 10, October 10); a copy shall also be given to each apprentice or trainee.
 - (3) The Contractor shall maintain and submit accurate and complete "Biweekly Training Reports" (Form CR-2) to the RE, and each apprentice or trainee, as periodic reports documenting performance under these Training Special Provisions.
- g. Training and Promotion
- (1) The Contractor shall assist in locating, qualifying, and increasing the skills of minority and female employees, and applicants for employment.
 - (2) The Contractor shall advise employees and applicants for employment of available training programs and entrance requirements.
 - (3) The Contractor shall periodically review the training and promotion potential of minority and female employees and encourage eligible employees to apply for such training and promotion.
- h. Determining Good Faith Compliance
- (1) Per the approved program or guideline, the Contractor shall provide Maximum Available Training to apprentices and trainees by beginning their training as soon as feasible with the start of craft work utilizing the skill involved on the project construction site and by retaining them as long as training opportunities exist in their crafts or until their training program positions are completed.
 - (2) The Contractor shall recall apprentices or trainees released due to reductions in force when the work scope permits and they are available to return. When they are unavailable to resume training on the project site, the Contractor shall submit written proof of recall efforts and replacement candidates and/or positions in a timely manner. The Contractor shall not terminate apprentices or trainees prior to completion of their training program positions without NJDOT consultation and authorization. Apprentices or trainees are not required to be on board for the entire length of the contract.
 - (3) The Contractor shall have fulfilled the contractual responsibilities under these Training Special Provisions if the company has provided Acceptable Training to the number of apprentices or trainees specified in this contract and/or by providing the remaining hours required to complete training positions begun by apprentices or trainees on other projects. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.
 - (4) The Contractor shall be responsible for demonstrating all steps that have been taken in pursuance of enrolling minorities and females in the training program positions, prior to a

determination as to whether the Contractor is in compliance with these Training Special Provisions.

- (5) The Contractor shall submit to the RE written training program summaries at the 50% time and/or cost stage of the contract and also prior to project completion, describing all good faith actions and particularly addressing Maximum Available Training for incomplete training positions, per the procedure found in the revised "Instructions for Implementing the Training Special Provisions".
- i. Enforcement Measures and Contractor's Rating
 - (1) Payment will not be made if either the failure to provide the required training or the failure to hire the apprentice or trainee as a journey person is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of these Training Special Provisions.
 - (2) Per established procedures and scheduled Contract Compliance Reviews, the Contractor's performance will be rated and reviewed periodically by the Department.
 - (3) Noncompliance with these Training Special Provisions may be cause for delaying or withholding monthly and final payments, pending corrective and appropriate measures by the Contractor to the satisfaction of the Department, per Item 1d of these EEO Special Provisions.

8. Unions

If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will make maximum effort to obtain the cooperation of such unions to increase opportunities for minorities and females within the unions, and to effect such union referrals to the construction project. Actions by the Contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

- a. The Contractor will use maximum effort to develop, in cooperation with the unions, joint training programs aimed at qualifying more minorities and females for union membership and increasing their skills in order to qualify for higher paying employment.
- b. The Contractor will use maximum effort to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.
- c. The Contractor will obtain information concerning the referral practices and policies of the labor unions except that to the extent such information is within the exclusive possession of the labor unions and they refuse to furnish this information to the Contractor, the Contractor shall so certify to the Department and shall set forth what efforts have been made to obtain this information.
- d. In the event the unions are unable to provide the Contractor with a reasonable flow of minority and female referrals within the time limit set forth in the collective bargaining agreement, the Contractor will through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin, making full efforts to obtain qualified and/or qualifiable minorities and females. (The US Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees). In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such Contractor shall immediately notify the Department.

9. Subcontracting

- a. The Contractor will use maximum effort to solicit bids from and to utilize minority subcontractors or subcontractors with meaningful minority and female representation among their employees. Contractors may use lists of minority-owned construction firms as issued by the Department.
- b. The Contractor will use maximum effort to ensure subcontractor compliance with the equal employment opportunity obligations.

10. Documents and Reports

- a. The Contractor will maintain such documents as are necessary to determine compliance with the contract's equal employment opportunity requirements. Documents will include the following:
 - (1) the number of minorities, non-minorities, and females employed in each work classification on the Project.
 - (2) the progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and females (applicable only to Contractors who rely in whole or in part on unions as a source of their work force).
 - (3) the progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - (4) the progress and efforts being made in securing the services of minority and female subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. All such documents must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department and the Federal Highway Administration.
- c. The contractor and each subcontractor must submit monthly employment and wage data to the Department via a web based application using electronic Form CC-257R. Instructions for registering and receiving the authentication code to access the web based application can be found at:

<http://www.state.nj.us/transportation/business/Civilrights/pdf/CC257.pdf>

Instructions on how to complete Form CC257 are provided in the web application. Submit Form CC-257R through the web based application within 10 days following the end of the reporting month. Submission of this form also satisfies the requirement of the form FHWA 1391.

All employment and wage data must be accurate and consistent with the certified payroll records. The contractor is responsible for ensuring that their subcontractors comply with these reporting requirements. Failure by the contractor to submit Monthly Employment Utilization Report may impact the contractor's prequalification rating with the Department.

FHWA ATTACHMENT NO.7

SPECIAL CONTRACT PROVISIONS FOR INVESTIGATING, REPORTING AND RESOLVING EMPLOYMENT DISCRIMINATION AND SEXUAL HARASSMENT COMPLAINTS

The contractor hereby agrees to the following requirements in order to implement fully the nondiscrimination provisions of the Supplemental Specifications.

The Contractor agrees that in instances when it receives from any person working on the project site a verbal or written complaint of employment discrimination, prohibited under N.J.S.A. 10:5-1 et seq., 10:2-1 et seq., 42 U.S.C. 2000(d) et seq., 42 U.S.C. 2000 (e) et seq. and Executive Order 11246, it shall take the following actions:

1. Within one (1) working day commence an investigation of the complaint which shall include but not be limited to interviewing the complainant, the respondent, and all possible witnesses to the alleged act or acts of discrimination or sexual harassment.
2. Prepare and keep for its use and file a detailed written investigative report which includes the following information:
 - a) Investigatory activities and findings.
 - b) Dates and parties involved and activities involved in resolving the complaint.
 - c) Resolution and corrective action taken if discrimination or sexual harassment is found to have taken place.
 - d) A signed copy of resolution of complaint by complainant and contractor.

In addition to keeping in its files the above-noted detailed written investigative report, the contractor shall keep for possible future review by the Department all other records, including but not limited to, interview memos and statements.

3. Upon the request of the Department, provides to the Department within ten (10) calendar days a copy of its detailed written investigative report and all other records on the complaint investigation and resolution.
4. Take appropriate disciplinary action against any contractor employee, official or agent who has committed acts of discrimination or sexual harassment against any contractor employee or person working on the project. If the person committing the discrimination is a subcontractor employee, then the contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with project's contract requirements.
5. Take appropriate disciplinary action against any contractor employee, official or agent who retaliates, coerces or intimidates any complaint and/or person who provides information or assistance to any investigation of complaints of discrimination or sexual harassment. If the person retaliating, coercing or intimidating a complainant or other person assisting an investigation is a subcontractor's employee, then the contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with the project's contract requirements.
6. Ensure to the maximum extent possible that the privacy interests of all persons who give confidential information in aid of the contractor's employment discrimination investigation are protected.

In conjunction with the above requirements, the contractor shall develop and post a written sexual harassment policy for its work force.

Failure by the contractor to comply with the above requirements may be cause for the New Jersey Department of Transportation to institute against the contractor any and all enforcement proceedings and/or sanctions authorized by the contract or by state and/or federal law.