

**City of Cleveland**  
**Mayor's Office of Capital Projects**  
**Division of Engineering and Construction**

# **Contract and Specifications REBID**

**for**

**West Sixth Street Streetscape  
West Lakeside Avenue to West St. Clair Avenue  
and  
Professor Street Intersections**

**The DBE Goal for this project is: 8%**

**CUY-West Sixth Street Streetscape, Part 1;  
CUY-Professor Street Intersections, Part 2  
PID 89722; PID 90218**

**January 2013**

**Table of Contents/Index**  
**CUY-West Sixth Street Streetscape, Part 1 # CUY-Professor Street Intersections, Part 2**

1	Cover Page	1
2	Table of Contents/Index	1
3	Notice to Bidders	1
4 *	Vendor Information Form (Yellow)	1
5 *	Bid Bond	1
6 *	Tax Payer ID W-9 (Yellow)	1-4
7	Part A - Instructions to Bidders	1-4
8	Part B - General Conditions	1-9
9	C Specs - Supplemental General Conditions (Blue)	1-16
10	LPA Required Contract Provisions	
	Section 100 Additional Requirements	1-7
	Proposal Note 102	1-3
	PPN-107 - Critical Path Schedule	1-12
	LPA Template	1-43
11	NOT INCLUDED	
12	Change Order Checklist	1
13	Current Wage Rates (Pink) Davis Bacon	1-43
14	Standard D Specs Index (Green)	1-111
15	Standard D Specs (Green)	1-68
16	DS Specs Index (Olive)	1-11
17	DS Specs (Olive)	1-52
18	Subsurface Investigation Report (Tan)	1-39
19	Special Provisions - Curb Ramps Revised 12-8-09 (Olive)	1-8
20	ODOT SS 800, Revisions to 2010 CMS, 07-20-2012 (Olive)	1-109
21	ODOT SS 832 Temporary Sediment and Erosion Control, 05-05-2009 (Olive)	1-62
22	ODOT Proposal Note 417 - Design Requirements for Plant Mix Pavements (Olive)	1
23	Exhibit "B" Utility Adjustments and 4A Notes (Olive)	1-7
24	Part E - Detailed Specifications, Cleveland Water Department (Blue)	1-79
25	Ordinance No. 1570-10	1
26	Ordinance No. 1571-11	1
27 *	Northern Ireland Disclosure (Yellow)	1
28 *	Affidavit (Yellow)	1-2
29 *	Bid Form - Unit Price (Yellow)	1-2
30 *	Schedule of Quantities (Yellow)	1-26
31	Bond	1-2

Items with asterik (\*) shall be completed and/or signed as part of the bid package

All pages and paragraphs of the specifications are numbered. It is the responsibility of each bidder to insure that the errors or omissions are called to the attention of the Division of Purchases and Supplies and to request a correct copy of these specifications

**Table of Contents/Index**  
**CUY-West Sixth Street Streetscape, Part 1 # CUY-Professor Street Intersections, Part 2**

1	Cover Page	1
2	Table of Contents/Index	1
3	Notice to Bidders	1
4 *	Vendor Information Form (Yellow)	1
5 *	Bid Bond	1
6 *	Tax Payer ID W-9 (Yellow)	1-4
7	Part A - Instructions to Bidders	1-4
8	Part B - General Conditions	1-9
9	C Specs - Supplemental General Conditions (Blue)	1-16
10	LPA Required Contract Provisions	
	Section 100 Additional Requirements	1-7
	Proposal Note 102	1-3
	PPN-107 - Critical Path Schedule	1-12
	LPA Template	1-43
11	NOT INCLUDED	
12	Change Order Checklist	1
13	Current Wage Rates (Pink) Davis Bacon	1-43
14	Standard D Specs Index (Green)	1-111
15	Standard D Specs (Green)	1-68
16	DS Specs Index (Off Green)	1-11
17	DS Specs ( Off Green)	1-52
18	Subsurface Investigation Report (Brown)	1-39
19	Special Provisions - Curb Ramps Revised 12-8-09 (Off Green)	1-8
20	ODOT SS 800, Revisions to 2010 CMS, 07-20-2012 (Off Green)	1-109
21	ODOT SS 832 Temporary Sediment and Erosion Control, 05-05-2009 (Off Green)	1-62
22	ODOT Proposal Note 417 - Design Requirements for Plant Mix Pavements	1
23	Exhibit "B" Utility Adjustments and 4A Notes (Off Green)	1-7
24	Part E - Detailed Specifications, Cleveland Water Department (Blue)	1-79
25	Ordinance No. 1570-10	1
26	Ordinance No. 1571-11	1
27 *	Northern Ireland Disclosure (Yellow)	1
28 *	Affidavit (Yellow)	1-2
29 *	Bid Form - Unit Price (Yellow)	1-2
30 *	Schedule of Quantities (Yellow)	1-26
31	Bond	1-2

Items with asterik (\*) shall be completed and/or signed as part of the bid package

All pages and paragraphs of the specifications are numbered. It is the responsibility of each bidder to insure that the errors or omissions are called to the attention of the Division of Purchases and Supplies and to request a correct copy of these specifications

## Notice to Bidders

1. The safety requirements of the State of Ohio, Ohio Administrative Code, and Chapter 4, 121:1-3 will be enforced during the contract term. The Ohio Bureau of Workers Compensation, Division of Safety and Hygiene book, "Specific Safety Requirements of the Ohio Bureau of Workers Compensation Relating to Construction", is hereby incorporated into these specifications.
2. The successful bidder will be required to provide a performance bond and a payment bond in the amount of the contract on the form attached elsewhere in this invitation to bid.
3. The successful bidder and all subcontractors shall be enrolled, and in good standing, in the Drug-Free Workplace (DFWP) Program or a similar program approved by the Bureau of Workers Compensation.
4. All pages and paragraphs of the specifications are numbered. It is the responsibility of the bidder to ensure that errors or omissions are called to the attention of the Division of Purchases and Supplies and to request any corrections from that Division in a written addendum.
5. A MANDATORY pre-bid meeting is scheduled on February 14, 2013, at 10:00 AM, in Room 509, Cleveland City Hall (601 Lakeside Avenue, Cleveland, OH – 44114).
6. Contractor hereby certifies that beginning on the date the contract is awarded and extending until one year following conclusion of the contract, all persons identified in Ohio Revised code Sections 3517.13(I)(3) and 3517.13(J)(3), as applicable, are in compliance with Ohio Revised Code Sections 3517.13(I)(1) and 3517.13(J)(1).
7. The bidder shall pay special attention to "Part A- Instructions To Bidders," including specifically paragraph "A-16-**Rejection Or Acceptance of Bids.**" Under paragraph A-16, the City of Cleveland has the right to reject any one bid, or part of a bid, or all bids for any reason stated in A-16, or if considered to be in the public interest.
8. Only pre-qualified contractors are eligible to submit bids for this PROJECT. Pre-qualification status must be in force at the time of the bid, at the time of the award, and through the life of the construction contract. For work types that ODOT does not pre-qualify, the LPA (Local Public Agency) must still select a qualified contractor. Subcontractors are not subject to the pre-qualification requirement. The "prime" contractor must perform no less than 30 percent of the total original contract price.
9. The City of Cleveland reserves the right to award Part 1 or Part 2 or both Parts of this project and to award any or all of the alternates based on available project funding. Alternate 1 for either Part will be awarded before Alternate 2 for that Part. Both Alternates can be awarded for either part whether or not the Alternates for the other Part are awarded. The City further reserves the right to non-perform individual items as seen fit.
10. Please note that the deadline for all bidders' questions shall be Wednesday, February 20, 2013 at 3:00 pm. Absolutely no further questions will be accepted after the deadline.

ALL BIDDERS ARE REQUIRED TO SUBMIT WITH THEIR BID  
THE FOLLOWING INFORMATION

Please fill in :

Contractor \_\_\_\_\_

Vendor Number 800 \_\_\_\_\_

Vendor Fax Number \_\_\_\_\_

Vendor Email Address \_\_\_\_\_

Federal Tax Payers I.D. Number \_\_\_\_\_

For all Corporations

Or

Owners Social Security Number \_\_\_\_\_

(For Individuals and Partnerships who do  
not have Federal Tax Payers I.D. numbers)

PLEASE INCLUDE ABOVE INFORMATION WHEN SUBMITTING YOUR BID

CITY OF CLEVELAND

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, That we

\_\_\_\_\_

as Principal, and

\_\_\_\_\_

a corporation duly authorized to do business in Ohio, as Surety, are held and firmly bound unto

**THE CITY OF CLEVELAND**

as Obligee, in the penal sum of \_\_\_\_\_

Dollars, lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED, sealed and dated this \_\_\_\_\_ day of \_\_\_\_\_

WHEREAS, the said principal is herewith submitting bid for

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Now, THEREFORE, the condition of the above obligation is such that if the said principal shall execute a contract and give bond for the faithful performance within ten (10) working days after being notified in writing of the award of such contract to the principal, or if the principal or surety shall pay the obligee the sum, not exceeding the penalty hereof, by which the amount of the contract, covering the said proposal, properly and lawfully executed by and between the obligee and some third party, may exceed the amount bid by principal, then this obligation shall be void; otherwise it shall remain in full force and effect.

PRINCIPAL \_\_\_\_\_

BY: \_\_\_\_\_

TITLE \_\_\_\_\_

By \_\_\_\_\_  
Attorney in Fact

(City Contract No.)

# AGREEMENT

(Purchases & Supplies File No.)

THIS AGREEMENT is made this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ by and between the CITY OF CLEVELAND ("City"), a municipal corporation of the State of Ohio, through its Director of \_\_\_\_\_, duly authorized pursuant to Chapter 181 of the Codified Ordinances of Cleveland, Ohio 1976, Ordinance No. \_\_\_\_\_, passed by the Council of the City on \_\_\_\_\_, \_\_\_\_\_ and City Board of Control Resolution No. \_\_\_\_\_, adopted \_\_\_\_\_ and \_\_\_\_\_ ("Contractor"), a corporation organized and existing under the laws of the State of \_\_\_\_\_ and authorized to do business in the State of Ohio / a partnership consisting of \_\_\_\_\_ / an individual doing business as \_\_\_\_\_.

RECITALS:

1. Contractor has offered to furnish certain products and/or equipment and/or services to the City.
2. The City has accepted Contractor's offer and desires to contract with Contractor for the provision of such products and/or equipment and/or services, under the terms, conditions and provisions of this Agreement.

In consideration of the foregoing, the payments and mutual promises contained herein, the City and the Contractor, each for itself, its successors, and assigns, hereby agree as follows:

Contractor shall furnish to the City the following products, equipment or services: \_\_\_\_\_, as more fully described in the specifications, for the consideration of \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

The Invitation to Bid, the General Conditions, the Specifications, the Bid, and the Bond, if applicable, all of which are incorporated herein as fully as if herein rewritten, constitute this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first above written.

CONTRACTOR  
\_\_\_\_\_  
(Type or print legal name)

By: \_\_\_\_\_  
(Authorized signature)

\_\_\_\_\_  
(Printed Name)

Title \_\_\_\_\_

Date \_\_\_\_\_

THE CITY OF CLEVELAND

By: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name)  
Director of \_\_\_\_\_

Date \_\_\_\_\_

**CONTRACT NO.**

THE CITY OF CLEVELAND  
WITH

FOR

The Approximate cost is \$

\$

Total \$

The legal form and correctness of the with-  
in contract and bond are hereby approved.

DIRECTOR OF LAW

ASSISTANT

File No.

**CERTIFICATION**

The sum of \_\_\_\_\_ Dollars

required for this Contract was on \_\_\_\_\_  
and is at this date in  
the City Treasury or in process of collection  
to the credit of \_\_\_\_\_  
Fund and not appropriated for any other  
purpose.

Director of Finance

Commissioner of Accounts

Entered by:

Appropriation Clerk

Indexed by:

Senior Auditor



# Request for Taxpayer Identification Number and Certification

**Give form to the  
 requester. Do not  
 send to the IRS.**

Print or type  
 See Specific Instructions on page 2.

Name	
Business name, if different from above	
Check appropriate box: <input type="checkbox"/> Individual/Sole proprietor <input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Other ▶ .....	
<input type="checkbox"/> Exempt from backup withholding	
Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
City, state, and ZIP code	
List account number(s) here (optional)	

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. For individuals, this is your social security number (SSN). **However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3.** For other entities, it is your employer identification number (EIN). If you do not have a number, see **How to get a TIN** on page 3.

Social security number								
or								
Employer identification number								

**Note:** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), **and**
2. I am not subject to backup withholding because: **(a)** I am exempt from backup withholding, or **(b)** I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or **(c)** the IRS has notified me that I am no longer subject to backup withholding, **and**
3. I am a U.S. person (including a U.S. resident alien).

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 4.)

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶
------------------	----------------------------	--------

## Purpose of Form

A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

**U.S. person.** Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee.

**Note:** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Foreign person.** If you are a foreign person, use the appropriate Form W-8 (see **Pub. 515**, Withholding of Tax on Nonresident Aliens and Foreign Entities).

## Nonresident alien who becomes a resident alien.

Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a **nonresident alien or a foreign entity** not subject to backup withholding, give the requester the appropriate completed Form W-8.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 30% of such payments (29% after December 31, 2003; 28% after December 31, 2005). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will **not** be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester, or
2. You do not certify your TIN when required (see the Part II instructions on page 4 for details), or
3. The IRS tells the requester that you furnished an incorrect TIN, or
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate **Instructions for the Requester of Form W-9**.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of Federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Name

If you are an individual, you must generally enter the name shown on your social security card. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your **individual** name as shown on your social security card on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

**Limited liability company (LLC).** If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, **enter the owner's name on the "Name" line.** Enter the LLC's name on the "Business name" line.

**Other entities.** Enter your business name as shown on required Federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

**Note:** *You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).*

### Exempt From Backup Withholding

If you are exempt, enter your name as described above and check the appropriate box for your status, then check the "Exempt from backup withholding" box in the line following the business name, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

**Note:** *If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.*

**Exempt payees.** Backup withholding is **not required** on any payments made to the following payees:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2);
2. The United States or any of its agencies or instrumentalities;
3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities;
4. A foreign government or any of its political subdivisions, agencies, or instrumentalities; or
5. An international organization or any of its agencies or instrumentalities.

Other payees that **may be exempt** from backup withholding include:

6. A corporation;
7. A foreign central bank of issue;
8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States;

- 9. A futures commission merchant registered with the Commodity Futures Trading Commission;
- 10. A real estate investment trust;
- 11. An entity registered at all times during the tax year under the Investment Company Act of 1940;
- 12. A common trust fund operated by a bank under section 584(a);
- 13. A financial institution;
- 14. A middleman known in the investment community as a nominee or custodian; or
- 15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, **1** through **15**.

If the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt recipients except for <b>9</b>
Broker transactions	Exempt recipients <b>1</b> through <b>13</b> . Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker
Barter exchange transactions and patronage dividends	Exempt recipients <b>1</b> through <b>5</b>
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt recipients <b>1</b> through <b>7</b> <sup>2</sup>

<sup>1</sup> See **Form 1099-MISC**, Miscellaneous Income, and its instructions.  
<sup>2</sup> However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are **not exempt** from backup withholding: medical and health care payments, attorneys' fees; and payments for services paid by a Federal executive agency.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a **resident alien** and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see **How to get a TIN** below.

If you are a **sole proprietor** and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner **LLC** that is disregarded as an entity separate from its owner (see **Limited liability company (LLC)** on page 2), enter your SSN (or EIN, if you have one). If the LLC is a corporation, partnership, etc., enter the entity's EIN.

**Note:** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get **Form SS-5**, Application for a Social Security Card, from your local Social Security Administration office or get this form on-line at [www.ssa.gov/online/ss5.html](http://www.ssa.gov/online/ss5.html). You may also get this form by calling 1-800-772-1213. Use **Form W-7**, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or **Form SS-4**, Application for Employer Identification Number, to apply for an EIN. You can get Forms W-7 and SS-4 from the IRS by calling 1-800-TAX-FORM (1-800-829-3676) or from the IRS Web Site at [www.irs.gov](http://www.irs.gov).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note:** Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 3, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt recipients, see **Exempt from backup withholding** on page 2.

**Signature requirements.** Complete the certification as indicated in 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA or Archer MSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

## What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee <sup>1</sup>
b. So-called trust account that is not a legal or valid trust under state law	The actual owner <sup>1</sup>
5. Sole proprietorship or single-owner LLC	The owner <sup>3</sup>
For this type of account:	Give name and EIN of:
6. Sole proprietorship or single-owner LLC	The owner <sup>3</sup>
7. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
8. Corporate or LLC electing corporate status on Form 8832	The corporation
9. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
10. Partnership or multi-member LLC	The partnership
11. A broker or registered nominee	The broker or nominee
12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> **You must show your individual name**, but you may also enter your business or "DBA" name. You may use either your SSN or EIN (if you have one).

<sup>4</sup> List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

**Note:** *If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.*

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA or Archer MSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, and the District of Columbia to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, or to Federal and state agencies to enforce Federal nontax criminal laws and to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 30% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.



**NOTE:** All of this bound information must be kept intact and, together with any addenda issued, must be returned with the bid, otherwise the bid may be considered informal.

A non-refundable deposit of Seventy-Five Dollars ( \$75.00), will be required for each set of plans and specifications.

## **CITY OF CLEVELAND, OHIO**

### **STANDARD FORM OF INVITATION TO BID, GENERAL CONDITIONS, SPECIFICATIONS AND BID FOR A PUBLIC IMPROVEMENT**

#### **Mayor's Office of Capital Projects**

#### **PART A - INSTRUCTIONS TO BIDDERS**

**A-1. ADVERTISEMENT.**

In accordance with Ordinance Nos. 1570-11 and 1571-11, passed by the Council of the City of Cleveland, December 5, 2011, and signed by the Mayor, December 9, 2011, an advertisement for proposals for the City of Cleveland Construction Contract for CUY-West 6<sup>th</sup> St. Streetscape, PID 89722 (W. Lakeside Ave. to W. St. Clair Ave.) and CUY-Professor St. Intersections, PID 90218 for the Mayor's Office of Capital Projects of the City of Cleveland, appears in the City Record under dates of January 30, 2013, February 6, 2013, and February 13, 2013.

**A-2. BIDS.**

Sealed bids endorsed CUY-West 6<sup>th</sup> St. Streetscape, PID 89722 (W. Lakeside Ave. to W. St. Clair Ave.) and CUY-Professor St. Intersections, PID 90218

will be received at the office of the Commissioner of Purchases and Supplies, Room 128, City Hall, Cleveland, Ohio 44114, until 2:00 o'clock noon, official time, February 27, 2013, and thereafter will be publicly opened and read in the Council Chamber, City Hall.

**A-3. FORM OF BID.**

Every bid must be made upon the blank form of bid attached hereto; must give the price of each and every item of the work bid on, in figures, and must contain the full name of every person, firm or corporation interested in the bid, and the address of the person, firm or the president and secretary of the corporation bidding; and if a corporation, the bid must give the name of the State in which it is incorporated.

**A-4. NAME OF BIDDER.**

Each bid must be clearly signed with the full name and address of each person, firm or corporation interested in it. In case of a partnership, the firm name and address and name and address of each individual party must be given.

**A-5. SIGNATURE OF BIDDER.**

The firm, corporation or individual name of the bidder must be signed by the bidder in the space provided for the signature on the bid blank. In case of a corporation, the title of the officer signing must be stated, and each officer must be thereunto duly authorized. In the case of a partnership, the signature of at least one of the partners must follow the firm name, using the term "member of firm". In case of an individual, use the term "doing business as" or "sole owner".

**A-6. BIDDER'S AFFIDAVITS.**

Each bidder is required to submit with his bid an affidavit stating that neither he nor his agents, nor any other party for him has paid or agreed to pay, directly or indirectly, any person, firm or corporation any money or valuable consideration for assistance in procuring or attempting to procure the contract herein referred to, and further agreeing that no such money or reward will be hereafter paid. This affidavit must be on a form provided by the City which may be obtained from the Commissioner of Purchase and Supplies.

**A-7. BID BOND, CERTIFIED OR CASHIER'S CHECK.**

Each bid shall be accompanied by a bid bond signed by a surety company authorized to do business in Ohio, or by a cashier's check or certified check on a solvent bank, which bond or check shall be in the sum of 5% of the amount of the bid. Said bond or check shall be given as security that if the bid is accepted, a contract will be entered into and the performance of it properly secured.

**A-8. DISPOSITION OF BID BOND, CERTIFIED OR CASHIER'S CHECK.**

- A. The bid bond, certified or cashier's check shall be forfeited and the principal amount of said bid bond shall be paid to the City, or said check shall be surrendered to the City as the agreed amount of liquidated damages in case of failure to enter into contract as above described. The bid bond or check will be released or returned to the bidder in case his bid is rejected.
- B. In case his bid is accepted, the bid bond or certified or cashier's check will be returned after the contract has been signed and the performance bond herein required has been furnished and approved by the City. The bid bond or certified or cashier's check of the next lowest responsible bidder will be retained until the lowest responsible bidder has signed and secured the performance of his contract, or if he fails so to do, said bid bond or check shall be further retained until the second lowest responsible bidder shall have signed and properly secured the contract awarded to him; and in default thereof the bid bond or certified or cashier's check shall be forfeited to the City as liquidated damages.

**A-9. EXPLANATIONS, WRITTEN AND ORAL.**

Should a bidder find any discrepancy in or omission from the drawings or specifications, or should he be in doubt as to their meaning, he shall at once notify the Commissioner of Purchases and Supplies, who will send written instructions to all bidders. The City will not be responsible for any oral instructions.

**A-10. UNACCEPTABLE BIDS.**

No bid will be accepted from, or contract awarded to, any person, firm or corporation that is in arrears or is in default to the City of Cleveland upon any debt or contract, or that is a defaulter as surety or otherwise, upon obligation to said City, or has failed to perform faithfully any previous contract with the City.

**A-11. EVIDENCE OF ABILITY TO DO WORK.**

Bidders must present evidence to the Director, when required to do so, that they are fully competent and have the necessary facilities and pecuniary resources to deliver the material and complete the work to be performed hereunder in a satisfactory manner and within the time specified.

**A-12. APPROXIMATE QUANTITIES.**

Where bids are based on estimated quantities it is understood that the estimates are prepared by the city officials for the purpose of comparison of bids, and that the estimated quantities are not guaranteed but are approximate only, and the City reserves the right to increase or diminish the same, or to omit any one or more items, at the unit price bid, as the Director may deem desirable.

**A-13. EXAMINATION OF SITE WORK.**

- A. Bidders shall satisfy themselves as to the existing conditions of the premises where the work is to be done and of the nature of the ground at the site of the proposed work, and pay particular attention to any soil condition that may affect the progress or performance of the work. The City makes no guarantee, either express or implied, as to ground conditions.
- B. Subject to the convenience of the City, prospective bidders may be permitted to explore the site by making borings or digging test pits. In such event, the work shall be done at the sole expense and risk of the bidder, and he shall maintain and restore the site to a condition of safety.

**A-14. MATERIALS, SAMPLES, ETC.**

- A. Before any contract is awarded, the bidder may be required to furnish a complete certified statement of the origin, composition and manufacture of any or all materials to be used in the work, together with samples, which required samples may be subjected to the tests provided for in these specifications to determine their quality and fitness for work.
- B. For samples of materials that may be required to be furnished by bidders prior to the opening of bids, see "Detail Specifications".

**A-15. CONSIDERATION OF BIDS.**

All bids received in conformity with these contract documents shall, as soon as practicable, be tabulated and shall become a public record.

**A-16. REJECTION OR ACCEPTANCE OF BIDS.**

The City, through the Board of Control, reserves the right to reject any or all bids, and any part or parts of any bid and also the right to waive any informalities in the bid. In awarding a contract, the City reserves the right to consider all elements entering into the question of determining the responsibility of the bidder. Any bid which is incomplete, conditional, obscure, or which contains additions not called for, or irregularities of any kind, may be cause for rejection of bid.

**A-17. WITHDRAWAL OF BID.**

No bid will be allowed to be withdrawn after it has been deposited with the Commissioner of Purchases and Supplies.

**A-18. TIME OF AWARD.**

Unless further time is required for analysis of the bids or investigation of the responsibility of any bidder and in the absence of a limitation upon the time of acceptance set forth in the bid, the Board of Control of the City of Cleveland will ordinarily make an award or reject all bids received hereunder not later than the second regular meeting of said Board following the opening of bids. Any extension of time beyond the date fixed by the successful bidder or the fourth regular meeting of the Board of Control, whichever event shall first occur, shall be subject to agreement between said bidder and the Board of Control.

**A-19. SURETY BOND.**

The Contractor shall furnish an indemnity bond to the City of Cleveland in the full amount of the contract price, as a guarantee of good faith on behalf of the Contractor that the terms of these contract documents shall be complied with in every particular. Said bond shall be subject to the approval of the Department of Law of the City of Cleveland, Ohio.

**A-20. RELEASE OF BOND.**

The Contractor's bond will not be released until all of the provisions of the contract have been fulfilled.

~~**A-21. BID DISCOUNTS – APPLICABLE TO BIDS FOR GOODS AND SERVICES PURCHASE CONTRACTS AND PUBLIC IMPROVEMENT CONTRACTS IN EXCESS OF TEN THOUSAND DOLLARS (\$10,000).**~~

~~a. Bid Discounts under Sections 187.03 and 187.05. If the bid of any prime contractor that is a CSB, MBE, FBE or a CSB, MBE or FBE joint venture is no more than five percent (5%) higher than the lowest actual bid for a contract that is not from a CSB, MBE, FBE or a CSB, MBE or FBE joint venture, the contracting department shall apply a Bid Discount of five percent (5%) to the CSB, MBE, FBE or CSB, MBE or FBE joint venture bid for the purpose of establishing a Comparison Bid. The City of Cleveland shall use the following ranking in determining who receives the preference:~~

1. Where the disparity study has determined that a disparity exists, the bid discount shall go to the bidders who are certified by the City as members of the specific MBE/FBE group for which the proven disparity exists. No other bidders shall receive any preference under Sections 187.03 and 187.05 at the prime contractor level.
2. Where no disparity has been proven, or when no bids are received from groups for which a proven disparity exists, the bid discount shall go to certified CSB bidders certified by the City as located within the city limits of Cleveland. No other bidders shall receive any preference under Sections 187.03 and 187.05 at the prime contractor level.
3. Where no disparity has been proven, or when no bids are received from groups for which a proven disparity exists, and no bids were received from certified CSB firms certified by the City as located within the city limits of Cleveland, the bid discount shall go to Certified CSB bidders certified by the City as located within Cuyahoga County. No other bidders shall receive any preference under Sections 187.03 and 187.05 at the prime contractor level.
4. In addition to any bid discounts at the prime contractor level, all prime contractors shall receive a bid discount of 5% of the total dollar amount of all CSB, MBE and/or FBE certified by the City that the prime contractor properly documents as subcontractors in their bid, for the purpose of establishing a Comparison Bid.
5. The total Bid Discount awarded to any bidder on a bid pursuant to Sections 187.03 and 187.05 shall not exceed \$50,000.00.

b. Bid Discounts under Section 187A.02(a): Application of Bid Discount—A Contracting Department shall apply a Bid Discount of two percent (2%) to a bid received from a Local Producer (LPE); two percent (2%) to a bid received from a Local Food Producer (LPE); and two percent (2%) to a bid received from a Local Sustainable Business (SUBE); provided that the maximum total Bid Discount applied under Section 187A.02 (a) shall not exceed four percent (4%). Bid Discounts applied under Section 187A.02 (a) shall be in addition to any Bid Discount applied under Sections 187.03 and 187.05. The maximum amount of any Bid Discounts applied under this Section 187A.02 (a) shall not exceed \$50,000.

c. Maximum Cumulative Amount of All Bid Discounts:

The maximum cumulative amount of all Bid Discounts that may be applied to the bid under Sections 187.03, 187.05, and 187A.02 shall not exceed \$75,000.00, or nine percent (9%), whichever is lower.

d. Comparison Bid to Determine Lowest and Best Bidder:

The City shall determine the Comparison Bid by totaling all applicable Bid Discounts under Sections 187.03, 187.05, and 187A.02. The City shall use the Comparison Bid in determining the lowest and best or lowest responsible bidder for the purpose of awarding the contract. If more than one CSB, MBE, FBE, LPE, SUBE or CSB, MBE, FBE LPE, SUBE joint venture prime contractor in the respective category submits a bid that is no more than five percent (5%) higher than the lowest actual bid that is not from a CSB, MBE, FBE, LPE, SUBE or from a CSB, MBE, FBE, LPE, SUBE joint venture, the contracting department shall recommend the CSB, MBE, FBE, LPE, SUBE, or CSB, MBE, FBE, LPE, SUBE joint venture submitting the lowest bid, after the inclusion of all applicable prime and subcontractor discounts, as the lowest and best or lowest responsible bidder.

The City shall use the Comparison Bid amount determined by applying the bid discounts described in Articles A 16A, and A 16B, above for evaluation purposes only; the City shall use the actual bid amount for the purposes of bid approval and contract award.

e. City of Cleveland Certification required: For the purpose of determining a bidder's eligibility for bid discounts, the City shall only consider bidders with valid certificates issued by the City of Cleveland's Office of Equal Opportunity. The certifications must be active on the date and time of the deadline for bid submission. Expired certification holders and pending certifications cannot be considered for calculation of bid discounts. Certifications from other public or private entities cannot be considered.

**~~A 22. GOOD FAITH PARTICIPATION— APPLICABLE TO BIDS FOR GOODS AND SERVICES PURCHASE CONTRACTS AND PUBLIC IMPROVEMENT CONTRACTS IN EXCESS OF TEN THOUSAND DOLLARS (\$10,000).~~**

~~Bidders are required to actively participate and demonstrate good faith in attempting to meet all OEO goals for this procurement. A good faith effort to meet certified CSB, MBE, and/or FBE subcontractor participation goals as established in this contract is of the essence of the contract.~~

~~Good faith participation shall include:~~

- ~~1. Active cooperation in making and documenting a serious effort to gain and maintain participation from certified businesses at or above the specific goals set for this procurement;~~
- ~~2. Achieving or exceeding the CSB/MBE/FBE goals set for this particular procurement and/or documenting the practical steps taken by the bidder in attempting to comply;~~
- ~~3. Active attendance and participation in all prebid meetings, Notice to Proceed meetings, and progress meetings during the contract;~~
- ~~4. Active compliance and cooperation with Project Monitors from OEO and/or the Department; and,~~
- ~~5. Timely and accurate submittals of all required forms, including, but not limited to, electronic monitoring forms, employment reports and certified payrolls if applicable.~~

~~The final determination of good faith effort shall be made by the Office of Equal Opportunity based upon each bidder's actions as documented in the required forms and as verified by OEO follow-up.~~

**~~A-23 — Cleveland Area Business Code Notice to Bidders & Schedules — APPLICABLE TO BIDS FOR GOODS AND SERVICES PURCHASE CONTRACTS AND PUBLIC IMPROVEMENT CONTRACTS IN EXCESS OF TEN THOUSAND DOLLARS (\$10,000).~~**

~~Sections 187 and 187A of the Codified Ordinances of the City of Cleveland Ohio, the Cleveland Area Business Code, in its entirety, whether reproduced in whole or in part within these documents, as well as the Cleveland Area Business Code Notice to Bidders & Schedules included in this bid document, shall become part of any contract awarded pursuant to this Invitation to Bid. Compliance with Section 187 and 187A is of the essence of the contract.~~

**A-24 SUBCONTRACTING:**

a. Any and all proposed subcontractors, whether City certified or not, must be divulged and listed in the sealed bid. Include all proposed subcontractors on OEO Schedule 2. A Schedule 3 is also required for each proposed subcontractor that is CSB, MBE, FBE, LPE, or SUBE certified. However, a Schedule 3 is not required for proposed subcontractors who are not City-certified as a CSB, MBE, FBE, LPE, or SUBE.

b. If OEO Schedule 2 is not included in the bid documents, you must submit a proposed subcontractor list on a separate, signed sheet of paper, listing the name, address, type of work or materials, and total subcontractor amount for each and every subcontractor that you propose to use on the contract.

c. All proposed subcontractors listed in your bid must receive written Board of Control approval in advance. The subcontractors you propose in your sealed bid will be considered the subcontractors that you will use in the contract if awarded to you. See Article B-11 regarding the City's Sub-contractor Addition and Substitution Policy and Procedure. The City also reserves the right to approve an award, but not approve a proposed subcontractor.

d. The City maintains a list of Vendors Ineligible to Contract or Subcontract with the City at the City of Cleveland website: <http://www.city.cleveland.oh.us>. It is each bidder's responsibility to propose only eligible contractors. The City cannot approve a subcontractor whose name appears in this listing.



## PART B - GENERAL CONDITIONS

### B-1. CONTRACT DOCUMENTS.

- A. The following shall constitute the Contract Documents and shall be deemed the Contract made pursuant to this Invitation to Bid:
- (1). The Ordinance or Ordinance authorizing the making of the public improvement.
  - (2). The Invitation to Bid, General Conditions, Supplemental General Conditions and Detail Specifications.
  - (3). The Contract Drawings.
  - (4). All Addenda issued by the City prior to the receipt of bids.
  - (5). The Affidavit of Non-Collusion.
  - (6). The Bid.
  - (7). The Resolution of the Board of Control awarding the Contract.
  - (8). The Agreement.
  - (9). All required Bonds and Policies of Insurance.
  - (10). All provisions required by law, charter or ordinance to be inserted in the Contract, whether actually inserted or not.

### B-2. DEFINITIONS.

- A. The following words and expressions, or pronouns used in their stead, shall, wherever they appear herein, be construed as follows, unless a different meaning is clear from the context:
- (1). "Addendum" or "Addenda" shall mean the additional contract requirements prepared by the Director and issued in writing, by means of drawings, or both, by the Commissioner of Purchases and Supplies prior to the receipt of bids.
  - (2). "City" shall mean the City of Cleveland, Ohio.
  - (3). "Contract" or "Contract Documents" shall mean each of the various parts of the contract referred to in Part B-1 hereof, both as a whole and severally and shall include subsidiary agreements, if any.
  - (4). "Contractor" shall mean the corporation, firm or individual, or any combination thereof, and its, their or his successors, personal representatives, executors, administrators and assigns, and any person, firm or corporation who or which shall at any time be substituted therefor under this contract, and shall include in their respective capacities, the President, Manager, or other officer or agent for the time being, representing or locally managing the work of any corporation contracting herein.
  - (5). "Contract Drawings" shall mean those identified as such in the contract documents and shall include those issued in connection with any addendum, or issued in connection with any proper subsidiary agreement and shall also include any other detail or explanatory drawings issued during the progress of the work which are consistent with the contract documents, true developments thereof or reasonably inferable therefrom.
  - (6). "Specifications" shall mean all of the directions, requirements and standards of performance applying to the work as hereinafter detailed under specifications.
  - (7). "Contract Work" or "Work" shall include the furnishing of all labor, materials, tools, equipment, incidentals, and any other thing necessary or required for the full performance of the contract by the Contractor, including all such required or necessary as called for in any proper subsidiary agreement.
  - (8). "Director" shall mean the director of the department for which the improvement is being made.
  - (9). "Final Acceptance" shall mean final acceptance of the work by the Director, as evidenced by his signature upon his certificate of completion and acceptance filed in the Office of Commissioner of Accounts of the City, copy of which shall be sent to the Contractor. Such acceptance shall be deemed to have taken place as of the date so stated in such certificate.
  - (10). "Law" or "Laws" shall mean the Constitution of the State of Ohio, the Cleveland City Charter, a statute of the United States or of the State of Ohio, The Codified Ordinances of the City of Cleveland, and any municipal ordinance, rule or regulation having the force of law which is applicable to this contract.
  - (11). "Materialman" shall mean any person, firm or corporation, other than employees of the contractor, who or which contracts with the contractor, or any sub-contractor to fabricate or deliver, or who actually fabricates or delivers, materials, plant, or equipment to be incorporated in the work.
  - (12). "Subcontractor" shall mean anyone (other than the contractor and his employees) who performs work (other than or in addition to the furnishing of materials, plant or equipment) at or about the construction site, directly or indirectly for or on behalf of the contractor (and whether or not in privity of contract with the contractor), but shall not include any person who furnished merely his own personal labor or his own personal services.
  - (13). "Workman", "Laborer" or "Workingman" shall mean any employee of the contractor or of a subcontractor, who performs personal labor or personal services at the construction site.
  - (14). "Directed", "Required", "Approved", and words of like import whenever they refer to the work or its performance; and the words "directed", "required", "permitted", "ordered", "designated", "established", "prescribed", and words or like import used in the specifications, the contract, or upon the drawings, shall imply the direction, requirement, permission, order, designation or prescription of the Director; and "approved" - "acceptable" - "satisfactory", and words of like import shall mean approved by or acceptable or satisfactory to the Director.
  - (15). "Site" shall mean the area upon or in which the Contractor's operations are carried on, and such other areas adjacent thereto as may be designated as such by the Director.
  - (16). "Resident" or "Resident of the City" shall mean persons domiciled within the boundaries of City of Cleveland. The domicile is an individual's one and only true, fixed and permanent home and principal establishment.
  - (17). "Low Income Person" shall mean a Resident who is a member of a family having an income equal to or less than the Section 8 very low-income limit established by the Department of Housing and Urban Development. Very low-income families are defined as families whose incomes do not exceed fifty percent (50%) of the median family income for the area. Income limits are adjusted for family size. Unrelated individuals shall be considered as one-person families for this purpose.
  - (18). "Construction Worker Hours" shall mean the total hours worked on the Contract by Skilled and Unskilled Construction Trade Workers, whether those workers are employed by the Contractor or any Subcontractor. The total Construction Worker Hours to be furnished at the construction site includes the number of hours devoted to all tasks customarily performed on a construction site, whether or not such tasks are, in fact, performed on the construction site.

Construction Worker Hours excludes the number of hours performed by non-Ohio residents.

- (19). "Resident Employment Requirement" means the percentage of Construction Worker Hours Residents must work, as required by Section 188.02.
- (20). "Skilled and Unskilled Construction Trade Worker" shall mean all work site foremen, journeyworkers, including technical engineers, apprentices, construction trainees and elevator construction helpers and apprentices that are in a bona fide apprenticeship training program that is certified by the U.S. Department of Labor, Bureau of Apprenticeship and Training. Also included are other workers appropriate for construction activities. Salaried superintendents are excluded.
- (21). "Referral Source" shall mean a company or agency that the Director of Equal Opportunity has designated as a source from which a Contractor must or may seek referrals of Residents or Low Income Persons to work on a Construction Contract.
- (22). "Work Force Table" shall mean a document identifying a Contractor's estimated numbers and types of various Skilled and Unskilled Trade Workers required for performance of a Construction Contract, separately listed by trade, month, Residents and Low Income Persons.

**B-3. TIME OF ESSENCE.**

Since this contract is for a needed improvement, the provisions relating to the time of performance and time of completion of the work included in this contract are of the essence of this contract. The Contractor shall begin work on the day specified in paragraph B-4 and shall prosecute the work diligently so as to assure completion of the work not later than the time specified therefor, or the time of completion extended, pursuant to paragraph B-6 hereof.

**B-4. TIME OF COMMENCEMENT AND COMPLETION OF WORK.**

- A. The work to be performed herein shall start within five (5) days after the execution of the contract and without further notices from the Director, except as otherwise provided in the supplemental general conditions; provided in case of special conditions arising after the execution of the contract the Director and Contractor may agree in writing to postpone the commencement of the work hereunder.
- B. A contract shall be deemed executed when signed by the parties thereto, certified by the Director of Finance as required by law, secured by the required bond, and approved by the Director of Law; and when the original contract is filed with the Commissioner of Accounts of the City and a copy delivered to the Contractor. Under normal conditions a contract will be executed within six weeks after award of contract.
- C. Unless fixed by the Director, or otherwise provided in the supplemental general conditions, the bidder shall state in his bid the date on or before which the work herein contemplated will be completed and ready for final acceptance. (Where equal bids are received, the date of completion will be used in determining the lowest responsible bid.)

**B-5. LIQUIDATED DAMAGES FOR DELAY.**

The Contractor guarantees that he can and will complete the work on or before the time fixed in his bid, or on or before the extended time as provided in paragraph B-6. For the reason that the damage and loss to the City which will result from the failure of the Contractor to complete the work at the time fixed will be most difficult or impossible of accurate assessment, the damages to the City for such delay and failure on the part of the Contractor shall be liquidated in the amount of Twenty-Five Dollars (\$25.00), or the amount fixed in the supplemental general conditions, for each calendar day which the Contractor shall fail to complete the work, or any part thereof, in accordance with the provisions of the contract and such liquidated damages shall not be considered as a penalty. The City will deduct and retain out of any money due or to become due under the contract the amount of the liquidated damages and, in case those amounts are less than the amount of the liquidated damages, the Contractor shall be liable for the payment of the difference upon demand of the City.

**B-6. DELAY FOR CAUSES BEYOND CONTROL.**

- A. If the Contractor be delayed in the completion of the work by any act or neglect of the City, or by any other contractor employed by the City, or by changes ordered in the work; or by strikes, lockouts, fire, unusual delay by common carriers, unavoidable casualties, or any cause beyond the contractor's control, including orders, limitations, or restrictions of any Governmental agency having jurisdiction over the subject matter of the contract, or by delay authorized by the City, or by any cause which the Director shall decide to justify the delay; then, for all such delays and suspensions, the Contractor shall be allowed one calendar day extension beyond the time herein stated for completion of the work for each and every calendar day of such delay so caused in the completion of the work, the same to be ascertained by the Director.
- B. No such extension shall be made for any one or more of such delays unless within ten (10) days after the beginning of such delay a written request for additional time shall be filed with the Director. In case of a continuing cause of delay, only one request will be necessary.
- C. No claims for damages or any claim other than for an extension of time as herein provided shall be made or asserted against the City by reason of any delays hereinbefore mentioned.
- D. When by reason of any of the causes stated herein an extension of time has been allowed the Contractor for the completion of his work, he shall not be entitled to a bonus for completion prior to the date so extended, anything in the contract documents to the contrary notwithstanding.

**B-7. STORAGE OF MATERIALS.**

- A. The Contractor shall make all necessary arrangements and provisions for the storage of materials and equipment to be used on this contract.
- B. Materials and equipment which are to become the property of the City, shall be so stored as to facilitate their prompt inspection and insure preservation of the quality and fitness of the work, including proper protection against damage by freezing and wet weather; and they shall be placed under cover on wooden platforms or other hard, clean surfaces, and not on the ground, when so directed. Whenever the best interest of the City so requires, upon order of the Director, the Contractor shall promptly provide improved storage facilities and methods.
- C. Lawns, grass plots or other private property shall not be used for storage purposes without written permission of the owner, his agent or other person in possession or control of such premises.
- D. The City disclaims all responsibility for loss or damage to stored materials or equipment, or both.

**B-8. RESPONSIBILITY OF CONTRACTOR.**

- A. The City will not insure the work under construction, nor against claims for injury to person or property arising during the

prosecution of such work.

- B. The Contractor will be held responsible for all damage to the work under construction, whether from fire, water, high winds, or other causes until final completion and acceptance, even though partial payments have been made under the contract. He will be held answerable for all damages that may occur to persons, property, animals, or vehicles from want of proper shoring, bracing, lighting, watching, boarding or enclosing, and for any accident arising from defective scaffolding or apparatus, or from any negligence on the part of himself or his employees.

**B-9. DUTY AND RESPONSIBILITY OF CONTRACTOR FOR PLANT AND METHODS.**

The Contractor shall provide and install such construction plants and shall use such methods and appliances for the performance of all the operations connected with the work to be done under this contract as will secure the safety of the work and those working on it, a satisfactory quality of the work and a rate of progress which will insure the completion of the work within the time specified. If at any time before the commencement or during the progress of the work, or any part of it, such methods and appliances appear to be unsafe, inefficient or inadequate for securing the safety of the workmen, the quality of the work or the rate of progress required, the Director may order the Contractor to increase safety measures or to improve their character, and the Contractor shall comply with such orders; but the failure of the Director to make such a demand shall not release the Contractor from his obligation to secure the safe conduct and the quality of the work, and the rate of progress required, and the Contractor alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances and methods.

**B-10. STRUCTURES ENCOUNTERED AND PROTECTION OF PROPERTY.**

- A. The Contractor shall, at his own expense, support and protect all buildings, bridges, conduits, wires, water pipes, gas pipes, sewers, pavements, curbing, sidewalks, equipment and fixtures of all kinds and all other public or private property, whether of this or another contract, that may be encountered or endangered in the prosecution of the work herein contemplated and that are not otherwise provided for in the Charter or franchise relating to same. He shall repair and make good any damage caused to any such property by reason of his operations leaving all work in approved condition at the completion of the contract.
- B. The City reserves the right to repair any damage to public utilities or other facilities of the City caused by the work of the Contractor and the cost of such repair shall be borne by the Contractor. In the event the Contractor refuses or fails to pay bills for such repair work upon presentation, without prejudice to any other remedies available to the City, the cost of the same shall be deducted from any money that may be due to him on partial or final estimates as herein provided.

**B-11. PROTECTION OF WORK.**

The Contractor shall provide proper facilities, take all necessary precautions and assume the entire cost for protecting the work against adverse weather conditions and for handling all storm and flood water, sewage, seepage, ice or snow that may be encountered during the performance of the contract and the manner of providing for such contingencies and for carrying on the work in freezing weather shall meet with the approval of the City.

**B-12. WATCHMEN.**

- A. The Contractor shall provide the necessary watchmen and sufficient warning lights and barricades at his own expense and he shall take such other precautions as are necessary to protect life and property.
- B. The Director may at any time order the Contractor to provide watchmen or additional watchmen at any point where, in his opinion, they are required, or where they may be requested by the proper official of any municipality affected.
- C. Nothing in this section shall be construed as requiring the Contractor to provide a road patrol.

**B-13. SANITARY PROVISIONS.**

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the sanitary requirements of law and ordinance.

**B-14. AID TO THE INJURED.**

The Contractor shall have standing arrangements for the immediate removal and hospital treatment, if necessary, of any employee who may be injured on the work. The Contractor shall keep on the work, ready for immediate use, all articles necessary for giving "First Aid to the Injured".

**B-15. WATER SUPPLY.**

- A. The Contractor may obtain water from the City water supply by obtaining the necessary fire hydrant permit from the Department of Public Utilities and shall pay all charges for the service. No improper, wasteful or undue use of water will be permitted.
- B. When the water supply to be used is in a Master Meter Municipality, permission shall be obtained by the Contractor from that municipality before any water is used, and the cost of such water supply shall be paid by the Contractor to said municipality.

**B-16. ACCESSIBILITY OF FIRE HYDRANTS AND STOP VALVES.**

Fire hydrants and stop valves adjacent to the work shall be kept readily accessible to fire apparatus and no material or other obstruction shall be placed within five (5) feet of any hydrant or stop valve unless by special permission of the proper authorities.

**B-17. REMOVAL OF RUBBISH.**

The Contractor shall, at his own expense keep the site of his operation, building or structure being worked on clean during the construction and remove all rubbish as it accumulates. Upon the completion of the work, the Contractor shall tear down and remove all temporary structures built by him; shall remove all rubbish of all kinds from any grounds which he occupied and shall leave the site and the work in a clean and neat condition.

**B-18. PUBLIC LIABILITY, PROPERTY DAMAGE AND AUTOMOBILE INSURANCE.**

- A. The Contractor shall take out and maintain during the life of this contract such public liability and property damage insurance, wherein the City of Cleveland is named as an additional insured, as shall protect himself, the City of Cleveland and any subcontractor performing work covered by this contract from claims for damage for personal injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. An exact copy of such policy or policies shall be deposited with the City of Cleveland before the commencement of any work under the contract. The amounts of such insurance shall be as follows:
  - B. Public Liability Insurance: In an amount not less than \$500,000.00 for injuries, including accidental death to any one person,

and subject to the same limit for each person, in an amount not less than \$1,000,000.00 on account of one occurrence involving injury to more than one person, and property damage insurance in an amount not less than \$200,000.00.

- C. The following special hazards shall be covered during the life of this contract by rider or riders to the policy or policies above required, or by separate policies of insurance in amounts as follows:
- (1). Public Liability insurance to cover each automobile, truck or other vehicle used in the performance of the contract in an amount not less than \$500,000.00 on account of injury or death of one person and not less than \$1,000,000.00 on account of injury or death of two or more persons.
  - (2). Property Damage liability insurance to cover each automobile, truck, or other vehicle used in the performance of the contract in an amount not less than \$200,000.00 in any occurrence.
  - (3). Public Liability and property damage insurance to cover the use of explosives used in the performance of this contract, in the same limits as set forth in the preceding sub-sections.

The policy shall contain the following special provisions: "The Company agrees that ten (10) days prior to cancellation or reduction of the insurance afforded by this policy, with respect to the contract involved, written notice will be mailed to the City of Cleveland".

**B-19. ACCESS TO WORK AND PLACE OF MANUFACTURE.**

The Director or his authorized representative and such representative's staff shall at all times have access to inspect the work wherever it is in preparation, progress, being manufactured or fabricated and the Contractor shall arrange and provide proper facilities for such access and inspection to determine whether such work is being done in accordance with the contract requirements.

**B-20. EXPERIMENTAL METHODS, EQUIPMENT AND MATERIAL PROHIBITED.**

The use of any experimental or untried methods, or the use or installation of any experimental or untried materials or equipment or any combination of either or both, shall not be allowed. Each bidder shall, if so required by the Director, submit ample proof that the method of doing any of the work contemplated under these specifications has been successfully used for like work for a period of at least one year; or that the materials or equipment or any combination of either or both proposed to be used on, or furnished for such contemplated work, is of a reliable make and is of a type that has been successfully used in practical service outside of the builder's works, for a period of not less than one year.

**B-21. STATUS OF CITY INSPECTOR.**

- A. Inspectors as designated by the Director shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the work, and to the preparation or manufacture of the materials to be used. In case of any dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector shall have the authority to stop the use of material or suspend the work until the question at issue can be referred to and decided by the Director. The Inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of these specifications, nor to approve or accept any portion of the work or to issue instructions contrary to the plans and specifications. The Inspector shall in no case act as foreman or perform other duties for the Contractor or interfere with the management of the work by the latter. Any advice which the Inspector may give the Contractor shall in no wise be construed as binding the Director in any way or releasing the Contractor from the fulfillment of the terms of the contract.
- B. The Contractor shall not be entitled to any claims for loss of time, damages or anticipated profit due to any time lost from suspension of work and from the referral of the questions at issue to said Director or his representative.

**B-22. LAWS, PERMITS AND REGULATIONS.**

The Contractor shall comply with all applicable laws of the Federal Government, State of Ohio and Ordinances of the City of Cleveland or other municipality in which the work is being done, and all applicable regulations and any authorized regulations, and shall be responsible for securing at his own expense any and all licenses, permits and certificates of inspection required by law, or by the Contract Documents.

**B-23. BLASTING**

- A. The use, storage and transportation of explosives in and about the work or in the vicinity of the same shall be in accordance with the provisions of Sections 387.01 to 387.99, both inclusive, of The Codified Ordinances of the City of Cleveland.
- B. In addition, all laws, rules and regulations of the State and the municipalities or townships through which the explosives are to be transported or in which the explosives are to be stored or used shall be complied with.
- C. The Contractor shall assume all responsibility for any damage that may be done by the use of any explosives, by him or his agent, in any way, in connection with this contract, or damage that may be done by explosives that are being stored for, or transported to or from the work.
- D. In blasting, great care must be taken not to injure any existing gas or water pipes, sewer drain, conduit or other structures on the site of the work or in adjacent premises, and the Contractor will be held responsible for any damage done to these structures.

**B-24. OTHER CONTRACTS.**

It is understood and agreed that the Contractor shall execute his work in such a manner and in such order as will not interfere with work in progress and will permit the City to perform other work or to enter into other contracts for work and materials to be constructed or placed in, on or about the work herein described, with the least interference possible and with complete cooperation whenever it is desirable to prosecute such other work, either simultaneously with the work under this contract or otherwise. The Director shall decide all questions of priority among separate Contractors.

**B-25. PATENTS.**

The Contractor shall pay all royalties and license fees and shall hold and save the City and its officers, agents, servants and employees harmless from liability of any nature or kind, including cost and expenses, for or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the City of Cleveland unless otherwise specifically stipulated in the contract documents. In this respect the Contractor shall defend all suits or claims for infringement of any patent or license rights.

**B-26. STATE INDUSTRIAL COMPENSATION.**

The Contractor shall at all times during the term of this contract subscribe to and comply with the Workmen's Compensation Laws

of the State of Ohio and pay such premiums as may be required there under and to save said City harmless from any and all liability arising from or under said act. He shall also furnish at the time of delivery of this contract and at such other times as may be requested, a copy of the official certificate or receipt showing the payments hereinbefore referred to.

**B-27. SOCIAL SECURITIES ACT.**

The Contractor shall be and remain an independent contractor with respect to all services performed hereunder and agrees to and does hereby accept full and exclusive liability for the payment of any and all contributions or taxes for social security, unemployment insurance, or old age retirement benefits, pensions, or annuities now or hereafter imposed under any State or Federal Law which are measured by the wages, salaries, or other remuneration paid to persons employed by the Contractor on work performed under the terms of this contract and further agrees to obey all lawful rules and regulations and to meet all lawful requirements which are now or hereafter may be issued or promulgated under said respective laws by any duly authorized state or federal officials; and said Contractor also agrees to indemnify and save harmless the City of Cleveland from any such contributions or taxes or liability therefor.

**B-28. EIGHT HOUR DAY-MINIMUM WAGE AND NON-DISCRIMINATION.**

The Contractor agrees that he will comply with the following provisions of the Charter of the City of Cleveland, which read respectively, as follows:

**Section 196.** Except in case of extraordinary emergencies, not to exceed eight hours shall constitute a day's work and not to exceed forty-eight (48) hours a week's work, for any city employee of the City of Cleveland in the classified service thereof, and for any workmen engaged in any public work carried on or aided by the municipality whether done by contract or otherwise. The Council shall, by ordinance, provide for the enforcement of the provisions of this section.

**Section 197.** Every contract for public work entered into by the City of Cleveland shall contain, and no contract shall be entered into unless it contains the following stipulations:

The Contractor hereby agrees that all persons employed by him shall be paid wages which are not less than are paid by the City of Cleveland for similar or like work; but if said city has not established a rate of wages for any particular class of work to be performed under the terms of this contract, then said employees shall be paid wages not less than are generally paid therefor by others employing union labor in said city; but in no event shall any employee be paid less than four dollars and fifty cents (\$4.50) per day for eight hours.

The Contractor hereby further agrees that in the employment of labor, skilled or unskilled, under the contract there shall be no discrimination exercised against any citizen because of race, color, religion or national origin; and that any violation hereof shall be deemed a material breach of said contract.

**Section 198.** No person employed by any contractor or subcontractor on any public work of or for the City of Cleveland shall be paid less than four dollars and fifty cents (\$4.50) per day of eight hours work, and no contract for public work shall be entered into by the City of Cleveland unless said contract so provides.

**~~B-29. PREVAILING RATES OF WAGES.~~**

- ~~A. Each laborer, workman or mechanic employed by the Contractor for the work herein specified or by the subcontractor, or by other persons upon such work, shall be paid the prevailing rates of wages as determined by the Department of Industrial Relations, Division of Building and Factory Inspection, of the State of Ohio, the published and approved schedule of which may be obtained at the office of the Director.~~
- ~~B. In the event the wage scale for any labor classification is changed between the time the schedule was approved and the time the work required by this contract is performed, or in the event any class of labor employed under this contract, is not included in the published schedule of prevailing wages, then the rate prevailing at the time the work is actually performed as ascertained and determined by the Department of Industrial Relations of the State of Ohio shall govern the work done under this contract.~~
- ~~C. Every contractor and subcontractor who is subject to Chapter 4115. of the Revised Code shall, as soon as he begins performance under his contract with any contracting public authority, supply to the prevailing wage coordinator of the contracting public authority a schedule of the dates during the life of his contract with the authority on which he is required to pay wages to employees. He shall also deliver to the prevailing wage coordinator a certified copy of his payroll, within two weeks after the initial pay date, and supplemental report for each month thereafter which shall exhibit for each employee paid any wages, his name, current address, social security number, number of hours worked during each day of the pay periods covered and the total for each week, his hourly rate of pay, his job classification, fringe payments, and deductions from his wages. If the life of the contract is expected to be no more than four months from the beginning of performance by the contractor or subcontractor, such supplemental reports shall be filed each week after the initial report. The certification of each payroll shall be executed by the contractor, subcontractor, or duly appointed agent thereof and shall recite that the payroll is correct and complete and that the wage rates shown are not less than those required by the contract.~~
- ~~D. Each contractor or subcontractor shall file with the contracting public authority upon completion of the public improvement and prior to final payment thereof an affidavit stating that he has fully complied with Chapter 4115. of the Revised Code. Said affidavit is to be filed with the Commissioner of Accounts.~~

**B-30. STATE OR FEDERAL TAXES.**

- A. The contract price or prices for the materials contained in the contract are subject to increase or decrease by the amount of any additional tax or taxes or reduction of such tax or taxes, as the case may be, affecting such commodity imposed by or under authority of the Federal Government or the State of Ohio, which may be enacted after receipt of bids for this contract and such changes shall continue in effect during the existence of such change in the taxes, provided, however, that in the event of any increase in cost, a claim shall be presented by the Contractor within thirty (30) days and provided that such claim is supported by evidence showing such additional tax, satisfactory to the Director of Law. Reductions in taxes will be deducted from the contract price.
- B. The City of Cleveland is exempt from all sales, excise and transportation taxes, except State of Ohio gasoline tax. The price or prices bid, whether a unit price, lump sum price, lot price, or a trade discount from catalogue list prices, shall be exclusive of all such taxes and will be so construed.

**B-31. LABOR AND MATERIAL MEN.**

- A. The Contractor shall well, truly, and promptly pay or satisfy the just and equitable claims of all persons who have performed labor or furnished material for said contractor in the execution of the contract, including those who have previously filed attested account of such claims with the Director of Finance of the City, and all bills, costs or claims of whatever kind which might in law or equity become a lien upon said work or against the fund from which the same is to be paid or a charge against the City. In case said attested accounts, claims, bills or costs are not paid or adjusted to the satisfaction of the Director of Finance, then it is agreed that said City may proceed as in the next succeeding paragraph.
- B. The City may retain out of any monies at any time due to the Contractor a sum sufficient to pay all persons who have done work or furnished labor or materials for the work herein contracted for, and who shall have filed an attested account of such claim with the Director of Finance within four months from the performance of labor or the delivery of materials, stating that any balance for said work or materials is still due and unpaid, which amount may be retained by the said City until satisfactory evidence is furnished to the Director of Finance that said balance has been fully paid, and if said evidence is not furnished before the next estimate becoming due to the contractor under the contract, said Director of Finance may pay said balance to the person claiming it and charge such payment to the Contractor as payment on the contract, unless the Contractor shall have previously filed with the Director of Finance written notice that such claim is in dispute. In the event of such dispute, the City will retain the amount until the claim has been adjusted or the money paid into court on proceedings in the nature of an interpleader.

**B-32. ASSIGNMENT OF CONTRACT**

The Contractor shall not assign, transfer, convey or otherwise dispose of this contract, or his right to execute it, or his right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise, any of the moneys due or to become due under this contract, except by consent of the Board of Control, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such prior written consent to any further assignment, transfer, or conveyance, nor shall any such change become valid before filing of the contract change with the Commissioner of Accounts.

**B-33. SUBCONTRACTING.**

- A. This contract is made pursuant to the bid submitted by the Contractor and in reliance upon the Contractor's qualifications and responsibility. Therefore:
  - i. The contractor shall not subcontract, sublet, assign, transfer, convey or otherwise dispose of the contract, its duties, rights, title or interest in it or in any part thereof, or assign, by power of attorney or otherwise, any of the monies due or to become due under the contract, except, in each instance, with the prior written authorization of the Board of Control of the City, expressed through its resolution, and then only upon such terms and conditions as may be agreed to by said Board. No such subcontracting, subletting, assignment, transfer, conveyance or other disposal of the contract shall be valid until the written consent of the Board of Control is attached or endorsed hereto and filed in the Office of the Commissioner of Accounts.
  - ii. Prior written Board of Control consent is required for a City contractor to add a subcontractor, or to substitute one subcontractor for another subcontractor, under a City contract.
  - iii. The City assumes no obligation to pay, and will not pay, a contractor for any work and or services performed by a sub-contractor on the contract prior to Board of Control approval of that sub-contractor.
  - iv. The Director will not grant any City contractor additional time to meet project deadlines, and will not authorize or pay additional compensation or delay damages of any kind arising from the contractor's inability to add or substitute a subcontractor because the contractor failed to submit the approval request and supporting documentation at least 3 (three) weeks in advance of the date the additional or substitute sub-contractor is needed.
  - v. The Office of Equal Opportunity shall evaluate each subcontractor addition and substitution for increased CSB, MBE, or FBE participation even if the original contract had no certified sub-contractor participation.
  - vi. The City's Sub-contractor Addition and Substitution Policy and Procedure is hereby incorporated by reference in its entirety. The complete document is available online at the City of Cleveland website: <http://www.city.cleveland.oh.us>.
  - vii. In making application for subletting any portion of the work, the Contractor shall state in writing the portion of the work which each subcontractor is to do or the material which he is to furnish, his place of business, and such other information as may be required in order to ascertain whether such subcontractor is responsible, reliable and able to perform the work or to furnish the materials as called for in the specifications. Subletting, if permitted, shall not relieve the Contractor, or his surety of any of his or its obligations under this contract
- B. Any subcontract for work covered by this contract must conform to the requirements of the general and detailed provisions of this contract.
- C. The Contractor shall be and remain solely responsible to the City for the acts or faults of his subcontractor and of such subcontractor's officers, agents and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the Contractor to the extent of his subcontract. The Contractor shall promptly, upon request of the Director file a conformed copy of the subcontract with prices and terms of payment deleted, as a condition precedent to the approval of a subcontractor. The Contractor and subcontractor shall jointly and severally agree that no obligation upon the City of Cleveland is thereby created to pay to, or see to the payment of any sums to any subcontractor.

**B-34. CHANGES OR MODIFICATIONS OF CONTRACT. (Section 168 of the Charter of the City of Cleveland)**

When in the prosecution of any work or improvement under contract it becomes necessary, in the opinion of the Director of the appropriate department, to make alterations or modifications in such contracts, such alterations or material, or both, under the altered or modified contract, shall have been agreed upon in writing and signed by the Contractor and such Director prior to authorization by Council.

- A. Changes in the Work - Without invalidating the Contract and without notice to the Contractor's surety, the City may, at any time, or from time to time, order additions, deletions or revisions in the work, which shall be authorized by a Change Order. Upon receipt of a Change Order, Contractor shall promptly proceed with the work as altered, the same as if it had been part of the original Contract, whether or not agreement has been reached as to any price adjustment for such work.
- B. Change of Contract Price - The contract price shall mean the moneys payable by the City to the Contractor under the Contract Documents less the Contingency Allowance. No change in the Contract Price shall be authorized for work required by or reasonably implied as a requirement of the Contract Documents or for work foreseeable at the time of the bid as necessary to complete the project as originally contemplated.

In the event the Contractor is requested or required to perform work neither required by nor reasonably implied as a requirement of the Contract Documents and not foreseeable at the time of the bid as necessary to complete the project as originally contemplated, the Contract Price may be changed for work so performed by Contingency Allowance or by Subsidiary Agreement, provided that:

- (1.) Within ten (10) days after the occurrence or non-occurrence of any event giving rise to Contractor's claim for an adjustment in the Contract Price based on changes in the work, Contractor shall notify the City, in writing, of the general nature of the claim.
- (2.) Contractor shall provide to Engineer, within thirty (30) days after such event, the following supporting documentation:
  - (i) statement of the date, nature and specific circumstances of such event;
  - (ii) copies of all correspondence regarding such event;
  - (iii) identification of all work which has been or may be affected by such event;
  - (iv) itemization of all labor, materials and equipment for which a price adjustment is claimed;
  - (v) copies of all invoices for materials delivered for which a price adjustment is claimed.

Contractor's supporting documentation shall be accompanied by the Contractor's written statement that the amount claimed covers all known amounts to which Contractor is entitled as a result of the occurrence of said event.

No claim by Contractor for an adjustment in the Contract Price shall be valid if not submitted in accordance with this Article, B-34.

- (3.) The price adjustment for any work for which Contractor claims an increase in the Contract Price shall not exceed the actual cost of additional on-site labor, materials and equipment plus ten percent (10%) of such cost for profit and overhead.

All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to the City, and Contractor shall make provisions so that they may be obtained.

- (4.) In the event changes in the work result in a net decrease in the Contractor's costs, the Contract Price shall be decreased by an amount equal to the actual net decrease in the cost of on-site labor, materials and equipment plus ten percent (10%) of such net decrease.
- (5.) Where the work involved is covered by unit prices contained in the Contract Documents, the value of the work for which Contractor claims an increase in the contract price or the credit to which the City is entitled shall be determined by application of such unit prices.
- (6.) Changes in the contract price made pursuant to the Contingency Allowance shall not exceed the amount of the Contingency Allowance listed on the Contractor's bid.
- (7.) In the event that the Contingency Allowance is exhausted, changes in the Contract Price may only be made by Subsidiary Agreement, pursuant to Article B-34 of the General Conditions; the Contractor shall proceed with the work while any such Subsidiary Agreement is being processed.

#### **B-35. FAILURE TO MEET PERFORMANCE REQUIREMENTS.**

The delivery of any material, equipment or the performance of any labor hereunder which does not in all respects conform to contract requirements, will be rejected and the Contractor shall be notified promptly by the Director of such rejection and the reason therefor, which notice shall be confirmed in writing. If the said Contractor fails to effect immediate replacement of such rejected materials, equipment and labor with material, equipment and labor meeting the requirements of the order and of the contract, the City of Cleveland will purchase in the open market, material, equipment and hire labor of the character required under the order up to the amount rejected and the said Contractor and his surety shall be liable to the City of Cleveland for any excess cost and expense occasioned the City thereby. The Director shall have the right to suspend the whole or any part of the work to be done hereunder, when the Contractor is not doing the work in accordance with the provisions of the contract. No extension of time for completion of the contract work or claim for damages will be allowed by reason of such suspension.

#### **B-36. ANNULMENT OF CONTRACT.**

The Director shall have the right to annul the contract upon the failure of the Contractor to comply within three (3) days after receipt of written notice to proceed with the performance of any work unreasonably delayed as to indicate failure of completion within the time specified or to replace any work, material or equipment not meeting the contract.

#### **B-37. ACCEPTANCE OF PERFORMANCE.**

It shall be understood and agreed by the parties hereto that the Director shall determine finally, the satisfactory quality of the work, material and equipment furnished under the contract.

#### **B-38. GUARANTEE.**

- A. The Contractor for the work called for in the contract documents, in consideration of the price bid and the payments received or to be received, guarantees that all work done and all material used in the project under contract are in all respects first-class, of the proper kind and quality and has been done and is being done in accordance with the requirements of the contract documents, and also guarantees that the improvement will remain in good condition for and during the entire period of guarantee.
- B. The period of guarantee shall begin upon the date of final acceptance by the Director in writing, of the construction work, and shall continue for a period of twelve (12) months thereafter or as otherwise provided in the supplemental general conditions.
- C. If at any time before or during said period of guarantee, any defects or omissions become apparent in the work, or if the work, or if it becomes apparent that any of the work is not in accordance with the requirements of the contract documents, or if any of the work constructed under this contract requires repairs due to defects in materials or workmanship, or for any other cause which may be attributed to the work which is being done or has been done by the Contractor, all as determined by the Director or his authorized representative, such Director or representative will notify the Contractor to rectify such defects or omissions, or to make the repairs so required.
- D. If the Contractor shall fail to begin to rectify such defects or omissions or to start such repairs within five (5) days from the date of such notification, or if such rectification or repair work is not made in a manner satisfactory to the Director or to his representatives, the Director shall have the right to purchase any necessary materials, rent any necessary tools and equipment and to employ such other person or persons as he may deem proper to make such repairs, and to pay the expense thereof out of moneys then due, or which may thereafter become due to the Contractor, or out of the amount

retained for that purpose by the City.

- E. In case of an emergency the Director shall have the right to purchase any necessary materials, rent any necessary tools and equipment and to employ such other person or persons as he may deem proper to make such repairs, and to pay the expense thereof out of the moneys then due, or which may thereafter become due to the Contractor, or out of the amount retained for that purpose by the City.
- F. If such moneys are not sufficient to meet such expense, the additional moneys shall be furnished by the Contractor, and if he refuses or neglects to provide the necessary moneys, they shall be provided by his sureties.
- G. If it is necessary to remove any part of the work to rectify defects or omissions or to repair defects in materials or workmanship, or if any part of the work becomes damaged due to such rectification or repairing, all such shall be replaced or repaired, all to the satisfaction of the Director or said representative. The guarantee provisions shall also apply to all rectified or repaired work.

**B-39. TERMS OF PAYMENT.**

- A. The Contractor will make current requests for payment in writing, not more than one each month, and submit them to the Director for approval. Said request shall be dated the last working day of the month and shall be submitted to the Director by the fifth day of the following month. At the same time, a copy of the request shall be mailed by the Contractor to the Resident Engineer or Architect. The request for payment shall cover the materials in place complete, and the amount of work performed in accordance with the contract during the preceding payment period and the value thereof. At the discretion of the Director, allowances may be made for non-perishable materials which are to be incorporated into the work, when delivered and properly stored upon the site. Upon approval of the Contractor's request for payment, the Director will make estimates in writing, one each payment period of the material in place complete, and the amount of work performed, all in accordance with the contract. Upon approval by the Director, the Contractor shall be paid the amount of each such estimate less a deduction of five percentum (5%) which shall be retained until final acceptance of all work covered by the contract, and less all prior payments.
- B. Upon the final acceptance of the work as certified by the Director, the City shall pay the Contractor the whole amount of the money then due the said Contractor under the contract except such sums which have already been paid and except such sum as may have been expended by the City or may be due the City or properly deductible, under the provisions of the contract, and less a deduction of five percentum (5%) to be retained for a further period of forty-five (45) days.
- C. Forty-five (45) days after the final acceptance the Contractor shall be paid the sums retained less proper deductions and less two percent (2%) of the total amount of the contract, which shall be retained for the balance of the guarantee period.
- D. The payment of the moneys provided for herein shall constitute a full and complete discharge of all the duties and obligations of the City of Cleveland under this contract.

**B-40. NO WAIVER OF LEGAL RIGHTS.**

Neither acceptance of nor payments for the work, or any part of the work, nor any extension of time, nor any possession taken by the City shall operate as a waiver of any portion of the contract, nor shall a waiver of any breach of the contract be held to be waiver of any other or subsequent breach.

**B-41. INDEMNITY CLAUSE.**

The Contractor shall indemnify, keep and save harmless the City of Cleveland, Ohio and their respective officers, agents, and employees against all suits or claims that may be based upon any injury to persons or property that may occur, or that may be alleged to have occurred in the course of the performance of this contract by the Contractor, or as a result of the performance of this contract by the Contractor, whether or not it shall be claimed that the injury was caused through a negligent act or omission of the Contractor or his employee, and whether or not the persons injured or whose property was damaged were third parties, employees of the Contractor or employees of an authorized subcontractor; and the Contractor shall at his own expense defend the City of Cleveland in all litigation, pay all attorneys' fees and all costs and other expenses arising out of the litigation or claim incurred in connection therewith; and shall, at his own expense satisfy and cause to be discharged such judgments as may be obtained against the City, or any of its officers, agents or employees.

**B-42. FIRE AND EXTENDED COVERAGE INSURANCE.**

The Contractor shall insure for the life of the contract against all loss or damage by theft, vandalism, by fire, water, hurricane, windstorm, hail, lightning, explosion, riot, civil commotion, aircraft, smoke, vehicles and other hazards covered by the standard extended coverage insurance endorsement. The insurance policy shall be held jointly in the names of the owner and the Contractor. The amount of the policy may vary with the extent of the work completed, but shall at all times be at least equal to the amount paid on account of work done and materials on hand as furnished or delivered by the Contractor. Certificates of the insurance companies as to the amount and extent of coverage shall be delivered to the City before partial payments are made by any estimate for payment.

**~~B-43. FANNIE M. LEWIS CLEVELAND RESIDENT EMPLOYMENT LAW (Chapter 188, Codified Ordinances).~~**

~~A. Employment of City Residents~~

- ~~(1.) Where not otherwise prohibited by federal, state or local law or the terms of federal or state grants, the Contractor shall employ Residents to perform twenty percent (20%) of the total Construction Worker Hours ("Resident Construction Worker Hours").~~
- ~~(2.) Where not otherwise prohibited by federal, state or local law or the terms of federal or state grants, the Contractor and any of its Subcontractors shall use significant effort to ensure that no less than four percent (4%) of the Resident Construction Worker Hours are performed by Residents who qualify as Low Income Persons.~~
- ~~(3.) The Resident Construction Worker Hours percentage levels set forth in subparts 1 and 2 above are intended only as minimum requirements for use of Residents of the City under the Contract and do not limit or defer the Contractor from full use of Residents above those levels.~~
- ~~(4.) Prior to the commencement of work, each Contractor and Subcontractor(s) shall complete and submit to the Director of Equal Opportunity a Work Force Table. The Contractor and Subcontractor shall revise this document as required, but not less than once a month.~~

~~B. Reductions; No Waiver~~

~~The Director of Equal Opportunity may reduce, but may not waive, the Resident Construction Worker Hours requirement prior to or during construction, as more specifically provided in the Standards and Procedures.~~



~~C. Contractor Reporting; Records; Access~~

- ~~(1.) The Contractor shall provide for the maintenance of all records documenting that Residents of the City are employed in the Contract. The Contractor and its Subcontractors shall maintain copies of personnel documents supportive of every Resident employee's actual residence of record. The Contractor and Subcontractors shall maintain all relevant personnel data in records for a period of at least three (3) years after final completion of the work.~~
- ~~(2.) The Contractor shall designate a principal officer of its firm to be responsible for administering the Resident Employment Requirement for the Contractor and its Subcontractors. This officer shall meet regularly, or as may be required, with the Director or his designee to ensure compliance with the Resident requirements. The Contractor has primary responsibility for meeting the Resident Employment requirement and the Low Income Persons goal.~~
- ~~(3.) The Contractor shall submit monthly to the Director of Equal Opportunity certified payroll reports (U.S. Department of Labor Form WH-347 or equivalent) for this Contract in a format specified by the Director. The reports shall identify clearly the actual residence of every employee on each submitted payroll and shall include a hire date for an employee the first time the employee's name appears on a payroll.~~
- ~~(4.) The Contractor and Subcontractors shall grant the Director of Equal Opportunity, his designated agents, the Chief of Police, or any duly authorized representative of either, full access to their employment records that document information related to the Resident Employment Requirements.~~

~~D. Violation; Penalty~~

- ~~(1.) If Contractor does not employ the percentage of Residents required by these General Conditions, it has breached this contract. The penalty shall be one eighth of one percent of the final total amount of the contract for each full percentage point by which the Contractor has fallen short of the percentage required by these General Conditions.~~
- ~~(2.) If Contractor does not meet the Low Income Persons Objective, the Director shall determine if a penalty is appropriate. The penalty shall be one eighth of one percent of the final total amount of the contract for each percentage of shortfall toward the Low Income Persons Objective.~~
- ~~(3.) Failure to submit or knowingly falsifying a Work Force Table or any of the reports required by the Resident Employment Law or the Director of OEO is a breach of the contract. The penalty shall be as stated in subsection 1 above, calculated as if no residents were employed. Knowing falsification of reports is also a misdemeanor of the first degree, punishable by a fine of not more than \$5000. A Contractor that is convicted of this crime is barred from contracting with the City for five years on any construction project governed by the Resident Employment Law.~~
- ~~(4.) Anyone who knowingly supplies false information to establish that a person is a Resident for purposes of the Resident Employment Law is guilty of a misdemeanor of the first degree. Anyone convicted of this crime may not work on a contract under the Resident Employment Law for five years. Contractor shall not employ any person prohibited from employment on a contract governed by the Resident Employment Law. The Director of Equal Opportunity will maintain a list of the persons prohibited from employment.~~
- ~~(5.) During the five years after a Contractor has violated the Resident Employment Law, the City may require the Contractor to furnish a surety bond or other security of twenty percent of the contract price for any contract governed by the Resident Employment Law awarded to that Contractor. This requirement shall be in addition to any other bond requirement and penalty in the Codified Ordinances.~~
- ~~(6.) The City may withhold any retainage until it determines whether Contractor must pay a penalty.~~

~~**B-44. COMPLIANCE WITH THE CLEVELAND AREA BUSINESS CODE (Chapter 187, Codified Ordinances).**~~

~~A. Definitions:~~

~~As used in these General Conditions, all terms shall have the meanings assigned to them in the *Cleveland Area Business Code*, Chapter 187 of the Codified ordinances of Cleveland, Ohio, 1976. Refer to the enclosed *Mayor's Office of Equal Opportunity Notice to Bidders & Schedules*, Item 2, Definitions, for definitions of terms related to the *Cleveland Area Business Code*.~~

~~B. Requirements:~~

~~During performance of this contract, contractor shall comply with all applicable requirements of the *Cleveland Area Business Code*, Chapter 187 of the Codified Ordinances of Cleveland, Ohio, 1976, and any *Regulations* promulgated under the Code, which Code and *Regulations* are incorporated into and made part of this contract by this reference as fully as if attached. Specifically, compliance shall include, but not be limited to, the contractor's compliance with its bid representations regarding, CSB, MBE, and/or FBE participation in the contract, and contractor's:~~

- ~~(1.) Timely and accurate submission of all required forms, including, but not limited to, employment reports, certified payrolls, electronic monitoring forms, and other documentation the Director of the Office of Equal Opportunity may require to ascertain the Contractor's compliance, whether in print or electronically; and~~
- ~~(2.) Active compliance and cooperation with Project monitors, whether from the Office of Equal opportunity or the Contracting department;~~
- ~~(3.) Attending and participating in all required pre-construction meetings, Office of equal opportunity compliance meetings, and all progress meetings called by the Contracting Department Director(s) at key intervals during construction of the project (e.g. 25% completion, 50% completion, 75% completion).~~

~~C. Failure to Comply:~~

~~In determining a Contractor's future eligibility for a City contract, the City shall consider the Contractor's failure to comply with its bid representations and the requirements of the *Cleveland Area Business Code* as a failure to faithfully perform a contract.~~

**B-45. CITY'S REMEDIES.**

All rights and remedies granted to the City in this Agreement and any other rights and remedies which the City may have at law and in equity are declared to be cumulative and not exclusive and the fact that the City may have exercised any remedy without terminating this Agreement shall not impair the City's rights later to terminate or to exercise any other remedy granted or to which it may be otherwise entitled.

**THIS PAGE  
HAS BEEN  
INTENTIONALLY  
LEFT BLANK.**

## **Part C - Supplemental General Conditions**

### **Table of Contents**

C-1	Scope
C-2	Closing Streets
C-3	Traffic Signs
C-4	Maintaining Traffic, Item 614
C-5	Care of Existing Utilities
C-6	Soil Conditions
C-7	Dimensions, Shop Drawings and Elevations
C-8	Exclusion of Water
C-9	Field Office
C-10	Toilet Facilities
C-11	Project Signs
C-12	Granite Curb Removal
C-13	Disposal of Castings
C-14	<u>Not Used</u>
C-15	Tree and/or Stump Removal
C-16	Approximate Quantities
C-17	Mathematical Errors
C-18	Dray Slips
C-19	Sealing Gutters, Joints, and Castings
C-20	Special Working Conditions
C-21	Supervision
C-22	Approval and Acceptance
C-23	Completion of Work Defined
C-24	Construction Schedule
C-25	Liquidation Damages
C-26	Demolition Material
C-27	Safety Requirements - State of Ohio
C-28	Standard Construction Drawings
C-29	Cold Weather Work

## **Part C - Supplemental General Conditions**

### **Table of Contents (Cont)**

- C-30 Supplement to Part A-10 Unacceptable Bids
- C-31 Supplement to Part B-2 Definitions
- C-32 Supplement to Part B-7 Storage of Materials
- C-33 Supplement to Part B-29 Prevailing Rates of Wages
- C-34 Supplement to Part B-42 Equal Employment Clause
- C-35 Supplement to Part B-43 Compliance with the  
Cleveland Area Business Code
- C-36 Supplement to Part 44 – Fannie M. Lewis Cleveland  
Resident Employment Law
- C-37 City Remedies
- C-38 LPA (Local Public Authority) Additional Provisions to the  
City General Provisions
- C-39 Public Liability, Property Damage and Automobile Insurance Section 18 b.

## **C-1 SCOPE**

These "Supplement General Conditions" amplify or modify the "General Conditions". Where any article of the "General Conditions" is supplemented hereby, the original provisions remain in effect and the supplemental portion shall be considered as added.

## **C-2 CLOSING OF STREETS**

The Contractor shall notify the City's project Engineer seven working days in advance of the closing of the project street(s) or cross streets(s).

## **C-3 TRAFFIC SIGNS**

Any traffic or parking signs that are to be covered, removed or relocated temporarily shall be reported by the Contractor to the authorized representative of the Division of Traffic Engineering and Parking not less than forty-eight (48) hours before such covering, removal or relocation is necessary. Where possible to locate normal signposts, the Division of Traffic and Parking will do this work at no cost to the Contractor. Where temporary mountings, such as barricades, easels, etc., are necessary to support the signs, the Contractor must furnish same. All such items shall be directed by the Division of Traffic Engineering and Parking.

Under no circumstances will the Contractor be permitted to remove any traffic or parking signs without first obtaining approval from the Division of Traffic Engineering and Parking.

All traffic and parking signs or mountings damaged by the contractor or removed without authorization must be replaced by the Contractor at his expense. If not replaced by the Contractor, The Division of Traffic Engineering and Parking will replace them and charge the cost of this work against the Contractor.

## **C-4 MAINTAINING TRAFFIC, ITEM 614**

Before starting any work under this contract, the Contractor shall confer with the proper representatives of the Division of Traffic Engineering and Parking, the Regional Transit Authority, The City Engineering office and others who may be

affected by the carrying out of this work, and shall be covered by agreements reached at such conferences.

The Contractor shall be required to comply with the following conditions on the work site as directed by the Commissioner of Traffic Engineering and Parking of the City of Cleveland or his authorized representatives.

The Contractor shall furnish all required traffic control devices, including weight drums, traffic cones, traffic control signs, barricades, warning and flasher lights, and any and all other warning or traffic channeling devices required for the control of traffic in the construction area. Traffic control devices shall be those approved by the Commissioner of Traffic Engineering and Parking

The Contractor shall place, relocate, and remove the traffic control devices as needed with the written permission of the Commissioner of Traffic Engineering and Parking.

He shall make any and all changes of the arrangement of warning and channeling devices as required by the progress of work, and when the flow of traffic must be changed and maintained as required. These changes shall be performed as directed by and under the supervision of a representative of the Commissioner of Traffic and Engineering and Parking.

The Contractor shall provide a competent flagman or off-duty policeman to assist the flow of traffic and for the safe maneuvering of equipment and trucks used for construction work under this contract. This flagman or off-duty policeman must be on duty at all times when construction work is in progress. The flagman or off-duty policeman must be approved by the Commissioner of Traffic Engineering and Parking prior to starting work.

All barricades shall have the necessary lighting to provide a warning to approaching vehicles. These lights shall be maintained by the Contractor.

The cost of maintaining traffic as herein specified shall be included in the lump sum bid for Maintaining Traffic, Item 614.

#### **C-5 CARE OF EXISTING UTILITIES**

The type, size and location of utility mains have been indicated on the plans form available records. The Contractor shall repair, in a manner satisfactory to the

Owner; any utility main, or service damaged in the process of this work. The Contractor shall notify all owners of utilities when his work is in progress and shall make such arrangements as are necessary in the event repair should become necessary. The Contractor shall contact OUPS at 1.800.362.2764 and report the confirmation number to the Chief Engineer of Construction. Non-member utilities must be contacted directly. No extra compensation will be made for repair of any services or equipment, nor for any damage incurred through neglect or failure to provide protective barriers, lights and other devices or means required to protect such utilities.

## **C-6 SOIL CONDITIONS**

The Mayor's Office of Capital Projects of the City of Cleveland has not made or hired a Contractor to perform soil borings for this job.

Subject to the convenience of the City, prospective bidders will be permitted to explore the site by making borings. In such event, the work shall be done at the sole expense and risk of the bidder, and he shall maintain and restore the site to a condition of safety.

Bidders shall satisfy themselves as to the nature of the ground at the site of the proposed work and pay particular attention to any soil condition that may affect the progress of the work. The City makes no guarantee, either expressed or implied, as to such ground conditions.

The Contractor agrees that he will make no claim against the City, if, when carrying out the work, he finds the actual subsurface conditions encountered do not conform to those indicated by said borings, test excavations and other subsurface investigations.

## **C-7 DIMENSIONS, SHOP DRAWINGS AND ELEVATIONS**

Figured dimensions on drawings shall take precedence over measurements by scale, and shop drawings are to take precedence over general drawings and shall be considered as explanatory of them and not as indicating extra work. If, however, any of the shop drawings show more elaborate or expensive work than is specified and indicated by the contract drawings, notice thereof must be given to the Administrator Bureau Manager of Engineering and Construction by the Contractor within ten (10) days after the receipt such additional expense on account such work may be adjusted and authorized. If the Administrator Bureau

Manager of Engineering and Construction does not receive such notice, in writing, from the Contractor within ten (10) days after shop drawings have been received by him it is agreed that the Contractor accepts the drawings and will execute them without claim for extra compensation.

The figures given in the Contract or upon the Contract drawings after the word "elevation", or an abbreviation of it shall mean distances in feet above Sea Level Datum. Example: 574.80 = 0 on old city base.

### **C-8 EXCLUSION OF WATER**

The Contractor shall provide all necessary pumps, pipes, drains, ditches and other means for removing water from excavations or other parts of the work, or for preventing the sides from sliding or caving, and he shall remove the water. He shall provide additional pumps or drains at any place where the Engineer shall deem them necessary.

### **C-9 FIELD OFFICE**

The contractor shall erect and make available for the exclusive use of the City Engineers and Inspectors an 8' x16' field office building and toilet facilities at such point at the site of the work as the City may designate or approve. The Contractor will be permitted to use a suitable trailer of equivalent size in place of a building.

The building shall be of sound construction, weather-tight and in all ways suitable for the purpose intended. It shall be properly equipped with a wood floor, lights, screens, doors, and a heating system, if necessary.

The building shall be furnished with a desk, chairs, filing cabinet, rack for plans, benches, work table, and such other furniture and equipment as would normally be required for a building of this character. A phone shall be installed.

Water for drinking and washing shall be furnished by the Contractor; and if piped water is not available, water shall be furnished and stored in proper containers.

The field office shall have provisions for maintaining a temperature between 68F and 80F with lighting and electrical outlets.



The building shall be neatly painted dark gray or such other color as the Engineer may approve.

Before starting work on the building, the Contractor shall furnish to the Administrator Bureau Manager of Engineering and Construction of the City of Cleveland a general plan description of the proposed structure and its furnishings and shall not do any work until the type of building and the site have been approved.

The erection of the office building as herein described shall be one of the first duties of the Contractor, and the building shall be available for use before any part of the construction project is started. The erection, furnishing and maintaining of the office building and facilities as herein described shall be included in the lump sum bid price for Field Office, Item 619.

The office building shall remain the property of the Contractor, and upon the completion and final acceptance of work done under the Contract, The Contractor shall remove the building facilities from the premises and clean up the site. The Contractor shall provide suitable toilet facilities near the field office.

#### **C-10 TOILET FACILITIES**

The Contractor shall furnish suitable toilet facilities for the workers on the project.

#### **C-11 PROJECT SIGNS**

Before commencing work in this project the Contractor shall furnish erect and maintain two (2) signs on the project in the locations directed by the Engineer. The signs shall remain in the place until all work on the project has been completed.

Graphics program will be provided in electronic form by the Division of Traffic Engineering Sign Shop. Contact Mr. Greg McKee at 216-664-8286. No modifications to final format will be permitted.

Employ the services of a sign fabricator which is acceptable to the City of Cleveland, Division of Traffic Engineering. Request and receive approval from Greg McKee for vendor used prior to onset of production.

Fabricate project identification signs to the following minimum standards:

Use only vinyl coated plywood panels (MDO) 4'-0" x 8'-0", smooth on one side, free from knots and imperfections.

For 8'-0" x 12'-0" signs, use (3) panels, mounted vertically and abutted to provide hairline joints. Use vinyl H caps and C caps on panel edges.

All graphics artwork shall be produced on large format inkjet equipment using ultraviolet ray resistant outdoor ink applied to minimum 3 mil. Vinyl sheet for application.

Finished panels shall be lag mounted to 2 x 4 wood frame for rigidity. Framed sign shall be mounted to 4 x 4 wood posts which are properly braced to withstand normal wind load anticipated.

No other signage or advertising will be permitted by the Contractor or his subcontractors.

The project identification sign (s) shall be removed at the time of final acceptance, unless the Engineer orders their prior removal.

Contractor shall return project identification signs to the City of Cleveland, Division of Traffic Engineering Sign Shop, less wood framing, at no additional cost to the owner.

No refund or otherwise shall be paid for the sign when returned, and it shall remain the property of the City of Cleveland.

### **C-12 GRANITE CURB REMOVED**

When existing granite curb has to be removed and replaced with concrete curb, the following method of disposal shall be used. The curb is to remain the property of The City of Cleveland. This curb shall be delivered to the Division of Streets storage yard, Eaton Building, 2301 East 65 Street, Cleveland, Ohio

### **C-13 DISPOSAL OF CASTINGS**

All monument box frames and/or covers removed shall become the property of the Contractor and removed from the construction site. All other Municipal-owned castings are to remain the property of the respective departments of the City of Cleveland. These castings shall be delivered to the owning department's storage yard as directed by the Engineer.

When an existing tree is to remain in an area which will receive sidewalk, the contractor shall form a pocket around the tree to the size shown on the plans or the size directed by the Engineer.

**C-14 Not Used**

**C-15 TREE AND/OR STUMP REMOVAL**

All work performed under this item shall conform with the State of Ohio Department of Transportation Construction and Material Specifications Item 201, latest edition, as modified herein. The engineer shall mark all trees and stumps, or stumps to be removed under this item. All stumps shall be removed to a minimum of one (1) foot below the finished grade. The Contractor shall fill the remaining void, as directed by the Engineer, as part of this item.

All trees and stumps, or stumps, removed shall be classified and paid for as follows:

MEASURED TREE SIZE	PAY DESIGNATION
Under 12"	12"
12" to 24"	18"
24" to 36"	30"
36" and larger	36"
Stumps regardless of size	Each

**C-16 APPROXIMATE QUANTITIES**

The quantities of work to be done or material or equipment to be furnished as given for each item in the Fixed Price Schedule and in the Bid Form are approximate only and are assumed solely for the comparison of proposals. They are not guaranteed to be accurate statements and quantities to be performed or furnished under the Contract, and any departure therefrom will not be considered as valid grounds for any claims for damage or for loss of profits.

## **C-17 MATHEMATICAL ERRORS**

If the bidder makes any mathematical error(s) the City will correct those errors based upon the following criteria. The unit prices for labor and material stated on the bid sheet by the Contractor shall be accepted as being correct.

The actual sum of these two (2) figures and the extension based upon the bid quantity shall then govern. The unofficial total shall be revised accordingly. The City also reserves the right to correct any mathematical errors in the summation of the bid item extensions

Where subtotals or totals are transferred from one sheet to another sheet the City reserves the right to correct any errors made in transferring (recopying) the figures, as the intent to the bid form is that these figures be the same. If the correction of any errors has an effect on the award of the bids, only the directly effected bidders will be notified in writing of the changes.

## **C-18 DRAY SLIPS**

### General

The Contractor shall have a tested and sealed scale which has a device that will automatically print on each dray slip the gross and tare weight for each load of asphalt or concrete

The scale shall be certified by the Division of Markets, weights and Measures of the City of Cleveland. The scale shall be tested at least once every six (6) months.

### Payment Procedures

The Contractor shall file with the Engineer the proper dray slips for materials which is to be paid for on a cubic yard or weight basis. No material shall be delivered to the job without these dray slips with the printed weights on them.

### Asphaltic Materials

Dray slips for asphaltic material shall indicate whether limestone or slag was used as a coarse aggregate.

## **C-19 SEALING GUTTERS, JOINTS, AND CASTINGS**

All gutters, joints, merger joints and castings shall be sealed.

## **C-20 SPECIAL WORKING CONDITIONS**

Any street or section of street stripped shall be resurfaced prior to the suspension of asphalt work due to weather limitations as per Ohio Department of Transportation Construction and Material Specifications 401.05.

## **C-21 SUPERVISION**

The Contractor shall keep on his work at all times during its progress, a competent superintendent and all necessary assistant. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Important directions shall be confirmed on written request in each case.

The superintendent shall have a minimum of three (3) years experience in the supervision of construction and be subject to the approval of the Engineer. In the event the Contractor changes the superintendent of the work he shall notify the Engineer immediately. This new superintendent shall meet all the requirements of this section.

## **C-22 APPROVAL AND ACCEPTANCE**

Upon the completion of the work as herein provided, the Contractor shall notify the City, in writing, that the installation has been completed and is ready for performed test.

The performance test may then be conducted, as elsewhere specified, and the successful operation of the plant during such test shall be considered as indicating that the plant and its appurtenances have been completed within the meaning of these specifications.

The final estimate shall not be paid until the performance test has been satisfactorily completed, and the guarantee period shall begin immediately upon the successful completion of such performance test and not before.

## **C-23 COMPLETION OF WORK DEFINED**

The completion of the work included under this contract is defined, for the purposes of determining liquidated damages, as that stage when all of the structures and appurtenances have been completed, tested and are, in the

opinion of the Director, ready for continuous permanent use and occupancy for the purpose intended. After this date, there may still remain some grading, cleaning up, or other minor work which is not immediately required for the operation of the new facilities.

#### **C-24 CONSTRUCTION SCHEDULE**

The Contractor shall furnish the Engineer four (4) copies of his construction schedule within fourteen (14) calendar days after the date of execution of the Contract. The total construction time required to complete the work, as stated in the Contractor's bid, shall be scheduled according to standard CPM or PERT methods.

**C-25 LIQUIDATED DAMAGES**

In case of delay in the completion of the work beyond the time stipulated, The City shall retain from the moneys that are due or that may become due the Contractor an amount equal to that stated below for each calendar day by which the time of completion of the work is delayed beyond the item stipulated in the proposal, and such amount so to the retain is hereby agreed to be liquidated damages accruing to the City incident to such amount, which as stated below shall govern.

Contract \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )

Original Contract Amount (Total Amount of the Bid)                      Amount of Liquidated Damages to be deducted for each calendar day of overrun in Time.

<u>FROM MORE THAN</u>	<u>TO AND INCLUDING</u>	
\$0	\$50,000	\$25.00
50,001	100,000	40.00
100,001	300,000	100.00
300,001	500,000	200.00
500,001	750,000	325.00
750,001	1,000,000	450.00
1,000,001	1,500,000	625.00
1,500,001	2,000,000	875.00
2,000,001	OVER	1,000.00

Note: A. The Contractor number will be assigned after the contract is awarded.

The amount of liquidated damages will be entered after the tabulation of the bids in accordance with the above schedule.

**C-26 DEMOLITION MATERIAL**

Demolition material such as asphalt, concrete, brick stone other masonry, steel, iron, etc., and excess excavated materials, shall be hauled away front he construction site and disposed of in a landfill site approved by the local government authority. The Contractor shall identify the landfill and/or

reclaim/recycle site location and owner and shall submit a copy of the site permit issued by the local governmental authority to the Engineer. The requirements are the same for the Contractor's owned site. No material shall be removed from the project site prior to the approval of the disposal site by the Engineer.

The Contractor shall also submit dray slips to the Engineer from the operator of the disposal site for all materials removed from the project site. The cost involved shall be included in the price bid for the related or appropriate pay items.

### **C-27 SAFETY REQUIREMENTS - STATE OF OHIO**

The safety requirements of the State of Ohio, Ohio Administrative Code, Chapter 4, 121:1-3, will be enforced during the contract term. The Ohio Bureau of Workers' Compensation, Division of Safety and Hygiene, book entitled Specific safety Requirements of the Ohio Bureau of Workers' Compensation relating to Construction is hereby incorporated in these specifications.

### **C-28 STANDARD CONSTRUCTION DRAWINGS**

The project title sheet contains a list of the standard construction drawings for this project. A copy of each drawing is included in the plans.

### **C-29 COLD WEATHER WORK**

When placing concrete or any other operation during cold weather (less than 35 degree Fahrenheit.) the Contractor shall provide proper cold weather protection, as accepted by the Engineer, at no additional cost to the City.

### **C-30 SUPPLEMENT TO PART A-10 UNACCEPTABLE BIDS**

The following note is removed from the General Conditions, Part A-10:

"No bid will be accepted from, or contract awarded to, any person, firm or corporation that is in arrears or is in default to the City of Cleveland upon any debt or contract, or that is a defaulter as surety or otherwise, upon obligation to said City, or has failed to perform faithfully any previous contract with the City."



### **C-31 SUPPLEMENT TO PART B-2 DEFINITIONS**

The following definition is removed from the definitions listed in Part B-2:

“Resident Employment Requirement” means the percentage of Construction Worker Hours Residents must work, as required by Section 188.02.”

### **C-32 SUPPLEMENT TO PART B-7 STORAGE OF MATERIALS**

The following is added to Part B-7:

“e. Duration of site storage shall be kept to a minimum. Deliveries shall be scheduled with the associated Work activity (s).

f. Warehouse all electrical and motor operated equipment or place in job site trailers.

g. Equipment with mechanical moving parts shall be properly stored in job site trailers or offsite in a warehouse.

h. Material that will not be allowed as stored material for pay estimates are conduit, wire/cable, conduit fittings, fasteners, hangers or other materials that are readily consumed by the progress of work.

‘Skilled and Unskilled Construction Trade Worker’ shall mean all work site foremen, journey workers, including technical engineers, apprentices, construction trainees and elevator construction helpers and apprentices that are in a bona fide apprenticeship training program that is certified by the U.S. Department of Labor, Bureau of Apprenticeship and Training. Also included are other workers appropriate for construction activities. Salaried superintendents are excluded.”

### **C-33 SUPPLEMENT TO PART B-29 PREVAILING RATES OF WAGES**

The prevailing rates of wages detailing to be determined by the Department of Industrial Relations, Division of Building and Factory Inspection, of the State of Ohio in Part B-29, subpart a., b., c., d. notwithstanding, is to be replaced with the prevailing Davis-Bacon federal wages rates.

### **C-34 SUPPLEMENT TO PART B-42 EQUAL EMPLOYMENT CLAUSE**

Notes 5, 6, and 7 of this provision does not apply to this project. Federal Procurement Provisions specified and referenced in this manual shall govern.

### **C-35 SUPPLEMENT TO PART B-43 COMPLIANCE WITH THE CLEVELAND AREA BUSINESS CODE**

This provision does not apply to this project. Federal Procurement Provisions

specified and referenced in this manual shall govern.

**C-36 SUPPLEMENT TO PART 44 - FANNIE M. LEWIS CLEVELAND  
RESIDENT EMPLOYMENT LAW**

This provision does not apply to this project. Federal Procurement Provisions specified and referenced in this manual shall govern.

**C-37 CITY REMEDIES**

All rights and remedies granted to the City in this Contract and any other rights and remedies which the City may have at law and in equity are declared to be cumulative and not exclusive and the fact that the City may have exercised any remedy without terminating this Contract shall not impair the City's rights later to terminate or to exercise any other remedy granted or to which it may otherwise be entitled.

**C-38 LPA (LOCAL PUBLIC AUTHORITY) ADDITIONAL PROVISIONS TO  
THE CITY GENERAL PROVISIONS**

The CONTRACTOR is required to perform all ODOT provisions in the Section 100, "Required Additional Provisions for LPA's Using Their Own General Provisions", as detailed in the following ODOT documents, in addition to the requirements set forth in Section Part B-General Conditions.

**C-39 Public Liability, Property Damage and Automobile Insurance  
Section 18 b.**

Change Property damage from \$200,000 to \$1,000,000 per occurrence.

## SECTION 100 ADDITIONAL REQUIREMENTS

### REQUIRED ADDITIONAL PROVISIONS FOR LPA'S USING THEIR OWN "GENERAL PROVISIONS"

**103.03 Cancellation of Award.** The Department may cancel a Contract award at any time before all parties sign the Contract without liability to the Department.

**104.02 B. Differing Site Conditions.** During the progress of the Work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract Documents or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the Work provided for in the Contract Documents, are encountered at the site, notify the Engineer as specified in 104.02.G of the specific differing conditions before they are disturbed or the affected Work is performed.

Upon notification, the Engineer will investigate the conditions and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any Work under the Contract, the Department will make an adjustment and modify the Contract as specified in 108.06 and 109.05. The Engineer will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted.

**104.02 C. Suspension of Work.** If the performance of all or any portion of the Work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation or time is due as a result of such suspension or delay, notify the Engineer as specified in 104.02.G.

Upon receipt of notice, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost or time required for the performance of the Work has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an equitable adjustment (excluding profit) and modify the contract as specified in 108.06 and 109.05. The Engineer will notify the Contractor of its determination whether or not an adjustment to the Contract Documents is warranted. Failure of the Engineer to suspend or delay the Work in writing does not bar the Contractor from receiving a time extension or added compensation according to 108.06 or 109.05.

The Department will not make an adjustment under this subsection in the event that performance is suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this Contract.

*Language from 23 CFR 635.109(a) (3) [In place of ODOT 104.02(D)]:*

Significant changes in the character of work.

(i) The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.

(ii) If the alterations or changes in quantities significantly change the character of the work under the contract, whether such alterations or changes are in themselves significant changes to the character of the work or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.

(iii) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.

(iv) The term "significant change" shall be construed to apply only to the following circumstances:

- (A) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
- (B) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

**106.09 Steel and Iron Products Made in the United States.** Furnish steel and iron products that are made in the United States according to the applicable provisions of Federal regulations stated in 23 CFR 635.410 and State of Ohio laws, and ORC 153.011 and 5525.21. "United States" means the United States of America and includes all territory, continental or insular, subject to the jurisdiction of the United States.

**A. Federal Requirements.** All steel or iron products incorporated permanently into the Work must be made of steel or iron produced in the United States and all subsequent manufacturing must be performed in the United States. Manufacturing is any process that modifies the chemical content; physical shape or size; or final finish of a product. Manufacturing begins with the initial melting and mixing, and continues through the bending and coating stages. If a domestic product is taken out of the United States for any process, it becomes a foreign source material.

**B. State Requirements.** All steel products used in the Work for load-bearing structural purposes must be made from steel produced in the United States. State requirements do not apply to iron.

**C. Applications.**

1. When the Work is Federally funded both the Federal and State requirements apply. This includes all portions of the Work, including portions that are not Federally funded.

2. When the Work has no Federal funds, only the State requirements apply.

**D. Exceptions.** The Director may grant specific written permission to use foreign steel or iron products in bridge construction and foreign iron products in any type of construction. The Director may grant such exceptions under either of the following conditions:

1. The cost of products to be used does not exceed 0.1 percent of the total Contract cost, or \$2,500, whichever is greater. The cost is the value of the product as delivered to the project.

2. The specified products are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet the requirements of the Contract Documents. The Director may require the Contractor to obtain letters from three different suppliers documenting the unavailability of a product from a domestic source, if the shortage is not previously established.

**F. Proof of Domestic Origin.** Furnish documentation to the Engineer showing the domestic origin of all steel and iron products covered by this section, before they are incorporated into the Work. Products without a traceable domestic origin will be treated as a non-domestic product.

**106.10 Qualified Products List.** The Department may use Qualified Product Lists (QPL) for approval of manufactured materials. The Office of Materials Management (OMM) will maintain the QPL and the standard procedure for the QPL process. Inclusion of a material onto the QPL will be determined by OMM with support from other Department offices. To be kept on the QPL, manufacturers must recertify their material according to the Department's standard procedure by January 1 of each year. When a material requires QPL acceptance, only provide materials listed on the QPL at the time of delivery of the material to the project. Provide the Engineer documentation according to the Department's standard procedure that, at the time of delivery, the material provided is on the QPL.

**107.01 Laws to be Observed.** Stay fully informed of all Federal and State laws, all local laws, ordinances, and regulations, and all orders and decrees of authorities having any jurisdiction or authority that affect those engaged or employed on the Work, or that affect the conduct of the Work. Observe and comply with all such laws, ordinances, regulations, orders, and decrees. The Contractor shall protect and indemnify the State and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees, subcontractors, or agents.

The Contractor agrees that in the hiring of employees for the performance of Work under this Contract or any subcontract hereunder, neither the Contractor, the subcontractor, nor any person acting on behalf of such Contractor or subcontractor shall, by reasons of race, religion, color, sex, or national origin, discriminate against any citizen of the United States in the employment of labor or workers, who is qualified and available to perform the Work to which the employment relates.

Neither the Contractor, the subcontractor, nor any person on their behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of Work under this Contract on account of race, religion, color, sex, or national origin.

Comply with OAC-4121:1-3, entitled "Specific Safety Requirements of the Industrial Commission of Ohio Relating to Construction," effective November 1, 1979 and as amended, and with the Federal Occupational Safety and Health Act of 1970 and Code of Federal Regulations, Title 29, Chapter XVII, Part 1926 and as amended.

**107.05 Federal-Aid Provisions.** When the United States Government pays for all or any portion of the Project's cost, the Work is subject to the inspection of the appropriate Federal agency.

Such inspections will not make the Federal Government a party to this Contract. The inspections will in no way interfere with the rights of either party to the Contract.

**107.12 Responsibility for Damage Claims and Liability Insurance.** The Contractor shall indemnify and save harmless the State and all of its representatives, municipalities, counties, public utilities, any affected railroad or railway company, and any fee owner from whom a temporary Right-of-Way was acquired for the Project from all suits, actions, claims, damages, or costs of any character brought on account of any injuries or damages sustained by any person or property on account of any negligent act or omission by the Contractor or its subcontractors or agents in the prosecution or safeguarding of the Work.

The Contractor shall procure and maintain insurance for liability for damages imposed by law and assumed under this Contract, of the kinds and in the amounts hereinafter provided from insurance companies authorized to do business in the State by the Ohio Department of Insurance. The cost of insurance is incidental to all contract items. Before the execution of the Contract by the Director, furnish to the Department a certificate or certificates of insurance in the form satisfactory to the Department demonstrating compliance with this subsection. Provide an insurance certificate or certificates that show that the Contractor's liability and auto policies coverage are not reduced, restricted, or canceled until 30 days written notice has been given to the Department by the insurer. Mail all certificates and notices to: Administrator, Office of Contracts, Ohio Department of Transportation, 1980 West Broad Street, Columbus, Ohio 43223. Upon request, the Contractor shall furnish the Department with a certified copy of each policy, including the provisions establishing premiums.

The types and minimum limits of insurance are as follows:

**A. Workers' Compensation Insurance.** Comply with all provisions of the laws and rules of the Ohio Bureau of Workers' Compensation covering all operations under Contract with the Department whether performed by it or its subcontractors. In addition, if a portion of the Work is performed from a barge or ship or requires unloading material from a barge or ship on a navigable waterway of the United States, it is the responsibility of the Contractor to arrange coverage for that portion of the Work under the Longshore and Harborworkers' Compensation Act [33 USC Section 901 *et seq.*] and the Jones Act [5 USC Section 751 *et seq.*] and provide proof of coverage to the Department.

**B. Commercial General Liability Insurance.** The minimum limits for liability insurance are as follows:

General Aggregate Limit	\$2,000,000
Products - Completed Operations	
Aggregate Limit	\$2,000,000
Personal and Advertising Injury Limit	\$1,000,000
Each Occurrence Limit	\$1,000,000

Obtain the above minimum coverages through primary insurance or any combination of primary and umbrella insurance. In addition, the Department will require the General Aggregate Limit on a per project basis.

Ensure that the Commercial General Liability Insurance policy names the State of Ohio, Department of Transportation, its officers, agents, and employees as additional insureds with all rights to due notices in the manner set out above. Obtain Explosion, Collapse, and Underground (XCU) coverage at the same limits as the commercial general liability insurance policy. In addition, if blasting is to be performed, obtain XCU coverage providing a minimum Aggregate Limit of \$5,000,000 and Each Occurrence Limit of \$1,000,000. Submit proof of insurance, endorsements, and attachments to the Engineer prior to starting the Work.

**C. Comprehensive Automobile Liability Insurance.** The Comprehensive Automobile Liability policy shall cover owned, non-owned, and hired vehicles with minimum limits as follows:

Bodily Injury and Property Damage Liability Limit	
Each Occurrence	\$1,000,000

Insurance coverage in the minimum amounts set forth neither relieves the Contractor from liability in excess of such coverage, nor precludes the Department from taking such other actions as are available to it under any other provisions of this Contract or otherwise in law.

Clearly set forth all exclusions and deductible clauses in all proof of insurance submitted to the Department. The Contractor is responsible for the deductible limit of the policy and all exclusions consistent with the risks it assumes under this Contract and as imposed by law.

If the Contractor provides evidence of insurance in the form of certificates of insurance, valid for a period of time less than the period during which the Contractor is required by terms of this Contract, then the Department will accept the certificates, but the Contractor is obligated to renew its insurance policies as necessary. Provide new certificates of insurance from time to time, so that the Department is continuously in possession of evidence that the Contractor's insurance is according to the foregoing provisions.

If the Contractor fails or refuses to renew its insurance policies or the policies are canceled or terminated, or if aggregate limits have been impaired by claims so that the amount available is under the minimum aggregate required, or modified so that the insurance does not meet the requirements of 107.12.C, the Department may refuse to make payment of any further monies due under this Contract or refuse to make payment of monies due or coming due under other contracts between the Contractor and the Department. The Department in its sole discretion may use monies retained pursuant to this subsection to renew or increase the Contractor's insurance as necessary for the periods and amounts referred to above. Alternatively, should the Contractor fail to comply with these requirements, the Department may default the Contractor and call upon the Contractor's Surety to remedy any deficiencies. During any period when the required insurance is not in effect, the Engineer may suspend performance of the Contract. If the Contract is so suspended, the Contractor is not entitled to additional compensation or an extension of time on account thereof.

Nothing in the Contract Documents and insurance requirements is intended to create in the public or any member thereof a third party beneficiary hereunder, nor is any term and condition or other provision of the Contract intended to establish a standard of care owed to the public or any member thereof.

**107.19 Environmental Protection.** Comply with all Federal, State, and local laws and regulations controlling pollution of the environment. Avoid polluting streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, sediments, or other harmful materials, and avoid polluting the atmosphere with particulate and gaseous matter.

Fording of streams is prohibited. Causeways for stream and river crossings or for Work below a bridge are permitted provided:

- A. The causeway is constructed according to 207.03.B.8.b.
- B. The causeway complies with the requirements of the 404 Permit the Department obtained for the Project.
- C. The Contractor obtains a 404 Permit from the U.S. Army Corps of Engineers if the Department has not obtained such a permit. Obtain the 404 Permit prior to beginning construction of the causeway. The Department does not guarantee that the Contractor will be able to obtain a 404 Permit.

Comply with all current provisions of the Ohio Water Pollution Control Act, (OWPCA), (ORC Chapter 6111). The Department will obtain a storm water permit under the OWPCA provisions when the plan work acreage requires a permit. The storm water permit will not cover the Contractor's work outside the Project limits shown on the Plans. Apply for a permit to cover operations outside the Project limits shown on the plans as required by the OWPCA provisions. When the Department has not applied for a permit on the Project and a permit is required under the provisions of the OWPCA because of the total area of the Contractor's work, apply for, obtain, and comply with the required permit for both the Work within Project limits and the Contractor's work.

The Department has obtained the required permits from the U.S. Army Corps of Engineers and Ohio EPA for Work in the "Waters of the United States" and isolated wetlands under ORC Chapter 6111. Comply with the requirements of these permits.

When equipment is working next to a stream, lake, pond, or reservoir, spill response equipment is required in the event of a hydraulic leak. Do not stockpile fine material next to a stream, lake, pond, or reservoir.

Take precautions to avoid demolition debris and discharges associated with the excavation and hauling of material from entering the stream. Remove any material that does fall into the stream as soon as possible.

When excavating in or adjacent to streams, separate such areas from the main stream by a dike or barrier to keep sediment from entering the stream. Take care during the construction and removal of such barriers to minimize sediment entering the stream.

Accomplish control of ground water and water in excavations in a manner that prevents the degradation of the water quality of any surface water. Install wells and well points with suitable screens and filters where necessary to prevent the continuous pumping of fines. Pump sediment-laden water in a manner to prevent degradation of streams, lakes, ponds, or other areas of water impoundment. Such prevention may involve but is not limited to the means and methods described in Item 207. Use the current version of the *Sediment and Erosion Control Handbook* to plan this work. Use the methods necessary to prevent adverse effects to surface waters as provided in OAC-3745-1-04. The cost of constructing and maintaining these measures is incidental to the Contract.



Treat water from aggregate washing or other operations containing sediment by filtration, settling basins, or other means sufficient to reduce the sediment concentration to not more than that of the stream or lake into which it is discharged by using means and methods described in Item 207. Use the current version of the *Sediment and Erosion Control Handbook* to plan this work. The cost of constructing and maintaining these measures is incidental to the Contract.

Control the fugitive dust generated by the Work according to OAC-3745-17-07(B), OAC-3745-17-08, OAC-3745-15-07, and OAC-3745-17-03 and local ordinances and regulations. In addition, use dust control measures when fugitive dust creates unsafe conditions as determined by the Engineer. Perform this work without additional compensation except for Item 616.

Perform open burning according to 105.16.

**107.20 Civil Rights.** Comply with Federal, State, and local laws, rules, and regulations that prohibit unlawful employment practices including that of discrimination because of race, religion, color, sex, or national origin and that define actions required for Affirmative Action and Disadvantaged Business Enterprise (DBE) programs.

**107.21 Prompt Payment.** Make payment to each subcontractor and supplier within 10 Calendar Days after receipt of payment from the Department for Work performed or materials delivered or incorporated into the Project, according to ORC 4113.61, provided that the pay estimate prepared by the Engineer includes Work performed or materials delivered or incorporated into the public improvement by the subcontractor or supplier.

Also require that this contractual obligation be placed in all subcontractor and supplier contracts that it enters into and further require that all subcontractor and suppliers place the same payment obligation in each of their lower tier contracts. If the Contractor, subcontractors, or supplier subject to this provision fail to comply with the 10 Calendar Day requirement, the offending party shall pay, in addition to the payment due, interest in the amount of 18 percent per annum of the payment due, beginning on the eleventh Calendar Day following the receipt of payment from the Department and ending on the date of full payment of the payment due plus interest.

Repeated failures to pay subcontractors and suppliers timely pursuant to this subsection will result in a finding by the Department that the Contractor is in breach of Contract and subject to all legal consequences that such a finding entails. Further, repeated failures to pay timely pursuant to this subsection will result in a lower evaluation score for the Contractor and those subcontractors who are subject to evaluation by the Department.

**108.10 Payroll Records.** Keep payroll records as specified in ORC 4115.07 or as required by Federal law.

Authorized representatives of the Director may inspect the certified payroll and other payroll records. Upon completion of the Work and before receiving the final estimate and when required by ORC 4115.07, submit an affidavit stating that wages have been paid according to the minimum rates specified in the Contract Documents.

## PROPOSAL NOTE 102

### BAR CHART SCHEDULE (1/2/2002)

#### **I. General.**

The progress schedule required for this project is the simple bar chart type as described in Section II of this note. Prepare and submit a progress schedule to the DCE for review at or before the pre-construction conference. The Engineer will review the schedule and within 14 calendar days of receipt, will either accept the schedule or provide the Contractor with comments. Acceptance of the schedule does not revise the Contract Documents. Provide clarification or any needed additional information within 10 days of a written request by the Engineer. The Department will withhold Estimates until the Engineer accepts the schedule. The Engineer will not measure or pay for the preparation of the schedule and schedule updates directly, but the cost of preparing and updating the schedule is incidental to all Contract Items. The requirements of this note are in addition to progress schedule requirements in 108.02 of the Construction & Material Specifications.

#### **II. Schedule Requirements.**

Include the following Administrative Identifier Information:

1. Project Number
2. County
3. Route Number
4. FHWA Number
5. PID Number
6. Contract Number
7. Date of Contract
8. Completion Date
9. Contractor's Name
10. Contractor's Dated Signature
11. ODOT's Dated Acceptance Signature

Provide a working day schedule that shows the various activities of Work in sufficient detail to demonstrate a reasonable and workable plan to complete the Project by the Completion Date. Show the order and the sequence for accomplishing the Work. Describe all activities in sufficient detail so that the Engineer can readily identify the Work and measure the progress of each activity. The bar chart schedule must reflect the scope of work, required phasing, maintenance of traffic requirements, interim completion dates, the Completion Date, and other project milestones established in the Contract Documents. Include activities for submittals, working and shop drawing preparation, submittal review time for the Department, material procurement and fabrication, and the delivery of materials, plant, and equipment, and other similar activities. The schedule must be detailed on letter or legal sized paper.

Activity requirements are discussed in further detail as follows:

1. Activity Description

Assign each activity an unambiguous descriptive word or phase. For example, use “Excavate Area A,” not “Start Excavation.”

## 2. Activity Original Duration

Indicate a planned duration in calendar days for each activity. Do not exceed a duration of 20 working days for any activity unless approved by the Engineer. Do not represent the maintenance of traffic, erosion control, and other similar items as single activities extending to the Completion Date. Break these Contract Items into component activities in order to meet the duration requirements of this paragraph.

**III. Updated Progress Schedule.** Submit an updated progress schedule when ordered by the Engineer. The Engineer may request an updated progress schedule when progress on the work has fallen more than 14 calendar days behind the latest accepted progress schedule. Information in the updated schedule must include a “% work completed” value for each activity.

**IV. Recovery Schedule.** If the progress schedule projects a finish date for the Project more than 14 calendar days later than the Completion Date, submit a revised schedule showing a plan to finish by the Completion Date. The Department will withhold Estimates until the Engineer accepts the revised schedule. The Engineer will use the schedule to evaluate time extensions and associated costs requested by the Contractor.

**Designer Notes:**

The Bar Chart Schedule should be specified on those projects where it is desirable for ODOT to have a defined concept of the Contractor's logic in the performance of the work. The requirements for this type of schedule will be described in the Proposal Note.

The Bar Chart Schedule shall be specified when:

1. The duration of the project exceeds 90 days

AND

2. The dollar value of the project is \$500,000 or greater. Or, in the case of bridges, the project includes a span of 20 feet or longer.

(At the Contractor's option, projects not subject to the above requirements may use the current bar graph form).

## **PN 107 - 01/16/2009 - CRITICAL PATH METHOD PROGRESS SCHEDULE**

**A. General.** The progress schedule required for this project is the critical path method schedule (CPM schedule). The Contractor shall designate a Schedule Representative who shall be responsible for coordinating with the Engineer during the preparation and maintenance of the schedule. The requirements of this note replace the progress schedule requirements in 108.02.B of the Construction & Material Specifications. The contractor shall submit an interim schedule followed by a baseline schedule, or only a baseline schedule, depending on when the contractor starts work as described below.

**B. Interim Schedule.** If the Contractor starts work within 60 days of execution of the contract, they shall submit an interim schedule. The interim schedule can be in bar chart format or CPM schedule format. The interim schedule shall include detailed activities for the work to be accomplished during the first 90 days of the Contract, and summary activities for the balance of the work.

**C. Baseline Schedule.** The Contractor shall submit a baseline schedule within 60 days of the execution of the Contract. The baseline schedule will be in CPM schedule format and as described below. The Engineer will review the baseline schedule and will either “approve”, “approve as noted” or “reject” the schedule within 21 days of receipt. If the Engineer does not provide written notification regarding the disposition of the baseline schedule within 21 days, the submission will be considered approved.

For baseline schedules that are “approved as noted”, the Contractor shall make the necessary revisions and resubmit the revised schedule within 14 days. The Engineer will only reject baseline schedules that are not in compliance with contract requirements.

For baseline schedules that are “rejected”, the Engineer shall indicate in writing all portions of the schedule that are not in compliance with the contract requirements. The Project Engineer shall conduct a mandatory meeting with the Contractor and the Contractor’s Schedule Representative within 14 days of the Engineer’s written notice. The purpose of this meeting is to resolve all issues with the baseline schedule. At this meeting the Contractor shall provide clarification and all additional information necessary for the Engineer to “approve” the baseline schedule.

In the event the baseline schedule is not “approved” within 120 days of execution of the contract, all work shall cease on the project until the baseline schedule is “approved”.

Approval of the baseline schedule does not revise the Contract Documents. The baseline schedule must be “approved” or “approved as noted” by the Engineer prior to the Engineer evaluating any contractor claims associated with time impacts.

1. Schedule Requirements. Generate the baseline schedule using either SureTrak Project Manager or P3 Project Planner by Primavera Systems Inc., Bala Cynwyd, PA.

Provide a working day schedule that shows the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the Project by the Original Contract Completion Date. Show the order and interdependence of activities and the sequence for accomplishing the work. Describe all activities in sufficient detail so that the Engineer can readily identify the work and measure the progress of each activity. The baseline schedule must reflect the scope of work, required phasing, maintenance of traffic requirements, interim completion dates, the Completion Date, and other project milestones established in the Contract Documents. Include activities for submittals, working drawings, shop drawing preparation, submittal review time for the Department shop drawings, material procurement and fabrication, and the delivery of materials, plant, and equipment, and other similar activities.

The Contractor shall be responsible for assuring all work, including all subcontractor work, is included in the schedule. The Contractor shall be responsible for assuring that all work sequences are logical and that the schedule indicates a coordinated plan.

Failure by the Contractor to include any element of work required for performance of the Contract shall not excuse the Contractor from completing all work within the required time. The Engineer’s review of the baseline schedule will be for compliance with the specifications and contract requirements. Approval by the Engineer will not relieve the Contractor of any of their responsibilities for the accuracy or feasibility of the schedule. Omissions and errors will be corrected as described in Section F or I in this note and will not affect contract time.

a) Administrative Identifier Information:

- i. Project Number
- ii. County
- iii. Route Number

- iv. FHWA Number
- v. PID Number
- vi. Contract Signed Date
- vii. Completion Date
- viii. Contractor's Name
- ix. Contractor's Dated Signature
- x. ODOT's Dated Approval Signature

b) Project Activities:

- i. Activity Identification (ID). Assign each activity a unique identification number. Activity ID length shall not exceed 10 characters. Once accepted, the Activity ID shall be used for the duration of the project.
- ii. Activity Description. Each activity shall have a narrative description consisting of a verb or work function (e.g.; form, pour, excavate) and an object (e.g.; slab, footing, underdrain).
- iii. Activity Original Duration. Assign a planned duration in working days for each activity. Do not exceed a duration of 20 working days for any construction activity unless approved by the Engineer. Do not represent the maintenance of traffic, erosion control, and other similar items as single activities extending to the Completion Date. Break these Contract Items into component activities in order to meet the duration requirements of this paragraph.
- iv. Activity Relationships:
  - All activities, except the first activity, shall have a predecessor(s). All activities, except the final activity, shall have a successor(s).
  - Use only finish-to-start relationships with no leads or lags to link activities, or use start-to-start relationships with lags no greater than the predecessor duration to link activities.
  - Use of finish-to-finish relationship is permitted when both activities are already linked with a start-to-start relationship.

c) Project Milestones:

- i. Start Project: The Contractor shall include as the first milestone in the schedule, a milestone named "Start Project". The date used for this milestone is the date the contract is executed and signed by the Department.
- ii. End Project Milestone: The Contractor shall include as the last activity in the project schedule, a milestone named "End Project". The date used for this milestone is considered the project completion date.
- iii. Start Phase Milestone: The Contractor shall include as the first activity for a project phase, an activity named "Start Phase X", where "X" identifies the phase of work. The Contractor may include additional milestones but, as a minimum, must include all contractual milestones.
- iv. End Phase Milestone: The Contractor shall include as the last activity in a project phase, an activity named "End Phase X" where "X" identifies the phase of work. The Contractor may include additional milestones, but at a minimum contractual milestones.

d) Hammock:

Use hammocks to show the duration of specified contract work periods, phases and road closures. The hammock activity type is allowed to have a start-to-start relationship with the first activity in a series of activities and a finish-to-finish relationship with the last activity in a series of activities.

e) Constraints:

Use constraints sparingly in the schedule. If constraints are used, use only Early Constraints or Late Constraints.

f) Seasonal Weather Conditions:

The winter shutdown periods shall be shown using non-work calendars. The activity can be assigned to a calendar indicating time periods of non-work. These custom calendars can be created to show days, weeks, or months of non-work. Seasonal weather conditions shall be considered and included in the planning and scheduling of all work.



- g) Linking Projects:  
Independent projects shall not be linked using Primavera's Interproject Relationship Manager Application.
  - h) Activity Codes:  
The Contractor shall, at a minimum, include codes for Area, Phase, and Responsibility for each activity.
  - i) Schedule Options:  
The schedule may only be calculated using retained logic. Show open ends as non-critical. Schedule durations are to be contiguous. Total float shall be calculated as finish float.
2. Submission Requirements. Submit all schedules within the time frames specified. Submit the schedule and information in electronic file format via email, on diskette or compact disc (CD) compatible with the Engineer's computer. Submit the following information along with the electronic baseline schedule:
- a) A baseline schedule in a bar chart format including the Administrative Identifier Information discussed in Section C.1.a on the first page of the schedule. For each activity on the chart, indicate the Activity ID, Activity Description, Original Duration, Remaining Duration, Total Float, Early Start Date, Early Finish Date, and Calendar ID. Use arrows to show the relationships among activities.
  - b) A baseline schedule in a bar chart format, on paper. Identify the critical path of the project on the bar chart in red. The critical path is defined as; the longest path of activities in the project that determines the project completion date. The activities that make-up the critical path of activities are the "Critical Activities."
  - c) A Six Week Look Ahead Schedule in bar chart format. This schedule will have all the requirements of the baseline schedule in bar chart format except that it shall be limited to those activities that have an early start or early finish within a six week period of the data date.
  - d) A Scheduling Statistics Report. Submit a report of baseline schedule statistics,

including number of activities, number of activities on the longest path, number of started activities, number of completed activities, number of relationships, percent complete, and number and type of constraints.

- e) A Logic Diagram (If requested by the Engineer). Submit a diagram in PERT chart format showing the logic of the baseline schedule.
- f) An Activity ID Sort. Submit a listing of all activities included in the baseline schedule sorted by ascending Activity Identification Number.
- g) A Total Float Sort. Submit a listing of all activities included in the baseline schedule sorted by increasing total float and by early start date.
- h) A Detailed Predecessor/Successor Sort. Submit a listing of all activities included in the baseline schedule indicating the activities that immediately precede and immediately succeed that activity in the schedule logic.

**D. Float.** Use of float suppression techniques, such as; preferential sequencing (arranging critical path through activities more susceptible to Department caused delay), lag logic restraints, zero total or free float constraints, extending activity times, or imposing constraint dates other than as required by the contract, shall be cause for rejection of the project schedule or its updates.

1. Definitions of Float: Total Float is the length of time along a given network path that the actual start and finish of activity(s) can be delayed without delaying the project completion date. Project Float is the length of time between the End Project Milestone and the Contract Completion Date.
2. Ownership of Float: Float available in the schedule, at any time shall not be considered for the exclusive use of either the Department or the Contractor. During the course of contract execution, any float generated due to the efficiencies of either party is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated weather is less than expected, will also contribute to the Project Float. A schedule showing work completing in less time than the contract time, and accepted by the Department, will be considered to have Project Float. Project Float will be a resource available to both the Department and

the Contractor. No time extensions will be granted nor delay damages paid unless a delay occurs which impacts the project's critical path, consumes all available float and extends the work beyond the Contract Completion Date.

3. Negative Float: Negative float will not be a basis for requesting time extensions. Any extension of time will be addressed in accordance with the Section F. Scheduled completion date(s) that extend beyond the contract (or phase) completion date(s) may be used in computations for assessment of liquidated damages. The use of this computation is not to be construed as an order by the Department to accelerate the project.

**E. Monthly Update Schedule.** A monthly update schedule is a schedule in which only progress is updated from the prior data date to the current data date. Work added and/or excusable delays encountered since the prior data date must be represented as a schedule revision as described in Section F.

1. Update Requirements. On the tenth day of the current month, during the life of the Project, submit an updated schedule and all required information with a data date of the last day of the preceding month. The date for submission and data date may be adjusted to accommodate regularly scheduled progress meetings. Submit the monthly updated bar chart on paper and a copy of the updated schedule in electronic format in Section C.2. The Engineer shall “approve” or “reject” the schedule update within 5 days of receipt of the updated CPM schedule. The Engineer may withhold estimates if the updated schedule is not submitted as required by this section. For each updated schedule, identify the actual start and finish dates for all completed activities and the actual start date and remaining duration for all activities in progress. Provide a written narrative that identifies any changes or shifts in the critical path and submit reasons for the changes or shifts in the critical path. Correct out-of-sequence progress listings generated by the Scheduling Statistics Report on the critical path. The project schedule shall be reviewed at each monthly progress meeting. Any corrections shall be made prior to the next monthly progress meeting.

Submit the following with each updated schedule:

- i. CPM Schedule in Bar Chart Format
- ii. Six Week Look Ahead CPM Schedule in Bar Chart Format

- iii. Logic Diagram (If requested by the Engineer)
- iv. Activity ID Sort (If requested by the Engineer)
- v. Total Float Sort (If requested by the Engineer)
- vi. Detailed Predecessor/Successor Sort (If requested by the Engineer)
- vii. Schedule Statistics Report
- viii. Electronic files (formatted as described above)

The Contractor may submit a statement that there were no changes in the schedule logic, activity durations, or calendars since the previous update in lieu of submission of items iii, iv, v and vi. .

2. Early Completion Monthly Update Schedule. An Early Completion Monthly Update Schedule is defined as a monthly update schedule submitted by the Contractor in which the Finish Date precedes the Contract Completion Date. If after incorporating necessary revisions in accordance with Section F, the Finish Date precedes the Contract Completion Date by at least the number of days shown Table A the Engineer will initiate a change order amending the Contract Completion Date to the Early Completion Date shown on the accepted Early Completion Monthly Update. The amended Completion Date will be effective upon execution of that change order and all contract provisions concerning the Completion Date such as incentives, disincentives, excusable delays, compensable delays, and liquidated damages will be measured against the amended Completion Date. The Contractor may elect not to execute the change order amending the Completion Date; however, in so doing, the Contractor waives its rights to delay damages in meeting the projected early Completion Date and the time between the Early Completion Date and the Contract Completion Date is used as Project Float.

Table A

<u>Original Project Duration</u>	<u># days prior to Contract Completion Date</u>
one year or less	30
one year to two years	60
two years or more	90

3. Late Completion Monthly Update Schedule. A Late Completion Monthly Update Schedule is defined as a monthly update schedule submitted by the Contractor in which the Finish Date exceeds the Contract Completion Date. In the event the Finish Date is more than 14 days beyond the current contract completion date and a schedule revision is not warranted, the contractor must proceed in accordance with Section H.

**F. Revisions.** The Work may require and/or the Contractor may make revisions to the CPM schedule. Addition of new activities or new calendars or changes to existing activities, calendars or logic constitute a revision. All revisions must be reported in narrative form on a cover sheet accompanying the monthly update schedule. Any revision which modifies the critical path or impacts an interim date or project completion date must be represented on a companion schedule submitted with the monthly update schedule or as a fragnet within the monthly update schedule. A fragnet is defined as the sequence of new activities that are proposed to be added to the existing schedule. The fragnet shall identify the predecessors to the new activities and demonstrate the impacts to successor activities. If submitted as a fragnet, the Contractor shall compute two Finish Dates. The first Finish Date shall be computed without consideration of any impact by the fragnet. The second Finish Date shall be computed with consideration of any impact by the fragnet. The Contractor shall also submit a written narrative stating the reason for the proposed revisions. The Engineer shall “approve” or “reject” proposed revisions within ten days of receipt of appropriate schedules and narrative. All approved revisions will be incorporated into the Monthly Update Schedule which will become the Revised Monthly Update Schedule.

**G. Time Extensions for Delays in Accordance with C&MS 108.06.B and 108.06.D.** The Work may require and/or the Contractor may request an extension of the Completion Date. Perform the following analysis to compute the duration of the time extension. Submit two paper copies and two electronic copies of each analysis performed.

1. Determine project progress prior to circumstance(s) necessitating the time extension. ,

The previous accepted monthly update, updated to the date of the circumstance alleging to have caused delay, shall be used to display the prior progress of the project. This schedule is referred to as the Un-impacted Schedule

2. Prepare a fragmentary network (fragnet) depicting the circumstance that is believed to have delayed the project.
3. Insert the fragnet into the Un-impacted Schedule, run the schedule calculations and determine the finish date. This schedule is referred to as the Impacted Schedule.
4. Compare the Impacted Schedule finish date with the Un-impacted Schedule finish date in order to determine the duration of any warranted time extension.

Submit the impacted schedule with the request for time extension. Include a narrative report describing the effects of new activities and relationships to interim and contract completion dates. All approved time extensions will be incorporated into the monthly update with the fragnet used to determine impacts incorporated into the schedule.

**H. Weather Days in Accordance with C&MS 108.06.C.** The Contractor may request and/or the Engineer will determine an extension of the completion date due to weather days. Perform the following analysis to compute the duration of the time extension. Submit two paper copies and two electronic copies of each analysis performed.

1. The previously accepted monthly update shall be used to display progress of the project and planned activities for the next 30 day period that incurred weather days. Make a copy of the schedule file to use for the analysis. This schedule is referred to as the Non-weather Schedule.
2. Prepare a list of weather days believed to have delayed the project.
3. Insert the weather day(s) into the calendar(s) for the planned work as a non-work day. Run the schedule calculations and determine the finish date. This schedule is referred to as the Weather Schedule.
4. Compare the Weather Schedule finish date with the Non-weather Schedule finish date in order to determine the duration of any warranted time extension.

Submit the weather schedule with the request for time extension on a monthly basis. Include a narrative report describing the effects of weather days to interim and contract completion dates.

**I. Recovery Schedule.** If the Monthly Update Schedule or Revised Monthly Update Schedule projects a finish date for the Project more than 14 calendar days later than the current Completion Date, submit a recovery schedule showing a plan to finish by the current Completion Date if requested by the Engineer. The Department will withhold Estimates until the Engineer approves the recovery schedule. The Engineer will use the schedule to evaluate time extensions and associated costs requested by the Contractor. In the event the current Completion Date is in dispute, the recovery schedule will need to be submitted once the dispute has been resolved.

**J. Basis of Payment.** The Department will make partial payments according to C&MS 109.09 and as modified by the following schedule:

1. The Department will release 60 percent of the lump sum amount bid for CPM Progress Schedule to the Contractor with the first regular estimate payable after the Engineer has approved the CPM Baseline schedule submission.
2. The Department will release an additional 30 percent of the lump sum amount bid for CPM Progress Schedule to the Contractor with the first regular estimate payable after 50 percent of the original contract amount is complete.
3. The Department will release the remaining 10 percent of the lump sum amount bid for CPM Progress Schedule to the Contractor with the first regular estimate payable after 90 percent of the original contract amount is complete.

The Department will pay for the accepted quantities at the contract price as follows:

<b>Item</b>	<b>Unit</b>	<b>Description</b>
108E10000	Lump Sum	CPM Progress Schedule

**Designer's Note:** This note should be used for projects whose cost is greater than \$5 million; which have more than 3 phases; or, as may otherwise be appropriate. The Critical Path Method Progress Schedule is now a contract pay item as per Section J of the note and is shown in the construction plan General Summary. It is recommended that this note be used when PN 120, PN 121, PN 122, PN 123, PN 124 and PN 130 are specified. Any questions should be addressed to Clint Bishop in the Division of Construction Management [614-387-1164].



*By signing the specified contract proposal, of which the ODOT 2010 LPA Template (ODOT Spec Book and LPA Spec Book) has been incorporated, the bidder agrees to all of the below provisions.*

**ODOT’s 2010 LPA Template (ODOT Spec Book and LPA Spec Book)  
Required Contract Provisions.**

**1. ODOT’S 2010 CONSTRUCTION AND MATERIAL SPECIFICATIONS (CM&S) AND ITS SUPPLEMENTS**

**With the exception of Section 100 “General Provisions” included in the matrix below, ODOT’s 2010 Construction and Material Specifications (CM&S) and its supplements are hereby incorporated by reference, in their entirety, as if rewritten herein. The incorporation of this document by reference is not intended to interfere with the order of precedence set forth in Section 105.04 of the CMS Manual.**

In accordance with the Locally Administrated Transportation Projects Manual of Procedures (LATPM), when bidding this project, the Contractor should replace the terms “the Department”, “the Engineer” and “the DCE” with the term “the Local Public Agency (LPA).” Furthermore, nothing in this document is intended to alter the LPA’s adherence to Ohio Revised Code, local ordinance or other applicable requirements which are properly established.

<b>Excluded 2010 Specifications</b>			
Section 102.01	Section 103.02	Section 107.04	Section 109.12(A)
Section 102.03	Section 103.04	Section 107.13	Section 109.12(B)
Section 102.06	Section 103.05	Section 108.01	Section 109.12(D)
Section 102.09	Section 103.06	Section 108.02(A)	Section 109.12(E)
Section 102.10	Section 103.07	Section 108.08	
Section 102.11	Section 104.02(A)	Section 108.09	
Section 102.13	Section 104.05	Section 108.11	
Section 102.14	Section 105.05	Section 109.06	
Section 103.01	Section 105.13	Section 109.09	

**2. STEEL AND IRON PRODUCTS MADE IN THE UNITED STATES**

Furnish steel and iron products that are made in the United States according to the applicable provisions of Federal regulations stated in 23 CFR 635.410 and State of Ohio laws, and ORC 153.011 and 5525.21. “United States” means the United States of America and includes all territory, continental or insular, subject to the jurisdiction of the United States. Both the State and Federal requirements contained in (A.) and (B.) of this section apply to this contract.

**A. Federal Requirements.** All steel or iron products incorporated permanently into the Work must be made of steel or iron produced in the United States and all subsequent manufacturing must be performed in the United States. Manufacturing is any process that modifies the chemical content; physical shape or size; or final finish of a product. Manufacturing begins with the initial melting and mixing, and continues through the bending and coating stages. If a domestic product is taken out of the United States for any process, it becomes a foreign source material.

**B. State Requirements.** All steel products used in the Work for load-bearing structural purposes must be made from steel produced in the United States. State requirements do not apply to iron.

**C. Exceptions.** ODOT may grant specific written permission to use foreign steel or iron products in bridge construction and foreign iron products in any type of construction. ODOT may grant such exceptions under either of the following conditions:

1. The cost of products to be used does not exceed 0.1 percent of the total Contract cost, or \$2,500, whichever is greater. The cost is the value of the product as delivered to the project.
2. The specified products are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet the requirements of the Contract Documents. ODOT may require the

Contractor to obtain letters from three different suppliers documenting the unavailability of a product from a domestic source, if the shortage is not previously established.

**D. Proof of Domestic Origin.** Furnish documentation to the Engineer showing the domestic origin of all steel and iron products covered by this section, before they are incorporated into the Work. Products without a traceable domestic origin will be treated as a non-domestic product.

**3. CERTIFICATION AGAINST DEBARMENT AND SUSPENSION**

The bidder hereby certifies by signing this proposal that, except as noted below, under penalty of perjury and under other such penalties as the laws of this state and the United States of America provide, that the company or any person associated there with in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds is **not** currently under suspension, debarment, voluntary exclusion or determination of ineligibility by any federal agency; that the company or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds has **not** been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past three (3) years; that the company or any person associated therewith in the capacity of owner, partner, director, manager, auditor, or any position involving the administration of federal funds does **not** have a proposed debarment pending; that the company or any person associated there with in the capacity of owner, partner, director, officer, principal investigator has **not** been indicted, convicted, or had a civil judgment rendered against the company, or themselves by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years.

If there are exceptions to any of the above clauses please include a statement with the bid package detailing these exceptions.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, initiating agency and dates of action. Providing false information may result in criminal prosecution or administrative sanctions. Execution of this proposal on the signature portion thereof shall constitute also signature of this certification as permitted by Title 28 United States Code, Section 1746.

**4. PREQUALIFICATION**

Only pre-qualified contractors are eligible to submit bids for this PROJECT. Pre-qualification status must be in force **at the time of bid, at the time of award, and through the life of the construction contract.** For work types that ODOT does not pre-qualify, the LPA must still select a qualified contractor. Subcontractors are not subject to the pre-qualification requirement. The “prime” contractor must perform no less than 30 percent of the total original contract price.

**5. PN033 - 10/15/2004 - AS PER PLAN DESIGNATION**

**(Not required by FHWA, but strongly suggested if As Per Plan is used by the LPA)**

For the last several years the “As Per Plan” designation has been added to some item descriptions in the proposal to assist the Contractors to easily identify standard items that have been altered by plan notes.

The “As Per Plan” designation has proven to be a very useful tool for the Contractors. However, its use was never intended to relieve the Contractors of their responsibility to read, bid and construct all items in accordance with all governing plan notes. Therefore, the absence of an “As Per Plan” designation on some item descriptions in the proposal for which there are clear and controlling plan notes does not relieve the Contractors of the responsibility to read, bid and construct those particular items in accordance with the governing plan notes.

Be advised that the item descriptions in the bidding proposal must be read or interpreted with the governing plan notes and the Construction and Material Specification Manual. A claim based upon an “order of precedence” basis will be denied. In the event that a conflict, either real or perceived, exists between the item description and the governing plan note, the Contractors are to request clarification through the pre-bid process.

6. **FEDERALLY REQUIRED EEO CERTIFICATION FORM**

The bidder hereby certifies that he **has** ....., **has not** ....., participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he **has** ....., **has not** ....., filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements. *The Bidder must circle the appropriate “has or has not” above.*

**7. PN 017 - 10/15/2004 - FEDERALLY REQUIRED EEO CERTIFICATION CLAUSE**

The Federally Required EEO Certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontractors which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

**8. PN 026 - 10/15/2004 - CERTIFICATION OF NONSEGREGATED FACILITIES**

(a) Certification of Nonsegregated Facilities, as required by the May 9, 1967, Order of the Secretary of Labor (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities (for a Federal-aid highway construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity clause).

(b) Bidders are cautioned as follows: By signing this bid, the bidder has agreed to the provisions of the "Certification of Nonsegregated Facilities" in this proposal. This certification provides that the bidder does not maintain or provide for his employees facilities which are segregated on a basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a de facto basis. The certification also provides that the bidder will not maintain such segregated facilities.

(c) Bidders receiving Federal-aid highway construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause, will be required to provide for the forwarding of the following notice to prospective subcontractors for construction contracts and material suppliers where the subcontracts or material supply agreements exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity clause.

*"Notice to Prospective Subcontractors and Material Suppliers of Requirement for Certification of Nonsegregated Facilities" -*

(a) A Certification of Nonsegregated Facilities as required by the May 9, 1967, Order of the Secretary of Labor (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, which is included in the proposal, or attached hereto, must be submitted by each subcontractor and material supplier prior to the award of the subcontract or consummation of a material supply agreement if such subcontract or agreement exceeds \$10,000 and is not exempt from the provisions of the Equal Opportunity clause.

(b) Subcontractors and material suppliers are cautioned as follows: By signing the subcontract or entering into a material supply agreement, the subcontractor or material supplier will be deemed to have signed and agreed to the provisions of the "Certification of Nonsegregated Facilities" in the subcontract or material supply agreement. This certification provides that the subcontractor or material supplier does not maintain or provide for his employees facilities which are segregated on the basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a de facto basis. The certification also provides that the subcontractor or material supplier will not maintain such segregated facilities.

(c) Subcontractors or material suppliers receiving subcontract awards or material supply agreements exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause will

be required to provide for the forwarding of this notice to prospective subcontractors for construction contracts and material suppliers where the subcontracts or material supply agreements exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity clause.

**9. PN 035 - 10/15/2004 - SPECIAL PROVISIONS OF FEDERAL-AID HIGHWAY PROGRAM OF MANUAL 6-4-1-2 SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES**

**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 PR- 1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., 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 LPA, ODOT and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.
- c. The contractor and all his/her 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 equal Employment Opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection I of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) 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.

**2. EQUAL EMPLOYMENT OPPORTUNITY POLICY**

The contractor will accept as his operating policy the following statement which is designed to further the provision 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, pre-apprenticeship, and/or on-the-job training.

**3. EQUAL EMPLOYMENT OPPORTUNITY OFFICE**

The contractor will designate and make known to the LPA contracting officer(s) an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable to effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

**4. DISSEMINATION OF POLICY**

- a. 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 equal employment opportunity policy and contractual responsibilities to provide equal

employment opportunity 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:

- (1) 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 equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
  - (2) All new supervisory or personnel office employees 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 thirty days following their reporting for duty with the contractor.
  - (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the contractor's procedures for locating and hiring minority group 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, or other appropriate means.

## 5. RECRUITMENT

- a. When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Employment 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 group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the contractor will, through his EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group 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 equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or women or obligates the contractor to do the same, such implementation violates Executive Order 1 1246, as amended.)

- c. The contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group 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 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 his 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 his avenues of appeal.

## 7. TRAINING AND PROMOTION

- a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
- 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. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the "Training Special Provisions" are included in this bid proposal, this subparagraph will be superseded as indicated in said provisions.
- 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 minority group and women employees and will encourage eligible employees to apply for such training and promotion.

## 8. UNIONS

If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority

and female employees. 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 best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
- b. The contractor will use best efforts 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 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 ODOT 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 minority and women 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 minority group persons and women. (The U.S. 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 ODOT.

## 9. SUBCONTRACTING

- a. The contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from the LPA's personnel.
- b. The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

## 10. RECORDS AND REPORTS

- a. The contractor will keep such records as are necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:
  - (1) the number 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 to increase employment opportunities for minorities and women (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 group subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the LPA, ODOT and the Federal Highway Administration.

c. The contractors will submit to the LPA and ODOT a monthly report for the first three months after construction begins and every month of 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 PR 139 1. If on-the-job training is being required by "Training Special Provisions," the contractor will be required to furnish Form FHWA 1409.

**10. PN 003 - 10/15/2004 - TITLE VI RELATED STATUTES NON-DISCRIMINATION STATEMENT**

The LPA, under Title VI of the Civil Rights Act and related statutes, ensures that no person in the LPA, shall on the grounds of race, color, national origin, sex, disability or age be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

**11. PN 020 – 10/17/2008 - NOTICE OF REQUIREMENT OF AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY**

The Bidder's attention is called to the affirmative action obligations required by the specifications set forth in 23 CFR Part 230, 41 CFR Part 60, Executive Order 11246, Section 503, and the affirmative action provisions of Vietnam Era Veterans' Readjustment Assistance Act (VEVRAA) of 1974.

Utilization goals applicable to the project, expressed in percentages, for minority and female participation for each construction craft can be found on ODOT's website at <http://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/Pages/default.aspx>. These goals are based on 2000 census data and represent the area, per craft, minority and female availability pool.

Minority and female utilization obligations by craft per county (applicable to project):

<http://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/Construction/CountyAvailability-ByTrade.pdf>

Statewide utilization obligations by craft (applicable to the Contractor's statewide workforce):

<http://www.dot.state.oh.us/Divisions/ContractAdmin/Contracts/Construction/StatewideAverages-ByTrade.pdf>

**Effective 1/1/08 the New Hire Definition will be as follows:**

Individual who has a break in service (not on an employer's payroll) for a period of 60 days or longer and the person affected is not a salaried employee, but belongs to a union craft. If this person is rehired the following Spring (construction industry), that person is to be considered a new hire even though the individual may have worked for the contractor the previous construction season or prior years. Individuals compensated for training or incidental work which does **not cause a break in unemployment compensation**, i.e., paid by voucher check or petty cash, are considered new hires if the individual's break in service is 60 days or longer.

**Effective 4/1/09:**

A new hire shall be associated with the first project worked for that contractor regardless of whether it is public or private. When reporting new hires the contractor shall identify that

employee as a new hire on that specific project only. Subsequent work, barring a break in service of 60 days or more, would **not** qualify the employee as a new hire for that contractor.

The Contractor's compliance shall be based on the implementation of affirmative action obligations required by the specifications set forth in 23 CFR Part 230, and its good faith efforts to meet these obligations. 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 females on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the affirmative action obligations shall be a violation of the contract and regulations in 23 CFR Part 230. The good faith efforts put forth by the contractor will be measured against the total work hours performed. Under FHWA, ODOT is the authority tasked with ensuring that the contractor adheres to the aforementioned regulations. In addition to complying with the Required Contract Provisions as outlined in the attached subcontract agreement the Contractor shall provide immediate written notification to the ODOT and the Prime Contractor when referral practices of the union or unions with which the Contractor has a collective bargaining agreement impede the company's efforts to meet its equal opportunity obligations.

The Office of Federal Contract Compliance Programs (OFCCP) administers and enforces equal employment opportunity laws that apply to Federal government contractors and subcontractors supplying goods and services, including construction, to the Federal Government under 41 CFR Part 60, Executive Order 11246, Section 503, and the affirmative action provisions of VEVRAA. The OFCCP monitors compliance with these laws primarily through compliance evaluations, during which a compliance officer examines the contractor's affirmative action efforts and employment practices. Under Executive Order 11246, the OFCCP may perform contract compliance reviews on contractors involved with federally funded ODOT projects.

Requirements for affirmative action obligations governing OFCCP contract compliance reviews are those listed in the Federal Register for the Economic Area.

<http://www.dol.gov/ofccp/TAguides/consttag.pdf> page E-32

The Department of Administrative Services (DAS), Equal Opportunity Division, is responsible for ensuring state contractors implement and adhere to the State of Ohio's affirmative action program pursuant to Ohio Administrative Code (OAC) 123:2-3-02. Specifically, this unit's responsibilities includes the issuance of certificates of compliance under ORC 9.47 and 153.08, conducting project site visits and compliance reviews (desk audits) to ensure contractors utilize minorities and women in the construction trades, as well as maintaining a working environment free of discrimination, harassment and intimidation. The DAS may perform contract compliance reviews on contractors involved with state funded ODOT projects. Requirements for affirmative action obligations governing DAS contract compliance reviews are those listed in the O.A.C. for the Metropolitan Statistical Area in which a project is located.

<http://das.ohio.gov/Divisions/EqualOpportunity/ConstructionCompliance>

All prime and subcontractors regardless on the number of employees or the state contract amount are required to submit monthly utilization reports (Input Form 29) to Ohio Department of Administrative Services covering the contractor's total workforce within the state of Ohio. The reports must be filed electronically by the 10th of each month, beginning with the contract award and continuing until the contractor or subcontractor completes performance of the state contract.

<http://das.ohio.gov/Divisions/EqualOpportunity/InputForm29>

The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs, 200 N. High Street, Room 409, Columbus, Ohio 43215, 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 shall 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 subcontract is to be performed.

**12. PN 029 - 10/15/2004 - ON-THE JOB TRAINING (OJT) PILOT PROGRAM**

The requirements of this Training Special Provision supersede subparagraph 7b of the Special Provision entitled Special Employment Opportunity Responsibilities, and implements 23 U.S.C. 140(a).

The following must be included as part of the Contractor's equal employment opportunity affirmative action training program:

The Contractor must provide on-the-job training aimed at developing full journey persons in the type or job classification in which they work.

The contractor is not required to have a specific number of trainees assigned to this project. The number of trainees will be distributed among the work classifications on the basis of the Contractor's needs and the availability of the journey persons in the various classifications. The Contractor will be credited for each trainee employed by him or her who is currently enrolled or becomes enrolled in an approved program.

Training and upgrading of minorities and women toward journey person status is a primary objective of this Training Special Provision. Accordingly, the Contractor must make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and will not be used, to discriminate against any applicant for training, regardless of whether the applicant is a member of a minority group or not.

No employee will be employed as a trainee in any classification in which he or she has successfully completed a training course leading to journey person status or in which he or she has been employed as a journey person. The Contractor must satisfy this requirement by including appropriate questions in the employee's application or by other suitable means. Regardless of the method used, the Contractor's records must document the findings in each case.

The minimum length and type of training for each classification will be established in the training program selected by the Contractor.

No payment by the LPA will be made to the Contractor for providing this training. However, if the Contractor fails to provide adequate training and cannot show good faith efforts on its part to provide adequate training, it will be subject to a formal compliance review to determine the Contractor's efforts in meeting the EEO laws and regulations.

The Contractor must provide the following reports:

1. CR1 Report
  - A. To be completed on each trainee
  - B. To be filled out at the start of training and finish of training or at the end of the year, whichever comes first
  - C. To be submitted to the ODOT District in which the Contractor's home office is located.
2. Tracking will be on an annual basis. The Contractor must submit the subsequent CR1 to the ODOT District in which the Contractors home office is located.

The prime or subcontractor conducting the training must be involved in at least one Federal project per calendar year in order to get FHWA training credit. Participation in the OJT Program is not project or contract specific.

All Contractors are encouraged to participate in the OJT program. Such a program will be considered when examining the contractor's Good Faith Efforts toward meeting its contractual affirmative action obligations.

All Contractors shall submit their own Training Program or Apprenticeship Certificate, for approval, to the ODOT District in which the company's home office is located.

All OJT Trainees must have the appropriate certification. Apprenticeship Certificates can be obtained from the State of Ohio, Bureau of Apprenticeship and Training. The union apprenticeship agreement is not acceptable verification of an apprentice's enrollment in a union sponsored training program. A copy of the Apprenticeship Certificate along with a statement indicating the number of months/years the employee has been in the apprenticeship program must be submitted to the ODOT EEO Coordinator in the company's home district and to the prevailing wage coordinator in the district responsible for the project within 90 days of the apprentice beginning work on the project.

### **13. PN 059 - 10/15/2004 - WAGE DETERMINATION APPEALS PROCESS**

- 1.) Has there been an initial decision in the matter? This can be:
- \* an existing published wage determination
  - \* a survey underlying a wage determination
  - \* a Wage and Hour Division letter setting forth a position on a wage determination matter
  - \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response for this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determination  
Wage and Hour Division  
U. S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, D. C. 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (see 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U. S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requester considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

- 4.) All decisions by the Administrative Review Board are final.

**14. PN 061 – 07/09/2009 - WAGE SCALE ON ALL FEDERAL-AID PROJECTS**

The wage rates for this project were determined by the Secretary of Labor in accordance with Federal-Aid requirements. LPA must formally incorporate into contract documents.

*Contractors shall use only the classifications and wage rates set forth in the United States Department of Labor (USDOL) wage decision found at website noted below on payrolls submitted to the District Office. Additionally, please note that the wage modification in effect at the time of the project sale date, shall be used by all contractors.*

This USDOL wage decision may be viewed, by accessing the United States Department of Labor (USDOL) website at:

<http://www.wdol.gov/dba.aspx#3>

This contract requires the payment of the total of the basic hourly rates plus the fringe benefits payments for each classification in accordance with the following regulations which by reference are made part of this contract:

1) The U.S. Department of Labor Regulations, Title 29, Subtitle A, Part 5, Sections 5.5, 5.31, and 5.32, most recent revision at contract execution.

Form FHWA-1273 (most recent revision at contract execution) Part IV. Payment of Predetermined Minimum Wage and Part V. Statements and Payrolls.

The failure to pay prevailing wages to all laborers and mechanics employed on this project, shall be considered a breach of contract. Such a failure may result in the termination of the contract and debarment.

The Contractor and all subcontractors shall pay all wages and fringe benefits by company check. All payroll records and canceled pay checks shall be maintained for at least three years after final acceptance as defined in section 109.12 of the Ohio Department of Transportation Construction and Materials Specifications. The Contractor's and all subcontractors payroll records and canceled pay checks shall be made available for inspection by the Department and the U.S. Department of Labor, upon request, anytime during the life of the contract, and for three years thereafter by the U.S. Department of Labor. Additionally, the Contractor and all subcontractors shall permit such representatives to interview any employees during working hours while the employee is on the job.

The wage and fringe rates determined for this project shall be posted by the Contractor in a prominent and accessible place on the project, field office, or equipment yard where they can be easily read by the workers.

The Contractor and all subcontractors shall submit to the District Construction Office, certified payrolls each week beginning three weeks after the start of work. These payrolls shall be on a Form WH-347 or equivalent and shall show the following:

Employee name, address, classification, and hours worked.

2. The basic hourly and overtime rate paid, total pay, and the manner in which fringe benefit payments have been irrevocably made.
3. The project number and pay week dates.
4. Original signature of a company officer on the certification statement.

Additionally, a copy of the "Apprentice Certification" obtained from the Ohio State Apprenticeship Council, must accompany all certified payrolls submitted for all apprentices working on this project.

Please be aware that it is ultimately the responsibility of the Contractor to ensure that all laws relating to prevailing wages in the USDOL Regulations, Title 29, parts 1 and 5, are strictly adhered to by all subcontractors on the project.

If the Contractor or any subcontractor fails to comply with any of the provisions contained in this proposal note, the Department may terminate the contract, debar the Contractor or Subcontractor and/or withhold or suspend pay estimates after written notice and a reasonable opportunity to comply has been provided.

**The applicable wage and fringe rates for this project are to be incorporated in their entirety as an attachment to the executed contract.**

**15. PN 027 – 4/21/2006 - IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more)**

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the LPA and ODOT of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

**16. PN 050 - 10/15/2004 - LIMITATION ON USE OF CONTRACT FUNDS FOR LOBBYING**

1. The prospective bidder certifies, by signing and submitting this bid 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. This certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective bidder also agrees by submitting his or her bid proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

**17. PN 045 - 10/15/2004 - NON -COLLUSION AFFIDAVIT**

In accordance with Title 23 United States Code, Section 112 and Ohio Revised Code, Chapter 1331 et. seq; and Sections 2921.11 and 2921.13, the bidder hereby states, under penalty of perjury and under other such penalties as the law provides, that he or his agents or employees have not entered either directly or indirectly into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal. Execution of this proposal on the signature portion thereof shall constitute also signature of this Non-Collusion Affidavit as permitted by title 28 United States Code, Section 1746.

**REPORTING BID RIGGING**

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

**18. PN 014 - 10/15/2004 - DRUG-FREE WORKPLACE**

The prime contractor agrees to comply with all applicable state and federal laws regarding drug-free workplace. The prime contractor shall make a good faith effort to ensure that all its employees, while working on this project, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.

The prime contractor shall also require that this contractual obligation be placed in all subcontractor and materialman contracts that it enters into and further requires that all subcontractors and materialmen place the same contractual obligations in each of their lower tier contracts.

**19. PN 034 - 05/25/2011 - Drug Free Safety Program Participation**

During the life of this project, the Contractor and all its Subcontractors, that provide labor on the Project site, must be enrolled in and remain in good standing in the Ohio Bureau of Worker's Compensation ("OBWC") Drug-Free Safety Program ("DFSP") or a comparable program approved by the OBWC.

In addition to being enrolled in and in good standing in an OBWC-approved DFSP or a comparable Drug Free Workplace Program ("DFWP") approved by the OBWC, the LPA requires each Contractor and Subcontractor that provides labor, to subject its employees who perform

labor on the project site to random drug testing of 5 percent of its employees. The random drug testing percentage must also include the on-site supervisors of the Contractors and Subcontractors. Upon request, the Contractor and Subcontractor shall provide evidence of required testing to the LPA.

Each Subcontractor shall require all lower-tier Subcontractors that provides labor on the project site with whom the Subcontractor is in contract for the Work to be enrolled in and be in good standing in the OBWC DFSP or an OBWC-approved DFWP prior to a lower-tier Subcontractor providing labor at the Site.

The LPA will declare a bid non-responsive and ineligible for award if the Contractor is not enrolled and in good standing in the Ohio Bureau of Workers' Compensation's DFSP Discount Program or a similar program approved by the Bureau of Workers' Compensation within 8 days of the bid opening. Furthermore, the LPA will deny all requests to sublet when the subcontractor does not comply with the provisions of this proposal note.

Failure of the Contractor to require a Subcontractor to be enrolled in and be in good standing in the OBWC DFSP or an OBWC-approved DFWP prior to the time that the Subcontractor provides labor at the Site, shall result in the Contractor being found in breach of the Contract and that breach shall be used in the responsibility analysis of that Contractor or the Subcontractor who was not enrolled in a program for future contracts with the State for five years after the date of the breach.

**20. OHIO WORKERS' COMPENSATION COVERAGE**

The Contractor must secure and maintain valid Ohio workers' compensation coverage until the project has been finally accepted by the Ohio Department of Transportation. A certificate of coverage evidencing valid workers' compensation coverage must be submitted to the LPA before the contract will be executed by the LPA.

The Contractor must immediately notify the LPA, in writing, if it or any subcontractor fails or refuses to renew their workers' compensation coverage. Furthermore, the Contractor must notify the LPA, in writing, if its or any of its subcontractor's workers' compensation policies are canceled, terminated or lapse.

The failure to maintain valid workers' compensation coverage shall be considered a breach of contract which may result in the Contractor or subcontractor being removed from the project, withholding of pay estimates and/or termination of the contract.

**21. PN 038 - 10/15/2004 - UNRESOLVED FINDING FOR RECOVERY**

The Contractor affirmatively represents to the LPA that it is not subject to a finding for recovery under Ohio Revised Code §9.24, or that it has taken the appropriate remedial steps required under §9.24 or otherwise qualifies under that section. The Contractor agrees that if this representation is deemed to be false, the contract shall be void ab initio as between the parties to this contract, and any funds paid by the state hereunder shall be immediately repaid to the LPA, or an action for recovery may be immediately commenced by the LPA and/or for recovery of said funds.

**22. PN 039 - 10/15/2004 - ASSIGNMENT OF ANTITRUST CLAIMS IN STATE CONTRACT LANGUAGE**

The Contractor should recognize that in actual economic practice, overcharges resulting from antitrust violations are usually borne by ODOT and/or the LPA. As consideration for the Award of the Contract and intent to be legally bound, the Contractor acting herein by and through the person signing this contract on behalf of the Contractor as a duly authorized agent, hereby assigns, sells, conveys, and transfers to ODOT and/or the LPA any and all right, title and interest to any and all claims and causes of action the Contractor now has or hereafter requires under state or federal antitrust laws provided that the claims or causes of action related to the goods or services that are the subject to the contract. In addition, the Contractor warrants and represents that it will require any and all of its subcontractors and first tier suppliers to assign



any and all federal and state antitrust claims and causes of action to ODOT and/or the LPA. The provisions of this article shall become effective at the time the LPA executes this contract without further acknowledgment by any of the parties.

All contracting entities shall assign their rights and responsibilities to ODOT and/or the LPA for all antitrust claims and causes of action regarding subcontractors.

**23. PN 024 - 10/15/2004 - US ARMY CORPS OF ENGINEERS AND OHIO ENVIRONMENTAL PROTECTION AGENCY PERMITS**

The above referenced permits are incorporated and made a part of this contract as special provisions incorporated herein. Therefore, in the event that the Contractor or its agents refuse or fail to adhere to the requirements of the 404 Permit, and/or the NPDES Stormwater Permit and as a result an assessment or fine is made or levied against the Ohio Department of Transportation and/or the LPA, the Contractor shall reimburse ODOT or the LPA within thirty (30) calendar days of the notice of assessment or fine or the LPA or ODOT may withhold the amount of the fine from the Contractor's next pay estimate. All money collected or withheld from the Contractor shall be delivered to the permitting agencies issuing the assessment or fine.

These fines are not to be construed as a penalty but are liquidated damages to recover costs assessed against the LPA and/or ODOT due to the Contractor's refusal or failure to comply with the permits.

The Contractor shall make all necessary or required adjustments to the Storm Water Pollution Plan or plan quantities to adhere to the above permits and shall be paid in accordance with the contract. The Engineer will make the weekly and rainfall inspections of the work as required by the NPDES.

**24. PN 530 - 01/15/2010 – ASPHALT BINDER PRICE ADJUSTMENT FOR SINGLE YEAR PROJECTS**

**(PN 530 is optional, however strongly encouraged by ODOT/FHWA)**

Any contract line item specifying more than 500 cy of asphalt concrete is eligible for a price adjustment, if the Department's asphalt binder index shows the price for asphalt binders has increased or decreased in excess of 15% and the adjustment is more than \$100 for any individual item. If the ratio of the placing index (PI) to the bidding index (BI) is greater than 1.15 or less than 0.85, the Department will adjust compensation the Contractor receives for work done each month under applicable contract items specifying asphalt concrete. The adjustment will apply to the price for asphalt binder used in those contract items according to the following formula contained with ODOT PN 530 - 01/15/2010 available on ODOT Office of Construction Management website at the following link:

[http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN530\\_01152010\\_for\\_2010.PDF](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN530_01152010_for_2010.PDF)

**[OR]**

**PN 535 - 01/15/2010 – ASPHALT BINDER PRICE ADJUSTMENT FOR MULTI-YEAR PROJECTS**

**(PN 535 is optional, however strongly encouraged by ODOT/FHWA)**

Any contract line item specifying more than 2500 cy of asphalt concrete is eligible for a price adjustment, if the Department's asphalt binder index shows the price for asphalt binders has increased or decreased in excess of 10% and the adjustment is more than \$100 for any individual item. If the ratio of the placing index (PI) to the bidding index (BI) is greater than 1.10 or less than 0.90, the Department will adjust compensation the Contractor receives for work done each month under applicable contract items specifying asphalt concrete. The adjustment will apply to the price for asphalt binder used in those contract items according to the following formula contained with ODOT PN 535 - 01/15/2010 available on ODOT Office of Construction Management website at the following link:

[http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN535\\_01152010\\_for\\_2010.PDF](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Specification%20Files/PN535_01152010_for_2010.PDF)

25. **PN 525 – 1/15/2010 – STEEL PRICE ADJUSTMENT**  
**(PN 525 is optional, however strongly encouraged by ODOT/FHWA)**

**A. General:** This proposal note acknowledges fluctuations in the cost of manufactured steel used in the materials defined below and placed as part of the applicable construction work in the form of a pay adjustment. This proposal note will be used in bidding documents only for as long as the price of the steel products set out below are subject to volatile spikes as determined solely by the ODOT.

These price adjustment provisions apply to items in the contract including any modified standard or non-standard item where the work to be performed involves the placement or installation of one or more of the steel products specified herein.

ODOT will post monthly adjustment indices for steel using data obtained in Table B-1.

**For Category 1, Table B-1:**

ODOT will post monthly adjustment indices (BI and MI) for steel using data obtained from the steel producers listed. The adjustment indices shall determine the BI and MI values for wide flange beams plus a scrap surcharge as listed.

- [http://www.stld-cci.com/pdf/Price\\_list.pdf](http://www.stld-cci.com/pdf/Price_list.pdf)
- <http://www.gerdauameristeel.com/products/mp/pl.cfm>
- <http://www.nucoryamato.com/>

**For Category 2, Table B-1:**

The Department will post monthly adjustment indices (BI and MI) for steel using data obtained on the last Wednesday of the month from the American Metal Market (AMM). The cost basis shall determine the raw steel material price for Steel Plate, Cut-to-length as reported for National Mills;[j1].

**B. Price Adjustment Criteria and Conditions:** The BI monthly values apply to projects old during the same month in which the data is posted. The MI monthly values apply to projects for which qualifying items are shipped from the mill during the same month in which the data is posted. Adjustments will be made to the contract for fluctuations in the cost of steel used in the manufacture of the primary components of only the steel products listed in Table B-1:

<b>Product Relationship Table B-1</b>	
<b>Steel Product (Title)</b>	<b>BI, MI</b>
<b>Category 1:</b> Structural Steel Members, Levels UF, 1,2, and 3 Steel H-Piling	Average of lowest and highest 27” to 36” tall, 10” – 12” wide flange beams, up to 256 lbs./ft., prices plus scrap surcharge from Nuco-Yamato, SDI, and Gerdau Ameristeel
<b>Category 2:</b> Structural Steel Members, Levels 4,5, and 6 Stay in-place steel casing (Piling & Caissons)	AMM Product Designation: Steel Plate, Cut-to-length (National Mills)

Nuts, bolts, rebar chairs, connecting bands and other miscellaneous hardware items shall not be included in the price adjustment. No other steel products shall be considered for a price adjustment.

Adjustments will only be made for fluctuations in the cost of the steel used in the above products as shipped from the producing mill. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

Adjustments may be positive, negative, or non-existent depending on the circumstances. Adjustments for the steel price will be calculated by the Engineer and processed by change order on the Contractor’s progress estimate.

No steel price adjustments will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

Furnish the following documentation for all Table B-1 steel products to be incorporated into the work. Submit all documentation to the Engineer prior to incorporation of the steel into the work. The Department will withhold progress payments if the documentation is not provided and at the discretion of the Engineer the work is allowed to proceed. Progress payments will be made upon receipt of the delinquent documentation. Submit separate documentation packages for each steel product in Table B-1 and for each quantity represented by items 2) c and d below. Label each documentation package with a unique number.

- 1) An affidavit signed by the Contractor stating that the documentation provided is true and accurate.
- 2) Identification of the steel product subject to adjustment.
  - a. Documentation package number: PN525 – (Insert the steel product “title” from Table B-1) – (Insert sequential package number beginning with “1”). Example: PN525 – Guardrail – 1, PN 525 – Reinforcing Steel – 2, etc...
  - b. The steel product quantity in pounds (kg).
  - c. Steel Certification and Mill Test Reports for the steel product.
  - d. The date the steel product, subject to adjustment, was shipped from the producing mill.

Upon the incorporation of the steel product into the work provide the Engineer the following:

- 1) An affidavit signed by the Contractor stating that the documentation provided is true and accurate.
- 2) Identification of the steel product subject to adjustment.
  - a. Documentation package number that was initially established for the steel product for which the price adjustment will be calculated.
  - b. The actual steel product quantity in pounds (kg) that was incorporated into the work.

### **Price Adjustment Calculations**

The below formulas allow for a variation in steel prices without recognizing cost increases/decreases within the range of - 90 % to 110% of the Bidding Index (BI). The total steel price adjustment (SPA) will not be computed unless the percent **% Change** is - 10% or more, increase or decrease:

$$\% \text{ Change} = [(MI/BI) - 1] \times 100$$

#### **For a Price Increase:**

$$SPA = [(MI/BI) - 1.10] \times Q$$

**Example:** If the Project was bid on 4/8/2008, the BI for a category 1 pay item in March 2008 is \$46.475. If wide flange beams have a documented weight of 34500 pounds and the mill date of 9/8/2009, the MI for September 2008 is \$60.225.

Check threshold:

$$\% \text{ Change} = [(\$60.225/CWT / \$46.475/CWT) - 1] \times 100 = 29.586,$$

Is ABS (29.586) > 10? Yes

$$\text{Calculate SPA} = [(\$60.225/CWT / \$46.475/CWT) - 1.10] \times \$46.475/CWT \times 34,500 \text{ lbs}/100 = \$3,140.36 \text{ (positive adjustment)}$$

#### **For a Price Decrease:**

$$SPA = [(MI/BI) - 0.90] \times Q$$

**Example:** If the Project was bid on 1/8/2009, the BI for a category 1 pay item in January 2009 is \$47.825. If wide flange beams have a documented weight of 34500 pounds and the mill date of 4/8/2009, the MI for April 2009 is \$37.375.

Check threshold:

$$\% \text{ Change} = [(\$37.375/\text{CWT}/\$47.825/\text{CWT}) - 1] \times 100 = -21.85,$$

Is ABS (-21.85) > 10? Yes

$$\begin{aligned} \text{Calculate SPA} &= [(\$37.375/\text{CWT}/\$47.825/\text{CWT}) - 0.90] \times \$47.825/\text{CWT} \times 34,500 \text{ lbs}/100 \\ &= -\$1,955.29 \text{ (negative adjustment)} \end{aligned}$$

Where:

SPA = Steel Price Adjustment

MI = Mill Shipping Index. - Use the adjustment indices from the month the steel was shipped from the producing mill and properly documented. The adjustment indices will be posted on ODOT's website.

BI = Bidding Index. - Use the adjustment indices from the month proceeding the month in which the project is bid. The adjustment indices will be posted on ODOT's website.

Q = Quantity of the steel product, pounds (- actually incorporated into the work as documented by the Contractor and verified by the Engineer. -

**C. Price Adjustment Limitations:** The price adjustments are limited to a % Change of 50%, increase or decrease.

**Example 1:** When the Project was bid, the BI for a category 1 pay item with a quantity of 50,000 pounds, was \$39.00, and the MI for the month in which the steel was shipped was \$60.225.

Check threshold:

$$\% \text{ Change} = [(\$60.225/\text{CWT}/\$39.00/\text{CWT}) - 1] \times 100 = 54.423\%$$

The limit is 50%, thus the SPA is calculated as follows:

$$\text{SPA} = [1.50 - 1.10] \times \text{BI} \times \text{Q}$$

$$\begin{aligned} \text{SPA} &= [1.50 - 1.10] \times \$39.00/\text{CWT} \times 50,000 \text{ lbs}/100 \\ &= \$7,800.00 \end{aligned}$$

**Example 2:** When the Project was bid, the BI for a category 1 pay item with a quantity of 50,000 pounds, was \$60.225, and the MI for the month in which the steel was shipped was \$29.00

Check threshold:

$$\% \text{ Change} = [(\$29.00/\text{CWT}/\$60.225/\text{CWT}) - 1] \times 100 = -51.847\%$$

The limit is -50 %, thus the SPA is calculated as follows:

$$\text{SPA} = [0.50 - 0.90] \times \text{BI} \times \text{Q}$$

$$\text{SPA} = [0.50 - 0.90] \times \$60.225/\text{CWT} \times 50,000 \text{ lbs}/100$$

= -\$12,045.00

**D. Payment/Deductions:** The price adjustment will be paid, or deducted from the Contractor's progress estimate, upon approval of a change order.

If the price adjustment is based on estimated material quantities for that time, and a revision to the total material quantity is made in a subsequent or final estimate, an appropriate adjustment will be made to the price adjustment previously calculated. The adjustment will be based on the same indices used to calculate the price adjustment which is being revised. If the shipping date(s) of the revised material quantity cannot be determined, the adjustment for the quantity in question, will be based on the indices utilized to calculate the steel price adjustment for the last initial documentation package submission, for the steel product subject to adjustment, that was incorporated into the particular item of work, for which quantities are being finalized.

**Example:** Structural steel for a particular bridge was provided for in three different shipments with each having a different mill shipping date. The quantity of structural steel actually used for the bridge was calculated and a steel price adjustment was made in a progress payment. At the conclusion of the work an error was found in the calculation of the final quantity of structural steel used for the bridge. The quantity to be adjusted can not be directly related to any one of the three mill shipping dates. The steel price adjustment for the quantity in question would be calculated using the indices that were utilized to calculate the steel price adjustment for the quantity of structural steel represented by the last initial structural steel documentation package submission. The package used would be the one with the greatest sequential number.

**E. Expiration of Contract Time:** When steel products are shipped from the mill after expiration of contract time and liquidated damages are chargeable, steel price adjustments will be based on the MI for the month in which contract time expired.

**F. Documentation Review:** The Department reserves the right to inspect the records of the Contractor, its subcontractors, material fabricators and suppliers to verify the accuracy of the documentation submitted to the Department.

**G. Extra Work/Force Account:** When steel product, as specified herein, are added to the contract as Extra Work, in accordance with the provisions of C&MS Section 109, no steel price adjustments will be made for any products manufactured from steel having a mill shipping date 5 business days after the Department's request. Price adjustments will be made as provided herein however the BI shall be based on the month - of the Department's request. The MI will be based on the month the steel was shipped from the producing mill and after the Extra Work request. For extra work performed on force account basis, reimbursement of actual material costs, along with the specified overhead and profit markup, will be considered to include full compensation for the current cost of steel and no steel price adjustments will be made.

**Designer Note:**

For use on all projects expected to be constructed over a time period of more than one year AND that require steel products listed in Table B-1 of the proposal note.

**26. PN 520 – 1/15/2010 - FUEL PRICE ADJUSTMENT  
(PN 520 is optional, however strongly encouraged by ODOT/FHWA)**

**General:** This Fuel Price Adjustment (Fpa) provision is intended to minimize risk to the Contractor due to fuel price fluctuations that may occur during the Contract. This provision is not designed to estimate actual quantities of fuel used in construction operations, but to provide a reasonable basis for calculating a fuel price adjustment based on average conditions.

ODOT determines adjustments under the provisions of this Proposal Note, and presumes that the Contractor has relied on these provisions when determining unit bid prices. The monthly application range

for percent change (Mbp/Cbp) will not exceed 50% for a Fuel Price Adjustment increase or decrease as outlined in Section B, Calculation of Fuel Price Adjustment.

**A. Price Adjustment Criteria:** These requirements provide for a price adjustment, positive or negative, to payments due the Contractor for fluctuations in the cost of fuel consumed in the performance of certain items of work. These price adjustment provisions apply only to those items in the contract as grouped by category and identified in Table A-1. All adjustments will be made based on fuel consumption indicated by Table A-1, and no changes will be made for actual consumption rates.

Category descriptions and the fuel usage factors which are applicable to each are as follows:

Fuel Adjustment Categories, Table A-1				
Category	Basis of Calculation and Threshold Quantity	Eligible Items	Units	Fuel Usage Factor
Earthwork	Apply only to the greater of the sum of all Excavation quantities or the sum of all Borrow and Embankment quantities. Threshold Quantity*=30,000 c.y. (22,936 c.m.)	203, 204	Gallons per cubic yard  (Gallons per cubic meter)	0.50  (0.65)
Aggregate Bases	Apply to quantity calculated based on the Method of Measurement and Basis of Payment. Threshold Quantity*=2,500 c.y. (1,912 c.m.)	304, 307	Gallons per cubic yard  (Gallons per cubic meter)	0.75  (0.98)
Select Granular Backfill	Apply to quantity calculated based on the Method of Measurement and Basis of Payment. Threshold Quantity*=2,000 c.y. (1,529 c.m.)	840	Gallons per cubic yard  (Gallons per cubic meter)	0.75  (0.98)
Flexible Bases and Pavements	Apply to quantity calculated based on the Method of Measurement and Basis of Payment. Threshold Quantity*=1,200 c.y. (917 c.m.)	301, 302, 308, 424, 442, 443, 446, 448, 803, 826, 857, 880	Gallons per cubic yard  (Gallons per cubic meter)	4.50  (5.88)
Rigid Bases and Pavements	Apply to quantity calculated based on the Method of Measurement and Basis of Payment. Threshold Quantity*=1,200 c.y. (917 c.m.)	305, 306, 451, 452, 526, 884, 888, 896	Gallons per cubic yard  (Gallons per cubic meter)	1.00  (1.31)
Structural Concrete	Apply to quantity calculated based on the Method of Measurement and Basis of Payment. Threshold Quantity*=350 c.y. (268 c.m.)	511, 524, 842, 892, 893, 894, 898	Gallons per cubic yard  (Gallons per cubic meter)	4.00  (5.23)

**\*A Fuel Price Adjustment will only apply when the sum of all original contract quantities for the category meet or exceed the specified Threshold Quantity. When a Fuel Price Adjustment applies, calculate the Fuel Price Adjustment for the sum of all quantities for the category per this proposal note.**

**B. Calculation of Fuel Price Adjustment:** Fuel Price Adjustments may be either positive or negative. A positive Fuel Price Adjustment will result in a payment to the contractor while a negative Fuel Price Adjustment will result in a deduction.

ODOT will calculate a Monthly Base Price (Mbp) for fuel for each month of each calendar year beginning with January 2001. The method for calculating the Monthly Base Price (Mbp) will be on file in the Division of Construction Management. The Monthly Base Price (Mbp) will be used to calculate all Fuel Price Adjustments. The Contract Base Price (Cbp) will be the Monthly Base Price (Mbp) for the month the contract was bid. All Monthly Base Price (Mbp) values will be posted on the Division of Construction Management, Office of Construction Administration website at:

<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Admin/Pages/PriceIndexes.aspx>

During each month of the contract the Engineer will select the applicable Monthly Base Price (Mbp) and calculate the ratio of the Monthly Base Price (Mbp) divided by the Contract Base Price (Cbp). The formulas below allow for a variation in fuel prices without recognizing cost increases/ decreases within the range of 90% to 110% of the Contract Base Price (Cbp).

When, and only when, the Monthly Base Price (Mbp) divided by the Contract Base Price (Cbp) is less than 0.90 or greater than 1.10 will the Engineer calculate a Fuel Price Adjustment (Fpa).

Cost increases in excess of 150% of the Contract Base Price (Cbp) will not be recognized. When, the Monthly Base Price (Mbp) divided by the Contract Base Price (Cbp) is greater than 1.50, the Fpa shall be calculated using a Cbp/Mbp ratio of 1.50.

Cost decreases in excess of 50% of the Contract Base Price (CBP) will not be recognized. When, the Monthly Base Price (Mbp) divided by the Contract Base Price (Cbp) is less than 0.50, the Fpa shall be calculated using a Cbp/Mbp ratio of 0.50.

**For a Price Increase:**

$$Fpa = [(Mbp/Cbp) - 1.10] \times Cbp \times Q$$

**For a Price Decrease:**

$$Fpa = [(Mbp/Cbp) - 0.90] \times Cbp \times Q$$

Where:

**Fpa** = Fuel Price Adjustment

**Mbp** = Monthly Base Price

**Cbp** = Contract Base Price

**Q** = The number of gallons of fuel used in the placement of items identified in Table A-1 during that month at the specified Fuel Usage Factor. Q will be determined by the Engineer for each category by multiplying the applicable Fuel Usage Factor by the sum of quantities of completed and accepted work for the specified items.

The total Monthly Fuel Price Adjustment will be the algebraic sum of the Fuel Price Adjustments for materials placed during the month for each applicable category identified in Table A-1. The Total Fuel Price Adjustment for the project will be the algebraic sum of all Monthly Fuel Price Adjustments. ODOT will calculate the Monthly and Total Fuel Price Adjustment on a monthly basis and make contract modifications as provided in Section C, Payment/Deduction.

**C. Payment/Deduction:** The Fuel Price Adjustment will be paid, or deducted, upon approval of a change order prepared after completion of all work. Contractor markups are not permitted. Partial payments or deductions will be processed prior to total completion when the unpaid accrued Total Fuel Price Adjustment exceeds \$10,000 or once every 12 months.

**D. Expiration of Contract Time:** When eligible items of work grouped by category and identified in Table A-1 are performed after expiration of contract time and liquidated damages are chargeable, the value of Monthly Base Price (Mbp) used to compute the price adjustment will be either the Monthly Base Price (Mbp) at the time of actual performance or the Monthly Base Price (Mbp) at the time contract time expired, whichever is less.

**E. Extra Work:** When eligible items of work grouped by category and identified in Table A-1 are added to the contract as Extra Work and for which a unit price is negotiated the contractor must use the appropriate price for fuel when preparing required backup data for the negotiated price. No Fuel Price Adjustment will be made for fuel consumed in the performance of eligible work added to the contract as Extra Work at a negotiated price when the work commences within 90 days of the approval of the change order authorizing said extra work. If the eligible work at a negotiated price commences more than 90 days after the approval of the change order authorizing said extra work a Fuel Price Adjustment will be made if said extra work quantities exceed the applicable threshold quantity in Table A-1. The Fuel Price Adjustment will be calculated using the Monthly Base Price (Mbp) value for the month the change order authorizing said extra work was approved as the value for its Contract Base Price (Cbp).

When Extra Work is added to the contract as a Force Account operating costs for equipment used in the performance of this work will be paid in accordance with C&MS 109.05.C.4 with no further adjustment.

**F. Final Quantities:** Upon completion of the work and determination of final pay quantities a change order will be prepared to reconcile any difference between estimated quantities previously paid and the final quantities. In this situation, the value for the Monthly Base Price (Mbp) used in the price adjustment formula will be the average of all Monthly Base Price (Mbp) values previously used for computing price adjustments.

**Designer Note:** This note is to be used on all projects that contain any of the categories of work listed in Table A-1 of this proposal note. Questions regarding this note should be directed to the Office of Construction Administration at 614-387-2173.

**27. PN 007 - 10/15/2004 - TRUCK LEASING (Required if DBE goal on the project)**

The Code of Federal Regulations Title 49, Section 26.55(d) (4) (5) (6) governs trucking operations. This section states that the Disadvantaged Business Enterprise (DBE) may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE will receive credit for only the fee or commission it receives as a result of the lease agreement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE. The law requires that a lease must indicate that the DBE has exclusive use of and control over the truck for credit to be accorded to the DBE. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

In lieu of a truck owner displaying the name and identification number of the DBE, the truck owner shall be required to furnish a photocopy of the lease agreement, thereby fulfilling the rule without causing undue hardship on any entity.

Credit for expenditures with DBEs for materials or supplies toward the DBE goal is described as follows:

1. When the materials or supplies are obtained from a DBE manufacturer the prime contractor may receive credit for 100 percent of the cost of the materials or supplies toward the DBE goal. For purposes of this section, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.
2. When the materials or supplies are purchased from a DBE regular dealer or supplier the prime contractor may receive credit for 60 percent of the cost of the materials or supplies toward the DBE goal. For purposes of this section, a regular dealer or supplier is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

For subcontract agreement (C-92) purposes the following definitions will be used:

Install - DBE contractor who obtains goods, materials and supplies and fixes in place, for use, the same goods, materials and supplies. (e.g., DBE contractor obtains and fixes in place re-bar on project site). Must spend 20% or more time on project per day. 100% credit toward prime's DBE goal.

Stockpiling - DBE Contractor/Trucker who delivers materials, goods, or supplies to project site. 60% credit toward prime's DBE goal.



Tailgating - DBE Contractor/Trucker who delivers and installs materials, goods, or supplies to project site. Must spend 20% or more time on project per day. 100% credit toward prime's DBE goal.

**28. PN 013 - 6/23/2009 - DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS (Required if DBE goal on the project)**

It is the policy of the Ohio Department of Transportation that Disadvantaged Business Enterprises (DBEs) shall have equal opportunity to compete for and perform subcontracts which the Contractor enters into pursuant to this contract. The Contractor must use its best efforts to solicit bids from and to utilize DBE subcontractors with meaningful minority groups and female representation among their employees. Consequently, the requirements of Title 49 CFR Part 26 and Ohio Revised Code §5525.011 apply to this contract. **The Contractor must ensure that the DBE subcontractor(s) is performing a "commercially useful function" as defined in CFR 26.55.**

The percentage indicated on the front cover of this bid document is the percent of the awarded Contractor's bid which must be subcontract to certified ODOT DBE firms. The percentage goal may be met if the awarded Contractor is DBE certified.

In order to be assured that the Contractor complies with this contract requirement the Contractor shall provide certified payrolls from its DBE subcontractors where appropriate. When the Contractor utilizes a service, for example trucking, to satisfy a part or its entire contractual goal, the Contractor, when requested, must provide a copy of each canceled check issued to the DBE service provider until the goal amount is reached. The LPA shall total the amounts of the canceled checks and compare that total to the subcontract agreement by the parties and the C-92 issued to the Contractor for the work to be performed by the DBE subcontractor.

**WAIVER PROCESS FOR DBE GOAL**

The Contractor must document the progress and efforts being made in securing the services of DBE subcontractors. In the event the Contractor is unable to meet the DBE Goal placed on this Local Let project, a request for a waiver of all or part of the goal may be made. The written request must indicate a good faith effort was made to meet the goal and be sent to the LPA contracting authority. The LPA forwards the request with recommended action to the ODOT District. The ODOT District then makes recommendation and forwards the request to the Administrator, Office of Contracts, 1980 West Broad Street, Columbus, Ohio, 43223. There will be no extension of time for the project granted if the Contractor wishes to avail himself of this process. If an item of work subcontracted to a DBE firm is non-performed by LPA or the subject of an approved VECP, the Contractor may request a waiver for the portion of work excluded.

The Contractor must provide the following information and documentation when requesting a DBE goal waiver:

1. Dollar value and % of DBE goal (based on the awarded sale amount of the contract). Dollar value and % of waiver request.
2. Signed copy of each subcontract or purchase order agreement between the prime and DBE subcontractor utilized in meeting the contract goal.
3. Copy of dated written communication, fax confirmation, personal contact, follow up and negotiation with the DBE's. At least one follow up phone call is required for those contractors who are non-responsive to fax or letter solicitation.

4. Copy of dated written communication and/or fax confirmation that bidder solicited and provided DBE's with adequate information about the plans, specifications and requirements of the contract in a timely manner to assist them in responding to a solicitation.
5. Copy of dated written communication and/ or fax confirmation of each noncompetitive DBE quote that includes the dollar value of each reference item and work type. Documentation must be provided which will offer comparison between quotes deemed noncompetetive and those quotes accepted.
6. Copy of dated written communication and/ or dated fax confirmation of DBE's that were not interested in providing a quote for the project.
7. Documentation of all negotiating efforts and reason for rejecting bids.
8. Documentation of good faith efforts (GFE) to meet the DBE subcontract goal, by looking beyond the items typically subcontract or consideration of subcontracting items normally performed by the prime as a way to meet the DBE goal.

ODOT Office of Civil Rights will review the submitted documentation and issue a written decision to the Contractor within ten (10) business days. The Contractor may request administrative reconsideration within 14 days of being informed that it did not perform a GFE. The Contractor must make this request in writing to the following:

Ohio Department of Transportation  
Attention: Office of Contracts  
1980 West Broad Street  
Columbus, Ohio 43223

The reconsideration official will not have played any role in the original determination that the contractor did not document sufficient good faith effort.

As part of this reconsideration, the contractor will have the opportunity to provide written documentation or an argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. ODOT will send the contractor a written decision on reconsideration explaining the basis for finding that the contractor did or did not meet the goal or make adequate good faith efforts. The result of the reconsideration process is not administratively appealable to the US Department of Transportation. However, it is appealable to the Franklin County Court of Common Pleas.

## **SANCTIONS**

The LPA will issue sanctions if the Contractor chooses not to request a waiver, the Contractor fails to comply with the contract requirements and/or fails to demonstrate the necessary good faith effort.

The LPA may impose any of the following sanctions:

- (1) letter of reprimand;
- (2) liquidated damages computed up to the amount of goal dollars not met;
- (3) cross-withhold from future projects;
- (4) contract termination; and/or
- (5) other remedies available by law including suspension, revocation, and/or debarment.

Factors to be considered in issuing sanctions include, but are not limited to:

- (1) the magnitude and the type of offense;
- (2) the degree of the Contractor's culpability;
- (3) any steps taken to rectify the situation;
- (4) the Contractor's record of performance on other projects including, but not limited to:
  - a. annual DBE participation over DBE goals;
  - b. annual DBE participation on projects without goals;

- c. number of complaints ODOT has received from DBEs regarding the Contractor; and
  - d. the number of times the Contractor has been previously sanctioned by the ODOT; and
- (5) whether the Contractor falsified, misrepresented, or withheld information.

**29. PN - 031 - 10/15/2004 - AFFIDAVIT OF SUBCONTRACTOR PAYMENT  
(Required if DBE goal on the project)**

The Code of Federal Regulations 49, 26.37(b), requires the LPA to monitor and verify that work committed to Disadvantaged Business Enterprise (DBE) firms at contract award is actually performed by the DBE's. Additionally, the LPA is required to report the DBE participation on each project, including all work, materials or service sublets. Therefore, it is the LPA's responsibility to discern whether payments are made to DBE firms. An affidavit is to be completed and signed by the contractor within 15 days of the completion of the project. The affidavit seeks to verify actual payments made to DBE firms on the project. Each DBE firm must verify the actual payment amount.

The blank spaces in the affidavit must be filled in correctly, where indicated. The affidavit must be signed by the prime contractor and subcontractor, or by the subcontractor and DBE sub-contractor, if applicable. By signing the affidavit, the noted firm agrees that the payment amount recorded is true and accurate as of the payment time period.

Completed and signed affidavit shall be mailed to the Ohio Department of Transportation, Office of Contracts, DBE Services section, 1980 West Broad Street, Columbus, Ohio 43223.

**30. WAIVER OF CM&S 614.03**

ODOT's 2010 Construction and Material Specifications section 614.03, third paragraph, does not apply to any project which is not physically located on the National Highway System (NHS), and/or does not impact NHS traffic in any way.

**31. ODOT AS OBLIGEE ON BOND**

The contractor shall furnish a performance and payment bond in an amount at least equal to 100 percent of the estimate as security for the faithful performance of its contract. In addition to the project Owner, ODOT shall be named as an obligee.

**32. NON-DISCRIMINATION PROVISIONS**

1) **Compliance with Regulations:** The CONTRACTOR will comply with the regulations relative to nondiscrimination in Federally-assisted programs of the United States Department of Transportation (hereinafter "U.S. DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of this contract.

In addition, the CONTRACTOR will comply with the provisions of the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, FHWA Guidance, and any other Federal, State, and/or local laws, rules and/or regulations (hereinafter referred to as "ADA/504").

(2) **Nondiscrimination:** The CONTRACTOR, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, or disability, in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The CONTRACTOR will not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations, as well as the ADA/504 regulations.

(3) **Solicitations for Contractors or Subcontractors, including Procurement of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the CONTRACTOR for work to be performed under a contract or subcontract, including procurements of materials or leases of equipment, each potential subcontractor, or supplier will be notified by the CONTRACTOR of the CONTRACTOR's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, national origin, sex, age, or disability.

(4) **Information and Reports:** The CONTRACTOR will provide all information and reports required by the Regulations or directives issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the STATE or the Federal Highway Administration (hereinafter "FHWA") to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of the CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information, the CONTRACTOR will so certify to the STATE or FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.

(5) **Sanctions for Noncompliance:** In the event of the CONTRACTOR's noncompliance with the nondiscrimination provisions of this contract, the LPA will impose such contract sanctions as it or STATE / FHWA may determine to be appropriate, including, but not limited to:

- (a) withholding of payments to the CONTRACTOR under the contract until the CONTRACTOR complies, and/or
- (b) cancellation, termination or suspension of the contract, in whole or in part.

(6) **Incorporation of Provisions:** The CONTRACTOR will include the provisions of paragraphs (1) through (5) above in every contract or subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The CONTRACTOR will take such action with respect to any subcontractor procurement as the LPA or STATE / FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that, in the event the CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor, or supplier as a result of such direction, the CONTRACTOR may request the LPA / STATE to enter into such litigation to protect the interests of the LPA and the STATE, and, in addition, the LPA / STATE may request the United States to enter into such litigation to protect the interests of the United States.

### **33. REQUIRED CONTRACT PROVISIONS FOR FEDERAL-AID CONSTRUCTION CONTRACTS (Electronic Form FHWA 1273 – May 1, 2012)**

- 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 contacting 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 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).
- 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.

CHANGE ORDER CHECKLIST

CONTRACT NO. \_\_\_\_\_ Date \_\_\_\_\_  
PROJECT NAME \_\_\_\_\_  
CONTRACTOR \_\_\_\_\_  
CONTRACT AMOUNT \_\_\_\_\_  
CHANGE ORDER NO. \_\_\_\_\_  
INCREASE AMOUNT \_\_\_\_\_  
CREDIT AMOUNT \_\_\_\_\_  
NET INCREASE/DECREASE \_\_\_\_\_

ORIGINAL CONTRACT SPECIFICATION (DESCRIPTION) :

DESCRIPTION OF CHANGE :

REASON FOR CHANGE ORDER :

Unforeseen Field Conditions

Regulatory Agency Requirement

Explain :

Specify Agency :

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Change in Specifications

- due to
- a) omission
  - b) ambiguity
  - c) design error
  - d) substitution of materials or methods

Explain :

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify that this changed work was neither specified nor reasonably implied as a requirement of the above-referenced contract and that the changed work is necessary to complete the project within the scope originally contemplated.

\_\_\_\_\_  
Chief Engineer or Project Manager

\_\_\_\_\_  
Director or Commissioner

# DAVIS BACON WAGE RATES

General Decision Number: OH120002 07/27/2012 OH2

Superseded General Decision Number: OH20100002

State: Ohio

Construction Types: Heavy and Highway

Counties: Ohio Statewide.

Heavy and Highway Construction Projects

Modification Number	Publication Date
0	01/06/2012
1	01/13/2012
2	01/20/2012
3	02/10/2012
4	02/17/2012
5	03/16/2012
6	04/06/2012
7	04/13/2012
8	04/27/2012
9	05/04/2012
10	05/18/2012
11	05/25/2012
12	06/01/2012
13	06/08/2012
14	06/15/2012
15	06/22/2012
16	06/29/2012
17	07/06/2012
18	07/13/2012
19	07/20/2012
20	07/27/2012

BRKY0007-003 06/01/2011

LAWRENCE

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 28.29	16.80

BROH0001-001 07/01/2010

DEFIANCE, FULTON (Excluding Fulton, Amboy & Swan Creek Townships), HENRY (Excluding Monroe, Bartlow, Liberty, Washington, Richfield, Marion, Damascus & Townships & that part of Harrison Township outside corporate limits of city of Napoleon), PAULDING, PUTNAM and WILLIAMS COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 29.30	11.81

BROH0001-004 06/01/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 26.57	10.18

-----  
 BROH0003-002 07/01/2011

FULTON (Townships of Amboy, Swan Creek & Fulton), HENRY (Townships of Washington, Damascus, Richfield, Bartlow, Liberty, Harrison, Monroe, & Marion), LUCAS and WOOD (Townships of Perrysburg, Ross, Lake, Troy, Freedom, Montgomery, Webster, Center, Portage, Middleton, Plain, Liberty, Henry, Washington, Weston, Milton, Jackson & Grand Rapids) COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 28.38	15.78

-----  
 BROH0005-003 05/01/2012

CUYAHOGA, LORAIN & MEDINA (Hinckley, Granger, Brunswick, Liverpool, Montville, York, Homer, Harrisville, Chatham, Litchfield & Spencer Townships and the city of Medina)

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS; CAULKERS; CLEANERS; POINTERS; & STONEMASONS.....	\$ 32.19	11.78
SANDBLASTERS.....	\$ 32.44	11.78
SEWER BRICKLAYERS & STACK BUILDERS.....	\$ 32.69	11.78
SEWER BRICKLAYERS; STACK BUILDERS; & SWING SCAFFOLDS..	\$ 30.91	11.78
SWING SCAFFOLDS.....	\$ 32.94	11.78

-----  
 BROH0006-005 05/01/2012

CARROLL, COLUMBIANA (Knox, Butler, West & Hanover Townships), STARK & TUSCARAWAS

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 26.00	11.28

-----  
 BROH0007-005 06/01/2011

PORTAGE & SUMMIT

	Rates	Fringes
BRICKLAYER.....	\$ 28.26	12.87

BROH0007-010 06/01/2011

PORTAGE & SUMMIT

	Rates	Fringes
MASON - STONE.....	\$ 29.07	8.90

BROH0008-001 06/01/2011

COLUMBIANA (Salem, Perry, Fairfield, Center, Elk Run, Middleton, & Unity Townships and the city of New Waterford), MAHONING & TRUMBULL

	Rates	Fringes
BRICKLAYER.....	\$ 25.55	15.34

BROH0009-002 07/01/2011

BELMONT & MONROE COUNTIES and the Townships of Warren & Mt. Pleasant and the Village of Dillonvale in JEFFERSON COUNTY

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 24.72	15.61
Refractory.....	\$ 29.44	15.61

BROH0010-002 07/01/2012

COLUMBIANA (St. Clair, Madison, Wayne, Franklin, Washington, Yellow Creek & Liverpool Townships) & JEFFERSON (Brush Creek & Saline Townships)

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 26.37	14.54

BROH0014-002 07/01/2005

HARRISON & JEFFERSON (Except Mt. Pleasant, Warren, Brush Creek, Saline & Salineville Townships & the Village of Dillonvale)

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 24.01	8.85

BROH0016-002 05/01/2012

ASHTABULA, GEAUGA, and LAKE COUNTIES

Rates	Fringes
-------	---------

Bricklayer, Stonemason.....\$ 30.84 12.94

-----  
BROH0018-002 06/01/2011

BROWN, BUTLER, CLERMONT, HAMILTON, PREBLE (Gasper, Dixon,  
Israel, Lanier, Somers & Gratis Townships) & WARREN COUNTIES:

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 26.57	10.26

-----  
BROH0022-004 01/01/2012

CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, HIGHLAND, LOGAN,  
MIAMI, MONTGOMERY, PREBLE (Jackson, Monroe, Harrison, Twin,  
Jefferson & Washington Townships) and SHELBY COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 25.29	10.48

-----  
BROH0032-001 06/01/2011

GALLIA & MEIGS

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 30.72	12.23

-----  
BROH0035-002 07/01/2010

ALLEN, AUGLAIZE, MERCER and VAN WERT COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 24.67	11.57

-----  
BROH0039-002 06/01/2011

ADAMS & SCIOTO

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 29.17	14.62

-----  
BROH0040-003 06/01/2011

ASHLAND, CRAWFORD, HARDIN, HOLMES, MARION, MORROW, RICHLAND,  
WAYNE and WYANDOT (Except Crawford, Ridge, Richland & Tymochtee  
Townships) COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 27.05	15.94



FOOTNOTE: Layout Man and Sawman rate: \$1.00 per hour above journeyman rate.  
 Free standing stack work ground level to top of stack;  
 Sandblasting and laying of carbon masonry material in swing stage and/or scaffold; Ramming and spading of plastics and gunniting: \$1.50 per hour above journeyman rate.  
 "Hot" work: \$2.50 above journeyman rate.

-----  
 BROH0044-002 06/01/2011

	Rates	Fringes
Bricklayer, Stonemason COSHOCTON, FAIRFIELD, GUERNSEY, HOCKING, KNOX, KICKING, MORGAN, MUSKINGUM, NOBLE (Beaver, Buffalo, Seneca & Wayne Townships) & PERRY COUNTIES:.....	\$ 25.50	11.45

-----  
 BROH0045-002 06/01/2011

FAYETTE, JACKSON, PIKE, ROSS and VINTON COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 29.20	11.63

-----  
 BROH0046-002 06/01/2011

ERIE, HANCOCK, HURON, OTTAWA, SANDUSKY, SENECA, WOOD (Perry & Bloom Townships) and WYANDOT (Tymochtee, Crawford, Ridge & Richland Townships) COUNTIES & the Islands of Lake Erie north of Sandusky

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 28.02	15.34

FOOTNOTE: Layout Man and Sawman rate: \$1.00 per hour above journeyman rate.  
 Free standing stack work ground level to top of stack;  
 Sandblasting and laying of carbon masonry material in swing stage and/or scaffold; Ramming and spading of plastics and gunniting: \$1.50 per hour above journeyman rate.  
 "Hot" work: \$2.50 above journeyman rate.

-----  
 BROH0052-001 06/01/2011

ATHENS COUNTY

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 26.60	12.75

-----  
BROH0052-003 06/01/2011

NOBLE (Brookfield, Noble, Center, Sharon, Olive, Enoch, Stock, Jackson, Jefferson & Elk Townships) and WASHINGTON COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 26.60	12.75

-----

BROH0055-003 06/01/2010

DELAWARE, FRANKLIN, MADISON, PICKAWAY and UNION COUNTIES

	Rates	Fringes
Bricklayer, Stonemason.....	\$ 27.21	12.49

-----

CARP0003-004 05/01/2012

MAHONING & TRUMBULL

	Rates	Fringes
CARPENTER.....	\$ 25.42	13.49

-----

CARP0069-003 05/01/2012

CARROLL, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
CARPENTER.....	\$ 25.39	11.92

-----

CARP0069-006 05/01/2012

COSHOCTON, HOLMES, KNOX & MORROW

	Rates	Fringes
CARPENTER.....	\$ 23.65	11.62

-----

CARP0171-002 05/01/2012

BELMONT, COLUMBIANA, HARRISON, JEFFERSON & MONROE

	Rates	Fringes
CARPENTER.....	\$ 25.67	13.92

-----

CARP0200-002 05/01/2011

ADAMS, ATHENS, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GUERNSEY, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING, MADISON, MARION, MEIGS, MORGAN, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, ROSS, SCIOTO, UNION, VINTON and WASHINGTON

COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 27.17	11.30
Diver.....	\$ 39.41	10.40
PILEDRIVERMAN.....	\$ 27.17	11.30

-----  
 CARP0248-005 07/01/2008

LUCAS & WOOD

	Rates	Fringes
CARPENTER.....	\$ 27.27	14.58

-----  
 CARP0248-008 07/01/2008

	Rates	Fringes
CARPENTER DEFIANCE, FULTON, HANCOCK, HENRY, PAULDING & WILLIAMS COUNTIES.....	\$ 23.71	13.28

-----  
 CARP0254-002 05/01/2012

ASHTABULA, CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
CARPENTER.....	\$ 31.16	12.71

-----  
 CARP0372-002 07/01/2008

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM & VAN WERT

	Rates	Fringes
CARPENTER.....	\$ 23.18	13.28

-----  
 CARP0639-003 05/01/2012

MEDINA, PORTAGE & SUMMIT

	Rates	Fringes
CARPENTER.....	\$ 29.22	13.19

-----  
 CARP0735-002 05/01/2012

ASHLAND, ERIE, HURON, LORAIN & RICHLAND

	Rates	Fringes
CARPENTER.....	\$ 24.73	11.54

-----  
CARP1311-001 05/01/2011

BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, DARKE,  
GREENE, HAMILTON, LOGAN, MIAMI, MONTGOMERY, PREBLE, SHELBY &  
WARREN

	Rates	Fringes
Carpenter & Piledrivermen.....	\$ 25.74	12.96
Diver.....	\$ 40.58	9.69

-----

CARP1393-002 07/01/2008

CRAWFORD, DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA,  
PAULDING, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
Piledrivermen & Diver's Tender...\$	27.30	16.05
DIVERS - \$250.00 per day		

-----

CARP1393-003 07/01/2008

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM, VAN WERT & WYANDOT

	Rates	Fringes
Piledrivermen & Diver's Tender...\$	25.15	15.92
DIVERS - \$250.00 per day		

-----

CARP1871-006 05/01/2012

BELMONT, HARRISON, & MONROE

	Rates	Fringes
Diver, Wet.....	\$ 46.74	13.34
Piledrivermen; Diver, Dry.....	\$ 31.16	13.34

-----

CARP1871-008 05/01/2012

ASHLAND, ASHTABULA, CUYAHOGA, ERIE, GEAUGA, HURON, LAKE,  
LORAIN, MEDINA, PORTAGE, RICHLAND & SUMMIT

	Rates	Fringes
Diver, Wet.....	\$ 43.89	14.61
Piledrivermen; Diver, Dry.....	\$ 29.26	14.61

-----

CARP1871-014 05/01/2012

CARROLL, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
Diver, Wet.....	\$ 37.29	12.93
Piledrivermen; Diver, Dry.....	\$ 24.86	12.93

-----  
CARP1871-015 05/01/2012

COSHOCTON, HOLMES, KNOX & MORROW

	Rates	Fringes
Diver, Wet.....	\$ 36.47	12.08
Piledrivermen; Diver, Dry.....	\$ 24.31	12.08

-----  
CARP1871-017 05/01/2012

MAHONING & TRUMBULL

	Rates	Fringes
Diver, Wet.....	\$ 39.26	13.58
Piledrivermen; Diver, Dry.....	\$ 26.17	13.58

-----  
CARP2235-012 01/01/2010

COLUMBIANA & JEFFERSON

	Rates	Fringes
PILEDRIVERMAN.....	\$ 29.95	12.25

-----  
CARP2239-001 07/01/2008

CRAWFORD, OTTAWA, SANDUSKY, SENECA & WYANDOT

	Rates	Fringes
CARPENTER.....	\$ 23.71	13.28

-----  
ELEC0008-002 06/01/2011

DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING,  
PUTNAM, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
CABLE SPLICER.....	\$ 36.30	18.17
ELECTRICIAN.....	\$ 34.57	18.17

-----  
ELEC0032-003 06/01/2011

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT &  
WYANDOT (Crawford, Jackson, Marseilles, Mifflin, Ridgeland,  
Ridge & Salem Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 27.10	12.35

-----  
 ELEC0032-004 06/01/1998

ALLEN, HARDIN, VAN WERT & WYANDOT (Crawford, Jackson,  
 Marseilles, Mifflin, Richland, Ridge & Salem Townships)

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 20.27	4.12+a
Groundman Truck Driver.....	\$ 14.43	3.63+a
Lineman.....	\$ 22.52	4.31+a

FOOTNOTE: a. Half day's Paid Holiday: The last 4 hours of  
 the workday prior to Christmas or New Year's Day

-----  
 ELEC0038-002 04/30/2012

CUYAHOGA, GEAUGA (Bainbridge, Chester & Russell Townships) &  
 LORAIN (Columbia Township)

	Rates	Fringes
ELECTRICIAN		
Excluding Sound & Communications Work.....	\$ 36.28	19.01

FOOTNOTES;  
 a. 6 Paid Holidays: New Year's Day; Memorial Day; July 4th;  
 Labor Day; Thanksgiving Day; & Christmas Day  
 b. 1 week's paid vacation for 1 year's service; 2 weeks' paid  
 vacation for 2 or more years' service

-----  
 ELEC0038-008 04/30/2012

CUYAHOGA, GEAUGA (Bainbridge, Chester & Russell Townships) &  
 LORAIN (Columbia Township)

	Rates	Fringes
Sound & Communication Technician		
Communications Technician...	\$ 25.25	9.18+a+b
Installer Technician.....	\$ 24.00	9.14+a+b

FOOTNOTES;  
 a. 6 Paid Holidays: New Year's Day; Memorial Day; July 4th;  
 Labor Day; Thanksgiving Day; & Christmas Day  
 b. 1 week's paid vacation for 1 year's service; 2 weeks' paid

vacation for 2 or more years' service

-----  
ELEC0064-003 11/28/2011

COLUMBIANA (Butler, Fairfield, Perry, Salem & Unity Townships)  
MAHONING (Austintown, Beaver, Berlin, Boardman, Canfield,  
Ellsworth, Coitsville, Goshen, Green, Jackson, Poland,  
Springfield & Youngstown Townships), & TRUMBULL (Hubbard &  
Liberty Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 30.10	12.97

-----  
ELEC0071-001 01/16/2012

ASHLAND, CHAMPAIGN, CLARK, COSHOCTON, CRAWFORD, DELAWARE,  
FAIRFIELD, FAYETTE, FRANKLIN, GUERNSEY, HIGHLAND, HOCKING,  
JACKSON (Coal, Jackson, Liberty, Milton, Washington & Wellston  
Townships), KNOX, LICKING, MADISON, MARION, MONROE, MORGAN,  
MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE (Beaver,  
Benton, Jackson, Mifflin, Pebble, Peepee, Perry & Seal  
Townships), RICHLAND, ROSS, TUSCARAWAS (Auburn, Bucks, Clay,  
Jefferson, Oxford, Perry, Salem, Rush, Washington & York  
Townships), UNION, VINTON (Clinton, Eagle, Elk, Harrison,  
Jackson, Richland & Swan Townships), and WASHINGTON COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operators.....	\$ 29.03	10.65
Groundmen.....	\$ 20.96	9.40
Linemen & Cable Splicers....	\$ 32.25	11.77

-----  
ELEC0071-004 01/16/2012

AUGLAIZE, CLINTON, DARKE, GREENE, LOGAN, MERCER, MIAMI,  
MONTGOMERY, PREBLE, and SHELBY COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....	\$ 29.03	10.65
Groundman.....	\$ 20.96	9.40
Lineman & Cable Splicers....	\$ 32.25	11.77

-----  
ELEC0071-005 01/16/2012

ASHTABULA, CUYAHOGA, GEAUGA, LAKE & LORAIN

	Rates	Fringes
LINE CONSTRUCTION: Equipment Operator		

	DOT/Traffic Signal & Highway Lighting Projects...\$ 29.03	10.65
	Municipal Power/Transit Projects.....\$ 30.74	11.15
LINE CONSTRUCTION:	Groundman	
	DOT/Traffic Signal & Highway Lighting Projects...\$ 20.96	9.40
	Municipal Power/Transit Projects.....\$ 22.22	9.44
LINE CONSTRUCTION:		
	Linemen/Cable Splicer	
	DOT/Traffic Signal & Highway Lighting Projects...\$ 32.25	11.77
	Municipal Power/Transit Projects.....\$ 35.77	12.15

ELEC0071-008 01/16/2012

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....\$ 29.03		10.65
Groundman.....\$ 20.96		9.40
Lineman & Cable Splicers....\$ 32.25		11.77

ELEC0071-010 01/16/2012

BELMONT, CARROLL, HARRISON, HOLMES, JEFFERSON, MEDINA, PORTAGE,  
STARK, SUMMIT, and WAYNE COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....\$ 29.03		10.65
Groundman.....\$ 20.96		9.40
Lineman & Cable Splicers....\$ 32.25		11.77

ELEC0071-013 01/16/2012

BROWN, BUTLER, CLERMONT, HAMILTON, and WARREN COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator.....\$ 29.03		10.65
Groundman.....\$ 20.96		9.40
Lineman & Cable Splicers....\$ 32.25		11.77

ELEC0082-002 12/05/2011

CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE & WARREN  
(Wayne, Clear Creek & Franklin Townships)



	Rates	Fringes
ELECTRICIAN.....	\$ 27.00	15.77

-----  
 ELEC0082-006 05/24/2004

CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY, PREBLE & WARREN  
 (Wayne, Clear Creek & Franklin Townships)

	Rates	Fringes
Sound & Communication Technician		
Cable Puller.....	\$ 9.14	4.91
Installer/Technician.....	\$ 18.28	6.32

-----  
 ELEC0129-003 03/01/2010

LORAIN (Except Columbia Township) & MEDINA (Litchfield &  
 Liverpool Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 31.00	13.80

-----  
 ELEC0129-004 03/01/2010

ERIE & HURON (Lyme, Ridgefield, Norwalk, Townsend, Wakeman,  
 Sherman, Peru, Bronson, Hartland, Clarksfield, Norwich,  
 Greenfield, Fairfield, Fitchville & New London Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 31.00	13.80

-----  
 ELEC0141-003 09/05/2011

BELMONT COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 28.61	20.72
ELECTRICIAN.....	\$ 30.01	21.25

-----  
 ELEC0212-003 06/27/2011

BROWN, CLERMONT & HAMILTON

	Rates	Fringes
Sound & Communication Technician.....	\$ 21.55	8.46

-----  
 ELEC0212-005 05/28/2012

BROWN, CLERMONT, and HAMILTON COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 26.11	14.77

-----  
 ELEC0245-003 01/02/2012

DEFIANCE, FULTON, HANCOCK, HENRY, HURON, LUCAS, OTTAWA,  
 PAULDING, PUTNAM, SANDUSKY, SENECA, WILLIAMS, and WOOD COUNTIES

	Rates	Fringes
Line Construction		
Cable Splicer.....	\$ 35.77	24%+\$5.00+a
Groundman/Truck Driver.....	\$ 22.22	24%+\$5.00+a
Heli-arc Welding.....	\$ 31.47	20.25%+4.80+a
Lineman.....	\$ 34.18	24%+\$5.00+a
Operator - Class 1.....	\$ 27.27	24%+\$5.00+a
Operator - Class 2.....	\$ 22.09	24%+\$5.00+a
Traffic Signal & Lighting Technician.....	\$ 34.18	24%+\$5.00+a

FOOTNOTE: a. 6 Observed Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; & Christmas Day. Employees who work on a holiday shall be paid at a rate of double their applicable classified straight-time rates for the work performed on such holiday.

-----  
 ELEC0246-006 10/31/2011

CARROLL (South of Fox, Harrison, Rose & Washington Townships),  
 COLUMBIANA (South of Butler, Fairfield, Knox, Salem & Unity Townships),  
 HARRISON, and JEFFERSON COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 33.00	24.51+a

FOOTNOTE: a. 1 1/2 Paid Holidays: The last scheduled workday prior to Christmas & 4 hours on Good Friday.

-----  
 ELEC0306-005 05/30/2011

MEDINA (Brunswick, Chatham, Granger, Guilford, Harrisville, Hinckley, Homer, Lafayette, Medina, Montville, Sharon, Spencer, Wadsworth, Westfield & York Townships), PORTAGE (Atwater, Aurora, Brimfield, Deerfield, Franklin, Mantua, Randolph, Ravenna, Rootstown, Shalersville, Streetsboro & Suffield Townships), SUMMIT & WAYNE (Baughman, Canaan, Chester, Chippewa, Congress, Green, Milton, & Wayne Townships)

Rates Fringes

CABLE SPLICER.....	\$ 34.98	5%+13.61
ELECTRICIAN.....	\$ 32.39	5%+13.61

-----  
 ELEEC0317-002 05/30/2012

GALLIA & LAWRENCE

	Rates	Fringes
CABLE SPLICER.....	\$ 32.68	18.13
ELECTRICIAN.....	\$ 32.22	20.09

-----  
 ELEEC0317-008 06/01/1998

ADAMS, ATHENS, GALLIA, JACKSON (Bloomfield, Franklin, Hamilton, Lick, Jefferson, Scioto & Madison Townships), LAWRENCE, MEIGS, PIKE (Camp Creek, Marion, Newton, Scioto, Sunfish & Union Townships), SCIOTO & VINTON (Brown, Knox, Madison, Vinton & Wilkesville Townships)

	Rates	Fringes
Line Construction		
Cable Splicers.....	\$ 23.66	8.48
Equipment Operators.....	\$ 17.14	8.25
Groundmen.....	\$ 13.92	8.14
Linemen.....	\$ 21.42	8.40

-----  
 ELEEC0540-003 06/05/1997

TUSCARAWAS COUNTY (North of Auburn, Clay, Rush & York Townships)

	Rates	Fringes
Line Construction		
Groundman; & Truck Driver...	\$ 14.65	8.18
Line Equipment Operator.....	\$ 19.02	8.69
Lineman; & Cable Splicer....	\$ 21.86	9.01

-----  
 ELEEC0540-005 12/26/2011

CARROLL (Northern half, including Fox, Harrison, Rose & Washington Townships), COLUMBIANA (Knox Township), HOLMES, MAHONING (Smith Township), STARK, TUSCARAWAS (North of Auburn, Clay, Rush & York Townships), and WAYNE (South of Baughman, Chester, Green & Wayne Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 27.60	17.56

-----  
 ELEEC0573-003 11/28/2011

ASHTABULA (Colebrook, Wayne, Williamsfield, Orwell & Windsor

Townships), GEAUGA (Auburn, Middlefield, Parkman & Troy Townships), MAHONING (Milton Township), PORTAGE (Charlestown, Edinburg, Freedom, Hiram, Nelson, Palmyra, Paris & Windham Townships), and TRUMBULL (Except Liberty & Hubbard Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 29.15	15.64

-----  
 ELEC0575-001 05/30/2011

ADAMS, FAYETTE, HIGHLAND, HOCKING, JACKSON (Bloomfield, Franklin, Hamilton, Jefferson, Lick, Madison, Scioto, Coal, Jackson, Liberty, Milton & Washington Townships), PICKAWAY (Deer Creek, Perry, Pickaway, Salt Creek & Wayne Townships), PIKE (Beaver, Benton, Jackson, Mifflin, Pebble, PeePee, Perry, Seal, Camp Creek, Newton, Scioto, Sunfish, Union & Marion Townships), ROSS, SCIOTO & VINTON (Clinton, Eagle, Elk, Harrison, Jackson, Richland & Swan Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 30.69	13.32

-----  
 ELEC0648-001 09/05/2011

BUTLER and WARREN COUNTIES (Deerfield, Hamilton, Harlan, Massie, Salem, Turtle Creek, Union & Washington Townships)

	Rates	Fringes
CABLE SPLICER.....	\$ 29.94	13.02
ELECTRICIAN.....	\$ 29.44	13.02

-----  
 ELEC0673-004 06/27/2011

ASHTABULA (Excluding Orwell, Colebrook, Williamsfield, Wayne & Windsor Townships), GEAUGA (Burton, Chardon, Claridon, Hambden, Huntsburg, Montville, Munson, Newbury & Thompson Townships) and LAKE COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 32.45	16.47
ELECTRICIAN.....	\$ 32.20	16.47

-----  
 ELEC0683-002 05/30/2011

CHAMPAIGN, CLARK, DELAWARE, FAIRFIELD, FRANKLIN, MADISON, PICKAWAY (Circleville, Darby, Harrison, Jackson, Madison, Monroe, Muhlenberg, Scioto, Walnut & Washington Townships), and UNION COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 30.40	14.26
ELECTRICIAN.....	\$ 29.80	14.26

-----  
 ELEC0688-003 01/05/2011

ASHLAND, CRAWFORD, HURON (Richmond, New Haven, Ripley & Greenwich Townships), KNOX (Liberty, Clinton, Union, Howard, Monroe, Middleberry, Morris, Wayne, Berlin, Pike, Brown & Jefferson Townships), MARION, MORROW, RICHLAND and WYANDOT (Sycamore, Crane, Eden, Pitt, Antrim & Tymochtee Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 26.25	14.30

-----  
 ELEC0867-001 06/01/1998

ERIE

	Rates	Fringes
Line Construction		
Lineman; Cable Splicer; & Equipment Operator.....	\$ 20.75	4.09
Truck Driver (Winch)		
Groundman; & Groundman.....	\$ 13.49	3.87

-----  
 ELEC0972-002 06/01/2011

ATHENS, MEIGS, MONROE, MORGAN, NOBLE, VINTON (Brown, Knox, Madison, Vinton & Wilkesville Townships), and WASHINGTON COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 31.59	20.11
ELECTRICIAN.....	\$ 31.34	20.10

-----  
 ELEC1105-001 05/28/2012

COSHOCTON, GUERNSEY, KNOX (Jackson, Clay, Morgan, Miller, Milford, Hilliar, Butler, Harrison, Pleasant & College Townships), LICKING, MUSKINGUM, PERRY, and TUSCARAWAS (Auburn, York, Clay, Jefferson, Rush, Oxford, Washington, Salem, Perry & Bucks Townships) COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 27.34	11.44

ASHTABULA, CUYAHOGA, ERIE, GEAUGA, LAKE, LORAIN, MEDINA,  
 PORTAGE, and SUMMIT COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 31.48	12.80
GROUP 2.....	\$ 31.38	12.80
GROUP 3.....	\$ 30.34	12.80
GROUP 4.....	\$ 29.12	12.80
GROUP 5.....	\$ 23.83	12.80
GROUP 6.....	\$ 31.73	12.80
GROUP 7.....	\$ 31.98	12.80

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; Wheel Excavator; and Asphalt Plant Engineer (Cleveland District Only).

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Horizontal Directional Drill (Over 50,000 ft lbs thrust); Hydro Milling Machine; Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); Vermeer type Concrete

Saw; and Maintenance Operators (Portage and Summit Counties Only).

GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer (Portage and Summit Counties Only); Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); Welding Machines; and Railroad Tie Inserter/Remover; Articulating/straight bed end dumps if assigned (minus \$4.00 per hour).

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway); Finishing Machine; Fireperson, Floating Equipment (all types); Forklift; Form Trencher; Hydro Hammer except masonry; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); and Vibratory Compactor with Integral Power.

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt Plant); Generator; Masonry Fork Lift; Inboard-Outboard Motor Boat Launch; Oil Heater (asphalt plant); Oiler/Helper; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signalperson; Tire Repairperson; VAC/ALLS; Cranes - Compact, track or rubber under 4,000 pound capacity; fueling and greasing; and Chainmen.

GROUP 6 - Master Mechanic & Boom from 150 to 180.

GROUP 7 - Boom from 180 and over.

-----  
ENGI0018-004 05/04/2011

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING,

PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS,  
 SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN  
 WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, and  
 YANDOT COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 29.99	12.80
GROUP 2.....	\$ 29.87	12.80
GROUP 3.....	\$ 28.83	12.80
GROUP 4.....	\$ 27.65	12.80
GROUP 5.....	\$ 22.19	12.80
GROUP 6.....	\$ 30.24	12.80
GROUP 7.....	\$ 30.49	12.80

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Air Compressor on Steel Erection; Barrier Moving Machine; Boiler Operator on Compressor or Generator when mounted on a Rig; Cableway; Combination Concrete Mixer & Tower; Concrete Plant (over 4 yd. Capacity); Concrete Pump; Crane (All Types, Including Boom Truck, Cherry Picker); Crane-Compact, Track or Rubber over 4,000 lbs. capacity; Cranes-Self Erecting, Stationary, Track or Truck (All Configurations); Derrick; Dragline; Dredge (Dipper, Clam or Suction); Elevating Grader or Euclid Loader; Floating Equipment (All Types); Gradall; Helicopter Crew (Operator-Hoist or Winch); Hoe (all types); Hoisting Engine on Shaft or Tunnel Work; Hydraulic Gantry (Lifting System); Industrial-Type Tractor; Jet Engine Dryer (D8 or D9) Diesel Tractor; Locomotive (Standard Gauge); Maintenance Operator Class A; Mixer, Paving (Single or Double Drum); Mucking Machine; Multiple Scraper; Piledriving Machine (All Types); Power Shovel; Prentice Loader; Quad 9 (Double Pusher); Rail Tamper (with auto lifting & aligning device); Refrigerating Machine (Freezer Operation); Rotary Drill, on Caisson work; Rough Terrain Fork Lift with Winch/Hoist; Side-Boom; Slip-Form Paver; Tower Derrick; Tree Shredder; Trench Machine (Over 24" wide); Truck Mounted Concrete Pump; Tug Boat; Tunnel Machine and/or Mining Machine; and Wheel Excavator.

GROUP 2 - Asphalt Paver; Automatic Subgrader Machine, Self-Propelled (CMI Type); Bobcat Type and/or Skid Steer Loader with Hoe Attachment Greater than 7,000 lbs.; Boring Machine More than 48"; Bulldozer; Endloader; Hydro Milling Machine; Horizontal Directional Drill (over 50,000 ft. lbs. thrust); Kolman-type Loader (production type-Dirt); Lead Greaseman; Lighting & Traffic Signal Installation Equipment (includes all groups or classifications); Material Transfer Equipment (Shuttle Buggy) Asphalt; Pettibone-Rail Equipment; Power Grader; Power Scraper; Push Cat; Rotomill (all), Grinders & Planers of All types; Trench Machine (24" wide & under); and Vermeer type Concrete Saw.



GROUP 3 - A-Frame; Air Compressor on Tunnel Work (low pressure); Asphalt Plant Engineer; Bobcat-type and/or Skid Steer Loader with or without Attachments; Highway Drills (all types); Locomotive (narrow gauge); Material Hoist/Elevator; Mixer, Concrete (more than one bag capacity); Mixer, one bag capacity (Side Loader); Power Boiler (Over 15 lbs. Pressure) Pump Operator installing & operating Well Points; Pump (4" & over discharge); Railroad Tie Inserter/Remover; Roller, Asphalt; Rotovator (lime soil stabilizer); Switch & Tie Tampers (without lifting & aligning device); Utility Operator (Small equipment); and Welding Machines; Articulating/straight bed end dumps if assigned (minus \$4.00 per hour).

GROUP 4 - Backfiller; Ballast Re-locator; Bars, Joint & Mesh Installing Machine; Batch Plant; Boring Machine Operator (48" or less); Bull Floats; Burlap & Curing Machine; Concrete Plant (capacity 4 yd. & under); Concrete Saw (Multiple); Conveyor (Highway); Crusher; Deckhand; Farm-type Tractor with attachments (highway); Finishing Machine; Fireperson, Floating Equipment (all types); Fork Lift; Form Trencher; Hydro Hammer expect masonry; Hydro Seeder; Pavement Breaker; Plant Mixer; Post Driver; Post Hole Digger (Power Auger); Power Brush Burner; Power Form Handling Equipment; Road Widening Trencher; Roller (Brick, Grade & Macadam); Self-Propelled Power Spreader; Self-Propelled Power Subgrader; Steam Fireperson; Tractor (Pulling Sheepfoot, Roller or Grader); and Vibratory Compactor with Integral Power.

GROUP 5 - Compressor (Portable, Sewer, Heavy & Highway); Drum Fireperson (Asphalt Plant); Generator; Masonary Forklift; Inboard-Outboard Motor Boat Launch; Oil Heater (asphalt plant); Oiler/Helper; Power Driven Heater; Power Sweeper & Scrubber; Pump (under 4" discharge); Signalperson; Tire Repairperson; VAC/ALLS; Cranes - Compact, track or rubber under 4,000 pound capacity; fueling and greasing; and Chainmen.

GROUP 6 - Master Mechanic & Boom from 150 to 180.

GROUP 7 - Boom from 180 and over.

-----  
 ENGI0066-023 06/01/2012

COLUMBIANA, MAHONING & TRUMBULL COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		
GROUP 1 - A & B.....	\$ 36.48	16.06
ASBESTOS; HAZARDOUS/TOXIC		
WASTE PROJECTS		

GROUP 2 - A & B.....	\$ 36.15	16.06
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 3 - A & B.....	\$ 32.82	16.06
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 4 - A & B.....	\$ 29.04	16.06
ASBESTOS; HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 5 - A & B.....	\$ 25.64	16.06
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 1 - C & D.....	\$ 33.47	16.06
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 2 - C & D.....	\$ 33.19	16.06
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 3 - C & D.....	\$ 30.13	16.06
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 4 - C & D.....	\$ 26.66	16.06
HAZARDOUS/TOXIC WASTE PROJECTS		
GROUP 5 - C & D.....	\$ 23.55	16.06
ALL OTHER WORK		
GROUP 1.....	\$ 30.49	16.06
ALL OTHER WORK		
GROUP 2.....	\$ 30.22	16.06
ALL OTHER WORK		
GROUP 3.....	\$ 27.44	16.06
ALL OTHER WORK		
GROUP 4.....	\$ 24.29	16.06
ALL OTHER WORK		
GROUP 5.....	\$ 21.46	16.06
GROUP 1 - Rig, Pile Driver or Caisson Type; & Rig, Pile Hydraulic Unit Attached		
GROUP 2 - Asphalt Heater Planer; Backfiller with Drag Attachment; Backhoe; Backhoe with Shear attached; Backhoe-Rear Pivotal Swing; Batch Plant-Central Mix Concrete; Batch Plant, Portable concrete; Berm Builder-Automatic; Boat Derrick; Boat-Tug;		

Boring Machine Attached to Tractor; Bullclam; Bulldozer; C.M.I. Road Builder & Similar Type; Cable Placer & Layer; Carrier-Straddle; Carryall-Scraper or Scoop; Chicago Boom; Compactor with Blade Attached; Concrete Saw (Vermeer or similar type); Concrete Spreader Finisher; Combination, Bidwell Machine; Crane; Crane-Electric Overhead; Crane-Rough Terrain; Crane-Side Boom; Crane-Truck; Crane-Tower; Derrick-Boom; Derrick-Car; Digger-Wheel (Not trencher or road widener); Double Nine; Drag Line; Dredge; Drill-Kenny or Similar Type; Easy Pour Median Barrier Machine (or similar type); Electromatic; Frankie Pile; Gradall; Grader; Gurry; Self-Propelled; Heavy Equipment Robotics Operator/Mechanic; Hoist-Monorail; Hoist-Stationary & Mobile Tractor; Hoist, 2 or 3 drum; Horizontal Directional Drill Operator; Jackall; Jumbo Machine; Kocal & Kuhlman; Land-Seagoing Vehicle; Loader, Elevating; Loader, Front End; Loader, Skid Steer; Locomotive; Mechanic/Welder; Metro Chip Harvester with Boom; Mucking Machine; Paver-Asphalt Finishing Machine; Paver-Road Concrete; Paver-Slip Form (C.M.I. or similar); Place Crete Machine with Boom; Post Driver (Carrier mounted); Power Driven Hydraulic Pump & Jack (When used in Slip Form or Lift Slab Construction); Pump Crete Machine; Regulator-Ballast; Hydraulic Power Unit not attached to Rig for Pile Drillings; Rigs-Drilling; Roto Mill or similar Full Lane (8' Wide & Over); Roto Mill or similar type (Under 8'); Shovel; Slip Form Curb Machine; Speedwing; Spikemaster; Stonecrusher; Tie Puller & Loader; Tie Tamper; Tractor-Double Boom; Tractor with Attachments; Truck-Boom; Truck-Tire; Trench Machine; Tunnel Machine (Mark 21 Java or similar); & Whirley (or similar type)

GROUP 3 - Asphalt Plant; Bending Machine (Pipeline or similar type); Boring machine, Motor Driven; Chip Harvester without Boom; Cleaning Machine, Pipeline Type; Coating Machine, Pipeline Type; Compactor; Concrete Belt Placer; Concrete Finisher; Concrete Planer or Asphalt; Concrete Spreader; Elevator; Fork Lift (Home building only); Fork lift & Lulls; Fork Lift Walk Behind (Hoisting over 1 buck high); Form Line Machine; Grease Truck operator; Grout Pump; Gunnite Machine; Horizontal Directional Drill Locator; Single Drum Hoist with or without Tower; Huck Bolting Machine; Hydraulic Scaffold (Hoisting building materials); Paving Breaker (Self-propelled or Ridden); Pipe Dream; Pot Fireperson (Power Agitated); Refrigeration Plant; Road Widener; Roller; Sasgen Derrick; Seeding Machine; Soil Stabilizer (Pump type); Spray Cure Machine, Self-Propelled; Straw Blower Machine; Sub-Grader; Tube Finisher or Broom C.M.I. or similar type; & Tugger Hoist

GROUP 4 - Air Curtain Destructor & Similar Type; Batch Plant-Job Related; Boiler Operator; Compressor; Conveyor; Curb Builder, self-propelled; Drill Wagon; Generator Set; Generator-Steam; Heater-Portable Power; Hydraulic Manipulator Crane; Jack-Hydraulic Power driven; Jack-Hydraulic (Railroad); Ladavator; Minor Machine Operator; Mixer-Concrete; Mulching Machine; Pin Puller;

Power Broom; Pulverizer; Pump; Road Finishing Machine (Pull Type); Saw-Concrete-Self-Propelled (Highway Work); Signal Person; Spray Cure Machine-Motor Powered; Stump Cutter; Tractor; Trencher Form; Water Blaster; Steam Jenny; Syphon; Vibrator-Gasoline; & Welding Machine

GROUP 5 - Brakeperson; Fireperson; & Oiler

-----  
 IRON0017-002 05/01/2012

ASHTABULA (North of Route 6, starting at the Geauga County Line, proceeding east to State Route 45), CUYAHOGA, ERIE (Eastern 2/3), GEAUGA, HURON (East of a line drawn from the north border through Monroeville & Willard), LAKE, LORAIN, MEDINA (North of Old Rte. #224), PORTAGE (West of a line from Middlefield to Shalersville to Deerfield), and SUMMIT (North of Old Rte. #224, including city limits of Barberton) COUNTIES

	Rates	Fringes
IRONWORKER		
Ornamental, Reinforcing, & Structural.....	\$ 30.40	18.68

-----  
 IRON0017-010 05/01/2012

ASHTABULA (Eastern part from Lake Erie on the north to route #322 on the south to include Conneaut, Kingsville, Sheffield, Denmark, Dorset, Cherry Valley, Wayne, Monroe, Pierpont, Richmond, Andover & Williamsfield Townships)

	Rates	Fringes
IRONWORKER		
Structural, including metal building erection & Reinforcing.....	\$ 30.40	18.68

-----  
 IRON0044-002 06/01/2012

CLINTON (South of a line drawn from Blanchester to Lynchburg), HAMILTON, HIGHLAND (Excluding eastern one-fifth & portion of county inside lines drawn from Marshall to Lynchburg from the northern county line through E. Monroe to Marshall) & WARREN (South of a line drawn from Blanchester through Morrow to the west county line)

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 22.50	18.10
Ornamental; Structural.....	\$ 24.80	18.10

-----  
 \* IRON0055-003 07/01/2012

CRAWFORD (Area Between lines drawn from where Hwy #598 & #30 meet through N. Liberty to the northern border & from said Hwy junction point due west to the border), DEFIANCE (S. of a line drawn from where Rte. #66 meets the northern line through Independence to the eastern county border), ERIE (Western 1/3), FULTON, HANCOCK, HARDIN (North of a line drawn from Maysville to a point 4 miles south of the northern line on the eastern line), HENRY, HURON (West of a line drawn from the northern border through Monroeville & Willard), LUCAS, OTTAWA, PUTNAM (East of a line drawn from the northern border down through Miller City to where #696 meets the southern border), SANDUSKY, SENECA, WILLIAMS (East of a line drawn from Pioneer through Stryker to the southern border), WOOD & WYANDOT (North of Rte. #30)

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 19.40	17.92
Flat Road Mesh.....	\$ 20.75	18.00
Tunnels & Caissons Under Pressure.....	\$ 28.50	18.00
All Other Work.....	\$ 28.32	18.95

-----  
IRON0147-002 06/01/2012

ALLEN (Northern half), DEFIANCE (Northern part, excluding south of a line drawn from where Rte. #66 meets the northern line through Independence to the eastern county border), MERCER (Northern half), PAULDING, PUTNAM (Western part, excluding east of a line drawn from the northern border down through Miller City to where #696 meets the southern border), VAN WERT, and WILLIAMS (Western part, excluding east of a line drawn from Pioneer through Stryker to the southern border) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 24.64	18.32

-----  
IRON0172-002 06/01/2011

CHAMPAIGN (Eastern one-third), CLARK (Eastern one-fourth), COSHOCTON (West of a line beginning at the northwestern county line going through Walhonding & Tunnel Hill to the southern county line), CRAWFORD (South of Rte. #30), DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, HARDIN (Excluding a line drawn from Roundhead to Maysville), HIGHLAND (Eastern one-fifth), HOCKING, JACKSON (Northern half), KNOX, LICKING, LOGAN (Eastern one-third), MADISON, MARION, MORROW, MUSKINGUM (West of a line starting at Adams Mill going to Adamsville & going from Adamsville through Blue Rock to the southern border), PERRY, PICKAWAY, PIKE (Northern half), ROSS, UNION, VINTON and WYANDOT (South of Rte. #30) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 26.52	17.08

-----  
 IRON0207-004 06/01/2012

ASHTABULA (Southern part starting at the Geauga County line),  
 COLUMBIANA (E. of a line from Damascus to Highlandtown),  
 MAHONING (N. of Old Route #224), PORTAGE (E. of a line from  
 Middlefield to Shalersville to Deerfield) & TRUMBULL

	Rates	Fringes
IRONWORKER		
Layout; Sheeter.....	\$ 28.06	19.96
Ornamental; Reinforcing;		
Structural.....	\$ 27.06	19.96

-----  
 IRON0290-002 06/01/2012

ALLEN (Southern half), AUGLAIZE, BUTLER (North of a line drawn  
 from east to the west county line going through Oxford,  
 Darrtown & Woodsdale), CHAMPAIGN (Excluding east of a line  
 drawn from Catawla to the point where #68 intersects the  
 northern county line), CLARK (Western two-thirds), CLINTON  
 (Excluding south of a line drawn from Blanchester to  
 Lynchburg), DARKE, GREENE, HIGHLAND (Inside lines drawn from  
 Marshall to Lynchburg & from the northern county line through  
 East Monroe to Marshall), LOGAN (West of a line drawn from  
 West Liberty to where the northern county line meets the  
 western county line of Hardin), MERCER (Southern half), MIAMI,  
 MONTGOMERY, PREBLE, SHELBY & WARREN (Excluding south of a line  
 drawn from Blanchester through Morrow to the western county  
 line) COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 26.23	18.15

-----  
 IRON0372-002 01/01/2012

ADAMS (Western Part), BROWN, BUTLER (Southern Part), CLERMONT,  
 CLINTON (South of a line drawn from Blanchester to Lynchburg),  
 HAMILTON, HIGHLAND (Excluding eastern one-fifth & portion of  
 county inside lines drawn from Marshall to Lynchburg from the  
 northern county line through E. Monroe to Marshall) and WARREN  
 (South of a line drawn from Blanchester through Morrow to the  
 west county line) COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING		
Beyond 30-mile radius of		

Hamilton County Courthouse..\$ 26.75	17.55
Up to & including 30-mile radius of Hamilton County Courthouse.....\$ 26.50	17.55

-----  
IRON0549-003 12/01/2011

BELMONT, GUERNSEY, HARRISON, JEFFERSON, MONROE & MUSKINGUM  
(Excluding portion west of a line starting at Adams Mill going  
to Adamsville and going from Adamsville through Blue Rock to  
the south border)

	Rates	Fringes
IRONWORKER.....	\$ 29.35	16.04

-----  
IRON0550-004 05/01/2012

ASHLAND, CARROLL, COLUMBIANA (W. of a line from Damascus to  
Highlandtown), COSHOCTON (E. of a line beginning at NW Co. line  
going through Walhonding & Tunnel Hill to the South Co. line),  
HOLMES, HURON (S. of Old Rte. #224), MAHONING (S. of Old Rte.  
#224), MEDINA (S. of Old Rte. #224), PORTAGE (S. of Old Rte.  
#224), RICHLAND, STARK, SUMMIT (S. of Old Rte. #224, Excluding  
city limits of Barberton), TUSCARAWAS, & WAYNE

	Rates	Fringes
Ironworkers:Structural, Ornamental and Reinforcing.....	\$ 24.92	16.97

-----  
IRON0769-004 06/01/2012

ADAMS (Eastern Half), GALLIA, JACKSON (Southern Half), LAWRENCE  
& SCIOTO

	Rates	Fringes
IRONWORKER		
ZONE 1.....	\$ 30.52	20.08
ZONE 2.....	\$ 30.92	20.08
ZONE 3.....	\$ 32.52	20.08

ZONE 1 - Up to 10 mile radius of Union Hall, Ashland, Ky.,  
1643 Greenup Ave.

ZONE 2 - 10 to 50 mile radius of Union Hall, Ashland, Ky.,  
1643 Greenup Ave.

ZONE 3 - 50 mile radius & over of Union Hall, Ashland, Ky.,  
1643 Greenup Ave.

-----  
IRON0787-003 06/01/2012

ATHENS, MEIGS, MORGAN, NOBLE, and WASHINGTON COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 31.07	17.65

---

LABO0265-008 05/01/2011

	Rates	Fringes
LABORER		
ASHTABULA, ERIE, HURON, LORAIN, LUCAS, MAHONING, MEDINA, OTTAWA, PORTAGE, SANDUSKY, STARK, SUMMIT, TRUMBULL & WOOD COUNTIES		
GROUP 1.....	\$ 26.25	8.75
GROUP 2.....	\$ 26.42	8.75
GROUP 3.....	\$ 26.75	8.75
GROUP 4.....	\$ 27.20	8.75
CUYAHOGA AND GEAUGA COUNTIES ONLY: SEWAGE PLANTS, WASTE PLANTS, WATER TREATMENT FACILITIES, PUMPING STATIONS, & ETHANOL PLANTS		
CONSTRUCTION.....	\$ 28.86	8.75
CUYAHOGA, GEAUGA & LAKE COUNTIES		
GROUP 1.....	\$ 27.48	8.75
GROUP 2.....	\$ 27.65	8.75
GROUP 3.....	\$ 27.98	8.75
GROUP 4.....	\$ 28.43	8.75
REMAINING COUNTIES OF OHIO		
GROUP 1.....	\$ 25.82	8.75
GROUP 2.....	\$ 25.99	8.75
GROUP 3.....	\$ 26.32	8.75
GROUP 4.....	\$ 26.77	8.75

LABORER CLASSIFICATIONS

GROUP 1 - Asphalt Laborer; Carpenter Tender; Concrete Curing Applicator; Dump Man (Batch Truck); Guardrail and Fence Installer; Joint Setter; Laborer (Construction); Landscape Laborer; Highway Lighting Worker; Signalization Worker; Mesh Handlers & Placer; Right-of-way Laborer; Riprap Laborer & Grouter; Scaffold Erector; Seal Coating; Surface Treatment or Road Mix Laborer; Sign Installer; Slurry Seal; Utility Man; Bridge Man; Handyman; Waterproofing Laborer; Flagperson; Hazardous Waste (level D); Diver Tender; Zone Person & Traffic Control

GROUP 2 - Asphalt Raker; Concrete Puddler; Kettle Man (Pipeline); Machine Driven Tools (Gas, Electric, Air); Mason Tender; Brick Paver; Mortar Mixer; Power Buggy or Power Wheelbarrow; Sheeting & Shoring Man; Surface Grinder Man; Plastic Fusing Machine Operator; Pug Mill Operator; &



Vacuum Devices (wet or dry); Rodding Machine Operator; Diver; Screwman or Paver; Screed Person; Water Blast, Hand Held Wand; Pumps 4" & Under (Gas, Air or Electric) & Hazardous Waste (level C); Air Track and Wagon Drill; Bottom Person; Cofferdam (below 25 ft. deep); Concrete Saw Person; Cutting with Burning Torch; Form Setter; Hand Spiker (Railroad); Pipelayer; Tunnel Laborer (without air) & Caisson; Underground Person (working in Sewer and Waterline, Cleaning, Repairing & Reconditioning); Sandblaster Nozzle Person; & Hazardous Waste (level B)

GROUP 3 - Blaster; Mucker; Powder Person; Top Lander; Wrencher (Mechanical Joints & Utility Pipeline); Yarner; Hazardous Waste (level A); Concrete Specialist; Concrete Crew in Tunnels (With Air-pressurized - \$1.00 premium); Curb Setter & Cutter; Grade Checker; Utility Pipeline Tapper; Waterline; and Caulker

GROUP 4 - Miner (With Air-pressurized - \$1.00 premium); & Gunite Nozzle Person

TUNNEL LABORER WITH AIR-PRESSURIZED ADD \$1.00 TO BASE RATE

SIGNAL PERSON WILL RECEIVE THE RATE EQUAL TO THE RATE PAID THE LABORER CLASSIFICATION FOR WHICH HE OR SHE IS SIGNALING.

-----  
 PAIN0006-002 05/01/2012

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN, PORTAGE (N. of the East-West Turnpike) & SUMMIT (N. of the East-West Turnpike)

	Rates	Fringes
PAINTER		
COMMERCIAL NEW WORK; REMODELING; & RENOVATIONS		
GROUP 1.....	\$ 26.79	11.74
GROUP 2.....	\$ 27.19	11.74
GROUP 3.....	\$ 27.49	11.74
GROUP 4.....	\$ 28.49	11.74
COMMERCIAL REPAINT		
GROUP 1.....	\$ 25.29	11.74
GROUP 2.....	\$ 25.69	11.74
GROUP 3.....	\$ 25.99	11.74

PAINTER CLASSIFICATIONS - COMMERCIAL NEW WORK; REMODELING; & RENOVATIONS

GROUP 1 - Brush; & Roller

GROUP 2 - Sandblasting & Buffing

GROUP 3 - Spray Painting; Closed Steel Above 55 feet; Bridges & Open Structural Steel; Tanks - Water Towers; Bridge Painters; Bridge Riggers; Containment Builders

GROUP 4 - Bridge Blaster

PAINTER CLASSIFICATIONS - COMMERCIAL REPAINT

GROUP 1 - Brush; & Roller

GROUP 2 - Sandblasting & Buffing

GROUP 3 - Spray Painting

-----  
PAIN0007-002 12/01/2011

FULTON, HENRY, LUCAS, OTTAWA (Excluding Allen, Bay, Bono, Catawba Island, Clay Center, Curtice, Danbury, Eagle Beach, Elliston, Elmore, Erie, Fishback, Gem Beach & Genova) & WOOD

	Rates	Fringes
PAINTER		
NEW COMMERCIAL WORK		
GROUP 1.....	\$ 22.97	14.46
GROUP 2.....	\$ 23.22	14.46
GROUP 3.....	\$ 23.47	14.46
GROUP 4.....	\$ 23.57	14.46
GROUP 5.....	\$ 23.67	14.46
GROUP 6.....	\$ 23.72	14.46
GROUP 7.....	\$ 23.97	14.46
GROUP 8.....	\$ 23.22	14.46
GROUP 9.....	\$ 24.81	13.22

REPAINT IS 90% OF JR

PAINTER CLASSIFICATIONS

GROUP 1 - Brush; Spray & Sandblasting Pot Tender

GROUP 2 - Refineries & Refinery Tanks; Surfaces 30 ft. or over where material is applied to or labor performed on above ground level (exterior), floor level (interior)

GROUP 3 - Swing Stage & Chair

GROUP 4 - Lead Abatement

GROUP 5 - All Methods of Spray

GROUP 6 - Solvent-Based Catalized Epoxy Materials of 2 or More Component Materials, to include Solvent-Based Conversion Varnish (excluding water based)

GROUP 7 - Spray Solvent Based Material; Sand & Abrasive Blasting

GROUP 8 - Towers; Tanks; Bridges; Stacks Over 30 Feet

GROUP 9 - Epoxy Spray (excluding water based)

-----  
PAIN0012-008 05/01/2012

BUTLER COUNTY

	Rates	Fringes
PAINTER		
GROUP 1.....	\$ 20.49	8.33
GROUP 2.....	\$ 23.10	8.33
GROUP 3.....	\$ 23.60	8.33
GROUP 4.....	\$ 23.85	8.33
GROUP 5.....	\$ 24.10	8.33

PAINTER CLASSIFICATIONS

GROUP 1: Bridge Equipment Tender; Bridge/Containment Builder

GROUP 2: Brush & Roller

GROUP 3: Spray

GROUP 4: Sandblasting; & Waterblasting

GROUP 5: Elevated Tanks; Steeplejack Work; Bridge; & Lead  
Abatement

-----  
PAIN0012-010 05/01/2012

BROWN, CLERMONT, CLINTON, HAMILTON & WARREN

	Rates	Fringes
PAINTER		
HEAVY & HIGHWAY BRIDGES-		
GUARDRAILS-LIGHTPOLES-		
STRIPING		
Bridge Equipment Tender and Containment Builder....	\$ 20.49	8.33
Bridges when highest point of clearance is 60 feet or more; & Lead Abatement Projects.....	\$ 24.10	8.33
Brush & Roller.....	\$ 23.10	8.33
Sandblasting & Hopper Tender; Water Blasting.....	\$ 23.85	8.33
Spray.....	\$ 23.60	8.33

-----  
PAIN0012-014 05/01/2011

DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, MADISON, PICKAWAY, ROSS  
& UNION

	Rates	Fringes
PAINTER		
Bridges.....	\$ 33.35	9.42
Brush; Roller.....	\$ 23.87	9.42
Sandblasting; Steamcleaning; Waterblasting (3500 PSI or Over)& Hazardous Work.....	\$ 24.57	9.42
Spray.....	\$ 24.37	9.42
Stacks; Tanks; & Towers.....	\$ 27.38	9.42
Structural Steel & Swing Stage.....	\$ 24.17	9.42

-----  
PAIN0093-001 12/01/2011

ATHENS, GUERNSEY, HOCKING, MONROE, MORGAN, NOBLE and  
WASHINGTON COUNTIES

	Rates	Fringes
PAINTER		
Bridges; Locks; Dams; Tension Towers; & Energized Substations.....	\$ 28.33	14.01
Power Generating Facilities.....	\$ 25.18	14.01

-----  
PAIN0249-002 05/01/2011

CLARK, DARKE, GREENE, MIAMI, MONTGOMERY & PREBLE

	Rates	Fringes
PAINTER		
GROUP 1 - Brush & Roller....	\$ 22.29	8.95
GROUP 2 - Swing, Scaffold Bridges; Structural Steel; Open Acid Tank; High Tension Electrical Equipment; & Hot Pipes.....	\$ 22.70	8.95
GROUP 3 - Spray; Sandblast; Steamclean; Lead Abatement.....	\$ 23.04	8.95
GROUP 4 - Steeplejack Work..	\$ 23.24	8.95
GROUP 5 - Coal Tar.....	\$ 23.79	8.95
GROUP 6 - Bridge Equipment Tender & or Containment Builder.....	\$ 25.88	8.95
GROUP 7 - Tanks, Stacks & Towers.....	\$ 26.28	8.95
GROUP 8 - Bridge Blaster, Rigger.....	\$ 32.25	8.95

-----  
PAIN0356-002 09/01/2009

KNOX, LICKING, MUSKINGUM, and PERRY

	Rates	Fringes
PAINTER		
Bridge Equipment Tenders and Containment Builders....	\$ 27.93	7.25
Bridges; Blasters; and Riggers.....	\$ 34.60	7.25
Brush and Roller.....	\$ 20.93	7.25
Sandblasting; Steam Cleaning; Waterblasting; and Hazardous Work.....	\$ 25.82	7.25
Spray.....	\$ 21.40	7.25
Structural Steel and Swing Stage.....	\$ 25.42	7.25
Tanks; Stacks; and Towers...\$	28.63	7.25

---

PAIN0438-002 12/01/2011

BELMONT, HARRISON and JEFFERSON COUNTIES

	Rates	Fringes
PAINTER		
Bridges, Locks, Dams, Tension Towers & Energized Substations.....	\$ 28.73	13.55
Power Generating Facilities.\$	25.58	13.55

---

PAIN0476-001 06/01/2011

COLUMBIANA, MAHONING, and TRUMBULL COUNTIES

	Rates	Fringes
PAINTER		
GROUP 1.....	\$ 23.29	10.11
GROUP 2.....	\$ 23.49	10.11
GROUP 3.....	\$ 23.50	10.11
GROUP 4.....	\$ 23.79	10.11
GROUP 5.....	\$ 23.94	10.11
GROUP 6.....	\$ 24.19	10.11
GROUP 7.....	\$ 24.37	10.11

PAINTER CLASSIFICATIONS:

GROUP 1: Painters, Brush & Roller

GROUP 2: Bridges

GROUP 3: Structural Steel

GROUP 4: Spray, Except Bar Joist/Deck

GROUP 5: Epoxy/Mastic; Spray- Bar Joist/Deck; Working Above  
50 Feet; and Swingstages

GROUP 6: Tanks; Sandblasting

GROUP 7: Towers; Stacks

-----  
PAIN0555-002 06/01/2011

ADAMS, HIGHLAND, JACKSON, PIKE & SCIOTO

	Rates	Fringes
PAINTER		
GROUP 1.....	\$ 26.39	13.47
GROUP 2.....	\$ 27.62	13.47
GROUP 3.....	\$ 28.84	13.47
GROUP 4.....	\$ 31.24	13.47

PAINTER CLASSIFICATIONS

GROUP 1 - Containment Builder

GROUP 2 - Brush; Roller; Power Tools, Under 40 feet

GROUP 3 - Sand Blasting; Spray; Steam Cleaning; Pressure Washing; Epoxy & Two Component Materials; Lead Abatement; Hazardous Waste; Toxic Materials; Bulk & Storage Tanks of 25,000 Gallon Capacity or More; Elevated Tanks

GROUP 4 - Stacks; Bridges

-----  
PAIN0603-002 06/01/2011

CARROLL, COSHOCTON, HOLMES, STARK, TUSCARAWAS & WAYNE

	Rates	Fringes
PAINTER		
Bridges; Towers, Poles & Stacks; Sandblasting Steel; Structural Steel & Metalizing.....	\$ 20.71	10.55
Brush & Roller.....	\$ 20.00	10.55
Spray; Tank Interior & Exterior.....	\$ 20.53	10.55

-----  
PAIN0639-001 05/01/2011

	Rates	Fringes
Sign Painter & Erector.....	\$ 20.61	3.50+a+b+c

FOOTNOTES: a. 7 Paid Holidays: New Year's Day; Memorial Day; July 4th; Labor Day; Thanksgiving Day; Christmas Day & 1 Floating Day  
b. Vacation Pay: After 1 year's service - 5 days' paid vacation; After 2, but less than 10 years' service - 10 days' paid vacation; After 10, but less than 20 years' service - 15 days' paid vacation; After 20 years' service -

20 days' paid vacation  
 c. Funeral leave up to 3 days maximum paid leave for death of  
 mother, father, brother, sister, spouse, child,  
 mother-in-law, father-in-law, grandparent and inlaw  
 provided employee attends funeral

---

PAIN0788-002 06/01/2011

ASHLAND, CRAWFORD, ERIE, HANCOCK, HURON, MARION, MORROW, OTTAWA  
 (Allen, Bay, Bono, Catawba Island, Clay Center, Curtice,  
 Danbury, Eagle Beach, Elliston, Elmore, Erie, Fishback, Gem  
 Beach & Genoa), RICHLAND, SANDUSKY, SENECA & WYANDOT

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 22.25	10.56
Structural Steel.....	\$ 23.85	10.56

WINTER REPAINT: Between December 1 to March 31 - 90%JR

\$.50 PER HOUR SHALL BE ADDED TO THE RATE OF PAY FOR THE  
 CLASSIFICATION OF WORK:

While working swingstage, boatswain chair, needle beam and  
 horizontal cable. While operating sprayguns, sandblasting,  
 cobblasting and high pressure waterblasting (4000psi).

\$1.00 PER HOUR SHALL BE ADDED TO THE RATE OF PAY FOR THE  
 CLASSIFICATION OF WORK:

For the application of catalized epoxy, including latex epoxy  
 that is deemed hazardous, lead abatement, or for work or  
 material where special precautions beyond normal work  
 duties must be taken. For working on stacks, tanks, and  
 towers over 40 feet in height.

---

PAIN0813-005 12/01/2008

GALLIA, LAWRENCE, MEIGS & VINTON

	Rates	Fringes
PAINTER		
Base Rate.....	\$ 24.83	10.00
Bridges, Locks, Dams & Tension Towers.....	\$ 27.83	10.00

---

PAIN0841-001 06/01/2011

MEDINA, PORTAGE (South of and including Ohio Turnpike), and  
 SUMMIT (South of and including Ohio Turnpike) COUNTIES

Rates	Fringes
-------	---------

Painters:

GROUP 1.....	\$ 23.55	11.13
GROUP 2.....	\$ 24.20	11.13
GROUP 3.....	\$ 24.30	11.13
GROUP 4.....	\$ 24.40	11.13
GROUP 5.....	\$ 24.80	11.13
GROUP 6.....	\$ 38.20	11.13
GROUP 7.....	\$ 24.80	11.13

PAINTER CLASSIFICATIONS:

GROUP 1 - Brush, Roller & Paperhanger

GROUP 2 - Epoxy Application

GROUP 3 - Swing Scaffold, Bosum Chair, & Window Jack

GROUP 4 - Spray Gun Operator of Any & All Coatings

GROUP 5 - Sandblast, Painting of Standpipes, etc. from Scaffolds, Bridge Work and/or Open Structural Steel, Standpipes and/or Water Towers

GROUP 6 - Public & Commerce Transportation, Steel or Galvanized, Bridges, Tunnels & Related Support Items (concrete)

GROUP 7 - Synthetic Exterior, Drywall Finisher and/or Taper, Drywall Finisher and Follow-up Man Using Automatic Tools

---

PAIN1020-002 04/01/2012

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, and WILLIAMS COUNTIES

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 22.70	10.93
Drywall Finishing & Taping..	\$ 21.70	10.93
Lead Abatement.....	\$ 24.45	10.93
Spray, Sandblasting Pressure Cleaning, & Refinery.....	\$ 23.45	10.93
Swing Stage, Chair, Spiders, & Cherry Pickers...	\$ 23.45	10.93
Wallcoverings.....	\$ 20.30	10.93

All surfaces 40 ft. or over where material is applied to or labor performed on, above ground level (exterior), floor level (interior) - \$.50 premium

Applying Coal Tar Products - \$1.00 premium

---

PLUM0042-002 07/01/2012



ASHLAND, CRAWFORD, ERIE, HURON, KNOX, LORAIN, MORROW, RICHLAND  
& WYANDOT

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 30.00	17.50

-----  
PLUM0050-002 07/02/2012

DEFIANCE, FULTON, HANCOCK, HENRY, LUCAS, OTTAWA, PAULDING,  
PUTNAM, SANDUSKY, SENECA, WILLIAMS & WOOD

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 35.50	22.59

-----  
PLUM0055-003 05/01/2012

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, MEDINA (N. of Rte. #18 &  
Smith Road) & SUMMIT (N. of Rte. #303, including the corporate  
limits of the city of Hudson)

	Rates	Fringes
PLUMBER.....	\$ 33.60	19.92

-----  
PLUM0083-001 07/01/2011

BELMONT & MONROE (North of Rte. #78)

	Rates	Fringes
Plumber and Steamfitter.....	\$ 31.77	18.18

-----  
PLUM0094-002 05/01/2012

CARROLL (Northen Half), STARK, and WAYNE COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 31.13	15.74

-----  
PLUM0120-002 05/01/2012

ASHTABULA, CUYAHOGA, GEAUGA, LAKE, LORAIN (the C.E.I. Power  
House in Avon Lake), MEDINA (N. of Rte. #18) & SUMMIT (N. of  
#303)

	Rates	Fringes
PIPEFITTER.....	\$ 34.49	18.78

-----  
PLUM0162-002 06/01/2012

CHAMPAIGN, CLARK, CLINTON, DARKE, FAYETTE, GREENE, MIAMI,  
MONTGOMERY & PREBLE

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 27.95	18.92

-----

PLUM0168-002 06/01/2012

MEIGS, MONROE (South of Rte. #78), MORGAN (South of Rte. #78)  
& WASHINGTON

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 32.93	18.28

-----

PLUM0189-002 06/01/2012

DELAWARE, FAIRFIELD, FRANKLIN, HOCKING, LICKING, MADISON,  
MARION, PERRY, PICKAWAY, ROSS & UNION

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 33.38	19.76

-----

PLUM0219-002 06/01/2011

MEDINA (Rte. #18 from eastern edge of Medina Co., west to  
eastern corporate limits of the city of Medina, & on the county  
road from the west corporate limits of Medina running due west  
to and through community of Risley to the western edge of  
Medina County - All territory south of this line), PORTAGE, and  
SUMMIT (S. of Rte. #303) COUNTIES

	Rates	Fringes
Plumber and Steamfitter.....	\$ 32.41	20.20

-----

PLUM0392-002 06/01/2012

BROWN, BUTLER, CLERMONT, HAMILTON & WARREN

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 29.30	16.59

-----

PLUM0396-001 06/01/2012

COLUMBIANA (Excluding Washington & Yellow Creek Townships & Liverpool Twp. - Secs. 35 & 36 - West of County Road #427), MAHONING and TRUMBULL COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 29.21	16.80

-----  
 PLUM0495-002 06/01/2012

CARROLL (Rose, Monroe, Union, Lee, Orange, Perry & Loudon Townships), COLUMBIANA (Washington & Yellow Creek Townships & Liverpool Township, Secs. 35 & 36, West of County Rd. #427), COSHOCTON, GUERNSEY, HARRISON, HOLMES, JEFFERSON, MORGAN (South to State Rte. #78 & from McConnelville west on State Rte. #37 to the Perry County line), MUSKINGUM, NOBLE, and TUSCARAWAS COUNTIES

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 36.73	18.96

-----  
 PLUM0577-002 06/01/2012

ADAMS, ATHENS, GALLIA, HIGHLAND, JACKSON, LAWRENCE, PIKE, SCIOTO & VINTON

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 26.00	20.48

-----  
 PLUM0776-002 01/01/2012

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY and VAN WERT COUNTIES

	Rates	Fringes
Plumber, Pipefitter, Steamfitter.....	\$ 29.66	19.39

-----  
 TEAM0377-003 05/01/2012

STATEWIDE, EXCEPT CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 23.38	13.18
GROUP 2.....	\$ 23.80	13.18

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Asphalt Distributor; Batch; 4- Wheel Service; 4-Wheel Dump; Oil Distributor & Tandem

GROUP 2 - Tractor-Trailer Combination: Fuel; Pole Trailer; Ready Mix; Semi-Tractor; & Asphalt Oil Spraybar Man When Operated From Cab; 5 Axles & Over; Belly Dump; End Dump; Articulated Dump; Heavy Duty Equipment; Low Boy; & Truck Mechanic

-----  
TEAM0436-002 05/01/2012

CUYAHOGA, GEAUGA & LAKE

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 25.20	13.05
GROUP 2.....	\$ 25.70	13.05

GROUP 1: Straight & Dump, Straight Fuel

GROUP 2: Semi Fuel, Semi Tractor, Euclids, Darts, Tank, Asphalt Spreaders, Low Boys, Carry-All, Tourna-Rockers, Hi-Lifts, Extra Long Trailers, Semi-Pole Trailers, Double Hook-Up Tractor Trailers including Team Track & Railroad Siding, Semi-Tractor & Tri-Axle Trailer, Tandem Tractor & Tandem Trailer, Tag Along Trailer, Expandable Trailer or Towing Requiring Road Permits, Ready-Mix (Agitator or Non-Agitator), Bulk Concrete Driver, Dry Batch Truck, Articulated End Dump

-----  
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====  
Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----  
The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

#### Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

---

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

## Detail Specifications

### Table of Contents

D-1	SCOPE OF WORK.....	1
D-2	GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS, AND PLANS .....	2
D-3	CONSTRUCTION AND MATERIAL SPECIFICATIONS.....	2
D-4	SEASONAL SUSPENSION OF WORK .....	3
D-5	CONTRACTOR HOURS .....	3
D-6	WORK HOURS-NOISE CONTROL .....	3
D-7	ELEVATIONS AND DIMENSION .....	4
D-8	NEW MATERIALS SPECIFIED .....	4
D-9	RESTORING ROADWAYS, DRIVEWAYS, SIDEWALKS, CURBING, AND TREELAWNS .....	4
D-10	INCONVENIENCE TO THE PUBLIC .....	4
D-11	WORK PERMITS .....	5
D-12	WATER SUPPLY .....	5
D-13	FORCE ACCOUNT .....	5
D-14	REDUCTION/ELIMINATION OF WORK AND/OR INCREASE IN WORK .....	5
D-15	PAVMENT AND/ OR BASE REMOVED (ITEM 202).....	6
D-16	UNDERCUTTING SUBGRADE AND SUBBASE (ITEM SPECIAL) .....	6
D-17	REMOVAL MISC. TRACK REMOVED (ITEM 202) .....	6
D-18	POLE REMOVED (WOOD OR METAL/CONCRETE (ITEM 202) .....	7
D-19	POLE FOUNDATION AND/OR VAULT REMOVED (ITEM 202) .....	7
D-20	LINEAR GRADING (ITEM 209).....	7
D-21	MATERIAL DISPOSAL (ITEM 203).....	8
D-22	EROSION CONTROL (ITEM 207).....	8
D-23	CONSTRUCTION OF CONCRETE BASE, PAVEMENT, SIDEWALKS, DRIVEWAYS AND CURB (ITEMS 305, 451, 452, 608, 609, SPECIAL).....	9
D-24	CONCRETE DESIGN MIX (ITEM SPECIAL).....	17
D-25	CONCRETE MIX DESIGN FOR CLASS MS CONCRETE (ITEM SPECIAL)...	18
D-26	CONCRETE MIX DESIGN FOR CLASS FS CONCRETE (ITEM SPECIAL).....	19
D-27	ADA CURB RAMP LAYOUT, AS PER PLAN, ITEM 608.....	20
D-28	PORTLAND CEMENT CONCRETE SEALING - ITEM SPECIAL.....	21

D-29	ASPHALT CONCRETE ITEM 301, 446 AND 448.....	24
D-30	BACKFILL MATERIAL (ITEM 603, SPECIAL).....	25
D-31	BACKFILL MATERIAL - FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES (INSIDE OF PAVEMENT AREA) (ITEM 603, SPECIAL).....	25
D-32	PIPE CULVERTS, SEWERS, AND CONNECTIONS (ITEM 603).....	27
D-33	CROSSING AND CONNECTIONS TO EXISTING PIPE AND UTILITIES.....	27
D-34	CATCH BASINS (ITEM 604).....	28
D-35	CLEAN CATCH BASINS AND CONNECTIONS (ITEM 604, SPECIAL).....	28
D-36	PRE-CONSTRUCTION VIDEO TAPING OF RIGHT OF WAY.....	28
D-37	CLEAN AND TELEWISE CONDUIT (SEWER).....	29
D-38	CATCH BASIN RECONSTRUCTED TO GRADE (ITEM 604).....	29
D-39	ADJUSTING STREET CASTINGS (ITEM 604).....	30
D-40	MONUMENT ASSEMBLIES (ITEM 604).....	31
D-41	MONUMENT BOX, ADJUSTED TO GRADE OR REPLACED (ITEM 604).....	32
D-42	4" UNCLASSIFIED PIPE UNDERDRAIN (ITEM 605) .....	32
D-43	UNDERDRAIN, MISC.: EDGEDRAIN (ITEM SPECIAL).....	33
D-44	DRIVEWAY ACCESS (ITEM 614).....	33
D-45	FIELD OFFICE (ITEM 619).....	34
D-46	COMPUTER EQUIPMENT (ITEM 619, SPECIAL).....	35
D-47	CONSTRUCTION LAYOUT STAKES (ITEM 623).....	36
D-48	SIGNAL SUPPORT FOUNDATION, AS PER PLAN (ITEM 632).....	36
D-49	MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATIONS.....	37
D-50	POWER SERVICE (Traffic Control).....	38
D-51	CONDUIT 2", 3" OR 4" (ITEM 625).....	38
D-52	SIGNALIZATION MISC.: FOUNDATION TEST HOLES.....	39
D-53	SIGN LIGHTING MISC.: SIGN LIGHTING CABLE (ITEM 631).....	39
D-54	LIGHTING MISC.: LUMINAIRE LIGHTING CABLE (ITEM 625).....	39
D-55	POWER CABLE MISC.: POWER FOR SIGN LIGHTING (ITEM 632) .....	39
D-56	POWER CABLE MISC.: POWER FOR LUMINAIRE LIGHTING (ITEM 632)	39
D-57	POWER CABLE MISC.: PUSHBUTTON CABLE (ITEM 632) .....	39
D-58	GROUND ROD (ITEM 625).....	40
D-59	TEMPORARY FACILITIES & CONSTRUCTION IN THE PEDESTRIAN ACCESS ROUTE.....	40



<b>D-60</b>	<b>CONTROLLER ACTUATED, 8 PHASE SOLID STATE DIGITAL MICROPROCESSOR (ITEM 633).....</b>	<b>40</b>
<b>D-61</b>	<b>PLASTIC CAUTION TAPE (ITEM 625 SPECIAL).....</b>	<b>47</b>
<b>D-62</b>	<b>REMOVAL OF TRAFFIC SIGNAL INSTALLATION (ITEM 632).....</b>	<b>47</b>
<b>D-63</b>	<b>SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN (ITEM 630) .....</b>	<b>47</b>
<b>D-64</b>	<b>COMBINATION SIGNAL SUPPORT (BY TYPE AND DESIGN) &amp; SIGNALIZATION MISC.: SIGNAL, OVERHEAD SIGN AND LIGHT POLE SUPPORT, AS PER PLAN (ITEM 632) .....</b>	<b>48</b>
<b>D-65</b>	<b>WATER WORK DETAILS .....</b>	<b>50</b>
<b>D-66</b>	<b>SEEDING AND MULCHING (ITEM 659) .....</b>	<b>53</b>
<b>D-67</b>	<b>WATER FOR SEEDING (ITEM 659) .....</b>	<b>53</b>
<b>D-68</b>	<b>COMMERCIAL FERTILIZER (ITEM 659) .....</b>	<b>53</b>
<b>D-69</b>	<b>TREE PRUNING (ITEM 666) .....</b>	<b>54</b>
<b>D-70</b>	<b>TREE REMOVAL .....</b>	<b>55</b>
<b>D-71</b>	<b>ROOT PRUNING .....</b>	<b>55</b>
<b>D-72</b>	<b>MISCELLANEOUS METAL (ITEM SPECIAL) .....</b>	<b>59</b>
<b>D-73</b>	<b>TESTING OF CONSTRUCTION MATERIAL, (ITEM SPECIAL) .....</b>	<b>59</b>
<b>D-74</b>	<b>ASPHALT REJUVENATING AGENT (ITEM SPECIAL) .....</b>	<b>63</b>

## **PART D - DETAIL SPECIFICATIONS**

### **D-1 SCOPE OF WORK**

#### **CUY-West Sixth Street Streetscape, Part 1, PID 89722**

Limits of work: West Lakeside Avenue to West St. Clair Avenue

Work includes:

- Pavement planing and asphalt overlay
- Curb bump-outs and relocation of existing granite curb.
- Renovation and expansion of planting beds around existing trees
- Installation of streetscaping items such as benches and bicycle racks
- Pavement markings
- All other associated work to complete the project.

#### **CUY-Professor Street Intersections, Part 2, PID 90218**

Limits of work: Intersections of Professor Street with West 10<sup>th</sup> Street, Literary Avenue, College Avenue and Jefferson Avenue

Work includes:

- Pavement planing and asphalt overlay within the intersections
- Curb bump-outs
- Decorative crosswalks
- Installation of streetscaping items such as decorative sidewalks
- Realignment of the West 10<sup>th</sup> Street-Professor Street-Fairfield Avenue intersection.
- All other associated work to complete the project

**All quantities listed in contract are approximate.** They were derived from measurements in the field, computer generated areas or are based on engineering judgments. Payments shall be computed from field measurements of the work complete and accepted in place. Any work item not listed in the bid schedule of items shall be considered incidental to the work item it is associated with to complete the project. Omitted items, if any, shall be brought to City's attention before bidding. Contractors are strongly urged to visit the site and verify the work required. Any discrepancies between field conditions and the contract work shall be brought to the City's attention during the pre-bid meeting.

**Contractor shall coordinate** his work with all public and private utilities, including City Traffic Engineering and/or sign shop to coordinate signal operations, pavement markings, and detector loops.

**D-2 GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS AND PLANS**

The provisions of Part B - General Conditions, as amplified or modified by Part C - Supplemental General Conditions, apply to all work performed under these detail specifications, except as otherwise expressly provided herein.

Where there is a conflict, the Detail Specifications (Part D) shall govern over the Supplemental General Conditions (Part C). Between the plans and the specifications, where there is a conflict, the plans shall govern.

Supplemental Detail Specifications (DS) shall govern over Detail Specifications should there be a conflict.

The Detail Specifications (Part D) and Supplemental Detail Specifications (DS) shall govern over the State of Ohio, Department of Transportation (ODOT), Construction and Material Specifications, or other specifications for any other City Division, should there be a conflict between the specifications.

**D-3 CONSTRUCTION AND MATERIAL SPECIFICATIONS**

~~The State of Ohio, Department of Transportation, Construction and Material Specifications dated January 1, 2005, only Part 200, EARTHWORK, through Part 700, MATERIAL DETAILS, inclusive, as may be modified on the Construction Plans or in these Specifications, shall govern this project. All of these modifications are in these specifications or are shown on the plans. No other portion of the ODOT Construction and Material Specifications shall apply.~~

~~Copies of the ODOT Construction and Material Specifications are available, cost involved, from the:~~

Ohio Department of Transportation  
Bureau of Contract Sales  
P.O. Box 899  
Columbus, Ohio 43216-0899  
Telephone: (614) 466-3778, 466-3200

For purposes of this project, the following terms in the applicable State of Ohio Department of Transportation, Construction and Material Specifications shall have the below-listed meanings:

Department: The Department of Public Service of the City of Cleveland.

Director: The Director of the Department of Public Service of the City of Cleveland or his/her authorized designee.

Engineer: The Commissioner of Engineering and Construction, Division of the Engineering & Construction, Department of Public Service of the City of Cleveland or his/her authorized designee.

Laboratory: The private laboratory/testing firm, selected by the City of Cleveland.

State: The City of Cleveland acting through its authorized representatives.

#### **D-4 SEASONAL SUSPENSION OF WORK**

Before the Contractor may suspend work for the winter season, any and all areas disturbed by the Contractor's operation must be left in a safe and passable condition. If it should become necessary to install temporary sidewalk, such sidewalk shall be constructed as per ODOT Item 608 concrete walk. Temporary surface on the street is to be constructed using 12" of Item 304 "Aggregate Base" per ODOT Construction and Material Specification requirements and maintained throughout the winter suspension period as directed the Engineer. All temporary work is to be at the Contractor's expense and is to be removed and replaced with the permanent construction in the spring when the weather conditions permit the resumption of work.

#### **D-5 CONTRACTOR HOURS**

The Project work hours shall be an eight hour day five days a week for a maximum of 40 Hours, unless a different 40 hour work schedule is approved by the City.

**The Contractor shall pay for any overtime, which requires City inspection. Prior to the commencement of construction, the Contractor shall deposit \$1,000.00 with the Division of Accounts to cover the City inspector's overtime costs. Any remaining balance will be returned to the Contractor after the project is completed. No additional compensation shall be given for such expense. If the deposit is exhausted before the end of the project, another deposit of \$1,000.00 will be required before any more overtime work is authorized. The estimated overtime rate for inspection shall the current billing rate established by the City of Cleveland**

#### **D-6 WORK HOURS AND NOISE CONTROL**

The Contractor shall restrict his working hours to those permitted by local ordinances or any other applicable ordinances, laws or regulations except as he may obtain written variances from such ordinances, laws or regulations from the appropriate governing authorities.

The noise level resulting from the construction shall be within the limits specified in OSHA regulations and all local ordinances.

#### **D-7 ELEVATIONS AND DIMENSIONS**

Elevations on the Plans refer to sea level datum. Calculated dimensions shall take precedence over measurements by scale.

Pavement thickness and all underground utility locations are approximate and are subject to actual field verification by the Contractor. The City is not liable for utilities not as shown on the drawings or abandoned lines. The Contractor shall cut out any abandoned lines with all costs incurred shall be included in the Bid Item for that work.

#### **D-8 NEW MATERIAL SPECIFIED**

All materials for the Bid Items specified are to be considered all new material unless clearly and distinctly indicated on the plans or in these specifications as recycled, reset or used. The use of any other material is prohibited.

#### **D-9 RESTORATION OF ROADWAYS, DRIVEWAYS, SIDEWALKS, CURBING AND TREELAWNS**

The Contractor shall properly restore all roadways, driveways, sidewalks, curbing treelawns including the area behind the sidewalk and the Right-of-Way line not designated for removal or repair that have been damaged or disturbed during construction, at no cost to the City.

Generally any damaged slab shall be totally replaced. Partial replacement will be permitted only if adjacent slab is replaced & as directed by the engineers.

#### **D-10 INCONVENIENCE TO THE PUBLIC**

It is intended that the public be put to a minimum of inconvenience due to the construction work. The Contractor must therefore complete the work as rapidly as possible, once it is begun in a particular area. The Engineer will pay particular attention to the scheduling and sequencing of the work.

**D-11 WORK PERMITS**

The Contractor shall obtain all permits and pay all applicable fees to the City of Cleveland and/or respective municipality (ies). The cost of said fees shall be included in the applicable unit prices bid by the Contractor.

**D-12 WATER SUPPLY**

Water will be supplied to the Contractor at the nearest hydrant. The cost of the water supply shall be borne by the Contractor. The Contractor shall obtain the necessary permit from the City of Cleveland Water Department.

The Contractor will be required to provide approved standard tight hose and fittings with which to make connections to hydrants and outlets. No improper, wasteful or undue use of water will be permitted.

**D-13 FORCE ACCOUNTS**

~~The Engineering and Construction Force Account is to be used to cover cost overruns on bid items, the cost (wholly or partially) of change orders (any unbid work item), the cost for any project related (engineering related) materials and supplies, the cost for material tests, consultants, evaluations and inspections, and the cost of other unforeseen, unexpected or unanticipated items, all as authorized in writing by the engineer. Except for quantity overruns, all the above items shall be considered change orders. Change orders shall be numbered, titled (short and descriptive), quantified (if applicable) and priced. The location of cost overruns or underruns shall be recorded by the inspector.~~

~~The dollars related to any Force Account that may be listed in this section are paid directly to the identified party by the City. For cases where this is not true, the line item shall so state.~~

**D-14 REDUCTION/ELIMINATION OF WORK AND/OR INCREASE IN WORK**

The City of Cleveland reserves the right to reduce or eliminate portions of any or all of any items of work. If the project is over budget, work will be eliminated and quantities will be adjusted accordingly. A bid tabulation will be prepared using the reduced quantities and the unit prices submitted by the bidder. This tabulation shall be submitted to the Contractor for his reviews and approval.

**D-15 PAVEMENT AND/ OR BASE REMOVED (ITEM 202)**

This item shall consist of the removal of the existing asphalt wearing course, brick, grout, granite or sandstone block and concrete to the top of the existing cushion/base course. The Limits for removal shall be as indicated on the plans or as directed by the Engineer.

**D-16 ITEM SPECIAL – UNDERCUTTING SUBGRADE AND SUBBASE**

Where soft subgrade is encountered, the unstable material shall be excavated to the depth required by the Engineer, and disposed of. The undercut subgrade shall be replaced in accordance with ODOT Item 204. The area shall be proof-rolled to determine if adequate stabilization was achieved.

Where soft subgrade is due to the failure, neglect or any other fault of the Contractor, the unstable condition shall be corrected as outlined above at no additional expense to the project.

Payment for this item shall include all excavation, aggregate and additional proof-rolling, and shall be paid for at the bid unit price per cubic yard, Item Special – Undercutting Subgrade and Subbase. Any Geotextile fabric, if required by the engineer, shall be paid as separate item.

**D-17 ITEM 202 - REMOVAL MISC.: TRACK REMOVED**

If old tracks are found buried beneath existing pavement, it is required that said tracks be removed as part of this project. The exact location, limits, and type of track are unknown.

If rail tracks are found beneath existing pavement they may be required to be removed as directed by the engineer.

The unit price bid per square yard for this item shall include the removal and disposal of the full depth of track. The limits of payment shall be the width of the railroad tie by the length of the rail removal. Payment will include removal of brick pavers, ties, any angles or other hardware, rails, ballast and the base.

In the areas of complete pavement removal and replacement, the removal of the asphalt wearing course shall also be included in the unit price bid for this item. Any part of the track which is below the proposed subgrade shall be removed and replaced with Item 304, Aggregate Base.

Any additional excavation and/ or embankment required between the bottom of the track base and the proposed subgrade will be paid for under separate item.

The Drawings contain a detail of the most probable type of track, as determined from record drawings.

No additional compensation for minor variation in the existing track features will be made.

**D-18 POLE REMOVED (WOOD OR METAL/CONCRETE), AS PER PLAN (ITEM 202)**

Work performed under these items shall include the removal and disposal of the existing abandoned poles as shown on the Drawings or as directed by the Engineer, in conformance with the applicable portions of Item 202.

All pole foundations encountered shall be removed as a part of the applicable light pole removal item. Removal of the pole foundation shall conform to Item 202, Light Pole Foundation Removed, as per plan.

**D-19 POLE FOUNDATION AND/OR VAULT REMOVED, AS PER PLAN (ITEM 202)**

Work performed under this item shall conform to the applicable provisions of Item 202. Existing pole foundations designated for removal shall be removed to a minimum of 1 foot below the finished subgrade or ground surface and disposed of by the Contractor. The remaining cavity shall be backfilled as required.

Vault shall be completely removed as directed by the Engineer, in conformance with the applicable portions of Item 202, with remaining cavity backfilled as required.

**D-20 LINEAR GRADING (ITEM 203)**

This item of work shall be performed as per ODOT Item 203, Linear Grading except as modified herein:

- 1). The Contractor shall remove all excess material so that the ground elevation is one quarter of one inch (1/4") below the elevation of a theoretical plane projected from the top of the existing sidewalk to the top of the existing curb.
- 2). The Contractor shall remove all excess material so that the ground elevation is one quarter of one inch (1/4") below the elevation of a theoretical plane projected from the top of the existing sidewalk following the natural contour of the existing ground.



- 3). Payment for this item of work shall be per hundred foot (100') station as measured along the centerline that shall include both sides of the street. This curb measurement will be for both the area in between the curb and sidewalk and the area behind the sidewalk.

Payment for all labor, equipment and incidental costs necessary to complete this work, including removal and disposal of materials deemed unfit for reuse by the Engineer and additional or replacement embankment material regardless of the source, shall be included in the contract unit price bid.

#### **D-21 MATERIAL DISPOSAL (ITEM 203)**

The Contractor shall not dump any waste materials on any City property without the written permission of the Department of Public Service, or on other property without the written permission of the owner or lessee thereof, and the Department of Public Service. When such permission is granted, dumping shall be subject to regulations specified by the Department of Public Service.

#### **D-22 EROSION CONTROL (ITEM 207)**

All of the work performed under this contract shall be in compliance with all the pertinent plan specifications and/or details, local regulations, State agencies ( i.e. Ohio Environmental Protection Agency), and Federal regulatory agencies regulating the control of erosion and sediment.

At the Pre-construction meeting, the contractor shall submit their plan for the erosion and sediment control, within the construction limits, for review and acceptance by the City. Construction shall not begin until all sediment and erosion control measures have been installed and approved by the Engineer.

The City's acceptance does not relieve the Contractor from full compliance with erosion and sediment controls required by the above agencies. It is the contractor's responsibility to control any sediment or erosion produced by the Contractors' activities.

Sediment controls shall be installed as a first order of work. Sediment controls shall remain in place until the project is completed and disturbed areas are restored. All devices are to be maintained and kept in good condition. Any additional sediment control devices needed will be placed, at the direction of the Engineer, at no additional cost as noted below.

After construction of the project, all disturbed areas are to be restored as provided in these specifications and/or plans. Upon approval of the Engineer, the Contractor shall remove all sediment control devices and insure that the project site and structures are in reasonably clean condition. If sediment and erosion control devices fail, the contractor

shall clean the site of sediment including all structures and conduits within the project limits, at no additional cost to the City. Those areas outside that are affected by such failure shall also be cleaned at no additional cost to the City.

If no Unit Bid Item is provided in the contract, erosion and sediment control shall be considered incidental to the other Unit Bid Items. If erosion and sediment control Unit Bid Items are provided, payment will be made under those Unit Bid Items.

**D-23 CONSTRUCTION OF CONCRETE BASE, PAVEMENT, SIDEWALKS, DRIVEWAYS AND CURB (ITEMS 305, 451, 452, 608 & 609, SPECIAL)**

**1. WORK INCLUDED**

The Contractor under this section of the specifications shall construct concrete base, pavement, sidewalk, driveway aprons, curb, curb and gutter sections, handicap ramps, and integral radius curb and walk. This includes the restoration of all adjacent surfaces, which are disturbed by this construction and not scheduled to be restored under a separate item of payment.

**2. MATERIALS**

The concrete used shall be the concrete design mix as per D-24 and MS Concrete Mix Design, D-25 or FS Concrete Mix Design, D-26, as appropriate.

**GRADING**

Grading shall include all excavation, fill, and embankment required to permit the construction of the proposed pavement, sidewalk, driveway aprons, and curb to the designated lines and grades.

**3.1 Excavation**

- a) The cost of all excavation for a total depth of the full thickness of the proposed slab shall be included in the price bid for the various items of work including removal and disposal, complete in place. Excavation shall include the removal of all concrete, stone, earth, roots, and other material of every description within the limits of the proposed work.
- b) Except as otherwise ordered, excavation at the elevation of the finished grade of the construction shall extend one (1) foot beyond each edge and then on a slope of one (1) vertical to one and one-half (1 1/2) horizontal and shall be paid for as excavation at the price per cubic yard for such work as it appears on the price sheet of the contract. When so ordered, excavation shall extend to a sufficient

width to permit proper drainage with the cost of excavating beyond the limit stated above paid for as excavation.

- c) The cost of all excavation for a depth in excess of the thickness of the slab shall be paid for as excavation at the lump sum or unit price bid for Item 203 - Excavation.
- d) The Contractor shall use extreme care, by whatever methods and procedures are necessary, in the removal of pavement, sidewalk, driveway aprons, and curb, to ensure that no adjacent slabs beyond those marked for removal by the City Inspector will be disturbed, removed or damaged. Should any pavement, walk, driveway apron or curb be damaged, either in whole or in part, other than that which is marked for removal by the City Inspector, the Contractor shall remove and replace said damaged slabs, in whole, without cost to the City.

### 3.2 Fill or Embankment

- a) Fill or embankment shall be ODOT Item 203-Embankment as per plan notes and meet the following two (2) requirements:
  - It shall be substantially free from vegetable or organic matter and shall contain not more than ten (10) percent of loam or clay.
  - It shall weight not less than ninety (90) pounds per cubic foot, dry compacted weight.

The upper six (6) inches of embankment outside of the edge of the sidewalk, driveway apron or curb shall be topsoil or excavated material approved by the engineer. (No sand)

- b) Fill shall extend at least one and one-half (1 1/2) feet beyond each side of the construction unless otherwise ordered or permitted. Side slopes shall be trimmed to a slop of one (1) vertical to one and one-half (1 1/2) horizontal, except as otherwise ordered by the City.
- c) Fill shall be in place in advance of construction to allow for settlement. The fill material shall be thoroughly compacted by tamping or rolling, or both, so as to produce a solid dense subgrade.
- d) It shall be the Contractor's responsibility to raise all municipally owned utility castings to finished grade of new work. Adjusting these castings to new grade shall constitute a separate item of work and payment.

- e) Non-municipally owned castings are the responsibility of their respective owners to adjust to the proper grade. Adjusting these castings to the new grade shall not be paid for under this contract.

#### 4. CONCRETE

- a) All concrete used shall be concrete design mix as per D-24 (Concrete Design Mix) of these Specifications, D-25 MS Concrete Mix Design or D-26 FS Concrete Mix Design, as specified. All concrete delivered shall be subjected to any or all tests described in the "Testing of Construction Materials" section of these Detail Specifications. All concrete failing any of these tests shall be removed and replaced as many times as required, until it passes all tests performed. The removal and replacement shall be at no cost to the City.
- b) All concrete delivered to the construction site shall be accompanied by dray slips. Dray slips shall contain all of the information required by ASTM C-94, Paragraph #16, Batch Ticket Information. Any concrete truck without a dray slip or with an incomplete dray slip shall be rejected.
- c) Trucks shall conform to AASHTO M 157 - 10.1, 10.2, 11.5, 11.6, 11.7, & 11.8 (18<sup>th</sup> Edition Part 1-1997)
- d) The slump and percent of air entrainment shall conform to the limits shown in section D-24 (Concrete Design Mix) of these specifications.
- e) All concrete shall be discharged from the truck within ninety (90) minutes of the batching time as indicated on the dray slip.
- f) The temperature of the concrete at the time of placement shall be between minimum concrete temperature as per AASHTO M157-1997 section 11.1.1 minimum concrete temperature table as shown below and ninety (90) degrees Fahrenheit as per the American Concrete Institute (ACI) recommendations for hot weather concrete.

<u>Air Temperature</u>	<u>Thin Sections and Uniformed Slabs</u>	<u>Heavy Sections and Mass Concrete</u>
<b><u>Fahrenheit</u></b>	<b><u>Degrees</u></b>	<b><u>Degrees</u></b>
30 to 45 degrees	60	50
0 to 30 degrees	65	55
Below 0 degrees	70	60
<b><u>Centigrade</u></b>		
-1 to 7 degrees	16	10
-18 to -1 degrees	18	13
Below -18 degrees	21	16

- g) Rejected Trucks and Loads - Any truck and its load of concrete rejected for failure to meet all the requirements of paragraph's 4c and 4d as stated above shall have the following condition imposed:

**Any truck rejected from any construction site covered by this section of the specifications shall also be banned from all construction sites covered by this section of the specifications.**

- h) Any concrete which fails to meet all of the requirements of paragraph's 4e, 4f, and 4g as stated above, or the requirements of the job mix, shall not be used on this or any other construction project where the specifications have been prepared by the Division of Engineering & Construction.

## 5. CONSTRUCTION

All of the various types of pavement, sidewalk, driveway aprons, curb or any combination thereof shall be constructed as per these specifications, plans, details and the respective Standard Drawings.

Except as otherwise directed, all concrete for pavement, sidewalk, driveways aprons, curb, handicap ramps and integral radius curb and walk shall be of one (1) course. Sidewalk shall be a minimum of four inches (4") thick. Driveway aprons shall be a minimum of six inches (6") thick for residential, eight inches (8") thick for commercial driveways and 10" for heavy commercial aprons. The minimum thickness for integral concrete radius curb and walk shall be eight inches (8") and as also shown on City of Cleveland Standard Drawing # 244ME.

The thickness of the pavement, sidewalk and/or driveway aprons shall be increased as indicated on the plans or as directed by the Engineer. Sidewalk through the driveway and driveway aprons of the same thickness may be combined into one item of work and payment.

### 5.1 Forms

- a) Forms for pavement, sidewalk, integral concrete radius curb and walk, and driveway apron construction shall be made of steel.
- b) Where standard lengths of steel forms cannot properly be used, a wooden form will be permitted for closure. Said wooden form shall not be less than one and five-eighths inches (1 5/8") in thickness. The minimum depth shall be as shown below:

Sidewalk	4", 6" or 8"
Driveway Apron	6" or 8"
Integral Concrete Radius	
Curb and Walk	8"
Base, Plain and Reinforced Pavement	9", 10" or 12"

5.2 Saw Cutting and Concrete Removal

When existing concrete pavement, drive aprons, curb or sidewalk necessitates cutting into the existing slab for removal, the cutting shall be accomplished by using a suitable concrete power saw which will produce a straight and smooth finish along the sawed edge. The depth of cutting or scoring shall be such that no damage will result to the remaining slab after removal of the designated section. The location of all saw cuts shall be determined by the Engineer. Any damage to the slab not designated for removal shall be replaced at no expense to the City.

5.3 Affidavit

An affidavit shall be secured from each company supplying the concrete stating that only the concrete design mix as per D-24, D-25 or D-26 shall be supplied. This affidavit shall also state that the material supplier has read the specifications relative to the concrete being supplied. It shall be signed by an officer of the supplying company and **notarized**.

5.4 Placing Concrete

- a) No concrete shall be poured until the inspector has approved the preparation of the foundation bed.
- b) No concrete shall be poured unless the inspector is on the jobsite observing the work.
- c) If any concrete is poured without the prior approval of the preparation of the foundation bed, with observation of the work by

the inspector, the concrete poured shall not be accepted by the City for payment.

- d) Foundation beds shall be sprinkled immediately prior to depositing of concrete during hot or dry weather conditions.
- e) All welded steel wire fabric for concrete reinforcement, as per construction plans, shall meet the requirements of Section 709.10 of ODOT Construction and Material Specifications.
- f) Concrete shall be continuously deposited between bulkheads to a uniform thickness and to the full depth and width. The concrete, after being placed, shall be thoroughly compacted and brought to the proper pitch and grade with a template or straightedge.
- g) No concrete showing segregation or clumps of material shall be deposited in the work.
- h) Immediately prior to the finishing of the surface, the concrete shall be cut into slabs not longer than six feet (6') on any one side for walks and driveways. Pavements shall be cut as per plan details and City of Cleveland Standard Drawings. The joints shall be formed by a cutting tool or some other means satisfactory to the City and shall not be less than one-quarter (1/4) of the depth of the slab. All edges shall be rounded, with an approved edging tool, to a radius of one-quarter inch (1/4").

#### 5.5 Surface Finish

- a) The finishing of the concrete shall immediately follow the placing and compacting of the concrete. Unless otherwise ordered, a broom finish shall be required. Rubbing with floats, the only other acceptable method shall be done only at the direction of the Engineer. All concrete slabs shall be edged around the entire perimeter unless otherwise directed by the Engineer. The surface shall be free from depressions and inequalities.
- b) The application of dry cement to hasten drying of the surface is prohibited.

## 5.6 White Liquid Film Method

- a) All concrete pavement, sidewalk, driveway aprons, curb, curb and gutter sections, handicap ramps, and integral radius curb and walk shall be cured by the use of white liquid film. This white liquid film shall have twenty-five (25%) to thirty percent (30%) effective solids and meet the requirements of ODOT Construction Materials Specifications Item 705.07 Type 2.
- b) The white liquid film may be used for curing all concrete placed except for concrete which is to be bonded to future concrete placement
- c) The curing materials shall be applied uniformly by means of an approved pressure spray distributor at the rate of one (1) gallon to each two hundred (200) square feet of surface, and it shall be so applied that the concrete surface is completely coated and sealed in one (1) application. The curing material shall be applied immediately after the concrete surface to be cured has been finished and before any marked dehydration has occurred. After the surface has been coated, it shall be protected from all traffic or abrasive action from any source.
- d) When this method of curing is used, a complete duplicate spraying system shall be on the site before starting the placement of the concrete.
- e) Final curing by the white liquid film method shall be considered to extend for two (2) complete days from the time the material is placed. During this period, the surface of the concrete shall be protected by barricades from all traffic or work operations.
- f) A transparent liquid film may be substituted as directed by the Engineer.

## 5.7 Expansion Joints

- a) Prepared strips of preformed expansion joint material meeting the requirements of 705.03 of the ODOT Construction and Material Specifications shall be one-half inch (1/2") in thickness and of sufficient width to extend the entire depth of the concrete. They shall be placed in such a manner that the joint will be filled to within one-half inch (1/2") of the finished surface of the walk. Joints shall be constructed at intervals no greater than fifty feet (50') in all sidewalks, driveway aprons, curb and gutter section, cast-in-place



curb and integral curb and walk unless otherwise ordered. Pavement expansion joints shall be placed as per plan details.

- b) Joints shall be placed where the walk abuts curbing or other lateral walks and along the building line where the walk is placed full width from the curb to the building or other structures or as otherwise directed by the Inspector in the field. The edges of all joints so placed shall be rounded as herein before specified. The cost for expansion joints shall be included in the unit price bid for the respective items of work.
- c) Where new concrete curb or the curb portion of integral concrete radius curb and walk abuts existing pavement, a three-quarter inch (3/4") thick preformed expansion strip as called for in 705.03 of the ODOT Construction and Material Specifications shall be placed to separate the pavement and curb. The upper one-half inch (1/2") of the joint shall be hot sealed.

#### 5.8 ODOT ITEM 305-PLAIN CONCRETE BASE

ODOT Item 305 - Plain Concrete Base shall meet all requirements for Item 452 - Plain Concrete Pavement except that concrete mix design shall be as per these Detail Specifications. All jointing and transfer devices are to be installed. The concrete shall have a broom finish.

**D-24 CONCRETE DESIGN MIX (ITEM SPECIAL)**

All applicable work items shall be bid using the concrete mix design specified in this section. Under this section of these specifications the contractor is required to submit a separate mix design for each combination of cement type, aggregate type and concrete supplier they will use under this contract. Each mix shall be designed in accordance with ASTM-C94-94 Option C and as herein modified.

<u>REQUIREMENT</u>	<u>DESCRIPTION</u>
Minimum twenty-eight (28)	4,000 PSI for 28 days compressive strength test. Four cylinders will be taken and tested as per ASTM C-39-04. One to be tested at seven days and the remaining three will be tested at twenty-eight) days. Acceptance will be based on the average results of the three cylinders.
Minimum Cement Content	650 lbs. per cubic yard. The cement shall conform to ASTM C-150-04 or C-595-04. IF <u>ANY</u> limestone is used, then the City <u>REQUIRES THAT</u> all of the information described in ASTM C-150-04 be furnished.
Water Cement Ratio	0.45 Maximum
Slump	Nominal three inches (3") as per ASTM C-94-04 (2"-4" actual). The use of chemical admixtures meeting ASTM C-494, to increase the slump to a maximum of 7", may be used with prior written approval of the Engineer. If this option is selected the admixture and resultant maximum slump shall be submitted for approval.
Air Content	Four percent (4%) to seven and one half percent (7 1/2%) ASTM C-173-04 or C-231-04.
Aggregate Size	No. 57 for course aggregate shall be limestone, gravel or crushed air-cooled blast furnace slag. Both course & fine aggregate as per ASTM C-33-04.

If crushed air-cooled blast furnace slag is used it shall meet all of the requirements of ODOT 703.01 and 703.02. Copies of all tests and certifications for the crushed air-cooled blast furnace slag, if used, shall be submitted as a part of the concrete mix design.

Steel Slag Aggregate (703.01E) is not permitted for use as an aggregate in concrete.

When high early strength is required, ASTM C-150-04 Type III A cement or admixtures in accordance with ASTM C-494-04 shall be used.

The contractor is required to furnish a signed affidavit, in triplicate, from each concrete supplier to the Commissioner giving dry weight and type of cement, saturated surface-dry weight and the type of fine and course aggregate, quantity, type and name of each admixture and weight of water per cubic yard of concrete. The contractor shall also furnish twenty-eight (28) day cylinder tests (per testing section) as verification that the materials used and the proportions selected will produce concrete of the quality specified.

Hot and cold weather protection (blankets, heaters, ice etc.) shall be included in the unit price bid.

The contractor is required to comply with all the above requirements. The contractor shall require that all of the sub-contractors placing concrete under this contract also comply with all of the above requirements.

**D-25 CONCRETE MIX DESIGN FOR CLASS MS CONCRETE (ITEM SPECIAL)**

All applicable work items shall be bid using the concrete mix design specified in this section. Under this section of these specifications the contractor is required to submit a separate Class MS Concrete with D-24 Concrete Mix Design, (Item Special) and as herein modified.

<u>Requirement</u>	<u>Description</u>
Minimum twenty-four (24) Hour Strength	400 PSI Modulus of rupture as per ASTM C-78
Minimum Cement Content	800 Lbs. Fly ash or additional aggregate shall not be used as a substitute for the cement
Water Cement Ratio	0.43 Maximum

Calcium chloride shall not be used this mix design. The results of the 24-hour beam test, as per ASTM C-78, shall be furnished in addition to the results of the twenty-eight (28) day cylinder tests.

Payment for MS concrete will be as a surcharge to the unit price per cubic yard per requirements of D-23 and D-24.

The Engineer will mark in the field the areas that require construction using Class MS Concrete. These marks will be limits of the payment for the various bid items using Class MS Concrete.

If the Contractor chooses to place Class MS Concrete outside of the Engineers marks for the Contractor's own convenience, then it will be measured and paid for as concrete which only meets the requirements of D-24 Concrete Mix Design, (Item Special).

**D-26 CONCRETE MIX DESIGN FOR CLASS FS CONCRETE (ITEM SPECIAL)**

All applicable work items shall be bid using the concrete mix design specified in this section. Under this section of these specifications the contractor is required to submit a separate Class FS Concrete with D-24 Concrete Mix Design, (Item Special) and as herein modified.

<u>Requirement</u>	<u>Description</u>
Minimum four (4) Hour Strength	400 PSI Modulus of rupture as per ASTM C-78
Minimum Cement Content	900 Lbs. Fly ash or additional aggregate shall not be used as a substitute for the cement
Water Cement Ratio	0.40 Maximum
Calcium Chloride	For 94 to 97% purity; 1.6% by weight of cement For 70 to 80% purity; 2% by weight of cement

The source, purity AND amount of calcium chloride shall be on each mix design. If the contractor desires to change either the source or purity, the contractor shall submit an additional mix design for review and approval showing the proposed changes.

Just before placement, add and mix the calcium chloride with each batch of concrete, as above described. When using a calcium chloride and water solution, consider the water as part of the concrete mixing water and make the appropriate adjustments for its inclusion in the total concrete mixture.

The results of the 4-hour beam test, as per ASTM C-78, shall be furnished in addition to the results of the twenty-eight (28) day cylinder tests.

The Engineer will mark in the field the areas that require construction using Class FS Concrete. These marks will be limits of the payment for the various bid items using Class FS Concrete.

Payment for FS concrete will be as a surcharge to the unit price per cubic yard per requirements of D-23 and D-24.

If the Contractor chooses to place Class FS Concrete outside of the Engineers marks for the Contractor's own convenience, then it will be measured and paid for as concrete which only meets the requirements of D-24 Concrete Mix Design, (Item Special).

**D-27 ADA CURB RAMP LAYOUT, AS PER PLAN, ITEM 608**

The ADA curb ramps and landings, including any sidewalk curbs, shall be measured and paid for per square foot of the unit price of the pertinent Item for sidewalk.

Under this pay item, the Contractor shall be responsible for laying out Americans with Disabilities Act (ADA) compliant curb ramps and landings that conform to City of Cleveland Curb Ramps Standard Drawings, and Special Provisions.

Payment shall include all surveying, construction layout and form work. The pay item is "Item Special, Curb Ramp Layout, As per Plan". Payment shall be per each corner at conventional intersections, per each corner at T-intersections (each corner at the leg, and the independent ramp opposite the leg which shall be considered a corner), and per each ramp at mid-block locations. Each side of the street for a mid-block location shall be considered as a corner. There may be either 1 or 2 curb ramps at a conventional intersection corner or at a T-intersection corner.

City of Cleveland Standard Drawings Curb Ramp Type 1 through Type 11 shall be used as a base for construction of the curb ramp. Any curb ramp not meeting ADA requirements will be removed and replaced by the Contractor, at his/her cost, to the satisfaction of the City.

Curb ramp and landing thicknesses

Sidewalk areas	6" thick
IRC&W areas	8" thick

**D-28 PORTLAND CEMENT CONCRETE SEALING - ITEM SPECIAL**

A. Submittals:

1. The Contractor shall submit technical information and a certified statement stating that the material to be furnished conforms to the material requirements of this section of the specifications.
2. Copies of waybills and delivery tickets shall be submitted to the contracting officer during the progress of the work. Before final payment is allowed, the Contractor shall file with the contracting officer certified waybills and delivery tickets for all concrete sealer used in the work.

B. Portland Cement Concrete Sealing Treatment

1. The concrete sealer shall be an approved non-epoxy, non-silicone, non-toxic, non-hydrophobic, non-solvent material, and shall meet the following qualifications and AASHTO and ASTM test performance criteria, based in accordance with the manufacturer's recommended rate of coverage.
  - a. The penetrating concrete sealer, after finished application, shall not darken, stain or discolor the treated concrete.
  - b. Application of the sealer shall not alter the surface texture or forms a film or coating on the surface, and shall be compatible with the concrete pavement joint materials.
  - c. AASHTO T 259 Resistance of Concrete to Chloride Ion Penetration

Sealer-treated test specimens shall exhibit the following average values when an average of 0.125 inches of the treated concrete specimen has been abraded from the surface to simulate 10-12 years of traffic wear. Abrasion will be performed after treatment with sealer; and before ponding with chloride solution.

Test	Duration	Average Absorbed CL	Method Used
Salt Water	90 Days	2.50 lbs per cubic yard	AASHTO T 259
Ponding	2160 Hours	Depth of Measurement: 1/16" to 1/2"*  0.04 lbs per cubic yard Depth of Measurement: 1/2" to 1.0"	AASHTO T 260

\*Based on abraded concrete specimens.

d. ASTM C 672 Scaling Resistance of Concrete Surfaces

Sealer-treated test specimens shall exhibit a 0 (zero) scale reading, and an improvement over untreated specimens after completion of a minimum of 50 freeze-thaw cycles; or until a difference between treated and untreated specimens develops. Example after 50 cycles:

<u>Specimen</u>	<u>Scale Rating</u>
Untreated	2+ (light to moderate scaling)
Treated	0 (no scaling)

e. AASHTO T 161/ASTM C 666 Resistance of Concrete to Rapid Freezing and Thawing.

Treated specimens shall demonstrate equal or better durability to surface scaling than the frost resistant concrete used as a control upon completion of the test after a minimum of 300 freeze-thaw cycles.

Example:

<u>Cycles</u>	<u>Control</u>	<u>Treated</u>
146	Slight	None
237	Slight	Slight
480	Slight	Slight

f. ASTM C 501 Relative Resistance to Wear

Treated test specimens shall meet or exceed the improvement percentages as specified below on nominal 3,000 psi concrete after 1,000 revolutions:

<u>Specimen</u>	<u>Avg. Abrasive Wear Index</u>	<u>Avg. Depth of Wear</u>	<u>Avg. Absolute Weight Loss</u>
Treated	27.4	.026 in	3.227 gm
Untreated	19.9	.033 in	4.525 gm
Improvement	37.7%	21.2%	28.7%

g. ASTM C 882 Bond Strength of Epoxy-Resin Systems Used with Concrete

Test results shall demonstrate bond strength of treated samples equal to untreated samples used as a control.

h. Depth of Penetration

Depth of penetration shall be a minimum of 1/8 in. as demonstrated by successful testing in accordance with AASHTO T 2590 (based on abroad specimens).

2. The concrete sealer to be used shall be SINAK Concrete Sealer or Approved Equal. To be considered equal, the Contractor must submit the following with his bid. Products submitted after the bid date will not be considered.

- a. Verifiable evidence from approved independent laboratory(s) confirming that the material proposed for consideration meets or exceeds the test criteria of each and every test set forth in this specification. Any product that does not meet or exceed the results of all tests will not be considered.
- b. A written certification from the manufacturer that the material proposed for consideration meets all of the other requirements of this specification as listed in paragraph B above.
- c. The manufacturer's application instructions and procedures, and rate of coverage shall be included with all submittals for consideration.

C. Surface Preparation

The Contractor shall prepare surfaces to be sealed by thoroughly cleaning same with mechanical sweepers of an approved type and with wire brooms where necessary. To be clean, the surfaces shall be free of sand, clay, dust, salt, grease, oil and other foreign matter that might adversely affect the penetrating capability of the sealer.

D. Application of Concrete Sealer

1. Equipment to be used shall be as recommended by the manufacturer and shall include a low pressure airless or gravity type sprayer with an application pressure of approximately 40 psi, using a spray tip large enough to deliver an even fan spray without misting.
2. Application of the concrete sealer shall be recommended by the manufacturer and in accordance with the following:

The application shall consist of two coats minimum. Each coat shall be in a light, even coat that shall be allowed to dry completely before continuing application. If a light sheen is visible when the second coat is dry, stop sealer application, and proceed to the water spray application.



If no sheen is visible when the second coat is dry, repeat coats until a light sheen is apparent. Immediately after the final seal coat has been applied and allowed to dry, a light, even water-spray shall be applied to all treated surfaces to ensure complete penetration of the sealer. If a sheen is still visible after the water coat has dried, additional water coats shall be applied until the sheen is no longer evident and the concrete finish appears dull.

Coverage rate for SINAK Concrete Sealer S-102 will generally average 300-500 square feet per coat. The manufacturer or approved distributor will be present during the application of the first 1,000 square feet application to insure proper application procedures are followed. Based upon the first 1,000 square feet application, the manufacturer (or distributor) and the project Engineer will agree upon a coverage rate to use for both coat within the range noted above.

**E. Weather Limitations:**

Sealer should not be applied when temperatures are below 40 degrees F or are expected to fall below 32 degrees F within 24 hours or when rain is forecasted within 24 hours.

**F. Method of Measurement:**

Concrete Sealer: The quantity to be paid for will be measured by the actual number of square yards of accepted pavement sealed with concrete sealer in accordance with this section of the specifications.

**G. Payment:**

The quantity as provided above shall be paid for at the applicable contract price per unit of measurement, which price and payment shall be full compensation for all materials, labor, equipment, tools, and incidentals necessary to complete the work required by this section of the specifications.

**D-29 ASPHALT CONCRETE ITEM 301, 446 AND 448**

Asphalt Concrete shall comply with ODOT Item 301, 446, and 448, PG64-22, unless specified different on the bid form, plans or supplemental specifications.

Recycled material shall be limited to wearing course maximum of 10%, intermediate course maximum of 20% and bituminous base course maximum of 30%.

### Gutter Seal

Unless otherwise specified or permitted, gutters shall be sealed with the same type of asphalt cement used in the concrete mixture for a distance of 4 inches from the curb. The seal shall be applied at a uniform rate and width by the means of a squeegee or distributor in such a manner that no excess material will be left on the surface. The asphalt gutter seal shall be applied at a temperature between 300 degrees Fahrenheit and 350 degrees Fahrenheit immediately upon the completion of the surface course.

The cost of the gutter seal applied as herein specified shall be included in the price per square yard for surface course bid by the Contractor.

### **D-30 BACKFILL MATERIAL (ITEM 603, SPECIAL)**

The use of "Flowable Fill" (Item 603, Special) as specified herein is required for all backfill operations in the right-of-way; #304 may be used at the direction of the Commissioner of Engineering & Construction.

All backfill material used under any pavements shall be crushed limestone or gravel as per ODOT Item 304 - Aggregate Base. Crushed air-cooled slag meeting # 304 gradation may be used with prior written approval of the Engineer. The use of sand or # 57 aggregate as premium backfill is prohibited. Sand may only be used as indicated on the plan details for items such as conduit cover, etc. The backfill shall be installed in 4 inch (4") lifts and compacted using mechanical means only. The use of water for compaction is prohibited. E.g. flooding or puddling. Sand used as embankment construction and as backfill around structures shall be ODOT Item 203 - Embankment or meeting the requirements of 703.11 Special Backfill Material of this section.

### **D-31 BACKFILL MATERIAL - FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES (INSIDE OF PAVEMENT AREA) (ITEM 603, SPECIAL)**

#### PART 1: CERTIFICATE OF COMPLIANCE

Material must come from a plant with a current Certificate of Compliance demonstrating the ability of the mix design to meet the specified requirements. Certificates in excess of one year will not be accepted. Certificates must contain the name of supplier, date, contract number and mix design data on each delivery ticket.

## PART 11: MATERIALS

All materials shall conform to the applicable requirements stated herein.

1. Cement shall be ASTM C-150 Type I.
2. **The use of Fly Ash is strictly prohibited.**
3. Fine Aggregate shall conform to ODOT Specification 703.03 Fine Aggregate for Mortar or Grout. (ODOT Construction and Materials Specifications most current edition). The use of spent foundry sand or core sand is strictly prohibited.

## PART III: PERFORMANCE ENHANCING ADMIXTURE

An air-enhancing admixture shall be incorporated in the mix that will have the effect of lowering the water/cement ratio to between 95 and 105 lbs/cubic foot. The air entrained content for the mix shall be 30% to eliminate/minimize the excessive water and segregation. Compressive strengths shall have a range of 50 PSI to 80 PSI at 28 days will be required if additional excavation by machine or hand is required.

Approved Admixtures

<b>Manufacturer</b>	<b>Product Name</b>
a) Master Builders	Rheofill
b) Axim	Flow Air
c) W.R. Grace	DaraFill
d) Or approved equal	

## PART IV: FLOWABLE FILL MIX DESIGN

The mix design shall be proportioned as follows:

Cement (Type I)	50lbs/cubic yard
Sand (SSD)	2475 lbs/cubic yard
Water	25 gallons/cubic yard
Admixture (Air)	3 oz/cubic yard

## PART V: APPLICATION

- Flowable fill shall begin 12 inches above the top of pipe and continue in the trench to the concrete base.
- Material for pipe bedding and pipe zone to a maximum depth of 12 inches over the top of pipe shall be as specified by the utility.
- Exposed bolts and valves exposed in the trench should be wrapped with polyethylene material conforming to ODOT 748.07 (8 mil thick).

- Cover all joints in existing clay pipe in the trench area with polyethylene material before pouring flowable fill. Repair all observed openings in any pipe or manhole in the trench area prior to backfilling with flowable fill. Repair techniques shall be in accordance with the utility company's standard repair procedures.
- Contact the respective utility owner for repair procedures.

#### 703.11 SPECIAL BACK FILL MATERIAL

Material used for backfilling trenches (outside of pavement area) and for such similar purposes as may be specified shall consist of hard, durable particles of a natural or artificial aggregate, such as gravel, sand, crushed air-cooled slag. At least eighty-seven percent (87%) by weight of the grains or particles shall be retained on a No. 200 sieve.

It shall be of such character that it can be placed in four (4) inch layers, loose depth.

It shall be substantially free from vegetable or organic matter and shall not contain more than ten percent (10%) of loam or clay as determined by decanting over No. 200 sieve.

Except in the case of slag, backfill material shall weigh not less than ninety (90) pounds per cubic foot, dry compacted weight.

#### **D-32 PIPE CULVERTS, SEWERS AND CONNECTIONS (ITEM 603)**

~~This items shall consist of the construction or reconstruction of sewers of the size and at the locations shown on the plans. The construction shall conform to the requirements of ODOT Item 603. Conduit to be used shall be item 706.08 ≤18" Extra strength Vitrified Clay pipe with 706.12 joints and >18" shall be Item 706.02 Reinforced Concrete Pipe Class III with item 706.11 joints. The conduit used for catch basin connection shall be in accordance with ODOT Item 603 — Pipe Culverts, Sewers, and Drains. — Backfill material shall be as per D-30. The backfill shall be compacted using mechanical means only; the use of flooding or puddling is prohibited. Payment shall be based on the accepted linear feet of pipe complete in place for the sizes and types of pipe indicated. Price bid per Linear Foot of pipe shall include costs of all bends and joints.~~

#### **D-33 CROSSING AND CONNECTIONS TO EXISTING PIPE AND UTILITIES**

- A. Where plans provide for a proposed conduit to be connected to, or cross over or under an existing sewer or underground utility, the Contractor shall locate the existing pipes or utilities both as to line and grade before starting to lay the proposed conduit.

- B. If it is determined that the elevation of the existing conduit, or existing appurtenance to be connected, differs from the plan elevation or results in a change in the plan conduit slope, the Engineer shall be notified before starting construction of any portion of the proposed conduit which will be affected by the variance in the existing elevations.**
- C. If it is determined that the proposed conduit will intersect an existing sewer or underground utility if constructed as shown on the plan, the Engineer shall be notified before starting construction of any portion of the proposed conduit which would be affected by the interference with an existing facility.
- D. Payment for all of the operations described above shall be included in the contract price for the pertinent 603 conduit item.

**D-34 CATCH BASINS (ITEM 604)**

This item shall consist of the construction of catch basins as located on the plans and as per the City of Cleveland Standard details. If the catch basin is to be installed in the same location that has an existing catch basin, then the removal of the existing catch basin is included in the catch basin pay item for installing a new catch basin. If a pay item for removal of the catch basin is included then payment will be made accordingly. The construction shall be in accordance with Item 604. Payment will be based on as per each basis of completed and accepted catch basins. Catch basins and connections shall be free of all debris before final acceptance, under this section, at no additional cost to the City.

**D-35 CLEAN CATCH BASINS AND CONNECTIONS (ITEM 604, SPECIAL)**

The work performed under this item of these specifications shall include cleaning the catch basin trap, and catch basin connection to the main sewer.

This work shall be performed by the use of equipment and methods intended for the purpose of cleaning catch basins and their appurtenances.

Prior to accepting this project the Engineer reserves the right to test catch basins, which have been cleaned. This test shall use the flow from a three inch (3") or larger fire hose as directed by the Engineer. The cost associated with performing said test shall be included in the bid price for cleaning catch basins.

The Contractor shall be paid at the price bid for each catch basin/manhole cleaned under "Item 604 - Clean Catch Basin".

**D-36 PRE-CONSTRUCTION VIDEO TAPING OF RIGHT OF WAY**

Prior to the delivery of any materials or supplies to the site of any work, or to the beginning of any of the construction work, the Contractor shall provide Preconstruction Audio-Video Taping for the purpose of establishing the surface conditions existing in all areas affected by the work. Video taping shall include, but shall not be limited to, driveway, driveway apron, and basement window, especially, the area where a temporary connection might be made or where a temporary hose might go through a basement window. Two passes in each direction are required to complete this activity; one focusing on Right Of Way and one focusing on private property. The Preconstruction videography shall be performed by an independent company having had previous experience in similar type of work. The name of the company shall be submitted to the City for approval prior to engaging the work. The Contractor shall provide one copy of the Preconstruction videography to the City and one copy for themselves. The full cost of furnishing all labor, materials and equipment to perform the required audio-video taping as described herein shall be included for payment in the Lump Sum Bid for Preconstruction Videography.

#### **D-37 CLEAN AND TELEWISE CONDUIT (SEWER)**

Television inspection of sewers shall consist of obtaining an internal photographic record in color of sewers requested by the City. Sewers forty-eight inches (48") in diameter and larger, in addition to televising, shall be visually inspected.

A three-quarter inch (3/4") video cassette shall be used. The report, covering the video tape, shall be considered as an integral part of the service and shall, in no case be deleted from the record. Three copies of the tape and report are required.

The sewer shall be cleaned of all debris, including roots and other obstructions, prior to inspection by water jetting the line. The length of the sewer to be televised and paid for will be the actual linear feet measured along the center line of the sewer with no deductions being made for manholes or junction chambers. The accepted quantity for sewer line televised and cleaned, regardless of size of the sewer, will be paid for at the quoted unit price per linear foot. The item shall be paid under the Bid Item "Clean and Telewise Conduit (Sewer)". This item shall only be performed as directed by the Engineer.

#### **D-38 CATCH BASIN RECONSTRUCTED TO GRADE (ITEM 604)**

This item of work shall be performed as per ODOT Item 604-Manholes and Catch Basins except as modified herein:

- a) The concrete used for this item of work shall conform to the concrete design mix section of these specifications.
- b) If the backplate is missing it shall be replaced. The casting is to be reinstalled if in reusable condition. The casting, once removed and the reconstruction work

completed, shall be reset at the elevation necessary for repaving.

Payment for the work shall be under Item 604 - Catch Basin Reconstructed to Grade

**D-39 ADJUSTING STREET CASTINGS (ITEM 604)**

All manhole, catch basins, water meter manholes, valve boxes and Cleveland Public Power castings shall be brought to proper grade by the Contractor by adjusting said castings with mortar, brick, or stone masonry as may be directed. No adjusting rings or bands will be permitted.

The Contractor shall use extreme care in the removal and adjustment of the castings. The contractor shall remove existing pavement as required to adjust the casting and shall replace same with Job mix "high early strength" concrete.

Unless otherwise directed by the City, all castings shall be brought to grade after the binder or leveling course is placed and before the wearing course is placed.

Castings belonging to private utilities shall be adjusted to grade by such utilities and does not constitute a part of the Contractor's obligations. However, Contractor is responsible for coordinate such work.

The price paid for bringing each street casting to line and grade shall be the Contractor's unit price bid for each and shall include all labor and material necessary for this work.

Care shall be exercised in moving the castings so as not to damage the casting or the structure. Damaged castings or structures shall be repaired or replaced at the Contractor's expense.

If the engineer changes the structure elevation by one foot it shall be paid for under the appropriate item. Valve boxes and other castings extending 1 foot below grade that, in the judgment of the engineer, require replacement, shall be replaced with a new casting. Payment will be the cost of casting adjustment plus miscellaneous metal furnished.

Items outlined shall be paid for under Item 604 - Adjusting Street Castings to Grade.

**D-40 MONUMENT ASSEMBLIES, (ITEM 604)**

Any person, Contractor, utility, or governmental agency, herein referred to as the Contractor, disturbing, removing and/or replacing pavement in the City of Cleveland's Public Right-of-Way shall provide information as to the type of work and the limits of the work to the City of Cleveland Chief Surveyor prior to performing such work. The Chief Surveyor will determine which monuments, if any will be affected by the work.

Where New Monument Assemblies are to be constructed, the Contractor shall furnish the following for each assembly as detailed on the City of Cleveland's Monument Box & Assemblies Standard Construction Drawing MB-1C: One(1) Cleveland Monument Box Assembly, One(1) one inch diameter epoxy steel deformed reinforcing bar thirty-six inches (36") long, flat on top with a round pointed end.

All Monuments Existing and Proposed must be referenced prior to construction. A minimum of 3-Ref. Pts. per Mon. must be used and must be located outside of the Construction Zone ("Work Area"). Care and Protective Measures shall be employed by the Contractor to Preserve Existing Monuments. All monuments disturbed and/or destroyed shall be reset as detailed on the City of Cleveland's Monument Box & Assemblies Standard Construction Drawing MB-1C. The Contractor shall use Competent Personnel and Suitable Equipment for the work required by this Detail Specification. All work shall be done by said Competent Personnel under direct supervision of a Professional Surveyor, Licensed and Registered to practice in the State of Ohio. Said Surveyor and Competent Personnel shall be hired by the Contractor.

Prior to beginning any work a copy of all Survey and Reference Notes is to be sent to the Attention of the Chief Surveyor at the City of Cleveland, Department of Public Service, Division of Engineering and Construction, 601 Lakeside Ave. Room 518, Cleveland, Oh. 44114. (216) 664-2460.

For monuments outside the Contractor's "Work Area", but near enough to the "Work Area" that may be disturbed for any reason, the Contractor shall be responsible for the replacement as if the monument were originally inside the "work area" as herein specified.

The Contractor shall perform all other operations necessary to complete this work item, such as pavement removal, excavation, setting the box to grade and pavement replacement. All work completed and accepted shall be paid for by the unit price bid for Monument Box Assemblies (Item 604).

All work shall be included and paid for at the bid unit price per Monument Assembly.



**D-41 MONUMENT BOX ADJUSTED TO GRADE OR REPLACED (ITEM 604)**

Where Monument Boxes are both suitable for re-use and conform to the City of Cleveland's Monument Box & Assemblies Standard Construction Drawing MB-C1, they shall be adjusted to grade as required and specified.

Where the plans call for the existing monument boxes to be replaced, the Contractor shall remove the existing monument box and replace it as detailed on the City of Cleveland's Monument Box & Assemblies Standard Construction Drawing MB-1C; set to proper grade.

In addition to adjusting the casting vertically this pay item shall include centering the casting over the existing iron pin or stone. The entire monument box casting shall be adjusted to grade; no inserts or adjusting rings will be permitted.

If the existing iron pin or stone is either missing or damaged, a new monument assembly, as per D-40 shall be installed and paid for as a monument assembly.

All Monuments Existing and Proposed must be referenced prior to construction. A minimum of 3-Ref. Pts. per Mon. must be used and must be located outside of the Construction Zone ("Work Area"). Care and Protective Measures shall be employed by the Contractor to Preserve Existing Monuments. All monuments disturbed and/or destroyed shall be reset as detailed on the City of Cleveland's Monument Box & Assemblies Standard Construction Drawing MB-1C. The Contractor shall use Competent Personnel and Suitable Equipment for the work required by this Detail Specification. All work shall be done by said Competent Personnel under direct supervision of a Professional Surveyor, Licensed and Registered to practice in the State of Ohio. Said Surveyor and Competent Personnel shall be hired by the Contractor.

Prior to beginning any work a copy of all Survey and Reference Notes is to be sent to the Attention of the Chief Surveyor at the City of Cleveland, Department of Public Service, Division of Engineering and Construction, 601 Lakeside Ave. Room 518, Cleveland, Oh. 44114. (216) 664-2460.

Payment for the above work shall be made under Item 604 - Monument Adjusted to Grade or Item 604-Monument Replaced and Set to Grade.

**D-42 4" UNCLASSIFIED PIPE UNDERDRAIN (ITEM 605)**

In addition to the applicable work and materials described under Item 605 of the Construction and Materials Specifications, the unit price bid for this item shall also include, but not be limited to, the following:

A. All labor and materials required to outlet the underdrain into the catch basins, in conformance with 605.06.

- B. Furnishing and installation of filter fabric, in conformance with 605.02.  
Payment for the all of the above work shall be included in the contract unit price bid for Item 605, 4" Unclassified Underdrain.

**D-43 UNDERDRAIN, MISC.: EDGEDRAIN (ITEM SPECIAL)**

Work Included

~~The contract unit price bid for this item shall include all labor, equipment, tools and incidentals necessary to furnish and install the geocomposite edgedrain system, including fittings, as shown on the drawings and as specified herein.~~

~~Edgedrain shall be used at locations where the precast concrete curb is being installed, as directed by the Engineer.~~

Material

- A.) ~~The geocomposite edgedrain shall be "AdvanEDGE" as manufactured by (or approved equal):~~

~~Advanced Drainage Systems, Inc.~~

~~3300 Riverside Drive~~

~~Columbus, Ohio 43221~~

~~Phone: (614) 457-3051~~

- B.) ~~Edgedrain shall be panel shape pipe, 12" high.~~
- C.) ~~Edgedrain backfill material shall conform to 605.03(c). Limits of the edgedrain backfill are as shown on the drawings.~~
- D.) ~~At either end of the edgedrain, the Contractor shall furnish and install an end outlet fitting. All costs in connecting the edgedrain to the underdrain shall be included in the unit price bid for this item.~~

**D-44 DRIVEWAY ACCESS (ITEM 614)**

This work shall be in conjunction with Item 614 - Maintaining Traffic and all costs incurred for this item shall be included in the lump sum bid for Maintaining Traffic - NO ADDITIONAL PAYMENTS WILL BE MADE. Access to all property owners, including residences and businesses, shall be made available at all times during construction.

The Contractor shall make available during the construction, steel plates, bridges or other means approved by the Engineer to bridge across the half width roadway construction, to provide full time (24 hours-7 days a week) access to driveways that require it.

The contractor shall submit to the engineer for approval, at the pre-construction meeting, his proposal for providing access to the driveways.

For estimating purposes the number of drive aprons to be maintained should be the number of driveways in each construction phase

**D-45 FIELD OFFICE (ITEM 619)**

The field office shall be as per ODOT Item 619 - Field Office Type B or Type C, except as modified below:

- a) It shall meet all the requirements of C-9 (Field Office) of Part C - Supplemental General Conditions Field Office of the specifications.
- b) Three all weather parking spaces are required for the exclusive use of the City.
- c) Two telephone lines with the second line shall be connected to a plain paper fax machine. The fax machine furnished shall also be able to be used as second telephone. Phones provided shall be two line speakerphones with conferencing ability. Voice Mail service shall be included. The cost of the fax machine and Voice Mail service shall be included in the cost of the field office.
- d) The contractor shall furnish a mobile phone for the use of the City Inspector for the duration of the project. The cost of the telephone shall be paid for under the Mobile Phone Bid Item.
- e) The Contractor shall provide all office supplies needed by the City Inspector.
- f) Copy machine capable of enlarging/ reducing images to 11" x 17"

Payment for this item of work shall be unit bid price per month for Item 619 - Field Office (Type B or Type C).

#### **D-46 COMPUTER EQUIPMENT (ITEM 619, SPECIAL)**

The contractor shall furnish, install and maintain the following items for the life of the contract. All items furnished shall be for the exclusive use of the Engineer and staff and shall be operable by the first day of work.

This system shall not experience down time exceeding 48 hours from notification by the Engineer. The contractor shall replace stolen, vandalized, or units otherwise inoperable within 48 hours after notification by the Engineer. Upon completion of the contract, the hardware and software furnished by the Contractor shall either become the property of the City or remain the property of the Contractor as indicated by the unit bid price.

Item 619 – Computer Equipment for City ownership – lump sum  
item 619 – Computer Equipment for City use – per month

The Contractor's failure to provide equipment as required below may result in the withholding of payment estimates.

#### **Computer Hardware**

##### **Type A, B, C Offices**

One (1) personal computer consisting of and including the following:

- (1) One IBM PC compatible notebook or desktop (as directed by the City) computer with an Intel processor operating at least 2 GHz or the current speed available as directed by the City. This computer shall be provided with the following as a minimum:
  - a. 200 Gig. Hard Disk
  - b. 1 Gig. DDR SDRAM
  - c. Multiple media reader drive
  - d. 16x DVD-ROM and 40 x 10 x 40 CD-RW or higher
  - e. one 56k Hayes compatible internal modem, broadband, DSL or approved equal
  - f. Active Matrix VGA color display
  - g. one parallel port and one serial port
  - h. one built in trackball (or equivalent)
  - i. one docking station, including 19" Flat-Tube monitor if not notebook or approved equal
  - j. AC adapter and two (2) rechargeable batteries
  - k. Operating system- Windows XP Professional
  - l. Software- MSOFFICE Professional latest edition.
  - m. Norton System Works Professional ( Current version) or approved equal

- (2) Computer and hardware maintenance agreement with a minimum four (4) hour on-site maintenance for all hardware stated here lasting for three years.
- (3) Hewlett Packard LaserJet HP 1200se or DeskJet 1220c/ps (as directed by the City), or approved equal, and parallel printer cable.
- (4) Surge protector, 15 amp six (6) outlet with circuit breaker control and surge indicator light.

**D-47 CONSTRUCTION LAYOUT STAKES (ITEM 623)**

This item of work shall be performed as per ODOT Item 623 and as modified below:

- a) Contractor shall furnish dimensions, measurement, sketches, etc. necessary to determine pay quantities. This will mainly apply to change orders, quantities to be used as directed and disputed payment quantities or calculations.
- b) The Contractor shall be responsible for providing all necessary surveying, calculations and/ or layout not furnished in the bid documents to comply with the Engineer's direction. Contractor shall provide cut sheets, temporary benchmarks, and layout (including stationing and hubs) as directed by the Engineer or his representative. All stationing and reference marks shall be maintained as directed by the Engineer or his representative.
- c) The Contractor shall use competent personnel and suitable equipment for the layout work required and shall provide that it be done under the supervision of a Registered Surveyor, licensed to practice in the State of Ohio.
- d) The Contractor is to provide "As-Built" Drawings showing all elevations and inverts, locations of roadways both horizontal and vertical. These drawings and/or CAD drawings shall be drawn on Mylars or Cad files (if available) provided by the City. The Inspector shall sign the sheets verifying that all changes have been shown on the "As-Built" drawings. The Inspector is not responsible for the accuracy of the locations or elevations. All elevations and locations are to be certified by the Registered Surveyor, licensed to practice in the State of Ohio.
- e) Payment for the above work shall be included in the lump sum bid price of Item 623- Construction Layout Stakes.
- f) Failure to comply with these provisions may incur a penalty of 10% reduction in the Bid Item "Construction Layout Staking" per failure to comply. Upon compliance that reduction may be restored by the Engineer. Final contract payment will not be processed until "As-Built" drawings are submitted and accepted by the City.

**D-48 SIGNAL SUPPORT FOUNDATION, AS PER PLAN (ITEM 632)**

The Contractor shall protect pedestrians and vehicles from exposed anchor bolts AT ALL TIMES until the associated signal support is erected. The method of covering the anchor bolts shall be approved by the engineer.

All costs associated with the procedures as outlined above shall be considered incidental to the cost of the unit price bid (each) for item 632-SIGNAL SUPPORT FOUNDATION, AS PER PLAN

#### **D-49 MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATIONS**

The Contractor shall be responsible for maintaining traffic signal installations within the project under the following conditions:

A) New signal installations or devices, installed by the Contractor. The Contractor shall be responsible for maintenance of these from the time of installation until the work is accepted.

B) Existing signal installations or devices installed or modified by the Contractor. The Contractor shall be responsible for maintenance of these from the time of initial installation or modification until the work is accepted.

The Contractor shall correct as quickly as possible all outages or malfunctions. He shall provide the city and the engineer such addresses and phone numbers where his maintenance forces may be contacted. The Contractor shall provide one or more persons to receive all calls and dispatch the necessary maintenance forces to correct outages. Such a person or persons may be used to perform other duties as long as prompt attention is given to these calls and a person is readily available continuously 24 hours a day, 7 days a week. All lamp outages, cable outages, electrical failures, equipment malfunctions and misaligned signal heads shall be corrected to the satisfaction of the Engineer with the signal back to service within eight (8) hours after the Contractor has been notified of the outage.

In the event new signals are damaged prior to acceptance all damaged equipment shall be replaced by the Contractor to the satisfaction of the Engineer. The signal shall be back in service within eight (8) hours after the Contractor's notification of the outage or malfunction.

If poles and/or control equipment are damaged and must be replaced, the contractor shall make temporary repairs as necessary to bring the signal back into full operation within the allowed 8-hour period, and shall make permanent repairs or replacement as soon thereafter as possible.

None of the above shall be construed as collective or consecutive outage time periods at any one location. That is, where more than one outage occurs at any one location,

then the allotted time limit shall be for the worst single outage.

Where outages are the direct result of a vehicle accident, the response of the Contractor shall be as outlined above. The Contractor shall be responsible for collection of any compensation for this work from those parties responsible for the damage.

Where the Contractor has failed to or cannot respond to an outage or signal equipment malfunction at these locations within his or her responsibility, within periods as outlined above, the Engineer may invoke the provisions of section 105.15 and any subsequent billings by the State or the City of Cleveland for police service and/or maintenance services by state and/or City forces shall be deducted from monies due or to become due the Contractor in accordance with provisions of section 105.15.

The Contractor shall provide the maintenance service entirely with his forces or he may choose to enter into a cooperative understanding with the local maintaining agency to provide the maintenance. The Contractor shall inform the Engineer, in writing, of the maintenance method selected.

Any vehicular traffic signal head, either new or existing, which will be out of operation, shall be covered in the manner described in section 632.25.

All cost resulting from the above requirements shall be considered to be included in the lump sum price bid for item 614-MAINTAINING TRAFFIC.

#### **D-50 POWER SERVICE (Traffic Control)**

Electric power shall be obtained from Cleveland Public Power (CPP) at the location indicated on the plans. Power supplied shall be 120 volts. All power cables shall be rated for 600 volts and consist of No. 6 AWG copper. All connections of power cable to equipment shall be by means of approved solderless type connectors. The solderless connections are to be taped. Power service shall also include 2" conduit risers where necessary.

The Contractor shall meet on site with CPP three (3) days prior to construction. Contact Fred Rodriguez at (216) 664-6640, Ext. 173 to make arrangements.

#### **D-51 CONDUIT 2", 3" OR 4" (ITEM 625)**

All conduit installed under pavement in this project for traffic signals shall be concrete encased. Conduit shall be schedule 40 and conform to Ohio Department of Transportation's specification 625.12.

**D-52 SIGNALIZATION MISC.: FOUNDATION TEST HOLES**

If underground obstructions are encountered that preclude use of the standard or alternate foundation designs, the Contractor shall provide the Engineer with complete information regarding the obstruction including type (i.e. utility), size, depth and lateral clearances to the sides of the foundation excavation. The foundation hole shall be covered with a steel plate (3/4" plywood in pedestrian accessible areas) until the Engineer determines if a new foundation location will be required. If subsequently directed by the Engineer, the Contractor shall backfill and compact the hole and restore the surface as described in "RESTORATION OF DISTURBED AREAS."

The Contractor shall be compensated for each foundation hole that must be abandoned. Payment for all labor, materials, tools, equipment and other incidentals, including back fill compacting and surface restoration shall be at the contract unit price bid for Item "632 – SIGNALIZATION MISC.: FOUNDATION TEST HOLES" for the number excavated and backfilled. The following quantity is estimated:

<u>ITEM</u>	<u>TOTAL</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
632	1	EA.	SIGNALIZATION MISC.: FOUNDATION TEST HOLES

**D-53 SIGN LIGHTING MISC.: SIGN LIGHTING CABLE (ITEM 631)**

Cable for overhead sign lighting shall be field determined by the Engineer.

**D-54 LIGHTING MISC.: LUMINAIRE LIGHTING CABLE (ITEM 625)**

Cable for luminaires shall be field determined by the Engineer.

**D-55 POWER CABLE MISC.: POWER FOR SIGN LIGHTING (ITEM 632)**

Power cable for overhead sign lighting shall be field determined by the Engineer.

**D-56 POWER CABLE MISC.: POWER FOR LUMINAIRE LIGHTING (ITEM 632)**

Power cable for luminaires shall be field determined by the Engineer.

**D-57 POWER CABLE MISC.: PUSHBUTTON CABLE (ITEM 632)**

Cable for pedestrian pushbuttons shall be per manufacturer's requirements.



**D-58 GROUND ROD (ITEM 625)**

All ground rods shall be 1" diameter, copper clad steel. All ground rods are to be bonded electrically to the foundation reinforcement. Ground rods shall comply with Ohio Department of Transportation specification 625.09.

**D-59 TEMPORARY FACILITIES & CONSTRUCTION IN THE PEDESTRIAN ACCESS ROUTE**

An alternate pedestrian circulation path shall be provided whenever the existing pedestrian access route in the public right-of-way is blocked by construction, alteration and maintenance or other temporary conditions. The alternate pedestrian circulation path shall comply with the Americans with disabilities accessibility guidelines (ADAAG) and signage shall be installed in accordance with the MUTCD.

**D-60 CONTROLLER ACTUATED, 8 PHASE SOLID STATE DIGITAL MICROPROCESSOR (ITEM 633)**

Traffic signal controller:

The purpose of this specification is to define the minimum operating requirement and characteristics for a NEMA TS1-1983 standard, and all adopted revisions, microprocessor based traffic signal controller and cabinet. Exceptions to this specification must be included with the bid. Unacceptable exceptions and/or substitutions by any bidder will result in rejection of that bidder's bid. Failure to comply with this provision may be considered cause for better declaring the contract in default.

General requirements:

The controller shall meet or exceed all requirements set forth by the institute of transportation engineers, the Manual of Uniform Traffic Control Devices, Latest Edition, and the NEMA TS1-1983 standards and all adopted revisions. All controllers shall be completely compatible with the latest edition of approved closed loop software for the existing city of Cleveland's closed loop system.

All circuit components such as transistors, diodes, integrated circuits, resistors, capacitors, etc., shall be commuter-grade quality. No vacuum tubes, relays or stepping switches shall be permitted. Integrated circuits shall be socket mounted. All components shall be identified with manufactures' part number for availability. No custom components, except for software and programmable chips, shall be permitted.

Overlaps shall be internally generated. Overlaps shall be user selectable using a standard NEMA program overlap card and wire jumper straps located within the controller unit in accordance with NEMA TS1-1983, Figure 14.3-6 or through internal programming. If internal programming is anticipated, the manufacturer shall still provide the NEMA overlap card with jumpers.

There shall be complete phase skip capability of any phase without a valid detector call.

The controller shall be capable of accepting a call from any standard vehicle or pedestrian detector without the use of special external isolation devices.

All timing shall be based on the 60 HZ frequency. All components on printed circuit boards shall have their identification permanently labeled on the circuit board in a manner so as not to be obscured by component mounting.

All required programming parameters required by this specification shall be user entered by means of front panel keyboard(s).

Programming of the controller shall be according to standard NEMA sequence charts, unless otherwise stated by the bid document.

The controller shall be designed to operate in standard traffic control cabinet without the need for environmental control devices other than a standard cabinet fan and ventilation vents in the controller housing cabinet.

All user entered data shall be stored in EEPROM devices which shall preclude the need for any battery or battery operated devices. Only the real-time clock for the time-based coordination shall utilize a battery. All user-entered data stored in the EEPROM shall be permanently stored in the devices. Loss of controller operation power shall not alter the values of EEPROM.

EEPROM shall be provided in addition to any other type of memory device or chip. The following front panel indicators shall be provided:

- A) Phase in service (per phase)
- B) Phase next (per phase)
- C) Detector call (Per phase)
- D) Pedestrian call (per phase)
- E) Gap termination (per phase)
- F) Max green termination (per ring)
- G) Max green two in effect (per ring)
- H) Termination by force off (per ring)
- I) Det lock/non lock (per ring)
- J) Hold (per ring)

There shall be means for user entry of the following via front panel switches on the

keyboard:

Per phase selection of:

- 1) Minimum recall
- 2) Maximum recall
- 3) Pedestrian recall
- 4) Phase non-actuated
- 5) Detector lock/non lock

Timer display shall be a quality back light liquid crystal.

Coordination:

Unless otherwise specified in the plans and/or bid documents, controllers shall be furnished with coordination capability contained internally within the controller unit.

The coordination capabilities shall provide as a minimum three (3) cycles, three (3) offsets, and three (3) splits.

Force-off and begin/end yield points shall be programmable by the user with respect to the local or system cycle as appropriate. There shall be a minimum of two permissive yield periods available.

The phases which are to be the coordinated phases shall be programmable by the user and are to be independently selectable in each ring.

The external coordination inputs which shall be accepted by the controlled unit through the addition of a fourth or "D" connector shall be as follows:

- A) Cycle 2
- B) Cycle 3
- C) Offset 1
- D) Offset 2
- E) Offset 3
- F) Split 2
- G) Split 3

The coordination cable for the fourth or "D" connector on the controller unit shall be terminated on a termination panel containing the required number of barrier terminal strips. This panel shall be mounted on the right sidewall of the cabinets. All terminals shall be clearly numbered.

Communication/coordination harness and panel shall be provided with each cabinet and shall be located in the lower sidewall of controller cabinet. Surge protection devices shall be provided.

Cabinet:

The cabinet shall be weather-tight construction fabricated from sheet aluminum (0.125"). All welds on fabricated cabinets shall be internal and continuous; spot welding is not acceptable. The cabinets shall be white inside and bronze (brown) on the outside.

The cabinet shall be equipped with properly rated circuit breaker(s) conforming to the national electrical code to accept No. 6 AWG wire.

There shall be two properly rated circuit breaker(s) conforming to the national electrical code to accept No. 6 AWG wire.

There shall be two properly rated circuit breakers for the following:

- 1) One breaker shall provide service for the controller, conflict monitor, load switches, fan and other controller appurtenances.
- 2) One breaker shall provide service for the cabinet light, convenience outlet and fan.

The cabinet shall be of suitable size to allow access to all cabinet terminals for installation and maintenance with shelf space for all provided equipment and one detector amplifier per phase.

The cabinet shall have a field test panel equipped with the following switches:

- A) Per phase detector simulation for momentary call.
- B) Per phase pedestrian call for momentary call.
- C) Stop timing per controller. When in stop timing, shall apply stop timing to both rings of the controller.
- D) Cabinet light on/off.
- E) Flash switch. When in position, will put intersection to flash and controller will continue to cycle.
- F) 110 VAC convenience outlet.

The cabinet shall have a police sub-panel equipped as follows:

- A) An auto/flash switch shall provide for normal controller operation when in auto position. When placed in flash position, will place intersection on flash and apply stop timing to controller.
- B) A signal on/off switch.

The cabinet shall be wired for vehicle and pedestrian NEMA LED indication load switches. Eight-phase controller shall be wired for eight vehicle movements and four pedestrian phases. Twelve NEMA load switches and positions shall be provided, eight for vehicle phases and four for pedestrian use. It shall be possible to change the pedestrian load switch position to overlap use by changing the appropriate cabinet wiring at the terminal strips.

The load switches shall have input indicators mounted on the front panel of the switch. The load switches shall be the replaceable cube type. Load switches made from discrete components shall not be acceptable.

The cabinet shall be provided with a minimum of two 12- position copper ground strips to accept #10 AWG wire.

All cabinet wiring shall be neatly routed, laced, and permanently secured.

All inputs to and outputs from the controller and conflict monitor and other equipment, whether used or not, shall be terminated in barrier type terminal strips. All terminal strips and wires shall be clearly marked with fade resistant terminals.

All barrier terminal connections shall utilize spade-type connectors. No "feed-through" terminal blocks shall be acceptable.

Also to be provided with each cabinet shall be one lot each of 50 cable straps (4" x 0.10" Tyton T-18R or equal), 50 circular waterproof cable tags, and two each capacitors, MMWA 6WLK IMFD plus 10%, 600 VDC CDET.

The cabinet shall be equipped with all necessary terminals, harnesses, and wiring to connect power, signals, detectors, controller monitor, and coordination inputs. Interconnect cable lightning protection devices, sufficient in quantity for cable protection, shall be provided with each cabinet.

The cabinet shall be wired for and include a NEMA flasher mounted on the back panel. All controllers shall have two circuit flashers. The flashers shall have output indicators mounted on the front of the flasher case.

The cabinet flash select sequence shall be accomplished via jumper straps or wires. It shall be possible to program flash select from the front of the load bay and any changes in the flashing program will be done without having to remove or lower the main panel assembly.

All relays external to the controller or appurtenances shall meet the following requirements.

- A) Flash transfer relays shall be AEMCO #136-4962, Midland Ross # 136-62T3A1 or approved equal, 10 amp contacts, 8-pin cinch jones base.

- B) Other control relays shall be potter brumfield KRP, Midland Ross 159 series, or approved equal, 5 amp contacts, 8-pin octal base.

Cabinet shall have a doorstop self-latching mechanism, which will provide a positive retention of door when open. This will be located at the bottom of the cabinet, and have a minimum of two locked positions, 90 and 120 degrees.

A three-point locking mechanism shall be provided to secure the door at three points: top, center and bottom.

All cabinets shall be provided with a minimum of two shelves, fabricated with the same material as the cabinet. They shall be adjustable vertically, and be mounted to the cabinet wall with mounting strips with spring-retained nuts and machine screws.

Panels will be located in cabinet as described below:

- A) Communications/coordination-lower left wall
- B) Detectors-lower left wall
- C) AC power-lower right side of main panel
- D) Police switches-door
- E) Load bay-back wall
- F) Test switches-rear of main door

A wiring diagram shall be provided for each cabinet supplied and shall be approved by the Engineer before final acceptance of material.

Exterior cabinet painting:

Powder coating – color: dark bronze

Surface preparation – the exterior steel surface shall be blasé cleaned to steel structures painting council surface preparation specification No. 6 (SSPC-SP6) requirements utilizing cast steel abrasives conforming to the Society of Automotive Engineers (SAE) recommended practice J827. The blast method used is a recirculating, closed cycle centrifugal wheel system with abrasive conforming to SAE shot number S280.

Interior coating – interior surfaces (pole shafts only) at the base end for a length of approximately 2.0 feet shall be mechanically cleaned and coated with a zinc rich epoxy powder. The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit.

Exterior coating – all the exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum film thickness of 2.0 mils (0.002”). The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit. The thermosetting powder resin shall provide both intercoat as well as substrate fusion adhesion that meets 5A or 5B classifications of ASTM D3359.

Combination coating galvanized-powder top coat color: Dark Bronze

Surface preparation – prior to being incorporated into an assembled product, steel plates ¾ inches or more in thickness shall be blast cleaned when required to remove rolled-in mill scale, impurities and non-metallic foreign materials. After assembly, all weld flux shall be mechanically removed. The iron or steel product shall be degreased by immersion in an agitated 4.5% - 6.0% concentrated caustic solution elevated to a temperature ranging from 150 degrees Fahrenheit to 190 degrees Fahrenheit. It shall next be rinsed clean from any residual effects of the caustic or acid solutions by immersion in a circulating fresh water bath. Final preparation shall be accomplished by immersion in concentrated zinc ammonium chloride flux solution heated to 130 degrees Fahrenheit. The solution’s acidity content shall be maintained between 4.5 – 5.0pH. The assembly shall be air-dried to remove any moisture remaining in the flux coat and/or trapped within the product.

Zinc coating – the product shall be hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A153 (hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810 degrees Fahrenheit and 850 degrees Fahrenheit. The entire product shall be totally immersed with no part of it protruding out of the zinc (no double dipping). This is to limit a risk of trapped contaminants containing chlorides and reduce the risk of bare spots (bare spots can occur when flux on the steel surface is burned away by heat of the first dip). Maximum aluminum content of the bath shall be 0.01%. Flux ash shall be skimmed from the bath surface prior to immersion and extraction of the product to assure a debris free zinc coating.

Exterior coating – all galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum film thickness of 2.0 mils (0.002”). Prior to application, the surfaces to be powder coated shall be mechanically etched by brush blasting (ref. SSPC-SP7) and the zinc coated substrate preheated to 450 degrees Fahrenheit for a minimum of one hour in a gas fired convection oven. The coating shall be electrostatically applied and cured in a gas fire convection oven by heating the zinc coated substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit. The thermosetting powder resin shall provide both intercoat as well as substrate fusion adhesion that meets 5A or 5B classification of ASTM D3559.

Base Mounted Cabinets:

The controller shall be provided in a base-mounted control cabinet.

All necessary installation hardware and templates shall be provided.

Minimum outside dimensions of cabinet shall be 25 inches (width) by 16 inches (depth) by 48 inches (height).

A telephone modem shall be completely wired in each cabinet in order to report cabinet failures, detector failures and traffic counts. The controller shall be completely compatible with the latest edition of the City of Cleveland's closed loop system software.

The items supplied shall be in conformance with the above reference specification and shall be supplemented with the latest edition of the State of Ohio Department of Transportation, Construction and Material Specifications. Payment for accepted materials will be made at the unit bid price of each item installed and accepted.

**D-61 PLASTIC CAUTION TAPE (ITEM 625 SPECIAL)**

The location of the conduit in the trench shall be marked by the use of a continuous identifying tape buried in that trench above the line. The identifying tape shall be an inert material approximately 6" wide composed of polyethylene plastic and shall be highly resistant to alkalis, acids or other chemical components likely to be encountered in soils. The type shall be red with the words "electric line buried below" printed in black letters on one side only. It shall be supplied in continuous rolls with the identifying letters repeated for the full length of the tape. The contractor shall bury the tape in the trench with one strip placed approximately down the centerline and 8" to 12" below the final grade. It shall be placed in the trench with the printed side up and shall be essentially parallel to the finished surface. The contractor shall take any necessary precautions to insure that the tape is not pulled, distorted or otherwise misplaced in completing the trench backfilling. The tape shall be "Terra Tape", "Allen System's" or an equal as approved by the engineer in advance.

**D-62 REMOVAL OF TRAFFIC SIGNAL INSTALLATION (ITEM 632)**

Traffic signal installation, including signal heads, cable, messenger wire, strain poles, pedestrian poles, luminaires, cabinet, controller, pullboxes, etc., shall be removed in accordance with 632.26.

Removed items shall be delivered to the City. Contact Andrew Cross, Traffic Engineer at (216) 664-3199. Items to be delivered shall include traffic signal heads, controller, pedestrian pushbuttons, pedestrian signal heads and cabinets, pedestrian poles and luminaires.

**D-63 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN (ITEM 630)**



Signs mounted on proposed traffic signal mast arms shall be rigidly attached to the arm and centered vertically on the arm. The contractor may use the method of attachment shown in standard construction drawing TC-16.20 or another method of rigid attachment as approved by the engineer.

The contractor shall insure the sign face is mounted perpendicular (90 degrees) to the direction of traffic.

Payment for Item 630 – Sign Hanger Assembly, Mast Arm, As Per Plan shall be made at the contract unit price bid for each. Payment shall be full compensation for all materials, labor, tools, equipment and all parts necessary to erect one individual sign.

**D-64 COMBINATION SIGNAL SUPPORT (BY TYPE AND DESIGN) & SIGNALIZATION MISC.: SIGNAL, OVERHEAD SIGN AND LIGHT POLE SUPPORT, AS PER PLAN (ITEM 632)**

In addition to the requirements of specification 632, signal supports shall be painted in accordance with the following:

Powder coating – color: dark bronze

Surface preparation – the exterior steel surface shall be blast cleaned to steel structures painting council surface preparation specification No. 6 (SSPC-SP6) requirements utilizing cast steel abrasives conforming to the Society of Automotive Engineers (SAE) recommended practice J827. The blast method used is a recirculating, closed cycle centrifugal wheel system with abrasive conforming to SAE shot number S280.

Interior coating – interior surfaces (pole shafts only) at the base end for a length of approximately 2.0 feet shall be mechanically cleaned and coated with a zinc rich epoxy powder. The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit.

Exterior coating – all the exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum film thickness of 2.0 mils (0.002”). The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit. The thermosetting powder resin shall provide both intercoat as well as substrate fusion adhesion that meets 5A or 5B classifications of ASTM D3359.

Combination coating galvanized-powder top coat color: Dark Bronze

Surface preparation – prior to being incorporated into an assembled product, steel plates ¾ inches or more in thickness shall be blast cleaned when required to remove rolled-in mill scale, impurities and non-metallic foreign materials. After assembly, all weld flux shall be mechanically removed. The iron or steel product shall be degreased by immersion in an agitated 4.5% - 6.0% concentrated caustic solution elevated to a temperature ranging from 150 degrees Fahrenheit to 190 degrees Fahrenheit. It shall next be rinsed clean from any residual effects of the caustic or acid solutions by immersion in a circulating fresh water bath. Final preparation shall be accomplished by immersion in concentrated zinc ammonium chloride flux solution heated to 130 degrees Fahrenheit. The solution's acidity content shall be maintained between 4.5 – 5.0pH. The assembly shall be air-dried to remove any moisture remaining in the flux coat and/or trapped within the product.

Zinc coating – the product shall be hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A153 (hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810 degrees Fahrenheit and 850 degrees Fahrenheit. The entire product shall be totally immersed with no part of it protruding out of the zinc (no double dipping). This is to limit a risk of trapped contaminants containing chlorides and reduce the risk of bare spots (bare spots can occur when flux on the steel surface is burned away by heat of the first dip). Maximum aluminum content of the bath shall be 0.01%. Flux ash shall be skimmed from the bath surface prior to immersion and extraction of the product to assure a debris free zinc coating.

Exterior coating – all galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum film thickness of 2.0 mils (0.002”). Prior to application, the surfaces to be powder coated shall be mechanically etched by brush blasting (ref. SSPC-SP7) and the zinc coated substrate preheated to 450 degrees Fahrenheit for a minimum of one hour in a gas fired convection oven. The coating shall be electrostatically applied and cured in a gas fire convection oven by heating the zinc coated substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit. The thermosetting powder resin shall provide both intercoat as well as substrate fusion adhesion that meets 5A or 5B classification of ASTM D3559.

The City of Cleveland, Division of Traffic Engineering requires that the contractor meet with a Traffic Department representative prior to foundation installations to verify locations and for final pole orientations. Contact Andrew Cross, Traffic Engineer at (216) 664-3194, 48 hours prior to commencing work.

Orders for signal poles and mast arms shall be placed systematically after the respective foundations have been constructed. In the event that utility or other conflict requires that a signal support be constructed in a location other than as indicated on the plan, the engineer shall determine whether the specified arm length is appropriate. If a longer or shorter arm is required, the City shall provide the engineer with design information for the revised pole and arm. Changes in pole and/or arm size, strength and/or length due to revised foundation locations shall not receive additional compensation beyond the contract unit price for the item(s) actually furnished.

## **D-65 WATER WORK DETAILS**

All of the work specified in Division of Water Part D or Part E of these specifications and/or indicated on the Contract Drawings shall be considered as Required Work. Work not specifically indicated in Part D or Part E nor shown on the Contract Drawings shall be considered Additional Work.

The Contractor shall perform Additional Work items only after receiving prior written approval from the City and shall be paid for this work at the bid unit prices submitted for each item.

### **A. FIRE HYDRANT REPLACEMENT**

1. Where determined by the City that an existing hydrant is to be replaced, the Contractor shall furnish all hydrants, materials, labor, tools and equipment for removing an existing hydrant and installing a new six (6) inch hydrant assembly complete. Hydrant replacements shall include the removal and replacement of the hydrant tee, the hydrant branch, the branch valve, and all appurtenances from the hydrant to the main.

2. The six (6) inch hydrant shall be City of Cleveland Standard and shall conform to the Division of Water's specifications and approved hydrant drawings on file with the Division of Water at the Public Utilities Building, 1201 Lakeside Ave., Cleveland, Ohio 44114.

3. The Contractor shall be paid at the bid unit price submitted for each fire hydrant replaced which shall include: the removal and furnishing of hydrants, testing, painting, the excavation, sheeting and shoring, backfilling, seeding and sodding, ductile iron pipe and fittings, concrete piers or thrust blocks; and shall include the furnishing of all labor, materials, and tools necessary to complete the work as specified or as shown or as directed.

B. WATER SERVICE CONNECTION REPLACEMENT

1. Where determined by the City, the Contractor shall furnish all materials and provide all labor and equipment necessary to replace (2" and less) service connections as required in accordance with the general requirements as specified by Division of Water specifications. The requirements shall include, but not limited to the followings:

Contractor shall provide City with list of connections replaced including Station number, address and connection number.

a- 1" Service connection on Ductile / Cast Iron Water Mains

- 1 1" Corporation stop-copper to iron
- 1 1" Curb stop valve-copper to iron
- 1 Curb stop valve box top
- 1 Curb stop valve box bottom
- X Ft 1" Type K, ASTM B88, copper tubing

OR

- 1 1" Compression corporation stop
- 1 1" Oriseal compression valve
- 1 1" Oriseal Compression valve
- X Ft 1" Type K, ASTM B88, copper tubing

b- 1-1/2" Service connection on Ductile / Cast Iron Water Mains

- 1 SOM x 1-1/2" Bronze double strap tapping saddle
- 1 1-1/2" Corporation stop - copper to iron
- 1 1-1/2" x 12" long Bronze Nipple
- 2 1-1/2" Bronze square head gate valve (one valve at Main, 2<sup>nd</sup> valve used as curb valve)
- 2 1-1/2" Streamline unions - copper to copper, Male
- 2 1-1/2" Compression three (3) part unions-copper to iron, Male
- X Ft 1-1/2" Type K, ASTM B88, copper tubing
- 2 Valve box covers
- 2 Valve box tops
  
- 2 Valve box bottoms
- X Ft 1" Type K, ASTM B88, copper tubing

OR

- 1 SOM x 1-1/2" Bronze double strap tapping saddle
- 2 1-1/2" Oriseal valve
- 1 1-1/2" x 6" long Bronze Nipple
- 2 1-1/2" Streamline unions - copper to copper, Male
- 2 1-1/2" Compression three (3) part unions - copper to iron, Male
- X Ft 1-1/2" Type K, ASTM B88, copper tubing
- 2 Valve box covers
- 2 Valve box tops
- 2 Valve box bottoms
- 2 Stationary rods for Oriseal valve

NOTE: NO SPLICES BETWEEN CURB VALVE AND CORPORATION.

2. The Contractor shall be paid at the unit bid price for each water service connection replaced.

H. PLUGGING WATER SERVICE CONNECTION, 2" OR LESS. IN ALL PLUGGING SCENARIOS.

1. Where directed by the City, the contractor shall provide all labor, equipment, and materials necessary to plug service connections per City standards. The following work methods will be used for plugging the specified service conditions:

- a) Ferrule connections - Remove ferrule, install repair clamp or tap saddle with plug.
- b) 1" connection with Corporation valves - If corporation is leaking or the City Inspector determines that replacement is necessary, the Contractor shall remove the corp. and install a repair clamp at tap or tap saddle with plug. Otherwise, if corp. is sound, connection could be plugged by shutting corp. valve and cutting and crimping the service connection just after corp. valve.
- c) 1-1/2" and 2" saddles and corps- Cut service connection pipe and crimp at corporation, remove saddle, install double full-circle repair clamp.
- d) The curb valve must be shut prior to performing any plugging activities.

2. The Contractor shall be paid at the unit bid price for plugging service connection.

3. The Contractor shall provide City with a list of connections plugged including Station number, address and connection number.

**D-66 SEEDING AND MULCHING (ITEM 659)**

This item shall conform to ODOT Item No. 659 with the following exception:

a) The Contractor shall seed and mulch all grass areas within right-of-way and utility easements. Contractor shall submit seed mix for City approval prior to seeding. All areas shall be seeded with the following mixture:

44 Percent Hubbard Fescue  
22 Percent Bonanza Fescue  
22 Percent Apache Fescue  
12 Percent Annual Ryegrass

b) There shall be restoration of all existing grass areas disturbed by the Contractor; the cost for this work shall be included in the unit price bid per square yard for ODOT Item 659 - Seeding and Mulching.

c) Mowing shall be done at the direction of the Engineer. The first mowing shall be as soon as grass top growth reaches a 3" height and is to be cut back to 2" in height. After the second mowing and two days later the Contractor shall apply Triaiminic Plus or approved equal to eliminate weeds in the seeded and restored areas. The third cutting, as directed by the Engineer, is the final mowing required.

d) Contractor is responsible for repairing seeded and restored areas until final cutting at no additional cost to the City.

**D-67 WATER FOR SEEDING (ITEM 659)**

This item shall conform to ODOT Item 659.

Payment shall be made at the contract unit price bid per thousand (M) gallons for Water for Seeding.

**D-68 COMMERCIAL FERTILIZER (ITEM 659)**

This item shall conform to ODOT Item 659 with the following exceptions:

(1) Fertilizer shall be 12-12-12 and applied at the rate of 20 pounds per 1,000 square feet and shall be distributed in an even pattern, then thoroughly raked into the soil to a depth of not less than one inch (1").

(2) The Contractor shall fertilize all areas to be seeded.

Payment shall be made at the contract unit price bid per ton for ODOT Item 659 Commercial Fertilizer.

**D-69 TREE PRUNING (ITEM 666)**

The following information and instruction are subject to the direction of the City Forester or Urban Forestry Representative.

In general, trees are to be pruned in accordance with accepted arboriculture practice, by the contractor or subcontractor approved by Urban Forestry.

Under the "No Fee" permit, which the contractor must obtain from the City Forester 72 hours in advance of starting construction, the contractor shall prune every tree to be saved to forestall damage by construction equipment. The Contractor shall also remove all trash and debris resulting from the pruning, which has accumulated within the area's limits.

No tree shall be pruned except as directed by Urban Forestry.

The types of pruning generally used are: Crown Cleaning, Crown Thinning, Crown Raising, Crown Restoration and Utility Pruning. The above listing is not intended to be a complete representation of the International Society of Arboriculture standards. For complete specifications refer to Tree-Pruning Guidelines, an official publication of the International Society of Arboriculture 1995.

The Contractor shall carefully protect against damage to all existing vegetation and other features designated to remain. The Contractor shall be liable for any and all damage to such vegetation, features and other real property and vehicles, caused by their work. The Contractor shall be responsible for restoring or replacing to their original condition, and to the satisfaction of the Urban Forestry representative, any and all of these items damaged during the performance for this work.

Prior to starting construction of the project the contractor shall prune every tree within the project site as needed. All cuts shall be made sufficiently close to the parent stem and according to NAA pruning standards to facilitate natural healing processes. All limbs one inch in diameter and over must be precut to prevent splitting. All pruning shall be done to a lateral branch (drop crotch pruning). All pruning shall be guaranteed for a period of one year. Do not leave stubs and do not flush cut.

Branches shall be removed to a height sufficient to permit free passage of both pedestrian and vehicular traffic. In lifting the bottom branches of trees to provide clearance, care should be given to overall appearance, and cuts shall not be made that will prevent normal sap flow.

All trees, which require corrective pruning and maintenance due to root and trunk

damage in the course of proximal excavation, shall have such corrective pruning and maintenance, performed within fifteen calendar days of said damage.

When pruning within City right of ways, all pruned material and all other debris shall be removed from the site within twenty-four hours and disposed of properly.

**D-70 TREE REMOVAL**

Tree removal shall be done only under the direction of the engineer or as shown on the plans. The contractor is reminded that a tree removal permit from the Urban Forestry section shall be obtained prior to the removal of any tree in any City right of way.

- 1). Brush is defined as trees up to and including 3 inches in diameter.
- 2). The diameter of the trees will be measured at a height of 54 inches above the ground.

Trees marked for removal shall be measured in accordance with the following schedule of sizes:

Over 3 inches to 12 inches	9-inch size each
Over 12 inches to 24 inches	15-inch size each
Over 24 inches to 36 inches	30-inch size each
Over 36 inches to 60 inches	48-inch size each
Over 60 inches	60-inch size each

- 3). **Existing stumps partially or totally inside of the area of excavation for any sidewalks, handicap ramp, driveway or curb shall be partially or totally removed as part of the excavation requirements. No additional payment will be made for removing these stumps.**

**D-71 ROOT PRUNING**

Root pruning should be prohibited when construction alternatives exist that make root pruning unnecessary. Some of these alternatives include; re-alignment or narrowing of the sidewalk blocks around the trees to eliminate the need to prune or cut major roots. Curb construction should be performed using a "slip form paving machine" using a model that has zero clearance and requires minimum excavation. Installing curb drain under the curb instead of next to it should also be a construction requirement.

After it has been determined that root pruning is necessary all root pruning operations will be subject to inspection, supervision and approval by the appropriate Urban Forestry personnel or consulting arborist working under the auspices of the Urban Forestry section. All root pruning should be performed by a certified arborist.



All roots should be removed by severing them cleanly with a sharp axe, power saw or by grinding them off using a root grinding machine. Roots may not be “torn off” or removed using power equipment, such as, backhoes, steerskid loaders or front end loaders.

Disruption of soil and roots should be kept to a minimum whenever possible. Root pruning or soil excavation shall not occur closer than three feet from the outer portion of the trunk, on trees that are 12” in diameter or less. For trees larger than 12” in diameter, soil excavation and root pruning shall not occur closer than the distance measured by the circumference of the tree. If there is an inability to perform the work necessary, following the distance guidelines outlined above, a representative of Urban Forestry Section shall be called to the tree site to make an inspection and recommendation, pertaining to the need to remove the tree.

Soil excavation work is permitted closer than the distance parameters established under the above categories; provided all excavation is accomplished using hand tools and no roots greater than two inches in diameter are severed.

Roots under sidewalk areas should be removed to a depth of (6-1/2”) inches below the top of the finished sidewalk only. The sub-grade material under the sidewalk should have acceptable pore space to allow for root aeration.

Whenever appropriate a “root barrier system” should be installed along the length of the work area, on sidewalk side only. Installation of this barrier should be done using the manufacturers specification and as directed by the Chief of the Bureau of Sidewalks.

Root pruning will not be performed on private trees by City personnel or by contractors working under the auspices of the City of Cleveland. The property owner who is responsible for the tree shall contact a qualified tree company, at their expense, and remove any offensive roots, before the sidewalk area can be repaired.

Exposed roots should be kept moist by applying water and adding an organic layer over the exposed area, until the site can be returned to a pre-construction condition.

Trees growing in the public right-of-way are the property of the City of Cleveland and their care and protection are governed by the Commissioner of Park Maintenance & Properties. No person, firm or corporation without a permit from the Director of Parks, Recreation and Properties shall cut, break, climb, injure, prune, spray or remove any tree or portion of tree planted in the public right-of-way within the City or cause, authorize or procure any person to break, climb or injure any such tree or portion thereof. All types of construction activity, being performed within a close proximity to a city owned tree are subject to the inspection and review by the Division of Park Maintenance.

The Consulting Arborist will perform an initial on site inspection, of all tree sidewalk conflicts provided by the City of Cleveland and will prepare either a Pre-Construction Tree Assessment or a Tree Assessment at time of sidewalk removal. Said report must

address both the condition of each tree and the sidewalk conflict from roots and or the trunk itself. Recommendations must be made as to whether roots can be cut, tree removal is advisable or an alternative can be done to protect the tree. The City's main concern is the preservation of all healthy and safe trees whether in the tree lawn or on private property and still allow pedestrian and wheelchair use of the sidewalks. All tree removal recommendations are subject to the review and approval of the Division of Park Maintenance & Properties and the Urban Forestry Section. In the event that tree removal becomes necessary and only after approval, this service shall be scheduled through the office of Urban Forestry. If root removal is recommended the Consulting Arborist will direct both the contractor performing the cement repair and the contractor performing the root grinding, on sidewalk adjustment/change in design and the amount of root removal needed. A final inspection of the area may also be required, after the root grinding has been completed and before any backfill has been added, to re-evaluate the condition of the tree and on the performance of the root removal operation. The Division of Park Maintenance & Properties reserves the right to approve the selection of the Consulting Arborist.

All root removal operations must be performed under the supervision and direction of a Registered Consultant Arborist. The Consulting Arborist must advise the sidewalk repair contractor of proper root pruning techniques prior to or at the start of construction. Upon removal of the old pavement, the contractor is advised to inspect and probe for additional roots before excavating soil. If more roots are to be cut than anticipated and those roots are in excess of two inches in diameter at the point of cutting, then the Consulting Arborist must be notified before any root cutting shall take place. The consulting Arborist may need to inspect the exposed roots. Notes will be required and photographs are advisable.

Root cutting performed with the use of hand tools may be done by non-arboriculture employees of the sidewalk repair contractor only after a briefing and instruction by the Consulting Arborist. Root grinding by machine must be done by either a qualified tree worker, or an equipment operator experienced in root cutting for sidewalk repair, but only after adequate instruction by the Consulting Arborist. Caution is advised that ripping old roots may damage both public and private property.

Clean up shall be completed within two hours after debris has been "ground out" around each site where root removal operations are taking place. The work site shall be left in a manner that is equal or cleaner than pre-work conditions. It shall be the responsibility of the contractor to remove and dispose of any wood debris (chips, roots, limbs etc...) in a proper and acceptable manner.

The contractor must have in their possession or available to them by formal agreement, trucks, stump grinders, hand tools and other equipment and supplies which are necessary to perform the outlined work as specified.

The contractor performing the root removal is responsible for contacting the necessary utility agencies any time work is being performed around overhead or underground

utility installations. The contractor shall protect all utilities from damage, shall immediately contact the appropriate utility should damage occur, and shall be responsible for all claims of damage due to his operation.

The contractor shall perform the work with due care, taking precautions against injury to persons and damage to property and against interference with traffic or abutting property and he shall at his own expense, erect barricades, display lights or signs, give warnings and adopt and enforce rules and regulations as may be necessary or required by the agency or by the authorities having jurisdiction to safeguard the public.

Traffic control is the total responsibility of the contractor and shall be coordinated with the proper departments of the City of Cleveland and shall be accomplished in conformance with State, County and local highway construction codes. The contractor is solely responsible for pedestrian and vehicular safety control within the work site and shall provide the necessary warning devices.

Damage by the contractor to any person or property, public or private are the total responsibility of the contractor and are repaired or compensated by the contractor to the satisfaction of both injured party and the Division of Park Maintenance & Properties at no cost to the City.

Tree Damage caused by the contractor shall be immediately repaired at no additional expense to the City of Cleveland. Trees damaged as judged by the Division of Park Maintenance & Properties are appraised to determine the value of damage. If the City determines that the damage warrants removal, it shall be done by the contractor at no cost to the City. The appraised cost of the damage may either be paid to the Division of Park Maintenance & Properties or deducted from monies owed by the contractor. If the damage resulted in the removal of the tree, the City may accept replacement trees whose combined diameters are equal to that of the tree to be removed. All replacement trees shall be balled and burlapped and of a species to be determined by the Division of Park Maintenance & Properties.

All equipment to be used and all work to be performed must be in full compliance with the most current version of the American National Standards Institute, (ANSI) standard Z-133-1, (Safety requirements for Pruning, Trimming, Repairing, Maintaining, Removing Trees and for Cutting Brush). ANSI standards are made part of this contract by this reference.

**D-72 MISCELLANEOUS METAL (ITEM SPECIAL)**

This Item shall be used to replace missing, damaged, or broken City of Cleveland castings. The Engineer shall determine which of the castings, if any, shall be replaced under this Item. New casting shall be set to line and grade and paid for as adjusting the respective casting, in addition to the payment for miscellaneous metal furnished.

Dray slips shall be submitted for each separate part of each casting and shall be used to determine the actual weight of miscellaneous metal to be paid for, in pounds (Lbs.). An estimated quantity of miscellaneous metal has been included in the Schedule of Items to perform this work. This quantity is used for estimating purposes only. Items meeting this specification shall be paid under Item Special Miscellaneous Metal.

**D-73 TESTING OF CONSTRUCTION MATERIALS (ITEM SPECIAL)**

The Contractor shall perform all work under this section of the specifications. The Contractor shall hire a Private Laboratory to perform tests on construction materials. The testing laboratory shall be subject to the review and prior approval of the Commissioner and shall not be changed without the approval of the Board of Control

Inspection and review of the laboratory by the Cement and Concrete Reference Laboratory of the National Bureau of Standards, in affiliation with the American Council of Independent Laboratories is required. Accreditation by the Department of Commerce's National Voluntary Laboratory Accreditation Program or other similar organization is not mandatory, but furnishing proof of such compliance would weigh heavily upon the acceptance of that laboratory to perform services under this contract. However, any laboratory performing services under this contract shall be able to verify its independence from the construction contractor and subcontractor, if any, whose work is being tested

Listed below is list of these tests and the respective American Society of Testing and Materials (ASTM) 1994 specifications:

**Tests**

The tests described below shall be performed only as requested and directed by the Commissioner or his designee. Each test shall conform to the specifications indicated. The unit price bid for each type of field test shall include all costs for the test described; including traffic control, mileage and the furnishing of the required reports. **Two (2) copies of each test report plus original are required.**

All tests requiring coring shall be subject to the following two (2) additional requirements. The first is the cored hole shall be filled with material approved by the Commissioner. The second is that the performance of these tests may be observed by a representative of the Commissioner.

**Test reports must include the name of the individual requesting the test and the date of the request. All reports should be sent to:**

, Commissioner of Engineering & Construction  
Division of Engineering & Construction  
Cleveland City Hall, Room 518  
Cleveland, OH 44114

**1. Asphalt Density Test**

This test shall conform to ASTM D-2950 (Density of Bituminous Concrete in Place by Nuclear Method). All tests shall be made at the time of placement of the asphalt at locations furnished by the engineer.

**2. Asphalt Extraction Test**

This test shall conform to ASTM D-2172 (Quantitative Extraction of Bitumen from Bituminous Paving Mixtures) and as herein modified. The first modification is that the sample taken in the field shall be used for a Marshall Stability Test as per ASTM D-1559 (Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus). The second and last modification is that after performing the ASTM D-2172 test, all the sample aggregate shall be subjected to a sieve analysis as per ASTM C-136 (Sieve Analysis of Fine Course Aggregates).

The test report shall include all the results, including test method used, for all three (3) ASTM tests.

**3. Thickness of Compacted Asphalt Test**

This test shall conform to ASTM D-3549 (Thickness or Height of Compacted Bituminous Paving Mixture Specimens). Cores shall be drilled in a random pattern along the pavement of each lane as directed.

**4. Concrete Compression, Slump, Air Content & Temperature Check Tests (Field)**

This item includes making and curing cylinders in the field and testing them in the laboratory. These tests shall conform to ASTM C-31 (Making and Curing Concrete Test Specimens in the Field) and ASTM C-39 (Compressive Strength of Cylindrical Concrete Specimens) and as herein modified. All samples shall be obtained as stated in ASTM C-172 (Sampling Fresh Concrete).

Each Concrete Compression Test shall be composed of a set of four (4) concrete test specimens made in conformity with ASTM C-31 (Making and Curing Concrete Test Specimens in the Field) at locations as specified by the engineer.

At the time of pouring, a slump test conforming to ASTM C-143 (Slump of Portland Cement Concrete) and an air entrainment test conforming to ASTM C-231 (Air Content of Freshly Mixed Concrete by the Pressure Method) shall be performed. The concrete temperature shall also be taken and recorded as per ASTM C-1064 (Test Method for Temperature of Freshly Mixed Concrete).

One (1) cylinder from each set of four (4) shall be compression tested at seven (7) days and a written report, including results of slump and air entrainment tests and the concrete temperature, shall be forwarded to the Commissioner within twenty-four (24) hours of the test completion.

The three (3) remaining cylinders shall be compression tested at twenty-eight (28) days and a written report of each individual cylinder test and their average shall be forwarded to the Commissioner within twenty-four (24) hours of the test completion. The cost of picking up test cylinders, whether on a holiday, weekend or at night shall be included in the unit price bid for each set tested.

The testing laboratory shall notify the Commissioner of Engineering & Construction, by telephone at (216) 664-2381, immediately on the occurrence of any of the following four (4) conditions:

- a. Any or all of the concrete test specimens of any set are lost or damaged in the field.
- b. Any or all of the concrete test specimens of any set are lost or damaged by the testing laboratory.
- c. The result of the seven (7) day test result is below 3200 psi for Type C concrete or 3400 psi for Type S concrete.
- d. The average of the twenty-eight (28) day test of any set is below 4000 psi for Type C concrete or 4500 psi for Type S concrete.

All telephone calls made, as required above, shall be included in the test report and include the name of the person called, the time and date, and the reason for the call.

The unit price bid for this item shall include making the four (4) cylinders (one set) in the field, curing, testing and the report. **Included in the report should be the exact location of each set of cylinders tested. Reports which do not include this will be rejected. Additionally, no payment will be made for any set which includes less than four (4) cylinders.**

## **5. Concrete Compression, Slump, Air Content & Temperature Check Tests (Lab)**

This item includes making, curing and testing cylinders in the laboratory. These tests shall conform to ASTM C-192 (Making and Curing Test Specimens in the Laboratory), ASTM C-143 (Slump of Portland Cement Concrete), ASTM C-231 Air Content of Freshly Mixed Concrete by the Pressure Method, ASTM C-1064 (Test Method for Temperature of Freshly Mixed Concrete) and ASTM C-39 (Compressive Strength of Cylindrical Concrete Specimens).

The testing laboratory shall submit a certified test report, within twenty-four (24) hours, to those designated by the Commissioner.

## **6. Concrete Core Samples for the Determination of Concrete Compressive Strength**

These samples shall be obtained and compression tested as per ASTM C-42 (Obtaining and Testing Drilled Cores and Sawed Beams of Concrete) and ASTM C-39 (Compressive Strength of Cylindrical Concrete Specimen). The concrete to be cored ranges from four (4) to twelve (12) inches in thickness.

The unit price bid to obtain the cores in the field shall include coring, transportation, storage and traffic maintenance.

The pay item testing concrete cores obtained in the field shall include necessary preparation.

## **7. Analysis of Aggregates**

This item covers sampling and testing aggregates used in subbase courses, bituminous paving mixes and concrete mixes. The sample of the aggregate shall be taken as per ASTM D-75 (Sampling Aggregate) and reduced to the proper test size. The sample shall be tested as per ASTM C-136 (Sieve Analysis of Fine and Course Aggregates), ASTM C-117 (Test Method for Materials Finer Than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing) or ASTM C-88 (Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate).

## **8 Soil Test Check**

This item covers the determination of the soil density and percent compaction. The density of the soil or soil aggregate shall be taken as per either ASTM D-2922 (Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)), ASTM D-1556 (Density of Soil in Place by the Sand-Cone Method), ASTM D-2167 (Density and Unit Weight of Soil in Place by the Rubber Balloon Method) or any combination of these tests as required and directed by the Commissioner. This density shall be compared to the maximum density as determined by the Moisture-Density Test as per ASTM D-698 (Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 5.5 lbs. (2.49 kg) Rammer and 12 in. (305 mm) Drop).

### **D-74 ASPHALT REJUVENATING AGENT (ITEM SPECIAL)**

#### SCOPE OF WORK

This Work shall consist of furnishing all labor, material, and equipment necessary to perform all operations for the application of an asphalt rejuvenating agent asphaltic concrete surface course. The rejuvenation of surface courses shall be by spray application of a cationic rejuvenating agent composed of petroleum oils and resins emulsified with water. All work shall be in accordance with the specifications, the applicable drawings, and subject to the terms and conditions of this contract.

#### MATERIAL SPECIFICATIONS

The asphalt rejuvenating agent shall be emulsion composed of petroleum resins oil base uniformly emulsified with water. Each bidder must submit with his bid a certified statement from the asphalt rejuvenator manufacturer showing that the asphalt rejuvenating emulsion conforms to the required physical and chemical requirements.

#### SPECIFICATIONS

<b><u>Tests</u></b>	<b><u>ASTM</u></b>	<b><u>AASHTO</u></b>	<b><u>Requirements</u></b>	
			Min.	Max.
<i>Test on Emulsion:</i>				
Viscosity, @ 25 C,S.F.S	D 244	T-59	15	40
Residue, % W	D 244 (Mod.)	T-59 (Mod.)	60	65
Miscibility test	D 244 (Mod.)	T-59 (Mod.)	No	
			Coagulation	
Sieve test, % W	D 244 (Mod.)	T-59 (Mod.)	-	0.1
Particle Charge Test	D 244	Positive		
Percent Light	GB	GB	-	30
Transmittance				



*Test on Residue from  
Distillation:*

Flash Point, COC, C	D-92	T-48	196	-
Viscosity @ 60 C, cSt	D 445	-	100	200
Asphaltness, % w	D 2006-70	-	0.3	1.00
Maltenes Dist. Ratio	D 2006-70	-	0.6	0.6
<u>PC+A</u>				
S + A				
PC/S Ration	D 2006-70	-	0.5	-
Saturated Hydrocarbons, S	D 2006-70	-	21	28

ASTM D-244 Modified Evaporation Test for percent of residue is made by heating 50 gram sample to 149°C (300F) until foaming ceases, then cool immediately and calculate results.

Test procedure identical with ASTM D-244-60 except that .02 Normal Calcium Chloride solution shall be used in place of distilled water.

Test procedure identical with ASTM D-244 except that distilled water shall be used in place of two percent sodium oleate solution.

Test procedure is attached.

Chemical composition by ASTM Method D-2006-70:

PC=Polar Compounds A=First Acidaffins

A=Second Acidaffins S=Saturated Hydrocarbons

#### MATERIAL PERFORMANCE

The material shall have a record of at least five years of satisfactory service as an asphalt rejuvenating agent and in-depth sealer. Satisfactory service shall be based on the capability of the material to decrease the viscosity and increase the penetration value of the asphalt binder as follows. The viscosity shall be reduced by a minimum of 45 percent and the penetration value shall be increased by 25 percent. Testing shall be performed on extracted asphalt cement from a pavement to a depth of three eighth's inch (3/8"). In addition, the pavement shall be in-depth sealed to the intrusion of air and water.

The bidder must submit with his bid the manufacturer's certification that the material proposed for use in compliance with the specifications requirements. The bidder must submit with his bid previous use documentation and test data conclusively demonstrating that the rejuvenating agent has been used successfully for a period of five years by government agencies such as Cities, Counties, etc.; and that the asphalt rejuvenating agent has been proven to perform, as heretofore required, through filed testing by government agencies as to the required change in the asphalt binder viscosity and penetration number. Testing data shall be submitted indicating such product performance on a sufficient number of projects, each being tested for minimum period

of three years to insure reasonable longevity of the treatment, as well as product consistency.

RECLAMITE, manufactured by Witco Corporation, is a product of known quality and accepted performance, but an approved equal may be use.

#### APPLICATOR EXPERIENCE

The asphalt rejuvenating agent shall be applied by an experienced applicator of such material. The bidder shall have a minimum of three years experience applying the product proposed for use. He must submit with his bid a list of five projects on which he applied said rejuvenator. He shall indicate the projects dates, number of square yards treated in each and the name and phone number of the government official in charge of each project.

A project superintendent knowledgeable and experienced in application of the asphalt rejuvenating agent must be in control of each day's work. The bidder shall submit a written experience outline of the project superintendent.

#### APPLICATION TEMPERATURE/WEATHER LIMITATIONS

The temperature of the asphalt rejuvenating emulsion, at the time of application shall be as recommended by the manufacturer. The asphalt rejuvenating agent shall be applied only when the existing surface to be treated is thoroughly dry and when it is not threatening to rain. The asphalt rejuvenating agent shall not be applied when the ambient temperature is below 40 F.

#### HANDLING OF ASPHALT REJUVENATING AGENT

Contents in tank cars or storage tanks shall be circulated at least forty five minutes before withdrawing any material for application. When loading the distributor, the asphalt rejuvenating agent concentrate shall be loaded first and then the required amount of water shall be added. The water shall be added into the distributor with enough force to cause agitation and through mixing of the two materials. To prevent foaming, the discharge end of the water hose or pipe shall be kept below the surface of the material in the distributor which shall be used as a spreader. The distributor truck will be cleaned of all of its asphalt materials, and washed out to the extent that no discoloration of the emulsion may be perceptible. Cleanliness of the spreading equipment shall be subject to the approval and satisfaction of the Engineer.

## APPLICATION EQUIPMENT

The distributor for spreading the emulsion shall be self-propelled, and shall have pneumatic tires. The distributor shall be designed and equipped to distribute the asphalt rejuvenating agent uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 0.5 gallons per square yard of surface, and with an allowable variation from any specified rate not to exceed 5 percent of the specified rate.

Distributor equipment shall include full circulation spray bars, pump tachometer, volume measuring device and hand hose attachment suitable for application of the emulsion manually to cover areas inaccessible to agitate the emulsion within the tank.

A check of distributor equipment as well as application rate accuracy and uniformly distributed onto the pavement. The spreader shall be able to apply ½ pound to 3 pounds of sand per square yard in a single pass. The spreader shall be adjustable so as not to broadcast sand onto driveways or treelawns.

The sand to be used shall be free flowing, without any leaves, dirt, stones, etc. Any wet sand shall be rejected from the job site.

Any equipment which is not maintained in full working order, or is proven inadequate to obtain the results prescribed, shall be repaired or replaced at the direction of the Engineer.

## APPLICATION OF REJUVENATING AGENT

The asphalt rejuvenating agent shall be applied by a distributor truck at the temperature recommended by the manufacturer and at the pressure required for the proper distribution. The emulsion shall be so applied that uniform distribution is obtained at all points of the area to be treated. Distribution shall be commenced with a running start to insure full rate of spread over the entire area to be treated. Areas inadvertently missed shall receive additional treatment as may be required by hand sprayer application.

Application of asphalt rejuvenating agent shall be on one-half width of the pavement at a time. When the second half of the surface is treated, the distributor nozzle nearest the center of the road shall overlap the previous application by at least one-half of the width of the nozzle spray. In any event the centerline construction joint of pavement shall be treated in both application passes of the distributor truck.

Before spreading, the asphalt rejuvenating agent shall be blended with water at the rate of two (2) parts rejuvenating agent to one (1) part water, by volume or as specified by the manufacturer. The combined mixture of asphalt rejuvenating agent and water shall be spread at the rate of 0.05 to 0.10 gallons per square yard, or as approved by the Engineer following field testing.

Where more than one application is to be made, succeeding application shall be made as soon as penetration of the preceding application has been completed and approval is granted for additional applications by the Engineer.

Grades or super elevations of surface that may cause excessive runoff, in the opinion of the Engineer, shall have re required amounts applied in two or more applications as directed.

After the street has been treated, the area within one foot of the curb line on both sides of the road shall receive an additional treatment of asphalt rejuvenating emulsion. Said treatment shall be uniformly applied by a method acceptable to the Engineer.

After the rejuvenating emulsion has penetrated, a coating of dry sand shall be applied to the surface in sufficient amount to protect the traveling public as required by the Engineer.

The contractor shall furnish a quality inspection report showing the source, manufacturer, and date shipped, for each load of asphalt rejuvenating agent. When directed by the Engineer, the Contractor shall take representative samples of material for testing.

#### STREET SWEEPING

The Contractor shall be responsible for sweeping and cleaning of the streets prior to, and after treatment.

Prior to treatment, the street will be cleaned of all standing water, dirt, leaves, foreign materials, etc. This work shall be accomplished by hand brooming, power blowing or other approved methods. If in the opinion of the Engineer the hand cleaning is not sufficient than a self-propelled street sweeper shall be used.

All sand used during the treatment must be removed no later than 48 hours after treatment of the street. This shall be accomplished by a combination of hand and mechanical sweeping. All turnouts, cul-de-sacs, etc. must be cleaned of any material to the satisfaction of the Engineer. Street sweeping will be included in the price bid per square yard for asphalt rejuvenating agent.

If, after sand is swept and the opinion of the Engineer and hazardous condition exists on the roadway, the Contractor must apply additional sand and sweep same no later than 24 hours following reapplication. No additional compensation will be allowed for reapplication and removal of sand.

## TRAFFIC CONTROL

The Contractor shall schedule his operation and carry out the work in a manner to cause the least disturbance and/or interference with the normal flow of traffic over the area to be treated. Treated portions of the pavement surfaces shall be kept closed and free from traffic until penetration, in the opinion of the Engineer, has become complete and the area is suitable for traffic.

When, in the opinion of the Engineer, traffic must be maintained at all times on a particular street, then the Contractor shall apply asphalt rejuvenating agent to one lane at a time. Traffic shall be maintained in the untreated lane until the traffic may be switched to the completed lane.

The Contractor shall be responsible for all traffic control and signing required to permit safe travel. The Contractor shall notify the police and fire departments as to the streets that are to be treated each day.

If, in the opinion of the Engineer, proper signing is not being used, the Contractor shall stop all operations until safe signing and barricading is achieved.

Payment for maintaining traffic for this item of work shall be included in ODOT Item 614 Maintaining Traffic and shall be bid lump sum.

## METHOD OF MEASUREMENT

Asphalt rejuvenating agent will be measured by the square yard as provided for in the schedule of items.

**Supplement to Detail Specifications**  
**Table of Contents**

<b>DS-0</b>	<b>REVISIONS TO CITY DETAILED SPECIFICATIONS .....</b>	<b>1</b>
<b>DS-1</b>	<b>ITEM 202 – GRANITE CURB REMOVED FOR REUSE .....</b>	<b>1</b>
<b>DS-2</b>	<b>ITEM 202 – REMOVAL, MISC.: PARKING METER .....</b>	<b>1</b>
<b>DS-3</b>	<b>ITEM 202 – REMOVAL, MISC.: TREE PIT FRAME AND GRATE .....</b>	<b>2</b>
<b>DS-4</b>	<b>ITEM 202 – REMOVAL, MISC.: CURBED TREE PIT .....</b>	<b>2</b>
<b>DS-5</b>	<b>ITEM 202 – REMOVAL, MISC.: BENCHES, TRASH CANS, AND BIKE RACKS. ....</b>	<b>2</b>
<b>DS-6</b>	<b>ITEM SPECIAL – BIORETENTION CELL .....</b>	<b>2</b>
<b>DS-7</b>	<b>ITEM 608 – 6” CONCRETE WALK, AS PER PLAN .....</b>	<b>4</b>
<b>DS-8</b>	<b>ITEM 608 – CURB RAMP WITH TILE, INCLUDING LAYOUT, AS PER PLAN .....</b>	<b>5</b>
<b>DS-9</b>	<b>ITEM 604 – 2-2B CATCH BASIN WITH SUMP AND TRAP .....</b>	<b>5</b>
<b>DS-10</b>	<b>ITEM 605 – 6” UNCLASSIFIED PIPE UNDERDRAIN, AS PER PLAN .....</b>	<b>5</b>
<b>DS-11</b>	<b>ITEM 254 – PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN .....</b>	<b>6</b>
<b>DS-12</b>	<b>ITEM 407 – TACK COAT, TRACKLESS TACK, BY COURSE .....</b>	<b>6</b>
<b>DS-13</b>	<b>ITEM 609 – CURB, TYPE 6, AS PER PLAN .....</b>	<b>8</b>
<b>DS-14</b>	<b>ITEM 609 – CURB, MISC.: GRANITE CURB RESET .....</b>	<b>9</b>
<b>DS-15</b>	<b>ITEM SPECIAL – REMOVE EXISTING VAULT/MANHOLE .....</b>	<b>9</b>
<b>DS-16</b>	<b>ITEM SPECIAL – RECONSTRUCT VAULT/MANHOLE FRAME AND COVER TO GRADE .....</b>	<b>9</b>
<b>DS-17</b>	<b>ITEM 630 – SIGN, FLAT SHEET, AS PER PLAN .....</b>	<b>10</b>
<b>DS-18</b>	<b>ITEM 630 – SIGNING, MISC.: STREET NAME SIGN (16” OR 12”) .....</b>	<b>10</b>
<b>DS-19</b>	<b>ITEM 625 - LIGHTING, MISC.: PULL BOX REMOVED AND REPLACED. .</b>	<b>19</b>
<b>DS-20</b>	<b>ELECTRICAL UTILITIES .....</b>	<b>19</b>
<b>DS-21</b>	<b>CLEVELAND PUBLIC POWER GUIDELINES .....</b>	<b>19</b>
<b>DS-22</b>	<b>ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS .....</b>	<b>29</b>
<b>DS-23</b>	<b>MAINTAINING TRAFFIC, MISC: MAINTENANCE OF PEDESTRIAN TRAFFIC .....</b>	<b>29</b>

<b>DS-24</b>	<b>ITEM 608 – WALKWAY, MISC.: INTEGRALLY COLORED AND STAMPED CONCRETE SIDEWALK .....</b>	<b>31</b>
<b>DS-25</b>	<b>DESIGN, FABRICATION, AND INSTALLATION OF PUBLIC ART (WEST SIXTH STREET STREETScape) 100% LOCAL ITEM .....</b>	<b>33</b>
<b>DS-26</b>	<b>FABRICATION AND INSTALLATION OF PUBLIC ART FOUNDATION (WEST SIXTH STREET) .....</b>	<b>33</b>
<b>DS-27</b>	<b>DESIGN OF PUBLIC ART (PROFESSOR STREET INTERSECTIONS) 100% LOCAL ITEM .....</b>	<b>34</b>
<b>DS-28</b>	<b>FABRICATION AND INSTALLATION OF PUBLIC ART (PROFESSOR STREET INTERSECTIONS) .....</b>	<b>34</b>
<b>DS-29</b>	<b>ITEM SPECIAL – STREETScape, MISC.: TREE PIT .....</b>	<b>37</b>
<b>DS-30</b>	<b>ORNAMENTAL FENCE FOR TREE PITS .....</b>	<b>37</b>
<b>DS-31</b>	<b>PLANTINGS .....</b>	<b>38</b>
<b>DS-32</b>	<b>STREETScape FURNISHINGS .....</b>	<b>43</b>
<b>DS-33</b>	<b>ITEM SPECIAL, PATTERNED CROSSWALK , AS PER PLAN .....</b>	<b>47</b>
<b>DS-34</b>	<b>ITEM 619 – FIELD OFFICE, AS PER PLAN .....</b>	<b>47</b>
<b>DS-35</b>	<b>ITEM SPECIAL - COMPUTER EQUIPMENT REMAINING CONTRACTORS.....</b>	<b>47</b>
<b>DS-36</b>	<b>RECORD DRAWINGS .....</b>	<b>49</b>
<b>DS-37</b>	<b>UTILITY NOTES .....</b>	<b>50</b>
<b>DS-38</b>	<b>UTILITY OWNERSHIP .....</b>	<b>51</b>
<b>DS-39</b>	<b>ITEM 108 – CRITICAL PATH METHOD PROGRESS SCHEDULE PER PN 107 .....</b>	<b>51</b>
<b>DS-40</b>	<b>INSERTS.....</b>	<b>52</b>

**Subsurface Investigation Report**  
**Special Provisions - Curb Ramps**  
**ODOT Supplemental Specification 800**  
**ODOT Supplemental Specification 832**  
**Exhibit “B” Utility Adjustments and 4A Notes**  
**List of Encroachments**

# GENERAL

## DS-0 REVISIONS TO CITY DETAILED SPECIFICATIONS

In addition to the revisions made in the Supplemental Detailed Specifications (Part DS), the following changes are made to the City of Cleveland Detailed Specifications (Part D):

**D-5 Contractor Hours:** REMOVE the second paragraph from this Specification.

**D-29 Asphalt Concrete Item 301, 446, and 448:** REMOVE all references to “446” in this Specification.

**D-73 Asphalt Rejuvenating Agent (Item Special):** REMOVE this Detailed Specification in its entirety.

# ROADWAY

## DS-1 ITEM 202 – GRANITE CURB REMOVED FOR REUSE

Work under this item shall include all materials, equipment, and labor necessary to remove and store the existing granite curb for reuse in this project. This Detail Specification supersedes Supplemental General Condition C-12, “GRANITE CURB REMOVED.”

All existing granite curb within the project shall be removed, cleaned, and stored by the Contractor. The Contractor shall exercise reasonable care in the removal and storage of the existing granite curb. The method of removal shall not damage the curb. If necessary, the Contractor shall hand excavate to ensure that the curb is not damaged. All mortar and concrete shall be removed from the existing curb.

The existing curb shall be stacked neatly, out of the way of construction equipment and pedestrian access paths, at a location approved by the City. Should the Contractor choose to remove the curb from the site, they shall be stacked on wooden pallets and secured tightly for transit.

At the conclusion of the project, all unused granite curb shall become property of the City of Cleveland and shall be delivered by the Contractor to the Division of Streets storage yard, Eaton Building, 2301 East 65th Street.

## DS-2 ITEM 202 - REMOVAL, MISC.: PARKING METER

All existing parking meters located within the project are to be removed. The City of Cleveland forces will remove the meter head. The Contractor shall contact Reginald Matthews, Manager of Parking, at (216) 664-2748 to coordinate removal of the parking meter heads at least one week prior to construction. After the City removes the meter head, the Contractor shall remove and dispose of the meter post and any foundation.



The Contractor shall in no case remove any parking meter post until the City has removed the meter head.

**DS-3 ITEM 202 - REMOVAL, MISC.: TREE PIT FRAME AND GRATE**

Work under this item shall include all materials, equipment, and labor necessary to remove the existing tree pit frame and grates. The grates shall be cleaned by the Contractor and stored on site for removal by the City. The frames shall be disposed of by the Contractor. This item shall also include the removal and disposal of the existing concrete frame support.

**DS-4 ITEM 202 - REMOVAL, MISC.: TREE PIT FRAME AND GRATE**

Work under this item shall include all materials, equipment, and labor necessary to remove the existing curbed tree pits, including decorative iron fence where applicable. All fence removed shall become property of the Contractor.

**DS-5 ITEM 202 – REMOVAL, MISC.: BENCHES, TRASH CANS, AND BIKE RACKS**

All existing benches, trash cans, and bike racks identified on the Drawings shall be removed and by the Contractor and stored on site in a location designated by the Engineer for removal by the City.

**DS-6 ITEM SPECIAL – BIORETENTION CELL**

1. **General:** Construct the bioretention cells as shown on the Drawings and to the satisfaction of the Engineer. Do not use the completed bioretention cell as temporary sediment control facilities during construction. Do not operate construction equipment within the perimeter of the bioretention facility during excavation, underdrain placement, backfilling, planting, or mulching of the facility.
2. **Materials:**
  - a. **Mulch:** Shredded hardwood as specified below in Detailed Specifications DS-31 (paragraph 2.01 C.2.). No other mulching material is acceptable for installation in the bioretention cells
  - b. **Soil Media:**
    - i. 50% sand (ASTM C33 fine).
    - ii. 20% composted organic (leaf compost).
    - iii. 30% topsoil, consisting of USDA textural classification of loamy sand or sandy loam meeting the criteria in the following table:

<b>TOPSOIL FOR BIORETENTION CELLS</b>	
<b>ITEM</b>	<b>CRITERIA</b>
Corrected PH	5.5-7.0
Organic Matter	1.5%-10%
Magnesium	32 PPM Minimum
Phosphorous (P205)	69 PPM Minimum
Potassium (K20)	78 PPM Minimum
Soluble Salts	550 PPM Maximum

- c. Pea Gravel: #7, #8, or #78 stone.
- d. Underdrain Pipe: 4-inch diameter rigid Schedule 40 PVC perforated with 3/8-inch holes @ 6 inches c/c, 4 holes per rows.
- e. Filter Fabric: Conforming to ODOT Item 712.09 Type D, Geotextile Fabrics for Subgrade-Base Separation or Stabilization.

3. **Construction:**

- a. Protection during construction: Bioretention materials as specified in this Supplemental Detailed Specification shall not be installed until the contributing drainage area is stabilized.
- b. Testing the Bioretention Soil Mix:
  - i. The soil media shall be a uniform mix, free of stones, stumps, roots, or other similar objects larger than two inches (2"). No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of noxious weeds.
  - ii. When soil media is mixed by the Contractor at the project site, the mix shall be tested according to this Supplemental Detailed Specification. A textural analysis is required from the topsoil stockpiled on the project site and all imported topsoil. All testing results shall come from the same testing facility.
  - iii. Should the PH of the soil media fall out of the acceptance range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur. Should the mix not meet the minimum requirements for magnesium, it may be modified with magnesium sulfate. Should the soil media not meet the minimum requirements for potassium, it may be modified with potash. Magnesium sulfate and potash must be mixed uniformly into the soil media mixture prior to use in bioretention facilities.
- c. Excavation: The bioretention facility shall be excavated to the dimensions, side slopes, and elevations shown on the Drawings. The method of excavation shall minimize the compaction of the bottom of the facility. Excavators and backhoes operating on the ground adjacent to the facility shall be used to excavate the facility. Excavated materials shall be removed from the project site.

- d. **Underdrain Installation:** Place the underdrain according to the Detail on the Drawings. Ensure a minimum of three inches (3”) of No. 57 gravel is placed over the pipe, plus the additional two inches (2”) of pea gravel.
  - e. **Placing the Soil Media Mixture:**
    - i. The bioretention soil media mixture shall be placed and graded using excavators and/or backhoes operating on the ground adjacent to the bioretention cell.
    - ii. The mixture shall be placed in horizontal layers not to exceed twelve inches (12”) in thickness over the entire area of the cell. Materials shall be graded by hand methods. The elevation of the mix may be a maximum of two inches (2”) above the final grade at installation in anticipation of settling.
  - f. **Plant Installation for Bioretention Cells:**
    - i. After placing the soil mixture, trees, shrubs, and other specified plant materials shall be planted. Planting shall be conducted between May 1 and June 15 or between September 15 and November 1. Root stock of plant materials should be kept moist during transport from the source until planted.
    - ii. Bioretention cells shall be planted in accordance with the Planting Plan.
    - iii. All planting pits shall be dug by hand and excavated to 1 ½ times the width of the root mass. The planting pit shall be deep enough to allow the first lateral root of the root mass to be flush with the existing grade. Remove all non-organic debris from the pit and tamp loose soil in the bottom of the pit by hand.
    - iv. Mix a minimum of 500 spores of endomycorrhizal fungi and 30 million spores of ectomycorrhizal fungi to each cubic foot of backfill from trees and shrub planting. Backfill planting pit with existing soil and hand tamp as pit is being backfilled to completely fill all voids and air pockets. Do not over compact soil. Make sure plants remain straight during backfill/tamping procedure. Do not cover the top of the root mass with soil.
    - v. An eighteen inch (18”) diameter area of shredded hardwood mulch as specified in this Supplemental Detailed Specification shall be placed around each plant, two to three inches (2”-3”) thick. Mulch shall not be placed directly against the stem of the plant.
    - vi. Water plant thoroughly immediately after planting.
4. **Catch Basin:** The furnishing and installation of the catch basin and outlet pipe are specified under Supplementary Detailed Specifications DS-9 and DS-10.
5. **Trees, Shrubs and Plants:** are specified under Supplementary Detailed Specification DS-31.

**DS-7 ITEM 608 – 6’ CONCRETE WALK, AS PER PLAN**

In addition to the requirements of Item 608 and Detailed Specification D-23, all internal longitudinal and transverse sidewalk joints shall be sawcut. Tooled joints shall be

placed at the edges of the sidewalks, against curbs and existing sidewalks and pavements that are not disturbed by this project.

**DS-8 ITEM 608 – CURB RAMP WITH TILE, INCLUDING LAYOUT**

Work under this item shall include all provisions of ODOT Item 608, City of Cleveland Detailed Specification D-27 and the City of Cleveland Curb Ramp Special Provisions and Standard Drawings, with the following exception:

- The width of the ramp shall be five feet (5'). Detectable Warnings shall be installed for the entire width of the ramp at the adjacent curb line.
- The truncated domes shall be Detectable/Tactile Warning Surface Tiles in accordance with ODOT Standard Drawings, brick red color.

**DRAINAGE**

**DS-9 ITEM 604 – 2-2B CATCH BASIN WITH SUMP AND TRAP**

In addition to the requirements of ODOT Item 604 and Standard Construction Drawing CB-1.1, the 2-2B Catch Basin shall be constructed with a trap conforming to City of Cleveland Standard Drawing CB-1 and a 2'-0" deep sump (measured from the bottom of the trap to the floor of the catch basin).

**DS-10 ITEM 605 – 6" UNCLASSIFIED PIPE UNDERDRAIN, AS PER PLAN**

In addition to the provisions of ODOT Item 605 and City of Cleveland Detailed Specification D-42, the unit price bid for this item shall include, but not be limited to, the furnishing and installation of a fabric sock on the underdrain pipe. The sock shall completely cover the perforated underdrain pipe and shall be secured to the pipe in such a way to prevent infiltration of trench backfill material.

The knitted fabric sock shall be a continuous one piece material that fits over the pipe like a sleeve. It shall be knitted of continuous 150 denier yarn and shall be free from any chemical treatment or coating that might significantly reduce porosity and permeability.

The knitted fabric sock shall comply with the following physical properties:

Weight, applied (oz./sq. yd.)	3.5 min.	ASTM D3887
Grab tensile strength (lbs.)	50 min.*	ASTM D5034
Equivalent opening size (EOS No.)	25 min.**	Corps of Engineers CW-02215-77
Burst Strength (psi)	100 min.**	ASTM D3877

\* Tested wet.

\*\* Manufacturer's certification to meet test requirement.

# PAVEMENT

## **DS-11 ITEM 254 – PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN**

This work shall consist of planing the existing asphalt pavement to the depth as indicated on the Drawings and disposal of the cuttings in accordance with ODOT Item 254. In locations where the existing concrete base is encountered within the required depth of planing, the concrete shall be planed to the required depth and shall be included with this item for measurement and payment.

Pavement planing operations shall be as directed by the Engineer and in conformance with the construction sequences as described in the Maintenance of Traffic notes. One or more planing passes shall be made over the designated area as necessary to remove irregularities such as bumps, corrugations, and wheel ruts, and to establish the new pavement surface.

Cuttings shall be removed from the surface following each pass of the equipment. Before opening the planed pavement to traffic, the surface shall be cleaned thoroughly of all loose material that may create a hazard, a nuisance, or would be deposited back into the surface. Cuttings shall be disposed of in accordance with ODOT Item 105.16.

Effective measures shall be taken throughout the planing operation to control dust and smoke, contamination of the underlying pavement or adjacent pavement to remain and the scattering of loose particles during planing and cleaning operations.

Where sound pavement has been gouged, torn, or otherwise damaged during planing operations due to the Contractor's negligence, the damaged area shall be repaired at no additional cost in a manner satisfactory to the Engineer.

All castings encountered shall be set to grade after the intermediate course has been placed and compacted. The adjustment of castings in the area of planed pavement is included under Detailed Specifications D-39 and D-41.

## **DS-12 ITEM 407 – TACK COAT, TRACKLESS TACK, BY COURSE**

1. **Description:** This work consists of preparing and treating a paved surface with a trackless tack coat. Materials and installation shall meet the requirements of ODOT Item 407, Tack Coat, except as noted below. Manufacturers of this product include:
  - a. NTSS-1HM; produced by Blacklidge Emulsions, Inc.
  - b. An equivalent material approved by the Engineer.
2. **Material:** Conform to the following physical properties in the following tables.

Parameter	Test Method	Min.	Max.
Saybolt Furol Viscosity, SFS @ 25 °C	ASTM D88	15	100
Storage Stability, 24 hrs, %	ASTM D244	----	1
Storage Stability, 5 days, %	ASTM D244	----	5
Residue by Distillation, %	ASTM D244	50	----
Oil Distillate, %	ASTM D244	----	1
Sieve Test, %	ASTM D244	----	0.3
<b>Test on Residue</b>			
Penetration @ 25 °C	ASTM D5	----	20
Softening Point Range Deg C	ASTM D36	65	----
Solubility, %	ASTM D2042	97.5	----
Original Binder DSR @ 82 °C G*/sin Δ, 10 rad/sec	AASHTO T111	1	----

Tack coat product should not contain filler such as clay, etc. The material shall not be stored in such a manner that the temperature falls below 32 degrees F. Submit certified test data to Engineer showing the material supplied was tested for meets the above properties.

3. **Equipment:** All requirements of ODOT Item 407.03 apply. Follow manufacturer's recommendations for correct distributor settings. Thoroughly clean all equipment if cationic emulsion was previously used.
4. **Application of Asphalt Material:** Uniformly apply the asphalt material with a distributor per the requirements of ODOT Item 407.06, except as noted below:
  - a. If product is stored for an extended period of time, prior to application, agitate or gently circulate the material.
  - b. All nozzles and spray patterns shall be identical to one another along the distributor spray bar. The angle of the nozzle should be a 15 to 30 degree angle to the spray bar axis to maximize overlap or as recommended by the nozzle manufacturer. Contact the Manufacturer's representative for required spray nozzle size, and distributor and nozzle settings.
  - c. Apply at the rate indicated on the Typical Sections in the drawings. Recommended application temperature is 160°F to 180°F. Do not exceed 180°F.
  - d. Dilution is not allowed.

The Engineer and Manufacturer's representative will approve rate of application, temperature, distributor settings, and areas to be treated before application of the tack coat. The Engineer will determine the actual application in gallons per square yard by a check on the Project.

The application is considered satisfactory when the material is applied uniformly with no visible evidence of streaking or ridging and the application rate is  $\pm 10\%$  of the specified rate.

**DS -13 ITEM 609 – CURB, TYPE 6, AS PER PLAN**

1. **Description:** Where indicated on the Drawings, the Contractor shall furnish and install an integrally colored cast in place concrete curb as per the Detail on the Drawings and as specified herein.

In addition to the provisions of ODOT Item 609 and City of Cleveland Detailed Specifications, this item shall include, but not be limited to the furnishing and installation of the integrally colored concrete admixture in conformance with this Supplemental Detailed Specification

2. **Materials:**

- a. **Admixture:** A colored, water-reducing admixture containing no calcium chloride with coloring agents that are limeproof and UV resistant. The colored admixture shall conform to the following:
  - i. ASTM C979 – Standard Specification for Pigments for Integrally Colored Concrete.
  - ii. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
  - iii. AASHTO M194 – Chemical Admixtures.
- b. **Curing Compound for Colored Concrete:** Curing compound shall comply with ASTM C309 and be approved by color additive manufacturer for use with colored concrete.
- c. **Sealant:** Joint sealers shall be color-matched to the concrete and specially formulated for high-performance pedestrian and vehicular traffic areas.
- d. **Concrete Mix Design:** Concrete mix shall conform to Detailed Specification D-24 with the following additions:
  - i. Calcium chloride shall not be added to the mix.
  - ii. Supplemental admixtures, such as additional water-reducing admixtures, water-proofing agents, and super plasticizers shall not be used.
  - iii. Color additives: Mix in accordance with manufacturer's instructions. Mix until color additives are uniformly dispersed without mixture and disintegrating bags, if used, have disintegrated.
  - iv. Do not add water to the mix in the field.

3. **Concrete Colors:**

- a. Match colors selected by Owner from color additive manufacturer's color line.
- b. Colored admixture shall be added to the mix per manufacturer's written instructions in a premeasured bag and shall not be added by weight of cement content.

4. **Curing:** Apply curing compound for colored concrete in accordance with manufacturer's instructions using manufacturer's recommended application techniques. Apply curing compound at consistent time for each pour to maintain close color consistency.

**DS-14 ITEM 609 – CURB, MISC.: GRANITE CURB RESET**

Under this item the Contractor shall install the existing granite curb removed and salvaged under separate bid item.

This item shall include, but not be limited to, the following:

- Excavation and disposal of the excavated material to the width and depth required to install the granite curb.
- Furnishing and installation of the Class "C" concrete bed. The bed shall be continuous, 10 inches in width and 6 inches in depth.
- Placing of the granite curb. Prior to placing granite curb, a string line shall be installed true to the vertical and horizontal alignment of the proposed curb. The curb shall then be placed, ensuring that the granite curb is set true to line and grade. If necessary, trim the granite curb prior to resetting. If the condition of the end faces preclude making a neat butt joint (when the blocks are placed the maximum gap between the blocks should be  $\leq \frac{1}{8}$  inch), then the end face(s) of the granite curb blocks should be sawn prior to the placement of the blocks.

## **WATER WORK**

**DS-15 ITEM SPECIAL- REMOVE EXISTING VAULT/MANHOLE**

Where shown on the Contract Drawings, or where ordered, the Contractor, under this Supplemental Detailed Specification, shall remove and dispose of the existing water vault structures and/or manhole structures. The Contractor shall provide all labor, materials, tools, and equipment necessary to perform the work shown, or where ordered, including all excavating, sheeting and shoring, and all other work as required. City of Cleveland, Division of Water records show that the meters have previously removed from these vaults.

Furnishing and installing the backfill material shall be included under Detailed Specification D-31.

**DS-16 ITEM SPECIAL- RECONSTRUCT VAULT/MANHOLE FRAME AND COVER TO GRADE**

This item shall be performed at locations where water vault/manhole covers must be raised more than one (1) foot from existing elevation, or lowered more than six (6) inches from existing elevation. This work shall be as performed as specified in



Detailed Specification Part E, Item12-1 C3. The Engineer will examine each structure to determine whether the casting is to be adjusted to grade or reconstructed to grade prior to the work being performed.

## **TRAFFIC CONTROL**

### **DS-17 ITEM 630- SIGN, FLAT SHEET, AS PER PLAN**

Signs supplied under this item shall meet the requirements of 630, except that reflective sheeting will not be used. The background color of the sign shall be type F sheet material.

### **DS -18 ITEM 630 – SIGNING, MISC.: STREET NAME SIGN (16” OR 12”)**

Under this item the Contractor shall furnish and install street name signs in conformance with ODOT standards except as modified by the City of Cleveland. Complete illustrations, descriptions and application guidelines are contained within the Bid Documents.

Street Name Signs for non-signalized intersections shall be City of Cleveland Type D.3 and be mounted on utility poles, light poles, or channel installations, if absolutely necessary. Channel installation must be accepted by the City of Cleveland Division of Traffic Engineering before installation.

Street name signs furnished and installed under these items shall be per the City of Cleveland Production, Installation and Management Specifications, contained within the Bid Documents. An example must be presented to the City of Cleveland Division of Traffic Engineering before any fabrication of signs.



**Content and Placement Criteria**

In urban and suburban areas the street name is a frequently used and basic information component in locating destinations. The street name signage system described below aids wayfinding through larger, distinctive messages, creating awareness of downtown districts, and selective identification of street block addresses for orientation. The type of information accompanying the basic street name is based upon the type of intersection and knowledge that visitors usually travel on arterial streets.



Districts shall be identified at arterial intersections with arterials and through secondary streets. (The street is continuous, without breaks)



Districts and street block addresses shall be identified along Euclid and key North/South through streets intersecting with major East/West arterials. Euclid is the division between the 1000 and 2000 block addresses on North/South streets.



Street names only should be used along secondary street intersections with secondary streets and arterial intersections with non-through secondary streets. These streets are used less frequently by out-of-town visitors and commercial delivery vehicles.



Outside of downtown districts, the neighborhood name may be used to identify and reinforce those neighborhoods officially recognized by the City of Cleveland Council.



**Program Rationale**

The street name sign is utilized at intersections 1) where signal mast arm street name signs are not utilized; or 2) in conjunction with mast arm street name signs for intersection corners without signal mast arm street name signs. It identifies street names, and downtown districts (or city approved neighborhood names primarily for pedestrians and secondarily for vehicular traffic. It reinforces district/neighborhood entrances and boundaries, as well as providing directions to districts/neighborhoods along streets serving as boundaries between streets, i.e., E 9th Street.

**Design Expression**

The sign features a larger 7" cap height more legible street name size using a distinctive bright blue reflectorized background and white message. The message utilizes the Unifers 65 font, initial caps, centered horizontally & vertically on the blue and violet segments of the sign. The messages shall be screen printed whereby the background colors are screened and the message "drops out" in white from the high intensity grade reflectorized sheeting. When block address numbers are included for key north/south through streets; this may be applied using pre-spaced machine cut reflectorized vinyl characters flanking the district name.

Sign panels are .080" thk. aluminum with a consistent width (16"). Three panel sizes are available to accommodate varying message lengths. (3'-0", 3'-6", 4'-0")

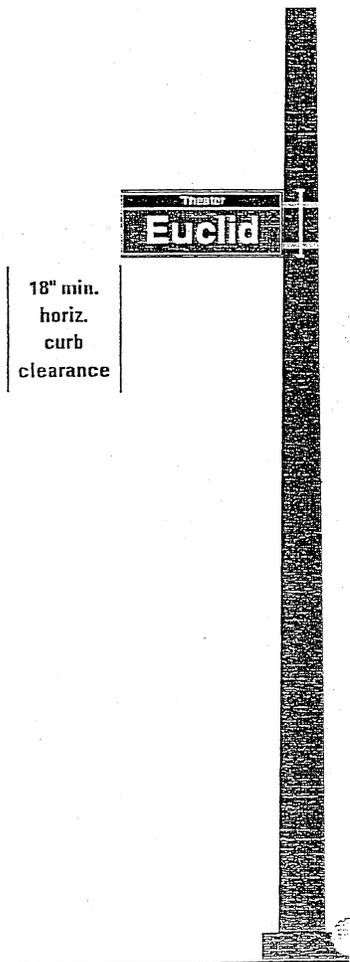
**Placement Criteria**

Sign panels are roadside mounted to existing light or signal poles utilizing a sign-fix or equivalent bracket and stainless steel strapping. Minimum of 8'-0" vertical clearance and 18" horizontal curb clearance to prevent being hit by trucks.

Signs are located diagonally opposed on light or signal poles at the near side corner of the intersection for the arterial roadway approach.

**References**

- Appendix A - General Specifications
- Appendix B - Production, Installation, Management Specifications - *Drawing D1-D4.1*
- Appendix C - Program Matrix



Scale 1/2"=1'-0"



#### Program Rationale

The street name sign is utilized at intersections 1) where signal mast arms exist; or 2) where mast arms exist along only one approach in conjunction with cantilevered pole-mounted street name signs for approaches without signal mast arms. It identifies street names primarily for vehicular traffic as well as pedestrians. It reinforces district/neighborhood identification and provides directions to districts/neighborhoods along streets serving as boundaries between districts, e.g., E 9th Street.

#### Design Expression

The sign features a larger 12" cap height, more legible street name size, using a distinctive bright blue reflectorized background and white message. The message utilizes the Univers 65 font, initial caps, centered horizontally and vertically on the blue and violet segments of the sign. The messages shall be screen printed, whereby the background colors are screened and the message "drops out" in white from the high-intensity grade reflectorized sheeting. When block address numbers are included for key north/south through streets, these may be applied using pre-spaced machine cut reflectorized vinyl characters flanking the district name.

Sign panels are .080" thk. aluminum with a consistent width (26"). Three panel sizes are available to accommodate varying message lengths (6'-0", 7'-0" and 8'-0").

#### Placement Criteria

Sign panels are mounted on the mast arms of signal or light poles between the signal head and curb, using stainless steel straps and standard City of Cleveland brackets and hardware mechanically fastened to panel stiffeners bonded to the back of the panel.

Signs are located at the far side of intersection, facing all approaches whenever possible.

#### References

- Appendix A - General Specifications
- Appendix B - Production, Installation, Management Specifications - *Drawing D1-D4.1*
- Appendix C - Program Matrix





**Program Rationale**

The street name sign is utilized at intersections 1) where signal mast arm street name signs cannot be utilized; or 2) in conjunction with mast arm street name signs for intersection approaches with signal mast arm street name signs. It identifies street names primarily for pedestrians and secondarily for vehicular traffic along secondary lower traffic volume streets.

**Design Expression**

The sign features a larger 7" cap height, more legible street name size using a distinctive bright blue reflectorized background and white message. The message utilizes the Univers 65 font, initial caps, centered horizontally and vertically on the panel. The messages shall be screen printed, whereby the background colors are screened and the message "drops out" in white from the high-intensity grade reflectorized sheeting.

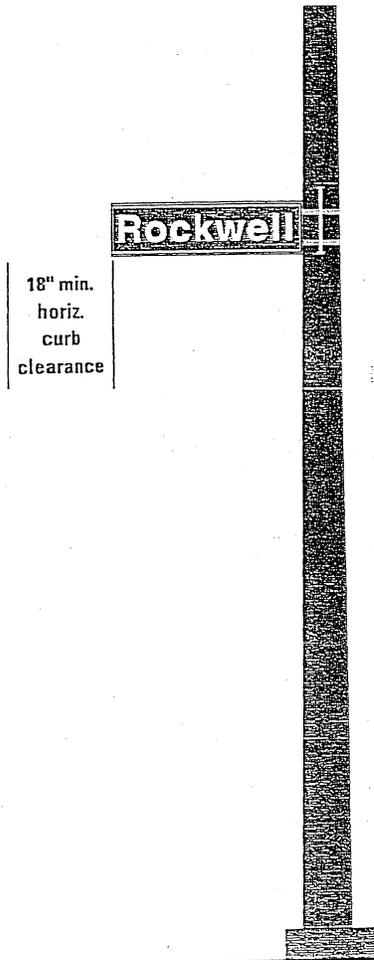
Sign panels are .080" thk. aluminum with a consistent width (12"). Three panel sizes are available to accommodate varying message lengths (3'-0", 3'-6" and 4'-0"). Where existing post strength or windloading is a concern, the Engineer may reduce this to a 10" high panel with 6" copy.

**Placement Criteria**

Sign panels are roadside mounted to existing light or signal mast arm poles, utilizing a sign-fix or equivalent bracket and stainless steel strapping. Minimum of 8'-0" vertical clearance and 18" horizontal curb clearance to prevent being hit by trucks. Signs are located diagonally opposed on light or signal poles at the near side corner of the intersection for the arterial roadway approach.

**References**

- Appendix A - General Specifications
- Appendix B - Production, Installation, Management Specifications - *Drawing D1-D4.1*
- Appendix C - Program Matrix



Scale 1/2"=1'-0"



#### Program Rationale

The street name sign is utilized at intersections 1) where signal mast arms exist; or 2) in conjunction with cantilevered pole-mounted (Type D.3 signs) street name signs for approaches without signal mast arms. It identifies street names primarily for vehicular traffic as well as pedestrians along secondary lower traffic volume streets.

#### Design Expression

The sign features a larger 12" cap height, more legible street name size using a distinctive bright blue reflectorized background and white message. The message utilizes the Univers 65 font, initial caps, centered horizontally and vertically on the panel. The message shall be screen printed, whereby the background colors are screened and the message "drops out" in white from the high-intensity grade reflectorized sheeting.

Sign panels are .080" thk. aluminum with a consistent width (20"). Three panel sizes are suggested to accommodate varying message lengths (6'-0", 7'-0" and 8'-0").

#### Placement Criteria

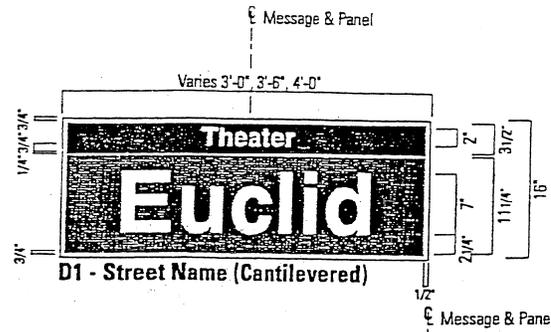
Sign panels are mounted on mast arms of signal or light poles between the signal head and curb, using stainless steel straps and standard City of Cleveland brackets and hardware mechanically fastened to panel stiffeners bonded to the back of the panel.

Signs are located at the far side of the intersection, facing all approaches whenever possible.

#### References

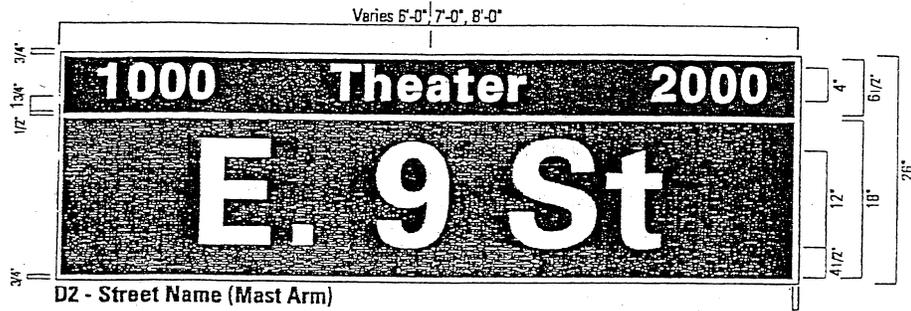
- Appendix A - General Specifications
- Appendix B - Production, Installation, Management Specifications - *Drawing D1-D4.1*
- Appendix C - Program Matrix





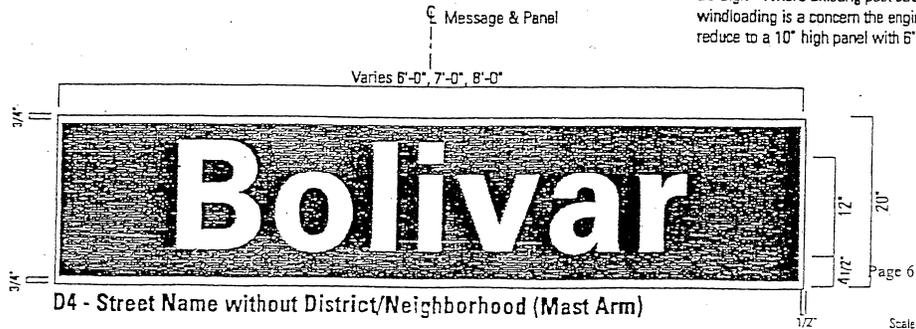
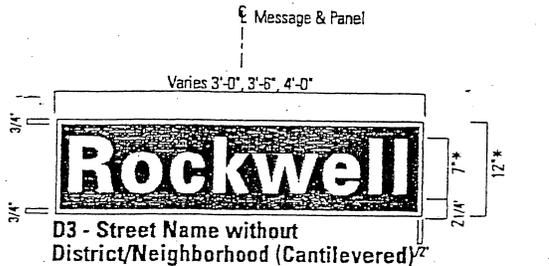
NOTES:

1. All panels .080" thk. aluminum with 3M High Intensity Grade reflective sheeting.
2. Background colors/messages reverse screen printed or equivalent color transparent film.
3. Block addresses, if used, applied with machine-cut reflective sheeting.
4. Use heavy duty Sign-Fix bracket for cantilever mounting.



5. Colors:

- Name bkgd: Blue Scotchlite ink #863 or equivalent transparent film.
- District bkgd: Violet Scotchlite ink #893 or equivalent transparent film.
- Message: Scotchlite High Intensity Grade silver #3870.
- \* D3 Sign - Where existing post strength or windloading is a concern the engineer may reduce to a 10" high panel with 6" copy.





The Univers family is the official letter style for the Greater Cleveland Master Signage Program. This style is readily available from manufacturers of signs, or sign making equipment and features a wide variety of proportions and stroke widths adaptable to the various program applications. Univers Bold is utilized throughout all applications as sign messages and text. Univers Condensed Bold is utilized on Pedestrian Directional signs and printed maps. Univers Condensed is utilized primarily on maps and other printed applications.

Among various manufacturers and letter cutting equipment, there is not total uniformity as to letter form. This is especially true with Univers Condensed. It is important that there be a match with the examples shown in this manual. Univers Condensed has a lighter stroke width for internal illumination to minimize the "halation effect", where the stroke will appear to glow and enlarge.

All non-tactile sign word messages are to be in initial upper case followed by lower case to enhance word signature readability unless specified otherwise. Examples of exceptions are "EXIT" and "DO NOT ENTER", where these word signatures are learned in all upper case. Other exceptions are to distinguish a heading from body copy or to emphasize the importance of a word or phrase.

As required by ADA, any tactile messages shall be all upper case. Univers Bold braille messages do not have to be all upper case except to emphasize the importance of a word or phrase.

**ABCDEFGHIJK  
LMNOPQRSTU  
VWXYZ.,-:;! '&?  
abcdefghijklmnop  
opqrstuvwxyz  
\$1234567890**

Univers Bold - 65

**ABCDEFGHIJKLMN  
OPQRSTUVWXYZ  
abcdefghijklmnopq  
rstuvwxyz.,-:;! '&?  
\$1234567890**

Univers Condensed Bold - 57

**ABCDEFGHIJKLMN  
OPQRSTUVWXYZ  
abcdefghijklmnopq  
rstuvwxyz.,-:;! '&?  
\$1234567890**

Univers Condensed Regular - 57





The final layout and/or assembly of letters on a sign panel requires careful letter spacing guidelines to assure maximum legibility.

This manual recommends normal spacing for signs that are ambiantly lighted or externally lighted. Normal spacing should result in approximately one stroke width between straight vertical letters such as (i) and (n). All other letter spacing combinations should be visually proportional to one stroke width. Tight letter spacing shall not be considered and is not within the guidelines of this manual since legibility would be compromised.

This manual recommends wide spacing for signs that are internally-illuminated and normal spacing for letters that are reflective. Wide spacing should result in approximately 1 1/4 (1.25) times the stroke width.

Spacing between words is equally as important to achieve good legibility as inter-letter and inter-line spacing. Word spacing shall be 3/4 (.75) times the cap letter height. Thus, lettering using 4" cap letters will have 3" between words. This space guideline also applies to abbreviations, initials, etc.

Line spacing shall be 1/2 (.50) times the cap letter height for words of a related message line such as "Metroparks Zoo". Spacing between unrelated message lines shall be 1 times the cap letter height.

Signage margins for left, right, top and bottom spacing shall be a standard 3/4 (.75) times the cap letter height and for exceptions where there are space limitations, 1/2 (.50) times cap letter height.

Univers 67 Condensed

Spacing

Univers 65

Spacing

Spacing NOT APPROVED (Tight)

Univers 67 Condensed

Spacing

Univers 65

Spacing

Spacing APPROVED (Normal) for ambiantly & externally illuminated & reflective letters

Univers 67 Condensed

Spacing

Univers 65

Spacing

Spacing APPROVED (Wide) for internally illuminated letters

# LIGHTING AND ELECTRICAL

## DS-19 ITEM 625, LIGHTING, MISC.: PULL BOX REMOVED AND REPLACED

Under this item the Contractor shall remove the existing precast concrete lighting pull boxes and replace them with composite pull boxes.

Before replacing the existing pull box, the Contractor shall disconnect the existing conduit from the pull box. The existing concrete pull box shall be removed and disposed of and the new pull box installed in conformance with CPP standards. The Contractor shall furnish and install new conduit as necessary to connect the existing conduits to the new pull box.

Refer to Supplemental Detailed Specification DS-21 for pull box details.

## DS-20 ELECTRICAL UTILITIES

### 1. SAFETY

- a. It shall be the responsibility of the Contractor to see that all personnel comply with Chapter IC-3, Specific Safety Requirements of the Industrial Commission of Ohio Relating to Construction and the latest Federal Regulations of the Department of Labor, Bureau of Labor Standards and the Occupational Safety and Health Act (O.S.H.A.), PART 1926 - SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION.
- b. This Contractor shall conduct safety training classes and set up specific safety meetings regarding the work of this project. This Contractor and this Contractor's employees shall be familiar with and shall comply with N.F.P.A. 70E "ELECTRICAL SAFETY REQUIREMENTS FOR EMPLOYEE WORKPLACES".
- c. This Contractor and all employees shall comply with and fully understand the National Electrical Safety Code. The electrical utilities of several utility companies are located in the area of construction. All electrical construction workers should be qualified and experienced in medium voltage to work on this Project.

## DS-21 CLEVELAND PUBLIC POWER GUIDELINES

GUIDELINES FOR INSTALLATION OF ELECTRICAL SERVICE  
INSTALLATIONS TO BE IN ACCORDANCE WITH CPP STANDARDS

### **GENERAL CONTRACTOR'S RESPONSIBILITIES:**

1. To appoint a person to coordinate the installation of utilities.
2. Establish final grade before trenching and setting transformers and utility boxes.
3. Provide excavation and clean backfill for all trenches. See backfill procedure.

4. Furnish and install all primary conduit, 5" PVC Type EB primary conduits; for each of two primary power sources to each transformer, or as shown on the Drawings. Install 5" bell ends. Provide a 3/8" pulling line in each of the 5" conduits. **NOT REQUIRED.**
5. All electrical conduits shall be Type EB & must be encased with a minimum 3" concrete envelope; & constructed with base spacers and intermediate spacers.
6. All vertical and horizontal curves are to be constructed by using 2' 6" chord lengths and appropriate 5 degree couplings, or as noted on plan view, or approved by the Engineering section of Cleveland Public Power.
7. All conduit runs are to be installed at a minimum of 30" below existing and/or proposed grades
8. CPP will furnish and install cable to the primary side of the transformer, also from the secondary side of the transformer to the meter socket.
9. Provide trench per CPP standard drawing 10-23.
  - a. Width 24" x 48" depth relative to the finished grade.
  - b. First layer of sand to be 6" depth.
  - c. Backfill around CPP ducts with 6" depth of sand.
  - d. Backfill and properly compact trench to grade level.
10. Furnish and install grounding per The National Electric Code and/or The City of Cleveland Code requirements at the service point of each house.
11. Furnish and install a pre-cast concrete pad 4" above finish grade per CPP standard Drawing 10-7 for each pad mounted transformer. Properly compact and level soil before setting pad. **NOT REQUIRED**
12. Furnish and install an equipment ground rod on transformer pad; & grounding for each transformer per CPP standard drawing 10-8.
13. Furnish and install pull boxes and utility boxes per CPP design drawings:
  - a. Pull box (Street lighting & Secondary service connections): CPP standard drawing 13-3-1-1.
  - b. Place 6" of wash gravel below each utility box extending a minimum of 6" beyond the perimeter of the box.
  - c. Each utility box is to be free of all foreign objects and debris.
14. All manholes outside walls and conduits runs are to have a minimum clearance of 5' horizontally from all water and gas lines. Vertical clearance shall be 1'- 6". Clearance between other utilities shall be one foot. CPP's ductbank shall cross over or under other utilities at an angle of no less than 45 degrees.
15. Any conduit runs that are crossing any steam lines shall have a minimum clearance of 3' 6". In the event this cannot be accomplished, notify the engineering section of Cleveland Public Power prior to final construction.
16. For Street lights furnish and install the following:
  - a. Street light pole base foundation per CPP standard PBOXE-1
  - b. 2 - 2" PVC ducts and pull boxes per CPP design standard 13-3-1-1.
  - c. Pull box at each street light pole per CPP standard PBDXE-1 and 13-3-1-1
17. Contractor shall be responsible for all electrical service charges, until accounts are transferred to the resident's name.

### **BACKFILL PROCEDURE:**

1. Backfill material: The sand material shall be natural river or bank sand; free of silt, clay, loam, friable or soluble materials and organic matter.
2. Employ a placement method that does not disturb conduits.
3. Place and tamp sand in 6" loose layers around the conduits, to a minimum of 1' 6" below existing and/or proposed grade line. A rugged polyethylene material warning tape capable of resisting high or low PH conditions must be placed 6" above electrical conduits. This warning tape is to be six inches wide, red in color, and imprinted with the words "DANGER - BURIED HIGH VOLTAGE CABLES BELOW". This shall conform with the standards set by Ohio Utilities Protection Service.
4. Place & tamp the remaining with normal earth spoil. Tamp earth soil in continuous 6" layers

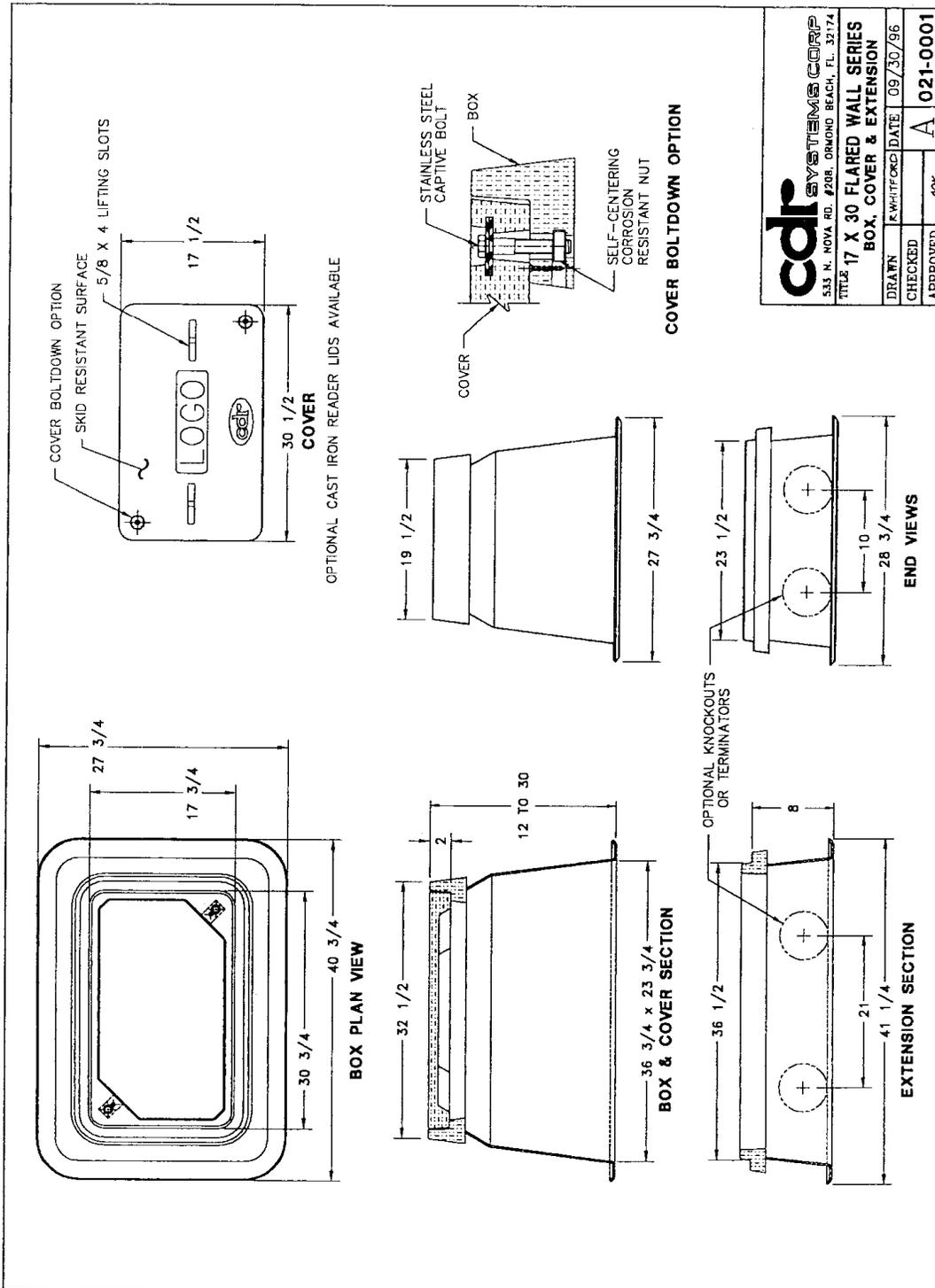
### **CLEVELAND PUBLIC POWER'S RESPONSIBILITIES:**

1. Furnish and install all high voltage cable in underground duct; provided by the contractor, per CPP specifications. **NOT REQUIRED**
2. Furnish and install transformers.
3. Furnish and install secondary cables from the utility box/transformer location to the meter.
4. Furnish and install meters and secondary cable terminations at the meter enclosures

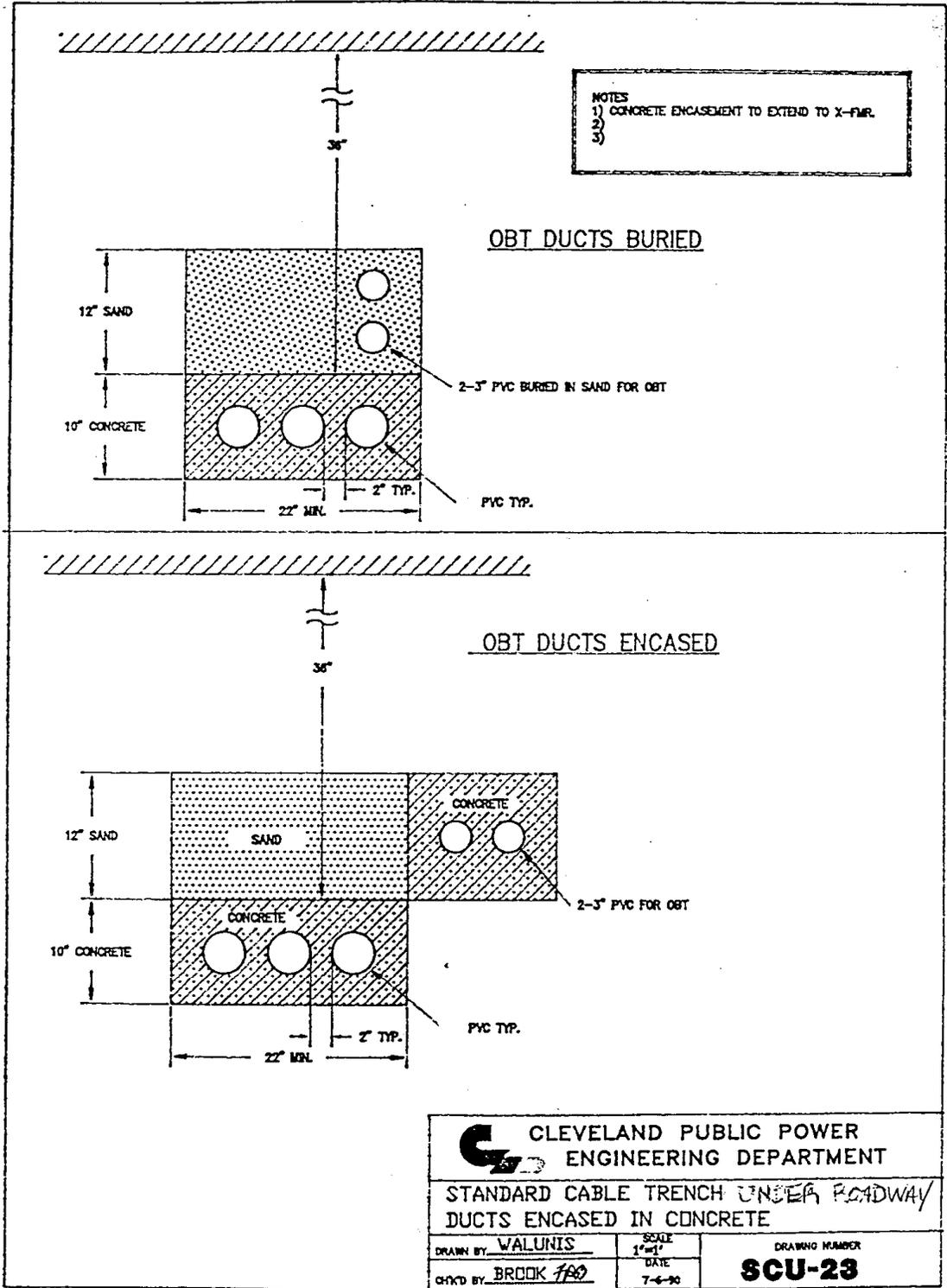
### **UNDERGROUND CONDUIT INSTALLATION NOTES**

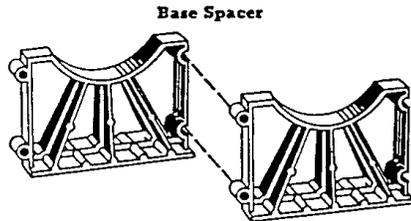
1. Contact Ohio Utilities Protection Service, two working days prior to start of construction. In Ohio call toll free (800) 362-2764.
2. All power duct construction to be constructed by using 5" PVC Type EB conduit, encased with a 3" concrete envelope, unless otherwise noted on plans provided by Cleveland Public Power.
3. Install a rugged polyethylene material warning tape capable of resisting high or low PH conditions. This tape shall be six inches (6") wide, red in color, imprinted with the words "DANGER --BURIED HIGH VOLTAGE CABLES BELOW", as required by Ohio Utilities Protection Service. It is the Law. Tape shall be place 6" above the electrical conduit run.
4. All vertical and horizontal curves shall have a radius of no less than 30 feet. These curves are to be constructed by using 2.5' chord lengths and the appropriate 5 degree couplings, or unless noted on the plans provided by Cleveland Public Power.
5. All conduit runs are to be installed at a minimum depth of 30" below existing and/or proposed grades, except those that are under the RTA tracks. These conduits will be installed at a minimum depth of 60" below the rail ties.
6. All manhole outside walls and conduits runs are to have a minimum clearance of 5' both vertically and horizontally of all water and gas lines. Clearance between other utilities shall be no less than 1 foot.
7. Horizontal crossings of other utilities shall be at an angle of no less than 45 degrees.
8. Any conduit runs that are crossing any steam line shall have a minimum clearance of 3' - 6". In the event that this can not be accomplished, notify the engineering unit of Cleveland Public Power prior to final installation.

9. Each manhole is to be free of all foreign objects and debris. The general contractor shall also provide a 1/2" pulling line in each of the 5" conduits.
10. The general contractor shall provide Cleveland Public Power with as-built plans of the newly installed conduit system, showing both vertical and horizontal locations. These locations shall be at 50' intervals.



(Also acceptable: "Synertech" 17x30 Junction Box, manufactured by Oldcastle Precast, or approved equal).





To provide a rigid, firm foundation for the duct installation and maintain the desired gradient before grout is poured, base spacers are furnished with a 3-inch base.

**Placing the Grout Envelope**

Whenever possible grout should be machine mixed. Grout mixed too wet or sloppy has more of a tendency to lift and float the fibre structure. Even with grout of the proper mass consistency, to insure flowing of grout between and under the individual fibre conduits, liberal and continuous puddling is necessary. While the built-up method offers speed as an inducement for its use, voids and air pockets can be formed through careless puddling of the grout envelope.

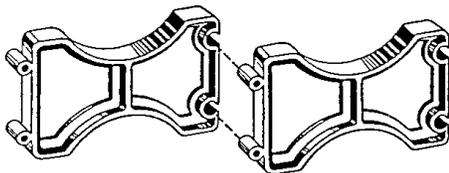
NOTE: Exercise care when puddling or using an automatic tamper to prevent abrasion of fibre tube.

		<i>TYPICAL BASE SPACER OR EQUIVALENT</i>	
DATE	BY	DIVISION OF LIGHT & POWER	CLEVELAND, OHIO
REVISION		DRAWN BY	CHECKED BY
			DATE



Two types of spacers, Intermediate and Base, are primarily used for monolithic block types of fibre conduit installations. They are available for 2-inch, 3-inch, 3-1/2-inch, 4-inch, 4-1/2-inch, 5-inch and 6-inch conduit. These spacers are made in a basic one-way design.

**Intermediate Spacer**



So that any number of three-way and four-way spacer combinations can be produced, Intermediate spacers have an integral locking device on both ends.

		<i>TYP. INTERMEDIATE SPACER, OR EQUIVALENT</i>		
DATE	BY	DIVISION OF LIGHT & POWER		CLEVELAND, OHIO
REVISION	DRAWN BY	CHECKED BY	DATE	

BILL OF MATERIALS				
ITEM NO.	ITEM	STOCK NO.	NO. REQ'D "A"	NO. REQ'D "B"
1	GROUND ROD 5/8" x 8'		2	3
2	CLAMP, CRD. ROD 5/8"		2	3
3	CU 1/0 BARE STR.		5'	33'
4	CONN. SPLIT BOLT 1/0 - 1/0 CU		1	1
5	TERM CMP 2H 1/0 STR. CU		1	1

ALL STOCK ITEMS ARE "OR EQUIVALENT" WITH ENGINEERS APPROVAL.

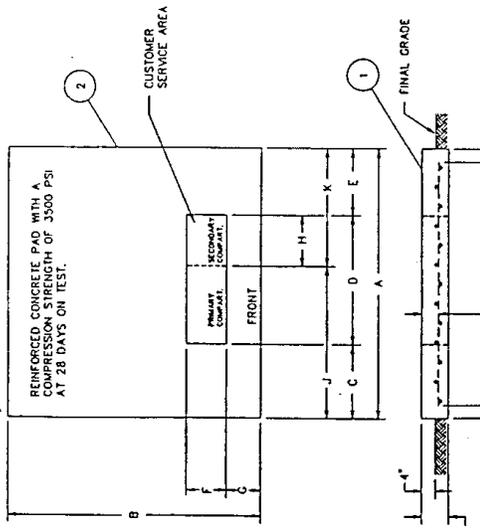
**DETAIL "A"**

**DETAIL "B"**

BECK	ROUTER	CLEVELAND PUBLIC POWER
STANDARD DUTY EQUIPMENT GROUND		
DATE	BY	PROJECT NO.

10 - 8

BILL OF MATERIALS			
ITEM NO.	ITEM	STOCK NO.	NO. REQ'D AS REQ'D.
1	F J REBAR		AS REQ'D.
2	3500 PSI CONCRETE		AS REQ'D.



SEE CONSTRUCTION DRAWINGS FOR INSTALLATION/CONSTRUCTION DETAILS AND NOTES.

NOTE: TRANSFORMER BASE SIZE TO BE DETERMINED BY TRANSFORMER PAD TYPE  
 ○ 750 KVA IS CHOSEN

TRANSFORMER TYPE	KVA		COND												REBAR FT.	CU. YD. CONC.		
	MIN	MAX	A	B	C	D	E	F	G	H	I	J	K	L				
1	75	1500	80"	75"	22"	38"	20"	12"	10"	15"	8"	45"	35"	5.3'	4"	3'	191	0.96
2	1000	1500	120"	120"	35"	50"	35"	15"	24"	25"	12"	60"	60"	8"	15"	8"	415	3.51

BECK PARTITION		CLEVELAND PUBLIC POWER	
UNIVERSAL THREE PHASE TRANSFORMER PADS 75 TO 2500KVA	REV. 11.18	DATE	8500.3

# MAINTENANCE OF TRAFFIC

## **DS -22 ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS**

In addition to the requirements of 614 and the latest edition of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD), a uniformed law enforcement officer and official patrol car with working top mounted emergency flashing lights, shall be provided for controlling traffic for the following tasks:

1. For lane closures and shifts: during initial set-up periods, tear down periods, substantial shifts of a closure point, or where new lane closures are initiated.
2. During the entire advance preparation and closure sequence, where complete blockage of traffic is required.

The law enforcement officers (LEOs) are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Engineer shall have control over their placement. Any patrol car utilized shall be a public safety vehicle as required by the Ohio Revised Code.

The hours paid shall include minimum show-up time required by the law enforcement agency involved. The Contractor shall make arrangements for these services with:

City of Cleveland Department of Public Safety  
Division of Police  
1300 Ontario Avenue  
Cleveland, Ohio 44113-1600  
Phone: (216) 623-5000

Law Enforcement Officers required by the traffic maintenance tasks above shall be paid for on a unit price (hourly) basis under Item 614, Law Enforcement Officer with Patrol Car.

Law Enforcement Officers (LEOs) should not be utilized where the OMUTCD intends that flaggers be used. However, if the Contractor wishes to use LEOs for flagging and traffic control other than for that required in these plans, he may do so at his own expense.

Payment for utilizing LEOs in this manner will be included under Item 614-Maintaining Traffic.

## **DS-23 ITEM 614, MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF PEDESTRIAN TRAFFIC**

The Contractor shall furnish and install all necessary barriers to ensure that pedestrians are protected from the construction areas. Pedestrian control barriers may consist of plastic and/or metal fencing and securely positioned supports, and/or portable concrete barrier at the Contractor's discretion, and as described herein.

Shop Drawings: Prior to commencing the work, the Contractor shall submit a Pedestrian Control Plan and shop drawings for each location showing installation of plastic and/or metal fencing, supports for same, and signage for approval by the Engineer. The Pedestrian Control Plan shall include signage, locations of pedestrian walkways, provisions to ensure pedestrians are protected from tripping hazards and moving equipment, areas that require cordoning off, and the type of protection to be used. If the whole sidewalk between two intersections needs to be cordoned off with pedestrians crossing to the other side of the street, then both barriers and necessary directional or detour signage are required.

The Maintenance of Traffic drawings provide a minimum standard. The Pedestrian Control Plan shall include drawings for enclosing the perimeter of the work site with OSHA/ODOT compliant barriers (blaze orange fencing and/or chain link fencing) as stipulated herein and/or concrete barriers. Access for work vehicles shall also be included where necessary.

Permits: The Contractor shall be responsible for obtaining all necessary permits to comply with the Pedestrian Control Plan.

Fence Supports: If fence is used, supports shall be ODOT drums or stakes as specified herein at the Contractor's discretion. Drums used to delineate the work zone may be used as pedestrian control fence supports.

Fencing: Pedestrian control fencing, if used, shall consist of one of the following, approved by the Engineer:

- Plastic fencing: Blaze orange, heavy duty, plastic mesh, minimum 4 feet high, securely attached to metal posts set into fixed placements.
- Galvanized chain link fencing: Four foot (4') high securely affixed to posts or stakes.
- Stakes for fencing shall be 2 inch by 6 foot high galvanized steel posts, driven into fixed placements. Posts shall be placed at 6 feet o.c. minimum.

Walking surfaces: The walkways for pedestrians must meet all OSHA and ADA accessibility requirements for surface, cross slope, longitudinal slope, etc. Pedestrian walkways should have a non-slip surface and be maintained free of any obstructions and hazards such as holes, debris, mud, construction equipment, stored materials, etc. If deemed necessary by the Engineer, temporary asphalt should be used to ensure a level walking surface. All pedestrian walkways should be at least 6 feet wide.

Pedestrian Signage: Signage shall conform to ODOT Construction and Materials Specifications Section 614.06. Contractor shall furnish and install signage. "SIDEWALK CLOSED" (R9-9) signage, where required, shall be located ahead of the closed sidewalk. Directional signage shall direct pedestrians to cross at the open intersection.

Removal of Protection Devices: Except as otherwise indicated or requested by the Engineer, temporary protection devices installed during the course of the work shall be removed only after all work which might injure or harm pedestrians is completed.

Measurement and Payment: Payment of all of the work indicated in this specification shall be included in the lump sum price bid for Item 614, Maintaining Traffic, Misc.: Maintenance of Pedestrian Traffic.

## **STREETSCAPE**

### **DS-24 ITEM 608 – WALKWAY, MISC.: INTEGRALLY COLORED AND STAMPED CONCRETE SIDEWALK**

Where indicated on the Drawings, the Contractor shall furnish and install integrally colored and stamped concrete sidewalks. Concrete materials for this item shall conform to Detailed Specifications D-23 and D-24 except as specifically modified hereibn.

#### **PART 1 GENERAL:**

##### 1.1 References:

- A. ACI 303.1: Specifications for Structural Concrete for Buildings.
- B. ASTM C494: Standard Specifications for Chemical Admixtures for Concrete.
- C. ASTM C979: Standard Specifications for Pigments for Integrally Colored Concrete.
- D. AASHTO M194: Chemical Admixtures.

##### 1.2 Stamped Concrete Paving Mockups:

- A. Construct a mockup panel, approximately 10 foot by 10 foot in area, at location to be determined by the Engineer. The mockup shall use the materials, processes, and techniques required for the work, including curing processes. Installer for the work shall construct the mockup. The mockup panel can be a part of the work, subject to the review and approval of the Engineer.
- B. For accurate color, the quantity of concrete mixed to produce the sample shall not be less than 3 cubic yards (or not less than 1/3 the capacity of the mixing drum on the ready-mix truck) and should always be in full cubic yard increments. Excess material shall be discarded according to local regulations.
- C. Prior to commencement of the work, the Contractor shall obtain the Engineer's acceptance of the mockup.
- D. The mockup shall remain in place until completion of the work to serve as a quality control standard for the work. Contractor shall provide suitable protections to preclude damage to the mockup.
- E. If the mockup is not located as a part of the work the Contractor shall demolish and remove the mockup from the site when directed.

- 1.3 Delivery, Storage, and Handling: Deliver colored admixtures in original, unopened packaging. Store in dry conditions.

## **PART 2 PRODUCTS:**

### 2.1 Manufacturers:

- A. Basis of Design: L.M. Scofield Company, 4155 Scofield Road, Douglasville, Georgia 30134
- B. Alternate manufacturers:
  - 1. Davis Colors, 3700 East Olympic Boulevard, Los Angeles, California 90023
  - 2. Butterfield Color, 625 West Illinois Avenue, Aurora, Illinois 60506
  - 3. Other equivalent with the prior approval of the Engineer.

### 2.2 Materials:

- A. Concrete: Concrete shall be as specified in Detailed Specification D-23. Mix design shall conform to Detail Specification D-24.
- B. Colored Admixture for Integrally Colored Concrete: Admixture shall be a colored, water-reducing admixture containing no calcium chloride with coloring agents that are lime proof and UV resistant. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494, and AASHTO M194.
- C. Imprinting Tools: System of matched tools for imparting textures and patterns into freshly placed concrete surfaces.
- D. Release Agent: Colorless, odorless liquid formulated to break the bond between imprinting tools and surface of color-hardened concrete, evaporate completely, leaving no residue. VOC content less than 3.75 lb/gal.
- E. Curing and Sealing Compound: Curing and sealing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.

### 2.3 Colors and Patterns:

- A. Colored admixture: Color shall match L.M. Scofield Company C-14 French Gray.
- B. Imprinting pattern: Pattern shall be brick herringbone.
- C. Curing compound: Color shall match the colored concrete.

## **PART 3 EXECUTION:**

### 3.1 Installation:

- A. General: Refer to Detailed Specification D-23 for concrete installation and surface finishing requirements.
- B. Apply stamping pattern according to tool manufacturer's instructions. Touch up pattern and finish edges with hand tools as necessary.

- C. The Contractor shall not allow foot or vehicular traffic on surfaces which have been sealed until such time as they are thoroughly dry, as determined by the Engineer.
- D. Areas not having uniform color, stamping, or other specified requirements shall be removed and replaced by the Contractor at no additional cost to the project.

3.2 Curing:

- A. Apply curing and sealing compound for integrally colored concrete according to manufacturer's instructions using manufacturer's recommended application techniques. Apply curing and sealing compound at consistent time for each pour to maintain close color consistency.
- B. Precautions shall be taken in hot weather to prevent plastic cracking resulting from excessively rapid drying at surface as described in CIP 5 Plastic Shrinkage Cracking published by the National Ready Mixed Concrete Association.
- C. Do not cover concrete with plastic sheeting.

3.3 Tolerances: Minor variations of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

**DS-25 DESIGN, FABRICATION AND INSTALLATION OF PUBLIC ART (WEST SIXTH STREET) - 100% LOCAL PARTICIPATION ITEM**

This item shall cover the costs to engage an artist, as selected by the City of Cleveland, to design, fabricate, deliver, and install two (2) public art works on West Sixth Street. The art work will include specially prepared panels to be mounted to the framework outlined in Supplemental Detailed Specification DS-26. These structures shall be located at the following locations:

- Station 12+25 (±), Lt. Side.
- Station 16+45 (±), Rt. Side.

An Allowance of 10,000 Dollars (\$10,000) shall be included in Contractor's costs to be allocated for the Artist's design, furnishing, and installation of the Public Art Projects. All of the Contractor's costs to coordinate this work, protection of the work, overhead and profit are included under Detailed Specification DS-27 below, not in the Allowance amount.

The Contractor shall coordinate with the Artist as to not delay the Project.

**DS-26 FABRICATION AND INSTALLATION OF PUBLIC ART FOUNDATION (WEST SIXTH STREET)**

This item shall include the furnishing and installation of the concrete foundation and framework for the placement of the public art piece defined in Supplemental Detailed Specification DS-25. This item shall include, but not be limited to the following:



- Excavation to the required depth and to the dimensions that allows for installation of formwork.
- Disposal of excavated material.
- All necessary formwork.
- Furnishing and placement of the foundation and reinforcing to the dimensions indicated on the Detail in the Drawings. All concrete furnished shall be Class C. All reinforcing steel shall conform to ODOT 709.00.
- Furnishing and installation of the aluminum framing and angles and all necessary anchor bolts, plates, etc. required to connect the framing to the concrete foundation. The Contractor shall coordinate this work with the Artist.
  - Aluminum extrusions: ASTM B221.
  - Aluminum Sheet and Plate: ASTM B209.
  - Anodized Finish: AAMA Class 1, clear.
  - Bolts, nuts & washers: ASTM A354 stainless steel.
  - Welding materials: AWS D1.2
- Furnishing, installation, and compaction of backfill to the proposed sidewalk subgrade elevation.

**DS-27 DESIGN OF PUBLIC ART (PROFESSOR STREET INTERSECTIONS)  
100% LOCAL PARTICIPATION ITEM**

This item shall cover the costs to engage an artist, as selected by the City of Cleveland, to design and install one (1) public art work on Professor Street. This structure shall be located at the following location:

- Station 10+36 (±), Lt. Side.

An Allowance of 10,000 Dollars (\$10,000) shall be included in Contractor's costs to be allocated for the Artist's design, furnishing, and installation of the Public Art Projects. All of the Contractor's costs to coordinate this work, protection of the work, overhead and profit are included under Detailed Specification DS-28 below, not in the Allowance amount.

The Contractor shall coordinate with the Artist as to not delay the Project.

**DS-28 FABRICATION AND INSTALLATION OF PUBLIC ART (PROFESSOR STREET INTERSECTIONS)**

The public art sculpture, designed by an artist under Supplemental Detailed Specification DS-27 will be fabricated and installed by the Contractor as a design-build element of the Work. For this part of the project, the work of the Artist will be assigned to the General Contractor for the work outlined below. The following notes and processes shall be employed to fabricate and install the sculpture:

**A. Materials:**

1. Reinforcing Steel: Deformed steel bars per ODOT Item 709.01. Bar sizes as directed by the structural engineer designer.

2. Wire Fabric:
  - a. Galvanized 20 gage wire mesh with straight twist
  - b. 1-inch to 2-inch hexagonal openings as directed by the Artist
3. Concrete materials:
  - a. Conform to Detailed Specification D-24 except as modified herein.
  - b. Cement: White.
  - c. Sand: White
  - d. Fiber Reinforcement: ASTM C1116, high strength, industrial grade fibers.
    - 1) Fiber Length:  $\frac{3}{4}$ -inch
    - 2) Fiber Count: 34 million per pound
    - 3) Tensile Strength: 130ksi
    - 4) Toughness: 15 ksi.
4. Stainless Steel:
  - a.  $\frac{1}{4}$  inch thick plate
  - b. Top surface polished to a mirror finish.
5. Adhesive: Suitable for attaching stainless steel and concrete. Adhesive shall be capable of bonding in outdoor conditions typically found in the Cleveland, Ohio area.

**B. Framework:**

1. Detailed drawings shall be provided by a Professional Engineer, licensed to practice in the State of Ohio. The Engineer shall determine, prior to fabrication, whether the work will be a single form or separate pieces for the base (head form) and superstructure (tree form).
2. Bend and weld deformed steel reinforcing bars (ASTM A615) to form a skeleton or framework for the head and tree. Use closely spaced, small diameter bars to create a grid-like pattern to shape the framework.
3. The intent is to shape the framework to give form to the face, tree trunk and upper branches.

**C. Wire Mesh:**

1. Form four to eight layers of wire mesh over the framework, creating a metal "skin" to shape the head and tree in more detail and dimension.
2. Attach the wire mesh layers to the framework with wire ties.

**D. Concrete:**

1. Apply in thin layers over the wire mesh forms.
2. Trowel concrete into wire mesh to form a bond. Apply sufficient layers of material to build up the concrete surface a minimum of one inch of concrete over the mesh.
3. If the piece is to be formed in two or more pieces, provision shall be made to join the structure such that the joint becomes as invisible as possible.
4. A pattern of the labyrinth shall be pressed into the surface of the uncured concrete base to form a depression into which the stainless steel pieces can be set.
5. The sculpture shall be moist cured for a minimum of seven days and a maximum of thirty days in a temperature and moisture controlled environment. During the initial cure, the sculpture shall be covered with dampened burlap

cloths. The cloths shall be watered daily during the cure period. Note that the piece will cure at differing rates. The curing shall be monitored daily.

E. **Labyrinth:**

1. Water jet cut the ¼ inch thick polished stainless steel plate to match the pattern provided by the Artist.
2. Prior to cutting, the Artist and fabricator shall agree on the number and shape of the pieces to be produced.
3. The cut labyrinth pattern shall be inset into the top of the sculpture seamlessly. Secure the labyrinth to the concrete base with adhesive.

F. **Transportation and Installation:**

1. The completed, cured piece shall be transported to the location designated on the Drawings. Proper lifts and vehicles shall be used to ensure the piece is placed without damage.
2. It shall be the responsibility of the Professional Engineer for this sculpture to determine how best to fabricate the piece to ensure proper transportation and installation.
3. If the piece is formed in more than one piece, the joint shall be filled with additional concrete materials of the same color and appearance as the piece. It is intended that there be no color or texture difference between the piece and the joining material and that the joint not be apparent once the materials are cured.
4. Once the piece is in place, the surface shall be sealed with white or clear protective sealant as directed by the Artist.

G. **Securing the Sculpture:**

1. The sculpture shall be secured to the sidewalk by such means as are determined by the Professional Engineer for this component. The intent is that the piece shall be set flush to the surface of the sidewalk, neither raised above nor set into the surrounding concrete.

H. **Artist's involvement:**

1. The Artist for this work shall be Olga Ziemska, Olga Ziemska Studio, (216) 376-7650, olgaziemskastudio@gmail.com
2. The Artist will supervise the shape and dimensions of the framework for the base and the superstructure.
3. The Artist will work directly with the fabricators to apply the wire mesh to the framework and sculpting the shape of the metal "skin."
4. The Artist will work directly with the fabricators in applying the concrete mixture to the wire mesh and framework. The Artist will trowel the concrete mixture into place and hand-smooth the surface to create a clean and even finish.
5. Concrete Curing: The Artist will work directly with the fabricators in overseeing the continuous moisture conditioning of the piece.
6. Labyrinth: The Artist will provide a detailed design layout and review and approve the conversion of the layout to an electronic image to allow for exact replication. The Artist will supervise the cutting of the design out of the polished stainless steel. The Artist will also supervise the attachment of the labyrinth to the concrete base.

7. Transportation: The Artist will attend the transportation of the piece to the designated site.
8. Installation: The Artist will supervise the installation. The position and rotation of the piece on the site will be solely the responsibility of the Artist.
9. Securing the Sculpture: The Artist will supervise the process of securing the sculpture to the concrete pavement. The Artist will assist in patching separate pieces together and any incidental repairs that are required at the installation.

**DS-29 ITEM SPECIAL – STREETScape, MISC.: TREE PIT**

This item shall include the work necessary to complete the expansion of the existing five foot by five foot (5'x5') tree pits on West Sixth Street. to become five feet by ten feet (5'x10') 5' x 10' as detailed on the plans.

This item shall include, but not be limited to, the following:

- Protection of the existing trees during construction of the project. The Contractor may not park or store equipment, materials, refuse, or excavated soils within the tree pit area. The use of the existing tree as a support or anchorage is prohibited.
- Pruning of the existing trees in conformance with Detailed Specification D-69, subject to the direction of the City Forester or Urban Forestry Representative.
- Pruning of the existing tree roots as necessary in conformance with Detailed Specification D-71.
- Provide and install planting soil and mulch in conformance with Supplemental Detailed Specification DS-31 (paragraphs 2.1.C, 3.2, 3.4.E and 3.8)

**DS-30 ITEM SPECIAL – STREETScape, MISC: ORNAMENTAL FENCING FOR TREE PITS**

- A. **General:** The Contractor shall furnish and install all items necessary to complete the ornamental fencing located at the perimeter of the expanded tree pits on West Sixth Street as specified in Detailed Specification DS-29 above.
- B. **Materials:**
  1. The fence materials shall be manufactured from aluminum extrusions to the dimensions indicated in the Detail on the Drawings.
  2. The aluminum shall have a minimum tensile strength of 35,000 psi, using 6061 or 6063 T6 alloy for structural components.
  3. The fence materials shall be coated with a TGIC polyester powder-coat finish system. The finish shall have a cured film thickness of at least 2.0 mils. The final color of the fence shall be black.
- C. **Construction:** Install the ornamental fence per the Detail on the Drawings.

## **DS-31 PLANTINGS**

### **PART 1 GENERAL**

#### **1.1 DESCRIPTION**

- A. Work of this Section includes street trees and landscaping in beds.

#### **1.2 QUALITY ASSURANCE**

- A. General. Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.
- B. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability to the Engineer, together with a proposal for use of equivalent materials.
- C. Analysis and Standards. Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
- D. Trees, Shrubs and Plants. Provide trees, shrubs and plants of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock." Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.
- E. Label each tree and shrub with securely attached waterproof tag bearing legible designation of botanical and common name.
- F. Landscape Inspection. The Engineer may inspect trees and shrubs, either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size and quality. The Engineer retains right to further inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from project site.

#### **1.3 SUBMITTALS**

- A. Certification. Submit manufacturers' or vendors' certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.
- B. Planting Schedule. Submit proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion.
- C. Maintenance Instructions. Submit typewritten instructions recommending procedures to be established by the Director for maintenance of landscape work for one full year. Submit prior to expiration of required maintenance period(s).

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. The landscape contractor will be expected to secure landscape materials at the nursery source at the time the general contract is awarded with the anticipation that the material will be held, continue to grow and be available for digging at the sizes specified at the time of installation.
- B. Packaged Materials. Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- C. Trees and Shrubs. Provide freshly-dug trees and shrubs. Do not prune prior to delivery unless otherwise approved by the Engineer. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery. Do not drop balled and burlapped stock during delivery.
- D. Deliver trees, shrubs and plants after preparations for planting have been completed and plant immediately. If planting is delayed more than six (6) hours after delivery, set trees, shrubs and plants in shade, protect them from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means for retaining moisture.

#### 1.5 JOB CONDITIONS

- A. Proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.
- B. Utilities. Determine location of underground utilities through notification to the Ohio Utilities Protection Service and perform work in a manner which will avoid possible damage. Hand excavate, as required.
- C. Excavation. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify the Engineer before planting.

#### 1.6 SPECIAL PROJECT WARRANTY

- A. Warranty trees and shrubs against defects including death or unsatisfactory growth for a period of one year after date of substantial completion, except for defects resulting from neglect by the City of Cleveland, abuse or damage by others, or unusual phenomena or incidents which are beyond Contractor's control.
- B. Remove and replace trees, shrubs or other plants found to be dead or in unhealthy condition during warranty period. Make replacements during growth season following end of warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period; unless, in opinion of the Engineer, it is advisable to extend warranty period for a full growing season.
  - 1. An inspection will be conducted at end of extended warranty period to determine acceptance or rejection. Only one replacement (per tree, shrub or plant) will be required at end of warranty period, except for losses or replacements due to failure to comply with specified requirements.

## **PART 2 PRODUCTS**

### **2.1 SOIL AMENDMENTS**

- A. Lime. Granular agricultural lime from a dealer whose brands are registered or licensed by the State of Ohio Department of Agriculture. The material shall meet or exceed the requirements of ODOT Item 659.03.
- B. Leaf Humus. Utilize screened decomposed leaf compost as available from:
  - 1. Greater Cleveland Ecology Association (216) 687-1266
  - 2. Kurtz Brothers, Inc. (216) 986-7000
  - 3. Approved equivalent source, acceptable to the Engineer.
- C. Mulch. Organic mulch free from deleterious materials and suitable for top dressing of trees, shrubs or plants and consisting of one of the following:
  - 1. For tree pits and planters: shredded hardwood bark .
  - 2. For bioretention cells: three-quarters to one inch (3/4" to 1") hardwood chips, aged a minimum of one (1) year.
- D. Commercial Fertilizer. Complete fertilizer of neutral character, with some elements derived from organic sources and containing the not less than 12% total nitrogen, 12% available phosphoric acid and 12% soluble potash. Deliver fertilizer to the site in bags or other convenient containers, each fully labeled as required by the State of Ohio Department of Agriculture and bearing the name, trade name or trademark, and warranty of the producer.

### **2.2 PLANT MATERIALS**

- A. Quality. Provide trees, shrubs, and other plants of size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock."
- B. Deciduous Trees. Provide trees of height and caliper scheduled or shown and with branching configuration recommended by ANSI Z60.1 for type and height of tree listed. Deciduous trees shall be balled and burlapped (B&B) for delivery to the project site.
- C. Deciduous Shrubs. Provide shrubs of the height shown or listed and with not less than minimum number of canes required by ANSI Z60.1 for type and height of shrub listed.
  - 1. Provide balled and burlapped (B&B) deciduous shrubs.
  - 2. Container-grown deciduous shrubs will be acceptable in lieu of balled and burlapped deciduous shrubs subject to specified limitations for container-grown stock.

### **2.3 MISCELLANEOUS LANDSCAPE MATERIALS**

- A. Anti-Desiccant. Emulsion type, film-forming agent designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacturer's fully-identified containers and mix in accordance with manufacturer's instructions.
- B. Herbicide. Round up or Kleenup.

- C. Wrapping. Tree-wrap tape not less than four inches (4") wide, designed to prevent bore damage and winter freezing.
- D. Stakes and Guys. Provide stakes and deadmen of sound new hardwood, treated softwood, or redwood, free of knot holes and other defects. Provide wire ties and guys of 2-strand, twisted, pliable galvanized iron wire not lighter than 12 gage with zinc-coated turnbuckles. Provide not less than one-half inch (1/2") diameter rubber or plastic hose, cut to required lengths and of uniform color, material and size to protect tree trunks from damage by wire.
- E. Soil Moisturizer: In non-irrigated planting areas, add "Terra-Sorb AG" or approved equivalent granules to the soil mix in accordance with the manufacturer's recommendations.

## **PART 3 EXECUTION**

### **3.1 LAYOUT**

- A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure the Engineer's acceptance before the start of the planting work. Make minor adjustments as may be requested.

### **3.2 PREPARATION OF PLANTING SOIL**

- A. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. For pit and trench type backfill, mix planting soil prior to backfilling. Stockpile at the site.
- C. Prevent lime from contacting roots of ericaceous plants.
- D. Soil mixture for backfilling to be two parts topsoil and one part leaf humus. Build up beds six (6) inches above finish grade.
- E. Scarify the upper two inches (2") of subgrade where topsoil is scheduled for planting beds and in areas where construction equipment has compacted the soil.

### **3.3 PREPARATION FOR PLANTINGS**

- A. Excavate tree pits as necessary to accommodate the ball or roots and to permit the required preparation of the bottom of the pit such that, when the tree is settled into the pit, it will not be necessary to raise or lower the tree.
- B. Excavate pits to a width two (2) feet greater than the diameter of the burlapped ball or the spread of the roots.
- C. Remove stones over 1 1/2 inches in any dimension, and sticks, stones, rubbish and other extraneous matter.
- D. Beds and trenches shall be excavated with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage.
- E. Fill excavations for trees and shrubs with water and allow to percolate out before planting.

### **3.4 PLANTING TREES AND SHRUBS**

- A. Space plants as shown on plant list.



- B. Dig holes large enough to allow for spreading of roots and backfill with planting soil. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover crowns of plants with wet soils.
- C. Set balled and burlapped (B&B) stock on undisturbed subgrade, plumb and in center of pit or trench with top of ball at same elevation or slightly higher than adjacent finished landscape grades so that when settled they will bear the same relation to the required grade as they bore to natural grade before being transplanted. Remove burlap from top of balls; retain on sides and bottoms. When set, place additional backfill around base and sides of top of ball at same elevation as adjacent finished landscape grades. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
- D. Dish top of backfill to allow for mulching.
- E. Mulch pits, trenches and planted areas. Provide not less than three inch (3") thickness of mulch. Work into top of backfill and finish level with adjacent finish grades. Apply anti-desiccant using power spray to provide an adequate film over trunks, branches, stems, twigs and foliage of all evergreen and broad leaf evergreen trees.
  - 1. If deciduous trees or shrubs are moved in full-leaf, spray with anti-desiccant at nursery before moving and again two (2) weeks after planting.
- F. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by the Engineer, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prune shrubs to retain natural character.
- G. Remove and replace excessively pruned or malformed stock resulting from improper pruning.
- H. Wrap single stem tree trunks of two inch (2") caliper and larger. Start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping.
- I. Guy and stake trees immediately after planting, as indicated.

### 3.5 MAINTENANCE OF PLANTINGS

- A. Begin maintenance immediately after planting.
- B. Maintain trees, shrubs and other plants until final acceptance but in no case less than 60 days after substantial completion of planting.
- C. Maintain trees, shrubs and other plants by pruning, cultivating, watering and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

### 3.6 CLEANUP AND PROTECTION

- A. During landscape work, keep pavements clean and work area in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

### 3.7 INSPECTION AND ACCEPTANCE

- A. When landscape work is completed, including maintenance, the Engineer will, upon request, make an inspection to determine the acceptability of the work.
  - 1. Landscape work may be inspected for acceptance in part agreeable to the Engineer, provided work offered for inspection is complete.
- B. When inspected landscape work does not comply with requirements, replace rejected work and continuous specified maintenance until re-inspected by Engineer and found to be acceptable. Remove rejected plants and materials promptly from project site.

### 3.8 SCHEDULE OF PLANTING SOIL MIXTURE REQUIREMENTS

- A. For backfill for trees and shrubs, provide specified material in not less than the following quantities:
  - 1. 1 part of loose leaf humus to 2 parts of topsoil by volume.
  - 2. 1/2 lb. of commercial fertilizer per inch of caliber.

## **DS-32 STREETSCAPE FURNISHINGS**

### **PART 1 GENERAL**

#### 1.1 DESCRIPTION

- A. Work of this Section includes the furnishing and installation of streetscape amenities, including bike racks, trash receptacles, and benches.

#### 1.2 SUBMITTALS

- A. Provide manufacturer's catalogue cut sheets and color palette for approval to Engineer prior to furnishing and installing.

#### 1.3 QUALITY ASSURANCE

- A. Acceptable Manufacturer: Meet quality objectives of specified materials and manufacturers or equivalent, approved by the Engineer.

#### 1.4 WARRANTY

- A. Written warranty from landscape furnishings manufacturer for a period of three years against defects in material and/or workmanship.

### **PART 2 PRODUCTS**

#### 2.1 BIKE RACKS

- A. Bike racks furnished and installed shall be of the “Inverted U” Type and meet the following requirements:
  - 1. Basis of Design: “U-Bike Rack” by Metro Metal Works, a program of the Lutheran Metropolitan Ministry (216) 658-7218 or sales@metrometalworks.com.
  - 2. Other equivalent with prior approval of the Engineer.
- B. The bike rack shall be fabricated from 2”x2” heavy gauge steel tubing. The U shall measure 36 inches high by 30 inches wide. A 7”x7”x1/4” stainless steel base plate shall be welded to each leg of the U.
- C. After fabrication, the rack shall be finished with a black powdercoat.
- D. Anchors shall be stainless steel as specified below for the Trash Receptacles.

## 2.2 TRASH RECEPTACLES

- A. Manufacturers:
  - 1. Basis of Design: “Chase Park,” Landscape Forms, Inc., 431 Lawndale Avenue, Kalamazoo, Michigan 49048.
  - 2. Alternate Manufacturers:
    - a. Victor Stanley, Inc., P.O. Drawer 330, Dunkirk, MD, 20754
    - b. Maglin Site Furniture, 999 18<sup>th</sup> Street, Suite 1100, Denver, CO, 80202
    - c. Other equivalent with prior approval of the Engineer.
- B. Trash receptacles to be 40 gallon top-opening style.
  - 1. Diameter: 24 inches.
  - 2. Height: 39 inches.
- C. Mounting: Surface mounted.
- D. Materials:
  - 1. Base: Ductile cast iron, ASTM A536, Grade 65-45-12.
  - 2. Sides and Door: Cast 319 aluminum.
  - 3. Lid: 0.100-inch thickness, spun 1100-0 aluminum.
  - 4. Lid Bracket: 1 inch by 1 inch by ¼ inch aluminum angle.
  - 5. Liners: Black, formed polyethylene.
  - 6. Fasteners: Stainless Steel.
- E. Accessories:
  - 1. Anchor Bolts: Stainless steel
    - a. Hilti HIT HY150/HIT-ICE
    - b. Simpson Strong Tie ET-High Stength Epoxy adhesive
    - c. Other equivalent with the prior approval of the Engineer.
- F. Finishes:
  - 1. Primer: Rust inhibitor.
  - 2. Topcoat: Thermosetting polyester powder coat, UV, chip, and flake resistant.
  - 3. Test Results:
    - a. Gloss Consistency, Gardner 60 Degrees, ASTM D523: ±5 percent from standard.
    - b. UV Resistance, Color, and Gloss, ASTM G155, Cycle 7: Delta E less than 2 at 2.0 mils and less than 20 percent loss.
    - c. Cross-Hatch Adhesion, ASTM D3359, Method B: 100 percent pass.
    - d. Flexibility Test, Mandrel, ASTM D522: 3 mm at 2 mils.

- e. Erichsen Cupping, ISO 1520: 8 mm.
- f. Impression Hardness, Buchholz, ISO 2815: 95.
- g. Impact Test, ASTM D2794: 60 inch-pounds at 2.5 mils.
- h. Pencil Hardness, ASTM D3363: 2H minimum.
- i. Corrosion Resistance, 1,500-Hour Test, ASTM B117: Max undercutting 1 mm.
- j. Humidity Resistance, 1,500-Hour Test, ASTM D2247: Max blisters 1 mm.

G. Color: Black

## 2.3 BENCHES

A. Manufacturers:

- 1. Basis of Design: "Balustrade," Landscape Forms, Inc., 431 Lawndale Avenue, Kalamazoo, Michigan 49048.
- 2. Alternate Manufacturers:
  - a. Fairweather Site Furnshings 1540 Leader International Drive, Port Orchard, Washington, 98367
  - b. Taylor & Associates, Inc, 445 Boones Station Road, Johnson City Tennessee, 37615
  - c. Other equivalent with the prior approval of the Engineer.

B. Style: Backless

- 1. Depth: 23 inches.
- 2. Seat Height: 17 inches.
- 3. Length: 60 inches.

C. Support Style: Surface Mounted.

D. Materials:

- 1. Boards:
  - a. Interior boards: 2 ½ inches by 1 ½ inches.
  - b. Face boards: 3 ½ inches by 2 ½ inches.
  - c. Each board: Individually fastened to steel profile straps.
  - d. Board Edges and Ends: Eased.
  - e. Fasteners: Black, phosphate-plated screws.
- 2. Supports: Square tubular steel. Powdercoated black.
- 3. Board Material: Redwood, clear, all heart, solid stock.

E. Accessories:

- 1. Anchor Bolts: Stainless steel
  - a. Hilti HIT HY150/HIT-ICE
  - b. Simpson Strong Tie ET-High Stength Epoxy adhesive
  - c. Other equivalent with the prior approval of the Engineer.

## PART 3 EXECUTION

### 3.1 BIKE RACK INSTALLATION

- A. Bike Racks shall be mounted to the concrete sidewalk using masonry wedge style anchors through each of four (4) 5/8" mounting holes in each base plate. Racks shall be set firm and aligned with a tolerance of ±1/4" from plumb.

Where required, steel tapered shims shall be installed prior to anchoring in place. Any departure of the base plate from grade by more than 3/8" shall require the separation to be filled with high-strength epoxy non-shrinking grout and made level.

### 3.2 TRASH RECEPTACLE INSTALLATION

#### A. Examination:

1. Examine areas to receive trash receptacles.
2. Notify Engineer of conditions that would adversely affect installation or subsequent use.
3. Do not begin installation until unacceptable conditions are corrected.

#### B. Installation:

1. Install trash receptacles in accordance with manufacturer's instructions at locations indicated on the Drawings.
2. Install trash receptacles level and plumb.
3. Anchor trash receptacles securely in place.

#### C. Adjusting:

1. Finish Damage: Repair minor damage to finish in accordance with manufacturer's instructions and as approved by the Engineer.
2. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by the Engineer.

#### D. Cleaning:

1. Clean trash receptacles promptly after installation in accordance with manufacturer's instructions.
2. Do not use harsh cleaning materials or methods that could damage finish.

#### E. Protect installed trash receptacles to ensure that, except for normal weathering, receptacles will be without damage or deterioration at time of Substantial Completion.

### 3.3 BENCH INSTALLATION

#### A. Examination:

1. Examine areas to receive benches.
2. Notify the Engineer of conditions that would adversely affect installation or subsequent use.
3. Do not begin installation until unacceptable conditions are corrected.

#### B. Installation:

1. Install benches in accordance with manufacturer's instructions at locations indicated on the Drawings.
2. Install benches level.
3. Anchor benches securely in place.

#### C. Adjusting:

1. Finish Damage: Repair minor damage to finish in accordance with manufacturer's instructions and as approved by the Engineer.
2. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by the Engineer.

#### D. Cleaning:

1. Clean benches promptly after installation in accordance with manufacturer's instructions.
  2. Do not use harsh cleaning materials or methods that could damage finish.
- E. Protect installed benches to ensure that, except for normal weathering, benches will be without damage or deterioration at time of Substantial Completion.

**DS-33 ITEM SPECIAL, PATTERNED CROSSWALK, AS PER PLAN (PROFESSOR STREET)**

This item includes painting the crosswalks at the Professor Street intersections with a specially patterned stencil. The Contractor shall prepare a stencil based on the pattern shown on the plans and as designed by the Tremont West Development Corporation. The stencil shall be constructed such that it can be moved from place to place during the project and can be transported without significant damage. At the conclusion of the project, the stencil shall be turned over to the Engineer for use elsewhere in the Tremont neighborhood.

The pattern is to be placed on the pavement, between the crosswalk lines as shown on the Drawings. Paint material shall be ODOT Item 644, Thermoplastic Pavement Marking paint, white, as specified for crosswalk lines. Glass beads are not required for the patterned crosswalks.

## **MISCELLANEOUS**

**DS-34 ITEM 619, FIELD OFFICE, AS PER PLAN**

Revise City Specification D-45 by adding the following:

The unit price per month of Item 619, Field Office, As Per Plan shall also include a high speed internet DSL line to be installed and operational.

**DS-35 ITEM SPECIAL, COMPUTER EQUIPMENT REMAINING CONTRACTOR'S**

The requirements of D-46 for the Computer Equipment shall be removed from that item and they shall be applicable to this pay item. The Contractor shall furnish, install, and maintain the following items for the life of the Contract. All items furnished shall be for the exclusive use of the Engineer and staff and shall be operable by the first day of work.

This system shall not experience down time exceeding 48 hours from notification by the Engineer. The Contractor shall replace stolen, vandalized, or units otherwise inoperable within 48 hours after notification from the Engineer. Upon completion of the Contract, the hardware and software shall remain property of the Contractor.

The Contractor's failure to provide equipment as required below may result in the withholding of payment estimates.

## **Computer Hardware**

### **Type A, B, C Offices**

One (1) personal computer consisting of and including the following:

- One IBM PC compatible notebook with an Intel i5-460M processor or desktop (as directed by the City) computer with an Intel i7-870 processor or as directed by the City. The computer shall be provided with the following as a minimum:

#### Laptop:

- Minimum 250 Gig Hard Disk.
- 6 GB DDR3 – 1333 RAM.
- 7-in-1 Digital Media Reader.
- Lightscribe 8X DVD +/- RW with Dual layer support or higher.
- High Speed Wi-Fi internal 802.11 b/g/n WLAN.
- LED color display with HD graphics (1366 x 768).
- One serial port, HDMI, 4 – USB (2.0), LAN.
- Wireless 365 Bluetooth.
- Touchpad.
- One docking station, including 19" LED monitor or approved equal.
- AC adapter and two (2) 6-cell 47 WHr lithium ion batteries.
- Operating system – Windows 7 Professional – 64 bit.
- Software – MSOFFICE 2010 Professional.
- Software – McAfee Enterprise version 8.7i or newer.

#### Desktop (AutoCAD Ready):

- Minimum 500 Gig Hard Disk.
  - 8 GB DDR3 – 1066 SDRAM.
  - 19-in-1 Digital Media Reader.
  - 16X DVD +/- RW with Dual layer support or higher.
  - LED color display with HD graphics (1366 x 768).
  - One serial port, HDMI, 4 – USB (2.0), 10/100/1000 Network.
  - ATI Radeon HD 5770 or approved equal.
  - 22" LED monitor or approved equal.
  - Operating system – Windows 7 Professional – 64 bit.
  - Software – MSOFFICE 2010 Professional.
  - Software – McAfee Enterprise version 8.7i or newer.
- 
- Hewitt-Packard Officejet Pro 8500 All-in-One Printer or approved equivalent, and USB cable.
  - Surge protector, 15 amp six (6) outlet with circuit breaker and surge protector light.

Payment shall be made under the Bid Item for Item Special, Computer Equipment Remaining Contractor's.

## **DS-36 RECORD DRAWINGS**

### **GENERAL**

The requirements of D-47 for as-built drawings shall be removed from that item and they shall be applicable to this pay item.

Contractor shall maintain and provide the City with record drawings as specified herein. Record drawings shall include complete documentation of field revisions to the Contract Documents.

### **FILING**

1. The Contractor shall maintain in his field office and in clean, dry, legible condition the following: contract drawings, specifications, addenda, conforming shop drawings, change orders, other modifications of contract, test records, survey data and all other documents pertinent to the Contractor's work.
2. The Contractor shall provide files and racks for proper storage and easy access. Filing shall be established in a format acceptable to the City.
3. The Contractor shall make documents available at all times for inspection by the City or their representatives.
4. Record drawings shall not be used for any other purpose and shall not be removed from their filed location without the City's approval.

### **RECORDING**

1. The Contractor shall keep all record drawings current.
2. The Contractor shall not permanently conceal any work until required information has been recorded.
3. Contract Drawings shall be legibly marked to record actual construction including:
  - a. Depths of various elements of foundation in relation to datum.
  - b. Horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.
  - c. Field changes of dimension and detail.
  - d. Changes made by Change Order or Field Order.
  - e. Details not on original Contract Drawings.
4. Specifications and Addenda: Legibly mark each section to record:
  - a. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
  - b. Changes made by Change Order or Field Order.
  - c. Other matters not originally specified.



## **MAINTENANCE**

1. The Contractor shall maintain the project during the course of the construction including the period of the as-built certification shall notify the engineer a minimum of 2 weeks prior to completion
2. The Contractor shall maintain the integrity of the project until final acceptance of the record drawings and a determination by the Engineer that no errors or omissions have been made by the Contractor during the course of construction. The Engineer shall notify the Contractor as to the acceptability or rejection of the construction of the project. The Contractor shall correct any errors/omissions prior to final acceptance of the record drawings for the project.
3. The Contractor shall maintain shop drawings and legibly annotate changes made after review.

## **SUBMITTALS**

1. The Contractor shall annotate all record drawing revisions onto electronic copies of plan drawings provided by the Engineer using AutoCAD 2007, or later software, as approved by the Engineer. At the completion of the project, deliver one (1) mylar copy, one (1) paper copy, and one (1) electronic copy in AutoCAD of record drawing original documents to the Engineer. Highlight changes with clouds and show changes on a separate AutoCAD layer.
2. Provide transmittal letter containing the following information:
  - a. Date.
  - b. Project title and project number.
  - c. Contractor's name and address.
  - d. Title and number of each drawing.
  - e. Certification that each document as submitted is complete and accurate.
  - f. Signature of Contractor or his authorized representative

## **PAYMENT**

Payment for all the above shall be lump sum upon the proper execution of all the work of this item as determined by the Engineer.

## **DS-37 UTILITY NOTES**

The Contractor shall take notice of the Exhibit "B" Utility Adjustments on the following pages of these Detailed Specifications.

**DS-38 UTILITY OWNERSHIP**

The following utilities and owners are located within the work area of this project:

- |   |   |
|---|---|
| <p>1. <b>AT&amp;T</b><br/>13630 Lorain Avenue - 2nd Floor<br/>Cleveland, Ohio 44111<br/>James Janis, Design Manager<br/>(216) 476-6142</p>                      | <p>5. <b>Dominion East Ohio Gas Company</b><br/>320 Springside Drive<br/>Failawn, Ohio 44333<br/>Ed Goubeaux, Project Manager<br/>(330) 664-2494</p>  |
| <p>2. <b>City of Cleveland<br/>Division of Public Power</b><br/>1300 Lakeside Avenue<br/>Cleveland, Ohio 44114<br/>Chris Hirzel<br/>(216) 664-3922, ext.115</p> | <p>6. <b>Illuminating Company</b><br/>6896 Miller Road<br/>Brecksville, Ohio 44141<br/>Mark Robinson, Contract Specialist<br/>(440) 717-6845</p>      |
| <p>3. <b>City of Cleveland<br/>Water Pollution Control Division`</b><br/>12302 Kirby Avenue<br/>Cleveland, Ohio 44108<br/>Rachid Zoghaib<br/>(216) 664-3785</p> | <p>7. <b>Northeast Ohio Regional<br/>Sewer District</b><br/>3900 Euclid Avenue<br/>Cleveland, Ohio 44115-2504<br/>Gary Hoffman<br/>(216) 881-6600</p> |
| <p>4. <b>City of Cleveland<br/>Division of Water</b><br/>1201 Lakeside Avenue<br/>Cleveland, Ohio 44114<br/>Guy Singer<br/>(216) 664-2444, ext. 5555</p>        | <p>8. <b>Time Warner Cable</b><br/>8179 Dow Circle<br/>Strongsville, Ohio 44136<br/>Paul Silvestro<br/>(216) 575-8016, ext. 5034</p>                  |

**NOTE:**

The Contractor must notify the Ohio Utilities Protect Service (O.U.P.S.) 1-800-362-2764 at least seventy-two (72) hours before work begins. The Contractor will have to furnish to the Engineer the reference number.

**DS-39 ITEM 108 – CRITICAL PATH METHOD PROGRESS SCHEDULE PER PN 107**

A Construction Progress Schedule shall be prepared by the Contractor and submitted to the Engineer within fifteen (15) days of the issuance of a Notice to Proceed. This schedule shall be in substantial compliance with the requirements of ODOT Plan Note 107, a copy of which is bound into this specification.

The Contractor shall take particular notice of the dates of Substantial Completion listed on the Drawings under Construction Sequence, Maintenance of Traffic General Notes.

## **DS-40 INSERTS**

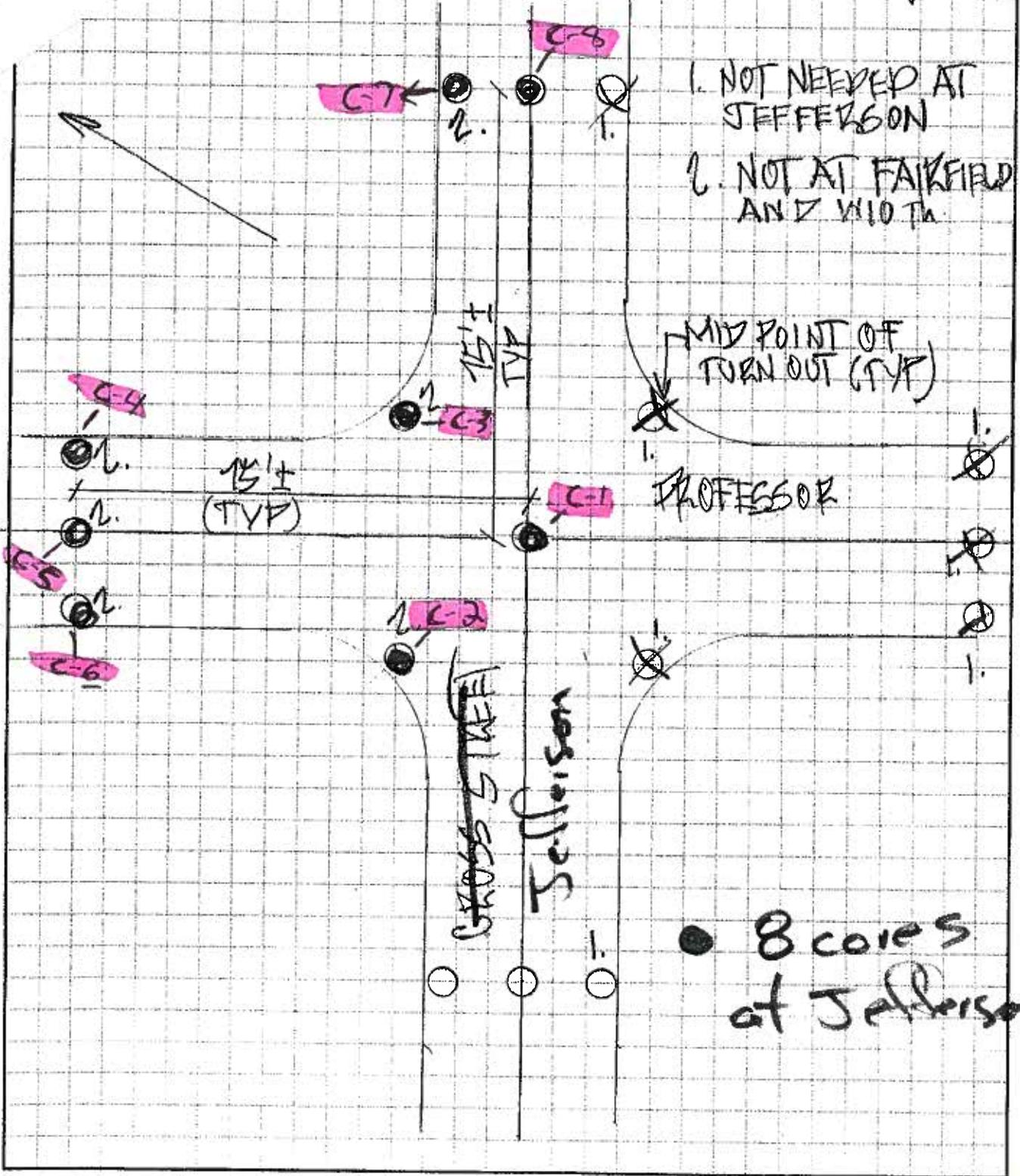
The following information has been inserted into this section for the use and information of the Contractor:

- “City of Cleveland Task Order #52,” prepared by Professional Services Industries, Inc. and dated February 28, 2012.
- “Special Provisions – Curb Ramps Last Revision: 3-15-2007”, including Standard Curb Ramp Drawings.
- Ohio Department of Transportation Supplemental Specification 800, “Revisions to the 2010 Construction and Materials Specifications,” dated July 20, 2012.
- Ohio Department of Transportation Supplemental Specification 832, “Temporary Sediment and Erosion Control,” dated May 5, 2009.
- Ohio Department of Transportation Proposal Note 417, “Design Requirements for Plant Mix Pavements (Medium),” dated July 15, 2005.
- Exhibit “B” Utility Adjustments and 4A Notes.
- List of Encroachments.

3 @ JEFFERSON

7A & ASSOCIATES INC.  
Engineers & Surveyors  
Columbus Road, #100  
COLUMBUS, OHIO 44141  
(440) 526-4206  
FAX (440) 546-2691

JOB CLEVELAND STREETSCAPE  
SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_  
CALCULATED BY RCN DATE 11/8/12  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
SCALE NONE (ES90A)

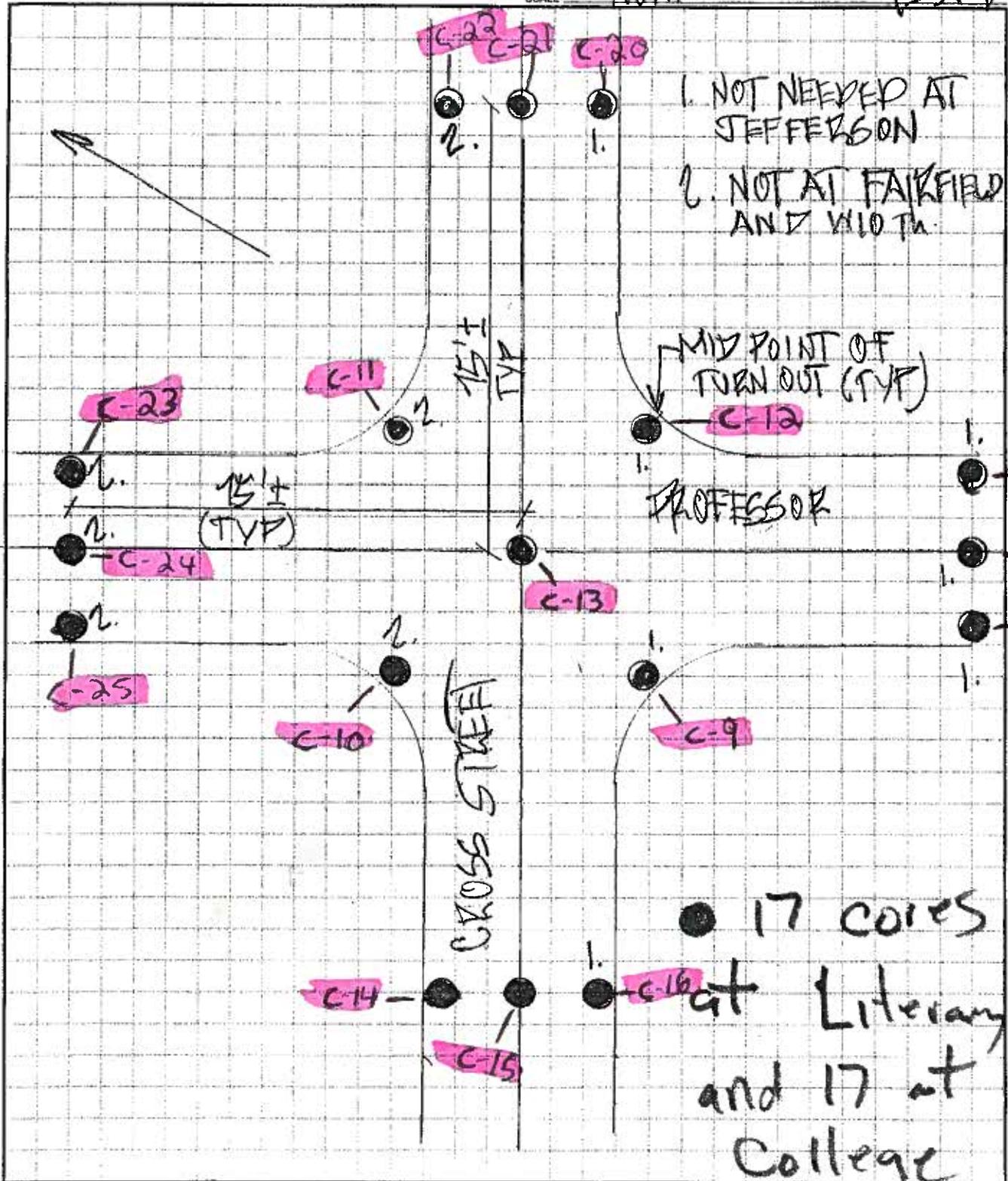


Dave

9-25 @ ~~LITERARY~~ COLLEGE

MICHAEL BENZA & ASSOCIATES INC.  
Consulting Engineers & Surveyors  
6860 West Snowville Road, #100  
BRECKSVILLE, OHIO 44141  
(440) 526-4206  
FAX (440) 546-2691

JOB CLEVELAND STREETSCAPE  
SHEET NO. 1 OF 1  
CALCULATED BY RGN DATE 11/18/11  
CHECKED BY NONE DATE (530A)  
SCALE NONE



PROFESOR and college

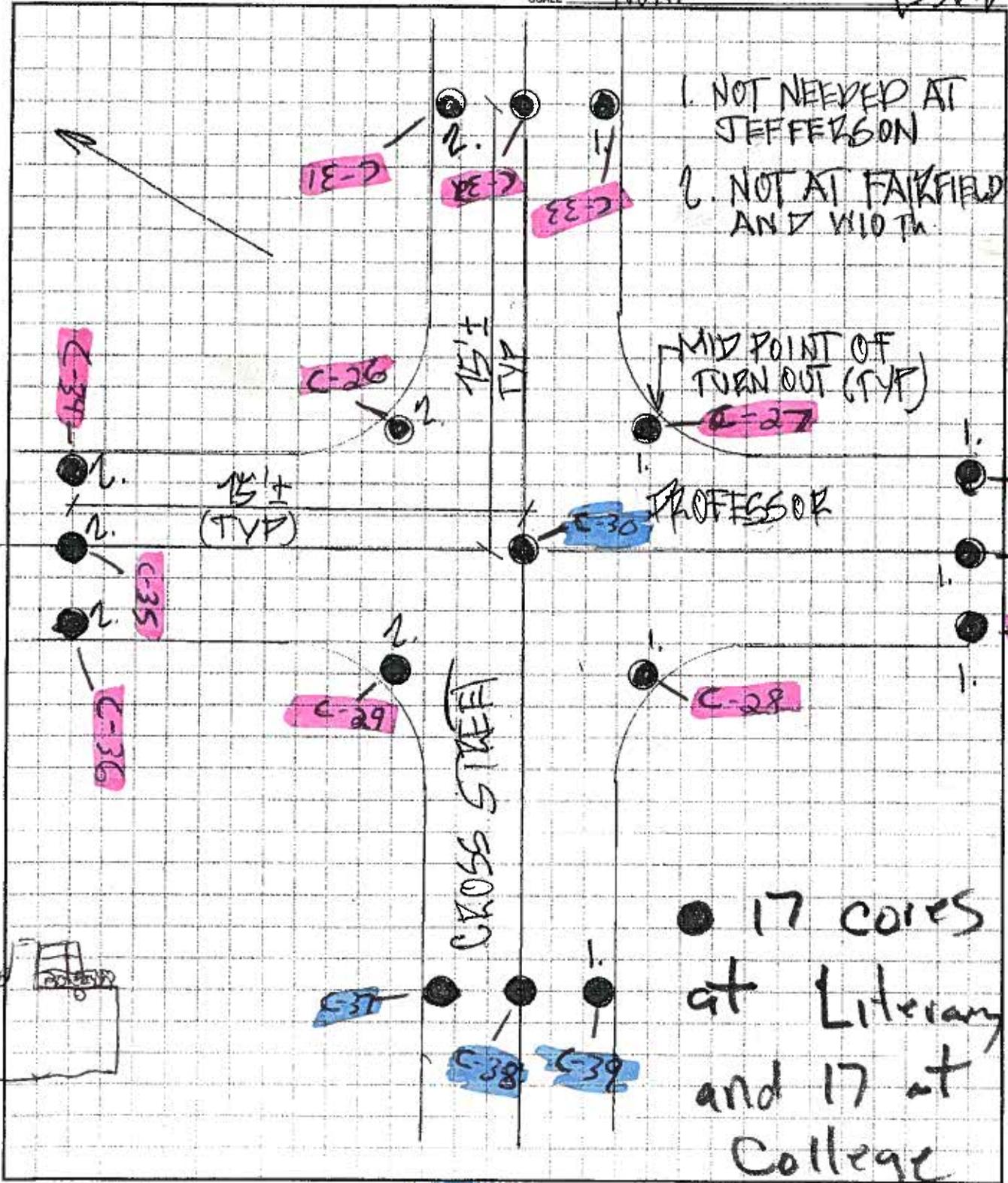
C-22 CORE sample came out of bit in pieces

C-24 8" OF concrete fell into void could not retrieve  
**NONE**

26-42 @ LITERARY

MICHAEL BENZA & ASSOCIATES INC.  
Consulting Engineers & Surveyors  
6860 West Snowville Road, #100  
BRECKSVILLE, OHIO 44141  
(440) 526-4206  
FAX (440) 546-2691

JOB CLEVELAND STREETSCAPE  
SHEET NO. 1 OF 1  
CALCULATED BY R.C.N. DATE 11/18/12  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
SCALE NONE (530A)



PROFESOR  
and  
Literary

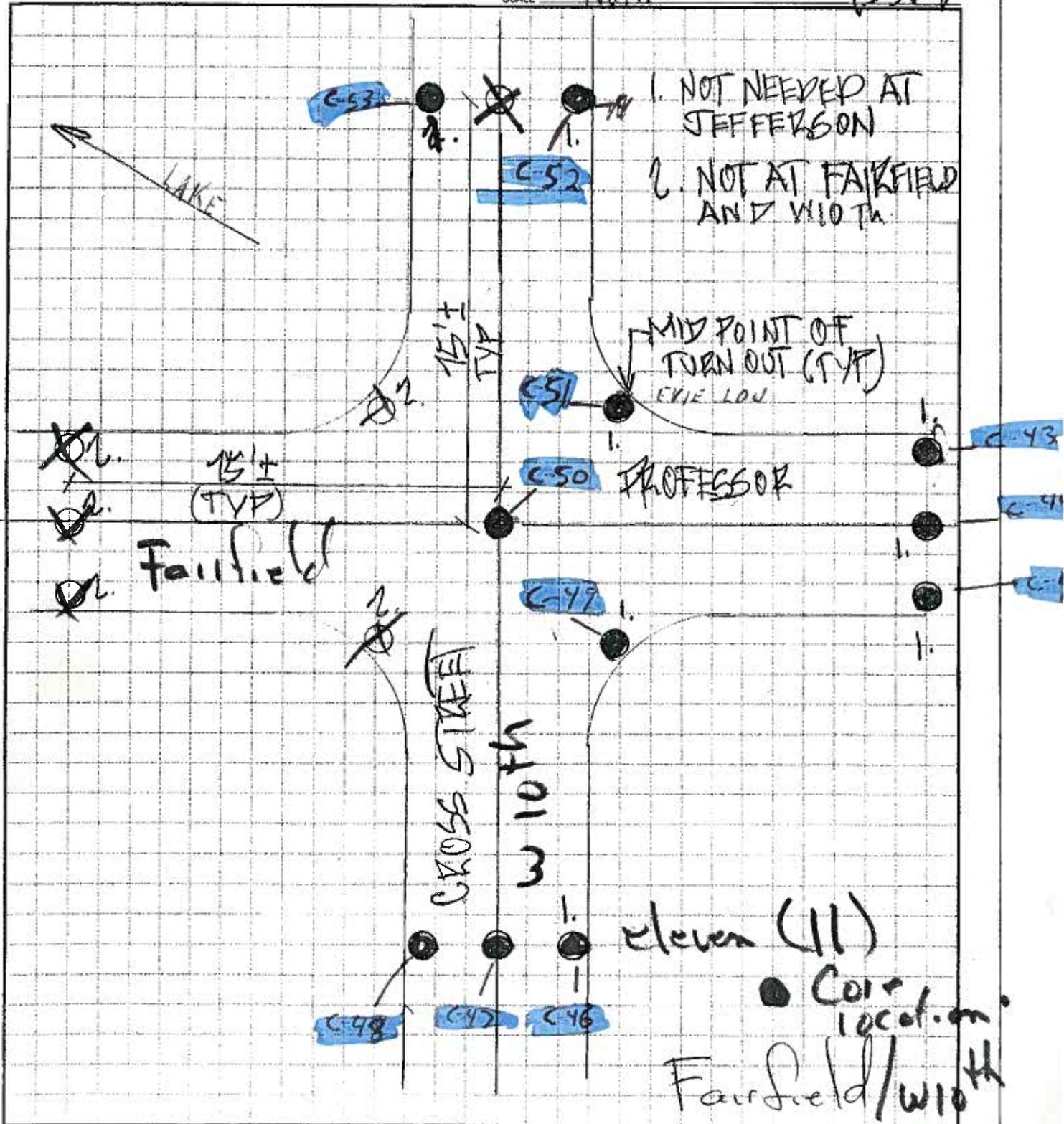
Dove

● 17 CORES  
at Literary  
and 17 at  
College  
C-70 8' off center line  
Due to vault. Also  
Huge Void under

43-53 @ FAIRFIELD

MICHAEL BENZA & ASSOCIATES INC.  
Consulting Engineers & Surveyors  
6860 West Snowville Road, #100  
BRECKSVILLE, OHIO 44141  
(440) 526-4206  
FAX (440) 546-2691

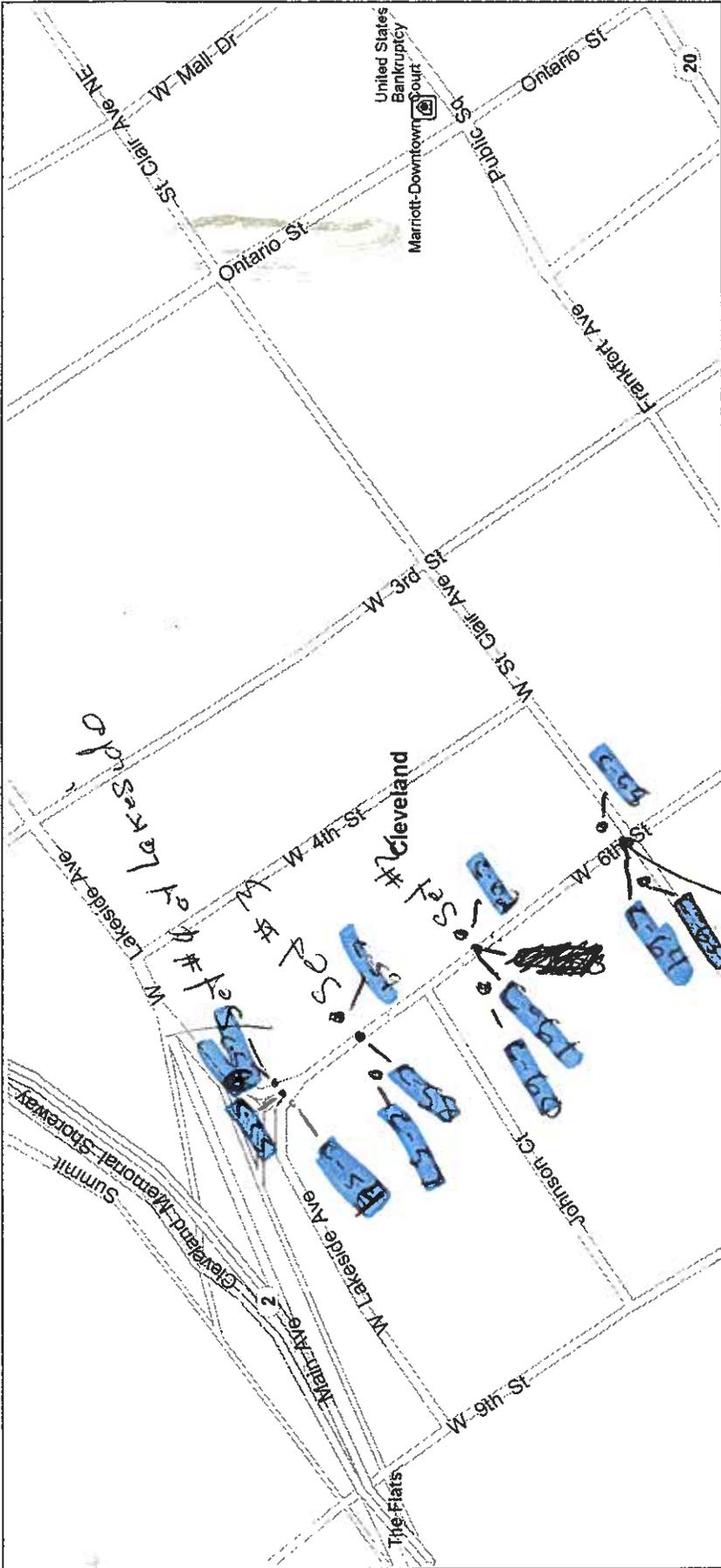
JOB CLEVELAND STREETSCAPE  
SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_  
CALCULATED BY RCN DATE 11/8/12  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
SCALE NONE (S30A)



**DONE**

54-65 @ W 6<sup>TH</sup>

Cleveland, Ohio, United States



Set #1 at St. Clair

Starting at LK  
Looking South

Lakeside ENB  
Right      Left  
C-S      C-S      C-S

Copyright © 1998-2001 Microsoft Corp. and/or its suppliers. All rights reserved. <http://www.microsoft.com/streets>  
© Copyright 2000 by Geographic Data Technology, Inc. All rights reserved © 2000 Navigational Technologies. All rights reserved. This data includes information taken with permission from Canadian authorities © Her Majesty the Queen in Right of Canada.  
© Copyright 2000 by CompuSearch Micromarketing Data and Systems Ltd.



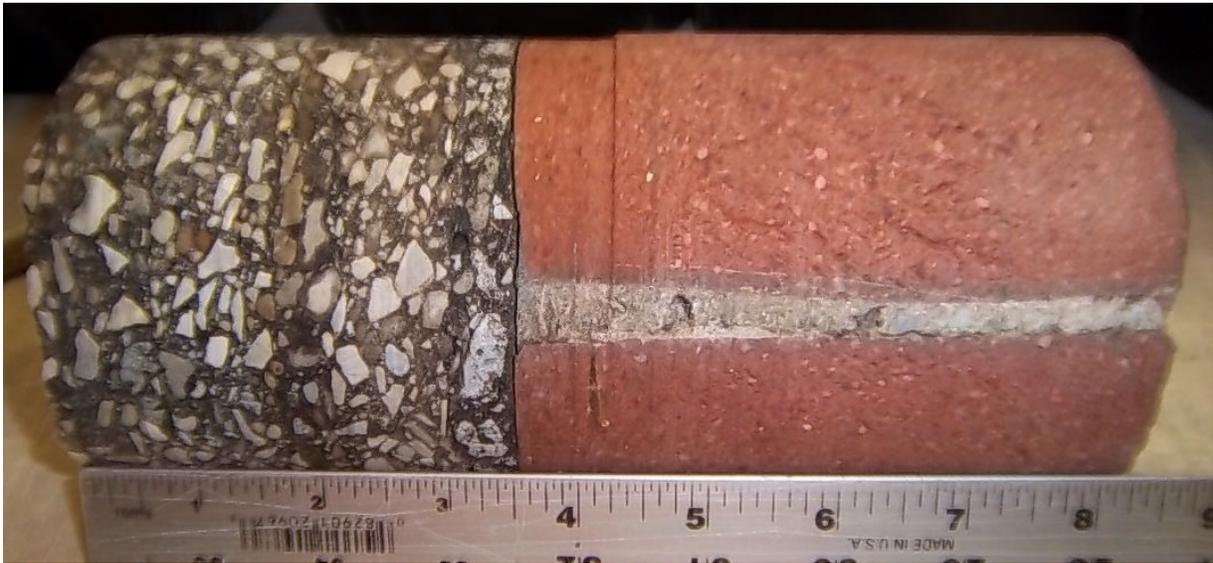


Core #43  
 Location: SE, North on Professor Ave.  
 7 1/4" Asphalt



Core #44  
 Location: SE, Center on Professor Ave.  
 1" Asphalt / 9 1/2" Concrete

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>Fairfield/Professor Ave. and W. 10th</b> <b>Cleveland, OH</b>	<b>Core #43 and #44</b>
	Scale: NA   Drawn By: EWP   Date: 2/28/2012	PSI Project No.: 0141914



Core #45  
 Location: SE, South on Professor Ave.  
 3 1/2" Asphalt / 4 3/4" Brick



Core #46  
 Location: SW, South on W. 10<sup>th</sup> St.  
 3" Asphalt / 4" Brick



Core #47  
 Location: SW, Center on W. 10<sup>th</sup> St.  
 7 ½" Asphalt / 9" Concrete



Core #48  
 Location: SW, West on W. 10<sup>th</sup> St.  
 2 ¾" Asphalt / 5" Brick



Core #49  
 Location: South Center of Intersection  
 3" Asphalt / 5 ½" Concrete



Core #50  
 Location: Center of Intersection  
 5 ¾" Asphalt / 6 ¾" Concrete



Core #51  
 Location: East Center of Intersection  
 2 ½" Asphalt / 4 ¾" Brick



Core #52  
 Location: NE, East on W. 10<sup>th</sup> St.  
 2 ½" Asphalt / 5" Brick

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>Fairfield/Professor Ave. and W. 10th</b> <b>Cleveland, OH</b>	<b>Core #51 and #52</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #53  
Location: NE, North on W. 10<sup>th</sup> St.  
1" Asphalt / 5" Brick

**psi** Information  
To Build On  
Engineering • Consulting • Testing

City of Cleveland  
Task Order #52  
Fairfield/Professor Ave. and W. 10th  
Cleveland, OH

Core #53

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914



Core #26  
 Location: North Center of Intersection  
 3 <sup>7</sup>/<sub>8</sub>" Asphalt / 6" Concrete



Core #27  
 Location: NE Center of Intersection  
 4 <sup>1</sup>/<sub>4</sub>" Asphalt / 5 <sup>3</sup>/<sub>4</sub>" Concrete

**psi** Information  
 To Build On  
 Engineering • Consulting • Testing

City of Cleveland  
 Task Order #52  
 Professor Ave. and Literary Ave.  
 Cleveland, OH

Core #26 and #27

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914



Core #28  
 Location: South Center of Intersection  
 3 ¾" Asphalt / 6 ¾" Concrete



Core #29  
 Location: NW Center of Intersection  
 3 ¾" Asphalt / 6 ¼" Concrete

**psi** Information  
*To Build On*  
 Engineering • Consulting • Testing

City of Cleveland  
 Task Order #52  
 Professor Ave. and Literary Ave.  
 Cleveland, OH

Core #28 and #29

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914





Core #30  
 Location: Center of Intersection  
 3" Asphalt / 9 1/2" Concrete



Core #31  
 Location: NE, North on Literary Ave.  
 2 3/4" Asphalt / 5 1/4" Brick

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>Professor Ave. and Literary Ave.</b> <b>Cleveland, OH</b>	<b>Core #30 and #31</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #32  
 Location: NE, Center on Literary Ave.  
 3 1/2" Asphalt / 4 1/2" Brick



Core #33  
 Location: NE, East on Literary Ave.  
 3 7/8" Asphalt / 4 5/8" Brick



Core #34  
 Location: NW, North on Professor Ave.  
 2 ½" Asphalt / 4 ½" Brick



Core #35  
 Location: NW, Center on Professor Ave.  
 7 ¼" Asphalt / 8 ¾" Concrete



Core #36  
 Location: NW, West on Professor Ave.  
 2" Asphalt / 5" Brick



Core #37  
 Location: SW, West on Literary Ave.  
 2 3/4" Asphalt / 4 3/4" Brick

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>Professor Ave. and Literary Ave.</b> <b>Cleveland, OH</b>	<b>Core #36 and #37</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #38  
 Location: SW, Center on Literary Ave.  
 3 3/8" Asphalt / 4 1/2" Brick



Core #39  
 Location: SW, South on Literary Ave.  
 2" Asphalt / 5" Brick



Core #40  
 Location: SE, South on Professor Ave.  
 4 ¼" Asphalt / 8" Concrete



Core #41  
 Location: SE, Center on Professor Ave.  
 8 ½" Asphalt

**psi** Information  
 To Build On  
 Engineering • Consulting • Testing

City of Cleveland  
 Task Order #52  
 Professor Ave. and Literary Ave.  
 Cleveland, OH

Core #40 and #41

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914



Core #42  
Location: SE, East on Professor Ave.  
4 <sup>3</sup>/<sub>4</sub>" Asphalt / 6 <sup>3</sup>/<sub>4</sub>" Concrete

**psi** Information  
To Build On  
Engineering • Consulting • Testing

City of Cleveland  
Task Order #52  
Professor Ave. and Literary Ave.  
Cleveland, OH

Core #42

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914



Core #9  
 Location: South Center of Intersection  
 7 1/2" Asphalt / 6" Concrete



Core #10  
 Location: NW Center of Intersection  
 4 1/2" Asphalt / 7" Concrete

	<p>City of Cleveland          Task Order #52          Professor Ave. and College Ave.          Cleveland, OH</p>	<p>Core #9 and #10</p>
	<p>Scale: NA   Drawn By: EW   Date: 2/28/2012</p>	<p>PSI Project No.: 0141914</p>





Core #11  
 Location: North Center of Intersection  
 5" Asphalt / 4 ½" Brick



Core #12  
 Location: NE Center of Intersection  
 9 ½" Asphalt



Core #13  
 Location: Center of Intersection  
 12" Asphalt



Core #14  
 Location: SW, West on College Ave  
 2 1/4" Asphalt / 4 3/4" Brick



Core #15  
 Location: SW, Center on College Ave.  
 1 1/2" Asphalt / 4 3/4" Brick



Core #16  
 Location: SW, South on College Ave.  
 1 3/4" Asphalt / 5 1/4" Brick



Core #17  
 Location: SE, South on Professor Ave.  
 2 3/4" Asphalt / 5" Brick



Core #18  
 Location: SE, Center on Professor Ave.  
 9 1/4" Asphalt / 7 3/4" Concrete



Core #19  
 Location: SE, East on Professor Ave.  
 2" Asphalt / 7" Concrete



Core #20  
 Location: NE, East on College Ave.  
 1 ¼" Asphalt / 4 ¾" Brick



Core #21  
 Location: NE, Center on College Ave.  
 1" Asphalt / 5 ¼" Brick



Core #22  
 Location: NE, North on College Ave.  
 ½" Asphalt / 4" Brick



Core #23  
 Location: NW, North on Professor Ave.  
 2 ¼" Asphalt / 4 ¾" Brick



Core #24  
 Location: NW, Center on Professor Ave.  
 8 ½" Asphalt



Core #25  
Location: NW, West on Professor Ave.  
2 1/2" Asphalt / 5" Brick

**psi** Information  
To Build On  
Engineering • Consulting • Testing

City of Cleveland  
Task Order #52  
Professor Ave. and College Ave  
Cleveland, OH

Core #25

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914





Core #1  
 Location: Center of Intersection  
 6" Asphalt



Core #2  
 Location: NW Center of Intersection  
 7 1/2" Asphalt / 4 1/2" Concrete



Core #3  
 Location: NE Center of Intersection  
 4" Asphalt / 5 ¼" Concrete



Core #4  
 Location: NE on Professor  
 2 ½" Asphalt / 5" Brick



Core #5  
 Location: N Center on Professor  
 7 1/2" Asphalt / 8 1/2" Concrete



Core #6  
 Location: NW on Professor  
 3" Asphalt / 5" Brick

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>Professor Ave. and Jefferson Ave.</b> <b>Cleveland, OH</b>	<b>Core #5 and #6</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #7  
 Location: NE on Jefferson  
 2 ¼" Asphalt / 7 ½" Concrete (Reinforcing Steel at 6 ¼")



Core #8  
 Location: E Center on Jefferson  
 2 ½" Asphalt / 5" Brick

	<b>City of Cleveland          Task Order #52          Professor Ave. and Jefferson Ave.          Cleveland, OH</b>	<b>Core #7 and #8</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #54  
 Location: West Side of W. Lakeside Ave. and W. 6<sup>th</sup> St.  
 4 ¼" Asphalt / 7" Concrete



Core #55  
 Location: Center of W. Lakeside Ave. and W. 6<sup>th</sup> St.  
 2" Asphalt / 7 ½" Concrete

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>West 6<sup>th</sup> St.</b> <b>Cleveland, OH</b>	<b>Core #54 and #55</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #56  
 Location: East Side of W. Lakeside Ave. and W. 6<sup>th</sup> St.  
 11 ¼" Asphalt



Core #57  
 Location: West Side of W. 6<sup>th</sup> between W. Lakeside Ave. and Johnson Ct.  
 2" Asphalt / 13" Concrete

 <p><b>PSI</b> Information      To Build On      Engineering • Consulting • Testing</p>	<p>City of Cleveland          Task Order #52          West 6<sup>th</sup> St.          Cleveland, OH</p>	<p>Core #56 and #57</p>
	<p>Scale: NA   Drawn By: EW   Date: 2/28/2012</p>	<p>PSI Project No.: 0141914</p>



Core #58

Location: Center of W. 6<sup>th</sup> between W. Lakeside Ave. and Johnson Ct.  
 4 ¾" Asphalt / 7 ¾" Concrete



Core #59

Location: East Side of W. 6<sup>th</sup> between W. Lakeside Ave. and Johnson Ct.  
 3" Asphalt / 10.5" Concrete

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>West 6<sup>th</sup> St.</b> <b>Cleveland, OH</b>	<b>Core #58 and #59</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914



Core #60

Location: West Side of W. 6<sup>th</sup> between Johnson Ct. and W. St. Clair Ave.  
 2 ¾" Asphalt / 6 " Concrete (Reinforcing Steel at 6")



Core #61

Location: Center of W. 6<sup>th</sup> between Johnson Ct. and W. St. Clair Ave.  
 1 ½" Asphalt / 7 ½" Concrete





Core #62

Location: East Side of W. 6<sup>th</sup> between Johnson Ct. and W. St. Clair Ave.  
7" Asphalt / 9 1/2" Concrete



Core #63

Location: West Side of W. 6<sup>th</sup> St. and W. St. Clair Ave.  
3" Asphalt / 8" Concrete

**psi** Information  
To Build On  
Engineering • Consulting • Testing

City of Cleveland  
Task Order #52  
West 6<sup>th</sup> St.  
Cleveland, OH

Core #62 and #63

Scale: NA | Drawn By: EW | Date: 2/28/2012

PSI Project No.: 0141914

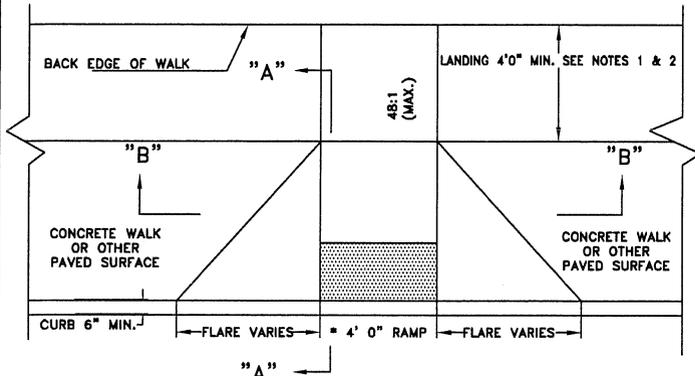


Core #64  
 Location: Center of W. 6<sup>th</sup> St. and W. St. Clair Ave.  
 10" Asphalt / 6 ½" Concrete

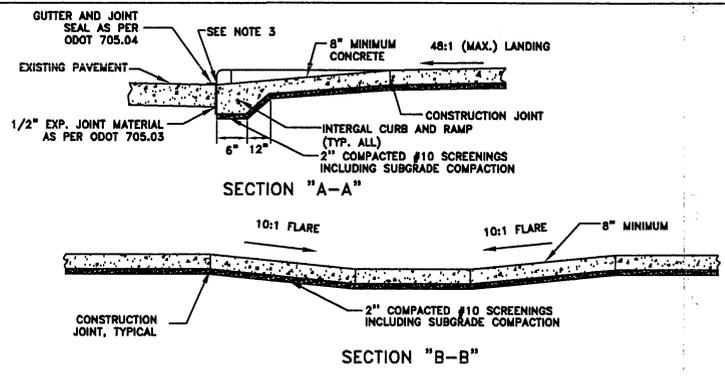
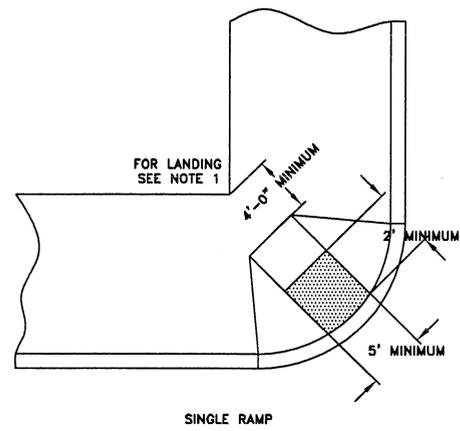


Core #65  
 Location: East Side of W. 6<sup>th</sup> St. and W. St. Clair Ave.  
 3 ½" Asphalt / 11" Concrete

	<b>City of Cleveland</b> <b>Task Order #52</b> <b>West 6<sup>th</sup> St.</b> <b>Cleveland, OH</b>	<b>Core #64 and #65</b>
	Scale: NA   Drawn By: EW   Date: 2/28/2012	PSI Project No.: 0141914

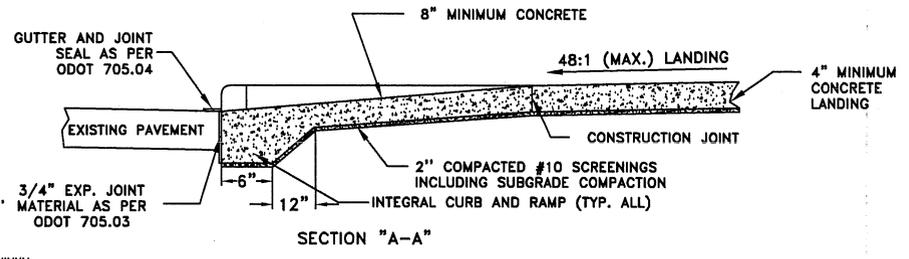
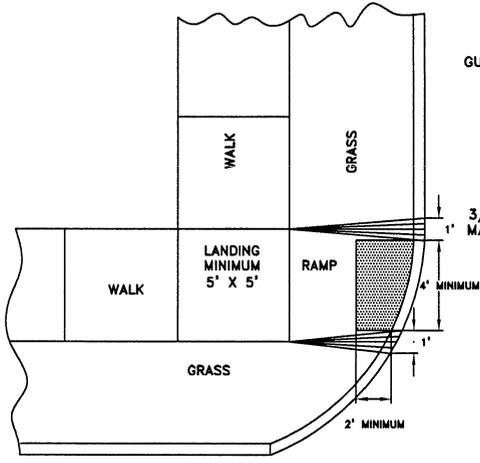
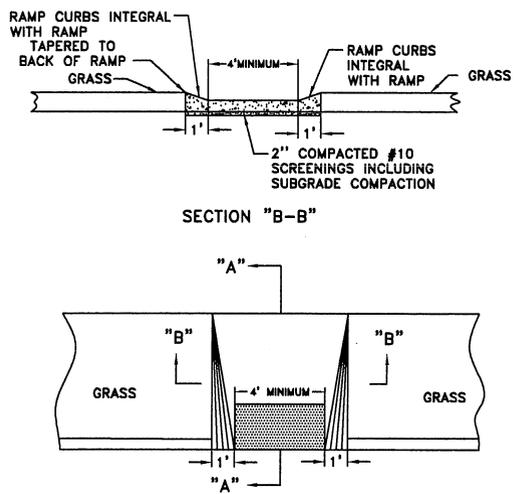


\* 3'-0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER



CR-1

- NOTES:
- 1) MAY BE REDUCED TO 3'-0" IN EXISTING SIDEWALK IF THE LANDING IS CONSTRAINED ALONG THE BACK EDGE.
  - 2) WHERE THE LANDING IS LESS THAN 4'-0", THE RAMP FLARE SHALL BE INCREASED TO 12:1.
  - 3) GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
  - 4) SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



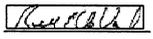
CR-2

- \* 3'-0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER
- NOTES:
- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
  - 2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
  - 3-GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.

REVISED 12/8/08

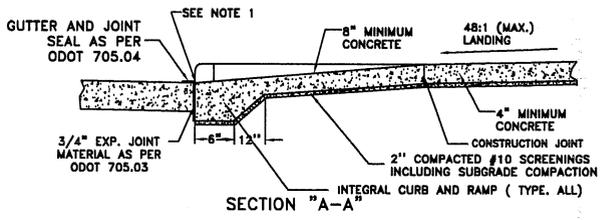
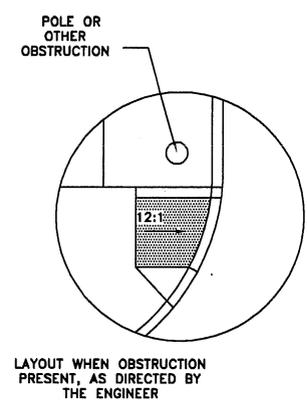
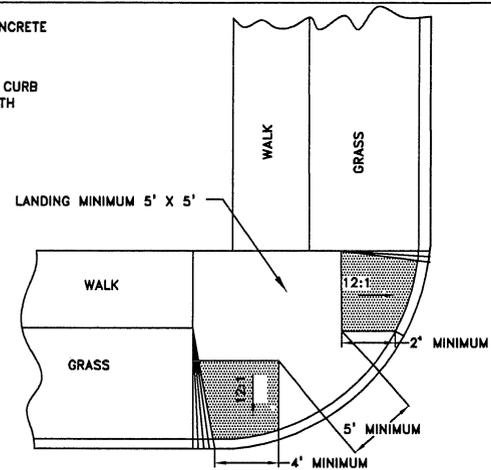
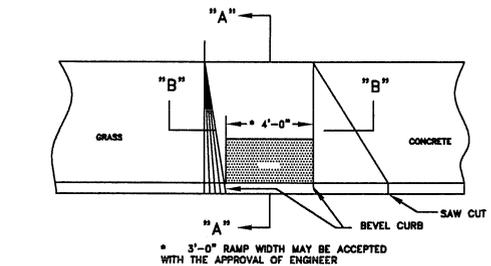
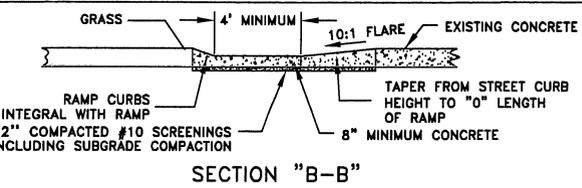
**CITY OF CLEVELAND**  
 DEPARTMENT OF PUBLIC SERVICE  
 DIVISION OF ENGINEERING & CONSTRUCTION  
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
**TYPICAL CONSTRUCTION**  
**CURB RAMPS**  
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS      DATE: 4/8/08  
 SUBMITTED BY: W. MCLAUGHLIN      DATE: 4/8/08

APPROVED:       DATE: 4/14/08

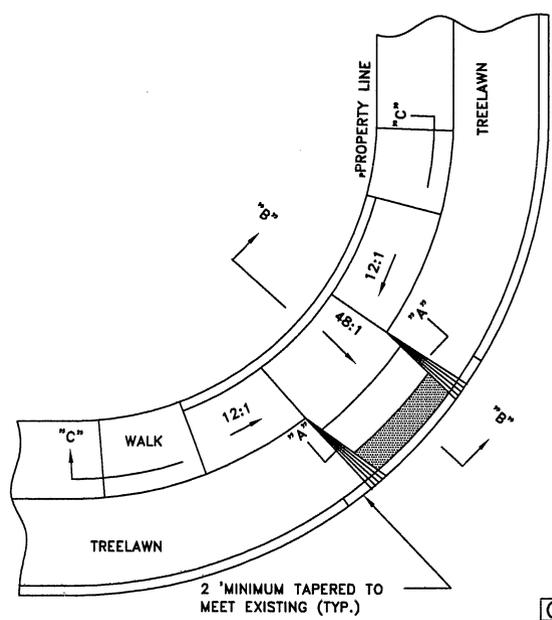
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR-1    SHEET 1/6    11

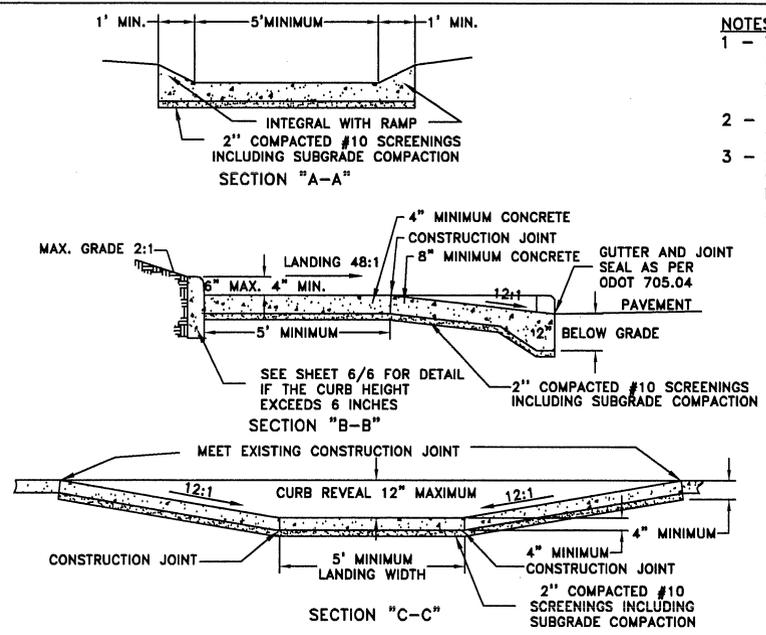


CR-3

- NOTES:
- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
  - 2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
  - 3-BARRIER CURB INSTALLATION ONLY WHEN ADJACENT OBSTACLE PRESENT AND AS DIRECTED BY THE ENGINEER



CR-4



- NOTES:
- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
  - 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
  - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

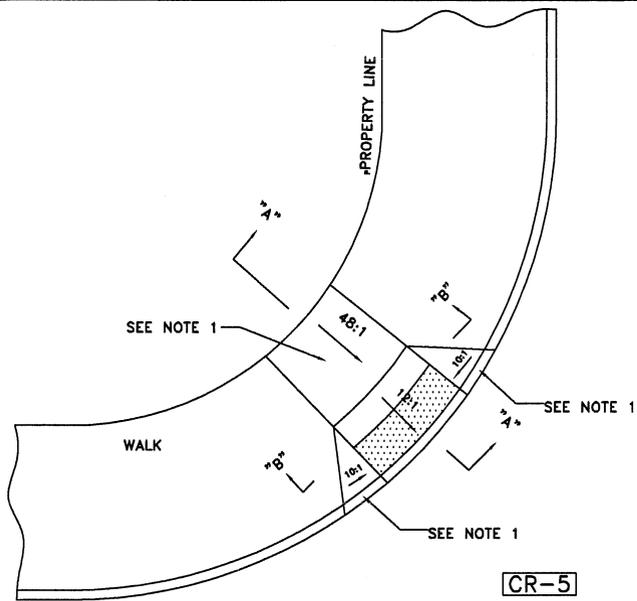
REVISED 12/8/08

CITY OF CLEVELAND  
 DEPARTMENT OF PUBLIC SERVICE  
 DIVISION OF ENGINEERING & CONSTRUCTION  
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
 TYPICAL CONSTRUCTION  
 CURB RAMPS  
 NOT TO SCALE

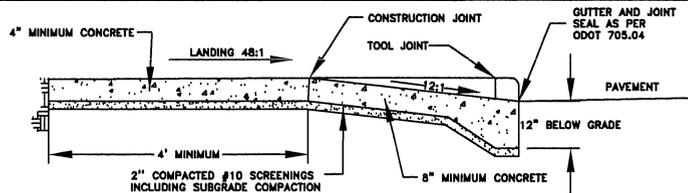
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08  
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

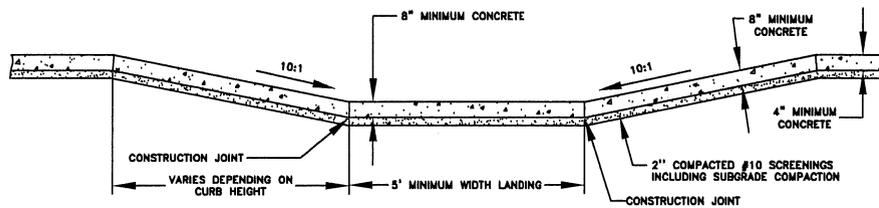
FILE NO.: CR 1 SHEET 2/6 (12)



CR-5



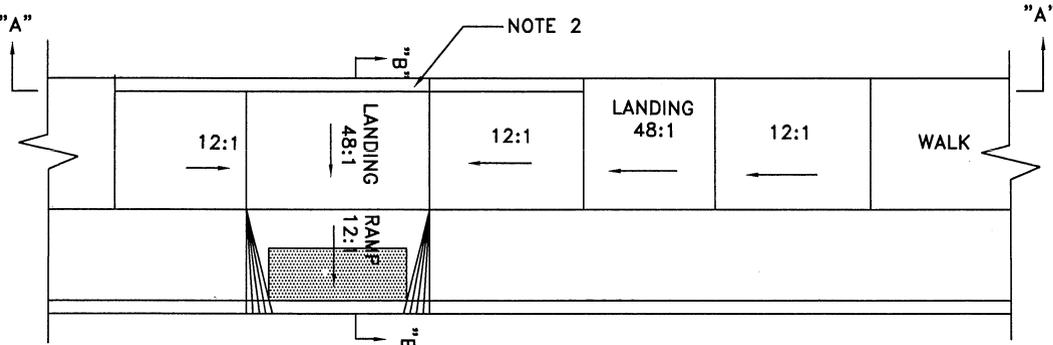
SECTION "A-A"



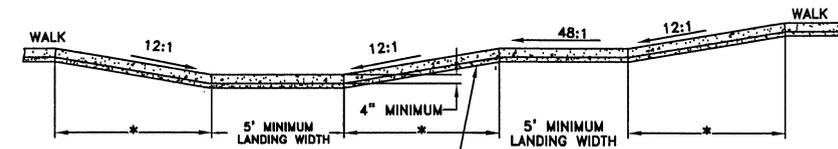
SECTION "B-B"

NOTES:

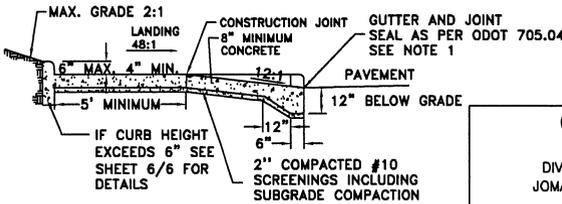
- 1 - WHERE THE LANDING IS LESS THAN 4'-0" THE RAMP FLARE SHALL BE INCREASED TO 12:1.
- 2 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 4 - GUTTER SEAL, 705.04, 6" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



CR-6



\* VARIES, DEPENDING ON ELEVATION  
30" MAXIMUM OVER 30"  
SECTION "A-A"



SECTION "B-B"

NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

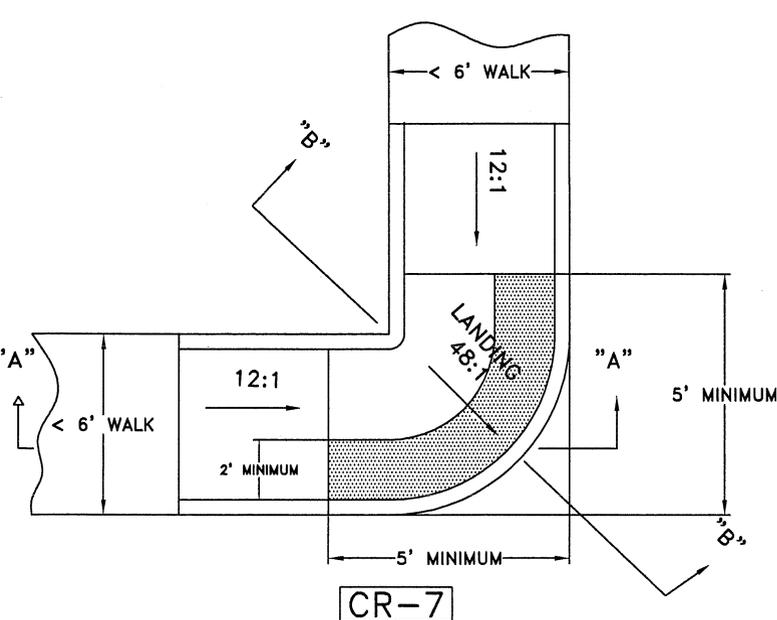
REVISED 12/8/09

**CITY OF CLEVELAND**  
 DEPARTMENT OF PUBLIC SERVICE  
 DIVISION OF ENGINEERING & CONSTRUCTION  
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
**TYPICAL CONSTRUCTION**  
**CURB RAMPS**  
 NOT TO SCALE

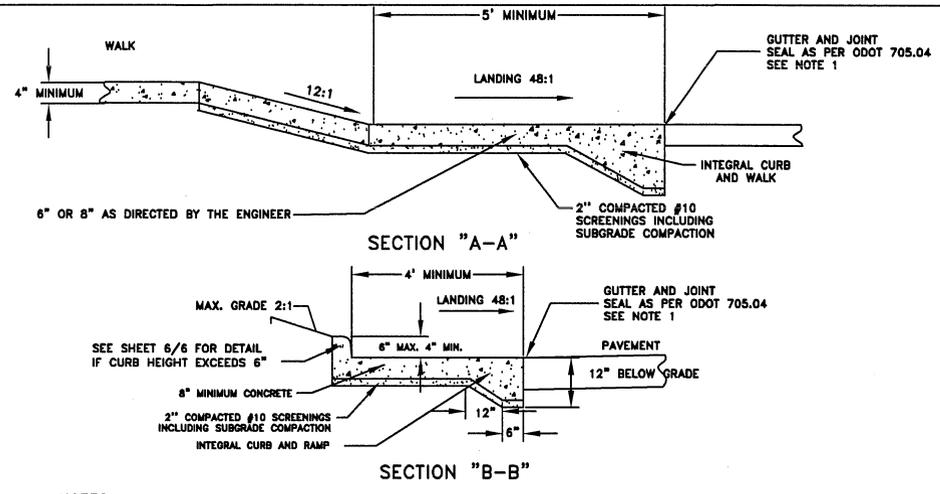
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: [Signature] DATE: 4/14/08  
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1    SHEET 3/6    (13)

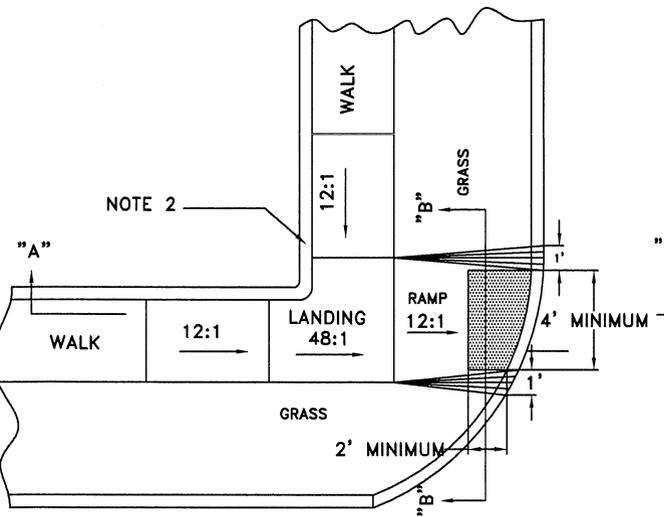


CR-7

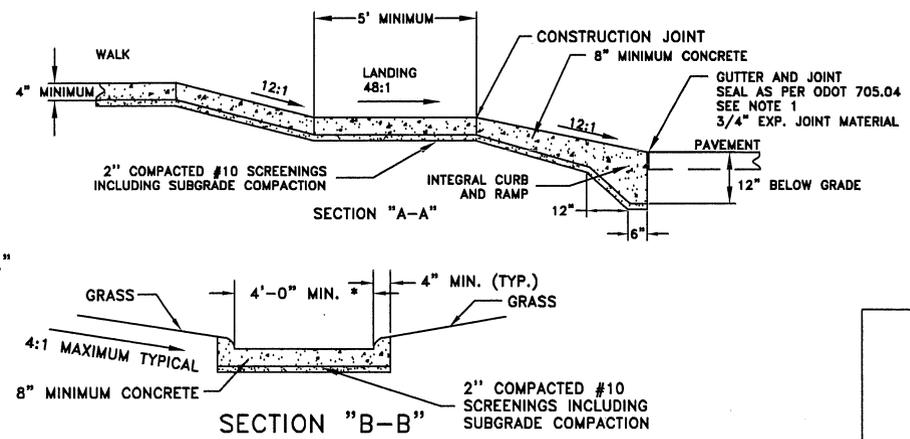


NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



CR-8



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

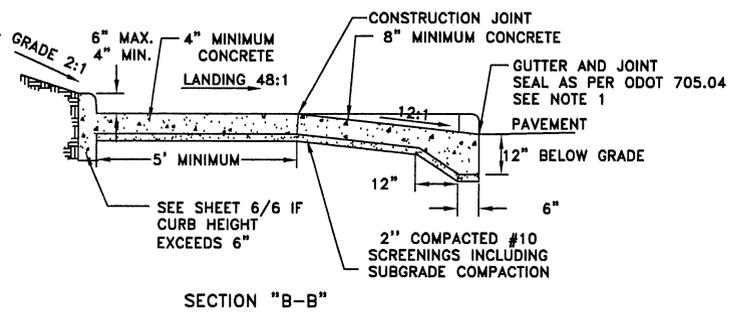
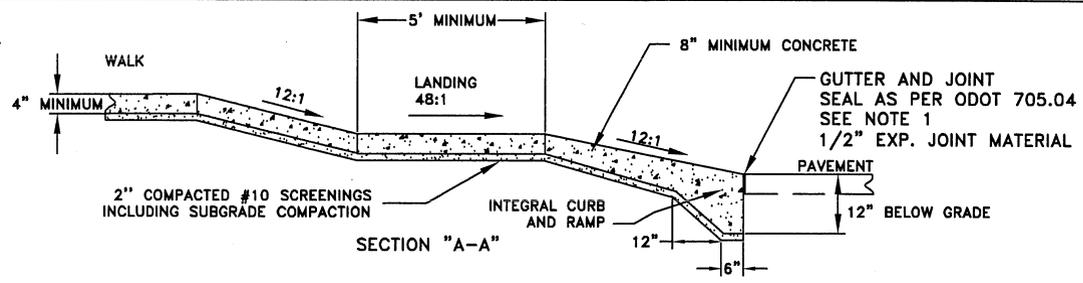
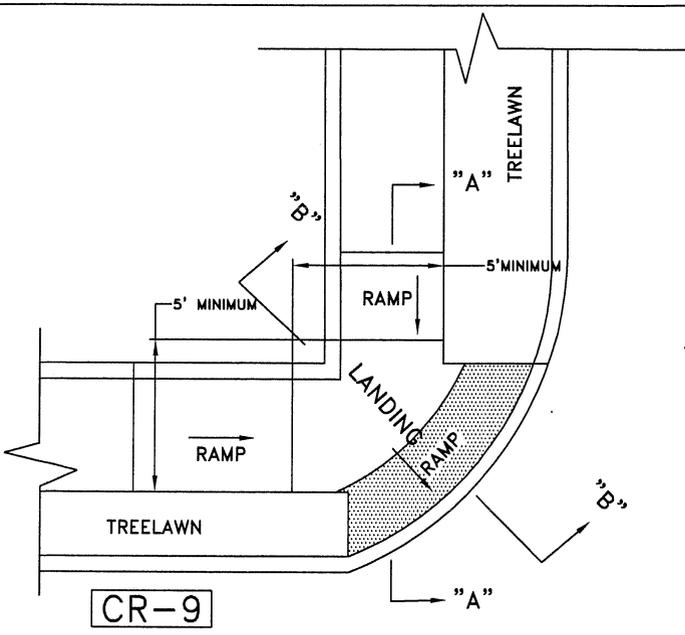
**CITY OF CLEVELAND**  
 DEPARTMENT OF PUBLIC SERVICE  
 DIVISION OF ENGINEERING & CONSTRUCTION  
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
 TYPICAL CONSTRUCTION  
 CURB RAMPS  
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: [Signature] DATE: 4/14/08

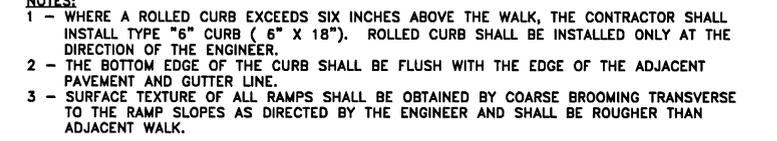
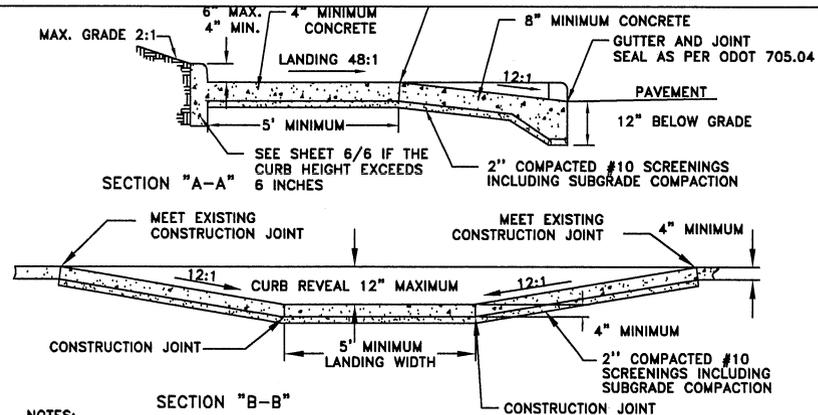
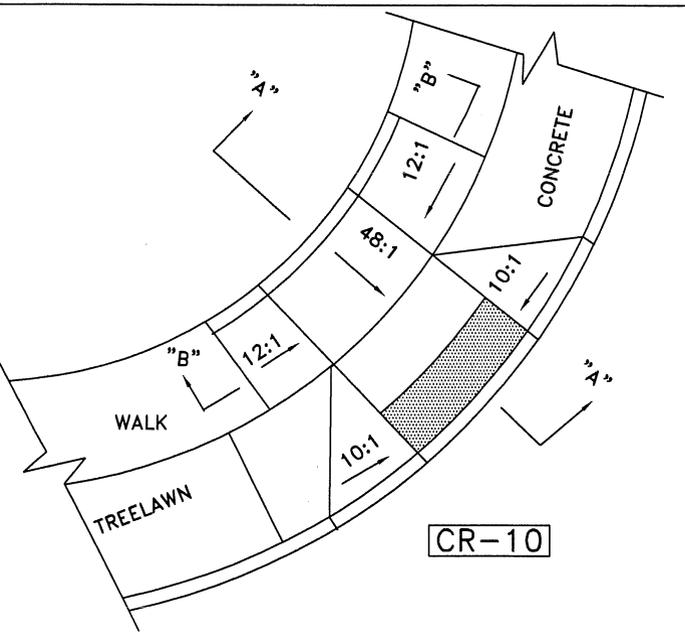
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1      SHEET 4/6      14



**NOTES:**

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



**NOTES:**

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

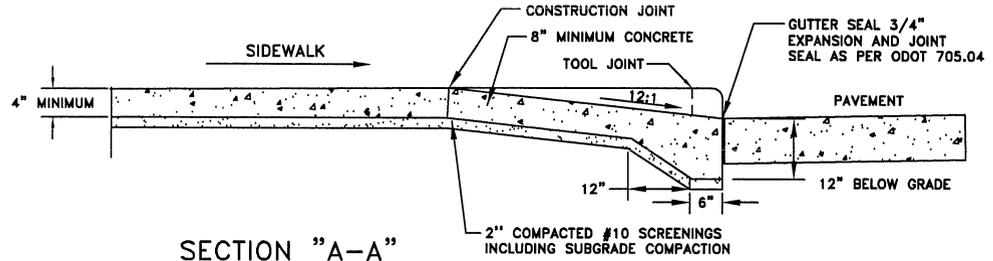
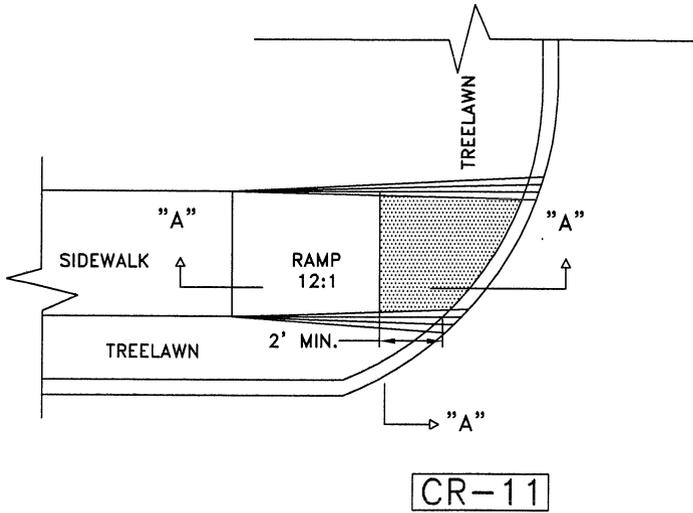
REVISED 12/8/09

**CITY OF CLEVELAND**  
 DEPARTMENT OF PUBLIC SERVICE  
 DIVISION OF ENGINEERING & CONSTRUCTION  
 JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
**TYPICAL CONSTRUCTION**  
**CURB RAMPS**  
 NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
 SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

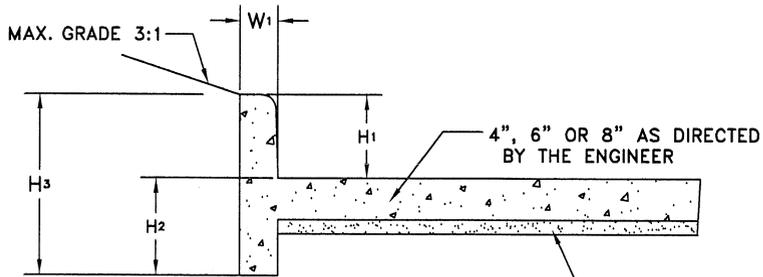
APPROVED: [Signature] DATE: 4/14/08  
 COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1    SHEET 5/6    15



**NOTES:**

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB ( 6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 4 - THIS DETAIL SHALL ONLY BE USED TO RETROFIT EXISTING CURB RAMPS AND SHALL NOT BE USED FOR NEW CURB RAMP CONSTRUCTION.



H <sub>1</sub>	W <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>
6"	6"	6"	12"
8"	6"	10"	18"
10"	8"	12"	22"
12"	10"	12"	24"

ROLLED CURB  
INSTALL ONLY AT THE DIRECTION  
OF THE ENGINEER

2" COMPACTED #10 SCREENINGS  
INCLUDING SUBGRADE COMPACTION

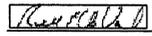
**NOTES:**

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL CURB PER THIS DETAIL. ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.

REVISED 12/8/09

**CITY OF CLEVELAND**  
DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
TYPICAL CONSTRUCTION  
CURB RAMPS & ROLLED CURB DETAIL  
NOT TO SCALE

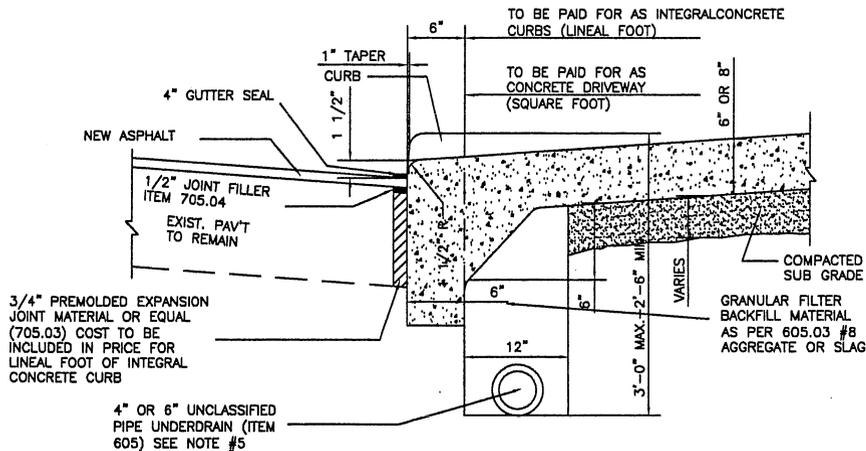
R. PLIODZINSKAS      DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN      DATE: 4/8/08

      DATE: 4/14/08

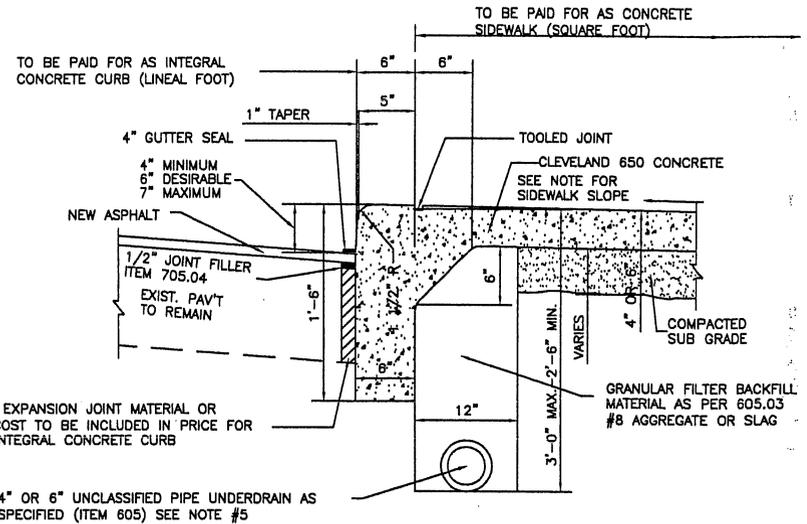
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1      SHEET 6/6      (6)





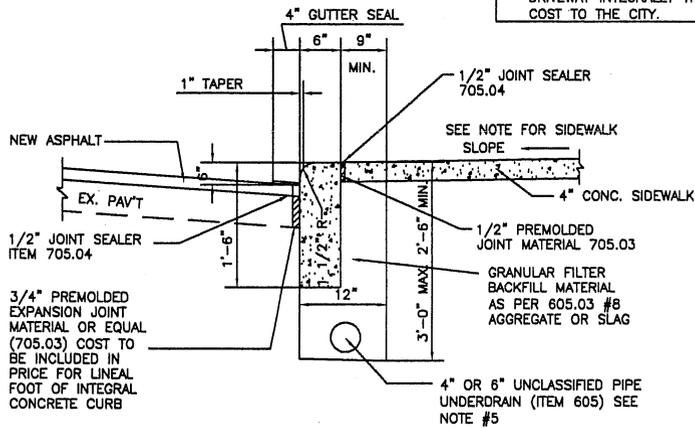
**INTEGRAL CONCRETE DRIVEWAY**  
NO SCALE



**INTEGRAL CONCRETE CURB & WALK**  
NO SCALE

**OPTIONAL DETAIL**

THE CONTRACTOR MAY USE THIS DETAIL IF GRANTED PERMISSION TO POUR THE CURB AND SIDEWALK OR DRIVEWAY INTEGRALLY THERE SHALL BE NO ADDITIONAL COST TO THE CITY.



**CAST-IN-PLACE CONCRETE CURB**  
NO SCALE

**NOTES:**

- SAND BACKFILL AS REQUIRED TO ACHIEVE PROPOSED SUB GRADE. COST TO BE INCLUDED IN UNIT PRICE BID PER SQUARE FOOT OF SIDEWALK OR CONCRETE DRIVEWAY.
- TRANSVERSE CONTRACTION JOINTS (5'CTRS) AND EXPANSION JOINTS TO BE CONSTRUCTED AS DIRECTED BY THE ENGINEER. JOINTS SHALL BE TOOLED 5" FROM THE STREET FACE OF THE CURB. 1/4" DEEP WITH EDGES ROUNDED TO A 1/4" RADIUS. COST TO BE INCLUDED IN PRICE PER SQUARE FOOT OF SIDEWALK OR CONCRETE DRIVEWAY.
- TRANSITION FROM STANDARD CURB SECTION TO DROP CURB SECTION TO BE MADE IN 18" DISTANCE FROM DRIVEWAY.
- SLOPE SHALL BE PROVIDED AS NEEDED TO DRAIN SIDEWALK AND TRELAWN AREA. 1/8" / FT. MIN. (1/4" / FT. DESIRABLE AND 5/8" / FT. MAX.) IF THE EXISTING CONDITIONS RESULT IN A UNIFORM SLOPE GREATER THAN 1/4" / FT. THEN THE SLOPE IN THE TRELAWN AREA MAY EXCEED THE MAX. AS NEEDED TO PROVIDE A SIDEWALK SLOPE OF 1/4" / FT. THE SLOPE IN THE WALK AREA OF DRIVE APRONS MUST NOT EXCEED ADA REQUIREMENTS OF 1/4" / FT. CROSS SLOPE.
- UNDERDRAINS TO BE INSTALLED IN AREAS WHERE CURB IS TO BE REPLACED. THE UNDERDRAIN SHALL BE CONSTRUCTED SO AS TO MATCH THE LOCATION OF ANY EXISTING UNDERDRAIN TO REMAIN. UNDERDRAIN SHALL OUTLET AT CATCH BASIN. UNDERDRAINS SHALL HAVE FILTER FABRIC WRAP OR TRENCH IS WRAPPED WITH FILTER FABRIC AS SPECIFIED.

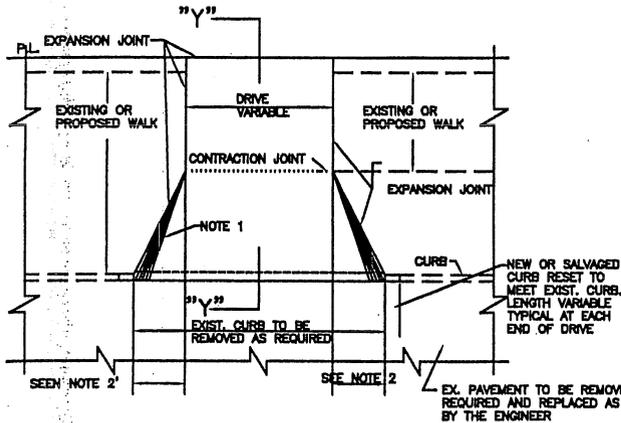
REVISED 12/3/09

**CITY OF CLEVELAND**

DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
**CURB DETAILS**  
NOT TO SCALE

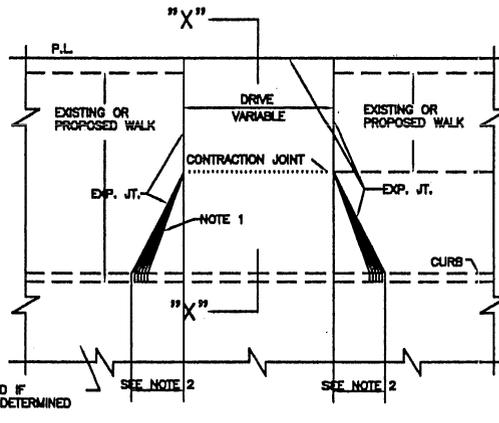
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08  
APPROVED: [Signature] DATE: 4/17/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION



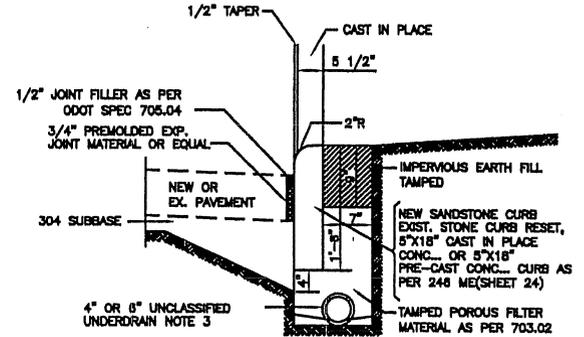
PLAN FOR NEW DRIVE WITH INTEGRAL CONCRETE CURB

NOT TO SCALE



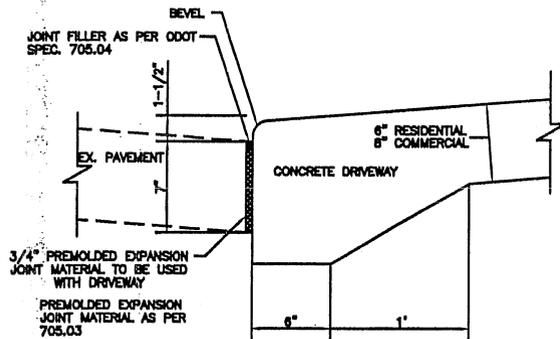
PLAN FOR NEW DRIVE WITH CURB CUT

NOT TO SCALE



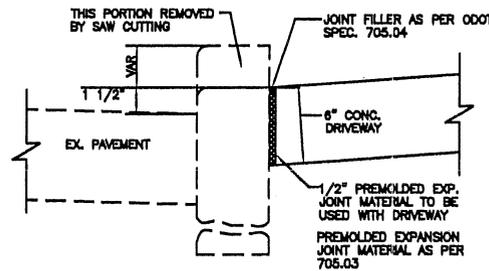
TYPICAL CURB CONSTRUCTION DETAIL

NOT TO SCALE



SECTION "Y"- "Y"

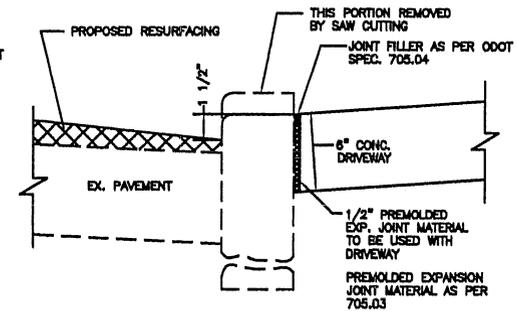
NOT TO SCALE



SECTION "X"- "X"

SHOWING PROPOSED DRIVE GUTTER WITHOUT RESURFACING

NOT TO SCALE



SECTION "X"- "X"

SHOWING PROPOSED DRIVE GUTTER WITH RESURFACING

NOT TO SCALE

NOTES:

- 1 - ON STREETS WITH NARROW TREELAWNS AND SIDEWALKS OR WITH APPROVAL OF THE ENGINEER THE FOLLOWING DETAIL MAY BE USED.
- 2 - APRON FLARES ARE 3' FOR RESIDENTIAL AND 5' COMMERCIAL
- 3 - UNDERDRAINS SHALL HAVE FILTER FABRIC WRAP OR TRENCH IS WRAPPED WITH FILTER FABRIC AS SPECIFIED.

REVISED 8/3/08

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK - DIRECTOR OF PUBLIC SERVICE

STANDARD PLAN OF  
TYPICAL CURB & DETAILS  
AT DRIVEWAYS

NOT TO SCALE

DRAWN BY: R. BLONZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION.

**STATE OF OHIO**  
**DEPARTMENT OF TRANSPORTATION**  
**SUPPLEMENTAL SPECIFICATION 800**  
**REVISIONS TO THE 2010 CONSTRUCTION & MATERIAL SPECIFICATIONS**  
**DATED 07-20-2012**

**101.03**

On pages 6-10, **Add** the following definitions:

**Construction Limits.** These limits must encompass all Work. This includes removals, room for construction equipment to complete work, site access, etc.

**Partnering.** A collaborative process for project cooperation and communication meant to achieve effective and efficient contract performance and completion of the Project within budget, on schedule, safely and with requisite quality in accordance with the contract.

**Project Limits.** Project limits are points on the mainline centerline of construction where the proposed improvement, as described in the project description on the Title Sheet (excluding incidental construction), begins and ends

**Work Limits.** Work Limits are the extreme limits of the contractor's responsibility on a project, including all temporary and incidental construction, with the exception of work zone traffic control devices required for maintenance of traffic.

**104.05**

On pages 19-24, **Delete** the entire subsection **104.05 Partnering and Dispute Resolution**. (See new section **108.02 Partnering**)

**105.16**

On page 29, **Replace** the first sentence of the third paragraph with the following:

Perform all engineering, including any field investigation, necessary to ensure long term stability of all side slopes and foundations of all borrow and waste areas.

**105.19 Value Engineering Change Proposals.**

On page 31 and 32, **Replace** the entire section with the following:

The Department will Partner with the Contractor by considering the Contractor's submission of a Value Engineering Change Proposal (VECP) which will reduce construction costs and possibly time on projects that do not contain Design Build provisions or incentive provisions based on time.

The purpose of this provision is to encourage the use of the ingenuity and expertise of the Contractor in arriving at alternate plans, specifications or other requirements of the contract. Savings in construction costs and possibly time will be shared equally between the Contractor and the Department. The Contractor's costs for development, design and implementation of the VECP are not eligible for reimbursement. The VECP must not impair any of the essential functions and

characteristics of the project such as service life, reliability, economy of operation, ease of maintenance, safety and necessary standardized features. The submission of the value engineering change proposal shall conform with the current Guidelines on Value Engineering Change Proposals adopted by the Director. Acceptance of a VECP is at the sole discretion of the Director.

The Department will not approve VECPs with any of the following characteristics:

- A. Consist only of non-performing items of work contained in the plans.
- B. Include plan errors identified by the Contractor as part of the cost reduction.
- C. The VECP designer/consultant for the Contractor is also the designer of record for ODOT.
- D. Changes to any special architectural or aesthetic treatments.
- E. Requires concrete beams to be installed with less than 17' vertical clearance over a state highway.
- F. Changes the type or buildup of permanent pavement.
- G. Compromises controlling design criteria or would require a design exception as discussed in Volume I, Section 100, of the Location and Design Manual.
- H. Proposes a time savings for any project which has an Incentive / Disincentive clause, which was awarded based on A+B Bidding or Lane Rental.

Engineering and drawing development and implementation costs for the VECP are not recoverable.

The Contractor shall have no claim against the Department for any costs or delays due to the Department's review or rejection of the initial VECP.

If the Department already is considering revisions to the contract which are subsequently proposed as a VECP, the Department may reject the Contractor's initial VECP or portions thereof and may proceed with such revisions without any obligations to the Contractor.

### **107.10**

On page 40, **Replace** the first paragraph with the following:

#### **107.10 Protection and Restoration of Property.**

Except for locations utilized specifically for parking of equipment between workdays for maintenance type projects, all areas proposed to be utilized by the Contractor outside the project construction limits shall be reviewed by environmental contractor(s) that are prequalified by the Department for each environmental resource. This exception applies to projects with "maintenance" in the project description. Have the consultant(s) certify that the proposed site to be utilized for the contractor will not impact:

### **107.13**

On page 44, **Replace** the first paragraph of with the following:

#### **Reporting, Investigating, and Resolving Motorist Damage Claims.**

When a motorist reports damage to its vehicle either verbally or in writing to the Contractor, the Contractor shall within 3 days make and file a written report to the District's construction office In

the event that the Department directly receives the motorist's claim, the Department shall within 3 days send the claim report to the Contractor. In the event the Contractor has not agreed to resolve the motorist claim, the District's construction office shall forward the report to the Department's Court of Claims Coordinator who, as a co-insured party, may then contact the Contractor's insurance company and request that the insurance company investigate and resolve the claim. If the Contractor or their insurance company does not resolve the claim in a timely manner, the Department may advise the motorist of the option of pursuing the claim in the Ohio Court of Claims.

On page 44, **Replace** the third paragraph with the following:

If the lawsuit claim amount is \$2,500 or less and the Court of Claims Coordinator determines that the Contractor is responsible for the claimed damages then the Department's Court of Claims Coordinator may, after notifying the Contractor, determine that it would be in the best interest of the Department to settle the claim. Any settlement amount including court costs may be assessed to the Contractor and deducted from the project. The Engineer will notify the Contractor prior to executing the deduction. The Contractor or the Contractor's insurance company may within 14 days appeal the assessment decision of the Court of Claims Coordinator to the District Construction Engineer. The decision of the DCE will be made within 14 days and will be administratively final.

#### **107.21**

On page 48, **Replace** the first paragraph with:

In accordance with ORC 4113.61, make payment to each subcontractor and supplier within 10 Calendar Days after receipt of payment from the Department for Work performed or materials delivered or incorporated into the Project, provided that the pay estimate prepared by the Engineer includes Work performed or materials delivered or incorporated into the public improvement by the subcontractor or supplier. Promptly release any retainage held, as set forth in any subcontractor or supplier agreement, within 10 days of department's acceptance of the work involving the subcontractor or supplier from whom retainage has been held. For the sole purpose of establishing a time frame for the release of the subcontractor or supplier retainage, acceptance of subcontractor or supplier work will occur when the subcontractor or supplier has complied with the requirements of 109.12.A, B and C.

#### **108.02**

On pages 49-51, **Replace** the entire subsection **108.02** with the following:

**108.02 Partnering.** It is the intent of the Department to partner every project. The purpose of Partnering is to develop a proactive effort and spirit of trust, respect, and cooperation among all stakeholders in a project. Partnering does not affect the terms and conditions of the Contract. The Partnering process in this section is Self-facilitated Partnering performed by the Project personnel. Costs associated with the Self-facilitated Partnering process are incidental to the Contract.

**A. Preconstruction Meeting.** Meet with the Engineer for a Preconstruction Meeting before beginning the Work. At or before the meeting, submit the initial progress schedule to the DCE. Prepare the schedule according to 108.03.

Furnish a list of proposed subcontractors and material suppliers at or before the Preconstruction Meeting. If the Contractor fails to provide the required submissions at or before the Preconstruction

Meeting, the Engineer may order the meeting suspended until they are furnished. Do not begin the Work until the meeting is reconvened and concluded or the Engineer gives specific written permission to proceed.

**B. Initial Partnering Session.** In conjunction with the Engineer, determine whether the Initial Partnering Session will be conducted as part of the Preconstruction Meeting or as a separate meeting. Partnering shall have its own agenda with specific time set aside to develop the necessary partnering protocols. Develop the Partnering agenda with the Engineer.

Identify and invite all stakeholders necessary to make the Project successful including utility companies, other transportation entities (i.e., railroads), community leaders, all Project participants including subcontractors.

During the Initial Partnering Session, consider developing Partnering teams consisting of Department and Contractor senior personnel and Project personnel. Consider the following items for discussion:

1. Identifying and developing a consensus on project goals consistent with the contractual obligations, including specific goals concerning safety, quality, schedule, and budget.
2. Deciding how the teams will measure progress on Project goals.
3. Identifying any potential risks to the Project's success, mitigation strategies and an implementation plan for the appropriate strategies.
4. Defining key issues, project concerns, joint expectations, roles of key partnership leaders, lines of decision making authority, and share relevant information to help determine the scope of the Partnering efforts.
5. Identifying any opportunities for project enhancement, enhancement strategies and a specific action plan for implementing strategies.
6. Developing a communication protocol to enhance communication on the Project
7. Developing an issue identification and resolution process that identifies and attempts to resolve issues at the level closest to the work. The issue identification and resolution process will develop all the necessary steps for issue elevation including Notice and Mitigation defined in 108.02.F and the Dispute Resolution and Administrative Claims Process defined in 108.02.G.

**C. Progress Meetings.** Hold monthly Progress Meetings unless the frequency is otherwise determined at the Preconstruction Meeting. Coordinate with the Engineer to determine agenda topics prior to each meeting. The purpose of Progress Meetings is to keep open communication between the Contractor and the Engineer. The senior personnel team is encouraged to participate in all Progress Meetings. Include Partnering as an agenda item at the Progress Meetings.

**D. Post-milestone Meeting.** In conjunction with the Engineer, determine whether the Post-milestone Meeting will be conducted as part of the Progress Meeting or as a separate meeting for multi-year, multi-phase, or projects with critical items of work or milestone dates. Consider discussing and updating items from the Initial Partnering Session in addition to items specific to the Project. All stakeholders should be invited to attend.

**E. Partnering Monitoring.** Monitor the progress of the Partnering relationship based on the goals decided during the Initial Partnering Session. On-line surveys of Project participants may be used to monitor progress on Project goals and help identify issues as they arise. The on-line surveys are consistent with the Department's Partnering Project Rating Form which is located on the Division of Construction Management's Partnering website:

<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Pages/Partnering.aspx>

**F. Mitigation and Notice.** Mitigation of any issue, whether caused by the Department, Contractor, third-party or an intervening event, is a shared contract and legal requirement. Mitigation efforts include, but are not limited to, re-sequencing work activities, acceleration, and substitution of materials. The Contractor and Engineer must explore and discuss potential mitigation efforts in a timely manner.

1. Contractor Initial Oral Notification. Provide immediate oral notification to the Engineer upon discovering a circumstance that may require a revision to the Contract Documents or may result in a dispute. Upon notification, the Engineer will attempt to resolve the identified issue as quickly as possible.

2. Contractor Written Early Notice. If the Engineer has not resolved the identified issue within 2 working days after receipt of oral notification, provide written notice to the Engineer of any circumstance that may require a revision to the Contract Documents or may result in a dispute. This early notice must be given by the end of the second working day following the occurrence of the circumstance.

The Engineer and Contractor shall maintain records of labor, equipment, and materials used on the disputed work or made necessary by the circumstance. Such records will begin when early notice is received by the Engineer. Tracking such information is not an acknowledgement that the Department accepts responsibility for payment for this disputed work.

If an issue is not resolved through the initial mitigation efforts, either abandon or escalate to the Dispute and Administrative Claims Process defined in 108.02.G.

**G. Dispute Resolution and Administrative Claims Process.** Whenever an issue is elevated to a dispute, the parties shall exhaust the Department's Dispute Resolution and Administrative Claim process as set forth below **prior to filing an action in the Ohio Court of Claims.** The following procedures do not compromise the Contractor's right to seek relief in the Ohio Court of Claims.

All parties to the dispute must adhere to the Dispute Resolution and Administrative Claim process. Do not contact Department personnel who are to be involved in a Step 2 or Step 3 review until a decision has been issued by the previous tier. Department personnel involved in Step 2 or Step 3 reviews will not consider a dispute until the previous tier has properly reviewed the dispute and issued a decision.

Failure to meet any of the timeframes outlined below or to request an extension may terminate further review of the dispute and may serve as a waiver of the Contractor's right to file a claim.

Disputes and claims by subcontractors and suppliers may be pursued by the Contractor on behalf of subcontractors or suppliers. Disputes and claims by subcontractors and suppliers against the Department but not supported by the Contractor will not be reviewed by the Department. Disputes and claims of subcontractors and suppliers against the Contractor will not be reviewed by the Department.

Continue with all Work, including that which is in dispute. The Department will continue to pay for Work.

The Department will not make the adjustments allowed by 104.02.B, 104.02.C, and 104.02.D if the Contractor did not give notice as specified in 108.02.F.1 and 108.02.F.2. This provision does not apply to adjustments provided in Table 104.02-2.

1. Step 1 (On-Site Determination). The Engineer will meet with the Contractor's superintendent within two (2) working days of receipt of the Contractor Written Early Notice set forth in 108.02.F.2. They will review all pertinent information and contract provisions and negotiate in an effort to reach a

resolution according to the Contract Documents. The Engineer will issue a written decision of Step 1 within fourteen (14) calendar days of the meeting. If the dispute is not resolved either abandon or escalate the dispute to Step 2.

2. Step 2 (District Dispute Resolution Committee). Each District will establish a District Dispute Resolution Committee (DDRC) which will be responsible for hearing and deciding disputes at the Step 2 level. The DDRC will consist of the District Deputy Director, District Construction Engineer and the Planning and Engineering Administrator or designees (other than the project personnel involved).

Within seven (7) calendar days of receipt of the Step 1 decision, submit a written request for a Step 2 meeting to the District Construction Engineer (DCE). The DCE will assign the dispute a dispute number. Within fourteen (14) calendar days of receipt of the request for a Step 2 meeting, submit the Dispute Documentation as follows:

- a) Submit three (3) complete copies of the documentation of the dispute to the DCE.
- b) Identify the Dispute on a cover page by county, project number, Contractor name, subcontractor or supplier if involved in the dispute, and dispute number.
- c) Clearly identify each item for which additional compensation and/or time is requested.
- d) Provide a detailed narrative of the disputed work or project circumstance at issue. Include the dates of the disputed work and the date of early notice.
- e) Reference the applicable provisions of the plans, specifications, proposal, or other contract documents in dispute. Include copies of the cited provisions in the Dispute Documentation.
- f) Include the dollar amount of additional compensation and length of contract time extension requested.
- g) Include supporting documents for the requested compensation stated in number six (6) above.
- h) Provide a detailed schedule analysis for any dispute involving additional contract time, actual or constructive acceleration, or delay damages. At a minimum, this schedule analysis must include the Schedule Update immediately preceding the occurrence of the circumstance alleged to have caused delay and must comply with accepted industry practices. Failure to submit the required schedule analysis will result in the denial of that portion of the Contractor's request.
- i) Include copies of relevant correspondence and other pertinent documents.

The DDRC will conduct the Step 2 meeting with Contractor personnel who are authorized to resolve the dispute within fourteen (14) calendar days of receipt of the Contractor's Dispute Documentation. The DDRC will issue a written decision of Step 2 within fourteen (14) calendar days of the meeting. If the dispute is not resolved, either abandon or escalate the dispute to Step 3.

3. Step 3 (Director's Claims Board Hearing or Alternative Dispute Resolution). Submit a written Notice of Intent to File a Claim to the Claims Coordinator in the Division of Construction Management within fourteen (14) calendar days of receipt of the Step 2 decision. Include the Contractor's request for either: 1.) a Director's Claim Board hearing on the claim or 2.) an acceptable Alternative Dispute Resolution (ADR) practice.

The dispute becomes a claim when the Claims Coordinator receives the Notice of Intent to File a Claim.

a) Director's Claims Board Hearing. The Director's Claims Board (the Board) will consist of the Deputy Director of the Division of Construction Management, Deputy Director of Engineering and a



District Construction Engineer from a district not involved in the claim or designees. A representative from the Division of Chief Legal Counsel and Equal Opportunity may be present to observe the hearing. The Director or designee will be responsible for deciding claims.

Submit six (6) complete copies of the Claim Documentation to the Claims Coordinator within thirty (30) calendar days of receipt of the Notice of Intent to File a Claim. This timeframe may be extended upon mutual agreement of the parties and with approval of the Claims Coordinator.

In addition to the documentation submitted at Step 2:

i. Enhance the narrative to include sufficient description and information to enable understanding by a third party who has no knowledge of the dispute or familiarity with the project.

ii. Certify the claim in writing and under oath using the following certification:

*I, (Name and Title of an Officer of the Contractor) certify that this claim is made in good faith, that all supporting data is accurate and complete to the best of my knowledge and belief, and that the claim amount accurately reflects the contract amendment for which ( Contractor Company name) believes the Department is liable.*

Sign and date this claim certification and have the signature notarized pursuant to the laws of the State of Ohio. The date the Claims Coordinator receives the certified claim documentation is the date of the Department's Receipt of the Certified Claim for the purpose of the calculation of interest as defined in 108.02.D. The Claims Coordinator will forward one (1) complete copy of this documentation to the District.

Within thirty (30) calendar days of the District's receipt of the Contractor's Claim Documentation, the District will submit six (6) complete copies of its Claim Documentation to the Claims Coordinator. In the event that the Contractor is granted a time extension for the submission of its Claim Documentation, the District will be granted an equal time extension for submission of its Claim Documentation. At a minimum, the District's Claim Documentation should include:

i. An overview of the project.

ii. A narrative of the disputed work or project circumstance at issue with sufficient description and information to enable understanding by a third party who has no knowledge of the dispute or familiarity with the project.

iii. The dates of the disputed work and the date of early notice.

iv. References to the applicable provisions of the plans, specifications, proposal, or other contract documents. Copies of the cited provisions shall be included in the claim document.

v. Response to each argument set forth by the Contractor.

vi. Any counterclaims, accompanied by supporting documentation, the District wishes to assert.

vii. Copies of relevant correspondence and other pertinent documents.

Within fourteen (14) calendar days of receipt of the District's Claim Documentation, the Claims Coordinator will forward one (1) complete copy to the Contractor and will schedule a hearing on the dispute.

Once a hearing date has been established, both the Contractor and District shall provide the Claims Coordinator with a list of names of persons who may be presenting information at the hearing. Unless

otherwise permitted by the Board, the exchange of documentation and all disclosures specified in this step of the process shall be completed at least fourteen (14) calendar days prior to the hearing.

Upon request or at the Board's discretion, the Board may delay the hearing one (1) time to allow more time for review and requests for more documentation.

The Board will hear the entire claim on behalf of the Director. The Board may have technical advisors at the hearing for assistance in reviewing the claim. The Contractor and District will each be allowed adequate time to present their respective positions before the Board. The Contractor and District will also each be allowed adequate time for one (1) rebuttal limited to the scope of the opposing party's presentation. The Contractor's position will be presented by a Contractor's representative who is thoroughly knowledgeable of the claim. Similarly, the District's position will be presented by a District representative who is thoroughly knowledgeable of the claim. Each party may have others assist in the presentation.

The Board may, on its own initiative, request information of the Contractor in addition to that submitted for the hearing. If the Contractor fails to reasonably comply with such request, the Board may render its decision without such information.

Upon completion of the hearing and consideration of any additional information submitted upon request, the Board will submit a written recommendation on the disposition of the claim to the Director. The Director or designee will ratify, modify, or reject the recommendation of the Board and render a decision within sixty (60) calendar days of the hearing. Within thirty (30) calendar days of receipt of the Board's decision, either accept or reject the decision in writing. In the event the Contractor fails to do so, the Board may revoke any offers of settlement contained in the decision.

The decision of the Director is the final step of the Department's Dispute Resolution Process and may not be appealed within the Department. The Director is not bound by any offers of settlement or findings of entitlement made during Steps 1 and 2 of the Dispute Resolution Process.

b) Alternative Dispute Resolution (ADR). In lieu of the Board hearing, the Contractor may opt to proceed through an Alternative Dispute Resolution (ADR) Process. The Department will choose either binding arbitration as defined by ORC 5525.23 or mediation in the manner in which those methods are practiced by the Department and allowed by law.

The Claims Coordinator will coordinate the agreement of the parties to the ADR method, and the selection of a neutral third party or technical expert. The fees of the neutral third party or technical expert will be shared equally between the Department and the Contractor. The Claims Coordinator will obtain a written agreement, signed by both parties, that establishes the ADR process. The neutral third party or technical expert will have complete control of the claim upon execution of the ADR agreement.

4. Interest on Claims. The Department will pay interest in accordance with ORC Section 5703.47 on any amount found due on a claim which is not paid within 30 days of the Claims Coordinator's Receipt of the Certified Claim.

**H. Post Construction Meeting.** It is the intent of the Department to conduct a Post Construction Meeting with the Contractor approximately 10 days after final inspection. The District will determine the time and place for the meeting. The District may contact the design agency or consultant and the local government agency to request a representative attend this meeting.

Both parties will discuss their performance including sublet portions of the Project, Contractor's C95 evaluation form and Partnering.

**I. Partnering Close-Out Survey.** Complete the final Partnering evaluation to get participants' feedback and improve the Partnering process. The Partnering Close-Out Survey is located on the Division of Construction Management's Partnering website:

<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Pages/Partnering.aspx>

### **108.03**

On page 51, **Add** the following section to **108.03 Prosecution and Progress**:

#### **A. Progress Schedule.**

1. General. Furnish a bar chart progress schedule to the District Construction Engineer for review at or before the Preconstruction Meeting. The Engineer will review the schedule and within 14 calendar days of receipt, will either accept the schedule or provide the Contractor with comments. Acceptance of the schedule does not revise the Contract Documents. Provide clarification or any needed additional information within 10 days of a written request by the Engineer. The Department will withhold Estimates until the Engineer accepts the schedule. The Engineer will not measure or pay for the preparation of the schedule and schedule updates directly, but the cost of preparing and updating the schedule is incidental to all Contract Items.

a. Include the following Administrative Identifier Information:

- (1) Project Number
- (2) County
- (3) Route Number
- (4) FHWA Number
- (5) PID Number
- (6) Contract Number
- (7) Date of Contract
- (8) Completion Date
- (9) Contractor's Name
- (10) Contractor's Dated Signature
- (11) ODOT's Dated Acceptance Signature

Provide a working day schedule that shows the various activities of Work in sufficient detail to demonstrate a reasonable and workable plan to complete the Project by the Completion Date. Show the order and the sequence for accomplishing the Work. Describe all activities in sufficient detail so that the Engineer can readily identify the Work and measure the progress of each activity. The bar chart schedule must reflect the scope of work, required phasing, maintenance of traffic requirements, interim completion dates, the Completion Date, and other project milestones established in the Contract Documents. Include activities for submittals, working and shop drawing preparation, submittal review time for the Department, material procurement and fabrication, and the delivery of materials, plant, and equipment, and other similar activities. The schedule must be detailed on letter or legal sized paper.

b. Activity requirements are discussed in further detail as follows:

(1) Activity Description

Assign each activity an unambiguous descriptive word or phrase. For example, use "Excavate Area A," not "Start Excavation."

(2) Activity Original Duration

Indicate a planned duration in calendar days for each activity. Do not exceed a duration of 20 working days for any activity unless approved by the Engineer. Do not represent the maintenance of traffic, erosion control, and other similar items as single activities extending to the Completion Date. Break these Contract Items into component activities in order to meet the duration requirements of this paragraph.

2. Early Completion Schedule. An Early Completion Schedule is defined as a baseline schedule or update schedule which anticipates completion of all work prior to the Completion Date established by the contract documents and the Contractor submits as an Early Completion Schedule. In the event that an Early Completion Schedule is accepted, the Engineer will initiate a change order amending the Completion Date to the finish date shown on the accepted Early Completion Schedule. The amended Completion Date will be effective upon execution of that change order and all contract provisions concerning the Completion Date such as incentives, disincentives, excusable delays, compensable delays, and liquidated damages will be measured against the amended Completion Date. The Contractor may elect not to execute the change order amending the Completion Date; however, in so doing, the Contractor waives its rights to delay damages in meeting the projected early Completion Date.

3. Updated Progress Schedule. Submit an updated progress schedule when ordered by the Engineer. The Engineer may request an updated progress schedule when progress on the work has fallen more than 14 calendar days behind the latest accepted progress schedule. Information in the updated schedule must include a "% work completed" value for each activity.

4. Recovery Schedule. If the progress schedule projects a finish date for the Project more than 14 calendar days later than the Completion Date, submit a revised schedule showing a plan to finish by the Completion Date. The Department will withhold Estimates until the Engineer accepts the revised schedule. The Engineer will use the schedule to evaluate time extensions and associated costs requested by the Contractor.

**108.05**

On page 51, after the first paragraph **Add** the following:

Ensure that no debarred individuals listed on the Federal website: [www.epls.gov](http://www.epls.gov) or State debarment list at the website: [www.dot.state.oh.us/divisions/contractadmin/](http://www.dot.state.oh.us/divisions/contractadmin/) act in any ownership, leadership, managerial, or other similar position that could influence the operations of an entity doing business with the Department.

**108.06.A**

On page 52, in the third paragraph of the section, **Replace** the first sentence with: The Department will not evaluate a request for extension of the Completion Date unless the Contractor notifies the Engineer as specified in 104.05. Notification shall be in writing to the Engineer within 30 days

following the termination of the event giving rise to the request and shall be accompanied by supporting analysis and documentation.

**108.07**

On page 56 **Replace** the existing table with the following:

**TABLE 108.07-1 SCHEDULE OF LIQUIDATED DAMAGES**

Original Contract Amount (Total Amount of the Bid)		Amount of Liquidated Damages to be Deducted for Each Calendar Day of Overrun in Time
From More Than	To and Including	
\$0.00	\$500,000	\$500
\$500,000	\$2,000,000	\$1,000
\$2,000,000	\$10,000,000	\$1,500
\$10,000,000	\$50,000,000	\$2,600
Over 50,000,000		\$3,200

**108.11**

On page 57, **Delete** the entire subsection **108.11 Post Construction Meeting**. (See new section **108.02 Partnering**).

**109.05.D.2.b**

On page 75, **Replace** the last sentence with:

The Department will pay wages and fringes with a 20% mark-up to cover administrative costs.

**109.05.D.2.d**

On page 75, **Replace** with the following:

**109.05.D.2.d Delay Costs.**

**2. Allowable Delay Costs.**

**d. Material Escalation or Material Storage.** The Department will pay the Contractor for increased material costs or material storage costs due to the delay. Obtain the Engineer’s approval before storing materials due to a delay. Payment will be based upon the accepted quantity of work performed during the period for which escalated costs have been approved. The Department will pay increased material costs with an 8% mark-up to cover administrative costs and any material waste inherent to the Work.

**109.05.D.2.e(2)**

On page 75, **Replace** the first sentence with:

The delay for which payment of field overhead is sought is only due to delays defined in 108.06.D.2, 108.06.D.3, 108.06.D.5 or for delays due to revised Work as specified in 104.02.B or 104.02.F.

### **109.09**

On page 79, **Replace** the first two paragraphs with the following:

**109.09 Estimates.** If satisfactory progress is being made, the Contractor will receive monthly payments equaling the Work and materials in place. The monthly payment is approximate, and all partial estimates and payments are subject to correction in the Final Estimate and payment. Payment for Work and materials shall not, in any way, prevent later rejection when defective Work or material is discovered, or constitute acceptance under 109.11 or 109.12.

Except for estimates generated during Project finalization, The Department will not pay an estimate until the Contractor certifies to the Engineer that the work for which payment is being made was performed in accordance with the contract. Certification will be made on forms provided by the Department.

### **109.12.C**

On page 81, **Replace** the entire subsection with the following:

**C. Finalization.** The Contractor shall accept the final quantities as determined by the Engineer or provide a written notice indicating the reason for disagreement within 30 Calendar Days of receiving the Engineer's list of final quantities. The prescribed 30 Calendar Day period can be modified by mutual agreement of the Contractor and the District Construction Engineer. If no notice of disagreement is received, then the final payment will be based on the Engineer's list of final quantities.

Supply all documents necessary for Project finalization within 60 Calendar Days from the date that the Work is physically complete. These documents include:

1. Delinquent material certifications.
2. Delinquent certified payrolls or required revised payrolls.
3. Wage affidavit required by ORC Chapter 4115 on projects without any Federal funding.
4. Delinquent force account records.
5. If applicable, DBE affidavits.
6. Any other document required to complete finalization of the project.

Failure to submit these acceptably completed documents will result in an administrative fee of \$100 per Calendar Day for every day that any of the required documents remain delinquent, starting 30 Calendar Days after receipt of written notification from the Engineer of a document deficiency.

### **201.02.B**

On page 83, **Replace** 201.02.B with the following:

**B.** In order to retard and prevent the spread of destructive insects, including the emerald ash borer and Asian longhorned beetle, limit the movement of regulated articles according to Ohio

Administrative Codes 901:5-56 and 901:5-57. Observe requirements for handling and transporting of regulated articles in quarantined areas as defined by the Ohio Department of Agriculture ([www.agri.ohio.gov](http://www.agri.ohio.gov)).

The following are considered regulated articles and are subject to the quarantine established by the Ohio Department of Agriculture:

1. Deciduous trees of any size.
2. Deciduous limbs and branches
3. Any cut non-coniferous (non-evergreen) firewood.
4. Deciduous tree bark and deciduous tree wood chips larger than 1 inch (25 mm).
5. Deciduous logs and lumber with the bark, outer inch of sapwood, or both attached.
6. Any item made from or containing deciduous tree wood capable of spreading emerald ash borer or Asian longhorned beetle.
7. Any means of conveyance capable of spreading emerald ash borer or Asian longhorned beetle.

Follow all other federal and state emerald ash borer and Asian longhorned beetle quarantines.

### 202.13

On page 90, **Add** the following text after the last paragraph in 202.13:

If removal of steps is measured by the foot (meter), the Department will measure the number of feet (meters) along the front edge of each tread. If the steps have an integral wall, the Department will include the thickness of the integral wall with the tread width measurement.

On page 91, **Add** the following pay item after “Steps Removed”:

202 Foot (Meter) Steps Removed

### 203.02

On page 93, Add the word “siltstone” to the definition of rock in 203.02.O.

On page 93, Delete the word “siltstone” from the definition of shale in 203.02.P.

On page 94, Delete the words “or durable siltstone” from 203.03.D.

### 203.10

On page 103, **Replace** the paragraph that begins “The Department will adjust earthwork quantities for changes ...” with the following paragraph:

The Department will adjust earthwork quantities for changes resulting from the following: undercutting, foundation settlement, changes to grades or slopes, and removing slides. The Department will not adjust earthwork quantities when the volume between two consecutive cross-sections differs by less than 5 percent from the plan quantity, unless the difference between the actual quantity and plan quantity is greater than 1000 cubic yards (1000 m<sup>3</sup>) for all pay items measured by the cubic yard (cubic meter) under Item 203, combined. For quantity differences greater than 5 percent or greater than 1000 cubic yards (1000 m<sup>3</sup>), submit supporting documentation to the Engineer.

### 204.02

On page 104, **Replace** the second paragraph of 204.02 with the following:

Furnish material that conforms to 703.16.B or 703.16.C when Granular Embankment is specified. Furnish material that conforms to 703.16.C when Granular Material, Type \_\_ is specified, except do not use RPCC, EAF slag, or BOF slag.

#### **205.04. A**

On page 110, **Revise** the table title from Table 206.05-1 to Table 205.04-1.

#### **205.07**

On page 111, **Replace** the last sentence in the first paragraph with the following:

The Department will pay one-third of the lump sum amount bid when the chemically stabilized embankment is completed and accepted by the Department, and the field verification test results are all submitted.

#### **206.05. C**

On page 114, **Replace** the last paragraph of 206.05.C with the following:

The Contractor may either shape and fine grade the chemically stabilized subgrade before the curing period, or shape the subgrade before the curing period and fine grade after the curing period. If fine grading before the curing period, fine grade the same day as mixing, compacting, and shaping. If fine grading after the curing period, shape the subgrade approximately 1 inch (25 mm) above the profile grade and typical sections. In either case, fine grade the subgrade to the profile grade and typical sections within the tolerances in 203.08.

#### **206.08**

On page 115, **Replace** the last sentence in the first paragraph with the following:

The Department will pay one-third of the lump sum amount bid when the chemically stabilized subgrade is completed and accepted by the Department, and the field verification test results are all submitted.

#### **401.04**

On page 170, **Replace** section 401.04 *Reclaimed Asphalt Concrete Pavement* with the following:

##### **401.04 Reclaimed Asphalt Concrete Pavement and Reclaimed Asphalt Shingles.**

Provide reclaimed asphalt concrete pavement (RAP) and/or reclaimed asphalt shingles (RAS) per the following requirements when choosing to use the in a mix. Failure to follow these requirements will result in a rejection of the Contractor QCP (403.03); restriction of any RAP or RAS use at the facility; and/or a change to Unconditional Acceptance at the facility.

**Job Mix Formula.** The Contractor may use a blend of new materials in combination with RAP obtained from verifiable Department or Ohio Turnpike Commission projects and/or RAS obtained from un-used manufactured shingle waste or used roofing tear-off shingles as listed in Tables 401.04-1 and 401.04-2 and as follows. If the RAP is not from the above sources or the source is unknown, process and blend the RAP into a single uniform stockpile, test according to Level 3 Asphalt Mix Design requirements and obtain District approval for use. Obtain written Laboratory approval for use of unusually large, old RAP stockpiles of unknown content and/or age. Include



approved methods in the QCP for ongoing processing and testing of these piles. Ensure no foreign or deleterious material (703.04, 703.05) is present in RAP. All RAS suppliers must meet the requirements of Supplemental Specification 1116.

Ensure that the JMF falls within the specified limits of the required mix item. Ensure the JMF submittal includes the percentages of RAP, RAS, virgin aggregates, and virgin asphalt binder required for the mix item. Report all RAP and RAS test results, including binder blend analysis, in the JMF submittal. Identify the RAP in the JMF submittal as to project origin and mix type(s). Identify the manufactured shingle waste manufacturer source or the approved tear-off RAS processor in the JMF submittal.

Determine RAP properties and uniformity as follows. Determine the final RAP gradation and asphalt binder content on a minimum of four separate stockpile (or roadway for concurrent grinding) samples all agreeing within a range of 0.4 percent for asphalt binder content and 5 percent passing the No. 4 (4.75 mm) sieve. If fractionated RAP is used use a suitable sieve for determining gradation uniformity.

Determine RAS properties and usage as follows. Use no more than 5.0% RAS by dry weight of mix. For design assume 18.0% available RAS binder. Determine gradation and specific gravity per AASHTO PP 53-09, Section 5 or subsequent AASHTO applicable standard. Provide the required certification forms in the JMF submittal documenting that the RAS meets AASHTO MP 15-09, sections 3.2 or 3.3 and that RAS from roofing tearoffs conforms to the EPA's NESHAP, 40 CFR 61 Subpart M, and other applicable agency requirements for asbestos.

**RAP and RAS Usage Limits and Requirements.** Process and use RAP and RAS as follows.

Process and use RAP by one of the following two methods. Note on the JMF submittal RAP page which of Method 1 or Method 2 methods described below apply to the RAP.

**1) Method 1 Standard RAP.** Include RAP in a JMF submittal per the Standard RAP/RAS Limits Table 401.04-1 unless specified differently in the applicable mix specification. For mixes that will contain up to 10 percent RAP the JMF submittal is not required to include the RAP except when a virgin polymer asphalt binder is used in a surface course. For surface course JMFs having polymer asphalt binder only submit at 0 or 10% RAP. If greater than 20 percent RAP is used in a JMF submittal include an analysis of the recovered asphalt binder and blend per Level 3 Mix Design procedures to determine the grade of virgin asphalt binder to use.

**TABLE 401.04-1  
METHOD 1 – STANDARD RAP/RAS LIMITS**

<b>Asphalt Mix Application</b>	<b>Percent RAP by Dry Weight of Mix, Max.</b>	<b>RAS Usage*</b>	<b>Total Virgin Asphalt Binder Content, Min.</b>	<b>Comments</b>
Heavy Traffic Polymer Surface Course	10	None	5.2	Polymerized binder is virgin. (For non-polymer virgin binder allow 20% max RAP and 5.0 min. virgin.)
Medium Traffic Surface Course	20	Manufacturing waste only	5.0	Polymer or non-polymer virgin.
Light Traffic Surface Course		Manufacturing waste only	5.2	
Intermediate Course	35	Manufacturing waste and tear-offs	3.0	Any mix type used as an intermediate course.
Base Course 301	50	Manufacturing waste and tear-offs	2.7	The Laboratory will establish the asphalt binder content.
Base Course 302	40 (30)	Manufacturing waste and tear-offs	2.0	A lower RAP limit of 30 percent will be required if poor production mixing or coating is evident.

\* No more than 5.0% RAS by dry weight of mix

**RAP Processing for Table 401.04-1 Method 1-Standard RAP.** For surface courses process RAP to less than 0.75 inch (19 mm) and place a 0.75 inch (19 mm) screen on the cold feed. For other courses place a 2-inch (50 mm) screen on the cold feed. Ensure that the RAP is the proper size to allow for complete breakdown in the plant. If mixing is incomplete, place a smaller screen on the cold feed.

**2) Method 2 Extended RAP.** Include RAP in a JMF submittal per the Extended RAP/RAS Limits Table 401.04-2 unless specified differently in the applicable mix specification. Only use Method 2 with counter flow drum plants or mini-drum batch plant configurations meeting 402. For mixes that will contain up to 15 percent RAP the JMF submittal is not required to include the RAP unless a virgin polymer asphalt binder is used in a surface course. For JMFs having polymer asphalt binder do not submit at 1 through 9% RAP.

If greater than 25 percent RAP is used in a JMF submittal include an analysis of the recovered asphalt binder and blend per Level 3 Mix Design procedures to determine the grade of virgin asphalt binder to use. If the blending shows a grade change is required use a PG64-28 for heavy intermediate courses or PG 58-28 or 64-28 for medium intermediate or base courses. No grade change is required with RAP at 26% to 40% if Warm Mix Asphalt (WMA) technology is used in a manner to maintain the mix temperature below 275 °F (135°C). Use WMA technology meeting 402.09. Other WMA technologies

must be approved by the Laboratory. If desired, WMA may be used to control plant temperatures when producing mixes using RAP above 40%, but a grade change is required if shown necessary by the blending index.

**TABLE 401.04-2  
METHOD 2-EXTENDED RAP/RAS LIMITS**

<b>Asphalt Application</b>	<b>Mix</b>	<b>Percent RAP by Dry Weight of Mix, max.</b>	<b>RAS Usage*</b>	<b>Total Virgin Asphalt Binder Content, min.</b>	<b>Comments</b>
Heavy Traffic Polymer Surface Course		15	None	5.0	Polymerized binder is virgin. (For non-polymer virgin binder allow 25% max RAP and 4.6 min virgin.)
Medium Traffic Surface Course		25	Manufacturing waste only	4.8	Polymer or non-polymer virgin.
Light Traffic Surface Course			Manufacturing waste only	5.0	
Intermediate Course		40	Manufacturing waste and tear-offs	3.0	Any mix type used as an intermediate course.
Base Course 301		55	Manufacturing waste and tear-offs	2.5	The Laboratory will establish the asphalt binder content.
Base Course 302		45 (35)	Manufacturing waste and tear-offs	1.8	A lower limit of 35 percent will be required if poor coating is evident. The virgin requirement of 302.02 does not apply.

\* No more than 5.0% RAS by dry weight of mix

**RAP Processing for Table 401.04-2 Method 2-Extended RAP.** Process RAP by means of fractionation or by additional in line processing. Include in the QCP additional methods and procedures to dictate how this is to be accomplished at plants. Specify documentation method for RAP measurement. Fractionation is the process of creating separate piles of RAP from one pile when split over a specific sieve or sieves. Test fractionated piles to show uniformity. For additional in line processing only process RAP from a uniform, tested and approved stockpile by passing the RAP over a double deck screen placed in-line between the RAP cold feed bin and the mixer. Use a 9/16 inch (14.3 mm) screen for surface and intermediate mixes and a 1.5 inch screen for base mixes. Do not use concurrent project RAP in a stream process.

**3) RAS Processing and Usage.** Include RAS in a JMF submittal per the Standard RAP/RAS Limits Table 401.04-1 or Extended RAP/RAS Limits Table 401.04-2 unless specified differently in the applicable mix specification.

Ensure RAS is processed to have 100 percent passing the ½ inch sieve and at least 85 percent passing the No. 4 sieve. Ensure RAS has less than 1.0 percent deleterious materials and 0.1 percent metals by weight. Do not blend RAS from manufacturing waste and RAS from roofing tearoffs.

Ensure the approved QCP includes RAS usage methods before using RAS. Include in the contractor QCP what contractor requirements apply to the RAS processor.

Introduce and control RAS in asphalt plants in the same manner as RAP is introduced and controlled. RAS for base courses may be preblended with RAP if using rate control equipment to ensure uniformity of blending and if satisfactory blend and production is achieved. RAS may be preblended with a small amount of virgin aggregate meeting 703.05 to minimize stockpile agglomeration. Include in the contractor QCP blending equipment type and operation and uniformity testing requirements for preblended RAP and RAS or RAS and virgin aggregate. Other methods must be approved by the Laboratory.

**RAP and RAS QC and Management Requirements.** Maintain as part of the QC records the signed certification forms as required in Supplemental Specification 1116.

Always note on the daily quality control report how much RAP and RAS is actually being used. Apply a tolerance of +/-5.0% on the amount of RAP used if needed for a quality control adjustment but do not exceed the limits of Table 401.04-1 or Table 401.01-2, whichever applies. If this adjustment is not adequate for maintaining control of the mix submit a new JMF for approval. Do not apply this tolerance to RAS.

Include in the QCP methods to be used to meet Method 1 and Method 2 requirements above and the following requirements:

Provide enough space for meeting all RAP and RAS handling requirements at a hot mix facility. Provide a clean, graded base for stockpiles that does not collect water. Test blended RAP and RAS stockpiles to assure uniform gradation and asphalt binder content. Ensure uniform stockpile properties match the JMF submitted RAP and RAS properties unless the uniform stockpile will be processed into the asphalt plant using plant cold feed in line processing.

If the uniform stockpile will be processed into the asphalt plant using plant cold feed in line processing determine the processed RAP properties for use in the mix design. Record in the JMF submittal both the uniform stockpile and in line processed RAP properties.

If desired, when applying Method 1 Standard RAP requirements, use concurrent Department project RAP in a stream process in place of stockpiling and testing for uniformity but do so in the following manner. Concurrent project RAP must be taken from one existing mix type on the concurrent project or two existing mix types if both mix types are taken at the same time in one pass of the milling machine. Submit a new JMF for each existing mix type on the project (or each milling pass of two types) desired for use as concurrent project RAP. Include in the QCP methods of validating RAP properties when using concurrent project RAP. If these requirements are not met blend and test for uniformity and apply the stockpile requirements of this specification.

Maintain in the plant lab and control room an up to date and dated site map of all tested and untested RAP and RAS stockpiles. Give each stockpile a unique identification and identify if RAS piles are from un-used manufactured shingle waste or used roofing tear-off shingles. Provide in the plant lab RAP and

RAS properties for each uniform, blended stockpile cross referenced with its identification. In addition, provide the date the stockpile processing was completed and the stockpile estimated size in tons. The DET may require RAP and RAS pile staking for failure to maintain the above. Do not add to a stockpile once it is tested for uniformity. Provide signage at all uniform stockpiles to inform haulers that uniform piles are not to be added to.

Stockpiles and processing methods are subject to inspection and approval by the DET at any time. Rejection of stockpiles can occur for the presence of foreign or deleterious materials, lack of uniformity, incomplete mixing in the asphalt mixture, adding to piles, or moving RAP or RAS in a way not traceable through the QCP records and methods. The Laboratory will resolve disputes over acceptability of RAP or RAS.

#### **401.05**

On page 173, in the 1st paragraph of this section, **Add** after the 1st sentence the following sentences: Schedule a date with the Department for approval inspection to be at least 1 week before mix production. Do not produce mixtures for projects from unapproved plants.

On page 178, **Replace** the third paragraph with the following:

Spread and finish the mixture using approved equipment or methods such that compaction can follow immediately. Preheat screeds and extensions before placing any asphalt concrete. Use side plates sufficient to contain the mixture laterally during spreading. Use only screed extensions, rigid or extendable, having the same features as the main screed including, but not limited to, vibration, heating, pre-strikeoffs, and tamping bars. When using front-mounted hydraulically extendable screeds at a fixed paving width use full width auger extensions and full tunnel extensions. When using fixed screed extensions use full width auger extensions and full tunnel extensions. Do not allow a buildup of excess material in front of any extended screed. Where excessive buildup of material is not controlled in front of the extended screed, the Engineer will require paver changes to correct the problem. The Contractor may use strike-off plates/strike-off extensions on irregular areas such as mailbox turnouts, driveway turnouts, and other irregular non-travelled roadway areas. The Engineer may approve the use of strike-off plates/extensions on variable width shoulders if the use of a standard extendable screed extension with the same features as the main screed is not practicable. Perform supplemental hand forming and tamping where irregularities develop and where placing the mixture by hand methods.

On page 178 after the 3rd paragraph in this section, **Add** the following paragraph:

Ensure the paver operation, screed, screed extension, and, or, mix design provide a mat, prior to compaction, that is free of texture inconsistencies, shadowing, streaking, tearing, pulling, or other deficiencies. Take immediate action to correct the paver operation, screed, screed extensions, or, mix design. The Engineer may stop placement until corrections are completed.

On page 179, **Replace** the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> full paragraphs with the following:

When the total project includes more than one continuous lane mile (including bridges) of surface course paving in combination with night paving, provide a Material Transfer Vehicle (MTV) with paver hopper insert; a Material Transfer Device (MTD) with paver hopper insert; or a remixing paver specifically manufactured to eliminate segregation.

Provide equipment that:

- a. Includes a mixer/agitator mechanism that consists of either segmented, anti-segregation, re-mixing augers or two full-length longitudinal paddle mixers specifically designed for the specific purpose of re-mixing. The longitudinal paddle mixers shall be located in the paver hopper insert.
- b. Eliminates segregation, and provides a uniform temperature throughout the mixture;
- c. Limits temperature differentials to less than 25 °F (14 °C).

Use the equipment on all mainline lanes of the traveled way including express lanes, collector-distributor lanes, continuous center turn lanes, acceleration/deceleration lanes, and ramp lanes.

Use paver hopper inserts with a minimum capacity of 14 tons.

Remixing may be done by the MTV or MTD, in the paver hopper insert, or by the remixing paver.

Demonstrate to the Engineer that the selected equipment eliminates physical segregation and limits the temperature differential of the mat surface measured transversely to 25 °F (14 °C). Provide a method before the start of paving that ensures non-segregation and thermal differential requirements are met, continuously during placement operations.

Remove equipment that does not consistently eliminate physical segregation and, or, does not meet the temperature differential requirement.

#### **401.16**

On page 180, Section 401.16 Compaction, **Replace** the 6<sup>th</sup> paragraph with the following:

For surface courses using a polymer modified asphalt binder give a copy of the JMF approval letter containing the design compaction temperature to the Engineer before any mix is placed. Unless otherwise specified ensure that the mix temperature immediately before rolling is not less than 290 °F (145 °C) if placing hot mix asphalt, and not less than 250 °F (121 °C) if placing warm mix asphalt according to 402.09. Do not compact polymer asphalt concrete surface courses with pneumatic tire rollers.

On page 180, Section 401.16 Compaction, **Add** the following new paragraph after paragraph 8:

When using pneumatic tire rollers, ensure for any mix, that surface deviations and deformations caused by the tires are removed with steel wheel rollers. Do not use pneumatic tire rollers if any resultant surface deformations cannot be removed.

#### **401.17**

On page 181, Section Joints, **Replace** paragraph 6 with the following:

Seal all cold longitudinal construction joints by coating the entire face of the cold joint with a certified 702.01 PG binder or 702.13 SBR Asphalt Emulsion to provide 100 percent coverage of the joint. Overlap the joint edges by at least 1/2 inch (13 mm). Seal all cold transverse construction joints with a certified 702.01 PG binder or 702.13 SBR Asphalt Emulsion to provide 100 percent coverage of the joint or with a certified 702.04 asphalt material applied at a rate of 0.25 gallon per square yard (1 L/m<sup>2</sup>).

**401.19**

On Page 182, Paragraph 6, **Delete** paragraph 6 of 401.19 and replace with the following paragraph:

Check the surface course for variations in slope or surface at locations where bumps are suspected when directed by the Engineer.

**402**

On page 183 **Replace** the entire section with the following:

**ITEM 402 ASPHALT CONCRETE MIXING PLANTS**

- 402.01 Description**
- 402.02 Calibration**
- 402.03 Polymer Binders**
- 402.04 Water Injection System for Warm Mix Asphalt**

**402.01 Description.** This specification consists of the minimum requirements for an asphalt concrete mixing plant to produce asphalt concrete mixes according to Department specifications.

Ensure asphalt concrete mixing plants conform to the requirements of Supplement 1101 in addition to the following.

**402.02 Calibration.** Ensure the plant is calibrated according to Supplement 1101 when producing any asphalt concrete for the Department. Ensure that the calibration is accurate within 1.0 percent. When performing a complete calibration for ODOT projects notify the ODOT district 24 hours in advance of the calibration.

**402.03 Polymer Binders.** If an asphalt binder is modified by SBR at an asphalt concrete mixing plant, equip the plant with an automated SBR flow control and monitoring system. Obtain the Department’s approval of the system before operating and demonstrate the system calibration to the District. If the District waives the demonstration, provide a letter documenting calibration data for the flow system to the DET for each project. Obtain written approval from the Laboratory for the use of SBR and ensure the QCP contains methods for properly controlling SBR.

For drum mix plants, introduce the SBR directly into the asphalt binder line through means of an in-line motionless blender or other device approved by the Laboratory which is able to provide a homogeneous blend. Locate a sampling valve between the in-line blender and the plant drum.

For batch plants, add the SBR after the aggregate has been completely coated with asphalt binder. Continue mixing for a minimum of 20 seconds after SBR is added and long enough to provide a uniform mixture.

Ensure the SBR pumping and metering system is capable of adding the SBR within the limits of 702.01. For drum plants ensure the SBR pump is automatically controlled by an independent computer

and interfaced with the asphalt binder flow to automatically maintain the SBR flow within specification limits. Produce asphalt mixtures for placement in automatic SBR control mode only.

Ensure the SBR meter is accurate to +/- 2.0 percent over a flow range typical of that used at the asphalt plant (typically 0.8 to 12 gpm at drum plants and 10 to 25 gpm at batch plants). Ensure the SBR meter is a magnetic flow meter consisting of a metering flow tube which utilizes Faraday's Law of Induction to measure the flow and includes a transmitter to transmit the flow signal to a totalizer located in the control room of the asphalt plant. Locate the SBR meter downstream of any recirculation lines. Provide a means for removing the SBR line at the in-line blender to be able to obtain a sample of the SBR for calibration purposes.

Obtain Laboratory approval for use of any other type of SBR meter. Ensure the totalizer displays total volume measured and flow rate in standard engineering units. Ensure the totalizer is interfaced with a data logger which produces printouts of the logged data every five minutes for a drum plant or every batch for a batch plant. Ensure the logged data includes time, date, flow rate, and flow total except flow rate is not necessary for batch plant production.

Ballings or wadding of SBR or uncoated aggregate indicates improper mixing; cease production immediately and until corrected to District satisfaction.

**402.04 Water Injection System for Warm Mix Asphalt** When allowed by specification use a Department-approved water injection system for the purpose of foaming the asphalt binder and lowering the mixture temperature. Only use equipment that has been proven stable and effective through project use on non-ODOT projects. Ensure equipment for water injection meets the following requirements:

1. Injection equipment computer controls are in the plant control room and are tied to the plant computer metering.
2. Injection equipment has variable water injection control controlled by the plant operation rate and the water injection can never exceed 1.8% by weight of asphalt binder.
3. Water injection rate cannot be manually overridden by the plant operator once in the computer.
4. Injection equipment stops water flow when a control or equipment failure in the injection system occurs.
5. The water injects into the asphalt binder flow before the asphalt binder spray hits aggregate. Do not allow water to touch aggregate before the binder spray.
6. Injection equipment includes water storage and pump control tied to the injection computer controls.
7. Water storage low water alarm installed in the control room.
8. Provide a PG binder sampling valve between the last piping tee on the tank side of the line and the injection equipment to sample PG binder before water is injected.

#### **403.03**

On page 188, **Replace** the 3<sup>rd</sup> sentence of the 1<sup>st</sup> Paragraph, with the following:

A minimum of 3 weeks before mix production, but no later than February 28, submit a hard copy of the proposed QCP to the Laboratory for review and approval.



On page 188, **Replace** the 2<sup>nd</sup> paragraph with the following:  
Send a hard copy and a digital copy (if available) of the approval letter and approved QCP to the DET in every District in which work is performed. Keep copies of the approval letter and the approved QCP in each Contractor plant laboratory and plant operation control room. Digital copies of the approved QCP and approval letter in pdf format are allowed in each Contractor plant laboratory and plant operation control room with the following requirements: The file icon must be appropriately labeled and be on the computer desktop of a computer in each area, the QCP must contain a Table of Contents inside the front cover locating all sections by page number and the QCP must be page numbered, and out of date QCPs must be removed from the computer desktop.

#### **403.03. A**

On page 188, **Replace** sentence 5 of the current Subsection A with the following:  
Assign Level 2 technicians for all Level 2 QC testing duties, and provide a list designating their responsibilities and expected actions.

On page 188, **Insert** a new sentence 7 in the current Subsection A as follows:  
Define in the QCP who is responsible at plants and specific methods for assuring haul vehicles meet all requirements and proper bed release products are used.

#### **403.03. C**

On page 188, **Delete** the following words in the 1<sup>st</sup> sentence of the current Subsection C:  
“when tests are outside warning band limits of the QCP”

#### **403.03. D**

On page 189, **Replace** the current Subsection D with the following:  
D. Methods to maintain all worksheets, including all handwritten records, and other test records for the duration of the contract or 5 years, whichever is longer. Define the test record process. Define company records retention requirements. Provide copies of all test reports and forms used in the quality control process.

#### **403.03. E**

On page 189, **Replace** the current Subsection E with the following:  
E. Procedures for equipment calibration and documentation for Level 2 lab equipment. Provide documentation that all Level 2 lab equipment has been calibrated at the time of the Level 2 lab approval inspection. Procedures for calibration record storage.

#### **403.03. H**

On page 189, **Replace** entire paragraph with the following:  
H. All procedures to meet the processing, testing and documentation requirements for RAP and RAS in 401.04 including test forms, record keeping, technician responsibilities, etc.

#### **403.06**

On page 190, **Replace** the 1st paragraph with the following:  
The Department will perform VA. If the random Department sampling and testing verifies the accompanying Contractor tests, the results of all the Contractor’s quality control tests for each day

(for Basic mix), the Contractor's tests for each Lot (for 448 mix), or daily average MSG (446 mix) will be used to determine acceptance.

#### **403.06. A**

On page 191 **Replace** paragraphs 3 and 4 with the following paragraphs:

Provide a clean area of sufficient size and a hard surface to perform sample splitting. Split samples by quartering and recombining according only as described in to AASHTO T 248, Method B for hard surfaces and recombining for the Department and Contractor's sample. The Department split sample size required is generally 22 to 27 pounds (10,000 to 12,000 g). A mechanical quartering device approved by the Laboratory may be used in lieu of the above but only split according to the procedure outlined in the Contractor QCP. Ensure that every quality control or Item 448 Sublot sample taken by the technician has a labeled split for the Department. Wrap and label the Department split samples as to Lot or Sublot, time, location (tonnage), and accompanying Contractor test identification. The Monitoring Team will pick up all Department split samples within 4 workdays. Sample mishandling (careless identification, changing sample size, consistency, or pre-testing) will result in a change to Unconditional Acceptance.

For Item 448 mixes, conform to the procedures of Supplements 1035, 1038, 1039, and 1043 except take samples from a truck at the plant. If workmanship problems continue on the project (segregation, etc.) or if quality control problems persist, the Monitoring Team may require sampling on the road according to Supplement 1035. Lots will be 3000 tons (3000 metric tons), and Sublots will be 750 tons (750 metric tons). However, when production is limited to less than 3000 tons (3000 metric tons), consider the quantity produced as a partial Lot. For partial Lots of 1500 tons or less sample and test at least two subplot samples regardless of the tons produced. Split and test all Sublot sample locations, as selected by the Monitoring Team or project and taken by the Contractor. The Contractor may test a Sublot QC sample at the required Sublot sample location instead of the required random quality control test as both a QC and Sublot test provided the sample is tested in the half day in which the Sublot sample mix was produced sample and is tested for all required quality control properties. Test results will apply for both QC and subplot requirements. A change in the location of the Sublot sample must be approved by the District and be reasonably close to the original location. This allowance does not apply to any other samples including Department VA sample locations selected by the Monitor. Label Department split samples as Sublot or quality control samples.

When the figures to be dropped in rounding off are exactly one-half of unity in the decimal place to be retained, round the value up to the nearest number in the decimal place to be retained.

On Page 191, **Add** a final paragraph to the current Subsection A as follows:

For Item 446 mixes MSG VA testing will be performed by the District on a minimum of one in every four required District-sampled Daily samples.

#### **403.06. B**

On page 192, In 2nd paragraph of this section, **Replace** the 2nd sentence with the following:

When the figures to be dropped in rounding off are exactly one-half of unity in the decimal place to be retained, round the value up to the nearest number in the decimal place to be retained.

**403.06. C**

On page 192, **Replace** the 1st and 3rd sentences of the 1st paragraph of the current Subsection C with the following respectively:

For Basic and 448 mixes the Monitor/District will randomly choose one Department sample in a maximum of every four production days for VA testing to confirm Contractor testing and mix control.

The Department VA sample location will be chosen randomly by the Monitor, including where in the truck to take the sample, if applicable.

On page 192, **Replace** the 2nd sentence of the 2nd paragraph of the current Subsection C with the following:

However, if the Department tests VA samples on Contractor equipment, test a VA sample on District lab equipment a minimum of one time in 15 production days from a given plant regardless of the number of projects or JMFs tested in the Level 2 lab.

On page 193, **Replace** existing paragraph 3 of the current Subsection C with two new paragraphs as follows:

For Item 446 mixes MSG VA testing will be performed by the District on a minimum of one in every four required District-sampled Daily samples. This result will be compared to that days Contractor average of MSG QC test results.

For all mixes, the District may increase the number of VA testing samples if desired.

On page 193, **Replace** Table 403.06-1 Department Verification Acceptance and Quality Control Test Comparison with the following:

<b>TABLE 403.06-1 DEPARTMENT VERIFICATION ACCEPTANCE AND QUALITY CONTROL TEST COMPARISON</b>					
	<b>Percent Asphalt Binder</b>		<b>Percent Passing No. 4 (4.75mm)</b>		<b>MSG Comparison</b>
	VA[1]	QC/lot test[2]	VA[1]	QC/lot test[2]	VA[3]
Basic	±0.3	±0.4	±4.0	±5.0	
448	±0.3	±0.3	±4.0	±4.0	
446					0.025
[1] District VA mix test deviation from Contractor split.					
[2] District VA mix test deviation from QC and/or lot test.					
[3] Deviation of District Daily sample MSG compared to QC MSG daily average.					

**403.06. D**

On page 194, **Replace** Table 403.06-2 Mix Acceptance with the following:

TABLE 403.06-2 MIX ACCEPTANCE			
Mix Type	Acceptance Tolerances or Method		
Basic Mixes (no acceptance limits stated in appropriate specification)		Deviation from JMF	Range
	Asphalt Binder Content	± 0.5%	1.0
	No. 4 (4.75 mm) sieve	± 6%	12
Basic Mixes (acceptance limits stated in appropriate specification)	Use acceptance limits in appropriate specification		
448 Mixes	Calculate pay factor according to 403.08		
446 Mixes	Calculate pay factor according to 446.05		

**403.06 E. 2**

On page 195, **Replace** the 1st sentence of the current Subsection E. 2. with the following:  
 If the District tests and investigation shows lack of Contractor mix control compared to the JMF the District will test the remaining Department split or Daily samples for the days or Lots represented by the original tests.

**407.06**

On page 199 **replace** paragraphs 5 and 6 in this section with the following paragraphs:

Apply the tack coat in a manner that offers the least inconvenience to traffic. Do not allow tack pick up and tracking by traffic or by construction vehicles. Take immediate steps to eliminate tack pick up and tracking. Only apply the tack coat to areas that will be covered by a pavement course during the same day unless using a lane closure lasting more than 24-hours.

Obtain the Engineer's approval for the quantity, rate of application, temperature, and areas to be treated before application of the tack coat. The Engineer will determine the actual application in gallons per square yard (Liters per square meter) by a check on the project. The application is considered satisfactory when the actual rate is within ±10 percent of the required rate and the material is applied uniformly with no visible evidence of streaking or ridging. The Engineer will require repairs to equipment when ridging, streaking, or other non-uniform coverage is observed, and a subsequent test strip to demonstrate proper application.

If the application is not uniform and not corrected or there is pick up, and, or tracking the total square yardage of non-uniform application will be considered non specification material. The Engineer will determine the number of gallons (liters) for non-payment by using the approved rate of application times the total square yards (square meters) of non-uniform application, pick up, and or tracking.

**421**

On Page 206, **Replace** entire section 421.02 Materials with the following:

**421.02**

Use a polymer modified emulsified asphalt binder (Binder) consisting of the following materials milled together:

- A. Natural SBR latex modifier or synthetic SBR latex modifier conforming to 702.14. Use only one type of latex.
- B. CSS-1h or CSS-1m (as required below) emulsified asphalt conforming to 702.04, except the cement-mixing test is waived. Use only emulsion certified per Supplement 1032.
- C. Other emulsifiers.

Use CSS-1mL (as defined below) if the project ADTT is less than 2000, otherwise use CSS-1hL (as defined below). Do not use port addition of the polymer to the emulsified asphalt. Provide to the Engineer certified test data and a statement from the Binder manufacturer with each load of Binder that the Binder is the same formulation as used in the mix design. Ensure the Binder meets one of the following.

CSS-1hL: Combine CSS-1h and SBR latex modified (L) to yield 3 percent SBR solids based on the weight of the asphalt binder content of the Binder. Ensure that the SBR latex modified residue conforms to the following requirements:

Test	Description	Specification
AASHTO T 59 (Note 1)	Residue	62 %
AASHTO T 53	Softening Point	60 °C minimum
AASHTO T 202	Absolute Viscosity @ 60 °C	8000 poise minimum

Note 1 - 24 hours at 77 °F (25 °C) in forced draft oven

CSS-1mL: Combine CSS-1m and SBR latex modifier (L) to meet the following properties.

Tests on emulsion, ASTM D 244, unless otherwise designated:	
Viscosity, Saybolt Furol, ASTM D 88, at 25 °C (sec)	20 to 100
Storage Stability Tests, 24-hr (% difference)	1 maximum
Particle Charge Tests	Positive
Sieve Tests (%) (Distilled Water)	0.10 maximum
Distillation to 260 °C, % by Weight, Residue, min[1]	62
Tests on distillation residue:	
Penetration, 25 °C, 100 g, 5 sec (dmm) ASTM D 5	70 to 90
Ductility, 4 °C, 5 cm/min, ASTM D 113	40 minimum
Elastic Recovery, 4 °C, 10 cm (%) [2]	65 minimum
Softening Point, Ring & Ball (°C) ASTM D 36	60 minimum

[1] ASTM D 244, with modifications to include a 400 °F ± 10 °F (204 °C ± 6 °C) maximum temperature to be held for 15 minutes.

[2] Straight molds. Hold at test temperature for 90 minutes. Place in ductilometer and elongate 10 cm at 5 cm/min. Hold for 5 minutes and cut. After 1 hour retract the broken ends to touch and measure the elongation (X) in centimeters. Use the following formula to calculate the elastic recovery:

$$\text{Elastic Recovery (percent)} = \left( \frac{10 - X}{10} \right) \times 100$$

Conform to 703.01 and 703.05 for aggregate, except as follows:

Percent by weight of fractured pieces	100
Sand Equivalence (ASTM D 2419)	45 minimum

Conform to Gradation A for the aggregate for leveling and surface courses and to Gradation B for the aggregate for rut fill courses according to the following:

Sieve Size	Total Percent Passing	
	A	B
3/8 inch (9.50 mm)	100	100
No. 4 (4.75 mm)	85 to 100	70 to 90
No. 8 (2.36 mm)	50 to 80	45 to 70
No. 16 (1.18 mm)	40 to 65	28 to 50
No. 30 (600 µm)	25 to 45	19 to 34
No. 50 (300 µm)	13 to 25	12 to 25
No. 100 (150 µm)	--	7 to 18
No. 200 (75 µm)	5 to 15	5 to 18

Screen the aggregate for oversize material prior to use. For mineral filler, use Portland cement conforming to ASTM C 150, Type I. Use water conforming to 499.02. Use mix set additives as required.

#### **422.02**

On Page 213, Replace the 2nd paragraph with the following:

Provide cover aggregate for the chip seal Job Mix Formula (JMF) of washed limestone or dolomite meeting 703.05. Do not use an aggregate source designated with “SR” on the Aggregate Source Group list in accordance with 703.01F. Additionally the following requirements apply:

#### **422.06**

On Page 216, **Replace** 1<sup>st</sup> paragraph with the following

Remove all existing pavement markings 740.03 (polyester), 740.04 (thermoplastic) and 740.07(epoxy) using an abrasion method conforming to 641.10.

#### **422.10. B**

On page 218, **Replace** the 1st sentence of the current Subsection B with the following:

Within one hour of start of production obtain and label a binder sample from the distributor truck and give the sample to the Engineer the same day. Provide and sample the binder in one quart plastic containers with plastic screw tops. Take more samples when requested by the Engineer.

#### **422.13**

On Page 224, **Replace** the 2nd paragraph under the subsection with the following: The cost of removal of all existing pavement markings according to 422.06 is incidental to this item.

#### **424.03**

On page 224 **Replace** the 2nd paragraph in this section with the following paragraph:

Use a PG 76-22M asphalt binder; or a PG 64-22 asphalt binder modified by adding 5.0 +/- 0.3 percent by weight Styrene Butadiene Rubber (SBR) solids and meeting the requirements of PG 76-22 . Provide SBR conforming to 702.14. Provide mineral filler conforming to 703.07. Provide binders conforming to 702.01.

On page 224, **Replace** the 1<sup>st</sup> sentence in the 3<sup>rd</sup> paragraph with the following: Ten percent reclaimed asphalt concrete pavement may be used in a Type B mix if all requirements of footnote 3 are met by the reclaimed asphalt concrete.

On page 224, (3) Fine Aggregate– After the last sentence of this section **add** the following sentence: Contact the Office of Materials Management, Asphalt Materials section for guidance on submitting RAP aggregate silicon dioxide data.

On page 224, (4) Coarse Aggregate – **Replace** entire paragraph with the following:

(4) Coarse Aggregate - For medium mixes, for the final blend of all coarse aggregate use a minimum 10 percent two - or more fractured faces aggregate. For heavy mixes, use 100 percent two or more

fractured faces aggregate. Meet the two or more fractured faces aggregates criteria of ASTM D5821 (reapproved 2006).

#### 424.04

On page 325, **Replace** section 424.04 Mixing with the following:

424.04 Mixing. Ensure the mixing plant conforms to 402. Discharge the mix from the plant at temperatures between 335 °F to 370 °F (168 °C to 188 °C) for hot mix asphalt or 300 °F to 340 °F (149 °C to 171 °C) for warm mix asphalt.

#### 441.09 Contractor Mix Design and AC, Quality Control Tests, A. Asphalt Binder Content.

On page 234 at the end of paragraph 2 in this section, **add** the following sentence:

Only take SBR PG-Modified Binder samples using a five gallon bucket, stirring its contents and transferring to the required sample containers.

#### 442

On page 239 **Replace** Table 442.02.02 with the following:

**TABLE 442.02-2 AGGREGATE GRADATION REQUIREMENTS**

<b>Sieve Size</b>	<b>9.5 mm mix (% passing)</b>	<b>12.5 mm mix (% passing)</b>	<b>19 mm mix (% passing)</b>
1 1/2 inch (37.5 mm)			100
3/4 inch (19 mm)		100	85 to 100
1/2 inch (12.5 mm)	100	95 to 100	90 max
3/8 inch (9.5 mm)	90 to 100	96 max	
No. 4 (4.75 mm)	70 max	52 min	
No. 8 (2.36 mm)	34 to 52	34 to 45	28 to 45
No. 200 (75 µm)	2 to 8	2 to 8	2 to 6

#### 442.01

On page 238, **Delete** the last sentence of the second paragraph that states:

“Do not use the warm mix...”

#### 451.02

On page 253, **Replace** the first line under the subsection heading with:

Concrete, Class C 499 or Class RCA 499.10

#### 451.03

On page 254, **Replace** the first paragraph of Section B. Slip Form Construction with the following:

B. Slip Form Construction. Place concrete using an industry-standard slip form paver designed to spread, consolidate, screed, and finish the freshly placed concrete in one complete pass of the machine and with a minimum of hand finishing providing a dense and homogeneous pavement.



## 451.08

Starting on page 257, **Replace** the entire subsection with the following:

### 451.08 Joints

Unless otherwise directed, construct all transverse joints normal to the centerline of the pavement lane and of the type, dimensions, and at locations specified.

Determine contraction and longitudinal joint sawing time limits to protect the concrete from early cracking by using HIPERPAV software. Obtain the software according to Supplement 1033.

Twenty four (24) hours before placing concrete pavement create a HIPERPAV project data file according to Supplement 1033.

Provide the completed file and the printout to the Engineer. When HIPERPAV predicts early age slab cracking will occur, whether due to standard construction practices, joint sawing methods, mix design or curing, either do not start construction until modifications have been made to eliminate HIPERPAV's predicted slab cracking or do not pave.

Perform a HIPERPAV analysis for each pour.

If software analysis determines joint sawing could exceed twenty four (24) hours, assure all joints are sawed by the 24th hour.

A HIPERPAV analysis showing paving can proceed does not eliminate the requirements of 451.16.

Accurately mark the correct locations of all joints that will be saw cut along both edges of the pavement. Ensure the method of marking remains clearly visible after the paver passes and until the joint saw cut is completed.

**A. Longitudinal Joint** Construct longitudinal joints between simultaneously placed lanes by sawing.

When a standard (water cooled diamond bladed) concrete saw is used to make the longitudinal joint between simultaneously placed lanes, saw the joint within the timeframe provided in the HIPERPAV output. For pavement less than or equal to 10 inches (255 mm), saw the joint to a minimum depth of one-fourth the specified pavement thickness. For pavements greater than 10 inches (255 mm) thick, saw the joint to a minimum depth of one-third the specified pavement thickness. Saw joints  $1/4 \pm 1/16$  inch ( $6 \pm 1.6$  mm) wide measured at the time of sawing.

When using early-entry (dry cut, light weight) saws to make the longitudinal joint between simultaneously placed lanes, only use saw blades and skid plates as recommended by the saw manufacturer for the coarse aggregate type being used in the concrete. Perform the early entry sawing after initial set and before final set. Saw the joint  $1/8$  inch (3 mm) wide and  $2 \frac{1}{4}$  to  $2 \frac{1}{2}$  inches (56 to 63 mm) deep.

Place deformed epoxy coated steel tiebars or the epoxy coated hook bolt alternate (wobble bolt) with epoxy coated coupling, in longitudinal joints during consolidation of the concrete. Install them at mid-depth in the slab by approved mechanical equipment. As an alternate procedure, rigidly secure them on chairs or other approved supports to prevent displacement. Provide tie bars or wobble bolts of the size and spaced as shown on the standard construction drawings. If used, securely fasten hook bolts or wobble bolts with couplings to the form at the longitudinal construction joint as shown on the standard construction drawings.

**B. Transverse Joints**

Unless otherwise directed, construct all transverse joints normal to the centerline of the pavement lane and of the type, dimensions, and at locations specified.

For all transverse joints, install round, straight, smooth, steel dowel bars of the size shown in Table 451.08-1.

Thickness of Pavement (T)	Diameter of Steel Dowel
Less than 8 1/2 inches (215 mm)	1 inch (25 mm)
8 1/2 to 10 inches (215 to 255 mm)	1 1/4 inches (32 mm)
Over 10 inches (255 mm)	1 1/2 inches (38 mm) or as shown on the plans

Within 2 hours prior of placing concrete coat the full length of all dowels with a thin uniform coat of new light form oil as a bond-breaking material.

**Load Transfer Assemblies**

Use load transfer (dowel basket) assemblies in transverse contraction joints conforming to and placed according to the standard drawings to hold the dowels in a position parallel to the surface and centerline of the slab at mid-depth of the slab thickness.

Preset all dowel basket assemblies before the day’s paving unless the Engineer determines complete presetting is impractical.

Completely install dowel basket assemblies before shipping and spacer wires are removed.

Immediately before paving, remove all shipping and spacer wires from the dowel basket assemblies; check the dowel basket assemblies are held firmly in place; check the dowels are parallel to the grade and parallel to centerline of pavement.

For each joint assembly used to hold dowels in position, provide a continuous assembly between longitudinal joints or between the longitudinal joint and pavement edge. Drive at least eight 1/2-inch (13 mm) diameter steel pins a minimum of 18 inches (460 mm) long at an angle to brace the assembly from lateral and vertical displacements during the placing of concrete. Drive two of these pins opposite each other at each end of the assembly, and drive the remaining pins in staggered positions on each side of the assembly. Where it is impractical to use the 18-inch (460 mm) length pins, such as where hardpan or rock is encountered, and provided the assembly is held firmly, the Engineer may authorize use of shorter pins. Where the dowel basket assembly is placed on granular material that may allow settlement or distortion, anchor the assembly with a combination of pins and steel plates, or by some other means satisfactory to the Engineer to prevent settlement.

When concrete pavement is placed on an existing concrete pavement or on a stabilized base, secure dowel basket assemblies from lateral and vertical displacement during concrete placement using power-

driven fasteners and appropriate clips or pins driven in predrilled holes of a diameter slightly less than the pin diameter. Use either of the above methods or a combination of the two in sufficient numbers to adequately secure the basket assemblies.

Where widths other than 12 feet (3.6 m) are specified, the Contractor may use standard dowel basket assemblies with dowel spacings adjusted as follows. Maintain 6-inch (150 mm) dowel spacing at the longitudinal joint and increase the spacing at the outer edge of the lane up to 12 inches (300 mm). Where an odd width of lane occurs and if the standard dowel basket assembly would provide for a space exceeding 12 inches (300 mm), place a dowel 6 inches (150 mm) from the outer edge of the lane). Hold such a dowel rigidly in proper position by a method satisfactory to the Engineer or cut and splice a dowel basket assembly of greater length than required to attain the required length.

### **Slip Form Paver with Mechanical Dowel Bar Inserter**

The Contractor may propose to use a slip form paver with mechanical dowel bar inserter (DBI) to place dowels in transverse contraction joints the full thickness of pavement and spaced per the requirements of the standard construction drawings. Submit details and specifications of the proposed equipment to the Engineer at least 14 calendar days prior to mobilizing the equipment to the project.

The use of any slip form paver with DBI is allowed only after acceptable performance is demonstrated with a test section and approved by the Engineer. Continued verification during all contract paving is required for each production day as detailed below.

Provide all equipment, perform all testing, and evaluate the slip form paver with DBI as detailed in the following sections.

#### **1. MIT Scan-2 Equipment and Reporting**

Provide MIT Scan-2 equipment to determine the location of dowel bars in either fresh or hardened concrete including horizontal and vertical alignment, side shift, depth, and horizontal translation.

Provide equipment for determining dowel bar alignment that has an onboard computer that runs the test; collects and stores the test data on a memory card; performs the preliminary evaluation; and provides a printout of results immediately after scanning. Provide MagnoProof software to provide a detailed report of all required alignment parameters in an Excel spreadsheet and a graphical color representation.

Ensure the equipment is properly calibrated per the manufacturer's specifications. Establish a standard protocol for scanning direction.

Provide trained personnel to operate the equipment.

Provide a print out, at the time of scanning, for horizontal and vertical alignment, side shift, depth, and horizontal translation for each bar in each joint. Provide a complete report to the Engineer at the completion of scanning with all data provided in the manufacturer's native file format as well as all calibration files. Include the standard report generated using the MagnoProof software in Excel format and with color graphical representation of each joint. Include in the report project contract number, county-route-section, placement date, scan date, station location and lane, joint ID number, name of operator, and all required alignment parameters.

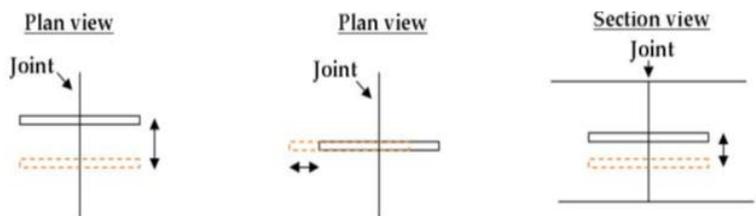
## 2. Acceptance/Rejection

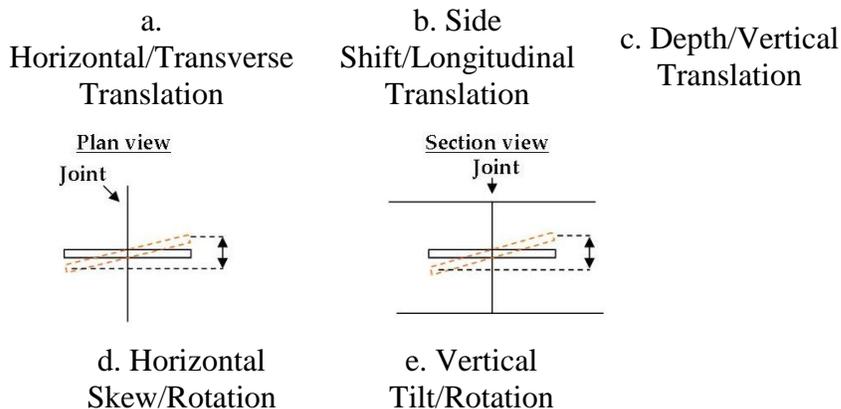
The required dowel bar tolerances are given in Table 451.08-2. Dowel bar alignment is measured as detailed below. Any dowel bar exceeding any Acceptance Tolerance in Table 451.08-2 is considered misaligned. Rejection Criteria is in absolute inches.

**Table 451.08-2  
Dowel Bar Tolerances**

<b>Alignment Parameter</b>	<b>Acceptance Tolerance (inches)</b>	<b>Rejection Criteria (inches)</b>
Horizontal/Transverse Translation <sup>a</sup>	±0.50	>2
Longitudinal Translation (Side Shift) <sup>b</sup>	±2.0	>2.30
Depth (Transverse Translation) <sup>c</sup>	±0.50	>0.66
Horizontal Skew /Rotation(Horizontal Alignment) <sup>d</sup>	±0.50	>0.70
Vertical Tilt/Rotation (Vertical Alignment) <sup>e</sup>	±0.50	>0.70

- Horizontal/Transverse Translation is the total difference measured horizontally from the actual dowel bar location to the plan required location along the transverse contraction joint.
- Side Shift (Longitudinal Translation) is the difference from the actual dowel bar center measured in the longitudinal direction from the center of the transverse contraction joint.
- Depth (Vertical Translation) is the measured difference between the actual dowel bar location and the mid-depth of the slab.
- Horizontal Skew/Rotation (Horizontal Misalignment) is the total difference measured from end to end of a dowel bar in the horizontal plane.
- Vertical Tilt/Rotation (Vertical Misalignment) is the total difference measured from end to end of a dowel bar in the vertical plane.





Perform a Joint Score Analysis per CPTP Tech Brief *Best Practices for Dowel Placement Tolerances* (FHWA-HIF-07-021) for every joint. Joint Score is a measure of the combined effects of rotational misalignment. Calculate the Joint Score: determine the square root of the sum of the squares of the horizontal and vertical misalignments of each dowel in the joint; assign a Weight for each misalignment category for each bar; sum the product of the Weight and the number of bars in each misalignment category and add 1.

Include the Joint Score for every joint scanned in the report to the Engineer.

### 3. Test Section

Prior to production use, perform a minimum 500-foot test section when using a slip form paver with DBI for acceptance of the machine. Evaluate all joints (all bars in each joint) for required dowel alignment using the MIT Scan-2. Do not place additional pavement until the slip form paver is accepted for use on the project.

#### a. Evaluation and Acceptance

The slip form paver and DBI can be accepted by the Engineer if one of the following requirements is met.

- Ninety-Five (95%) of the dowels in every test section are within the Acceptance Tolerances.
- Each Joint Score is less than 10, **AND** there is no horizontal or vertical misalignment greater than the Rejection Criteria, **AND** the side shift and depth all of bars are within the Acceptance Tolerances.

Reject any slip form paver and DBI not meeting the above requirements. Repair or replace any rejected slip form paver and DBI and repeat the test section.

Perform corrective action of all joints in the test section as per Section 5 below.

Perform the test strip for any new slip form paver and DBI that will be used for any contract item of work. New test strips are required at the beginning of every construction season; after major paver maintenance/repairs; at mobilization and remobilization to a project, after major concrete mix design changes; and as required by Section 4 of this specification.

#### 4. Paving

Scan 10% of all joints (all dowels in the joint), randomly selected by the Engineer, when using the accepted slip form paver and DBI for any contract item of work. Run additional scans as needed. Perform scanning, calculate the Joint Score, and submit the completed report to the Engineer within 24 hours of each day's production. The Engineer may accept an initial report to determine whether paving can continue.

Continue paving ONLY if one of the following requirements is met:

- All Joint Scores are less than 10 **AND** all other alignment parameters are less than the Rejection Criteria.
- Isolated Joint Scores greater than 10 are allowed if dowel bar side shift and depth are less than the Rejection Criteria **AND** there are three (3) joints ahead and behind the joint with Joint Scores of less than 10 (with side shift and depth less than the Rejection Criteria).

Discontinue paving, repair or replace the slip form paver and DBI, and repeat the Test Section when the above requirements are not met.

Investigate and fix any accepted slip form paver with DBI that exhibits systematic misaligned dowel bar installations.

#### 5. Corrective Action

The following conditions require removal and replacement per SCD BP-2.5:

- Any Joint Score greater than 10 that does not meet the above criteria for continuing paving.
- Any joint where the dowel side shift is greater than the Rejection Criteria in the first 4 dowels from a longitudinal joint.
- Any joint where the dowel depth deviation is greater than the Rejection Criteria in the first 4 dowels from a longitudinal joint.
- Any joint where the dowel transverse translation is greater than the Rejection Criteria in the first 4 dowels from a longitudinal joint.

**C. Expansion Joints.** Where a pressure relief joint is not provided adjacent to a bridge structure, construct expansion joints at the first two regularly spaced joint locations adjacent to the bridge approach slab on each side of the bridge. If the pavement is constructed in two or more separately placed lanes, construct the transverse expansion joints in a continuous line for the full width of the pavement and shoulders.

Construct expansion joints according to the standard construction drawings. Install the face of the expansion joint perpendicular to the concrete surface except when expansion joint is installed at a skewed bridge approach slab.

Use round, straight, smooth, steel dowels, and within 2 hours of placing concrete, coat the dowels with a thin uniform coat of new light form oil as a bond-breaking material to provide free movement. After coating the dowel, install a sleeve of metal or other approved material approximately 3 inches (75 mm) long, with crimped end, overlapping seams fitting closely around the dowel, and a depression or interior projection to stop the dowel a sufficient distance from the crimped end to allow 1 inch (25 mm) for longitudinal dowel movement with pavement expansion on one free end of each dowel. If approved by the Engineer, use other means to allow for 1 inch (25 mm) of expansion.

Punch or drill proper size dowel holes into the preformed expansion joint filler to assure a tight fit around each dowel.

Form a 1-inch (25 mm) wide and 1-inch (25 mm) deep opening on top of the expansion joint filler and seal this opening with 705.04 joint sealers.

**D. Contraction Joints.** For pavement less than or equal to 10 inches (225 mm) thick, saw contraction joints with a standard (water cooled diamond bladed) concrete saw to a minimum depth of one-fourth of the specified pavement thickness. For pavement greater than 10-inches (255 mm) thick, saw contraction joints to a minimum depth of one-third the specified pavement thickness. When cutting joints using a standard (water cooled diamond blade) saw assure the joint is  $1/4 \pm 1/16$ -inch ( $6 \pm 1.6$  mm) wide when measured at the time of sawing.

When using the option of early-entry (dry cut, light weight) saws, only use saw blades and skid plates as recommended by the saw manufacturer for the coarse aggregate type being used in the concrete. Perform the early entry contraction joint sawing after initial set and before final set. Saw the contraction joint 2-1/4 to 2-1/2-inches (56 to 63 mm) deep. Ensure any early entry saw joints are approximately 1/8-inch (3 mm) wide at the time of sawing.

If the pavement is constructed in two or more separately placed lanes, install the joints continuous for the full width of the pavement. Saw the pavement with sawing equipment approved by the Engineer as soon as the saw can be operated without damaging the concrete. Provide saws with adequate guides, blade guards, and a method of controlling the depth of cut. After wet sawing, clean the joint using a jet of water. After dry sawing clean the joint using air under pressure. During sawing of contraction joints, maintain a standby saw in working condition with an adequate supply of blades.

**E. Construction Joints.** Install dowelled construction joints at the end of each day's work and when work is suspended for a period of more than 30 minutes.

Use dowels in transverse construction joints. Within 2 hours of placing concrete, coat the free half of all dowels with a thin uniform coat of new light form oil. Use an adequate bulkhead, with openings provided for dowel bars spaced as specified and shaped to fit the typical section of the pavement, to form a straight joint. During placing of concrete, hold dowels rigidly in position.

Locate construction joints at or between contraction joints. If located between contraction joints, construct the construction joint no closer than 10 feet (3 m) to the last contraction joint.

#### 446.05

On page 247, **Replace** the 2nd paragraph of this section with the following:

Obtain ten, 4-inch cores for the Department to test to determine the in-place density of the compacted mixture as a percentage of the average QC Maximum Specific Gravity (MSG) for the production day the material was placed. If Department MSG VA tests show poor comparison to the average QC MSG according to 403.06 use Department determined MSG results in the density calculation for each production day. Compact shoulders using the same equipment and procedures as used on the mainline pavement. The requirements of 401.16, except for the last four paragraphs, are waived.

#### 451.09

On page 261, **Replace** paragraph 3 with the following two paragraphs:

Texture the surface in the longitudinal or transverse direction using a broom to produce a uniform, gritty, texture. Immediately following the broom drag texture, tine the pavement in the longitudinal direction using an approved device that produces uniform tine spacing 3/4 inches wide (19 mm), 1/8 inch deep (3 mm) and 1/8 inch wide (3 mm). Do not tine within 3 inches (75 mm) of pavement edges or longitudinal joints. Only use equipment that will tine the full width of the pavement in one operation and uses string line controls for line and grade to assure straight tining texture.

Use transverse tining in small areas only with the approval of the Engineer. Use equipment that produces a random pattern of grooves [0.05 inch (1.3 mm) to 0.08 inch (2.0 mm) deep and 0.10 inch (3 mm) wide] spaced at 3/8 to 1-3/4 inches (10 to 45 mm), with 50 percent of spacings less than 1 inch (25 mm).

#### **499.07**

On page 278, **Delete** the last sentence of the 1st paragraph of the section and insert the following between the 1st and 2nd paragraphs:

Prior to and during batching, maintain all coarse aggregates at a uniform moisture content.

For all slag aggregates or other aggregates with a reported absorption above 3.0 percent, only use aggregates with moisture contents at or above the ODOT-reported SSD for that aggregate as follows:

1. Use appropriate stockpile watering systems capable of raising and maintaining aggregate moisture at or above SSD. Sample and test the moisture content of the watered aggregate stockpiles from at least five (5) locations of the stockpile to ensure the stockpile is at or above SSD.
2. Have processes to maintain the aggregate stockpile at SSD until stockpile draining for SSD consistency has begun. Twenty-four (24) hours before batching concrete with the aggregate, shut down the stockpile watering process to allow drainage and to establish a uniform moisture content.
3. Run moisture content tests at least twice a day during concrete production. If the moisture content varies between tests by more than 1% increase the moisture testing frequency to assure correct batching information.
4. Provide the moisture content test results as part of all quality control plant ticket information.

#### **499.10**

On page 281, **Add** after the last paragraph of subsection 499.09 the following:

499.10 Class RCA. A concrete mix design using recycled concrete as a coarse aggregate conforming to the requirements of Supplement 1117. RCA is a stand-alone concrete mix design with no standard batching requirements.

#### **501.04. A**

On page 282, **Change** the first sentence in the 1<sup>st</sup> paragraph to:



After preparing the shop drawings for Items 513 and 515, submit the drawings to the Office of Materials Management at least 3 days before the pre-fabrication meeting, or before the start of fabrication on Item 513, UF Level.

#### **501.04. A**

On page 283, **Change** the 4<sup>th</sup> paragraph of this section to:

Prepare the shop drawings by or under direct supervisory control of an Ohio Registered Engineer having personal professional knowledge of *AASHTO Standard Specifications for Highway Bridges*, and Item 513 and 515. The Registered Engineer shall sign and date each drawing. **Have a second Ohio Registered Engineer check, sign, seal and date each drawing, confirming that the drawings meet the intent of the plan (as designed). The preparer and checker shall be two different Engineers.** Have all questions and comments addressed before submitting the shop drawings.

#### **501.04. C**

On page 283, **Change** the 2<sup>nd</sup> paragraph to:

Shop drawings shall be neatly and accurately drawn on 11 x 17 inch or 22 x 34 inch (280 x 432 mm or 559 x 864 mm) sheets. The shop drawings may be submitted electronically in pdf format or by mail .

#### **501.05.**

##### **A. Projects with Railroad Involvement.**

On page 284, After the second paragraph, after the sentence: Department acceptance is not required. **Add** the sentence: The absence of Department acceptance does not supersede the Engineer's authority as defined in 105.01.

On page 284, After the second paragraph, after the sentence: Department acceptance of revised working drawings is not required.

**Add** the sentence: The absence of Department acceptance does not supersede the Engineer's authority as defined in 105.01.

##### **B. Projects without Railroad Involvement.**

On page 284, After the second paragraph, after the sentence: Department acceptance is not required. **Add** the sentence: The absence of Department acceptance does not supersede the Engineer's authority as defined in 105.01.

On page 285, After the third paragraph, after the sentence: Department acceptance of revised working drawings is not required.

**Add** the sentence: The absence of Department acceptance does not supersede the Engineer's authority as defined in 105.01.

#### 501.05. B.1

On page 285, **Change** the first sentence referring to Excavation Bracing to the following:

1. Excavation Bracing, impacting active traffic, or with an exposed height over eight feet, except when a complete design is already shown in the plans.

#### 501.05. B.6

On page 288, **Replace** the entire subsection with the following:

When the total load applied to a structure during construction, (new or structure being rehabilitated), exceeds 75 % of the legal limit, (The Legal Limit is 80,000 lbs. or percentage thereof if posted), the load effects on the structure shall be analyzed based on the operating level calculated by the Load Factor Rating Method as given in the AASHTO Manual for Bridge Evaluation.

#### 503.08

On page 293, in the 1st paragraph, **Replace** the first two sentences with the following:

Backfill all excavations made under this item with materials conforming to 203.02.R., except behind abutments and below the approach slabs use materials conforming to Item 203 Granular Material Type B.

#### 503.09

On page 293, in the first paragraph, **Replace** the first sentence with the following:

After the requirements of Items 201, 202, and 203 have been met, the Department will measure excavation on a lump sum basis or by the number of cubic yards (cubic meters) as follows:

On page 294, **Delete** the following sentence: For abutment excavation quantities, the Department will include material removed above the bench (if any), in front of the vertical plane described in 503.09.C.1, and by the finished slope of the cut or embankment.

On page 294, **Delete** the following sentence: The Department will measure Unclassified Excavation on a lump sum basis when shown on the plans.

#### 504.03

On page 295, After the first sentence, **Add** the sentence:

Thread each sheet pile with adjacent sheets. Use corner piles and interlocking connectors as necessary so that all sheets are interlocked.

#### 507.03

On page 300, After Steel pile points, **Remove** the reference to 711.01.

#### 507.04

On page 301, **Replace** the last paragraph in the subsection with the following:

After being driven, cut off the piles at the elevation and angle shown on the plans. Ensure that the actual pile embedment into the concrete is within 2 inches (50mm) of the embedment shown in the plans.

#### 507.05

On page 301, After the first paragraph, **Add** the following:

To determine the minimum blow count for battered piles, divide the minimum blow count for vertical piles with the same ultimate bearing value by an efficiency factor (**D**) that is less than one. This will result in an increased minimum blow count for the battered piles. Compute the efficiency factor (**D**) as follows:

$$D = \frac{1 - (U \times G)}{(1 + G^2)^{0.5}}$$

Where:

- U = Coefficient of friction  
use 0.05 for double-acting air operated or diesel hammers,  
use 0.1 for single-acting air operated or diesel hammers, and  
use 0.2 for drop hammers.
- G = Amount of batter (H/V; 1/3, 1/4, etc.)

#### 507.06

On page 301, In part D., after the formula, **Change**

Where:

R= Ultimate bearing value in pounds (newtons).

#### 507.09

On page 302, **After** the fourth paragraph, **add** the following paragraph, Pile Points. When specified in the plans, select a product from the Department's approved list. Weld the pile points to the pile in accordance with AWS D1.5 or the manufacturer's written welding procedure supplied to the Engineer before the welding is performed. Submit a notarized copy of the mill test report to the Engineer.

#### 507.13

On page 303, **Change** the first sentence to:

When the Contractor elects to prebore to facilitate the pile driving operation, include the cost for preboring in the unit price bid for piles driven.

#### 508.03

On page 306, after the second paragraph in the section **Add** the following:

In forming Pier, Intermediate, or End Diaphragms for Prestressed or Post Tensioned Concrete members, do not place post installed anchors in these members. Properly brace diaphragm forms externally or use approved form tie inserts cast into these members.

**511.01**

On page 313, **Change** the first paragraph to:

This work consists of providing falsework and forming, furnishing, placing, consolidating, finishing and curing portland cement concrete. The work also includes diamond saw cutting longitudinal grooves into the surface of superstructure concrete. Construct falsework and forms as required in Item 508.

**511.06**

On page 314, **Make** the following changes:

**511.06 Concrete Test Specimens.** The Engineer will make test cylinders as follows:

A. Structures over 20-foot (6.1 m) span. A set of test cylinders from each 200 cubic yards (150 m<sup>3</sup>) of concrete, or fraction thereof that is incorporated into the work each day.

B. Structures of 20-foot (6.1 m) span or less. At least one set of test cylinders for each 50 cubic yards (35 m<sup>3</sup>) of concrete.

**511.10**

On page 315, After the first paragraph, **Add** the following:

Place and finish concrete to the lines and grades shown in the plans. Provide coverage over or around reinforcing steel as described in 509.04.

Conform to the following tolerances from plan dimensions:

Deviation from plumb for exposed surfaces	± ¾ inch (19 mm)
Vertical alignment (Deviation from a line parallel to the grade line)	± ½ inch in 20 feet (13 mm in 6 m)
Longitudinal alignment (Deviation from a line parallel to the centerline or baseline)	±½ inch in 20 feet (13 mm in 6 m)
Width dimensions of walls for exposed surfaces	±½ inch (13 mm)
Bridge Slab thickness	±¼ inch (6 mm)
Elevations of beam seats	±1/8 inch (3 mm)
Slope, Vertical Deviation from Plane	±0.2%
Slope, Horizontal Deviation from Plane	±0.4%

**Change** the first sentence of the seventh paragraph to:

Before placing concrete for backwalls above the approach slab seat with steel expansion joints, backfill the abutments to within 2-foot(0.6m) of the bridge seat elevation, erect structural steel or prestressed concrete beams and place superstructure concrete in the adjacent span.

## 511.20

On page 324 and 325, **Replace** the first 7 paragraphs of the section with the following:

**511.20 Bridge Deck Grooving.** After Class S concrete has cured, saw longitudinal grooves into the deck.

After water curing Class HP concrete and either before applying curing compound or some period after applying curing compound and before opening the bridge to traffic, saw longitudinal grooves into the deck. If sawing grooves after applying the curing compound, and concrete deck is less than 30 days old, reapply the curing compound after removing standing water, within 12 hours after sawing grooves in the deck.

The grooving of both Class S concrete and Class HP concrete shall be performed as specified below.

Use diamond blades mounted on a multi blade arbor on a self-propelled machine that was built for grooving of concrete surfaces. The groove machine shall have a depth control device that detects variations in the pavement surface and adjusts the cutting head height to maintain the specified depth of the groove. The grooving machine shall have devices to control alignment. Do not use flailing or impact type grooving equipment.

Begin and end grooves 9 to 12 inches (220 to 300 mm) from curbs, parapet toes, or deck edges, and saw grooves parallel to the bridge centerline.

Provide an experienced technician to supervise the location, alignment, layout, dimension, and grooving of the surface.

Saw grooves in a continuous pattern across the surface. Stop sawing 9 to 12 inches (220 to 300 mm) from any device in place in a bridge deck, such as scuppers or expansion joints. Stop sawing 2 inches to 2 feet from skewed expansion joints. Saw grooves in a uniform pattern spaced at 3/4 inch minus 1/4 inch or plus 0 (19 mm minus 6 mm or plus 0). Saw grooves approximately 0.15 inches (4 mm) deep and 0.10 inches (3 mm) wide.

## 512.03. E

On page 329, **Replace** the entire subsection with the following:

**E. Surface Condition.** Apply sealers only to surfaces which are dry, free from dust, dirt, oil, wax, curing compounds, efflorescence, laitance, coatings and other foreign materials. Visually inspect all surfaces before applying sealer. Remove all structurally unsound surfaces and weak sections.

Perform all concrete patching prior to surface profiling. Perform concrete patching on areas identified by the Engineer according to 519. Cure repaired areas for at least seven (7) days.

Air dry all concrete surfaces for at least ten (10) days after completion of required curing.

For accelerated cure of precast concrete, obtain the required 28 day strength and air dry the surfaces at least ten (10) days after completing accelerated cure.

**512.03. F**

On page 329, **Replace** the title of the subsection with the following:

**F. Surface Preparation and Profiling**

**512.03. F**

On page 330, **Add** the following sentence to the end of Section **F**:

Ensure that all wastes generated by the surface preparation operation are managed in accordance with 107.19.

**512.03. G**

On page 330, **Replace** the entire subsection with the following.

**G. Application and Coverage.** Apply the sealer between twelve (12) hours and 48 hours after surface preparation by water blasting methods. Apply the sealer within 48 hours after surface preparation by abrasive blasting methods. Do not apply sealer if rain is anticipated within six (6) hours after application. Clearly mark where the sealer application stops if not continuous.

**512.03**

On page 332, **Add** new subsection:

**N. Superintendent.** In addition to the requirements of 105.06, the Superintendent must successfully complete a Sealing of Concrete Surfaces pre-qualification training course offered by the Department. The course must have been completed within the past four years and an individual course certificate must have been received by the Superintendent. Present certificate to the Engineer prior to beginning the sealing of concrete surfaces work. Work will not be permitted to begin until after the Superintendent provides a valid course certificate.

**512.08**

On page 338, after the fourth paragraph of the General Section **add**:

Do not apply waterproofing fabric or membranes over attachments and hardware. Seal the discontinuities in waterproofing with Asphalt, 702.06, or hot applied joint sealer, 705.04.

**Change** the first sentence of the **Primer Coat Section** to:

Apply the primer coat at the rate of 0.10 to 0.20 gallon (0.50 to 1.00 L) of asphalt material per square yard (square meter).

On page 340, **Make** the following changes:

**Change** the first paragraph of the **Type 3 Membrane Waterproofing** subsection to:

This type of waterproofing consists of an primer coat conforming to 705.04 and a waterproofing membrane consisting of a high density asphalt mastic between two layers of polymeric fabric

conforming to 711.29. The application of this product shall follow the Manufacturer's written recommendations, which shall be provided to the project.

After the last paragraph of the **Type 3 Membrane Waterproofing** subsection, **Add** the sentence:

If asphalt pavement is to be placed directly over the water proofing membrane, first apply tack coat as specified in 407 without damaging the membrane.

#### **513.01**

On page 342, **Change** the first paragraph to:

This work consists of preparing shop drawings; furnishing and fabricating structural steel members, nondestructive testing, fabricator performed quality control, documentation, cleaning, shop coating, and erecting structural steel and other structural metals. Prepare shop drawings and erect structural steel according to Item 501 and the additional requirements below. Shop painting shall conform to Item 514. The work also includes any work to move existing steel structures to the plan location, making necessary repairs and alterations, and connecting or joining new and old construction.

#### **513.04**

On page 343, **Delete** the following two sentences: Item 501 includes general information pertaining to structural steel fabrication and erection. Shop painting shall conform to Item 514.

#### **513.07**

On page 345, **Change** the first sentence in the paragraph to:

After providing the notice and schedule required by 513.04 and at least 3 days after the Department receives shop drawings, conduct a pre-fabrication meeting at the fabricator's facilities, or another location agreed to by all parties.

#### **513.22**

On page 355, In the third paragraph, **Add**:

For galvanized structures with welded shear connectors, remove the galvanic coating by grinding at each connector location prior to welding.

#### **514.02**

On page 362, **Change** the last sentence at the end of the second paragraph to:

The Contractor is responsible for ensuring the compatibility of the intermediate and finish coats with the prime coat.

#### **514.04. A**

On page 363, **Change** the first sentence of the fifth paragraph to:

The quality control specialist will be immediately removed from their duties as the quality control specialist and disqualified from future duties as the quality control specialist if any quality control failure occurs.

**514.04. B**

On page 365, after the Table, **Add** the following:

Provide signed documentation of inspection, testing, conditions and material information to the Engineer on the following ODOT forms, or forms with the equivalent information.

Dry Film Thickness Readings for QCP #5 Prime, #8 Intermediate, and #10 Finish Coats..CA-S-2

QCS Inspection Documentation Sign Off for QCP’s.....CA-S-7

QCS & Visual Standards Information for QCP #3 Abrasive Blasting Test Section.....CA-S-11

QCP #1 Solvent Cleaning & QCP #2 Grinding Flange Edges.....CA-S-12

QCP #3 Abrasive Blasting.....CA-S-13

QCP #4 Disposal of Hazardous/Non-Hazardous Waste.....CA-S-14

QCP #5 Prime Coat Application.....CA-S-15

QCP #6 Grinding Fins, Tears and Slivers & QCP #9 Caulking.....CA-S-16

QCP #8 Intermediate & QCP #10 Finish Coat Application.....CA-S-17

**514.05**

On page 365, In the first paragraph, **Replace** the third sentence with the following:

The Contractor and fabricator shall maintain all testing equipment in good working order, and provide documentation or certification of calibration from the manufacturer.

**514.05. D**

On page 366, **Replace** the subsection with the following:

One Sling Psychrometer including Psychrometric tables, (or comparable electronic or digital equipment for the measurement of dew point, accurate within 2 °F (1 °C) and within 1% relative humidity).

**514.10**



On page 367, **Change** the title of section **514.10 Inspection Access** to **514.10 Inspection Access and Lighting**

In the first paragraph, after the first sentence, **add** the two sentences:

Provide artificial lighting as necessary to supplement natural light with a minimum of 30 foot candles (325 LUX) at the surface of the steel for inspection, cleaning and painting. Prevent glare that interferes with traffic, workers and inspection.

#### **514.13. C**

On page 370, **Change** the 4<sup>th</sup> paragraph to:

For field blasting, use a recyclable steel grit, or a recyclable natural mineral, low dusting abrasive. Do not use silica sands, mineral slags, and other types of non-metallic abrasives that contain more than 0.5 percent free silica, by weight, have a chlorides salts content more than 25 ppm, and contain any organic material. For shop blasting, use an abrasive that produces an angular profile. All abrasives shall provide a profile from 1.5 to 3.5 mils (40 to 90  $\mu\text{m}$ ) as determined by replica tape according to ASTM D 4417, Method C. **Adjust the abrasive size, blast hose nozzle pressure or other means in order to provide the 1.5 to 3.5 mil profile.** Clean the abrasive of paint, chips, rust, mill scale, and other foreign material after each use and before each reuse. Use equipment specifically designed for cleaning the abrasive.

#### **514.17. A**

On page 375, in the 1st paragraph, **Change** the 3rd sentence to:

**Unless otherwise shown on the plans or specified below, apply paint to provide the specified coating thickness by brush and spray methods.**

#### **514.17. C**

On page 375, In the 1st paragraph, **Change** the 1st sentence to:

**Apply a prime coat to all structural steel surfaces by brush or spray methods, including insides of holes, behind stiffener clips and contact surfaces of connection, and splice material that is to be fastened with bolts in the shop or field.**

#### **514.17.E**

On page 376, **Change** the 1st paragraph to:

**Apply the paint to produce a smooth coat. For field painting, to ensure coverage, apply wet stripe coats using brushes, daubers, small diameter rollers or sheepskins to all edges, outside corners, crevices, welds, rivets, bolts, nuts and washers in addition to the spray application of each individual coating.. Apply additional paint as necessary to produce the required coating thickness**

#### 514.17.F

On page 376, **Delete** the last sentence of the 3rd paragraph which states;  
To ensure coverage, spray all bolts and rivet heads from at least two directions or apply the paint to bolts and rivet heads using a brush.

#### 514.20

On page 379, **Replace** the paragraph that begins: “Certified test data proving...” with the following:

Certified test data proving that the excessive thickness will adequately bond to the steel when subjected to thermal expansion and contraction. The thermal expansion and contraction test shall take place over five cycles of a temperature ranges from -20° to 120 °F (-49° to 49°C). After the thermal contraction and expansion cycles have taken place, the tested system shall be subjected to pull off tests and the results compared to the results of pull off tests that have been performed on a paint system with the proper thicknesses.

Perform the adhesion tests per ASTM D 4541 Type IV. Document the preparation methods for the panels, including profile and level of cleanliness. Document the application methods, conditions and if any thinner, (percentage), was used. Test the panels according to the following:

1. Lightly sand the coating surface and aluminum dolly, and apply a quick set adhesive. Document the type of adhesive.
2. Allow adhesive to cure overnight.
3. Scribe the coating and adhesive around the dolly before testing.
4. Make a minimum of 4 trials to failure, and report the 4 trials. Reject trial if fracture occurs at the primer-substrate interface or pressure at failure is less than 400 pounds per square inch (2.8 MPa).
  - a. Describe the test specimen as substrate A, upon which successive coating layers B, C, D, etc. have been applied including the adhesive Y which secures the dolly Z to the topcoat.
  - b. Designate cohesive failures by the layers within which they occur as B, C, etc., and the percent of each.
  - c. Designate adhesive failures by the interfaces at which they occur as A/B, B/C, C/D, etc, and the percent of each.

In addition to the certified test results, the Contractor shall provide the Office of Construction Administration a written statement from the paint manufacturer stating that the excessive thickness is not detrimental.

#### 515.01

On page 383, **Change** the first paragraph to:

**515.01 Description.** This work consists of preparing shop drawings, furnishing and manufacturing prestressed concrete bridge members, testing, fabricator performed quality control, documentation, shop coating, and handling, transporting, storing, and erecting prestressed concrete bridge members. Prepare shop drawings and erect prestressed concrete bridge members, according to Item 501 and the additional requirements specified below. Shop coating shall conform to Item 512.

**515.07**

On page 385, **Change** the first sentence in the paragraph to:

At least 3 days after the Department receives shop drawings, conduct a pre-fabrication meeting at the fabricator’s facilities, or another location agreed to by all parties.

**515.15. A**

On page 388, **Revise** the subsection to the following:

A. Test data showing the mix achieves the required 28-day strength when cured by methods used for member fabrication. The strength of the concrete for the mix design approval and during production is determined using sets of two – 6” x 12” cylinders or three – 4” x 8” cylinders.

**515.19**

On page 393, in the sixth paragraph, **Delete** the following sentence:

If erection of prestressed members requires placing cranes or launching devices on previously erected spans, submit erection procedure for approval according to Item 501.

**516.04**

On page 395, **Add** the following:

Neoprene Sheeting ..... 705.13

**516.05**

At the end of the second paragraph, **Add** the following:

For Integral and Semi-Integral Abutment Expansion Joint Seals, install a 3 foot wide neoprene sheet for waterproofing of the backside of the joint between the integral backwall and the bridge seat at locations shown in the plans. Secure the neoprene sheeting to the concrete with 1 1/4" x #10 gage (length x shank diameter) galvanized button head spikes through a 1 inch outside diameter, #10 gage galvanized washer. Maximum fastener spacing is 9 inches. Use of other similar galvanized devices, which will not damage either the neoprene or the concrete, will be subject to the approval of the Engineer.

Center the neoprene strips on all joints. For horizontal joints, secure the horizontal neoprene strip by using a single line of fasteners, starting at 6 inches, +/-, from the top of the neoprene strip. For the vertical joints secure the vertical neoprene strip by using a single vertical line of fasteners, starting at 6 inches, +/-, from the vertical edge of the neoprene strip nearest to the centerline of roadway.

For vertical joints, install 2 additional fasteners at 6 inches, center to center, across the top of the neoprene strip on the same side of the vertical joint as the single vertical row of fasteners is located. The vertical neoprene strips shall completely overlap the horizontal strips. Lap lengths of the horizontal strips that are not vulcanized or adhesive bonded, shall be at least 1 foot in length, or 6 inches in length if the lap is vulcanized or adhesive bonded. No laps are acceptable in vertically installed neoprene strips. The neoprene sheeting shall be 3/32" thick general purpose, heavy-duty neoprene sheet with nylon fabric reinforcement.

### 516.07

On page 396, in the fourth paragraph, after the sentence: “Set elastomeric bearing pads directly on the concrete surface.”

**Add:** If the beams seats are sealed with an epoxy or non-epoxy sealer prior to setting the bearings, do not apply sealer to the concrete surfaces under the proposed bearing locations. If these locations are sealed, remove the sealer to the satisfaction of the Engineer prior to setting the bearings. The Department will not pay for this removal.

On page 396, in the fifth paragraph, after the sentence: “Position rockers, elastomeric bearing, and rollers so that, when the completed bridge is at 60 F (16 C), the rockers and elastomeric bearings are vertical and the rollers are centered on the base. “

**Add:** If the steel is erected at an ambient temperature higher than 80°F or lower than 40° F and the bearing shear deflection exceeds 1/6 of the bearing height at 60° F (+/-) 10° F, raise the beams or girders to allow the elastomeric bearings to return to their undeformed shape at 60° F (+/-) 10° F.

On page 396, in the last paragraph, after the sentence: “Permanently fasten bearing devices to the abutments, steel beams, or girders after backfilling the abutments to within 2 feet (0.6m) of the top of the bridge seat. “

**Add:** Where the load plate of an elastomeric bearing is to be connected to the structure by welding, control welding so that the plate temperature at the elastomer bonded surface does not exceed 300° F as determined by use of pyrometric sticks or other temperature monitoring devices.

### 518.05

On page 400, **Replace** the entire subsection with the following:

#### **518.05 Porous Backfill.**

Place porous backfill as shown on the plans. When not shown on the plans, place backfill at least 2 feet (0.6 m) thick behind the full length of abutments, wing walls, and retaining walls. Measure the thickness of porous backfill normal to the abutment or wall face. The Contractor may leave undisturbed rock or shale within 2 feet (0.6 m) of the abutment or wall. Place 2 ft<sup>3</sup> (0.23 m<sup>3</sup>) of bagged No. 3 aggregate at each weep hole to retain the porous backfill. Compact porous backfill according to Item 603.11 D.

### 518.10

On page 401, After the first sentence, **Add:** The Department will include bagged aggregate with porous backfill for payment .

### 519.03

On page 402, **Change** the third paragraph to:

If working around reinforcing steel, avoid damaging or debonding any reinforcing steel that is uncorroded and completely embedded in sound concrete. Ensure no shattering of the concrete, beyond

the area to be patched. Adequately support reinforcement that is loose, and tie it back into place. Replace reinforcement damaged during removing concrete.

### 523.02

On page 409, **Replace** the first and second paragraph with the following:

Perform dynamic tests on a minimum of two piles. Perform signal matching analysis of the dynamic test data on at least one of the two test piles. Perform the test according to ASTM D 4945 to determine driving requirements to achieve the required ultimate bearing values for the piles to be installed in the structure.

Perform restrike tests after piles have been driven and a minimum time specified in the plans has elapsed. When performing a restrike, warm the hammer before restriking the pile by applying at least 20 blows to another pile. Each restrike consists of performing dynamic testing on two piles and performing a signal matching analysis on one of the two piles tested.

### 523.03

On page 409, **Change** the second sentence in the paragraph to:

Supply personnel with an Advanced Master, or Expert Level Certification in High Strain Dynamic Pile Testing (HSDPT) from either Foundation QA or the Pile Driving Contractors Association (PDCA) to operate this equipment.

### 523.04

On page 410, **Replace** the section with the following:

Perform the dynamic test and signal matching analysis and immediately provide the Engineer driving criteria for any piles to be driven within the next 48 hours. Within 48 hours after performing the dynamic pile test or restrike tests, supply the Engineer with a written report confirming driving requirements for piles represented by the test. Include in the report, the required blow count for:

- A. The different strokes of the ram at 6-inch (150 mm) intervals within the expected range of operation as determined by a wave equation analysis, when open ended diesel hammers and drop hammers are used.
- B. The selected bounce pressures when closed end diesel hammers are used.
- C. The operating air pressure and stroke when an air operated hammer is used.
- D. The selected output energy or stroke when a hydraulic hammer is used.

Also include in the report a minimum depth of penetration if applicable.

Submit an electronic version of the report and data files from the testing and analysis to the Office of Structural Engineering.

### 526.04

On page 419, **Replace** the entire subsection with the following:

**526.04 Placing and Sampling Concrete.** Immediately before placing concrete according to Item 511.10, thoroughly moisten the subgrade or subbase with water in the amount and manner directed by

the Engineer. The Engineer will make at least one set of test cylinders for each 50 cubic yards (35 cubic meters) of concrete.

**601**

On page 421, **Replace** Item 601 with the following:

**ITEM 601 SLOPE AND CHANNEL PROTECTION**

- 601.01 Description**
- 601.02 Materials**
- 601.03 General Construction**
- 601.04 Riprap**
- 601.05 Grouted Riprap or Rock**
- 601.06 Crushed Aggregate Slope Protection**
- 601.07 Concrete Slope Protection**
- 601.08 Dumped Rock Fill**
- 601.09 Rock Channel Protection**
- 601.10 Detention Basin, Infiltration Basin, or Water Quantity Swale Aggregate**
- 601.11 Paved Gutter**
- 601.12 Tied Concrete Block Mat**
- 601.13 Articulating Concrete Block Revetment System**
- 601.14 Method of Measurement**
- 601.15 Basis of Payment**

**601.01 Description.** This work consists of the excavation for and the construction of gutters, riprap, concrete, grouted items, tied concrete block mats, articulating concrete block revetment systems, crushed aggregate, or rock items for protecting slopes and channels.

Use removed or excavated materials in the Work when the material conforms to the specifications; if not, then recycle or dispose of the material according to 105.16 and 105.17.

**601.02 Materials.** Furnish materials conforming to:

Curing .....	451 or 705.07 Type 1
Concrete, Class C.....	499, 511
Water for grout .....	499.02
Reinforcing steel.....	509.02
Cement for grout.....	701
Structural Backfill Type 3 .....	703.11
Sand for grout. ....	703.03
Rock and Aggregate Materials .....	703.19
Brick and blocks .....	704
Preformed expansion joint .....	705.03
Joint sealer .....	705.04
Filter fabric, Type B .....	712.09

Provide steel filter fabric securing pins with washers for securing filter fabric. Use a steel washer having an outside diameter not less than 1 1/2 inches (38 mm). Use securing pins at least 18 inches (0.5

m) long and at least 3/16 inch (5 mm) in diameter that are pointed at one end and fabricated with a head to retain the steel washer.

Ensure tied concrete block mats and articulating concrete block revetment systems are held together by galvanized steel wire, HDPE mesh, stainless steel wire, or any material that has a service life of 75 years or more as approved by the Office of Hydraulic Engineering.

**601.03 General Construction.** Cure gutters, concrete slope protection, and grouted riprap according to Item 451, except apply all the membrane cures at the rate of not less than 1 gallon per 200 square feet (1 L/5 m<sup>2</sup>) of surface.

Mix and place all concrete according to Item 511. Finish to produce a sandy texture.

**601.04 Riprap.** Construct riprap according to one of the following four alternatives unless specifically itemized in the Contract. The Contractor may elect to use a different alternative at each location on the project.

**A. Provide Flat Stones or Broken Concrete.** Ensure that individual pieces are roughly rectangular in cross-section with a minimum volume of 1/3 cubic foot (0.01 m<sup>3</sup>) and a minimum thickness of 3 inches (75 mm). Place individual pieces by hand in courses and so that the pieces overlap the joints in the course below. Place riprap with the flat surfaces roughly perpendicular to the slope and in contact with the courses immediately below and above. Fill spaces between larger pieces with spalls that are rammed into place to present an even and tight surface, pleasing in appearance and varying not more than 3 inches (75 mm) from that shown on the plans. When required by the plans, fill riprap with grout. Compact the backing as riprap construction progresses. Ensure that the thickness of the riprap, measured perpendicular to the slope, is not flatter than 9 inches (230 mm) and averages not flatter than 12 inches (0.3 m).

Approved manufacturers are on file with the office of Materials Management. For approval, manufacturers will submit product information to the Office of Hydraulic Engineering.

**B. Provide Articulating Concrete Block Revetment System.** Ensure articulating concrete block revetment conform to 712.1-3. Install according to the manufacturer's recommendations.

**C. Construct Concrete Riprap Using Cloth or Burlap Bags.** After soaking the bags with water, fill them with approximately 2/3 cubic foot (0.02 m<sup>3</sup>) of concrete and place the bags by hand to the limits on the plans. Provide bags with approximate dimensions of 6 × 12 × 16 inches (150 × 300 × 400 mm).

Stack the bags on the slope to ensure a minimum of 1/3 cubic yard (0.3 m<sup>3</sup>) of concrete for each square yard (square meter) of riprap in place as measured along the slope.

Tie the open end of each bag and fold the tie under the bag. Place each tie or fold so that it overlaps the joint in the lower layer. After placing, pierce each bag in the lower layer to allow some concrete to flow out and bond with the top overlying layer.

Stretchers are bags placed with the long length parallel to the streambed flow. Headers are bags placed with the long length perpendicular to the streambed flow. A layer runs horizontally at approximately the same elevation perpendicular to the protected slope grade.

If the slope is 1.5:1 or steeper, make the bottom layer with two bags laid as stretchers. Place the next overlying layer as a header. Place the rest of the overlying upslope layers as stretchers.

If the slope is flatter than 1.5:1, make the bottom layer with two bags as stretchers. Place all remaining layers as headers.

Push or drive No. 4 (No. 13M) reinforcing bars approximately 18 inches (0.5 m) long and spaced approximately 12 inches (0.3 m) apart through the top three layers. When required by the plans, fill voids with grout.

**D. Construct a 6-inch (150 mm) Reinforced Concrete Slab.** Reinforce the slab approximately midway between the top and bottom of the slab with steel bars or fabricated reinforcement equivalent to No. 3 (No. 10M) round bars, spaced at 24-inch (0.6 m) centers in two directions, or wire fabric according to the standard construction drawing for pavement reinforcing. The Contractor may use formed construction joints. Extend reinforcement through all formed construction joints. Include cutoff walls as shown on the plans in the unit price bid for reinforced concrete slab.

**601.05 Grouted Riprap or Rock.** When specified, grout in place riprap cloth bags, riprap burlap bags, flat stones, precast blocks, broken concrete, rock, or tied concrete block mats. Make the grout by mixing one part portland cement, three parts sand, and enough water to allow the grout to flow into the joints and cracks.

Prepare the grout in a mixing machine of an approved design and equipped with an accurate graduated regulating device for controlling the amount of water in each batch. Accurately measure and proportion the quantities for each batch, and ensure that the quantities are exactly sufficient for one or more sacks of cement.

Immediately before applying grout, thoroughly wet all surfaces. Place the grout, filling all the joints or voids. Do not add water to the grout after it has been placed.

**601.06 Crushed Aggregate Slope Protection.** Furnish material conforming to 703.19. Place the material on the filter fabric so that the surface is flush with the embankment slopes. Use a thickness of 12 inches (300 mm) unless a different thickness is specified. Extend the aggregate from the face of the abutments down to the toe of the slope or to normal water elevation, and a minimum of 3 feet (1 m) beyond the outer edges of the superstructures or as shown on the plans.

**601.07 Concrete Slope Protection.** Construct a concrete slab, 6 inches (150 mm) thick, extending over the embankment area under a bridge from the face of the abutment down to the toe of the slope and extending a minimum of 3 feet (1 m) beyond the outer edges of the superstructure or as shown on the plans. Thicken the bottom 3 feet (1 m) of the concrete slab from 6 to 18 inches (150 to 460 mm) to provide resistance to sliding.

Where pier columns extend through the slab, place 1-inch (25 mm) preformed expansion joint material around the columns and for the full thickness of the slab.

Divide the surface into an equally spaced block grid pattern at approximately 4 to 5-foot (1.2 to 1.5 m) intervals. Make the block grid pattern with one direction horizontally at a constant elevation or as directed by the Engineer, and the other direction parallel to the superstructure centerline, skewed, or as directed by the Engineer. Saw or form the block grid pattern to make joints at a depth of not less than one-fourth the thickness of the slab and approximately 1/8 inch (3 mm) wide.

**601.08 Dumped Rock Fill.** Furnish material conforming to 703.19. Dump larger pieces at the outer face and smaller pieces in the inner surface of the protected area. Ensure a reasonably smooth and continuous surface conforming to the slope lines shown on the plans. Avoid concentration of fines and small pieces at any location in the completed dumped rock fill material. When required by the plans fill all voids with grout.

**601.09 Rock Channel Protection.** Furnish material conforming to 703.19. When specified with a filter, provide a filter consisting of filter fabric or a 6-inch (150 mm) bed of aggregate conforming to



703.19. When placing rock, exercise reasonable care to ensure that the finished surface of the protected channel conforms to the channel cross-sections shown on the plans.

If filter fabric is used, prepare the surface to receive the fabric to a relatively smooth surface, free of obstruction and debris. With the long dimension parallel to the flow direction, loosely place the fabric without wrinkles and creases. Where joints are necessary, provide a 12-inch (0.3 m) minimum overlap, with the upstream strip overlapping the downstream strip. Place securing pins with washers at a minimum distance apart of 2 feet (0.6 m) along the joints and at a minimum distance apart of 5 feet (1.5 m) everywhere else. When required by the plans fill all voids with grout.

**601.10 Detention Basin or Infiltration Basin.** For detention basin or infiltration basin aggregate, furnish material conforming to Structural Backfill Type 3 at 6 inches (150 mm) thick. Use a filter consisting of filter fabric. When placing aggregate, exercise reasonable care to ensure that the finished surface of the basin conforms to the details shown in the plans.

**601.11 Paved Gutter.** Mix and place concrete paved gutters according to Items 499 and 511 and to the dimensions and shape shown on the plans or the standard construction drawing.

When gutter constructed under this item is to be tied to an existing concrete base, pavement, or other rigid structure, match the type and location of the joints in the gutter with those in the adjoining pavement.

When gutter constructed under this item is not tied to an existing concrete base, form impressed joints using a device or bar shaped to the gutter cross-section. Make the impression before initial setting of the newly placed concrete. Remove the device or bar as soon as the concrete is in such condition to retain its shape when the bar or device is removed. Form an impressed joint that is 3/8 inch (10 mm) wide at the surface; 1/4 inch (6 mm) wide at the bottom; and a depth equal to one-third the thickness of the concrete. Edge the joints to a radius not greater than 1/4 inch (6 mm). Until the filler is placed, protect the joint from dirt or foreign matter. Fill the impressed joints in such a manner to confine the material to the joint and in no way mar the surface.

Compact the subgrade for all paved gutters according to 204.03. When required by the plans fill all voids with grout.

Approved manufacturers are on file with the Laboratory. For approval, manufacturers will submit product information to the Office of Hydraulic Engineering.

**601.12 Tied Concrete Block Mat.** When specified, use Tied Concrete Block Mat Type \_\_\_ conforming to 712.12 as shown on the plans. Place directly on the filter fabric. Install per the manufacturer's recommendation. Tied Concrete Block Mats are approved by the Office of Hydraulic Engineering. Furnish products according to the Departments Qualified Products List (QPL).

**601.13 Articulating Concrete Block Revetment System.** When specified, use Articulating Concrete Block Revetment System Type \_ conforming to 712.13 as shown on the plans. Install per the manufacturer's recommendation. Articulating Concrete Block Revetment Systems are approved by the Office of Hydraulic Engineering. Furnish products according to the Departments Qualified Products List (QPL).

**601.14 Method of Measurement.** The Department will measure Riprap, Articulating Concrete Block Revetment System, Crushed Aggregate Slope Protection, Concrete Slope Protection, and Tied Concrete Block Mats by the square yard (square meter) of the finished surface completed and accepted in place, with or without grout.

The Department will measure Dumped Rock Fill and Rock Channel Protection (with or without filter), by the cubic yard (cubic meter), completed and accepted in place according to the dimensions shown on the plans, excluding rock filter, with or without grout. The Department may determine quantities by volume in the vehicle or by a job conversion weight of acceptable material delivered.

The Department will measure Paved Gutter by the foot (meter) completed and accepted in place.

**601.15 Basis of Payment.** The Department will specify with grout in the pay item description when required. When the pay item calls out Tied Concrete Block Mat or Articulating Concrete Block Revetment System, include filter fabric material and installation in the price.

The Department will pay for accepted quantities at the contract prices as follows:

Item	Unit	Description
601	Square Yard (Square Meter)	Riprap
601	Square Yard (Square Meter)	Crushed Aggregate Slope Protection
601	Square Yard (Square Meter)	Concrete Slope Protection
601	Square Yard (Square Meter)	Tied Concrete Block Mat, Type _ _
601	Cubic Yard (Cubic Meter)	Articulating Concrete Block Revetment System, Type ___
601	Cubic Yard (Cubic Meter)	Dumped Rock Fill, Type ___
601	Cubic Yard (Cubic Meter)	Rock Channel Protection, Type ___ with Filter
601	Cubic Yard (Cubic Meter)	Rock Channel Protection, Type ___ without Filter
601	Cubic Yard (Cubic Meter)	Rock Channel Protection, Type ___ with Aggregate Filter
601	Cubic Yard (Cubic Meter)	Detention Basin Aggregate
601	Cubic Yard (Cubic Meter)	Infiltration Basin Aggregate
601	Foot (Meter)	Paved Gutter

**602.03. E**

On page 428, **Replace** the first sentence in 602.03.E with the following:

E. Pre-cast structures for slab footers, cut off walls, wingwalls, and headwalls for use with Items 706.05, 706.051, 706.52, and 706.053 must conform to the manufacturer’s pre-approved design.

**603.02**

On page 430, **Replace** the material requirement for joint wrap with the following:

Joint wrap.....ASTM C 877, Type III

On page 430, **Add** the following after “precast reinforced concrete arch sections”:

Precast reinforced concrete round sections.....706.053

On page 433, under Type F conduits, Replace the material requirement for corrugated steel conduits with the following:

Corrugated steel conduits (steep slope conduit)..... 707.05, Type C or 707.07

On pages 431 and 432, under Type B conduits and Type C conduits, Delete the material requirements for “polyvinyl chloride plastic pipe (non-perforated) ... 707.41”, and “polyvinyl chloride sanitary pipe ... 707.44”, and **Add** the following after “polyvinyl chloride ABS composite pipe”:

Polyvinyl chloride large-diameter solid wall pipe .....707.48

On page 432, under Type D conduits, **Delete** the material requirements for “polyvinyl chloride sanitary pipe ... 707.44”, and **Add** the following after “polyvinyl chloride solid wall pipe”:

Polyvinyl chloride large-diameter solid wall pipe .....707.48

On pages 432 and 433, under Type E conduits and Type F conduits, **Replace** the material requirements for “polyvinyl chloride plastic pipe (non-perforated) ... 707.41” with the following:

Smooth-wall polyvinyl chloride underdrain pipe  
(non-perforated) .....707.41

On page 433, under Type E conduits, **Delete** the material requirements for “polyvinyl chloride sanitary pipe ... 707.44”, and **Add** the following after “polyvinyl chloride ABS composite pipe”:

Polyvinyl chloride large-diameter solid wall pipe .....707.48

On page 433, under Type F conduits, **Replace** the material requirement for corrugated steel conduits with the following:

Corrugated steel conduits (steep slope conduit).....707.05, Type C or 707.07

**603.03.A**

On page 433, **Replace** 603.03.A with the following:

A. Long span structure includes all of the following material kinds: 706.05, 706.051, 706.052, 706.053, 707.15, and 707.25.

**603.04. G**

On page 434, **Replace** the first sentence of 603.04.G with the following:

If a 706.05 structure is specifically itemized or specified in the Contract, the Contractor may submit to the Department for approval a request to supply a 706.051 structure placed on precast slab bottom, a 706.052 structure placed on precast slab bottom, or a 706.053 structure placed on a precast slab bottom that is hydraulically equivalent and meets all cover requirements.

**603.04.H**

On page 435, **Replace** 603.04.H with the following:

H. If 706.051, 706.052 or 706.053 is specifically itemized or specified in the Contract, on footers, the Contractor may substitute each one for the other upon structure approval for hydraulics and cover. The manufacturer shall submit shop drawings and hydraulic calculations that are signed and sealed by a Registered Engineer for review and approval before manufacture. If 706.051, 706.052 or 706.053 is specifically itemized or specified in the Contract, on pedestal walls, the Contractor may substitute each one for the other upon structure approval for hydraulics, cover and pedestal wall design. 706.051, 706.052 and 706.053 require different pedestal wall designs.

#### **603.04.I**

On page 435, **Replace** 603.04.I with the following:

I. For 706.051, 706.052 and 706.053 provide shop drawings that are signed and sealed by a Registered Engineer. The manufacturer shall submit shop drawings to the Department for review and approval before manufacture..

#### **603.06**

On page 436, **Replace** the second paragraph of 603.06 with the following:

Use Type 1 bedding for 706.05, or 706.051, 706.052, and 706.053 on slab bottoms. Also use Type 1 bedding for 707.03, 707.15, and 707.25 on corrugated invert plates.

#### **603.07**

On page 437, **Replace** the third full paragraph on the page to the sixth paragraph with the following:

Set the 706.051 units on the concrete footing shown on the plans. Unless otherwise shown on the plans, provide a 3-inch (75 mm) deep keyway centered on the precast leg. The width of the keyway shall be 6 inches (150 mm) greater than the thickness of the precast leg. Place the units in a 1/2-inch (13 mm) bed of mortar. If proper line and grade of the structure cannot be maintained on the bed of mortar, set the units on 5 × 5-inch (125 × 125 mm) masonite or steel shims. Fill the entire keyway joint with mortar.

Set the 706.052 units on the concrete footing shown on the plans. Unless otherwise shown on the plans, provide a 3-inch (75 mm) deep keyway centered on the precast leg. The width of the keyway shall be 6 inches (150 mm) greater than the thickness of the precast leg. Place the units on 5 × 5-inch (125 × 125 mm) masonite or steel shims to provide a minimum 1/2-inch (13 mm) gap between the footing and bottom of the unit's bottom leg. Fill the entire keyway joint with mortar.

Set the 706.053 arches on the concrete footing shown on the plans. Unless otherwise shown on the plans, provide an 8-inch (200 mm) deep keyway for spans up to 24 feet (7.3 m) and a 10-inch (250 mm) deep keyway for all spans greater than 24 feet (7.3 m). Center the keyway on the precast arch base. The width of the keyway must be 8 inches (200 mm) greater than the thickness of the precast arch base. For non-vertical leg arches set on pedestal walls, a one-sided keyway is acceptable if the required pedestal wall design thickness is not sufficient for a full keyway. Place masonite or steel shims to provide a minimum of 1.5-inch (38 mm) gap between the footing and the bottom of the precast arch base. Fill the entire keyway joint with mortar. Provide 5000 psi (34.5 MPa) mortar. For

arches that gain structural continuity by a cast-in-place closure at the project site, provide concrete with the same compressive strength as the precast arch.

If reinforced concrete pipe has elliptical reinforcing, the top and bottom of the pipe are clearly marked on the pipe. Handle and place reinforced concrete pipe with elliptical reinforcement and reinforced concrete horizontal elliptical pipe with single cage reinforcement with the reinforcement markings along a vertical plane as marked on the pipe. Handle and place reinforced concrete pipe with auxiliary supports (S-stirrups) with the centerline of the auxiliary support system (S-stirrups) in a vertical plane as marked on the pipe.

For 706.05, 706.051, 706.052, or 706.053 structures fill the lifting devices with mortar. Cover the exterior of the lifting devices with joint-wrap material if outside the limits of the membrane waterproofing. Use joint-wrap with a minimum width of 9 inches (225 mm). Use only lifting devices that do not require a hole through the structure.

### **603.08.B**

On page 439, **Replace** the first sentence of 603.08.B with the following:

B. Filling Joints. After placing 706.05, 706.051, 706.052, or 706.053 in their final position with a maximum joint gap of 1 inch (25.4 mm), clean the joint gap or joint of all debris and perform the following:

### **603.08.B.2**

On page 439, **Replace** 603.08.B.2 with the following:

2. For 706.051, fill the top keyway joint with 705.22. The side or leg joints shall also be filled with 705.22 for the keyway type joint or filled per 706.05 for a tongue and grove type joint. Clean the joint of all debris immediately before installing the joint filling material. Wet all surfaces of the keyway joint, but do not allow free standing water in the joint. Prepare, place, and cure the 705.22 according to the manufacturer's recommendations. Next cover the exterior joint with a 12-inch (300 mm) wide strip of joint wrap. Center the joint wrap on the joint. Use a continuous length of joint wrap sufficient to extend from the bottom of the vertical face on one side to the bottom vertical face on the other side. Apply membrane waterproofing to the precast sections after they are installed.

### **603.08.B.3**

On page 439, **Replace** 603.08.B.3 with the following:

3. For 706.052 and 706.053, install a  $7/8 \times 1\ 3/8$ -inch (24 × 34 mm) 706.14 joint filler along the outside joint chamfer. Use a continuous length of joint filler sufficient to extend from the bottom of the vertical face on one side to the bottom vertical face on the other side. Before installing the joint filler, prime the joint chamfer with a primer according to manufacturer's recommendations. For 706.052 and 706.053, cover all exterior joints with a 12-inch (300 mm) wide strip of joint wrap centered on the joint. Use a continuous length of joint wrap sufficient to extend from the bottom of the vertical face on one side of the structure to the bottom vertical face on the other side. Next, apply all waterproofing as shown on the plans. Apply membrane waterproofing to the precast sections after they are installed.

### 603.08.C

On page 439, **Replace** 603.08.C with the following:

**C. Sealing Concrete Surfaces.** For 706.05, 706.051, 706.052, or 706.053 apply an approved epoxy-urethane sealer per the plans to all top surfaces not covered by membrane waterproofing. Extend the sealer 1 foot (0.3 m) below the backfill on all sides of the culvert sections including the joint.

The Engineer and Contractor will visually inspect all conduit and joints before any backfill is placed. Rejoin, re-lay, or replace all conduit out of joint tolerance, alignment, settled, or damaged.

### 603.09

On pages 439 and 440, **Replace** 603.09 with the following:

**603.09 Exterior Coatings and Membrane Waterproofing.** If shown on the plans, externally apply membrane waterproofing to 706.05, 706.051, 706.052 or 706.053. Apply the membrane waterproofing to the top surface and extend it vertically down both sides of the structure. Clean the concrete surfaces when the membrane waterproofing does not adhere to the structure. Apply the membrane waterproofing to all surfaces that will be in contact with the backfill. Apply the waterproofing according to the appropriate requirements of Item 512.

Apply waterproofing to 707.03, 707.15, 707.23, and 707.25 conduits with less than eight feet (2.4 m) of cover by one of the following methods.

A. Coat the exterior of the conduit above the limits of the bedding and within the limits of backfill. Ensure that all plate seams and bolts are thoroughly sealed. The coating material and application shall conform to AASHTO M 243. Allow asphalt mastic material to dry 48 hours and tar base material to dry 28 hours before placing the conduit backfill. Rib stiffeners do not need to be coated.

B. Construct Buried Liner Waterproofing Membrane protection in the fill per the manufacturer's recommendations. The Buried Liner Waterproofing Membrane protection will be a seamless continuous sheet placed over the conduit and extend at least 10 feet (3.3 m) outside of the paved shoulder and for the width of the trench.

### 603.10.B

On page 440, **Replace** 603.10.B with the following:

B. Long Span.

1. For all long span structures except 706.053 in cut, place and compact structural backfill over the top of the section to a minimum depth 4 feet (1.2 m) or to the subgrade elevation whichever is less and for a width of 2 feet (0.6 m) on each side of the section. Use soil, granular embankment, or structural backfill to construct the adjacent embankment and for the remaining depth to the subgrade. Construct the adjacent material according to Item 203.

2. For all long span structures except 706.053 in fill, place and compact structural backfill over the top of the section to a minimum depth of 2 feet (0.6 m) or to the subgrade elevation whichever is less and for a width of 2 feet (0.6 m) on each side of the section. Use soil, granular embankment, or

structural backfill to construct the adjacent embankment and for the remaining depth to the subgrade. Construct the adjacent material according to Item 203.

3. For 706.053 structures in cut or fill, place and compact structural backfill on both sides of the structure to the following minimum limits: vertically from the base up to a height of 75 percent of the rise; horizontally on each side of the structure to a sloping line that begins 2 feet (0.6 m) from the base of the structure and slopes up and away from the structure at a 1H:1V slope (45 degree angle). Use soil, granular embankment, or structural backfill to construct the adjacent embankment and for the remaining depth to the subgrade. Construct the adjacent material according to Item 203.

**603.10.D**

On page 441, **Change** the measurement of 12 inches (300 mm) to 6 inches (150 mm) in 603.10.D.1 and 603.10.D.2.

**603.15**

On page 444, after the pay item for precast reinforced concrete arch sections, **Add** a pay item as follows:

603 Foot (Meter) Type \_\_\_ Precast Reinforced Concrete Round Sections,  
\_\_\_' (\_\_\_ mm) Span x \_\_\_' (\_\_\_ mm) Rise

**604.06**

On page 446, **Add** the following paragraph to the beginning of 604.06:

Furnish precast structures according to the contract documents. Extra openings or excessive diameter of openings are cause for rejection of the precast structure.

**605.02**

On page 448, in 605.02.A and 605.02.B, **Replace** the material requirements for “polyvinyl chloride plastic pipe ... 707.41” with the following:

Smooth-wall polyvinyl chloride underdrain pipe .....707.41

**605.02.B**

On page 449, **Replace** the last paragraph of 605.02.B with the following:

If the specified size of the underdrains a 6-inch (150 mm) shallow pipe underdrain or base pipe underdrain and the kind of pipe material is not specifically itemized, then the Contractor may use 4-inch (100 mm) 707.31 perforated corrugated polyethylene drainage tubing.

**608.02**

On page 457 **Replace** the third line under the subsection heading with:

Concrete, Class C499 or Class RCA 499.10

**609.02**

On page 459 **Replace** the first line under the subsection heading with:

Concrete, Class C499 or Class RCA 499.10

**614.02B**

On Page 471, **Replace** the first sentence of the section with the following

When the highway under construction is being used by through traffic, including periods of suspension of the Work, maintain it so that it is smooth, free from potholes, ruts, ridges, bumps, and other pavement deficiencies. Furnish proper maintenance of traffic facilities and proper provisions for traffic control as per 105.14.

### 614.03

On page 472, **Revise** the eighth paragraph to read as follows:

Furnish warning signs in advance of channelizing devices such as barricades, drums, vertical panels, and cones.

Keep retroreflective materials clean and in good condition.

On page 472, **Add** the following paragraphs after the eighth paragraph of the section:

Equip all project motor vehicles with photo strobe lights, LED warning lights, or rotating beacons meeting Class 1 or Class 2 specifications for color and intensity as defined by the Society of Automotive Engineers (SAE).

Photo strobe lights, LED warning lights, or rotating beacons shall be horizontally visible from all directions (360 degrees) at a distance of 100 feet minimum. In order to ensure this visibility, the light shall in no way be obstructed from view by any signs or appurtenances on the vehicle.

Activate the photo strobe lights, LED warning lights, or rotating beacons and all hazard lights anytime the vehicle is entering, exiting or operating in a traveled lane at a speed less than the posted speed within the limits of the work zone or one mile of either end of the work zone.

In addition, equip all project motor vehicles and trailers having a gross vehicle weight rating of 10,000 pounds or greater, in single or combination, with conspicuity tape. Also, delineate all NCHRP 350 Category IV equipment (lighted arrows, changeable message signs, etc.) with conspicuity tape.

Conspicuity Tape: Use red and white, Type G, H, or J retroreflective sheeting that complies with 730.19, 730.192, and 730.193.

a. Apply one 2-inch wide (minimum) horizontal stripe of Type G, H, or J retroreflective sheeting to a minimum of 50 percent of the length of each side of the payload portion of the motor vehicle, rearward from the back of the cab, NCHRP 350 Category IV equipment and trailers. Space lengths of tape evenly over the length of the payload portion of the motor vehicle rearward from the back of the cab, NCHRP 350 Category IV equipment, and trailers. The centerline for each strip of retroreflective sheeting shall be between 15 inches and 60 inches above the road surface when measured with the vehicle empty or unladen, or as close as practicable to this area.

b. Outline the lower rear facing area of the motor vehicle, NCHRP 350 Category IV equipment, and trailers with 2-inch wide (minimum) horizontal stripe of Type G, H, or J retroreflective sheeting. Apply the lower horizontal markings extending the width of the motor vehicle, NCHRP 350 Category IV equipment, and trailer as close as practical to the edge of the motor vehicle, NCHRP 350 Category



IV equipment, and trailer. The centerline for each strip of lower horizontal retroreflective sheeting shall be between 15 inches and 72 inches above the road surface when measured with the vehicle empty or unladen, or as close as practicable to this area.

c. Outline the upper rear facing area with two pairs of strips of 2-inch wide (minimum) retroreflective Type G, H, or J sheeting, each pair consisting of strips 12 inches long, must be positioned horizontally and vertically on the right and left upper corners of the rear of the body of each motor vehicle or trailer, as close as practicable to the top of the motor vehicle or trailer and as far apart as practicable. If the perimeter of the body, as viewed from the rear, is not square or rectangular, the strips may be applied along the perimeter, as close as practicable to the uppermost and outermost areas of the rear of the motor vehicle or trailer on the left and right sides.

Escort transport or delivery vehicles without proper photo strobe lights, LED warning lights, or rotating beacons or conspicuity tape to and from the work zone only with the approval of the Engineer. This exception is intended for limited use at the discretion of the Engineer and will only be considered following a written request by the contractor. Otherwise, equip all project vehicles with photo strobe lights, LED warning lights, or rotating beacons and conspicuity tape as described herein.

Equip all project vehicles with photo strobe lights, LED warning lights, or rotating beacons and conspicuity tape as set forth in this section no later than October 1, 2010.

Equip all project vehicles with photo strobe lights, LED warning lights, or rotating beacons meeting Class 1 specifications for color and intensity as defined by the Society of Automotive Engineers (SAE) no later than January 1, 2012.

#### **614.07**

On page 474, **Replace** the fourth paragraph with the following:

Whenever it is necessary to divert the flow of traffic from its normal channel into another channel, clearly mark the channel for such diverted traffic with cones, drums, barricades, vertical panels, pavement markings, or arrow boards. Also use this method of marking where working adjacent to the part of the highway in use by the public.

#### **614.10**

On page 474, **Add** the following after the first sentence in the paragraph;

“Furnish and install Uninterruptible Power Supplies (UPS) conforming to 733.09. “

#### **614.11. B**

On page 475, **Add** “or Type 1A” in the first sentence of the second paragraph after “740.02 Type 1”.

#### **614.11. F.1**

On page 476, **Replace** the first paragraph with the following:

**1. Class I Markings (Full Pattern, Full Rate).** Use Class I Markings on all surfaces exposed to traffic for more than 14 days prior to application of final markings and to over-winter the

project, with the following exception: Do not use Class I Markings on a surface course if thermoplastic, spray thermoplastic or epoxy final markings are to be applied to the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied to the surface course, use Class III Markings on that course.

On page 477, **Replace** the 2<sup>nd</sup> Paragraph with the following

Apply Class I work zone markings to the standard dimensions as defined in Item 641, except as follows:

- a. Edge Lines. Class I edge lines shall be 4 inches (100 mm) in width.
  - b. Lane Lines. Class I lane lines shall be 4 inches (100 mm) in width.
- Channelizing Lines. Class I channelizing lines shall be 8 inches (200 mm) in width.

### 614.11. F.3

On page 477, **Replace** the first paragraph with the following:

**3. Class III Markings (Full Pattern, Low Rate).** Use Class III Markings on surface courses that are expected to receive thermoplastic, spray thermoplastic or epoxy final markings within 30 days. Class III Markings use a lower application rate which reduces the surface preparation needed prior to application of thermoplastic, spray thermoplastic or epoxy final markings. If Class III Markings have been applied and weather conditions are expected to prevent thermoplastic, spray thermoplastic or epoxy final markings application for 30 days or more, re-apply Class III Markings if thermoplastic, spray thermoplastic or epoxy final markings application is expected to occur within 30 days or apply Class I Markings as necessary to carry the project through the season or over the winter.

On page 477, **Replace** the 2<sup>nd</sup> Paragraph with the following

Apply Class III work zone markings to the standard dimensions as defined in Item 641 except as follows:

- a. Edge Lines. Class I edge lines shall be 4 inches (100 mm) in width.
  - b. Lane Lines. Class I lane lines shall be 4 inches (100 mm) in width.
- Channelizing Lines. Class I channelizing lines shall be 8 inches (200 mm) in width

### 614.11. G.1.a

On page 477, **Replace** the entire section with the following;

**“Removal Methods.** Remove the markings so that less than 5% of the line remains visible. Repair damage to the pavement that results in the removal of more than 1/8 inch of pavement thickness. Use sand, shot, or water blasting to remove markings on all asphalt or concrete pavement surfaces. Use only sand, shot, or water blasting for removal of all pavement markings in preparation for placing Item 422 Chip Seal or Item 421 Microsurfacing. A grinder may only be used to remove markings on temporary pavement or pavement that will be covered or removed prior to project

completion (e.g., intermediate asphalt course). When a grinder drum is mounted to a skid steer loader, the drum must be able to accommodate a minimum of 150 teeth.”

#### **614.11.H.1**

On page 478, **Replace** the first paragraph with the following:

**1. No Passing Zones.** When existing permanent no-passing-zone markings are removed or obliterated as the result of a construction operation (pavement grinding, asphalt concrete pavement overlays, etc.) and the section of pavement continues to be used by the traveling public, place Class I Center Line Markings or final center line markings as specified by the plan within 3 Calendar Days unless thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course, place Class III Center Line Markings or final center line markings as specified in the plan within 3 Calendar Days.

#### **614.11.H.2**

On page 479, **Replace** the section with the following:

**2. Passing Zones.** Sections of pavement where passing is permitted in both directions must be marked with Class I Center Line Markings or final center line markings as specified by the plan within 14 Calendar Days unless thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course, place Class III Center Line Markings or final center line markings as specified in the plan within 14 Calendar Days.

#### **614.11.H.3**

On page 479, **Replace** the first paragraph with the following:

**3. Allowable Duration of Class II Lane Lines and Gore Markings and Absence of Edge lines.** Any time existing permanent lane lines, gore markings, or edge lines have been removed or obliterated as the result of a construction operation (pavement grinding, asphalt pavement overlays, pavement widening, etc.) and the section of pavement continues to be used by the traveling public, place Class I Markings or final markings as specified by the plan within 14 Calendar Days unless thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course, place Class III Markings or final markings as specified in the plan within 14 Calendar Days.

#### **614.11.5A**

On page 480, **Replace** the first paragraph with the following;

“Furnish materials according to the Department’s Approved List.”

#### **614.14**

On Page 484, **Add** the following sentence after the first paragraph:

Identify all pavement deficiencies within the work area. Repair deficiencies as soon as possible and within 24 hours from notice of the deficiency.

#### **614.15**

On page 484, **Add** the following to the end of the second paragraph; Line quantities will be the length of the completed stripe, including gaps, intersections and other sections of pavement not normally marked. Work Zone Pavement Markings will include the layout, application and removal of the markings, when required.

On page 484, **Add** the following paragraph after the third paragraph:

The Department will measure Sign Months for Portable Changeable Message Signs by the number of months each sign is at the project or project storage yard and immediately available to the project for use. Measurement will begin when each unit is in active service and will continue until the Engineer determines the Portable Changeable Message Sign is no longer needed for the remaining duration of the project. A Sign Month will be deducted if a PCMS is not working properly for more than 24 hours in one sign month or if the contractor removes the PCMS from the project/project storage yard without the Engineer's determination that it is no longer needed for the project.

#### 614.16

On page 484, **Replace** the words "Flashing arrow panels" with "Arrow boards".

On page 485, **Replace** the word "Day" with "Sign Month" for the Description Portable Changeable Message Sign.

#### 615.01

On page 486, **Replace** entire section with the following:

**615.01 Description.** This work consists of providing, maintaining, and subsequently removing roads and appurtenances, and pavements for maintaining traffic.

#### 615.05

##### **On Page 487, Paragraph 8**

Delete the last sentence and replace with the following paragraph:

Use a PG 64-22 asphalt binder for temporary asphalt pavement. If any part of the temporary pavement will be incorporated into the project permanently, then use the contract-specified PG asphalt binder grade for the pavement course.

#### 615.10

On page 488, **Replace** entire section with the following:

**615.10 Basis of Payment.** Payment for Roads for Maintaining Traffic will not include those specified for Item 410 Traffic Compacted Surface or Item 616 Calcium Chloride.

Payment for Roads for Maintaining Traffic includes the installation, maintenance, and removal of all fencing, earthwork, guardrail, sidewalk, and all other items as necessary to provide a complete, functional, and safe installation for public use. The Department will pay for areas requiring undercut and replacement conforming to 204.04 according to 204.09.

The Department will pay for accepted quantities at the contract prices as follows:

<b>Item</b>	<b>Unit</b>	<b>Description</b>
-------------	-------------	--------------------

615	Square Yard (Square Meter)	Pavement for Maintaining Traffic, Class A
615	Square Yard (Square Meter)	Pavement for Maintaining Traffic, Class B
615	Lump Sum	Roads for Maintaining Traffic

**617.05**

On page 490, **Replace** the second paragraph in 617.05 with the following:

Where the shoulder is relatively level, compact the material using crawler-type tractors, tamping rollers, trench rollers, suitable pneumatic tire rollers, or other suitable equipment. Use a minimum of four passes with compaction equipment weighing at least 6 tons (5 metric tons). Perform the final compaction of the surface of the shoulder using a pneumatic tire roller. Where it would be unsafe to use the above compaction equipment due to the grade or width of the shoulder, use a side-mounted roller or side-mounted vibrating plate compactor that is securely attached to a tractor or other construction equipment. The side-mounted roller or side-mounted vibrating plate compactor must be able to adequately compact the aggregate while the equipment to which it is mounted remains on the paved surface. Use a minimum of four passes with the side-mounted roller and two passes with the side-mounted vibrating plate compactor. Compact the aggregate immediately after the spreading operation to prevent the loss of contained moisture and displacement of the material.

**619.02**

On page 493, **Replace** the second paragraph with:

For projects requiring moisture and density control of construction materials, provide the field office with a lockable wood or metal storage box of sufficient size to store a nuclear density gauge and provide an electrical connection for the gauge's charging. Lockable requires two independent lock systems. One that locks the box the gauge is stored in. The second locks the box to the facility the box is housed in. The acceptable second lock can be bolting the box to the office floor or wall. The selected storage area for the box will be at least 15 feet (5 meters) from any occupied work area.

On page 493, **Replace** Table 619.02-1 Field Office with:

**TABLE 619.02-1 FIELD OFFICE**

Item	Type A	Type B	Type C
Minimum ceiling height, ft (m)	7 (2.1)	7 (2.1)	7 (2.1)
Floor space, ft <sup>2</sup> (m <sup>2</sup> )	150 (14)	500 (46)	1000 (93)
Separate enclosed room, ft <sup>2</sup> (m <sup>2</sup> ) (Part of specified floor space)	0 (0)	0 (0)	100 (9)
Telephone service & telephones <sup>[1]</sup>	2	2	2
Internet service connection <sup>[5]</sup>	1	1	1
Multi-Function copier that is setup for scanning, printing, faxing and copying. <sup>[2]</sup>	1, 11x17	1, 11x17	1, 11x17
Calculator with tape	1	2	3
Desk and chair set	1	3	5
Work table, 30 × 72-inch (750 × 1800 mm)	1	2	3
4-drawer, legal size, lockable metal file cabinet	---	1	2
2-drawer, metal file cabinet	1	2	2
Portable fire extinguishers <sup>[3]</sup>	1	1	2
Plan rack <sup>[4]</sup>	1	1	2
All-weather parking spaces	8	16	20

[1] For each telephone specified, provide the telephone itself, all wiring necessary to connect the phone and multi-function copier to the phone company system, and a working separate phone number for each telephone. Connect one phone to a recorded answering device. For Types B and C, provide one speakerphone.

[2] Copier must meet minimum specifications provided for each field office type. Contractor responsible for paper supplies, copier supplies, and maintenance of copier.

Type A:

Copy/Print Speed: 20 Pages Per Minute (Letter), 15 Pages Per Minute (Legal), 12 Pages Per Minute (Ledger) or higher

Duplex printing support

Automatic document feeder with 40 sheet duplexing document feeder

Copier Memory: 256 MB

Data Security Kit

Paper Capacity - 250 sheet x 2 trays, 50-sheet Bypass tray

Network Interface: 10/100Base-TX, 1000Base-TX

Analog Fax Support Included with machine

Color Scanning with following requirements:

Up to Up to 600 x 600 dpi

Scan Area up to 11" X 17"

Scanning Protocol Support - TCP/IP, SMTP, SMB, FTP, POP3, NCP

File Scan Types Supported: Single Page TIFF, JPEG, PDF, Multi- Page TIFF, PDF, and

Scanning Support for Scan-to-Email, SMB (Folder), URL, and TWAIN

Network protocol support for TCP/IP

Client and Server Print Driver Support for PCL Print Drivers

Server Operating System Support for Windows Server 2008 and Windows Server 2008 R2 (32 Bit/64 Bit)

Client Print driver support for Windows XP/Windows 7 (Both PCL/(32 Bit and 64 Bit))

Minimum print/copy resolution of 600 x 600 dpi

Type B:

Copy/Print Speed: 30 Pages Per Minute (Letter), 15 Pages Per Minute (Legal), 15 Pages Per Minute (Ledger) or higher

Duplex printing support

Automatic document feeder with 50 sheet duplexing document feeder

Copier Memory: 768 MB

Installed HDD: 40 GB

Data encryption and HDD Erase Support included with machine

Internal Stapler Support

Paper Capacity - 250 sheet x 2 trays, 50-sheet Bypass tray

Network Interface: 10/100Base-TX, 1000Base-TX

Analog Fax Support Included with machine

Color Scanning with following requirements:

Up to Up to 600 x 600 dpi

Scan Area up to 11" X 17"

Scanning Protocol Support - TCP/IP, SMTP, SMB, FTP, POP3, NCP

File Scan Types Supported: Single Page TIFF, JPEG, PDF, Multi- Page TIFF, PDF, and OCR PDF

Scanning Support for Scan-to-Email, HDD, SMB (Folder), URL, and TWAIN

Network protocol support for TCP/IP

Client and Server Print Driver Support for PCL Print Drivers

Server Operating System Support for Windows Server 2008 and Windows Server 2008 R2 (32 Bit/64 Bit)

Client Print driver support for Windows XP/Windows 7 (Both PCL/(32 Bit and 64 Bit))

Minimum print/copy resolution of 600 x 600 dpi

Secure printing with password or pin from client to copier

Type C:

Color Print/Copy/Scan

Copy/Print Speed: 30 Pages Per Minute (Letter), 15 Pages Per Minute (Legal), 15 Pages Per Minute (Ledger) or higher

Duplex printing support

Automatic document feeder with 50 sheet duplexing document feeder

Copier Memory: 1 GB

Installed HDD: 40 GB

Data encryption and HDD Erase Support included with machine

Internal Stapler Support

Paper Capacity - 250 sheet x 2 trays, 50-sheet Bypass tray

Network Interface: 10/100Base-TX, 1000Base-TX

Analog Fax Support Included with machine

Color Scanning with following requirements:

Up to Up to 600 x 600 dpi

Scan Area up to 11" X 17"

Scanning Protocol Support - TCP/IP, SMTP, SMB, FTP, POP3, NCP

File Scan Types Supported: Single Page TIFF, JPEG, PDF, Multi- Page TIFF, PDF, and OCR PDF

Scanning Support for Scan-to-Email, HDD, SMB (Folder), URL, and TWAIN

Network protocol support for TCP/IP

Client and Server Print Driver Support for PCL Print Drivers

Server Operating System Support for Windows Server 2008 and Windows Server 2008 R2 (32 Bit/64 Bit)

Client Print driver support for Windows XP/Windows 7 (Both PCL/(32 Bit and 64 Bit))

Minimum print/copy resolution of 600 x 600 dpi

Secure printing with password or pin from client to copier

[3] Type 2-A:10-B:C, 5-pound (2.27 g) size

[4] Capable of handling the breakdown of 22 x 34-inch (559 x 864 mm) sized plans in to ten sections.

[5] Provide a broadband internet connection capable of minimum download speeds as follows:  
 Type A: 2 Mbps download 768 Kbps upload - Network Latency less than 50 milliseconds  
 Type B: 5 Mbps download 1Mbps upload - Network Latency less than 50 milliseconds  
 Type C: 10 Mbps download 2 Mbps upload - Network Latency less than 50 milliseconds

If speeds are not available through an individual or singular circuit, provide the highest speed available in the area and install multiple circuits to achieve the specified speeds. When multiple broadband services are available the following is the preferred order: Cable, DSL, Cellular, and Wireless Radio (Satellite Communication is not compatible with ODOT VPN connection and will not be accepted). Supply modems have the capability to be configured in Bridge Mode. If a cellular network is used, provide the cellular equipment, including software and router equipment to connect to the ODOT provided Cisco ASA 5505 firewall. Supply ODOT with all documentation for the broadband circuit including all username/user ids, passwords and account information. Verify that the broadband internet connection is active and working as specified. ODOT IT personnel will confirm that bandwidth and network latency are compliant with the required field office specifications. All field office Internet connections are for ODOT use only.

**620.01**

On Page 494, **Delete** the words “or reflectors” from the first sentence.

On page 494, **Delete** the following from the first sentence in the paragraph;  
 “storage or “

**620.02**

On page 494, **Replace** the section with the following:

**620.02 Materials.** Furnish materials conforming to:

- Reflectors ..... 720.01
- Posts, flexible ..... 720.03
- Steel hardware ..... 730.08
- Brackets ..... 730.09
- Stainless steel hardware ..... 730.10
- Aluminum hardware ..... 730.17
- Reflective sheeting ..... 730.192, 730.193

Delineators consist of reflectors mounted on flexible posts or brackets. Reflectors are reflective sheeting adhered to either a flexible post or an aluminum plate. The colors of reflectors of each type are:

- Type C White
- Type D Yellow
- Type E Red

**620.02**

On page 494, **Add** the following sentence to the end of the section:

Delineator reflector and flexible post color shall match that of the nearest edge line.

**620.06**

On Page 495, **Delete** the second sentence in the section.

**620.07**

On Page 495, **Replace** the section with the following:

The Department will pay for accepted quantities at the contract prices as follows:



Item	Unit	Description
620	Each	Delineator
620	Each	Removal of Delineator

**621.02**

On page 496, **Replace** the entire section with the following:

**621.02 Materials.** Furnish materials conforming to :

Castings.....	721.01
Prismatic Retroreflectors and Adhesive .....	721.02
Casting adhesive .....	721.03

**621.05**

On page 498, **Delete** the following from the third paragraph;  
 “an ODOT approved”

**622.02**

On page 499, **Replace** the first line of the paragraph with the following

**622.02 Materials.** Furnish materials conforming to:

Concrete, Class C 499 or Class RCA 499.10

**626.02**

On Page 518, **Replace** the second paragraph with the following:

Barrier Reflectors.....726.01

**626.02**

On page 518, **Replace** the first sentence in the first paragraph with;  
 “Furnish materials conforming to”

**630.04**

On page 524 in Figure 1 Alternate design, **Replace** “08 09 10 11 12” with “10 11 12 13 14”.

**630.06.B**

On page 526, **Delete** the second sentence of the first paragraph. “Furnish supports that include brackets for attaching disconnect switch, and pipe couplings for sign wiring.”

On page 526, **Delete** the last sentence of the third paragraph. “Furnish luminaire support assemblies for lighted signs.”

**630.07**

On page 527, **Add** the following to the end of the section

Mount overhead signs so that the bottom of the signs are in a level position regardless of the sag of supporting messenger wire, mast arm rise, chord member or overpass slope

### **630.14**

On page 529, in the second paragraph, **Add** the word “raceways” after the word “backfilling”.

On page 529, in the second paragraph, **Add** the following sentence at the end of the paragraph:

Sealing of the 10 foot foundation section of concrete barrier shall be paid for under Item 512 when specified in the plans.

On page 530, in the tenth paragraph **Delete** "luminaire support assemblies when required,".

On page 530, in the eleventh paragraph **Delete** "luminaire support assemblies when required,".

### **631.03**

On page 533, in the materials list **Delete** "Mercury vapor".

### **631.06**

On page 535, **Add** “screened” before “1/4 inch” in the third sentence of the second paragraph.

### **631.09**

On page 535, **Replace** the fourth paragraph with the following: Furnish school speed limit sign assemblies that conform to the Contract Documents. School speed limit sign assemblies consist of a reflectorized SCHOOL (S4-3P) plaque, SPEED LIMIT 20 (R2-1) sign and DURING RESTRICTED HOURS (S4-H5P) plaque fitted with a pair of flashing beacons arranged above and below.

### **632.15**

On page 543, **Add** the following paragraph at the end of the section:

Do not erect signal supports unless at least one signal, sign or damping device approved by the Engineer is installed within 24 hours.

### **632.16**

On page 543, **Delete** the fourth paragraph at the end of the section:

### **632.225**

On page 544, **Replace** the section with the following:

**632.225 Tether Wire.** Arrange tether wire with accessories to stabilize signal heads and prevent excessive swinging and twisting. Install shim washers on hanger pin adjacent to wire entry to prevent any twisting of the head on the hanger. Accessories included with tether wire include pole clamps, anchor shackles, S-hooks yielding element, thimbles, turnbuckles, guy grips, wire rope clips, lock wire, safety tie wire, and signal head tether anchors and extenders.

Adjust the tether span to be horizontal on simple spans. On all spans, install tether horizontally and tighten with turnbuckles. Bull Rings will be used at all internal corners of the tether span. Safety

ties shall be installed at all yielding (S-hook) locations to prevent the span end from dropping into the roadway if the S-hook opens. No electrical or communication cables of any kind shall be attached to the tether wire. No signs or other devices shall be suspended from or attached to the tether wire.

#### **632.29**

On page 548, in the first sentence of the fourth paragraph, **Add** the words “pole clamps” before anchor shackles.

#### **632.23**

On Page 544, **Replace** the fourth paragraph with the following:

Install signal cable between signal heads and controller cabinets. Signal cables shall not be stripped beyond a length necessary to attach individual conductors within the signal head . The jacket shall extend into the signal head enclosure. Install interconnect cable between controller cabinets of different intersections. Route signal and interconnect cable by aerial installation supported by messenger wire or within underground conduit. If specified, use aerial self-supporting integral messenger type interconnect cable with a figure “8” cross-section and include pole clamps and splice enclosures. Ground the supporting messenger wire of interconnect cable.

#### **632.30**

On page 550, **Delete** “(LED)” from the bid item descriptions for Vehicular Signal Head and Pedestrian Signal Head.

#### **641.03**

On page 573, **Replace** the fourth paragraph with the following:

Ensure that lines are sharp, well defined, and uniformly retroreflective. Apply the lines to the width specified  $\pm 1/4$  inch (6 mm). Fuzzy lines, excessive overspray, or non-uniform application are unacceptable. The Engineer will inspect lines at night to verify proper retroreflectivity. Correct pavement markings that are improperly applied, located, or reflectorized. Reapply lines applied with insufficient material quantities according to 641.11, 644.04 or 817.05. Remove improperly located lines according to 641.10, and apply new lines in the correct locations.

#### **641.08**

On page 575, **Replace** the first paragraph with the following:

Apply marking materials at the rate or thickness specified in 642.04, 643.04, 644.04, 645.03, 646.05, 647.04, or 817.05 and, except for parking lot stall markings, ensure that they are uniformly retroreflective. However, ensure that portions of parking stalls that are adjacent to street traffic are retroreflective. Pavement markings consist of the following types:

#### **641.08**

On page 576, **Replace** the last paragraph with the following:

The term long lines, when used in sections 642 through 647 and 817 includes edge lines, lane lines, center lines, and channelizing lines over 200 feet (60 m) long. The term auxiliary markings, when used in Items 642 through 647 includes channelizing lines 200 feet (60 m) or shorter, stop lines, crosswalk lines, transverse lines, diagonal lines, curb markings, island markings, symbol markings, parking lot stall markings, lane arrows, and dotted lines.

**641.08 A**

On page 576, **Replace** the entire paragraph with the following  
Place edge lines as continuous stripes using the width specified. Locate the center of the stripe 6 inches (150 mm) from the edge of the pavement.

**641.08 B**

On page 576, **Replace** the entire paragraph with the following  
Place lane lines using the width specified, as white stripes between contiguous lanes of pavement carrying traffic in the same direction. Place them as broken lines unless specified solid. Offset lane lines to the left of the longitudinal joint, if present, or the theoretical line lying between contiguous lanes, if a joint is not present. Ensure that the nearer edge of the stripe is 2 inches (50 mm) to the left of the joint or line. Do not place lane lines through intersections.

**641.08 D**

On page 576, **Replace** the entire paragraph with the following  
Place channelizing lines as continuous white stripes, using the width specified.

**641.13**

On page 577, **Replace** the first sentence with the following:

The Department will pay for accepted quantities of work performed under Items 642, 643, 644, 645, 646, 647 and 817.

**642.05**

On page 580, **Replace** the following items  
642 Mile (Kilometer) Edge Line, Type \_\_\_\_  
642 Mile (Kilometer) Lane Line, Type \_\_\_\_  
642 Foot (Meter) Channelizing Line, Type \_\_\_\_

With the following

642 Mile (Kilometer) Edge Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_  
642 Mile (Kilometer) Lane Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_  
642 Foot (Meter) Channelizing Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_

**643.05**

On page 582, **Replace** the following items

643 Mile (Kilometer) Edge Line,  
643 Mile (Kilometer) Lane Line,

643 Foot (Meter) Channelizing Line,

With the following

- 643 Mile (Kilometer) Edge Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 643 Mile (Kilometer) Lane Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 643 Foot (Meter) Channelizing Line, \_\_\_\_ inch (\_\_\_\_ mm),

**644.04**

On page 585, **Replace** the following table

125 Mil Thickness	Line Width (inch)			
	4	8	12	24
	<b>Pounds per Mile of Line</b>			
Solid Line	2340	4680	7020	14040
Broken Line	585	1170	1755	3510
Dotted Line	585	1170	1755	3510
Areas, Symbols, , Words	133 pounds per 100 square feet			

3.2 mm Thickness	Line Width (mm)			
	100	200	300	600
	<b>Kilograms per Kilometer of Line</b>			
Solid Line	650	1300	1950	3900
Broken Line	165	325	490	975
Dotted Line	165	325	490	975
Areas, Symbols, Words	6.5 kg/m <sup>2</sup>			

With the following

125 Mil Thickness	Line Width (inch)				
	4	6	8	12	24
	<b>Pounds per Mile of Line</b>				
Solid Line	2340	3510	4680	7020	14040
Broken Line	585	878	1170	1755	3510
Dotted Line	585	878	1170	1755	3510
Areas, Symbols, Words	133 pounds per 100 square feet				

3.2 mm Thickness	Line Width (mm)				
	100	150	200	300	600
	<b>Kilograms per Kilometer of Line</b>				
Solid Line	650	975	1300	1950	3900
Broken Line	165	245	325	490	975
Dotted Line	165	245	325	490	975
Areas, Symbols, Words	6.5 kg/m <sup>2</sup>				

**644.06**

On page 586, **Replace** the following items

- 644 Mile (Kilometer) Edge Line,

- 644 Mile (Kilometer) Lane Line,
- 644 Mile (Kilometer) Channelizing Line,

With the following

- 644 Mile (Kilometer) Edge Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 644 Mile (Kilometer) Lane Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 644 Mile (Kilometer) Channelizing Line, \_\_\_\_ inch (\_\_\_\_ mm),

**645.05**

On page 588, **Replace** the following items

- 645 Mile (Kilometer) Edge Line, Type \_\_\_\_
- 645 Mile (Kilometer) Lane Line, Type \_\_\_\_
- 645 Foot (Meter) Channelizing Line, Type \_\_\_\_

With the following

- 645 Mile (Kilometer) Edge Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_
- 645 Mile (Kilometer) Lane Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_
- 645 Foot (Meter) Channelizing Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_

**646.06**

On page 593, **Replace** the following items

- 646 Mile (Kilometer) Edge Line,
- 646 Mile (Kilometer) Lane Line,
- 646 Foot (Meter) Channelizing Line,
- 646 Foot Dotted Line,

With the following

- 646 Mile (Kilometer) Edge Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 646 Mile (Kilometer) Lane Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 646 Foot (Meter) Channelizing Line, \_\_\_\_ inch (\_\_\_\_ mm),
- 646 Foot Dotted Line, \_\_\_\_ inch (\_\_\_\_ mm),

**647.05**

On page 595, **Replace** the following item

- 647 Foot (Meter) Channelizing Line, Type \_\_\_\_

With the following

- 647 Foot (Meter) Channelizing Line, \_\_\_\_ inch (\_\_\_\_ mm), Type \_\_\_\_

**659.25,**

On pages 614 and 615, **Replace** the first and second paragraphs in 659.25 with the following paragraphs:

**659.25 Basis of Payment.** The Department will pay the plan quantity for compacted topsoil. The Department will not adjust topsoil quantities when the volume between two consecutive cross-

sections differs by less than 5 percent from the plan quantity, unless the difference between the actual quantity and plan quantity is greater than 1000 cubic yards (1000 m<sup>3</sup>). For quantity differences greater than 5 percent or greater than 1000 cubic yards (1000 m<sup>3</sup>), submit supporting documentation to the Engineer.

The Department will pay the plan quantity for Seeding and Mulching. The Department will not adjust Seeding and Mulching quantities when the area between two consecutive cross-sections differs by less than 5 percent from the plan quantity, unless the difference between the actual quantity and plan quantity is greater than 20,000 square yards (20,000 m<sup>2</sup>) for all Seeding and Mulching pay items, combined. For quantity differences greater than 5 percent or greater than 20,000 square yards (20,000 m<sup>2</sup>), submit supporting documentation to the Engineer.

**671.03.A**

On page 626, **Delete** references to Type D erosion control mat.

**671.03.C**

On page 627, **Delete** 671.03.C, Type H.

**700**

On page 630, **Add** a section for **499**:

499	Various Concrete Items	A sample for concrete strength testing consists of a set of three 4" x 8" cylinders when the maximum nominal aggregate is 1 inch or less. For concrete with maximum nominal aggregate sizes greater than 1 inch, a sample consists of a set of two 6" x 12" cylinders.	Within 24 to 48 hours after sampling, ship cylinders to Laboratory with required documentation.
-----	------------------------	--	---

On page 630, **Make** the following changes to **511**:

511	Concrete for Structures	Make one set of cylinders for spans over 20 ft each day, each 200 yd <sup>3</sup> . For spans 20 ft span and under, make one set of cylinders each 50 yd <sup>3</sup> or less. Document in CMS. Field or Standard Cure according to ACI/ODOT specifications.	Within 24 to 48 hours after sampling, ship cylinders to Laboratory with required documentation.
-----	-------------------------	--	---

On page 631, **Make** the following changes to **526**:

526	Approach Slabs	Make one set of cylinders for each day, each 200 yd <sup>3</sup> . Document in CMS. Field or Standard Cure according to ACI/ODOT specifications.	Within 24 to 48 hours after sampling, ship cylinders to Laboratory with required documentation.
-----	----------------	--	---

On page 633 replace existing rows 1, 2, and 3 with the following:

Spec No.	Material	Material only Inspection or Sampling Requirements	Post Inspection Instructions
702.02 702.03 702.04 702.07 702.13	Cut Back Asphalt Cut Back Asphalt Emulsions Emulsified Asphalts Asphalt Emulsion MWS SBR Asphalt Emulsion	Certified material: At the refinery or source as directed by the Lab. Project and/ or Plant: One sample per each 25,000 gallons. None for less than 300 gallons.  Non-certified material: Will be sampled and approved by the Department before use.	Certified material: Submit to Lab.  Non-certified material: Submit to Lab. Do not use until approved by Lab.
702.05 702.06	Asphalt Primer Waterproofing Asphalt Waterproofing	Verify type and brand name of material is on QPL at the time of use.  Document in CMS (Trns.port SiteManager™)	If rejecting material because material non-performs or looks defective during use, notify District Testing and OMM Asphalt Cement Section.

On page 633 replace row 702.16 with the following row:

702.16	Polymer Emulsified Binder	Type A: Certified Material. At the refinery or source as directed by the Lab. Project and/ or Plant Sample per 422.10. Non-certified material: Will be sampled and approved by the Department before use.  Type B: Certified test data	Type A: Certified material: Submit to Lab. Non-certified material: Submit to Lab. Do not use until approved by Lab.
--------	---------------------------	---	--

On page 637, **Add** the following to the table:

705.13	Neoprene Sheeting	Verify type and brand name of material is on QPL at time of use.  Inspect for condition and appearance.  Document in CMS (Trns.port Site Manager™)	Notify District Testing and OMM, structural welding and metals section, if rejecting material because material non-performs or looks defective during use.
--------	-------------------	--	--



### **702.01 Asphalt Binders.**

On page 659, **Replace** the 1<sup>st</sup> and 4<sup>th</sup> paragraphs of this section with the following paragraphs respectively:

General. According to AASHTO M 320-10 Table 1 except as follows.

Materials and Manufacture. Replace the requirements of AASHTO M 320-10 Table 1 Section 5 “Materials and Manufacture” Section with the following:

### **702.01 Asphalt Binders.**

On page 660, **Replace** Item 5.7 of this section with the following:

5.7 Ensure that PG 64-22 has a Penetration (ASTM D5AASHTO T 49) of no more than 75.

### **702.05**

On page 662, **Replace** section 702.05 Asphalt Primer for Waterproofing with the following:

**702.05 Asphalt Primer for Waterproofing.** Provide asphalt primer for waterproofing according to ASTM D 41.

Furnish materials according to the Department’s Qualified Products List (QPL).

### **702.06**

On page 663, **Replace** section 702.06 Asphalt for Waterproofing with the following:

**702.06 Asphalt for Waterproofing.** Provide asphalt for waterproofing according to ASTM D 312, Type III.

Furnish materials according to the Department’s Qualified Products List (QPL).

### **702.13**

On page 663 and 664, **Replace** section 702.13 Rubberized Asphalt Emulsion with the following:

**702.13 SBR Asphalt Emulsion.** Provide material consisting of asphalt emulsion SS-1, SS-1h, CSS-1 or CSS-1h per 702.04 and Supplement 1032, blended with SBR emulsion per 702.14, to produce a residual mixture of asphalt binder and SBR solids having a composition of  $97.0 \pm 0.3$  percent asphalt binder and  $3.0 \pm 0.3$  percent SBR solids by weight.

Furnish a certification to the Engineer and signed by the contractor containing the following:

- A. The weight of SBR emulsion blended with the asphalt emulsion.
- B. The weight of asphalt emulsion blended with the SBR emulsion.
- C. The SBR emulsion manufacturer certification per 702.14.
- D. The percent of asphalt binder in the asphalt emulsion (residue by distillation).
- E. The percent of SBR solids in the SBR emulsion.
- F. The percent of SBR solids in the mixture of asphalt binder residue and SBR solids.
- G. Name of Certified asphalt emulsion producer and asphalt emulsion.

Determine the weight of the SBR emulsion to be added to a designated weight of asphalt emulsion to provide the percent of SBR solids in the mixture of asphalt residue and SBR solids using the following formula:

$$X = \frac{0.0309(B)(W)}{(A)}$$

where:

- X = pounds (kilograms) of SBR emulsion
- A = percent SBR solids in the SBR emulsion
- B = percent of asphalt residue of the asphalt emulsion
- W = pounds (kilograms) of the asphalt emulsion

For field blending, ensure the asphalt emulsion and SBR emulsion are thoroughly mixed as follows before application: Add to the distributor the asphalt emulsion and the required amount of the SBR emulsion of the appropriate SBR emulsion type (i.e. cationic or anionic). Heat and circulate the distributor contents for at least 30 minutes to ensure complete blending. Re-circulate the distributor contents for 10 minutes just prior to application. If the distributor has set for 12 hours without circulation, repeat the heating and circulating of the distributor contents for 30 minutes prior to application.

Draw samples of the mixed SBR and asphalt emulsion after mixing the materials as indicated above.

**702.14**

On page 664, **Replace** the entire section with following:

**702.14 SBR Emulsion.** Ensure the SBR emulsion is a cold polymerized Styrene Butadiene synthetic rubber (SBR) in latex form specifically compounded for use in asphalt binders and asphalt emulsions. Ensure the manufacturer of the SBR emulsion furnishes a written certification of the total SBR solids content of the SBR emulsion and actual test results showing compliance with both of the following requirements:

**A. SBR Emulsion:**

<b>Type of SBR Emulsion:</b>	<b>Anionic</b>	<b>Cationic</b>
SBR solids Styrene Butadiene Ratio	27±5 : 73±5	27±5 : 73±5
Total SBR solids, % by weight	60-72	60-72
SBR solids Residual Styrene, % by weight	0.1 max	0.1 max
Ash, % of total SBR solids by weight	3.5 max	3.5 max
pH	9-11	4-6

**B.** Combination of 3.0 – 4.0 % SBR solids with 96.0 – 97.0 % PG 64-22 meeting 702.01 by weight:

- Toughness inch-pounds (N×m), Minimum..... 133 (15)
- Tenacity, inch-pounds (N×m), Minimum.....80 (9)

**702.16 Polymer Emulsified Binder.**

On page 665, **Replace** the table and table notes in this section with the following:

**702.16 POLYMER EMULSIFIED BINDER**

<b>Emulsion (AASHTO T 59)</b>	<b>Type A (b)</b>	<b>Type B (b,c,g)</b>
Saybolt Furol Viscosity	100-550 (50 °C)	20-100 (25 °C)
Storage stability, 24 hrs., % difference, max (a)	1	1
Demulsibility, 35 ml of 0.8% Dioctyl Sodium Sulf., min	50	60
Demulsibility, 35 ml of 0.02N, CaCl <sub>2</sub> , %, min		60
Sieve test, (distilled water), %, max	0.1	0.05
Distillation to 190 °C, residue % solids (d)	68	63
Oil distillate, %, max	2	2
Distillation Residue		
Penetration, 100g, 5 sec @77 °F( 25°C) AASHTO T 49	70-100	90-150
Softening point, ° C, min AASHTO T 53	60	
Solubility in TCE, %, min ASTM D 2042 or D 5546	97.5	97.5
Elastic Recovery, 50 °F (10° C), %, min AASHTO T 301, (e),(g)	70	58
Toughness/Tenacity, 77 °F (25° C), 50 cm/min, Nm ASTM D 5801 (f)	report 16.0/ 9.0	
Ductility, 39 °F (4° C),1cm/min, min AASHTO T 51, (f)	70	

Notes:

- (a) After standing undisturbed for 24 hours, the surface will show no white, milky colored substance, but will be a smooth homogeneous color throughout.
- (b) CRS-2P, test within 20 days of project sampling. Limits for both certified source and project samples.
- (c) HFRS-2P, test within 20 days of project sampling.
- (d) See Supplement 1013.
- (e) Straight molds. Hold at test temperature for 90 minutes. Place in ductilometer and elongate 10 cm at 5 cm/min. Hold for 5 minutes and cut. After 1 hour retract the broken ends to touch and note elongation in cm (X). Percent Recovery = ((10-X)/10) x 100.
- (f) SBR
- (g) SBS, SB

**703.01**

On page 668, **Add** the following text:

**Pre-qualified Aggregate Supplier Program (Supplement 1069).** Provide aggregate materials to the Ohio Department of Transportation from pre-qualified suppliers. The aggregate materials covered by the pre-qualified aggregate supplier program are those referenced to in the 703 section of the Construction and Material Specifications (CM&S).

**703.02 Aggregate for Portland Cement Concrete, B. Coarse Aggregate.**

On page 673, **add** the following after the last table in Item 2:

Additional requirement for ACBFS aggregate:

Sulfur as S, Max. (ASTM C114) 2.0%

**703.14**

On page 680, **Replace** 703.14 with the following:

**703.14 Non Pavement Open-Hearth, Electric Arc Furnace, and Basic Oxygen**

**Furnace Steel Slag Aggregate Use.** Provide steel slag according to the following requirements.

**1. Non-confined Applications.** When using OH, EAF, and BOF slag in applications

where the steel slag will not be confined, ensure that the slag meets the requirements in 703.14.A (deleterious substances and crushing), and in 703.14.B (aging and stockpiling requirements).

Recycled steel slag from Department or non-Department projects may be used in applications where the recycled steel slag will not be confined.

**2. Confined Applications.** When using OH, EAF, and BOF slag in applications where the steel slag will be confined, ensure the steel slag meets all requirements of 703.14. The use of recycled steel slag from Department or non-Department projects is not allowed in confined applications.

**A. Deleterious Substances (soft pieces).** Deleterious substances include soft lime, lime oxide, or magnesia agglomerations or any foreign materials prone to rapid disintegration under construction processing and weathering conditions.

Furnish steel slag with less than 3 percent deleterious substances (soft pieces) by weight.

The Department will use Supplement 1029 (hand crushing of soft pieces) to determine the soft pieces. Crushing of steel slag is not allowed.

**B. Aging and Stockpiling Requirements.** Stockpile and age all steel slag as follows:

1. Grade and stockpile the material into maximum size piles of 25,000 ton (23,000 metric tons). Before and during the stockpiling operation, add water to these materials to provide a uniform moisture content not less than their absorbed moisture. Ensure that the stockpile is maintained in a moist condition during the required stockpiling period.

2. Ensure that the producer mixes the stockpile when the outside surface of the pile has crusted over. The Department will inspect the stockpile every 2 months to ensure no crusting occurs. Do not mix frozen stockpile material. Suspend the aging period when the stockpile is frozen for more than one month.

3. Ensure that this aging period is at least 6 months in duration and starts over if any new material is added to the pile during the aging period.

**C. Identification of Steel Slag.** Clear, definitive, and undisputable identification of the proposed material being steel slag is required.

The producer will show the Department evidence that the material supplied is steel slag.

This information will consist of, but is not limited to, the following:

1. Steel producer.
2. Production dates.
3. Production rates.
4. Stockpiling dates.
5. Type of steel furnace(s).
6. All known Department and non-Department projects where the material was previously used.

This identification of steel slag and the source may be supplemented by other information approved by the Department or by using 10 years of good performance data. Ensure that the producer submits to the Department projects where the steel slag has been used without expansion or tufa problems. The Department will review the above projects as part of the identification approval process.

**D. Tufa Performance Verification of Steel Slag.** Tufa is a precipitate form of calcium carbonate that can clog up the underdrain systems. Some steel slag sources clog up underdrain systems and some do not. Tufa performance verification is based on field performance and Department's inspection of the underdrain systems.

Tufa performance verification is required.

Ensure that the producer submits past projects that are at least 10 years old that used the proposed steel slag source to the Department. The Department may consider projects that are less than 10 years old for tufa performance verification if it can be determined by the Department that the age of the steel slag incorporated in the project was 10 years old or greater. Ensure the producer supplies the Department with construction plans with the underdrains and underdrain outlets marked on the plans, or other suitable method, approved by the Department, showing the underdrain system. Ensure the producer marks the underdrain outlets in the field for inspection. The Department will inspect the underdrain systems for tufa deposits. If tufa deposits are found in the outlets or in the underdrain system, the Department will reject the steel slag source.

**E. Expansion Testing of Steel Slag.** After the aging and stockpiling requirements are met, expansion testing is required for steel slag.

Perform expansion testing according to Pennsylvania Department of Transportation PTM No. 130, the ODOT equivalent to this test or expansion testing acceptable to the Department.

Ensure that the producer hires an independent AASHTO accredited and Department approved laboratory to perform at least half of the expansion testing. At the producer's option, up to half of the required expansion testing may be performed by the producer's laboratory. The Laboratory will observe the expansion testing and approve each independent and producer laboratory.

Perform expansion testing for every 2500 tons (2300 metric tons) or fraction thereof of the material stockpiled in accordance with 703.14.B. For steel slag less than 10 years old, retain a split portion of the expansion sample. Reduce the split sample to 5 lbs (2500 g) and test for total percent MgO by X-Ray fluorescence and total percent periclase (hard burned MgO) by X-Ray diffraction.

The maximum allowable total expansion for each test is less than 0.50 percent. If any one test fails in the stockpile, the Department will reject the entire stockpile.

When sampling for expansion, ensure that the producer notifies the Department at least 48 hours before the sampling. The Department will verify that the sample came from the correct stockpile and take independent split samples, if required.

Submit the expansion test data and a suitably presented summary of the expansion test data to the Department for approval. Submit X-Ray fluorescence and X-Ray diffraction data to the Department. The Department reserves the right to perform independent testing to verify the laboratory results at any time.

The Department expansion test data takes precedence over the producer or independent laboratory expansion testing results in the event of a conflict. The Department will make the final determination on all conflicting data.

If the material fails the expansion testing, then stockpile the material for a minimum of 2 additional months from the date of last sampling and retest for expansion. Only materials that pass the expansion test are approved for use.

### **703.16**

On pages 682 and 683, **Replace** the paragraph that begins "Furnish OH, EAF, and BOF slag ..." and the paragraphs numbered 1 and 2 that follow with the following text:

Furnish steel slag according to 703.14.

When using steel slag, RPCC, or RACP, completely blend it with at least 30 percent natural soil or natural granular material.

### **703.17**

On pages 684 and 685, **Replace** the words "OH slag" with "steel slag" in 703.17 (six replacements).

**705.13**

On page 691, **Add** the following:

**705.13 Neoprene sheeting.** Provide material conforming to the following:

Test Description	Specification	Requirement
Thickness (Inches)	ASTM D751	0.094 +/- 0.01
Breaking Strength, Grab (lbs.)	ASTM D751	700 x 700 (Long. X Trans.)
Adhesive Strip, 1” wide x 2” long (lbs.)	ASTM D751	9
Burst Strength (psi)	ASTM D751	1400
Heat Aging, 70 hr., 212°F, 180° bend without cracking	ASTM D2136	No cracking of coating
Low temperature brittleness, 1 hr., -40°F, bend around ¼” mandrel	ASTM D2136	No cracking of coating

Furnish material according to the Department’s Qualified Products List (QPL).

**706.051**

On page 715, **Delete** list item 1, that begins “All structural design according to section 900 ...” and renumber the remaining list items from 2 through 10, to 1 through 9.

On page 716, **Replace** item 7.1 with the following:

7.1 Design according to *AASHTO LRFD Bridge Design Specifications*, Section 12.14. Include a future wearing surface loading of 60 psf.

**706.052**

On page 719, **Delete** list item 1, that begins “All structural design according to section 900 ...” and renumber the remaining list items from 2 through 10, to 1 through 9.

On page 719, **Replace** list item 2 that begins “For side mounted guardrail, ...” and replace it with the following:

2. The corrosion inhibitor being used, if any, and dosage rate. Dosage rate will be approved by the Laboratory.

On page 720, **Replace** item 7.1 with the following:

7.1 Design according to *AASHTO LRFD Bridge Design Specifications*, Section 12.14. Include a future wearing surface loading of 60 psf.

### **706.053**

On page 723, **Add** section 706.053 after the end of 706.052 as follows:

**706.053 Precast Reinforced Concrete Round Sections.** Provide precast reinforced concrete elliptical and circular arch sections according to ASTM C 1504, with the following modifications:

This item shall consist of manufacturing precast reinforced concrete elliptical and circular arch sections for culverts.

Ensure that manufacturers of precast concrete members are certified according to Supplement 1073.

5. Ensure the manufacturer submits design calculations, a structural load rating and shop drawings for review and approval by the Department. Do not produce any units until receiving approval. Submit a minimum of five copies of the drawings. Allow a minimum of 4 weeks for approval. Ensure the shop drawings include the following:

1. Load rate the structure according to the requirements of section 900 of the Department's Bridge Design Manual.
2. All material specifications.
3. Plan view.
4. Elevation views.
5. Headwall and wingwall attachment requirements.
6. Dimensions.
7. All maintenance of traffic phases.
8. Section sizes.
9. Design handling strength.

The manufacturer may modify an approved shop drawing and resubmit for approval to the Department.

Ensure that the shop drawings also include the following special information as required:

1. For top mounted guardrail, the guardrail plate and bolt locations are shown in the plan view. Holes shall be a minimum of 6 inches (150 mm) from a joint.
2. The corrosion inhibitor being used, if any, and dosage rate. Dosage rate will be approved by the Laboratory.

6.2.1 In addition, provide cement according to 701, except 701.07.

6.2.2 Only use fly ash conforming to 701.13.

6.3 Provide aggregates conforming to the quality requirements of 703.02.

6.4 Use chemical admixtures conforming to 705.12. Use a corrosion inhibitor unless epoxy coated reinforcing steel is used. An approved list of corrosion inhibiting admixtures is on file at the Laboratory. Manufacturers should recognize that the corrosion inhibitors and admixtures may have an effect on strength, entrained air content, workability, etc. of their concrete mixes. The manufacturer's choice of one of these corrosion inhibitors does not alleviate meeting all design requirements of this structure.



6.4.1 Provide air-entraining admixture conforming to 705.10.

6.5 Provide epoxy coated reinforcement according to 709.00, Grade 60 (Grade 420), or 709.14. In lieu of epoxy coated reinforcement, an approved corrosion inhibiting admixture may be added to the concrete at the approved dosage; and provide reinforcement according to 709.01, 709.03 or 709.05; Grade 60 (Grade 420) or 709.08, 709.10, 709.11 or 709.12. Provide epoxy or galvanized coated connections when connecting a precast structural unit into a cast-in-place structural component or between segments of adjacent precast structural units either manufactured as separate units or across construction joints when manufactured as one unit. Provide epoxy coated reinforcement according to 709.00 or 709.14, when these connections are designed using reinforcing steel. Provide galvanized coatings according to 711.02, when these connections are designed using connection plates, hardware or concrete inserts.

7.1 Modify the first sentence as follows: Design according to *AASHTO LRFD Bridge Design Specifications*, Section 12.14. Include a future wearing surface loading of 60 psf.

7.2 Ensure that the concrete cover dimension over the outside circumferential reinforcement is a minimum of 2 inches (50 mm). Ensure that the concrete cover dimension over the inside circumferential reinforcement is a minimum of 1 1/2 inches (38 mm). The clear distance of the end circumferential wires shall not be less than 1 inch (25 mm) nor more than 2 inches (50 mm) from the ends of the sections. Reinforcement shall be assembled utilizing single or multiple layers of welded wire fabric (three-layer maximum), or utilizing a single layer of deformed billet-steel bars. The welded wire fabric shall be composed of circumferential and longitudinal wires and shall contain sufficient longitudinal wires extending through the section to maintain the shape and position of reinforcement. Longitudinal distribution reinforcement may be welded wire fabric or deformed billet-steel bars. The ends of the longitudinal distribution reinforcement shall be not more than 3 inches (75 mm) from the ends of the sections.

Form the outside and inside circumferential reinforcing steel for the arch such that it is approximately equal to the configuration of the arch shape.

7.3 In addition, tension splices in the circumferential reinforcement shall not be made. For splices other than tension splices, the overlap shall be a minimum of 12 inches (300 mm) for welded wire fabric or deformed billet steel bars. The spacing center-to-center of the circumferential wires in a wire fabric sheet shall be not less than 2 inches (50 mm) or more than 4 inches (100 mm). For the wire fabric, the spacing center-to-center of the longitudinal wire shall not be more than 8 inches (200 mm). The spacing center-to-center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches (410 mm).

8.1 Ensure the sections are produced with butt ends. The ends of the sections shall be such that when the sections are laid together they will make a continuous line of sections with a smooth interior free of appreciable irregularities, all compatible with the permissible variations in these Specifications and section 11 of ASTM C 1504. Provide a 3/4 × 3/4 inch (19 × 19 mm) minimum chamfer on the inside and outside surface at the sections joint.

Ensure that the design of the arch in its final constructed location is structurally continuous throughout the arch unit providing for flexural, compressive and shear force transfers. For arches that gain structural continuity by a cast in place closure at the project site, provide concrete with the same compressive strength as the precast arch. In addition, the cast in place closure shall provide continuity in the transverse direction (90 degrees to the span) along the lay length of the arches.

9.1 Ensure that the aggregate, cement, and water are manufactured according to 499.06, 499.07, and 499.09.

Ensure that the temperature requirements of 511.08 and 511.15 are met.

Ensure that the proportion of Portland cement is not less than 564 pounds per cubic yard (335 kg/m<sup>3</sup>) of concrete.

If used, add the corrosion inhibitor as an aqueous solution. Consider the water in the solution as mixing water for the purpose of determining the water-cement ratio of concrete.

9.2 Cure the arch sections in the forms for the length of time required to obtain the specified minimum design handling strength as defined in the shop drawings. Test a cylinder to check each section's design handling strength. Repeat this test as often as needed. Only one cylinder passing will ensure that the design handling strength has been met. If the shop drawing shows no design handling strengths, then the minimum handling strength is assumed to be 100 percent of the design strength. Ensure that the curing then continues either in or out of the forms until the specified minimum design strength is met.

9.2.1 Steam curing is an accelerated cure by low pressure steam or radiant heat within a suitable insulated enclosure to contain the live steam or heat. The initial application of the steam or heat is from 2 to 4 hours after the final placement of concrete to allow the initial set to take place. If retarders are used, increase the waiting period to 4 to 6 hours. As an alternative, determine the actual time of initial set according to ASTM C 403. Do not start curing until the actual time to initial set has elapsed.

During the waiting period, ensure that the temperature within the curing enclosure is not less than 50 °F (10 °C).

During the initial application of live steam or radiant heat, ensure that the ambient temperature within the curing enclosure increases at an average rate not exceeding 40 °F (22 °C) per hour until the curing temperature is reached.

Ensure that the maximum curing temperature does not exceed 150 °F (65 °C). Hold the design temperature until the concrete has reached the desired design strength. Do not direct the application of live steam on the concrete forms so as to cause localized high temperatures.

9.2.2 Provide water curing according to 511.15 and 511.17, Method A.

9.2.3 Delete.

9.3 Ensure that all forms are in place until the design handling strength is met.

Holes for handling or setting are not permitted. Do not move members before the design handling strength of the concrete is reached, or shipped before the design strength of the concrete is reached. Ensure that the manufacturers have equipment necessary to handle and transport the pieces without damaging them.

10 Ensure that the hardened concrete contains a minimum of 4 percent entrained air.

10.1 Cores drilled from the section are not permitted.

10.2.1 Keep the cylinders and matching arch section together to guarantee the cylinders are matched with the corresponding culvert section; or, upon agreement by the Department, keep the cylinders at a location that will provide the same environment as the arch sections.

10.2.2 For each section of the arch structure, produce and mark at least four cylinders so that they are identifiable with the matching arch section.

10.2.3 Conform to Supplement 1073 for acceptance.

10.2.3.1 Ensure that cylinder strengths conform to Supplement 1073.

11.0 The under-run in length of a section shall not be more than 1/2 inch (13 mm).

All changes to the project resulting from the manufacturer's dimensional changes in the structure are at no charge to the Department.

Ensure that the sections are free of fractures spalls and chips. Ensure that all surfaces have a smooth and regular finish being defined as a 1/4 inch variation within 4 feet (6 mm variation within 1.2 m).

11.1 The internal dimensions shall vary not more than 1 percent from the design dimensions or more than 1 1/2 inches (38 mm), whichever is less. The haunch dimensions shall vary not more than 3/4 inch (19 mm) from the design dimension.

11.4 Ensure that the maximum variation in the position of the reinforcement is 3/8 inch (9 mm), except that the cover over the reinforcement for the external surface of the top is not less than 2 inches (50 mm). The above tolerances or cover requirements do not apply to mating surfaces at the joint.

11.5 Resubmit any change in reinforcement from the shop drawings for approval.

11.6 All interior and exterior arch surfaces shall have a smooth steel form finish.

12.0 Make repairs according to the Department's requirements. The Department will not make additional payments for arch repairs. Repairs are acceptable if, in the opinion of the Department, the repairs are sound, properly finished, and cured.

13.0 The Department may perform inspection at the plant conforming to Supplement 1073 but final inspection and acceptance will be at the project site.

Furnish precast concrete components from suppliers certified according to Supplement 1073.

14.0 Form seams and slight surface irregularities that are expected from a steel panel forming system will not be cause for rejection. In addition, hairline cracks less than 0.01 inch (0.25 mm) will not be cause for rejection.

15.1 Ensure that the location of the product marking is on the interior of the arch section 4 feet (1.2 m) above the base of the arch. Measure the 4 feet (1.2 m) from the base of the arch along the circumference of the interior surface.

Add the product marking upon removal of the forms.

The manufacturer may be required to repeat the product markings before the project is final.

#### **707.01**

On page 726, **Delete** the following sentence "7.5 Ensure either helical lock or continuous welded seams are used."

#### **707.02**

On page 729 in the table, **Change** the wall thickness for a 142×91 pipe arch from 0.169 to 0.168 inch.

**707.18, 707.19, 707.20**

On page 734, **Add** the subsections:

**707.18 Polymer Precoated, Galvanized Steel Conduits with precoated galvanized smooth steel interior liner.** Provide Type IA pipe which has a corrugated exterior with a smooth interior liner. Provide corrugated exterior conduits and smooth liners according to 707.04 with the following modifications to AASHTO M 245:

7.5.1 Provide Polymer Precoated, Galvanized Steel Conduits with precoated galvanized smooth steel interior liner pipe with plain cut helical ends. Match mark ends. Install conduit so that match marks align and are in accordance with the layout drawings supplied by the manufacturer.

Provide external flat sheet coupling bands with a minimum wall thickness (coated) of .064 inch and that are a minimum of 12" wide. Ensure coupling bands are polymer precoated, galvanized steel.

9.3 Ensure a soil tight joint by the use of a flat gasket conforming to ASTM D1056 2B1 that is a minimum of 12" wide and centered over the joint.

**707.19 Aluminum Coated Steel Conduits with precoated galvanized smooth steel interior liner.** Provide Type IA pipe which has a corrugated exterior with a smooth interior liner. Ensure that the interior liner conforms to 707.04. Ensure that the corrugated exterior conduit material conforms to AASHTO M274. Provide corrugated exterior conduits per 707.01 or 707.02 with the following modifications to AASHTO M36:

7.7.1 Provide Aluminum Coated Steel Conduits with precoated galvanized smooth steel interior liner pipe with plain cut helical ends. Match mark ends. Install conduit so that match marks align and are in accordance with the layout drawings supplied by the manufacturer.

9.2 Provide external flat sheet coupling bands with a minimum wall thickness (coated) of .064 inch and that are a minimum of 12" wide. Ensure coupling bands are aluminum coated steel.

9.5 Ensure a soil tight joint by the use of a flat gasket conforming to ASTM D1056 2B1 that is a minimum of 12" wide and centered over the joint.

**707.20 Galvanized Coated Steel Conduits with precoated galvanized smooth steel interior liner.** Provide Type IA pipe which has a corrugated exterior with a smooth interior liner. Ensure that the interior liner conforms to 707.04. Ensure that the corrugated exterior conduit material conforms to AASHTO M 218. Provide corrugated exterior conduits per 707.01 and 707.02 with the following modifications to AASHTO M36:

7.7.1 Provide Galvanized Coated Steel Conduits with precoated galvanized smooth steel interior liner pipe with plain cut helical ends. Match mark ends. Install conduit so that match marks align and are in accordance with the layout drawings supplied by the manufacturer.

9.2 Provide external flat sheet coupling bands with a minimum wall thickness (coated) of .064 inch and that are a minimum of 12" wide. Ensure coupling bands are galvanized coated steel.

9.5 Ensure a soil tight joint by the use of a flat gasket conforming to ASTM D1056 2B1 that is a minimum of 12" wide and centered over the joint.

### **707.31**

On page 738, **Replace** 707.31 with the following:

**707.31 Corrugated Polyethylene Drainage Tubing.** Provide corrugated polyethylene drainage tubing according to AASHTO M 252 Type C, and CP. If Type S or SP is specified, provide corrugated polyethylene smooth lined pipe conforming to 707.33.

Only provide materials from manufacturers certified according to Supplement 1066.

### **707.32**

On page 738, **Replace** the words "Supplemental Specification" in the second sentence in 707.32 with the word "Supplement".

### **707.33**

On pages 738 and 739, **Replace** 707.33 with the following:

**707.33 Corrugated Polyethylene Smooth Lined Pipe.** Provide smooth lined corrugated polyethylene pipe, closed profile polyethylene pipe, couplings, and fittings conforming to AASHTO M 294, with the following modifications:

Provide Type S or Type D. If perforated is specified, provide Type SP.

1.1.1 Nominal sizes of 4 to 60 inches (100 mm to 1500 mm) are included.

7.2.1 In addition, nominal diameters of 4, 6, 8, and 10 inches (100, 150, 200, and 250 mm) are included.

7.2.2 For the additional nominal diameters listed for 7.2.1 the inner liner of Type S and SP pipe, and both inner and outer walls of Type D pipe shall have the following minimum thicknesses:

<b>Diameter</b>		<b>Inner</b>	<b>Wall</b>
<b>(in)</b>	<b>(m)</b>	<b>Thickness</b>	<b>(mm)</b>
	<b>m)</b>	<b>(in)</b>	
4	100	0.020	0.50
6	150	0.020	0.50
8	200	0.025	0.60
10	250	0.025	0.60

7.4 For the additional nominal diameters listed for 7.2.1 the pipe shall have a minimum pipe stiffness at 5 percent deflection as follows:

<b>Diameter</b>		<b>Pipe Stiffness</b>	
<b>(in)</b>	<b>(m)</b>	<b>(P/I/</b>	<b>(N/m/m</b>
	<b>m)</b>	<b>I)</b>	<b>m)</b>
4	100	50	340
6	150	50	340
8	200	50	340
10	250	50	340

7.8.5 In addition, couplings for corrugated pipe shall be bell and spigot or bell-bell couplings, or clamp-on bands, for all sizes up to and including 36-inch (900 mm) diameter.

Couplings for Type D pipe shall be a bell-bell or bell and spigot coupling. The coupling may be welded on one end of each length of pipe by means of a full circumferential weld. Stitch welds are not permitted.

Couplings for pipe diameters 42 inches (1050 mm) and larger shall be bell-bell or bell and spigot.

11.1.3 In addition, pipe with diameters 4 through 10 inches (100 through 200 mm) inclusive may be marked "AASHTO M252".

12.1 Only provide materials from manufacturers certified according to Supplement 1066.

**707.41**

On page 739, **Replace** 707.41 with the following:

**707.41 Smooth-Wall Polyvinyl Chloride Underdrain Pipe.** Provide smooth wall perforated and non-perforated PVC plastic pipe and fittings according to ASTM F 758, Type PS 46 minimum, with the following modifications:

7.2.4 Perforated pipe shall have a minimum of four rows of perforations.

Furnish materials according to the Department's Qualified Products List (QPL).

**707.42**

On pages 739 and 740, **Replace** 707.42 with the following:

**707.42 Polyvinyl Chloride Corrugated Smooth Interior Pipe.** Provide PVC corrugated smooth interior pipe, joints and fittings according to ASTM F 949, with the following modifications:

5.2.4 Perforated pipe may be specified.

Furnish materials according to the Department's Qualified Products List (QPL).

**707.43**

On page 740, **Replace** 707.43 with the following:

**707.43 Polyvinyl Chloride Profile Wall Pipe.** Provide PVC open profile wall pipe and fittings with integral bell joints according to ASTM F 794, with the following modifications:

7.2.4 Only molded or fabricated fittings conforming to the requirements of Specification F 794 may be used.

7.5 Ensure a pipe stiffness of 46 or greater.

Furnish materials according to the Department's Qualified Products List (QPL).

**707.44**

On page 740, **Delete** 707.44.

**707.45**

On pages 740 and 741, **Replace** 707.45 with the following:

**707.45 Polyvinyl Chloride Solid Wall Pipe.** Provide PVC solid wall pipe and fittings with nominal size of 4, 6, 8, 10, 12 and 15-inch (100, 150, 200, 250, 300 and 375 mm) diameter according to ASTM D 3034, SDR 35, with the following modifications:

10.1 The retest provisions do not apply.

Furnish materials according to the Department's Qualified Products List (QPL).

**707.46**

On page 741, **Replace** 707.46 with the following:

**707.46 Polyvinyl Chloride Drain Waste and Vent Pipe.** Provide PVC drain, waste, and vent pipe and fittings according to ASTM D 2665, with the following modifications.

8.1 The retest provisions do not apply.

Furnish materials according to the Department's Qualified Products List (QPL).

**707.47**

On page 741, **Replace** 707.47 with the following:

**707.47 ABS and Polyvinyl Chloride Composite Pipe.** Provide ABS and PVC composite pipe and fittings according to ASTM D 2680, with the following modifications.

11.1 The retest provisions do not apply.

13.1 Furnish certified test data as defined in 101.03 to the Engineer.

**707.48**

On page 741, **Add** the following:

**707.48 Polyvinyl Chloride Large-Diameter Solid Wall Pipe.** Provide PVC solid wall pipe and fittings according to ASTM F 679, with the following modifications:

8.1 The retest provisions do not apply.

Furnish materials according to the Department's Qualified Products List (QPL).

**707.51**

On page 741, **Replace** 707.51 with the following:

**707.51 ABS Drain Waste and Vent Pipe.** Provide ABS schedule 40 plastic drain, waste and vent pipe and fittings according to ASTM D 2661, with the following modifications:

6.4.1 Perform inspection at the project site.

9.18.1 The retest provisions do not apply.

10.1 Furnish certified test data as defined in 101.03 to the Engineer.

**707.52**

On page 741, **Replace** 707.52 with the following:

**707.52 ABS Sewer Pipe.** Provide ABS sewer pipe and fittings according to ASTM D 2751, with the following modifications:

9.1 Perform inspection at the project site.

10.1 The retest provisions do not apply.

11.1 Furnish certified test data as defined in 101.03 to the Engineer.

**707.62, 707.65, and 707.69**

On page 741, **Add** sections 707.62, 707.65, and 707.69 after the end of 707.52 as follows:

**707.62 Polypropylene Corrugated Single Wall Pipe.** Provide polypropylene corrugated single wall pipe for storm sewer pipe from 6 to 30-inch diameters according to ASTM F 2736, with the following modification.

9.1 Provide a letter of certification to cover each shipment of material verifying that it meets specification requirements.

**707.65 Polypropylene Corrugated Double Wall Pipe.** Provide poly propylene corrugated double wall pipe for non-pressure sanitary sewer and storm sewer pipe from 6 to 30-inch diameters according to ASTM F 2736 and storm sewer pipe from 36 to 60-inch diameters according to ASTM F 2881, with the following modification.



9.1 Provide a letter of certification to cover each shipment of material verifying that it meets specification requirements.

**707.69 Polypropylene Triple Wall Pipe.** Provide polypropylene triple wall pipe and fittings for non-pressure sanitary sewer and storm sewer pipe from 30 to 60-inch diameters according to ASTM F 2764, with the following modification.

10.1 Provide a letter of certification to cover each shipment of material verifying that it meets specification requirements.

#### **708.02 C. Epoxy Intermediate Coat**

On page 743, **Change** the first sentence to:

**C. Epoxy Intermediate Coat.** Provide a two-part epoxy intermediate coat composed of a base component and curing agent suitable for application over the zinc rich primer.

#### **709.08**

On page 747, **Change** the first sentence to: Provide cold drawn steel wire for concrete reinforcement according to ASTM A 82 or ASTM A 1064, with the following modification:

#### **709.10**

On page 747, **Change** the first sentence to: Provide welded steel wire fabric for concrete reinforcement according to ASTM A 185 or ASTM A 1064.

#### **709.11**

On page 748, **Change** the first sentence to: Provide deformed steel wire for concrete reinforcement according to ASTM A 496 or ASTM A 1064.

#### **709.12**

On page 748, **Change** the first sentence to: Provide welded deformed steel wire fabric for concrete reinforcement according to ASTM A 497 or ASTM A 1064.

#### **709.13 Coated Dowel Bars**

On page 748, **Delete** the third and fourth sentence:

“5.2 is waived. Ensure that the coating thickness is as approved under 2.5 and is within the manufacturer’s stated tolerance”.

#### **711.01**

On page 756, **Make** the following changes to the Value for the Min CVN for A709 Gr. 70W steel in the Table:

A709 Gr. 70W	Up to 4 in (100 mm) mechanically fastened or welded	25 ft-lb @ -10 °F <sup>[1]</sup> (34 J @ -23 °C)
--------------	---	---

### 711.07 Steel Castings

On page 757 **Change** the subsection to:

Furnish steel castings according to ASTM A 27/A 27M, Grade 65-35 or Grade 70-36, or AASHTO M103, or ASTM A 148, Grade 90-60, with the following modification:

Ensure that steel casings are free from pouring faults, sponginess, cracks, blow holes, and other defects in positions affecting their strength and value for the service intended. No sharp, unfiltered angles or corners are allowed.

### 711.23

On page 761 and 762, **Change** the fourth paragraph to:

Ensure that the external connection or distribution plates of laminated bearings are the same material as the attached structural steel and are similarly cleaned and coated. Furnish internal plates according to ASTM A 709 grade 36 or **A1011/A1011M**, **SS** Grade 36 or Grade 40. Minimum thickness for the internal plates is 0.074 inch (1.88 mm). Debur all plates.

### 712.01,

On page 764, **Change** the following:

- A. **Type A.** Federal Specification A-A-1923A, and A-A-55614.
- B. **Type B.** Federal Specification A-A-1924A.

The supplier or producer of the anchors will provide a certification showing certified test results of the proof load required in the Federal Specifications .

Furnish materials according to the Department's Qualified Products List (QPL).

### 712.04.B,

On page 764, **Replace** the first sentence of 712.04.B with the following:

B. Furnish quick lime for soil stabilization that is certified according to Supplement 1087 and according to ASTM C 977, with the following modification:

### 712.04.C,

On page 765, **Replace** the first table in 712.04.C with the following table:

Combined total calcium oxide and magnesium oxide	50 % minimum
Available calcium hydroxide (rapid sugar test, ASTM C25), plus total MgO content calculated to be equivalent Ca(OH) <sub>2</sub>	30 % minimum
Loss on ignition (carbon dioxide plus moisture, combined and free on as-received basis)	40 % maximum
Free water (as-received basis)	4 % maximum
Sulfur as SO <sub>3</sub>	10 % maximum

**712.09,**

On page 766, **Replace** 712.09 with the following:

**712.09 Geotextile Fabrics.** Furnish fabric composed of strong rot-proof polymeric fibers formed into a woven or non-woven fabric. Products must be tested by the National Transportation Product Evaluation Program (NTPEP). The Department will determine acceptance of Type A, B, C and D fabric according to data obtained in the most current NTPEP report– Laboratory Results of Evaluations on Geotextiles and Geosynthetics. The NTPEP testing results must meet or exceed the requirements listed in the table. For all tests except Ultraviolet Exposure, the products Minimum Average Roll Values (MARV), as published in the NTPEP report, must also meet or exceed the requirements listed in the table. If no MARV value is published in the NTPEP report, the manufacturer must submit to the Department certified test data showing the MARV values for the product will meet or exceed the requirements listed in the table.

Property	Test Method	Required Value	
<b>Type A: Underdrains and Slope Drains</b>			
Minimum tensile strength	ASTM D 4632	80 lb	355 N
Minimum puncture strength <sup>[1]</sup>	ASTM D 6241	140 lb	625 N
	or ASTM D 4833	25 lb	110 N
Minimum tear strength	ASTM D 4533	25 lb	110 N
Apparent opening size	ASTM D 4751		
Soil Type-1: Soils with 50% or less passing No. 200 (75 µm) sieve		AOS ≤ 0.6 mm	
Soil Type-2: Soils with 50 to 85% passing No. 200 (75 µm) sieve		AOS ≤ 0.3 mm	
Minimum permittivity	ASTM D 4491	0.5 sec <sup>-1</sup>	
<b>Type B: Filter Blankets for Rock Channel Protection</b>			
Minimum tensile strength	ASTM D 4632	200 lb	890 N
Minimum elongation	ASTM D 4632	15%	
Minimum puncture strength <sup>[1]</sup>	ASTM D 6241	440 lb	1955 N
	or ASTM D 4833	80 lb	355 N
Minimum tear strength	ASTM D 4533	50 lb	220 N
Apparent opening size	ASTM D 4751	AOS ≤ 0.6 mm	
Minimum permittivity	ASTM D 4491	0.2 sec <sup>-1</sup>	
<b>Type C: Sediment Fences</b>			
Minimum tensile strength	ASTM D 4632	120 lb	535 N
Maximum elongation	ASTM D 4632	50%	
Minimum puncture strength <sup>[1]</sup>	ASTM D 6241	275 lb	1225 N
	or ASTM D 4833	50 lb	220 N
Minimum tear strength	ASTM D 4533	40 lb	180 N
Apparent opening size	ASTM D 4751	AOS ≤ 0.84 mm	
Minimum permittivity	ASTM D 4491	0.01 sec <sup>-1</sup>	
Ultraviolet exposure strength retention <sup>[2]</sup>	ASTM D 4355	70%	
<b>Type D: Subgrade-Base Separation or Stabilization</b>			
Minimum tensile strength	ASTM D 4632	180 lb	800 N
Maximum elongation	ASTM D 4632	50%	
Minimum puncture strength <sup>[1]</sup>	ASTM D 6241	385 lb	1715 N
	or ASTM D 4833	70 lb	310 N
Minimum tear strength	ASTM D 4533	70 lb	310 N
Apparent opening size	ASTM D 4751	Same as Type A	
Permittivity	ASTM D 4491	0.05 sec <sup>-1</sup>	

[1] ASTM D6241 is now the standard puncture resistance test required by AASHTO and NTPEP. NTPEP will continue to publish product data, tested under ASTM D4833, until the product is retested under ASTM D6241.

[2] Provide certified test data to the Department. Include strength retention data at 0, 150, 300, and 500 hours

For Type E material, supply fabric conforming to the requirements of AASHTO M288, Section 10, Table 8. The Department will accept Type E material based on certified test data.

All minimum strengths shown are in the weakest principal direction.

Ensure that the fabric is free of any treatment that might significantly alter its physical properties.

During shipment and storage, wrap the fabric in a heavy-duty protective covering to protect it from UV deterioration, direct sunlight, dirt, dust, and other debris.

Furnish materials according to the Department's Qualified Products List (QPL).

**712.11,**

On page 769, **Delete** 712.11.D, Type D Temporary Erosion Control Mat, and 712.11.H, Type H Temporary Erosion Control Mat.

**712.12, 712.13,**

On page 771, **Add** the subsections:

**712.12 Tied Concrete Block Mat.** Furnish materials tested to ASTM D6460. The Department will determine acceptance of Type 1, 2, and 3 based on independent third party test data. The acceptable stability threshold shear values are:

Type 1: 3 lbf/ft<sup>2</sup> (140 Pa)

Type 2: 5 lbf/ft<sup>2</sup> (240 Pa)

Type 3: 7 lbf/ft<sup>2</sup> (340 Pa)

**712.13 Articulating Concrete Block Revetment System.** Furnish materials according to ASTM D6684 and tested according to ASTM D7277. The Department will determine acceptance of Type 1, 2, 3 based on independent third party test data. The acceptable stability threshold shear values are:

Type 1: 17 lbf/ft<sup>2</sup>(810 Pa)

Type 2: 20 lbf/ft<sup>2</sup>(960 Pa)

Type 3: 23 lbf/ft<sup>2</sup>(1100 Pa)

**720**

On Page 772, **Replace** the following section in its entirety:

**720 DELINEATOR MATERIALS**

**720.01 Reflectors.** For bridge parapet bracket or bridge rail bracket, furnish rectangular reflectors that are a minimum size of 3 x 6 inches (75 x 150 mm) and that consist of reflective sheeting according to 730.192 or 730.193 adhered to an aluminum plate. Furnish white, yellow, or red reflectors as specified. Furnish aluminum plate for reflectors according to ASTM B 209 (B 209M), 6061-T6 with a minimum thickness of 0.060 inch (1.5 mm).

For ground mounted delineators, furnish rectangular reflective sheeting according to 730.192 or 730.193 that is a minimum size of 3 x 6 inches (75 x 150 mm) adhered to a flexible post. Furnish white, yellow or red reflectors as specified.

For surface mounted delineators, furnish a 3 inch (75 mm) wide band of reflective sheeting according to 730.192 or 730.192 adhered completely around a flexible post. Furnish white or yellow reflectors as specified.

Furnish materials according to the Department's Qualified Products List (QPL).

**720.03 Flexible Posts.** Conform to Supplement 1020.

Furnish materials according to the Department's Qualified Products List (QPL).

**721.03**

On page 773, **Replace** the entire section with the following.

**721.03 Casting Adhesive.** Casting adhesives will follow a two-step acceptance procedure.

Step 1 will be materials testing and a flow test.

A. Furnish adhesive material conforming to AASHTO M 237, Type IV, except that the viscosity is 200 to 900 poise at 77 + 2 °F (25 + 1 °C) and the unit weight is 11.3 to 11.9 pounds per gallon (1.35 to 1.43 kg/L).

B. For materials conforming to the above requirements provide samples of the adhesives to the Department for flow testing. The casting adhesive flow test will meet the ranges in Table A.

The flow test procedure is:

1. In a standard 2x4 block of pine wood (3.5” wide x 1.5” deep x 22” long) cut a channel in the block that is 3/4" wide by 1/2" deep with a dado blade. The channel will run longitudinally 22 inches long in the center of the 3.5 inch wide face of the wood block. Use tape to block off the ends of the channel.
2. Condition epoxy (Part A and Part B) and the wood block for a minimum of 4 hours at each of the three different temperatures (77°, 100°, and 120°F).
3. Mix Part A and Part B epoxy separately for 15 seconds.
4. Mix Part A epoxy with Part B epoxy, at the manufacturer’s required ratio, for 1.5 minutes. The total amount of sample mixed will equal 40ml.
5. Temporarily dam off 6.5 inches of the channel at one end of the wood block. Keep the wood block flat and level with the channel side facing up.
6. Pour mixed product into the blocked off end of the channel for 30 seconds. The product should fill this blocked off volume. Remove the temporary dam.
7. Immediately place wood block with the epoxy filled channel on a 15% grade incline, with epoxy placed at the top of the slope.
8. Immediately start a stop watch.
9. Stop the watch when the material completely stops flowing in the channel.
10. The time and length the epoxy traveled down the channel need to meet the requirements of Table A.
11. This test will be run at each of the 3 established temperatures.

Table 721.03 - A			
	Temperature 77°F	Temperature 100°F	Temperature 120°F
Distance traveled down 15% incline (inches)	$10 \leq X \leq 18$	$12 \leq X \leq 20$	$12 \leq X \leq 20$
Time for epoxy to stop flowing on 15% incline (minutes)	$5 \leq X \leq 14$	$2 \leq X \leq 9$	$1 \leq X \leq 4$

Step 2 will include a Department controlled field application and performance test.

The epoxy adhesive will be field evaluated on two ODOT roadway projects in north eastern Ohio. One roadway will be new asphalt pavement and the other will new concrete or concrete that is less than 20 years old. The test sections on each roadway will be a minimum of 2 miles long and carry a minimum of 30,000 ADT. It will be the responsibility of the epoxy manufacturer to find routes in Ohio that meet these requirements and have them installed, at no cost to the Department, as a part of an existing ODOT contract. The casting adhesive will be evaluated after one year of service. Removal of any casting from the roadway after one year will be considered failure of the epoxy adhesive. If no castings are removed from the roadway and the product meets the requirements listed above, the epoxy adhesive will be granted Conditional Approval.

If the product continues to perform satisfactorily after 4 years, the product will be moved to Full Approval. If at any time during Conditional Approval status, the epoxy adhesive fails to perform to the satisfaction of the Department, it will be removed from Conditional Approval status and from further consideration.

Approved and Conditionally Approved materials will be incorporated on the Department’s QPL. Only furnish materials listed on the Department’s QPL.

**725.11C**

On page 778, **Deleted** the following after the eighth paragraph;  
 “Ensure that the starter ceases operation after the lamp has started and that the starter protects itself, the ballast, the capacitor, and the lamp socket against cycling, burned out, broken or missing lamps by ceasing the starting operation after the power has been applied to the luminaire for a period of not less than 3 minutes and no more than ten minutes and not beginning the starting operation again until power has been shut off and reapplied to the luminaire.”

**726**

On Page 791, **Add** the following section in its entirety:

**726 BARRIER REFLECTOR MATERIALS**

**726.01 Barrier Reflectors.** Furnish concrete barrier, retaining wall and bridge parapet reflector body housings that are made of acrylic or polycarbonate plastic, or corrosion resistant metal. Ensure that the minimum reflective surface area of the reflector is 7 square inches (4400 mm<sup>2</sup>).

Furnish white reflectors that reflect the following minimum candela of light at the indicated observation angles for each 1 foot-candle (10.76 lx) of incident light at the indicated entrance angles. Furnish amber reflectors that reflect at least 60 percent of these values.

**MINIMUM SPECIFIC INTENSITY, CD/10.76 LX**

		Observation Angle (degrees)	
		0.2	2.0
Entrance angle (degrees)	-4	62	0.25
	15	52	0.18

The entrance angle is measured in the horizontal plane between the direction of incident light and normal to the face of the reflector. The observation angle is measured in the vertical plane between the observer's line of sight and the direction of light incident to the reflector face.

Furnish guardrail blackout reflectors that are a minimum size of 4.5 x 10 x 0.125 inches (112.5 x 250 x 3.1 mm) and made of corrosion resistant metal with 1/4" (6 mm) predrilled mounting holes. One or both sides shall be covered with a minimum 4.5 x 5 inches (112.5 x 125 mm) of Type G, H or J reflective sheeting.

Furnish materials according to the Department's Qualified Products List (QPL).

### **730.017**

On page 792, **Replace** "ve10eers" with "veneers" in the first sentence.

### **730.191**

On page 794, **Replace** the section with the following:

**730.191 Reflective Sheeting Reboundable.** Furnish reboundable reflective sheeting according to Supplement 1049, and according to ASTM D 4956, Type III, IV, VIII, IX or XI, including supplemental requirements S1 and S2, with watermarks or other identification marks inconspicuously incorporated into the face of the sheeting on a repeating pattern if necessary to distinguish the sheeting from other similarly appearing sheetings.

Furnish materials according to the Department's Qualified Products List (QPL).

### **730.193**

On page 795, **Add** "or XI" after "Type IX".

### **731.06**

On page 797, Replace the word "incandescent" with the word "LED" from the last sentence in the first paragraph.

### **732.01,**

On page 797, **Replace** the first and second paragraphs with the following;

**732.01 Vehicular Signal Heads, Conventional.** Ensure that vehicular traffic signal heads conform to the ITE "Vehicle Traffic Control Signal Heads" standard. In conformance with the above standard, provide signal heads that are of cast nonferrous corrosion resistant metal.

Traffic signals consist of specified assemblies of optical sections containing 8 or 12-inch (200 or 300 mm) nominal diameter lens opening, a housing, a door frame with stainless steel hinge pins and latching device, gasketing, visor, wiring, and includes LED lamp in accordance with 732.04. Retention hardware for LED lamps, if sharing threaded hole with visor hardware, shall consist of minimum 1/2-inch (13 mm) long, set screw with retaining tab and captive wingnut or hex nut. All hardware shall be stainless steel and set screw shall be inserted into signal section door using visible, semi-permanent threadlocking compound. All hardware used to join optical sections together shall be stainless steel. Door hinges and visor mounting hardware shall be stainless steel.



### 732.01

On page 798, **Add** the following after the first sentence in the fourth paragraph;

“Cable entrance adapters shall be of the tri-stud type with stainless steel hardware. Tethered heads shall use unpainted cast aluminum cable entrance adapters with integral tri-studs (no inserts) and a single mounting hole. Tethered heads shall be shimmed with stainless steel shim washers to eliminate all slack between the span wire and the cable entrance adapter. Free swinging heads shall use cast iron cable entrance adapters with tri-studs. A neoprene gasket placed under the clamp washer in the top signal section shall effectively seal the entrance adapter on the signal to make a waterproof connection and shall have a minimum thickness of 3/32 inch (2.5 mm).”

On page 798, **Replace** the seventh paragraph with the following;

The inside surface of the visors shall have a finish of flat black. All other exterior surfaces of the signal head and hardware (except cast aluminum cable entrance adapters) shall have a finish of Federal Yellow or Gloss Black to closely agree with Federal Standard 595, Color 13538 or Color 17038, as specified in the plans. The coating system used shall be durable, uniform, and weather resistant.

### 732.02

On page 798, **Delete** “incandescent lamp or, if specified, a” from the last sentence of the second paragraph.

### 732.03

On page 799, **Delete** “incandescent lamp or when specified, a” from the last sentence of the second paragraph.

On page 799, **Delete** the following from the second paragraph;  
“incandescent lamp or when specified, a”

### 732.04

On pages 799, 800 and 801, **Delete** paragraphs A and B.

#### 732.04.C.2.a

On page 803, **Replace** the entire subsection with the following:

The red and orange lamps shall be manufactured using AlInGaP (Aluminum-Indium-Gallium-Phosphide) technology or other LEDs with lower susceptibility to temperature degradation than AlGaAs (Aluminum-Gallium-Arsenic). AlGaAs LEDs will not be permitted. Green and yellow lamps shall be manufactured using Indium Gallium Nitride.

### 732.05

On page 807, **Delete** the following from the fourth paragraph;

“to ensure rated lamp life.”

On page 807, **Delete** the fifth paragraph.

On page 808, **Delete** “Clear lamp incandescent” from Table 732.05-1.

On page 808, **Replace** the tenth paragraph with the following: Finish signal exterior surfaces black with enamel coating. Finish interior surfaces of visors flat black.

#### **732.05A**

On page 808, **Delete** the following from the first paragraph;

“Install a lamp in each section.”

#### **732.05B**

On page 808, **Delete** the following from the first paragraph;

“Install a lamp in each section.”

#### **732.05.C**

On page 809, **Replace** the section with the following:

Furnish a single housing signal head with a lens in one piece or in two sections, one for each message. Color and mask the lens to display in portland orange the symbol of an upraised hand from the left compartment and the symbol of a walking person in white from the right compartment. Install a lamp in each compartment. The upraised hand and the walking person symbols may be integral in the same compartment.

#### **732.05.D.2**

On page 809, **Delete** the last sentence. “The display numeral segments shall be comprised of two rows of discrete segments.”

#### **732.05.D.3**

On page 809, **Delete** the last sentence. “The display numeral segments shall be comprised of two rows of discrete segments.”

#### **732.06**

On page 810, in the first sentence of the third paragraph, **Delete** the words "per foot".

#### **732.14**

On page 812, **Replace** the entire section with the following:

**732.14 Down Guy Assemblies.** Furnish expanding or screw type anchors capable of withstanding a guy tension of 8000 pounds (35 kN) when installed in firm moist soil. Ensure that each anchor rod is 5/8 inch (16 mm) minimum diameter, 8 feet (2.4 m) minimum length galvanized steel with thimble eye.

Ensure that all pole and attachment hardware is hot dip galvanized in accordance with 711.02.

Furnish 3/8 inch (10 mm) minimum diameter guy wire that conforms to 732.18 and ensure that all accessories have a rated loading strength equal to or greater than the messenger wire minimum breaking strength.

Furnish porcelain strain insulators of the wet process type.

Furnish an 8 feet (2.4 m) minimum length guy guard made of impact and ultraviolet light resistant yellow plastic that is fastened to the guy wire.

Furnish materials according to the Department's Qualified Products List (QPL).

### **732.18**

On page 813, **Replace** the entire section with the following:

#### **732.18 Messenger Wire and Tether Wire**

a) Wire: Furnish seven strand ASTM A475 Class B Utilities Grade or stronger messenger wire except ¼ inch (6 mm) seven strand messenger wire must be High Strength Grade or stronger. Furnish ¼ inch (6 mm) seven strand ASTM A475 Class B High Strength Grade or stronger tether wire. Furnish all wire per ASTM A475 with the following modifications:

18.2 Tags are not required on lengths less than 1000 feet (300 m)

b) **Accessories: For messenger wire ensure** all accessories have a rated loading strength equal to or greater than (73 percent the messenger wire minimum breaking strength For breakaway tether installations, accessories within the turnbuckle-tensioned portion of the tether span shall have strength equal to or greater than 73 percent of the breaking strength of ¼-inch 7-strand ASTM A 475 High Strength Grade Wire rope , or 3460 pounds (15.4 kN). Furnish galvanized steel helical lashing rods in 5-foot (1.5 m) lengths. For tether wire ensure all accessories except S-hooks have rated load strength equal to or greater than the tether wire minimum breaking strength. S-hooks shall be made of mild low-carbon galvanized steel and of the wire size indicated on the plans; larger wire sizes and higher-strength steel S-hooks shall not be substituted. Safety tie wire shall be 304 or 316 stainless steel, 1x19 stranded, 1/8-inch (3 mm) with stainless steel wire rope clips. Lead sheet to wrap tether wire in breakaway anchors shall be commercially pure lead of thickness 0.030 to 0.042 inches (0.75 to 1.0 mm).

Furnish materials according to the Department's Qualified Products List (QPL).

### **732.185**

On page 813, **Delete** the entire section.

### **732.22**

On page 814, **Replace** the seventh sentence of the section, to the following:

A 2- inch (50 mm) wide continuous outside border of fluorescent yellow reflective sheeting shall be applied to the front of the backplate.

### **733.02B**

On page 818, **Add** the following to the list right before the last paragraph;

“(4) 2070-6A,B.”

On page 818, **Add** the following to the end of the last paragraph;

“and the vendor's name.”

### **733.03**

On page 820, **Add** the following to the end of the last paragraph;

“The door handle shall swing out away from the door edge, not toward the center of the door.”

#### **733.03.A.2.o**

On page 826, **Add** the following to the end of the paragraph;

“Route all wiring terminated on printed circuit boards (as commonly done for BIU backpanel connectors) at right angles to the pin array; no wires shall pass over the connector pins.”

#### **733.03.B.1.f**

On page 827, **Add** the following to the end of the sentence;

“Furnish momentary pushbuttons on the cabinet door for detector actuation of detector channels 1-16 of BIU #9 and opto-isolated pedestrian detector inputs 1-4 on BIU #1. Permanently label these pushbuttons as “VEH DET 1” through “VEH DET 16” and “PED DET 1” through “PED DET 4”.”

#### **733.03.B.1.h**

On page 827, **Replace** the entire section with the following;

“Section 7.3, unless otherwise specified in the plans, provide a Size 5 cabinet for four phase or less pole mounted cabinets, Size 5 for four phase or less ground mounted cabinets, and Size 6 for 5 phase or more ground mounted cabinets. Supply larger cabinets if required to house the equipment to meet the plan requirements; such as master controllers, preemption devices, 16 position backpanels or special detection units.

Furnish all wire passages through metal panels with edge protection polymer trim.”

#### **733.03.B.1.k**

On page 827, **Add** the entire section with the following;

“The following overrides NEMA requirements for signal bus relays. A solid state relay shall be used for the signal bus relay. The signal bus relay shall maintain output equal or above the rating of the cabinet main overcurrent protection device over the NEMA TS-2 Environmental Operating Range of -50 to +185 degrees F (-45 to +85 degrees C)”

#### **733.03.B.6**

On page 828, **Add** the following after the last sentence;

“Cabinet power distribution shall conform to Figure 5-4, NEMA TS-2 2003 v02.06. In addition, locate a non-GFCI NEMA 5-15 utility outlet on the right side power panel. If the cabinet is equipped with a UPS, this outlet shall be powered independently of the UPS.”

#### **733.03.B.7**

On page 828, **Add** the entire section;

“Furnish an 8-port SDLC expansion board on the left side of the cabinet. This board shall include in one of the slots an EDCO model SRS-BIU-15 surge suppressor or approved equal.”

#### **733.03.B.8**

On page 828, **Add** the entire section;

“Furnish an aluminum shelf with integral storage compartment in the rack below the controller. Ensure that the storage compartment has telescoping drawer guides for full extension. Ensure that the compartment top has a non-slip plastic laminate attached.”

#### **733.03.C.1**

On page 828, **Replace** the following

C. Type 332.

1. General. Furnish Model 332L cabinets that meet the specifications “Traffic Signal Control Equipment Specifications” and “Transportation Electrical Equipment Specifications”, California Department of Transportation. Ensure that the manufacturer of the cabinets is listed on the ODOT or CalTrans QPL.

#### **733.03.C.4.a**

On page 829, **Add** the following paragraph between the first and second paragraph:

"In addition to the requirements of Caltrans TEES, furnish detector unit with an LED or LCD display indication of call strength ( $\Delta L/L$  or equivalent). This display shall be a bar graph or numerical display with at least eight (8) discrete levels indicated."

#### **733.03.C.6.a**

On page 830, **Replace** “24” in the third paragraph the following;  
“60”

#### **733.03.E.1**

On page 840, **Replace** the following

E. Type 336.

1. General. Furnish Model 336 cabinets that meet the basic cabinet specifications “Traffic Signal Control Equipment Specifications”, California Department of Transportation, latest edition. Ensure that the manufacturer of these Model 336 cabinets is listed on the ODOT or CalTrans QPL for the Model 332 cabinets unless specified otherwise in the plans, a 336L cabinet shall be furnished.

#### **733.09.A**

On page 846, **Replace** the first paragraph with the following;

**Operation.** In addition to the material requirements below, furnish a UPS system with a minimum two and one half (2.5) hours of full run-time operation for an “LED-only” intersection with 1000 watts of active output power.”

On page 846, **Add** the following paragraphs at the end of this section:

Furnish a UPS with available buck/boost mode operation, over a minimum input voltage range of 85 - 150 vrms. The unit display shall indicate when buck/boost mode is engaged. Default buck/boost setpoints shall be 108 vrms and 132 vrms unless specified otherwise in the Plans.

Furnish a UPS with an Ethernet port for remote monitoring and control. Provide interface software unless the Ethernet port has a built-in web browser compatibility.

Ensure the UPS cabinet has a mastic tape seal between the cabinet bottom flange and the concrete foundation. Minimum tape thickness shall be 1/8-inch (3 mm) and the tape shall be continuous with no gaps between tape pieces or between cabinet and foundation.

#### **740.02**

On page 848, **Delete** the following from the first paragraph:  
“Prequalify materials according to Supplement 1047. Use materials certified according to Supplement 1089.”

On page 848, **Add** the following to the end of the section:  
“Furnish materials according to the Department’s Approved List.”

#### **740.03**

On page 850, **Add** the following to the end of the section:  
“Furnish materials according to the Department’s Approved List.”

#### **740.04**

On page 850, **Replace** the first paragraph with the following:

Furnish thermoplastic pavement marking material formulated expressly for use as retroreflective pavement markings on asphalt concrete or Portland cement concrete pavement. Furnish material that includes a mixture of Alkyd resins-19% minimum by weight at least one of which is solid at room temperature, and contains premixed glass beads 740.09 Type C, 30% minimum by weight, with a 1.50 minimum index of refraction. Ensure that the ingredients are well mixed so that all parts are evenly dispersed throughout. Ensure that there are no foreign objects, skins, dirt, or such ingredients that would cause staining, discoloration, or bleeding. Furnish suitable materials for application in molten form by extrusion method. Ensure that the material is capable of retaining reflective glass beads, 740.09 Type C, after application.

#### **740.04 G**

On page 850, **Replace** the section with the following:

G. Pigment Content. Furnish yellow material containing a minimum of 5 percent by weight of primary yellow (lead chromate) pigment (or a lead free pigment) (measured as per ASTM D 126 or Department approved lab method). Furnish white material containing a minimum of 10 percent Titanium Dioxide-Rutile Type -2 by weight of white pigment..

#### **740.09 C**

On page 854, **Replace** the section with the following:

C. Type C. Furnish Type C glass beads for thermoplastic material meeting the following specification.

<b>Sieve Size</b>	<b>Percent Retained</b>
No. 16 (1.18 mm)	3 max
No. 20 (850 mm)	5 to 20
No. 40 (425 mm)	65 to 95
No. 50 (300 mm)	0 to 5
Refractive Index	1.50 to 1.60
Roundness	80 min
Coating	Moisture Resistant (For Drop-on Beads only)

Ensure the glass bead packaging is clearly marked “THERMO”  
Use materials certified according to Supplement 1089.

**748.01**

On page 855, **Replace** the second paragraph of 748.01 with the following:

Furnish push-on joints, mechanical joints, and boltless restrained joints conforming to ANSI/AWWA C111/A21.11. For restrained joints, ensure that the restraint is a design approved by the owner of the utility and provides a positive lock designed to prevent joint separation. Steel locking segments molded into a gasket to grip the pipe do not meet the requirements for this joint.

**STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENTAL SPECIFICATION 832  
TEMPORARY SEDIMENT AND EROSION CONTROL**

**May 5, 2009**

- 832.01 Description**
- 832.02 Definitions**
- 832.03 SCD References**
- 832.04 Requirements and Provisions**
- 832.05 Locate and Furnish BMP**
- 832.06 Causeways and Access Fills (Stream and River Crossings and Fills)**
- 832.07 Causeway and Access Fills Construction and Payment**
- 832.08 Maintenance**
- 832.09 Storm Water Pollution Prevention Plan**
- 832.10 SWPPP Acceptance**
- 832.11 Inspections and SWPPP Updates**
- 832.12 Compensation**
- 832.13 Method of Measurement**
- 832.14 Basis of Payment**

**832.01 Description.** This work consists of locating, furnishing, installing, and maintaining temporary sediment and erosion control best management practices for earth disturbing activity areas, developing a Storm Water Pollution Prevention Plan, and filing a Co-Permittee form as required. Furnish a Storm Water Pollution Prevention Plan if required prior to any earth disturbing activity. Furnish and install temporary sediment and erosion control best management practices prior to any earth disturbing activity. Amend the Storm Water Pollution Prevention Plan in accordance with the OEPA NPDES Permit. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other Federal, State, or local agencies, adhere to the more restrictive laws, rules, or regulations. This supplemental specification replaces C&MS 207.

**832.02 Definitions**

**BMP.** Temporary sediment and erosion control best management practices.

**C&MS.** Construction and Material Specifications of the Ohio Department of Transportation dated as shown on the plans.

**CECI.** Contractor's Erosion Control Inspector.

**CESSWI.** Certified Erosion, Sediment, and Storm Water Inspector sponsored by the Soil and Water Conservation Society and International Erosion Control Association. Information on certified individuals is available at [www.cesswi.org](http://www.cesswi.org).



**CESSWI Trained.** An individual that has attended and completed CESSWI training and is recognized as completing the course by the approved CESSWI Instructor. The “CESSWI Trained” requirement applies to all project work taking place after April 1, 2008. Effective July 1, 2009 all “CESSWI Trained” references contained in this specification will require full CESSWI Certification status.

**CPESC.** Certified Professional in Erosion and Sediment Control as sponsored by the Soil and Water Conservation Society and International Erosion Control Association. Information on certified individuals is available at *www.cpesc.net*.

**CPESC Trained.** An individual that has attended and completed The Certified Professional in Erosion and Sediment Control Exam Review Course and is recognized as completing the course by the CPESC Instructor. The “CPESC Trained” requirement applies to all project work taking place after July 1, 2006. Effective July 1, 2009 all “CPESC Trained” references contained in this specification will require full CPESC Certification status.

**Co-Permittee.** A requirement of OEPA NPDES Permit (Appendix E of this specification, Part VII. Definitions O).

**EDA.** Earth Disturbing Activity is any activity that exposes bare ground or an erodible material to storm water, including any “Disturbance” as defined in OEPA NPDES Permit, Part VII, Definition G.

**Contractor EDA.** Any EDA that is NOT shown on the plans as part of the project. EDA not shown on the plans and occurring within the project limits is also Contractor EDA.

**Project EDA.** Any EDA that is shown on the plans as part of the project.

**Total EDA.** Combined Project EDA and Contractor EDA.

**EPA.** Environmental Protection Agency.

**Isolated Wetland Permit.** Ohio EPA permit allowing the discharge of fill material into an isolated wetland.

**NOI.** Notice of Intent.

**NOT.** Notice of Termination.

**NPDES.** National Pollutant Discharge Elimination System.

**OEPA.** Ohio Environmental Protection Agency.

**OEPA NPDES Permit.** Ohio EPA Storm Water Construction General Permit (OHC 000003) Appendix E of this specification.

**OES.** Office of Environmental Services-ODOT.

**OHWM.** The line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or

other appropriate means that consider the characteristics of the surrounding areas or defined in accordance with the most current version of 33 CFR 328.

**OWPCA.** Ohio Water Pollution Control Act (Ohio Revised Code 6111.01 et seq.).

**PCN.** Pre-Construction Notification for 404 permit.

**SCD.** Standard Construction Drawing.

**SWPPP.** Storm Water Pollution Prevention Plan.

**USACE.** United States Army Corps of Engineers.

**404 Permit.** USACE permit authorizing discharge of fill material into Waters of the US, per Section 404 of the Clean Water Act.

**401 Water Quality Certification (401 WQC).** Ohio EPA permit authorizing discharge of fill material, per Section 401 of the Clean Water Act.

**Waters of the United States.** Defined in Code of Federal Regulations, 33 CFR Part 328.

**832.03 SCD References.** Construct the following features according to the SCDs as listed on the plan title sheet.

Construction Fence .....	DM-4.3
Dikes .....	DM-4.3
Filter Fabric Ditch Check .....	DM-4.4
Inlet Protection.....	DM-4.4
Perimeter Filter Fabric Fence .....	DM-4.4
Rock Channel Protection Type C or D with/without Filter .....	DM-4.3/4.4
Sediment Basins and Dams .....	DM-4.3
Slope Drains.....	DM-4.3
Construction Entrance (Type 1 Driveway).....	BP 4.1

**832.04 Requirements and Provisions.** Furnish a SWPPP to represent compliance with OEPA NPDES Permit (See Appendix E), related rules, specifications, SCD, and permits. The Department will furnish the Contractor a copy of the NOI and the OEPA approval letter at or before the Pre-Construction meeting.

Locate, furnish, install, and maintain temporary sediment and erosion control Best Management Practices (BMP) to represent compliance with the Clean Water Act (33 USC Section 1251 et seq.), the OWPCA, the 404 permit, the 401 WQC, the Isolated Wetland Permit, local government agency requirements, specifications, SCD, and other related rules and permits.

File a Co-Permittee form when the project requires a SWPPP. Information about the Co-Permittee form can be found at [www.epa.state.oh.us/dsw/storm/stormform.html](http://www.epa.state.oh.us/dsw/storm/stormform.html). For a copy of the Co-Permittee form see Appendix D. When a co-permittee form is required, furnish the Department with an executed copy of the form submitted to OEPA at or before the Pre-Construction meeting.

Post Construction controls described in Appendix E (section III.G.2.e) are not temporary erosion control features. Construction requirements and compensation for post construction controls are detailed in the project plans. Any illicit or illegal discharge of construction related materials, wastes, pollutants or debris is prohibited.

The following provisions survive the completion and/or termination of the contract.

**Provision 1.** If a governmental agency or a local governmental authority finds a violation of the above noted requirements, or that the BMP are incomplete, or that the SWPPP is incomplete or that the implementation of the SWPPP is not being performed correctly or completely, full responsibility is borne by the Contractor to make all corrections.

**Provision 2.** If a governmental agency or a local governmental authority furnishes an assessment, damage judgment or finding, fine, penalty, or expense for a violation of the above noted requirements, or that the BMP are incomplete, or that the SWPPP is incomplete or that the implementation of the SWPPP is not being performed correctly or completely, the Contractor will reimburse the Department within 10 Calendar Days of the amount for any of the above. The Department may withhold the amount of money requested for the above from the Contractor's next pay estimate and deliver that sum to the governmental agency or local governmental authority issuing the assessment, damage judgment or finding, fine, penalty or expense.

**Provision 3.** The Contractor agrees to indemnify and hold harmless the Department, and will reimburse the Department for any assessments, damage judgment or finding, fine, penalty, or expense as a result of the failure of performing this portion of the Contract. The Department may withhold the amount of any assessments, damage judgment or finding, fine, penalty or expense from the Contractor's next pay estimate.

**Provision 4.** If a governmental agency or a local governmental authority furnishes a stop work order for any of the following: a violation of the above noted requirements; BMP are incomplete; SWPPP is incomplete; implementation of the SWPPP is not being performed correctly or completely, the Department will find the Contractor in default.

**Provision 5.** If the Department or any government regulatory agency finds a violation of the above noted requirements, or that the BMP are incomplete, or that the SWPPP is incomplete or that the implementation of the SWPPP is not being performed correctly or completely, the Contractor shall correct and mitigate the conditions within 48 hours of notification by the Department or regulatory agency. Failure to correct non-compliant site conditions may result in the Department suspending work for the entire project until the corrections are performed. Repeated non-compliance with the SWPPP or failure to regularly update the SWPPP as needed to match the site conditions may result in removal of the Contractors Superintendent in accordance with C&MS 108.05.

**EDA Requirements.** Furnish appropriate BMP for all EDA. Unless otherwise indicated, BMP will be compensated provided that the BMP are installed and maintained appropriately. For projects that do not require a SWPPP as indicated in the table below, furnish a written plan for acceptance by the Engineer that identifies the location, extent and purpose of the BMP proposed. Compensation will not be provided for the written plan.

An estimated amount is established in the proposal for BMP to be used for project EDA and estimated Contractor EDA as outlined below:

**Scenarios for Maintenance Projects**  
(as identified on the Plan Title Sheet)

Project EDA (acres)	Estimated Contractor EDA (acres) <sup>[1]</sup>		
	EDA = 0	0 < EDA < 1	1 ≤ EDA < 5
EDA = 0	A	B	C
0 < EDA < 5	B	B	C

**Scenarios for Non-Maintenance Projects**

Project EDA (acres)	Estimated Contractor EDA (acres) <sup>[1]</sup>		
	EDA = 0	0 < EDA < 1	EDA ≥ 1
EDA = 0	A	B	D
0 < EDA < 1	E	<sup>[2]</sup>	F
EDA ≥ 1	F	F	F

- [1] If the actual Contractor EDA in the SWPPP exceeds the estimated Contractor EDA on the Title Sheet resulting in a Total EDA > 1 acre (0.4 ha), use Scenario D.
- [2] If project EDA and estimated Contractor EDA are less than 1 acre (0.4 ha), use Scenario E. If Project EDA and Estimated Contractor EDA are greater than 1 acre (0.4 ha), use Scenario F. If the actual Contractor EDA exceeds the estimated Contractor EDA and results in the Total EDA exceeding 1 acre (0.4 ha), use Scenario D.

Scenario A:	No requirements for SWPPP, NOI and NOT.
Scenario B:	Furnish BMP for Contractor EDA. No SWPPP, NOI or NOT are required. BMP used for Contractor EDA will not be compensated.
Scenario C:	Furnish a BMP, SWPPP, NOI, and NOT for Contractor EDA only. BMP used for Contractor EDA, SWPPP, NOI and NOT will not be compensated.
Scenario D:	Furnish a NOI, SWPPP with BMP, and a NOT for all EDA areas. The NOI, SWPPP, BMP, and the NOT will not be compensated.
Scenario E:	Furnish BMP for all EDA. No SWPPP, NOI or NOT are required. BMP used for the Project EDA will be compensated.
Scenario F:	Furnish a SWPPP with BMP for all EDA areas and file a Co-Permittee form. The SWPPP and these BMP will be compensated. The Department will furnish a NOI and NOT.

**832.05 Locate and Furnish BMP.** Locate and furnish the BMP in accordance with the OEPA NPDES Permit and the SWPPP.

Construct the following items A, B, F, G, H, and I according to the SCD.

**A. Perimeter Controls.** Furnish filter fabric ditch checks, rock checks, inlet protection, perimeter filter fabric fence, sediment basins and dams, dikes, slope drains, construction entrances and rock channel protection materials as specified on the SCD. Furnish construction ditch and slope protection conforming to the requirements of C&MS Item 670. The seeding and

mulching of the mats are not required. The Department may accept other materials as BMP provided the Contractor submits a written proposal for the alternatives to the Engineer.

Use perimeter filter fabric fence to capture construction related sediment carried in sheet flow runoff. Restrict the use of perimeter filter fabric fence to the extent allowed in the OEPA NPDES Permit.

Use dikes to divert and control surface water and sediment flow to prevent discharge of construction related sediment from the project.

Install perimeter filter fabric fence and dikes before any clearing and grubbing operations.

Ensure that the ponding of water behind the perimeter filter fabric fence or dike will not damage property or threaten human health and safety.

**B. Inlet Protection.** Construct the inlet protection for existing inlets at the beginning of construction and for new inlets immediately after completing the sump. Ensure that the ponding of water behind the inlet will not damage property or threaten human health and safety.

The Contractor may propose modified Inlet Protection controls for Catch Basins and Inlets. Upon approval by the Engineer, the modified Inlet Protection BMP compensation may be made per the unit price for Inlet Protection shown in Appendix F.

**C. Construction Seeding and Mulching.** Furnish commercial fertilizer, seed, and mulch materials conforming to C&MS Item 659. Apply seed and straw mulch materials according to C&MS Item 659 as modified below.

Apply straw mulch at a rate of 3 tons per acre (0.7 metric ton/1000 m<sup>2</sup>). Seed and mulch during construction. This BMP may only be installed after March 15 and before October 15. Use wood fiber or compost mulch only with concurrence of the Department. Fertilize construction seeding areas at one-half the application rate specified in C&MS Item 659. If project conditions prevent fertilizing the soil and preparing the seed bed, then the fertilizing and preparation requirements of C&MS Item 659 may be waived. Do not place construction seed on frozen ground. Apply seed for this BMP at the rates shown below:

Seed Mixture	Number of Bales
Fawn Tall Fescue 3.0 lb/1000 ft <sup>2</sup> (15 kg/1000 m <sup>2</sup> ) and Annual Ryegrass 2 lb/1000 ft <sup>2</sup> (10 kg/1000 m <sup>2</sup> )	2 / 1000 ft <sup>2</sup> (0.01 ha)

**D. Construction Mulch.** Construction Mulch is the application of straw mulch directly on to the disturbed soil surface. Use straw according to C&MS Item 659. C&MS 659 wood fiber or compost mulch may only be used with concurrence of the Department. Apply Construction Mulch only to disturbed areas which will remain idle for 21 days or less or areas of exposed subgrade that require temporary stabilization. Use a mechanical crimping implement or other suitable implement approved by the Engineer when installing Construction Mulch on exposed subgrade. Apply Construction Mulch at a rate of 3 tons per acre (0.7 metric ton/1000 m<sup>2</sup>).

**E. Winter Seeding and Mulching.** Apply seed and straw mulch materials according to C&MS Item 659 as modified above. Apply straw mulch at a rate of 3 tons per acre (0.7 metric ton/1000 m<sup>2</sup>). Winter Seed and Mulch is required for EDA operations occurring between October 15 and March 15 and can only be installed during that time. All straw mulch included in this work must be either crimped in place or installed with a biodegradable Bonded Fiber Matrix. Crimped mulch is required to be anchored into the soil surface with a mechanical crimping implement or other suitable implement approved by the Engineer. The mulch included in this work must be capable of providing sufficient durable protective cover that provides OEPA NPDES Permit compliant erosion control for a minimum of 6 months. The use of other seed and/or mulch materials in this time period requires specific Department approval. The use of winter seeding and mulching is not an acceptable practice for protecting the subgrade surface.

**F. Slope Protection.** Place dikes, install slope drains, and construct ditches to divert water from bare non-vegetated areas and to protect cut and fill slopes. Protect the side slopes from erosion by placing dikes at the top of fill slopes prior to construction of the slope. Construct ditches and dikes prior to construction of cut slopes to divert runoff away from the slope. Ensure that all sediment-laden discharges from slope protection are directed into an appropriate sediment control BMP.

Furnish Construction Slope Protection at the required locations as the slopes are constructed. Furnish all permanent slope protection as shown in the construction plans when final grade is complete.

**G. Ditch Checks and Ditch Protection.** Place filter fabric ditch checks or rock checks across a ditch and perpendicular to the flow. Use rock checks to protect the ditch from erosion. Use filter fabric ditch checks to filter sediment from the flowing water.

Place ditch checks as soon as the ditch is cut. If working on a ditch, replace the ditch checks by the end of the workday.

Install filter fabric ditch checks for drainage areas less than or equal to 2 acres (0.8 ha) as shown in the SCD. Install rock checks for drainage areas between 2 to 5 acres (0.8 to 2.0 ha) as shown in the SCD.

Install ditch checks in conjunction with Sediment Basins and Dams.

Furnish Construction Ditch Protection at the required locations as the ditches are cut. Furnish all permanent ditch protection as shown in the construction plans when final grade is complete.

**H. Sediment Basins and Dams.** Design and construct Sediment Basins and Dams in accordance with and as described in the OEPA NPDES Permit for “sediment settling ponds”. Design and construct Sediment Basins and Dams at concentrated and critical flow locations to settle out sediment before the water leaves the EDA area. When the limits of construction do not allow construction of large Sediment Basins and Dams, substitute a series of smaller basins and dams. Do not construct Sediment Basins and Dams in streams or waterways that carry Waters of the United States.

Complete the construction of the Sediment Basins and Dams before starting EDA operations.

When needed or when directed by the Engineer, construct construction fence around the Sediment Basins and Dams.

**I. River, Stream, and Water Body Protection.** Protect all streams or water bodies passing through or on the project using the appropriate BMP. River, Stream, and Water Body Protection may include diverting project water flow using dikes and slope protection. The Contractor may use a combination of BMP.

**J. Stream Relocation, Temporary Channels and Ditches that carry Waters of the United States.** Perform this work in compliance with the OEPA NPDES Permit and any other applicable permits (i.e. 404/401 Permits). Stabilize Stream Relocation, Temporary Channels and Ditches with Construction Slope Protection or 70 percent grass growth before diverting flow into the new channel.

**K. Concrete washout areas BMP.** Compensation for this BMP is incidental to the concrete work.

**L. Construction Entrances.** Furnish Construction Entrance materials conforming to C&MS 712.09 Type B Filter Blankets for Rock Channel Protection and C&MS 703.01, Size Number 1 and 2, CCS aggregate. Furnish Construction Entrance protection at the locations shown on the SWPPP and as required below:

1. At locations where construction vehicles enter or leave EDA areas.
2. At all points of egress to public roads.
3. At all access locations where runoff from the construction access road is not checked by sediment controls.

Include the appropriate size culvert as needed to prevent water from flowing onto paved surfaces and from overtopping the entrance road surface.

Install a maximum of three Construction Entrances per mile along the length of the project. The length of the project is the plan length along the project's longest axis. Department approval is required for additional construction entrances in excess of the maximum.

Locate and identify all Construction Entrances on the SWPPP.

Provide a configuration consisting of 6 inches of aggregate over geotextile fabric. Provide geometry according to a Type 1 Driveway as shown in the SCD. Provide a minimum 10 foot width and length measuring a minimum of 150 feet and not exceeding 200 feet from edge of pavement.

Construction Entrance removal includes the appropriate disposal of geotextile fabric and pipe. Aggregate may be incorporated into embankment work when approved by the Department.

**M. Project fueling and refueling BMP locations.** Compensation for this BMP is incidental to the project.

N. All other BMP that are required and not specifically referenced in Appendix F will not be paid as a separate item, but will be included by the Contractor as part of the total project cost.

**832.06 Causeways and Access Fills (Stream and River Crossings and Fills).** Forging of streams and rivers is not allowed. Evaluate the 404/401 permits to determine whether or not causeway and access fills have been permitted by the USACE or OEPA. If a causeway and access fills have been permitted, construct fill(s) per the 404/401 permits, and the application submitted for those permits. Only the surface area (acreage) of temporary fill, and volume of temporary fill as permitted and contained in the permit application will be allowed. The surface area (acreage) of temporary fill, and volume of temporary fill may be furnished in the construction plans. The construction plans may furnish additional information or restrictions for causeways or access fills. The project engineer will consult with the Office of Environmental Services (OES) for any technical questions regarding 404/401 permits.

If the Contractor proposes a causeway and access fill(s) which has not been permitted through the 404/401 permit process, the Contractor is required to coordinate the request for the causeway and access fill(s) with the project engineer and OES. The Department makes no guarantee to granting the request. The causeway and access fills request will be coordinated by OES with the USACE and OEPA where applicable.

Supply the project engineer/OES with the following information:

- A. A plan and profile drawing showing the causeway and access fills with OHWM elevation.
- B. Volume of temporary fill below the OHWM.
- C. The surface area of temporary fill below the OHWM.
- D. A restoration plan for the area affected by the causeway and access fills.
- E. Time frames for placement and removal of the causeway and access fills.

The time frame allowed for the coordination of the causeway and access fill(s) will be 60 days, at a minimum, and the causeway and access fill(s) will not occur prior to the 404 Permit being authorized by the USACE. All coordination with the USACE and/or OEPA will be performed through OES.

**832.07 Causeway and Access Fills Construction and Payment.** Begin planning and installing causeways and access fills as early in construction as possible to avoid conflicts with 404/401 permits or other environmental commitments that have been included in the construction plans.

Access fills in streams or rivers may include, but are not limited to, cofferdams, access pads, temporary bridges, etc.

Make every attempt to minimize disturbance to water bodies during construction, maintenance and removal of the causeway and access fills. Construct the causeway and access fills as narrow as practical and perpendicular to the stream banks. Make the causeway and access fills in shallow areas rather than deep pools where possible. Minimize clearing, grubbing, and excavation of stream banks, bed, and approach sections. Construct the causeway and access fills as to not erode stream banks or allow sediment deposits in the channel.



Prior to the initiation of any in-stream work, establish a monument upstream of proposed temporary crossing or temporary construction access fill to visually monitor the water elevation in the waterway where the fill is permitted. Maintain the monument throughout the project. Provide a visual mark on the monument that identifies the elevation 1 foot above the Ordinary High Water Mark (OHWM). If the OHWM is not shown on the plans, the Department will establish the OHWM based on the definition of OHWM (832.02) or the peak discharge from the 2 year event, using the method described in the most current version of the Department's Location and Design Manual Volume II.

Ensure that the monument can be read from the bank of the waterway. Have this elevation set and certified by an Ohio Registered Surveyor.

Temporary causeway and access fill placed by the contractor above the OHWM are not subject to the 404/401 permit constraints.

Should the water elevation of the waterway, exceed the elevation 1 foot above OHWM, the Department will compensate the Contractor for repair of any resulting damage to the permitted temporary access fill up to the elevation of 1 foot above the OHWM. The Department will not pay for repair and maintenance of temporary access structures that are related to the construction access fill.

Should the water elevation of the waterway exceed the elevation shown on the monument, the Department will recognize this event as an excusable, non-compensable delay in accordance with Section 108.06 of the Construction & Materials Specifications.

All costs associated with furnishing and maintaining the above referenced monument is incidental to the work.

Construct the causeway and access fills to a water elevation at least 1 foot (0.3 m) above the OHWM. If the causeway fills more than one-third the width of the stream, then use culvert pipes to allow the movement of aquatic life. Maintain normal downstream flows. Ensure that any ponding of water behind the causeway and access fills will not damage property or threaten human health and safety.

The following minimum requirements apply to causeways where culverts are used.

- A. Furnish culverts on the existing stream bottom.
- B. Avoid a drop in water elevation at the downstream end of the culvert.
- C. Furnish culverts with a diameter at least two times the depth of normal stream flow measured at the causeway centerline or with a minimum diameter of 18 inches (0.5 m) whichever is greater.
- D. Furnish a sufficient number of culverts normal to the flow to completely cross the channel from stream bank to stream bank with no more than 10 feet (3 m) between each culvert.

For all fill and surface material placed in the channel, around the culverts, or on the surface of the causeway and access fills furnish clean, non-erodible, nontoxic dumped rock fill, Type B, C, or D, as specified in C&MS 703.19.B. Extend rock fill up the slope from original stream bank for 50 feet (10 m) to catch and remove erodible material from equipment.

When the work requiring the causeway and access fills all portions of the causeway (including all rock and culverts) and access fills will be removed in its entirety. The material will not be disposed in other waters of the US or isolated wetland. The stream bottom affected by the causeway and access fills will be restored to its pre-construction elevations. The causeway and access fills will not be paid as a separate item but will be included by the Contractor as part of the total project cost.

All environmental protection and control associated with the 404/401 permit activities are incidental to the work within the boundaries of the 404/401 permit or as otherwise identified in the 404/401 permit application.

**832.08 Maintenance.** Properly maintain all BMP. Dispose of silt removed from BMP according to C&MS 105.16. When the Contractor properly places the erosion control Items then the Department will pay for the cost to maintain or replace these items of work by the following:

If a recorded rain event is greater than 0.5 inches (13mm), the Department will pay to replace all BMP that have failed during the event at the unit price for those BMP including Sediment Removal as described in Appendix F..

*Example: A 0.6 inch rain event damaged a 300 ft. segment of a 900 ft. run of filter fabric fence. The damaged segment was repaired and the sediment was removed. How do we pay for the 300 ft of repair and sediment removed?*

*Pay for 300 ft. of new Item Perimeter Filter Fabric Fence and Item Miscellaneous Sediment Removal.*

If a recorded rain event is less than or equal to 0.5 inches (13mm), the Department will pay to remove the sediment per the unit price for Sediment Removal as described in Appendix F. No compensation will be provided for BMP that fail during rain events of less than equal to 0.5 inches (13mm).

For all Perimeter Filter Fabric Fence, Filter Fabric Ditch Checks, Rock Checks, and Inlet Protection, Dikes, remove trapped sediment and any other debris which has accumulated when sediment reaches a height of one-half the BMP. Compensation will be paid at the unit price for Miscellaneous Sediment Removal as described in Appendix F.

When the sediment fills the sediment storage zone (as described in the OEPA NPDES Permit) of a Sediment Basin or Dam, remove deposited sediment per the unit price for Basin Sediment Removal as described in Appendix F. Remove Sediment Basins and Dams after the contributing drainage area has been stabilized.

When erodible materials accumulate at the surface of the construction entrance, furnish additional stone as needed to prevent tracking. Compensation for additional stone needed to maintain the Construction Entrance will be paid at the unit price for Construction Entrance. If tracking occurs, restore and clean the affected roadway surface at no additional cost to the Department.

Remove all BMP before the project is accepted. Dispose of the removed materials including sediment according to C&MS 105.16 and C&MS 105.17. Maintain the BMP until the up-slope

permanent grass coverage is 70 percent or better and the site is permanently stabilized in accordance with the OEPA NPDES Permit (See Appendix E, Part VII, Q). At this stage, remove the BMP.

**832.09 Storm Water Pollution Prevention Plan.** If required, prepare the SWPPP as outlined in this specification. All activity identified by the SWPPP that is not specifically identified as a pay item elsewhere shall be included in the Lump Sum price bid for the SWPPP. At a minimum, the design and information requirements that must be included in the SWPPP are as follows:

- A. Provide a site specific SWPPP designed and sealed by a Professional Engineer who is CPESC Trained.
- B. Location of the required BMP for both on and off project EDA areas.
- C. Furnish quantity totals for all BMP required for the execution of the proposed plan.
- D. Location of a minimum of 100 feet (30 m) from the water's edge of any stream, ephemeral stream, wetland, or body of water:
  1. Concrete or asphalt plant areas
  2. Material and equipment staging or storage areas
  3. Dewatering Areas
  4. Concrete truck wash out BMP areas
  5. Construction access BMP locations
  6. Vehicle fueling and refueling locations
- E. Furnish an implementation schedule for each construction sequence.
- G. Furnish the total EDA areas in acres and identify each drainage area (watershed) impacted by the proposed construction.
- H. Locate all slopes that will be inactive for 21 calendar days or longer.
- I. Furnish the names of the individuals on site who will serve as the CPESC Trained SWPPP designer and CECL.
- J. Describe the type of construction activities that will be taking place.
- K. Furnish an estimated quantity for Basin Sediment Removal and Miscellaneous Sediment Removal for removing sediment from Sediment Basins and Dams, inlet protection, ditch checks, rock checks, perimeter filter fabric fence, and all other types of filter fabrics, straw or hay bales, or any other BMP.
- L. Furnish signatures of all contractors and subcontractors involved in BMP practices (see Appendix B).

If there are plan sheets which meet any of the requirements in Appendix E, use that information. Design files may be furnished to the awarded Contractor in electronic form upon request.

**832.10 SWPPP Acceptance.** Furnish the initial SWPPP to the Department for acceptance. The Department will allow work to begin upon receiving an acceptable SWPPP. See Appendix C for a sample acceptance form. The Department may assess critically the following:

- A. The type and location of BMP with totals.
- B. The SWPPP is for this project.
- C. There is no language in the SWPPP about any BMP being directed for use by the Engineer.
- D. The total estimated BMP quantities agree with the (per Each) “Erosion Control” amount identified in the proposal.
- E. The SWPPP accounts for the various phases of construction and the associated degree of earthwork disturbance over the life of the project.
- F. The SWPPP delineates and identifies the individual watersheds contained within the plan. If topographic mapping contained in the plans is not sufficient to identify and delineate the watersheds associated with the work, provide the appropriate mapping. The appropriate BMP are correctly sized and located in the SWPPP.
- G. All perimeter filter fabric fence is identified in the SWPPP and supporting runoff calculations are attached.
- H. The SWPPP identifies the locations and specific geometry of the required Sediment Basins and Dams and related control structures. Provide the following information for each Sediment Basin and Sediment Dam:
  1. Calculations demonstrating compliance with the 48 hour draw down time (if required by the OEPA NPDES Permit),
  2. Size of the contributing drainage area,
  3. Volume of the Sediment Storage Zone
  4. Volume of the Dewatering Zone (if required by the OEPA NPDES Permit),
  5. Basin excavation quantity or dam embankment quantity
  6. Quantity of rock channel protection
  7. Riser Pipe and outlet structure details (if required by the OEPA NPDES Permit).

Revise the accepted SWPPP as needed to maintain compliance with OEPA NPDES Permit. Revisions and amendments (See Appendix E, Part III, D) to the accepted SWPPP will be at no additional cost to the Department.

**832.11 Inspections and SWPPP Updates.** Perform the required OEPA NPDES Permit inspections and prepare inspection reports (see Appendix E).

The inspections must be performed by one of the following parties:

- A. The CPESC Trained Engineer who signed and sealed the SWPPP.
- B. The CPESC Trained inspector who is under the supervision of the Engineer who signed and sealed the SWPPP.
- C. The CESSWI Trained inspector who is under the supervision of the Engineer who signed and sealed the SWPPP.

The individual performing the OEPA NPDES Permit inspections is called the Contractor's Erosion Control Inspector (CECI). Prepare the inspection reports for projects that have a SWPPP. Submit inspection reports to the Engineer every 7 days and within 24 hours of a 0.5 inch (13 mm) or greater rainfall event throughout the life of the contract.

Due to the dynamic nature of the construction activities, the reporting CECI will update, amend and revise the SWPPP as the contractor's operations and site conditions warrant. Identify all revisions and updates to the SWPPP and indicate what measures will be taken to maintain OEPA NPDES Permit compliance in the report. Include the following in the inspection report; the OEPA NPDES Permit inspection checklist (see appendix E, Part III.G.2.i), a map identifying all BMP needed, installed, maintained or removed since the last inspection report, certification that all construction activities are compliant with the SWPPP and the signature of the CECI responsible for the inspection. The signature of the Professional Engineer who sealed the SWPPP is required as part of the inspection report, on a monthly basis or when modifications to the SWPPP design are made. Include the certification requirements according to OEPA NPDES Permit Part V.H with all reporting sign offs.

A BMP Inventory form is furnished in Appendix A to assist in documenting and recording the BMP quantities for payment. The BMP inventory form in Appendix A is not a substitute for the inspection report described above.

The CECI is required to notify the Department within 24 hours of any compliance deficiencies or verified complaints related to the SWPPP or OEPA NPDES Permit. Within 48 hours of the Department's or CECI's notice of deficiency, the contractor is required to construct, install, repair or correct the BMP measures needed to resume OEPA NPDES Permit compliance.

**832.12 Compensation.** The Department will furnish Item 832 Each, Erosion Control with an amount in the proposal to pay for BMP work. The fixed amount shown in the proposal is included (as any other bid items) in the Total Bid Amount. This fixed amount is the Department's estimate of the total cost of BMP work required to be performed for the project. If the BMP work exceeds this amount, the BMP work will still be paid at the pre-determined prices. All BMP work will be paid at the proposal pre-determined unit price times the correctly installed BMP number of units. The payment due will be deducted from Item 832 Each Erosion Control. C&MS Table 104.02-2 does not apply to reductions in this contract item.

The Lump Sum amount bid for the SWPPP includes all work associated with development, design, NPDES required inspection, modification, revision, updates, amendments and reporting

related to the SWPPP. Changes made to the SWPPP, but not caused by the Department, are the financial responsibility of the Contractor. Additional compensation will only be permitted for Department accepted amendments to the SWPPP resulting from revisions to the contract documents as per sections 104.02.B, 104.02.D and 104.02.F. Provide the additional costs for the amended SWPPP to the Department prior to beginning the associated revised work. All costs associated with providing and maintaining the required CPESC and CESSWI Trained personnel, conducting the NPDES required inspections, and support engineering services are included in the contract Lump Sum bid for SWPPP. The Department will only pay for one accepted SWPPP regardless of the number of Construction phases, revisions, amendments or project redesigns.

### **832.13 Method of Measurement**

The Department will measure the SWPPP as a Lump Sum.

The Department will measure Construction Seeding and Mulching by the number of square yards (square meters).

The Department will measure Slope Drains by the number of feet (meters) of conduit.

The Department will measure Sediment Basins by the number of cubic yards (cubic meters) of excavation.

The Department will measure Sediment Dams by the number of cubic yards (cubic meters) of embankment.

Any pipe required for the outlet structure of a sediment basin or dam is incidental to the unit price paid for Sediment Basins and Dams.

The Department will measure Perimeter Filter Fabric Fence, and Construction Fence by the number of feet (meters).

The Department will measure Filter Fabric Ditch Check by the number of feet (meters).

The Department will measure Inlet Protection by the number of feet (meters).

The Department will measure Dikes by the number of cubic yards (cubic meters) of embankment.

The Department will measure Construction Ditch Protection and Construction Slope Protection by the number of square yards (square meters).

The Department will measure Rock Channel Protection, Type C or D (with or without filter) by the number of cubic yards (cubic meters).

The Department will measure Sediment Removal by the number of cubic yards (cubic meters).

The Department will measure Construction Mulching by the number of square yards (square meters) regardless if the application is crimped or not.

The Department will measure Winter Seeding and Mulching by the number of square yards (square meters).

The Department will measure Construction Entrance protection by the number of cubic yards (cubic meters)

**832.14 Basis of Payment**

The Department will pay the contract Lump Sum price bid for the SWPPP.

The Department will make partial payments for the Storm Water Pollution Prevention Plan according to C&MS Section 109.09 and as modified by the following schedule:

The Department will release 60 percent of the lump sum amount bid for Storm Water Pollution Prevention Plan to the Contractor with the first regular estimate payable after the Engineer has accepted the Storm Water Pollution Prevention Plan submission.

The Department will release an 30 percent of the lump sum amount bid for Storm Water Pollution Prevention Plan to the Contractor with the first regular estimate payable after 50 percent of the project is complete.

The Department will release the remaining 10 percent of the lump sum amount bid for Storm Water Pollution Prevention Plan to the Contractor with the first regular estimate payable after 90 percent of the project is complete.

The Department will pay for properly installed and accepted BMP per Item 832 Each, Erosion Control. BMP compensation will be based on the unit prices shown in Appendix F.

The Department will not pay for BMP Items which are required as a result of the Contractor's negligence, carelessness, or failure to install permanent controls.

The Department will not pay for BMP that does not provide effective sediment and erosion control for the EDA.

The Department will not pay for any causeway and access fills.

The Department will not pay to replace BMP that have failed as a result of improper maintenance or installation.

The Department will not pay for concrete washout area BMP. Concrete washout area BMP are considered incidental to the concrete work.

The Department will not pay for BMP which are required as a part of the work and are not specifically identified as a separate item. Compensation for BMP that are required for NPDES Permit compliance and are not included in Appendix F of this specification are considered incidental to the work.

<b>Item</b>	<b>Unit</b>	<b>Description</b>
832	Lump Sum	Storm Water Pollution Prevention Plan
832	Each	Erosion Control

Appendix A

**Weekly and Rain Event Erosion Control  
BMP Inventory**

Contractor \_\_\_\_\_

Project No. \_\_\_\_\_ Co-Rt-Sec \_\_\_\_\_ Date \_\_\_\_\_

R=Replacement    W=Working    M=Maintenance    I=Install    D=Delete    Rain Amt

Station to Station	Side	Offset	Balloon Ref.	Perimeter Control	Inlet Protection	Constr. Speed	Dikes Fill Slopes	Dikes Cut Slopes	Slope Drains	FF Ditch Checks	Rock Ditch Checks	Sediment Basins	Stream Relocate	Stream Crossing	Date work was Complete

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

This form is furnished to assist in documenting and recording the BMP quantities for payment.  
 This form is not a substitute for the inspection report described in 832.11.





Appendix C

**Sample SWPPP Acceptance Form**

The Department has received the SWPPP for Project: \_\_\_\_\_

Co-Rt-Sec: \_\_\_\_\_

The submittal is dated: \_\_\_\_\_

The Department Accepts the Submittal.

\_\_\_\_\_  
Project Engineer, Project Supervisor

\_\_\_\_\_  
Date



## Co-Permittee Notice of Intent for Coverage Under Ohio EPA Storm Water Construction General Permit

Submission of this NOI constitutes notice that the party identified in Section I of this form intends to be authorized by Ohio's NPDES general permit for storm water associated with construction activity. Becoming a permittee obligates a discharger to comply with the terms and conditions of the permit. **NOTE: All necessary information must be provided on this form. Read the accompanying instructions *carefully* before completing the form. Do not use correction fluid on this form. Forms transmitted by fax will not be accepted. There is no fee associated with submitting this form.**

### I. Applicant Information/Mailing Address

Company (Applicant) Name: \_\_\_\_\_  
 Mailing (Applicant) Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Contact E-Mail Address: \_\_\_\_\_

### II. Facility/Site Location Information

Existing Ohio EPA Facility Permit Number:   \_\_ GC \_\_ \_ \_ \_ \_ \* \_\_ G           OR    OHR1 \_\_ \_ \_ \_ \_  
 Initial Permittee Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Facility/Site Name: \_\_\_\_\_  
 City: \_\_\_\_\_ Township(s): \_\_\_\_\_  
 County(ies): \_\_\_\_\_ State: Ohio Zip Code: \_\_\_\_\_  
 Facility Contact Person: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Facility Contact E-Mail Address: \_\_\_\_\_

### III. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant Name: \_\_\_\_\_ Title: \_\_\_\_\_  
 Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_



OHIO E.P.A.

APR 21 2008

CENTRAL DIRECTOR'S JOURNAL

Page 1 of 40

Ohio EPA Permit No.: OHC000003

Effective Date: April 21, 2008

Expiration Date: April 20, 2013

**OHIO ENVIRONMENTAL PROTECTION AGENCY**

**AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED  
WITH CONSTRUCTION ACTIVITY UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

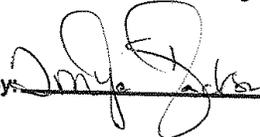
In compliance with the provisions of the federal Water Pollution Control Act, as amended (33 U.S.C. Section 1251 et. seq. hereafter referred to as "the Act") and the Ohio Water Pollution Control Act [Ohio Revised Code ("ORC") Chapter 6111], dischargers of storm water from sites where construction activity is being conducted, as defined in Part I.B of this permit, are authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA," to discharge from the outfalls at the sites and to the receiving surface waters of the State identified in their Notice of Intent ("NOI") application form on file with Ohio EPA in accordance with the conditions specified in Parts I through VII of this permit.

It has been determined that a lowering of water quality of various waters of the State associated with granting coverage under this permit is necessary to accommodate important social and economic development in the state of Ohio. In accordance with OAC 3745-1-05, this decision was reached only after examining a series of technical alternatives, reviewing social and economic issues related to the degradation, and considering all public and intergovernmental comments received concerning the proposal.

This permit is conditioned upon payment of applicable fees, submittal of a complete NOI application form and written approval of coverage from the director of Ohio EPA in accordance with Ohio Administrative Code ("OAC") Rule 3745-38-06.

Laura H. Powell  
Assistant Director

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By:  Date: 4-21-08

**TABLE OF CONTENTS**

PART I. COVERAGE UNDER THIS PERMIT

- A. Permit Area
- B. Eligibility
- C. Requiring an individual permit or an alternative general permit
- D. Permit requirements when portions of a site are sold
- E. Authorization

PART II. NOTICE OF INTENT REQUIREMENTS

- A. Deadlines for notification
- B. Failure to notify
- C. Where to submit an NOI
- D. Additional notification
- E. Renotification

PART III. STORM WATER POLLUTION PREVENTION PLAN (SWP3)

- A. Storm Water Pollution Prevention Plans
- B. Timing
- C. SWP3 Signature and Review
- D. Amendments
- E. Duty to inform contractors and subcontractors
- F. Total Maximum Daily Load (TMDL) allocations
- G. SWP3 Requirements

PART IV. NOTICE OF TERMINATION REQUIREMENTS

- A. Failure to notify
- B. When to submit an NOT
- C. How to submit an NOT

PART V. STANDARD PERMIT CONDITIONS

- A. Duty to comply
- B. Continuation of the expired general permit
- C. Need to halt or reduce activity not a defense
- D. Duty to mitigate
- E. Duty to provide information
- F. Other information
- G. Signatory requirements
- H. Certification
- I. Penalties for falsification of monitoring systems
- J. Oil and hazardous substance liability
- K. Property rights
- L. Severability
- M. Transfers
- N. Environmental laws
- O. Proper operation and maintenance
- P. Inspection and entry

PART VI. REOPENER CLAUSE

PART VII. DEFINITIONS

**PART I. COVERAGE UNDER THIS PERMIT**

**A. Permit Area.**

This permit covers the entire State of Ohio.

**B. Eligibility.**

1. Construction activities covered. Except for storm water discharges identified under Part I.B.2, this permit may cover all new and existing discharges composed entirely of storm water discharges associated with construction activity that enter surface waters of the State or a storm drain leading to surface waters of the State.

For the purposes of this permit, construction activities include any clearing, grading, excavating, grubbing and/or filling activities that disturb one or more acres of land. Discharges from trench dewatering are also covered by this permit as long as the dewatering activity is carried out in accordance with the practices outlined in Part III.G.2.g.iv of this permit. The threshold acreage includes the entire area disturbed in the larger common plan of development or sale.

This permit also authorizes storm water discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:

- a. The support activity is directly related to a construction site that is required to have NPDES permit coverage for discharges of storm water associated with construction activity;
- b. The support activity is not a commercial operation serving multiple unrelated construction projects and does not operate beyond the completion of the construction activity at the site it supports;
- c. Appropriate controls and measures are identified in a storm water pollution prevention plan (SWP3) covering the discharges from the support activity; and
- d. The support activity is on or contiguous with the property defined in the NOI (off-site borrow pits and soil disposal areas, which serve only one project, do not have to be contiguous with the construction site);

**Part I.B**

2. Limitations on coverage. The following storm water discharges associated with construction activity are not covered by this permit:
  - a. Storm water discharges that originate from the site after construction activities have been completed, including any temporary support activity, and the site has achieved final stabilization. Industrial post-construction storm water discharges may need to be covered by an NPDES permit;
  - b. Storm water discharges associated with construction activity that the director has shown to be or may reasonably expect to be contributing to a violation of a water quality standard; and
  - c. Storm water discharges authorized by an individual NPDES permit or an alternative NPDES general permit;
  
3. Waivers. After March 10, 2003, sites whose larger common plan of development or sale have at least one, but less than five acres of land disturbance, which would otherwise require permit coverage for storm water discharges associated with construction activities, may request that the director waive their permit requirement. Entities wishing to request such a waiver must certify in writing that the construction activity meets one of the two waiver conditions:
  - a. **Rainfall erosivity waiver**. For a construction site to qualify for the rainfall erosivity waiver, the cumulative rainfall erosivity over the project duration must be five or less and the site must be stabilized with at least a 70 percent vegetative cover or other permanent, non-erosive cover. The rainfall erosivity must be calculated according to the method in U.S. EPA Fact Sheet 3.1 Construction Rainfall Erosivity Waiver dated January 2001. If it is determined that a construction activity will take place during a time period where the rainfall erosivity factor is less than five, a written waiver certification must be submitted to Ohio EPA at least 21 days before construction activity is scheduled to begin. If the construction activity will extend beyond the dates specified in the waiver certification, the operator must either: (a) recalculate the waiver using the original start date with the new ending date (if the R factor is still less than five, a new waiver certification must be submitted) or (b) submit an NOI application form and fee for coverage under this general permit at least seven days prior to the end of the waiver period (see Attachment A); or

**Part I.B.3**

- b. **TMDL (Total Maximum Daily Load) waiver.** Storm water controls are not needed based on a TMDL approved or established by U.S. EPA that addresses the pollutant(s) of concern or, for non-impaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. The pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the director of Ohio EPA that the construction activity will take place, and storm water discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis. A written waiver certification must be submitted to Ohio EPA at least 21 days before the construction activity is scheduled to begin.
4. Prohibition on non-storm water discharges. All discharges covered by this permit must be composed entirely of storm water with the exception of the following: discharges from fire fighting activities; fire hydrant flushings; potable water sources including waterline flushings; irrigation drainage; lawn watering; routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; uncontaminated ground water from trench or well point dewatering and foundation or footing drains where flows are not contaminated with process materials such as solvents. Dewatering activities must be done in compliance with Part III.G.2.g.iv of this permit. Discharges of material other than storm water or the authorized non-storm water discharges listed above must comply with an individual NPDES permit or an alternative NPDES general permit issued for the discharge.

Except for flows from fire fighting activities, sources of non-storm water listed above that are combined with storm water discharges associated with construction activity must be identified in the SWP3. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.



**Part I.B**

5. Spills and unintended releases (Releases in excess of Reportable Quantities). This permit does not relieve the permittee of the reporting requirements of 40 CFR Part 117 and 40 CFR Part 302. In the event of a spill or other unintended release, the discharge of hazardous substances in the storm water discharge(s) from a construction site must be minimized in accordance with the applicable storm water pollution prevention plan for the construction activity and in no case, during any 24-hour period, may the discharge(s) contain a hazardous substance equal to or in excess of reportable quantities.

40 CFR Part 117 sets forth a determination of the reportable quantity for each substance designated as hazardous in 40 CFR Part 116. The regulation applies to quantities of designated substances equal to or greater than the reportable quantities, when discharged to surface waters of the State. 40 CFR Part 302 designates under section 102(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, those substances in the statutes referred to in section 101(14), identifies reportable quantities for these substances and sets forth the notification requirements for releases of these substances. This regulation also sets forth reportable quantities for hazardous substances designated under section 311(b)(2)(A) of the Clean Water Act (CWA).

**C. Requiring an individual NPDES permit or an alternative NPDES general permit.**

1. The director may require an alternative permit. The director may require any operator eligible for this permit to apply for and obtain either an individual NPDES permit or coverage under an alternative NPDES general permit in accordance with OAC Rule 3745-38-04. Any interested person may petition the director to take action under this paragraph.

The director will send written notification that an alternative NPDES permit is required. This notice shall include a brief statement of the reasons for this decision, an application form and a statement setting a deadline for the operator to file the application. If an operator fails to submit an application in a timely manner as required by the director under this paragraph, then coverage, if in effect, under this permit is automatically terminated at the end of the day specified for application submittal.

**Part I.C**

2. Operators may request an individual NPDES permit. Any owner or operator eligible for this permit may request to be excluded from the coverage of this permit by applying for an individual permit. The owner or operator shall submit an individual application with reasons supporting the request to the director in accordance with the requirements of 40 CFR 122.26. If the reasons adequately support the request, the director shall grant it by issuing an individual NPDES permit.
3. When an individual NPDES permit is issued to an owner or operator otherwise subject to this permit or the owner or operator is approved for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of approval for coverage under the alternative general permit, whichever the case may be.

**D. Permit requirements when portions of a site are sold**

If an operator obtains a permit for a development, and then the operator (permittee) sells off lots or parcels within that development, permit coverage must be continued on those lots until a Notice of Termination (NOT) in accordance with Part IV.B is submitted. For developments which require the use of centralized sediment and erosion controls (i.e., controls that address storm water runoff from one or more lots) for which the conveyance of permit coverage for a portion of the development will either prevent or impair the implementation of the controls and therefore jeopardize compliance with the terms and conditions of this permit, the permittee will be required to maintain responsibility for the implementation of those controls. For developments where this is not the case, it is the permittee's responsibility to temporarily stabilize all lots sold to individual lot owners unless an exception is approved in accordance with Part III.G.4. In cases where permit coverage for individual lot(s) will be conveyed, the permittee shall inform, in writing, the individual lot owner of the obligations under this permit and ensure that the Individual Lot NOI application is submitted to Ohio EPA.

**E. Authorization**

1. Obtaining authorization to discharge. Operators that discharge storm water associated with construction activity must submit an NOI application form in accordance with the requirements of Part II of this permit to obtain authorization to discharge under this general permit. As required under OAC Rule 3745-38-06(E), the director, in response to the NOI submission, shall notify the applicant in writing that he/she has been granted general permit coverage to discharge storm water associated with construction activity under the terms and conditions of this permit or that the applicant must apply for an individual NPDES permit or coverage under an alternate general NPDES permit as described in Part I.C.1.

**Part I.E**

2. No release from other requirements. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations. Other permit requirements commonly associated with construction activities include, but are not limited to, section 401 water quality certifications, isolated wetland permits, permits to install sanitary sewers or other devices that discharge or convey polluted water, permits to install drinking water lines, single lot sanitary system permits and disturbance of land which was used to operate a solid or hazardous waste facility (i.e., coverage under this NPDES general permit does not satisfy the requirements of OAC Rule 3745-27-13 or ORC Section 3734.02(H)). This permit does not relieve the permittee of other responsibilities associated with construction activities such as contacting the Ohio Department of Natural Resources, Division of Water, to ensure proper well installation and abandonment of wells.

**Part II. NOTICE OF INTENT REQUIREMENTS**

**A. Deadlines for notification.**

Initial coverage: Operators who intend to obtain initial coverage for a storm water discharge associated with construction activity under this general permit must submit a complete and accurate NOI application form and appropriate fee at least 21 days prior to the commencement of construction activity. If more than one operator, as defined in Part VII of this general permit, will be engaged at a site, each operator shall seek coverage under this general permit. Where one operator has already submitted an NOI prior to other operator(s) being identified, the additional operator shall request modification of coverage to become a co-permittee. In such instances, the co-permittees shall be covered under the same facility permit number. No additional permit fee is required.

Individual lot transfer of coverage: Operators must each submit an individual lot notice of intent (Individual Lot NOI) application form (no fee required) to Ohio EPA at least seven days prior to the date that they intend to accept responsibility for permit requirements for their portion of the original permitted development from the previous permittee. The original permittee may submit an Individual Lot NOT at the time the Individual Lot NOI is submitted. Transfer of permit coverage is not granted until an approval letter from the director of Ohio EPA is received by the applicant.

**B. Failure to notify.**

Operators who fail to notify the director of their intent to be covered and who discharge pollutants to surface waters of the State without an NPDES permit are in violation of ORC Chapter 6111. In such instances, Ohio EPA may bring an enforcement action for any discharges of storm water associated with construction activity.

**Part II**

**C. Where to submit an NOI.**

Operators seeking coverage under this permit must submit a signed NOI form, provided by Ohio EPA, to the address found in the associated instructions.

**D. Additional notification.**

The permittee shall make NOIs and SWP3s available upon request of the director of Ohio EPA, local agencies approving sediment and erosion control plans, grading plans or storm water management plans, local governmental officials, or operators of municipal separate storm sewer systems (MS4s) receiving drainage from the permitted site. Each operator that discharges to an NPDES permitted MS4 shall provide a copy of its Ohio EPA NOI submission to the MS4 in accordance with the MS4's requirements, if applicable.

**E. Renotification.**

Upon renewal of this general permit, the permittee is required to notify the director of his intent to be covered by the general permit renewal. Permittees covered under the previous NPDES general permits for storm water discharges associated with construction activity (NPDES permit numbers OHR100000 and OHC000002) shall have continuing coverage under this permit. The permittees covered under OHR100000 or OHC000002 shall submit a letter within 90 days of receipt of written notification by Ohio EPA expressing their intent that coverage be continued. There is no fee associated with these letters of intent for continued coverage. Permit coverage will be terminated after the 90-day period if the letter is not received by Ohio EPA. Ohio EPA will provide instructions on the contents of the letter and where it is to be sent within the notification letter.

**PART III. STORM WATER POLLUTION PREVENTION PLAN (SWP3)**

**A. Storm Water Pollution Prevention Plans.**

A SWP3 shall be developed for each site covered by this permit. For a multi-phase construction project, a separate NOI shall be submitted when a separate SWP3 will be prepared for subsequent phases. SWP3s shall be prepared in accordance with sound engineering and/or conservation practices by a professional experienced in the design and implementation of standard erosion and sediment controls and storm water management practices addressing all phases of construction. The SWP3 shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with construction activities. The SWP3 shall be a comprehensive, stand-alone document, which is not complete unless it contains the information required by Part III.G of this permit. In addition, the SWP3 shall describe and ensure the implementation of best management practices (BMPs) that reduce the pollutants in storm water discharges during construction and pollutants associated with post-construction activities to ensure compliance with ORC Section 6111.04, OAC Chapter 3745-1 and the terms and conditions of this permit.

**B. Timing**

A SWP3 shall be completed prior to the timely submittal of an NOI and updated in accordance with Part III.D. Upon request and good cause shown, the director may waive the requirement to have a SWP3 completed at the time of NOI submission. If a waiver has been granted, the SWP3 must be completed prior to the initiation of construction activities. The SWP3 must be implemented upon initiation of construction activities.

Permittees continuing coverage from the previous generations of this permit (OHR100000 and OHC000002) that have initiated construction activity prior to the receipt of the first written notification from Ohio EPA to submit a letter of intent to continue coverage, as required in Part II.E, are not required to update their SWP3 as a result of this renewal (OHC000003). Permittees continuing coverage from the previous generations of this permit (OHR100000 and OHC000002) that have not initiated construction activity prior to the receipt of the first written notification from Ohio EPA to submit a letter of intent to continue coverage, as required in Part II.E, are required to update their SWP3 as a result of this renewal (OHC000003).

**C. SWP3 Signature and Review.**

1. Plan Signature and Retention On Site. The SWP3 shall include the certification in Part V.H., be signed in accordance with Part V.G., and be retained on site during working hours.

**Part III.C**

2. Plan Availability

- a. On-site: The plan shall be made available immediately upon request of the director or his authorized representative during working hours. A copy of the NOI and letter granting permit coverage under this general permit also shall be made available at the site.
  - b. By written request: The permittee must provide a copy of the SWP3 within 10 days upon written request by any of the following:
    - i. The director or the director's authorized representative;
    - ii. A local agency approving sediment and erosion plans, grading plans or storm water management plans; or
    - iii. In the case of a storm water discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the operator of the system.
  - c. To the public: All NOIs, general permit approval for coverage letters, and SWP3s are considered reports that shall be available to the public in accordance with the Ohio Public Records law. The permittee shall make documents available to the public upon request or provide a copy at public expense, at cost, in a timely manner. However, the permittee may claim to Ohio EPA any portion of an SWP3 as confidential in accordance with Ohio law.
3. Plan Revision. The director or authorized representative, may notify the permittee at any time that the SWP3 does not meet one or more of the minimum requirements of this part. Within 10 days after such notification from the director (or as otherwise provided in the notification) or authorized representative, the permittee shall make the required changes to the SWP3 and, if requested, shall submit to Ohio EPA the revised SWP3 or a written certification that the requested changes have been made.

**D. Amendments**

The permittee shall amend the SWP3 whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the potential for the discharge of pollutants to surface waters of the State or if the SWP3 proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity. Amendments to the SWP3 may be reviewed by Ohio EPA in the same manner as Part III.C.

**Part III**

**E. Duty to inform contractors and subcontractors**

The permittee shall inform all contractors and subcontractors not otherwise defined as "operators" in Part VII of this general permit, who will be involved in the implementation of the SWP3, of the terms and conditions of this general permit. The permittee shall maintain a written document containing the signatures of all contractors and subcontractors involved in the implementation of the SWP3 as proof acknowledging that they reviewed and understand the conditions and responsibilities of the SWP3. The written document shall be created and signatures of each individual contractor shall be obtained prior to their commencement of work on the construction site.

**F. Total Maximum Daily Load (TMDL) allocations**

If a TMDL is approved for any waterbody into which the permittee's site discharges and requires specific BMPs for construction sites, the director may require the permittee to revise his/her SWP3.

**G. SWP3 Requirements**

Operations that discharge storm water from construction activities are subject to the following requirements and the SWP3 shall include the following items:

1. Site description. Each SWP3 shall provide:
  - a. A description of the nature and type of the construction activity (e.g., low density residential, shopping mall, highway, etc.);
  - b. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas);
  - c. An estimate of the impervious area and percent imperviousness created by the construction activity;
  - d. A calculation of the runoff coefficients for both the pre-construction and post construction site conditions;
  - e. Existing data describing the soil and, if available, the quality of any discharge from the site;
  - f. A description of prior land uses at the site;

**Part III.G.1**

- g. An implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence;
- h. The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water(s) and the areal extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project. For discharges to an MS4, the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a stream or surface water of the State must be indicated;
- i. For subdivided developments where the SWP3 does not call for a centralized sediment control capable of controlling multiple individual lots, a detail drawing of a typical individual lot showing standard individual lot erosion and sediment control practices.

This does not remove the responsibility to designate specific erosion and sediment control practices in the SWP3 for critical areas such as steep slopes, stream banks, drainage ways and riparian zones.

- j. Location and description of any storm water discharges associated with dedicated asphalt and dedicated concrete plants covered by this permit and the best management practices to address pollutants in these storm water discharges;
- k. A copy of the permit requirements (attaching a copy of this permit is acceptable);
- l. A cover page or title identifying the name and location of the site, the name and contact information of all construction site operators, the name and contact information for the person responsible for authorizing and amending the SWP3, preparation date, and the estimated dates that construction will start and be complete;
- m. A log documenting grading and stabilization activities as well as amendments to the SWP3, which occur after construction activities commence; and
- n. Site map showing:



**Part III.G.1.n**

- i. Limits of earth-disturbing activity of the site including associated off-site borrow or spoil areas that are not addressed by a separate NOI and associated SWP3;
- ii. Soils types should be depicted for all areas of the site, including locations of unstable or highly erodible soils;
- iii. Existing and proposed contours. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres;
- iv. Surface water locations including springs, wetlands, streams, lakes, water wells, etc., on or within 200 feet of the site, including the boundaries of wetlands or stream channels and first subsequent named receiving water(s) the permittee intends to fill or relocate for which the permittee is seeking approval from the Army Corps of Engineers and/or Ohio EPA;
- v. Existing and planned locations of buildings, roads, parking facilities and utilities;
- vi. The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during the course of site development;
- vii. Sediment and storm water management basins noting their sediment settling volume and contributing drainage area;
- viii. Permanent storm water management practices to be used to control pollutants in storm water after construction operations have been completed.
- ix. Areas designated for the storage or disposal of solid, sanitary and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling;
- x. The location of designated construction entrances where the vehicles will access the construction site;
- xi. The location of any in-stream activities including stream crossings;

**Part III.G**

2. **Controls.** The SWP3 must contain a description of the controls appropriate for each construction operation covered by this permit and the operator(s) must implement such controls. The SWP3 must clearly describe for each major construction activity identified in Part III.G.1.g: (a) appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and (b) which contractor is responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization). The SWP3 shall identify the subcontractors engaged in activities that could impact storm water runoff. The SWP3 shall contain signatures from all of the identified subcontractors indicating that they have been informed and understand their roles and responsibilities in complying with the SWP3. Ohio EPA recommends that the primary site operator review the SWP3 with the primary contractor prior to commencement of construction activities and keep a SWP3 training log to demonstrate that this review has occurred.

Ohio EPA recommends that the erosion, sediment, and storm water management practices used to satisfy the conditions of this permit should meet the standards and specifications in the current edition of Ohio's Rainwater and Land Development (see definitions) manual or other standards acceptable to Ohio EPA. The controls shall include the following minimum components:

- a. **Non-Structural Preservation Methods.** The SWP3 must make use of practices which preserve the existing natural condition as much as feasible. Such practices may include: preserving riparian areas adjacent to surface waters of the State, preserving existing vegetation and vegetative buffer strips, phasing of construction operations in order to minimize the amount of disturbed land at any one time and designation of tree preservation areas or other protective clearing or grubbing practices. The recommended buffer that operators should leave undisturbed along a surface water of the State is 25 feet as measured from the ordinary high water mark of the surface water.
- b. **Erosion Control Practices.** The SWP3 must make use of erosion controls that are capable of providing cover over disturbed soils unless an exception is approved in accordance with Part III.G.4. A description of control practices designed to restabilize disturbed areas after grading or construction shall be included in the SWP3. The SWP3 must provide specifications for stabilization of all disturbed areas of the site and provide guidance as to which method of stabilization will be employed for any time of the year. Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, use of construction entrances and the use of alternative ground cover.

Part III.G.2.b

- i. **Stabilization.** Disturbed areas must be stabilized as specified in the following tables below. Permanent and temporary stabilization are defined in Part VII.

**Table 1: Permanent Stabilization**

Area requiring permanent stabilization	Time frame to apply erosion controls
Any areas that will lie dormant for one year or more	Within seven days of the most recent disturbance
Any areas within 50 feet of a surface water of the State and at final grade	Within two days of reaching final grade
Any other areas at final grade	Within seven days of reaching final grade within that area

**Table 2: Temporary Stabilization**

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed areas within 50 feet of a surface water of the State and not at final grade	Within two days of the most recent disturbance if the area will remain idle for more than 21 days
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 50 feet of a surface water of the State	Within seven days of the most recent disturbance within the area  For residential subdivisions, disturbed areas must be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s).
Disturbed areas that will be idle over winter	Prior to the onset of winter weather

Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed.

- ii. **Permanent stabilization of conveyance channels.** Operators shall undertake special measures to stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding (as defined in the current edition of the Rainwater and Land Development manual), mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques or rock check dams.

**Part III.G.2**

- c. **Runoff Control Practices.** The SWP3 shall incorporate measures which control the flow of runoff from disturbed areas so as to prevent erosion from occurring. Such practices may include rock check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.
- d. **Sediment Control Practices.** The plan shall include a description of structural practices that shall store runoff allowing sediments to settle and/or divert flows away from exposed soils or otherwise limit runoff from exposed areas. Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices may include, among others: sediment settling ponds, silt fences, earth diversion dikes or channels which direct runoff to a sediment settling pond and storm drain inlet protection. All sediment control practices must be capable of ponding runoff in order to be considered functional. Earth diversion dikes or channels alone are not considered a sediment control practice unless those are used in conjunction with a sediment settling pond.

The SWP3 must contain detail drawings for all structural practices.

- i. Timing. Sediment control structures shall be functional throughout the course of earth disturbing activity. Sediment basins and perimeter sediment barriers shall be implemented prior to grading and within seven days from the start of grubbing. They shall continue to function until the up slope development area is restabilized. As construction progresses and the topography is altered, appropriate controls must be constructed or existing controls altered to address the changing drainage patterns.
- ii. Sediment settling ponds. A sediment settling pond is required for any one of the following conditions:
- concentrated storm water runoff (e.g., storm sewer or ditch);
  - runoff from drainage areas, which exceed the design capacity of silt fence or other sediment barriers;
  - runoff from drainage areas that exceed the design capacity of inlet protection; or
  - runoff from common drainage locations with 10 or more acres of disturbed land.

**Part III.G.2.d.ii**

The permittee may request approval from Ohio EPA to use alternative controls if the permittee can demonstrate the alternative controls are equivalent in effectiveness to a sediment settling pond.

The sediment settling pond volume consists of both a dewatering zone and a sediment storage zone. The volume of the dewatering zone shall be a minimum of 1800 cubic feet (ft<sup>3</sup>) per acre of drainage (67 yd<sup>3</sup>/acre) with a minimum 48-hour drain time for sediment basins serving a drainage area over 5 acres. The volume of the sediment storage zone shall be calculated by one of the following methods: Method 1: The volume of the sediment storage zone shall be 1000 ft<sup>3</sup> per disturbed acre within the watershed of the basin. OR Method 2: The volume of the sediment storage zone shall be the volume necessary to store the sediment as calculated with RUSLE or a similar generally accepted erosion prediction model. The accumulated sediment shall be removed from the sediment storage zone once it's full. When determining the total contributing drainage area, off-site areas and areas which remain undisturbed by construction activity must be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff. The depth of the dewatering zone must be less than or equal to five feet. The configuration between inlets and the outlet of the basin must provide at least two units of length for each one unit of width (> 2:1 length:width ratio), however, a length to width ratio of 4:1 is recommended. When designing sediment settling ponds, the permittee must consider public safety, especially as it relates to children, as a design factor for the sediment basin and alternative sediment controls must be used where site limitations would preclude a safe design. The use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal is encouraged.

- iii. Silt Fence and Diversions. Sheet flow runoff from denuded areas shall be intercepted by silt fence or diversions to protect adjacent properties and water resources from sediment transported via sheet flow. Where intended to provide sediment control, silt fence shall be placed on a level contour downslope of the disturbed area. This permit does not preclude the use of other sediment barriers designed to control sheet flow runoff. The relationship between the maximum drainage area to silt fence for a particular slope range is shown in the table below.

Part III.G.2.d.iii

Maximum drainage area (in acres) to 100 linear feet of silt fence	Range of slope for a particular drainage area (in percent)
0.5	< 2%
0.25	≥ 2% but < 20%
0.125	≥ 20% but < 50%

Placing silt fence in a parallel series does not extend the size of the drainage area. Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Such devices, which include swales, dikes or berms, may receive storm water runoff from areas up to 10 acres.

- iv. Inlet Protection. Other erosion and sediment control practices shall minimize sediment laden water entering active storm drain systems, unless the storm drain system drains to a sediment settling pond. All inlets receiving runoff from drainage areas of one or more acres will require a sediment settling pond.
- v. Surface Waters of the State Protection. If construction activities disturb areas adjacent to surface waters of the State, structural practices shall be designed and implemented on site to protect all adjacent surface waters of the State from the impacts of sediment runoff. No structural sediment controls (e.g., the installation of silt fence or a sediment settling pond) shall be used in a surface water of the State. For all construction activities immediately adjacent to surface waters of the State, it is recommended that a setback of at least 25-feet, as measured from the ordinary high water mark of the surface water, be maintained in its natural state as a permanent buffer. Where impacts within this setback area are unavoidable due to the nature of the construction activity (e.g., stream crossings for roads or utilities), the project shall be designed such that the number of stream crossings and the width of the disturbance within the setback area are minimized.
- vi. Modifying Controls. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the permittee must replace or modify the control for site conditions.

**Part III.G.2**

- e. **Post-Construction Storm Water Management Requirements.** So that the receiving stream's physical, chemical, and biological characteristics are protected and stream functions are maintained, post-construction storm water practices shall provide perpetual management of runoff quality and quantity. To meet the post-construction requirements of this permit, the SWP3 must contain a description of the post-construction BMPs that will be installed during construction for the site and the rationale for their selection. The rationale must address the anticipated impacts on the channel and floodplain morphology, hydrology, and water quality. Post-construction BMPs cannot be installed within a surface water of the State (e.g., wetland or stream) unless it's authorized by a CWA 401 water quality certification, CWA 404 permit, or Ohio EPA non-jurisdictional wetland/stream program approval. Note: localities may have more stringent post-construction requirements.

Detail drawings and maintenance plans must be provided for all post-construction BMPs. Maintenance plans shall be provided by the permittee to the post-construction operator of the site (including homeowner associations) upon completion of construction activities (prior to termination of permit coverage). For sites located within a community with a regulated municipal separate storm sewer system (MS4), the permittee, land owner, or other entity with legal control of the property may be required to develop and implement a maintenance plan to comply with the requirements of the MS4. Maintenance plans must ensure that pollutants collected within structural post-construction practices, be disposed of in accordance with local, state, and federal regulations. To ensure that storm water management systems function as they were designed and constructed, the post construction operation and maintenance plan must be a stand-alone document, which contains: (1) a designated entity for storm water inspection and maintenance responsibilities; (2) the routine and non-routine maintenance tasks to be undertaken; (3) a schedule for inspection and maintenance; (4) any necessary legally binding maintenance easements and agreements; and (5) a map showing all access and maintenance easements. Permittees are not responsible under this permit for operation and maintenance of post-construction practices once coverage under this permit is terminated.

Post-construction storm water BMPs that discharge pollutants from point sources once construction is completed, may in themselves, need authorization under a separate NPDES permit (one example is storm water discharges from regulated industrial sites).

**Part III.G.2.e**

Construction activities that do not include the installation of any impervious surface (e.g., soccer fields), abandoned mine land reclamation activities regulated by the Ohio Department of Natural Resources, stream and wetland restoration activities, and wetland mitigation activities are not required to comply with the conditions of Part III.G.2.e of this permit. Linear construction projects, (e.g., pipeline or utility line installation), which do not result in the installation of additional impervious surface, are not required to comply with the conditions of Part III.G.2.e of this permit. However, linear construction projects must be designed to minimize the number of stream crossings and the width of disturbance and achieve final stabilization of the disturbed area as defined in Part VII.H.1.

Large Construction Activities. For all large construction activities (involving the disturbance of five or more acres of land or will disturb less than five acres, but is a part of a larger common plan of development or sale which will disturb five or more acres of land), the post construction BMP(s) chosen must be able to detain storm water runoff for protection of the stream channels, stream erosion control, and improved water quality. The BMP(s) chosen must be compatible with site and soil conditions. Structural (designed) post-construction storm water treatment practices shall be incorporated into the permanent drainage system for the site. The BMP(s) chosen must be sized to treat the water quality volume (WQv) and ensure compliance with Ohio's Water Quality Standards in OAC Chapter 3745-1. The WQv shall be equivalent to the volume of runoff from a 0.75-inch rainfall and shall be determined according to the following equation:

$$WQv = C * P * A / 12$$

where:

WQv = water quality volume in acre-feet

C = runoff coefficient appropriate for storms less than 1 inch  
(Either use the following formula:  $C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04$ ,  
where i = fraction of post-construction impervious surface or use Table 1)

P = 0.75 inch precipitation depth

A = area draining into the BMP in acres



Part III.G.2.e

**Table 1**  
**Runoff Coefficients Based on the Type of Land Use**

Land Use	Runoff Coefficient
Industrial & Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5
Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acre)	0.3
Open Space and Recreational Areas	0.2

Where the land use will be mixed, the runoff coefficient should be calculated using a weighted average. For example, if 60% of the contributing drainage area to the storm water treatment structure is Low Density Residential, 30% is High Density Residential, and 10% is Open Space, the runoff coefficient is calculated as follows  $(0.6)(0.3) + (0.3)(0.5) + (0.1)(0.2) = 0.35$ .

An additional volume equal to 20 percent of the WQv shall be incorporated into the BMP for sediment storage. Ohio EPA recommends that BMPs be designed according to the methodology included in the Rainwater and Land Development manual or in another design manual acceptable for use by Ohio EPA.

The BMPs listed in Table 2 below shall be considered standard BMPs approved for general use. However communities with a regulated MS4 may limit the use of some of these BMPs. BMPs shall be designed such that the drain time is long enough to provide treatment, but short enough to provide storage for successive rainfall events and avoid the creation of nuisance conditions. The outlet structure for the post-construction BMP must not discharge more than the first half of the WQv or extended detention volume (EDv) in less than one-third of the drain time. The EDv is the volume of storm water runoff that must be detained by a structural post-construction BMP. The EDv is equal to 75 percent of the WQv for wet extended detention basins, but is equal to the WQv for all other BMPs listed in Table 2.

Part III.G.2.e

**Table 2**  
**Structural Post-Construction BMPs & Associated Drain (Drawdown) Times**

Best Management Practice	Drain Time of WQv
Infiltration Basin <sup>^</sup>	24 - 48 hours
Enhanced Water Quality Swale	24 hours
Dry Extended Detention Basin <sup>*</sup>	48 hours
Wet Extended Detention Basin <sup>**</sup>	24 hours
Constructed Wetland (above permanent pool) <sup>+</sup>	24 hours
Sand & Other Media Filtration	40 hours
Bioretention Cell <sup>^</sup>	40 hours
Pocket Wetland <sup>#</sup>	24 hours
Vegetated Filter Strip	24 hours

<sup>\*</sup> Dry basins must include forebay and micropool each sized at 10% of the WQv  
<sup>\*\*</sup> Provide both a permanent pool and an EDv above the permanent pool, each sized at 0.75  
<sup>\*</sup> WQv  
<sup>+</sup> Extended detention shall be provided for the full WQv above the permanent water pool.  
<sup>^</sup> The WQv shall completely infiltrate within 48 hours so there is no standing or residual water in the BMP.  
<sup>#</sup> Pocket wetlands must have a wet pool equal to the WQv, with 25% of the WQv in a pool and 75% in marshes. The EDv above the permanent pool must be equal to the WQv.

The permittee may request approval from Ohio EPA to use alternative post-construction BMPs if the permittee can demonstrate that the alternative BMPs are equivalent in effectiveness to those listed in Table 2 above. Construction activities shall be exempt from this condition if it can be demonstrated that the WQv is provided within an existing structural post-construction BMP that is part of a larger common plan of development or if structural post-construction BMPs are addressed in a regional or local storm water management plan. A municipally operated regional storm water BMP can be used as a post-construction BMP provided that the BMP can detain the WQv from its entire drainage area and release it over a 24 hour period.

Transportation Projects The construction of new roads and roadway improvement projects by public entities (i.e., the state, counties, townships, cities, or villages) may implement post-construction BMPs in compliance with the current version (as of the effective date of this permit) of the Ohio Department of Transportation's "Location and Design Manual, Volume Two Drainage Design" that has been accepted by Ohio EPA as an alternative to the conditions of this permit.

**Part III.G.2.e**

Offsite Mitigation of Post-Construction Ohio EPA may authorize the offsite mitigation of the post-construction requirements of Part III.G.2.e of this permit on a case by case basis provided the permittee clearly demonstrates the BMPs listed in Table 2 are not feasible and the following criteria is met: (1) a maintenance agreement or policy is established to ensure operations and treatment in perpetuity; (2) the offsite location discharges to the same HUC-14 watershed unit; and (3) the mitigation ratio of the WQv is 1.5 to 1 or the WQv at the point of retrofit, whichever is greater. Requests for offsite mitigation must be received prior to receipt of the NOI applications.

Redevelopment Projects Sites that have been previously developed where no post-construction BMPs were installed shall either ensure a 20 percent net reduction of the site impervious area, provide for treatment of at least 20 percent of the WQ<sub>v</sub>, or a combination of the two. A one-for-one credit towards the 20 percent net reduction of impervious area can be obtained through the use of pervious pavement and/or green roofs. Where projects are a combination of new development and redevelopment, the total WQv that must be treated shall be calculated by a weighted average based on acreage, with the new development at 100 percent WQv and redevelopment at 20 percent WQv.

Non-Structural Post-Construction BMPs The size of the structural post-construction can be reduced by incorporating non-structural post-construction BMPs into the design. Practices such as preserving open space will reduce the runoff coefficient and, thus, the WQv. Ohio EPA encourages the implementation of riparian and wetland setbacks. Practices which reduce storm water runoff include permeable pavements, green roofs, rain barrels, conservation development, smart growth, low-impact development, and other site design techniques contained in the Ohio Lake Commission's Balanced Growth Program (see <http://www.epa.state.oh.us/oleo/bg1/index.html>). In order to promote the implementation of such practices, the Director may consider the use of non-structural practices to demonstrate compliance with Part III.G.2.e of this permit for areas of the site not draining into a common drainage system of the site, i.e., sheet flow from perimeter areas such as the rear yards of residential lots, for low density development scenarios, or where the permittee can demonstrate that the intent of pollutant removal and stream protection, as required in Part III.G.2.e of this permit is being addressed through non-structural post-construction BMPs based upon review and approval by Ohio EPA.

**Part III.G.2.e**

Use of Alternative Post-Construction BMPs This permit does not preclude the use of innovative or experimental post-construction storm water management technologies. However, the Director may require these practices to be tested using the protocol outlined in the Technology Acceptance Reciprocity Partnership's (TARP) Protocol for Stormwater Best Management Practice Demonstrations (see <http://www.dep.state.pa.us/dep/deputate/pollprev/techservices/tarp>).

The Director may require discharges from such structures to be monitored to ensure compliance with Part III.G.2.e of this permit. Permittees must request approval from Ohio EPA to use alternative post-construction BMPs if the permittee can demonstrate that the alternative BMPs are equivalent in effectiveness to those listed in Table 2 above. To demonstrate this equivalency, the permittee must show that the alternative BMP has a minimum total suspended solids (TSS) removal efficiency of 80 percent. Also, the WQv discharge rate from the practice must be reduced to prevent stream bed erosion and protect the physical and biological stream integrity unless there will be negligible hydrological impact to the receiving surface water of the State. The discharges will have a negligible impact if the permittee can demonstrate that one of the following four conditions exist:

- i. The entire WQv is recharged to groundwater;
- ii. The larger common plan of development or sale will create less than one acre of impervious surface;
- iii. The project is a redevelopment project within an ultra-urban setting (i.e., a downtown area or on a site where 100 percent of the project area is already impervious surface and the storm water discharge is directed into an existing storm sewer system); or
- iv. The storm water drainage system of the development discharges directly into a large river (fourth order or greater) or to a lake and where the development area is less than 5 percent of the watershed area upstream of the development site, unless a TMDL identified water quality problems in the receiving surface waters of the State.

**Part III.G.2.e**

The Director shall only consider the use of alternative BMPs on projects where the permittee can demonstrate that the implementation of the BMPs listed in Table 2 is infeasible due to physical site constraints that prevent the ability to provide functional BMP design. Alternative practices may include, but are not limited to, underground detention structures, vegetated swales and vegetated filter strips designed using water quality flow, natural depressions, rain barrels, permeable pavements green roofs, rain gardens, catch basin inserts, and hydrodynamics separators. The Director may also consider non-structural post-construction approaches where no local requirement for such practices exist.

Small Construction Activities. For all small land disturbance activities (which disturb one or more, but less than five acres of land and is not a part of a larger common plan of development or sale which will disturb five or more acres of land), a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed must be included in the SWP3. Structural measures should be placed on upland soils to the degree attainable. Such practices may include, but are not limited to: storm water detention structures (including wet basins); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems (which combine several practices). The SWP3 shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed pre-development levels.

- f. **Surface Water Protection.** If the project site contains any streams, rivers, lakes, wetlands or other surface waters, certain construction activities at the site may be regulated under the CWA and/or state non-jurisdictional stream and wetland requirements. Sections 404 and 401 of the Act regulate the discharge of dredged or fill material into surface waters and the impacts of such activities on water quality, respectively. Construction activities in surface waters which may be subject to CWA regulation and/or state requirements include, but are not limited to: sewer line crossings, grading, backfilling or culverting streams, filling wetlands, road and utility line construction, bridge installation and installation of flow control structures. If the project contains streams, rivers, lakes or wetlands or possible wetlands, the permittee must contact the appropriate U.S. Army Corps of Engineers District Office. (CAUTION: Any area of seasonally wet hydric soil is a potential wetland - please consult the Soil Survey and list of hydric soils for your County, available at your county's Soil and Water Conservation District. If you have any questions about Section 401 water quality certification, please contact the Ohio Environmental Protection Agency, Section 401 Coordinator.)

**Part III.G.2.f**

U.S. Army Corps of Engineers (Section 404 regulation):  
Huntington, WV District (304) 399-5210 (Muskingum River, Hocking River, Scioto River, Little Miami River, and Great Miami River Basins)  
Buffalo, NY District (716) 879-4191 (Lake Erie Basin)  
Pittsburgh, PA District (412) 395-7154 (Mahoning River Basin)  
Louisville, KY District (502) 315-6733 (Ohio River)

Ohio EPA 401/404 and non-jurisdictional stream/wetland coordinator can be contacted at (614) 644-2001 (all of Ohio)

Concentrated storm water runoff from BMPs to natural wetlands shall be converted to diffuse flow before the runoff enters the wetlands. The flow should be released such that no erosion occurs downslope. Level spreaders may need to be placed in series, particularly on steep sloped sites, to ensure non-erosive velocities. Other structural BMPs may be used between storm water features and natural wetlands, in order to protect the natural hydrology, hydroperiod, and wetland flora. If the applicant proposes to discharge to natural wetlands, a hydrologic analysis shall be performed. The applicant shall attempt to match the pre-development hydroperiods and hydrodynamics that support the wetland. The applicant shall assess whether their construction activity will adversely impact the hydrologic flora and fauna of the wetland. Practices such as vegetative buffers, infiltration basins, conservation of forest cover, and the preservation of intermittent streams, depressions, and drainage corridors may be used to maintain wetland hydrology.

- g. **Other controls.** The SWP3 must also provide BMPs for pollutant sources other than sediment. Non-sediment pollutant sources, which may be present on a construction site, include paving operations, concrete washout, structure painting, structure cleaning, demolition debris disposal, drilling and blasting operations, material storage, slag, solid waste, hazardous waste, contaminated soils, sanitary and septic wastes, vehicle fueling and maintenance activities, and landscaping operations.
  - i. **Non-Sediment Pollutant Controls.** No solid or liquid waste, including building materials, shall be discharged in storm water runoff. The permittee must implement all necessary BMPs to prevent the discharge of non-sediment pollutants to the drainage system of the site or surface waters of the State. Under no circumstance shall concrete trucks wash out directly into a drainage channel, storm sewer or surface waters of the State. No exposure of storm water to waste materials is recommended.
  - ii. **Off-site traffic.** Off-site vehicle tracking of sediments and dust generation shall be minimized.

**Part III.G.2.g**

- iii. **Compliance with other requirements.** The SWP3 shall be consistent with applicable State and/or local waste disposal, sanitary sewer or septic system regulations, including provisions prohibiting waste disposal by open burning and shall provide for the proper disposal of contaminated soils to the extent these are located within the permitted area.
- iv. **Trench and ground water control.** There shall be no turbid discharges to surface waters of the State resulting from dewatering activities. If trench or ground water contains sediment, it must pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.
- v. **Contaminated Sediment.** Where construction activities are to occur on sites with contamination from previous activities, operators must be aware that concentrations of materials that meet other criteria (is not considered a Hazardous Waste, meeting VAP standards, etc.) may still result in storm water discharges in excess of Ohio Water Quality Standards. Such discharges are not authorized by this permit. Appropriate BMPs include, but are not limited to:
  - The use of berms, trenches, and pits to collect contaminated runoff and prevent discharges;
  - Pumping runoff into a sanitary sewer (with prior approval of the sanitary sewer operator) or into a container for transport to an appropriate treatment/disposal facility; and
  - Covering areas of contamination with tarps or other methods that prevent storm water from coming into contact with the material.

Operators should consult with Ohio EPA Division of Surface Water prior to seeking permit coverage.

- h. **Maintenance.** All temporary and permanent control practices shall be maintained and repaired as needed to ensure continued performance of their intended function. All sediment control practices must be maintained in a functional condition until all up slope areas they control are permanently stabilized. The SWP3 shall be designed to minimize maintenance requirements. The applicant shall provide a description of maintenance procedures needed to ensure the continued performance of control practices.

**Part III.G.2**

- i. **Inspections.** At a minimum, procedures in an SWP3 shall provide that all controls on the site are inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. The inspection frequency may be reduced to at least once every month if the entire site is temporarily stabilized or runoff is unlikely due to weather conditions (e.g., site is covered with snow, ice, or the ground is frozen). A waiver of inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following conditions are met: the project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month); land disturbance activities have been suspended; and the beginning and ending dates of the waiver period are documented in the SWP3. Once a definable area has been finally stabilized, you may mark this on your SWP3 and no further inspection requirements apply to that portion of the site. The permittee shall assign "qualified inspection personnel" to conduct these inspections to ensure that the control practices are functional and to evaluate whether the SWP3 is adequate and properly implemented in accordance with the schedule proposed in Part III.G.1.g of this permit or whether additional control measures are required.

Following each inspection, a checklist must be completed and signed by the qualified inspection personnel representative. At a minimum, the inspection report must include:

- i. the inspection date;
- ii. names, titles, and qualifications of personnel making the inspection;
- iii. weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
- iv. weather information and a description of any discharges occurring at the time of the inspection;
- v. location(s) of discharges of sediment or other pollutants from the site;
- vi. location(s) of BMPs that need to be maintained;
- vii. location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
- viii. location(s) where additional BMPs are needed that did not exist at the time of inspection; and
- ix. corrective action required including any changes to the SWP3 necessary and implementation dates.



**Part III.G.2.i**

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of or the potential for pollutants entering the drainage system. Erosion and sediment control measures identified in the SWP3 shall be observed to ensure that those are operating correctly. Discharge locations shall be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.

The permittee shall maintain for three years following the submittal of a notice of termination form, a record summarizing the results of the inspection, names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWP3 and a certification as to whether the facility is in compliance with the SWP3 and the permit and identify any incidents of non-compliance. The record and certification shall be signed in accordance with Part V.G. of this permit.

- i. **When practices require repair or maintenance.** If the inspection reveals that a control practice is in need of repair or maintenance, with the exception of a sediment settling pond, it must be repaired or maintained within three days of the inspection. Sediment settling ponds must be repaired or maintained within 10 days of the inspection.
- ii. **When practices fail to provide their intended function.** If the inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the SWP3 must be amended and the new control practice must be installed within 10 days of the inspection.
- iii. **When practices depicted on the SWP3 are not installed.** If the inspection reveals that a control practice has not been implemented in accordance with the schedule contained in Part III.G.1.g of this permit, the control practice must be implemented within 10 days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.

**Part III.G**

3. **Approved State or local plans.** All dischargers regulated under this general permit must comply, except those exempted under state law, with the lawful requirements of municipalities, counties and other local agencies regarding discharges of storm water from construction activities. All erosion and sediment control plans and storm water management plans approved by local officials shall be retained with the SWP3 prepared in accordance with this permit. Applicable requirements for erosion and sediment control and storm water management approved by local officials are, upon submittal of a NOI form, incorporated by reference and enforceable under this permit even if they are not specifically included in an SWP3 required under this permit. When the project is located within the jurisdiction of a regulated municipal separate storm sewer system (MS4), the permittee must certify that the SWP3 complies with the requirements of the storm water management program of the MS4 operator.
4. **Exceptions.** If specific site conditions prohibit the implementation of any of the erosion and sediment control practices contained in this permit or site specific conditions are such that implementation of any erosion and sediment control practices contained in this permit will result in no environmental benefit, then the permittee shall provide justification for rejecting each practice based on site conditions. Exceptions from implementing the erosion and sediment control standards contained in this permit will be approved or denied on a case-by-case basis.

The permittee may request approval from Ohio EPA to use alternative methods to satisfy conditions in this permit if the permittee can demonstrate that the alternative methods are sufficient to protect the overall integrity of receiving streams and the watershed. Alternative methods will be approved or denied on a case-by-case basis.

**PART IV. NOTICE OF TERMINATION REQUIREMENTS**

**A. Failure to notify.**

The terms and conditions of this permit shall remain in effect until a signed Notice of Termination (NOT) form is submitted. Failure to submit an NOT constitutes a violation of this permit and may affect the ability of the permittee to obtain general permit coverage in the future.

**B. When to submit an NOT**

1. Permittees wishing to terminate coverage under this permit must submit an NOT form in accordance with Part V.G. of this permit. Compliance with this permit is required until an NOT form is submitted. The permittee's authorization to discharge under this permit terminates at midnight of the day the NOT form is

**Part IV.B**

submitted. Prior to submitting the NOT form, the permittee shall conduct a site inspection in accordance with Part III.G.2.i of this permit and have a maintenance agreement in place to ensure all post-construction BMPs will be maintained in perpetuity.

2. All permittees must submit an NOT form within 45 days of completing all permitted land disturbance activities. Enforcement actions may be taken if a permittee submits an NOT form without meeting one or more of the following conditions:
  - a. Final stabilization (see definition in Part VII) has been achieved on all portions of the site for which the permittee is responsible (including, if applicable, returning agricultural land to its pre-construction agricultural use);
  - b. Another operator(s) has assumed control over all areas of the site that have not been finally stabilized;
  - c. For residential construction only, temporary stabilization has been completed and the lot, which includes a home, has been transferred to the homeowner. (Note: individual lots without housing which are sold by the developer must undergo final stabilization prior to termination of permit coverage.); or
  - d. An exception has been granted under Part III.G.4.

**C. How to submit an NOT**

Permittees must use Ohio EPA's approved NOT form. The form must be completed and mailed according to the instructions and signed in accordance with Part V.G of this permit.

**PART V. STANDARD PERMIT CONDITIONS.**

**A. Duty to comply.**

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of ORC Chapter 6111. and is grounds for enforcement action.
2. Ohio law imposes penalties and fines for persons who knowingly make false statements or knowingly swear or affirm the truth of a false statement previously made.

**B. Continuation of an expired general permit.**

An expired general permit continues in force and effect until a new general permit is issued.

**Part V**

**C. Need to halt or reduce activity not a defense.**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**D. Duty to mitigate.**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**E. Duty to provide information.**

The permittee shall furnish to the director, within 10 days of written request, any information which the director may request to determine compliance with this permit. The permittee shall also furnish to the director upon request copies of records required to be kept by this permit.

**F. Other information.**

When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI, SWP3, NOT or in any other report to the director, he or she shall promptly submit such facts or information.

**G. Signatory requirements.**

All NOIs, NOTs, SWP3s, reports, certifications or information either submitted to the director or that this permit requires to be maintained by the permittee, shall be signed.

1. These items shall be signed as follows:
  - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - i. A president, secretary, treasurer or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation; or

**Part V.G.1.a**

- ii. The manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
  - c. For a municipality, State, Federal or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).
2. All reports required by the permits and other information requested by the director shall be signed by a person described in Part V.G.1 of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Part V.G.1 of this permit and submitted to the director;
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator of a well or well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
  - c. The written authorization is submitted to the director.

**Part V.G**

3. Changes to authorization. If an authorization under Part V.G.2 of this permit is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part V.G.2 of this permit must be submitted to the director prior to or together with any reports, information or applications to be signed by an authorized representative.

**H. Certification.**

Any person signing documents under this section shall make the following certification:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

**I. Oil and hazardous substance liability.**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the CWA or 40 CFR Part 112. 40 CFR Part 112 establishes procedures, methods and equipment and other requirements for equipment to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable surface waters of the State or adjoining shorelines.

**J. Property rights.**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

**K. Severability.**

The provisions of this permit are severable and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

**Part V**

**L. Transfers.**

Ohio NPDES general permit coverage is transferable. Ohio EPA must be notified in writing sixty days prior to any proposed transfer of coverage under an Ohio NPDES general permit. The transferee must inform Ohio EPA it will assume the responsibilities of the original permittee transferor.

**M. Environmental laws.**

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

**N. Proper operation and maintenance.**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of SWP3s. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

**O. Inspection and entry.**

The permittee shall allow the director or an authorized representative of Ohio EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

**PART VI. REOPENER CLAUSE**

- A.** If there is evidence indicating potential or realized impacts on water quality due to any storm water discharge associated with construction activity covered by this permit, the permittee of such discharge may be required to obtain coverage under an individual permit or an alternative general permit in accordance with Part I.C of this permit or the permit may be modified to include different limitations and/or requirements.
- B.** Permit modification or revocation will be conducted according to ORC Chapter 6111.

**PART VII. DEFINITIONS**

- A. “Act” means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117 and Pub. L. 100-4, 33 U.S.C. 1251 et. seq.
- B. “Best management practices (BMPs)” means schedules of activities, prohibitions of practices, maintenance procedures and other management practices (both structural and non-structural) to prevent or reduce the pollution of surface waters of the State. BMP's also include treatment requirements, operating procedures and practices to control plant and/or construction site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage.
- C. “Commencement of construction” means the initial disturbance of soils associated with clearing, grubbing, grading, placement of fill or excavating activities or other construction activities.
- D. “Concentrated storm water runoff” means any storm water runoff which flows through a drainage pipe, ditch, diversion or other discrete conveyance channel.
- E. “Director” means the director of the Ohio Environmental Protection Agency.
- F. “Discharge” means the addition of any pollutant to the surface waters of the State from a point source.
- G. “Disturbance” means any clearing, grading, excavating, filling, or other alteration of land surface where natural or man-made cover is destroyed in a manner that exposes the underlying soils.
- H. “Final stabilization” means that either:
  - 1. All soil disturbing activities at the site are complete and a uniform perennial vegetative cover (e.g., evenly distributed, without large bare areas) with a density of at least 70 percent cover for the area has been established on all unpaved areas and areas not covered by permanent structures or equivalent stabilization measures (such as the use of landscape mulches, rip-rap, gabions or geotextiles) have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion; or
  - 2. For individual lots in residential construction by either:
    - a. The homebuilder completing final stabilization as specified above or



**Part VII.H.2**

- b. The homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or
3. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its pre-construction agricultural use. Areas disturbed that were previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters of the State and which are not being returned to their pre-construction agricultural use, must meet the final stabilization criteria in (1) or (2) above.
- I. "Individual Lot NOI" means a Notice of Intent for an individual lot to be covered by this permit (see parts I and II of this permit).
  - J. "Larger common plan of development or sale"- means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.
  - K. "MS4" means municipal separate storm sewer system which means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) that are:
    1. Owned or operated by the federal government, state, municipality, township, county, district(s) or other public body (created by or pursuant to state or federal law) including special district under state law such as a sewer district, flood control district or drainage districts or similar entity or a designated and approved management agency under section 208 of the act that discharges into surface waters of the State; and
    2. Designed or used for collecting or conveying solely storm water,
    3. Which is not a combined sewer and
    4. Which is not a part of a publicly owned treatment works.
  - L. "National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and enforcing pretreatment requirements, under sections 307, 402, 318 and 405 of the CWA. The term includes an "approved program."

**Part VII**

- M. "NOI" means notice of intent to be covered by this permit.
- N. "NOT" means notice of termination.
- O. "Operator" means any party associated with a construction project that meets either of the following two criteria:
1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
  2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with an SWP3 for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

As set forth in Part II.A, there can be more than one operator at a site and under these circumstances, the operators shall be co-permittees.

- P. "Owner or operator" means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.
- Q. "Permanent stabilization" means the establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap and landscaping techniques to provide permanent erosion control on areas where construction operations are complete or where no further disturbance is expected for at least one year.
- R. "Percent imperviousness" means the impervious area created divided by the total area of the project site.
- S. "Point source" means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or the floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
- T. "Qualified inspection personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls, who possesses the skills to assess all conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.

**Part VII**

- U. "Rainwater and Land Development" is a manual describing construction and post-construction best management practices and associated specifications. A copy of the manual may be obtained by contacting the Ohio Department of Natural Resources, Division of Soil & Water Conservation.
- V. "Riparian area" means the transition area between flowing water and terrestrial (land) ecosystems composed of trees, shrubs and surrounding vegetation which serve to stabilize erodible soil, improve both surface and ground water quality, increase stream shading and enhance wildlife habitat.
- W. "Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.
- X. "Sediment settling pond" means a sediment trap, sediment basin or permanent basin that has been temporarily modified for sediment control, as described in the latest edition of the Rainwater and Land Development manual.
- Y. "State isolated wetland permit requirements" means the requirements set forth in Sections 6111.02 through 6111.029 of the ORC.
- Z. "Storm water" means storm water runoff, snow melt and surface runoff and drainage.
- AA. "Surface waters of the State" or "water bodies" means all streams, lakes, reservoirs, ponds, marshes, wetlands or other waterways which are situated wholly or partially within the boundaries of the state, except those private waters which do not combine or effect a junction with natural surface or underground waters. Waters defined as sewerage systems, treatment works or disposal systems in Section 6111.01 of the ORC are not included.
- BB. "SWP3" means storm water pollution prevention plan.
- CC. "Temporary stabilization" means the establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.
- DD. "Water Quality Volume (WQ<sub>v</sub>)" means the volume of storm water runoff which must be captured and treated prior to discharge from the developed site after construction is complete. WQ<sub>v</sub> is based on the expected runoff generated by the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of runoff events captured begins to occur.

Appendix F

**Temporary Sediment and Erosion Control Best Management Practices (BMP)  
Unit Price Schedule, April 2009**

**EROSION CONTROL PRICES**

Item	Unit	Description	Project Identified EDA (acres)					Fixed Price	Comment
			<5	5 to 10	10 to 15	15 to 20	>20		
			Price (\$)						
832	Sq. Yd.	Construction Seeding and Mulching	0.90	0.82	0.74	0.67	0.64		Based on NOI acres
832	Feet	Slope Drains						9.35	
832	Cu. Yd.	Sediment Basins and Dams						10.00	
832	Feet	Perimeter Filter Fabric Fence	3.62	2.77	2.53	2.29	2.05		Based on NOI acres
832	Feet	Filter Fabric Ditch Check						9.65	
832	Feet	Inlet Protection						10.00	
832	Cu. Yd.	Dikes						2.50	
832	Sq. Yd.	Construction Ditch Protection						2.00	
832	Cu. Yd.	Rock Channel Protection, Type C or D with Filter						48.00	[1]
832	Cu. Yd.	Rock Channel Protection, Type C or D without Filter						45.00	[1]
832	Cu. Yd.	Basin Sediment Removal						4.50	
832	Cu. Yd.	Miscellaneous Sediment Removal						10.00	
832	Feet	Construction Fence						5.00	
832	Sq. Yd.	Construction Mulching	0.70	0.63	0.48	0.47	0.46		Based on NOI acres
832	Sq. Yd.	Winter Seeding and Mulching	0.96	0.89	0.82	0.74	0.72		Based on NOI acres
832	Cu. Yd.	Construction Entrance						67.15	

[1] Add the following amount per cubic yard for the cost of Type C or D Rock materials.

**BMP ROCK MATERIAL SCHEDULE**

District <sup>[2]</sup>	Purchase & Delivered to Job		Produced on Job	
	Type C	Type D	Type C	Type D
1	\$ 52.00	\$ 50.50	\$ 24.12	\$ 24.12
2	\$ 53.50	\$ 52.00	\$ 24.12	\$ 24.12
3	\$ 60.00	\$ 58.50	\$ 24.12	\$ 24.12
4	\$ 63.00	\$ 61.50	\$ 24.12	\$ 24.12
5	\$ 56.00	\$ 54.50	\$ 24.12	\$ 24.12
6	\$ 57.50	\$ 56.00	\$ 24.12	\$ 24.12
7	\$ 58.50	\$ 57.00	\$ 24.12	\$ 24.12
8	\$ 57.50	\$ 56.00	\$ 24.12	\$ 24.12
9	\$ 59.00	\$ 57.50	\$ 24.12	\$ 24.12
10	\$ 62.50	\$ 61.00	\$ 24.12	\$ 24.12
11	\$ 56.50	\$ 55.00	\$ 24.12	\$ 24.12
12	\$ 63.00	\$ 61.50	\$ 24.12	\$ 24.12

[2] Based on the District in which the project is administered.

**Designer Note:**

Provide this Supplemental Specification on all plans.

Under the Erosion Control heading, provide the following Reference Items:

Item 832 Each Erosion Control - Provide an encumbered dollar value to be placed in the proposal for Item: 832 Each Erosion Control. This amount is for both the “quantity” and “total” fields. This amount should only be provided in the C2 Estimate, the Special Considerations Field on the Plan Package Submittal Form, and in the Plans.

Example: \$10,000 set up for Item 832 Each Erosion Control then 10,000 placed in the “quantity” and “total” fields.

Item 832 Lump Sum Storm Water Pollution Prevention Plan - Provide a Lump Sum item for Storm Water Pollution Prevention Plan for projects that have 1 or more acres of estimated Total EDA.

Delete all C&MS 207 Items and all SS 877 Items.

For additional guidance on the NPDES process for ODOT projects, see the NPDES Construction Permit Implementation Plan flowchart on the Office of Structural Engineering website.

For help estimating the encumbered dollar value for the Item 832 - Erosion Control, see the BMP Estimator on the DRRC website (<http://www.dot.state.oh.us/drrc/>).

Projects that require OEPA Watershed Specific Storm Water Permits (such as the Big Darby or Olentangy) will need to modify this specification by Special Provision Note.

**PN 417 – 7/15/2005 - DESIGN REQUIREMENTS FOR PLANT MIX PAVEMENTS  
(MEDIUM)**

On this project, design all 301 bases and asphalt pavements requiring 441 for MEDIUM traffic volumes.

RE 75-3

2-78

Enclosure to Letter of Right of Way (N/A)

Certification to Federal Highway Administration (N/A)

Date August 12, 2012

**EXHIBIT "B"**  
**UTILITY ADJUSTMENTS**

Federal Project No. E110(604)  
SJN N/A PID 89722  
County Cuyahoga  
Route West Sixth Street  
West Lakeside Avenue to  
Section West St. Clair Avenue

SALE DATE

The following are the utility companies whose facilities require adjustment for the above project. The status of arrangements made for the completion of the work prior to or in coordination with the physical construction is shown below.

Company	Work Authorized	Date to be Started	Date to be Completed	Remarks
AT&T	_____	_____	_____	<i>Casting adjustments shall be coordinated with the utility by the Contractor.</i>
<i>Cleveland Division of Public Power</i>	-	-	-	<i>In Construction plans.</i>
<i>Cleveland Division of Water</i>				<i>In Construction plans.</i>
<i>Cleveland Division of Water Pollution Control</i>				<i>In Construction plans.</i>
<i>Dominion East Ohio Gas</i>				<i>The Company will coordinate work with the Contractor's construction activities</i>

**EXHIBIT "B"**

**UTILITY ADJUSTMENTS**

PID

89722

Company	Work Authorized	Date to be Started	Date to be Completed	Remarks
<i>Illuminating Company</i>	_____	_____	_____	<i>Illuminating Company has manholes within the Project that will require adjustment. Refer to attached Project Response. Illuminating Company File WR # 5590238. This work will be coordinated with the utility by the Contractor.</i>
<i>Northeast Ohio Regional Sewer District</i>	_____	_____	_____	<i>In construction plans.</i>
<i>Time Warner Cable</i>	_____	_____	_____	<i>The Company will coordinate work with the Contractor's construction activities</i>





RE 75-3

2-78

Enclosure to Letter of Right of Way (N/A)

Certification to Federal Highway Administration (N/A)

Date August 12, 2012

### EXHIBIT "B" UTILITY ADJUSTMENTS

Federal Project No. E110(579)

SJN N/A PID 90218

County Cuyahoga

Route Professor Street  
West 10<sup>th</sup> Street to

Section Jefferson Avenue

\_\_\_\_\_  
SALE DATE

The following are the utility companies whose facilities require adjustment for the above project. The status of arrangements made for the completion of the work prior to or in coordination with the physical construction is shown below.

Company	Work Authorized	Date to be Started	Date to be Completed	Remarks
AT&T	_____	_____	_____	<i>The Company will coordinate work with the Contractor's construction activities</i>
Cleveland Division of Public Power	-	-	-	<i>In Construction plans.</i>
Cleveland Division of Water				<i>In Construction plans.</i>
Cleveland Division of Water Pollution Control				<i>In Construction plans.</i>
Dominion East Ohio Gas				<i>The Company will coordinate work with the Contractor's construction activities</i>

**EXHIBIT "B"**

**UTILITY ADJUSTMENTS**

PID

90218

Company	Work Authorized	Date to be Started	Date to be Completed	Remarks
<i>Illuminating Company</i>	_____	_____	_____	<i>Illuminating Company has manholes within the Project that will require adjustment. Refer to attached Project Response. Illuminating Company File WR # 5592298. This work will be coordinated with the utility by the Contractor.</i>
<i>Time Warner Cable</i>	_____	_____	_____	<i>The Company will coordinate work with the Contractor's construction activities</i>





**Northern Region Engineering Services**  
**Project Response for PID 89722 CUY- West Sixth Street Scape**  
Reference Illuminating Company File – WR # 55590238

**Project Response for PID 90218 CUY Professor Ave. Intersections**  
Reference Illuminating Company File – WR # 55592298

June 18, 2012

Michael Benza & Associates  
6860 West Snowville Road  
Brecksville, Ohio 44141

Attention: Donald Phifer, P.E.

The following information indicates the Illuminating Company's findings after examining the information previously received by the Illuminating Company on 3/22/2012 for the aforementioned project.

- 1. The Illuminating Company has no facilities in conflict on this project.
- 2. Rearrangement of the Illuminating Company's facilities is not necessary.
- 3. **The Illuminating Company has facilities in conflict and will be required to rearrange them.**
- 4. Based upon plans or information received, it is indeterminate if rearrangement of our facilities is necessary. Please provide the additional information requested below.

Prior to the Illuminating Company commencing work on aerial or underground facilities in support of roadway, sanitary, storm or water line projects, all clearing, grubbing, necessary forestry (tree/bush trimming) in the Public Right of way is to be completed by others. Final grade shall be established prior to the Illuminating Company installing or relocating underground electric distribution facilities. Also, the project construction limits are to be surveyed and staked by the requesting engineering consulting firm or by the municipality in order ensure the Illuminating Company is properly locating aerial facilities in the public right of way and within the construction limits.

Relocation costs that are determined to be compensable, such as, sanitary sewer projects, water lines and other compensable rights or where the relocation of our overhead facilities is only caused by the installation of sidewalks, shall be invoiced by the Illuminating Company per our standard Aid to Construction form. Payment shall be received in advance of work commencing. Estimates are only valid for 30 days and will be re-estimated to provide current estimated costs should approvals be extended beyond the 30 days.

In the event additional conflicts are identified which are not part of the Project 4A Note/Project Response Form, due to field conditions, the Illuminating Company shall be notified immediately, both verbally and in writing by the authorized agent for the project. The Illuminating Company, along with the contractor and authorized agent for the project, shall resolve the field conflicts and determine if there are associated compensable costs. The Illuminating Company will not accept contractor delay costs that the Company has not had opportunity to dispute or resolve.

Important! Instances that require the Illuminating Company to de-energize our transmission circuitry for contractor related work, is to be requested in writing to the Illuminating Company in accordance to the current PJM requirements in advance of need. The charge to de-energize the circuitry will be communicated. Written approval of the Illuminating Company's Customer Charge Application is to be completed in advance by the requestor that is requiring the transmission circuitry de-energized

I. WOOD-POLE AERIAL DISTRIBUTION FACILITIES

**Project Response for PID 90218 CUY Professor Ave. Intersections**

Reference Illuminating Company File – WR # N/A

Rearrangement of the Illuminating Company’s facilities is not necessary.

Intersection of Professor Ave. & Literary Ave

Sheet 7 As designed CEI pole 206213 @STA 13+82 25.5’ LT pole is in proposed ADA Ramp. CEI is requesting improvement drawings to be adjusted to eliminate conflict.

II. BELOW-GRADE ELECTRIC DISTRIBUTION FACILITIES

**Project Response for PID 89722 CUY- West Sixth Street Scope**

Reference Illuminating Company File – WR # 55590238

The Illuminating Company has 4 manholes that are in conflict with the improvement drawings. CEI manhole roofs will need replaced and adjusted. All work associated with this project is compensable. The Illuminaing Company request that all conflicts be minimized if possible. Conflicts exist at:

Sheet 5

CEI Manhole 0209-02 @ STA 11+85 25’LT roof will need replaced and adjusted

CEI Manhole 0209-01 @ STA 13+25 25’RT roof will need replaced and adjusted

CEI Manhole 0209-02 @STA 13+30 25’ LT roof will need replaced and adjusted

Sheet 6

CEI Manhole 0120-23 @ STA 16+85 25’LT roof will need replaced and adjusted

**Project Response for PID 90218 CUY Professor Ave. Intersections**

Reference Illuminating Company File – WR # 55592298

The Illuminating Company has 1 manhole in conflict with the improvement drawings. CEI manhole roof will need replaced and adjusted All work associated with this project is compensable. The Illuminating Company request that all conflicts be minimized if possible

Conflict exists at:

CEI manhole 9324-01 @ STA 18+90 55’LT roof will need replaced and adjusted

Work Week:

The Illuminating Company’s workweek is comprised of 5 days per week, 8 hours per day, Monday through Friday. Any overtime costs incurred, as a result of contractor project escalation or requests from ODOT, Cuyahoga County or other project administering agencies shall be billed directly to the contractor. Authorization for payment for the requested overtime shall be received in advance of the overtime being worked.

Additional Comments:

The Illuminating Company has 13 castings in total to be adjusted.

All contractors/owners must know & comply with Occupational Safety Health Administration (OSHA) safe-working clearances between persons or any conductive object and the energized bare wires. Conductors rated at below 50 KV.

Please forward revised drawings to Mark Robinson @ 6896 Miller Road Brecksville Ohio 44141 as they are available for further review.

---

**Notice: The Illuminating Company denies permission to any contractor or other utility to remove Illuminating Company manhole castings, cut down Illuminating Company manhole necks, and to temporarily plate over project-created Illuminating Company manhole roof openings. This practice often results in construction debris falling into manholes, thus damaging**

energized circuits. Under any circumstances if project construction debris is found in Illuminating Company manholes on the subject project, the Illuminating Company shall charge the responsible party for the required clean out. In the event circuitry is damaged as a direct result of project construction debris, the Illuminating Company shall also file a claim, and pursue reimbursement for the damage. It is the Project General Contractor responsibility to notify the Illuminating Company in advance of any existing debris found in Illuminating Company manholes.

---

Notice: Customer-owned secondary cables/wire and equipment that requires relocation caused by a public works project is not the responsibility of The Illuminating Company. The relocation cost for customer owned facilities generally is the responsibility of the requesting agency.

---

Notice: In the event of a major storm in our service territory, the Illuminating Company's priority becomes the safety of the general public and employees. Efforts are directed to the safe and timely restoration of electrical service to our customers which may affect the projects overall schedule.

The Illuminating Company

Mark Robinson  
Project Manager  
Northern Region Operations

CC Martin Reese- City of Cleveland  
Dick Straka  
Ted Rader  
Steve Gill  
Don Bockrath

## DETAIL SPECIFICATIONS

### PART E - BID ITEMS

#### ITEM 1

#### E-1 DUCTILE IRON PIPE AND FITTINGS

##### 1-1 WORK INCLUDED

- A. The Contractor, under Item 1, "Ductile Iron Pipe and Fittings," shall furnish all the materials, labor, tools, equipment, and incidentals for and shall properly construct and connect in place, as shown on the Contract Drawings and as specified herein, all Ductile Iron Pipe and Fittings, including providing all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; sheeting and shoring, including use of trench box; all shop drawing submittals; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; hydrostatic pressure testing of the water main and all appurtenances and the repair and/or replacement of materials due leakage or defects; assisting in the chlorination and flushing procedures; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; final site restoration; and the furnishing of shop drawings and final "as-built" drawings.
- B. Item 1, shall also include the cutting into and removal of existing pipe, removal of existing concrete thrust blocks, removal of existing plugs/caps, connecting, furnishing and installing restrained joints, victaulic joints and compression couplings, painting, special exterior coating, joint bonding, electrolysis test stations, removal and restoration of miscellaneous items, and the furnishing of all labor, materials, tools, equipment, and other incidentals required to complete the work shown on the Contract Drawings and as specified, or as ordered, all for the proper completion of the work included under this contract.
- C. Except as stipulated under Section D-24, "Changes in Sewers, Catch Basins, Etc." and Section D-25, "Changes in Water Pipe" all work herein contemplated, under Item 1, "Ductile Iron Pipe and Fittings," classified as to size and type, shall be deemed to be included in the price bid per lineal foot of water main furnished and installed under this contract.



**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-2 DEFINITIONS/STANDARDS

Whenever the word "iron" is used in reference to pipe and fittings it shall mean Ductile Iron pipe having the thickness class specified and Ductile Iron fittings having the pressure class specified with all pipe and fittings to be cement lined. Joint type on all pipe and fittings shall be noted on the Contract Drawings and as specified herein. Standards referenced herein shall be latest revision thereof, except as modified herein:

ANSI/AWWA C104/A21.4-95: CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER;

ANSI/AWWA C105/A21.5-93: POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS;

ANSI/AWWA C110/A21.10-93: DUCTILE-IRON AND GRAY-IRON FITTINGS, 3-INCH THROUGH 48-INCH, FOR WATER AND OTHER LIQUIDS;

ANSI/AWWA C111/A21.11-90: RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS;

ANSI/AWWA C151/A21.51-91: DUCTILE-IRON PIPE, CENTRIFUGALLY CAST, FOR WATER OR OTHER LIQUIDS;

ANSI/AWWA C153/A21.53-94: DUCTILE-IRON COMPACT FITTINGS, 3 IN. THROUGH 24 IN. AND 54 IN. THROUGH 64 IN., FOR WATER SERVICE;

ANSI/AWWA C600-87: INSTALLATION OF GRAY AND DUCTILE CAST IRON WATER MAINS AND APPURTENANCES;

ASTM A 36-93a: SPECIFICATION FOR STRUCTURAL STEEL;

ASTM A 47-89: SPECIFICATION FOR FERRITIC MALLEABLE IRON CASTINGS;

ASTM A 123-89a: SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS;

ASTM A 193/A 193m-89: SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE;

ASTM A 194/A 194m-88: SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE;

1-2 DEFINITIONS/STANDARDS (Cont'd)

ASTM A 276-89a:	SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES;
ASTM A 536-84:	SPECIFICATION FOR DUCTILE-IRON CASTINGS;
ASTM B 98-84:	SPECIFICATION FOR COPPER-SILICON ALLOY ROD, BARS, AND SHAPES; and
DIRPA:	HANDBOOK OF DUCTILE IRON PIPE, Ductile Iron Pipe Research Association.

1-3 QUALIFICATIONS AND EXPERIENCE

Qualifications: All Ductile Iron Pipe and Fittings and pipe specials shall be furnished by a manufacturer who is fully experienced, reputable, and qualified in the manufacture of the ductile iron pipe, including the interior and exterior lining materials to be furnished as specified herein. The pipe, fittings and specials shall be designed, constructed and installed in accordance with the best practices and methods and shall comply in all respects with the Contract Drawings and with these specifications.

Experience: All bidders shall be required to show to the satisfaction of the Engineer/Design Engineer that the type and size of pipe and fittings he proposes to furnish, shall be made by a manufacturer whose pipe has been successfully used for like work for a period of not less than five (5) years. Such manufacturers shall only be deemed qualified where the interior cement mortar lining and the exterior coating system is applied at the same point of manufacture as the ductile iron pipe and fittings.

1-4 LAYOUT OF DUCTILE IRON PIPE AND FITTINGS FOR SUPPLY MAINS

A. General:

Under Item 1 the Contractor shall furnish Ductile Iron Cement Lined Pipe with Ductile Iron Cement Lined Fittings. Thickness class of pipe shall be minimum Class 52 and shall be increased as depth of pipe increases as specified under Section 1-4, "Layout of Ductile Iron Pipe and Fittings for Supply Mains," paragraph F, "Depth of Water Mains." Class of fittings shall be as specified under Section 1-6, "Ductile-Iron Pipe and Fittings," paragraph F, "Standard Thickness and Pipe Class Table." All valve assemblies, plain anchors, access manholes, drain assemblies, air relief/flushing outlets, pitometer outlets, supplemental connections, and other appurtenances, shall be constructed in accordance with Standard Detail Drawings and as specified herein. Ductile Iron Pipe and Fittings shall have a special exterior pipe coating as specified in Section 1-12, "Exterior Coatings/Painting," paragraph B. All pipe and fitting joints shall be as called for on the Contract Drawings and as specified herein.

1-4 LAYOUT OF DUCTILE IRON PIPE AND FITTINGS FOR SUPPLY MAINS (Cont'd)

B. Alignment:

Water main alignment shown on the Contract Drawings is based upon geometric design that permits installation of Ductile Iron Pipe and Fittings using "standard" fittings. In order to achieve the horizontal and vertical deflections shown on the Contract Drawings, standard bends of 11-1/4, 22-1/2, 45 degrees, or combination thereof, shall be used. Rotation of bends or use of compound bends shall not be permitted to combine horizontal and vertical alignment. When necessary, pipe joint or pipe/fitting joints may be "opened" for alignment to meet the horizontal and vertical deflections shown on the Contract Drawings. Joint openings shall not exceed the manufacturer's maximum suggested joint opening. The maximum nominal pipe length shall be 20'-0". In some cases due horizontal curve alignment, lengths less than 20'-0" may be used. These small lengths shall be included in the price bid per lineal foot of water main furnished under this contract. The Contractor shall maintain all horizontal points of intersection (HPI), and as close as possible, all vertical points of intersection (VPI), as shown on the Contract Drawings.

C. Restrained Distance:

Where "Restrained Distance" is shown on the Contract Drawings the Contractor shall furnish Ductile Iron Cement Lined Boltless Restrained Push-on Joint Pipe and Ductile Iron Cement Lined Boltless Restrained Push-on Joint Fittings of the pipe thickness class and fittings of the pressure class noted on the Contract Drawings to not less than the limits of the "Restrained Distance" shown on the Contract Drawings. All boltless restrained push-on joints shall be of the type specified under Section 1-8, "Joints," paragraph D, "Boltless Restrained Push-on Joints."

D. Valve Assemblies:

On all valve assemblies, all pipe joints, fitting joints, and adapter joints, between the two (2) access manholes and anchorages or plain anchors, except valve end joints, shall have boltless restrained push-on joints, whether within the "Restrained Distance" shown on the Contract Drawings or where no "Restrained Distance" is shown on the Contract Drawings. Valve end joints shall be of the type specified under E-4, "Valves," or as indicated in the Schedule of Bid Items.

E. Supplemental Connections:

Where shown on the Contract Drawings, supplemental connections shall be constructed. Branch of tee for supplemental connections on supply mains shall be furnished with "insulated" flanged outlet; see Section 1-8, "Joints," paragraph F(4), "Flanged Joints." Where a supplemental connection falls within the limits of the "Restrained Distance" shown on the Contract Drawings the tee shall be a boltless restrained push-on joint tee with an "insulated" flanged branch outlet or a boltless restrained push-on joint tee (all bell) with a boltless restrained push-on joint to "insulated" flanged adapter. Connection of the supplemental connection to the distribution water main shall be as shown on the Contract Drawings.

1-4 LAYOUT OF DUCTILE IRON PIPE AND FITTINGS FOR SUPPLY MAINS (Cont'd)

Where a supplemental connection falls outside the limits of the "Restrained Distance" shown on the Contract Drawings the tee shall be a retained mechanical push-on joint tee with an "insulated" flanged branch outlet or a retained mechanical joint push-on joint tee (all bell) with a retained mechanical joint push-on joint to "insulated" flanged adapter. Connection of the supplemental connection to the distribution water main shall be as shown on the Contract Drawings. Retained mechanical joints shall meet the requirements of Section 1-8, "Joints," paragraph B, "Mechanical Joints/Retained Mechanical Joints."

F. Depth of Water Mains:

Where depth of cover to top of 20-inch Ductile Iron Pipe exceeds twenty-six (26') feet, pipe thickness class shall be increased to minimum Class 54. Where depth of cover to top of 20-inch Ductile Iron Pipe exceeds thirty (30') feet, pipe thickness class shall be increased to minimum Class 56. No 20-inch Ductile Iron Water Main shall be installed where cover to top of pipe exceeds thirty-eight (38').

Where depth of cover to top of 24-inch Ductile Iron Pipe exceeds twenty-two (22') feet, pipe thickness class shall be increased to minimum Class 54. Where depth of cover to top of 24-inch Ductile Iron Pipe exceeds twenty-five (25') feet, pipe thickness class shall be increased to minimum Class 56. No 24-inch Ductile Iron Water Main shall be installed where cover to top of pipe exceeds thirty-two (32').

Where depth of cover for 30-inch, 36-inch, 42-inch and 48-inch Ductile Iron Pipe exceeds nineteen (19') feet, pipe thickness class shall be increased to minimum Class 54. Where depth of cover exceeds twenty-two (22') feet, pipe thickness class shall be increased to minimum Class 56. No 30-inch, 36-inch, 42-inch, or 48-inch Ductile Iron Water Main shall be installed where cover to top of pipe exceeds thirty (30').

1-5 CONNECTING TO EXISTING WATER MAINS

- A. The Contractor shall locate all pipe ends and/or all existing pipe joints where connections are to be made, including where existing mains are to be tapped, along with the next existing pipe joint to determine the exact location and elevation (line and grade) of the existing water main. The Contractor shall also expose the existing pipe joints adjacent to where connections are to be made to determine the type of the existing joints and the direction of the existing joints. No pipe fabrication drawing will be approved until this information is submitted to the Engineer/Design Engineer. All field data shall be obtained in the presence of the Inspector.
- B. It shall be the responsibility of the Contractor to verify all field dimensions and all design criteria, including design and pressure requirements, prior to preparing the various shop drawing submittals. At the time of each submission, the Contractor shall give the Engineer/Design Engineer specific written notice of each variation that the Shop Drawings may have from the requirements of the Contract Documents. In addition, the Contractor shall cause a specific notation to be made on each Shop Drawing submitted to the Engineer/Design Engineer for review of each such variation. The Engineer's/Design Engineer's review and approval of Shop Drawings shall not relieve the Contractor from

1-5 CONNECTING TO EXISTING WATER MAINS (Cont'd)

responsibility for any variation from the requirements of the Contract Documents. The Engineer's/Design Engineer's approval shall not extend to any such variation unless Contractor has, in writing, conspicuously called to the Engineer's/Design Engineer's attention each such variation at the time of the submittal, as required by this paragraph, and the Engineer/Design Engineer has given written approval of that particular variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing review and/or approval.

- C. The field data shall be obtained by the Contractor, and submitted to the Engineer/Design Engineer, in sufficient time in advance of the proposed connection in order to determine if any adjustments to the line and grade of the proposed water main or adjustments to the existing water main is required due to the information obtained in the field data. The information obtained in the field data shall also be forwarded to the pipe fabricator with sufficient time to allow for the preparation of revised shop drawings and for fabrication of those pipe and fittings required to make the connection. No extra compensation to the Contractor will be made for any delays and/or for additional, pipe and fittings, or equipment, tools and incidentals, for failure to having properly obtained and forwarded to the Engineer/Design Engineer and/or to the pipe fabricator in a timely manner the required field information data.

1-6 DUCTILE-IRON PIPE AND FITTINGS

- A. All pipe and fittings shall be manufactured in accordance with and in all respects with the requirements of the latest standard of the "American National Standard" for the following: ANSI/AWWA C110/A21.10-93, "DUCTILE-IRON AND GRAY-IRON FITTINGS, 3-INCH THROUGH 48-INCH, FOR WATER AND OTHER LIQUIDS;" ANSI/AWWA C111/A21.11-90, "RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS;" ANSI/AWWA C151/A21.51-91, "DUCTILE-IRON PIPE, CENTRIFUGALLY CAST, FOR WATER OR OTHER LIQUIDS;" and ANSI/AWWA C153/A21.53-94, "DUCTILE-IRON COMPACT FITTINGS, 3 IN. THROUGH 24 IN. AND 54 IN. THROUGH 64 IN., FOR WATER SERVICE," all as adopted by the American Water Works Association (AWWA), which standards, except as herein modified, are made a part of these specifications.

Unless otherwise called for on the Contract Drawings all fitting joints, and pipe connected to fittings, on water mains up to and including 16-inches in diameter, furnished and installed in this contract, shall have "Retained Mechanical Push-on Joints" in accordance with that specified in Section 1-8, "Joints," paragraph B, "Mechanical Joints/Retained Mechanical Joints."

On water mains 20-inch diameter and larger, where "Restrained Distance" is shown on the Contract Drawings, all fitting joints and pipe connected to fittings, furnished and installed in this contract, shall have "Boltless Restrained Push-on Joints" in accordance with that specified in Section 1-8, "Joints," paragraph D, "Boltless Restrained Push-on Joints." The Contractor's attention is herewith directed to Section 1-4, "Layout of Ductile Iron Pipe and Fittings for Supply Mains," paragraph D, "Valve Assemblies," and Section 1-4, paragraph E, "Supplemental Connections".

1-6 DUCTILE-IRON PIPE AND FITTINGS (Cont'd)

- B. All pipe shall be cement lined and shall be of the joint type, size and thickness class(es) noted on the Contract Drawings or as specified herein. The Contractor shall furnish centrifugal cast Ductile Iron Pipe of Grade 60-42-10, where the ductile iron metal shall have a minimum tensile strength of 60,000 psi, a minimum yield strength of 42,000 psi and a minimum elongation of ten (10) percent. The centrifugally cast Ductile shall conform to the American National Standard ANSI/AWWA C151/A21.51-91, "DUCTILE-IRON PIPE, CENTRIFUGALLY CAST, FOR WATER OR OTHER LIQUIDS," and all subsequent amendments thereto. Ductile Iron Pipe on straight runs shall have push-on single rubber-gasket compression joints, all in accordance with American National Standard, ANSI/AWWA C111/A21.11-90, "RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS," and all subsequent amendments thereto. Pipe may be furnished in eighteen (18) foot or twenty (20) foot nominal laying lengths.
- C. All fittings shall be cement lined and shall be of the joint type, size and pressure class noted on the Contract Drawings or as specified herein. All Ductile Iron fittings shall be manufactured in accordance with American National Standard, ANSI/AWWA C110/A21.10-93, "DUCTILE-IRON AND GRAY-IRON FITTINGS, 3-INCH THROUGH 48-INCH, FOR WATER AND OTHER LIQUIDS," and all subsequent amendments thereto. The Contractor shall furnish Ductile Iron Fittings of Grade 70-50-05, where the ductile iron metal shall have a minimum tensile strength of 70,000 psi, a minimum yield strength of 50,000 psi and a minimum elongation of five (5) percent. Metal for fittings shall conform to American National Standard, ANSI/AWWA C110/A21.10-93, "DUCTILE-IRON AND GRAY-IRON FITTINGS, 3-INCH THROUGH 48-INCH, FOR WATER AND OTHER LIQUIDS," and all subsequent amendments thereto. Fittings on pipe size up to and including 16" may be of the short bodied type in accordance with ANSI/AWWA C153/A21.53-94, "DUCTILE-IRON COMPACT FITTINGS, 3 IN. THROUGH 24 IN. AND 54 IN. THROUGH 64 IN., FOR WATER SERVICE," and all subsequent amendments thereto.
- D. Where called for on the Contract Drawings, or where specified herein, pipe and fittings shall be furnished with flanged ends. Where flanged end pipe is required the Contractor shall furnish Ductile Iron Pipe having a minimum thickness class of 53. All flanged end pipe and fittings shall be manufactured in accordance with American Nation Standard, ANSI/AWWA C115/A21.15-94, "FLANGED DUCTILE-IRON PIPE WITH DUCTILE-IRON OR GRAY-IRON THREADED FLANGES," and all subsequent amendments thereto.
- E. Gaskets for push-on joint pipe and fittings and for mechanical joint pipe and fittings shall be of styrene butadiene rubber (SBR) and be of a size and shape to provide adequate compressive force after assembly of the joint in order to effect a positive seal. Gaskets shall be free of porous areas, foreign material and visible defects. Lubricant used for ease in assembly of the pipe/fitting joints shall be nontoxic and shall have no deteriorating effect on the gasket material.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-6 DUCTILE-IRON PIPE AND FITTINGS (Cont'd)

F. STANDARD THICKNESS AND PIPE CLASS TABLE

The thickness of the centrifugally cast ductile iron pipe shall conform to the following table:

STANDARD THICKNESS OF CENTRIFUGALLY  
CAST, DUCTILE IRON PIPE

Pipe Size	Working Pressure(PSI)	Standard Thickness				Fittings (PSI)
		52	53	54	56	
4"	350	0.29	0.32	0.35	0.41	350
6"	350	0.31	0.34	0.37	0.43	350
8"	350	0.33	0.36	0.39	0.45	350
10"	350	0.35	0.38	0.41	0.47	350
12"	350	0.37	0.40	0.43	0.49	350
16"	350	0.40	0.43	0.46	0.52	350
20"	350	0.42	0.45	0.48	0.54	350
24"	350	0.44	0.47	0.50	0.56	350
30"	350	0.47	0.51	0.55	0.63	250
36"	350	0.53	0.58	0.63	0.73	250
42"	350	0.59	0.65	0.71	0.83	250
48"	350	0.65	0.72	0.79	0.93	250

- G. Where fittings shown on the Contract Drawings are not covered by the above specifications, they in such particulars as are lacking thereon shall conform to the dimensions and otherwise meet the specifications for the respective type which are carried in the latest edition of the Ductile Iron Pipe Research Association (DIRPA), "Handbook of Ductile Iron Pipe," or which are otherwise detailed on the Standard Detail Drawings.
- H. Wherever changes in line and grades of the main as shown on the Contract Drawings are not standard fitting deflections, the Contractor will be permitted to submit details using combinations of standard fittings and small deflections (not to exceed the manufacturer's maximum suggested joint opening) in the adjoining lengths of pipe.
- I. On new or extended water mains, up to and including 16-inch diameter, where water mains end or terminate and are not connected to existing mains, retained mechanical bell joint plugs or caps are to be furnished and installed. On mains 20-inch and larger, an approved typed restrained plug or cap shall be furnished and installed. All plugs and caps shall be furnished with two (2) malleable iron plugged two (2")-inch iron pipe threaded taps for drain and air relief connections.

1-6 DUCTILE-IRON PIPE AND FITTINGS (Cont'd)

- J. Closure pieces shall be accurately measured and cut in the field and installed using solid sleeves (long pattern) having mechanical bell joints or compression couplings. Mechanical bell joint sleeves shall be of the retained type as specified in Section 1-8, "Joints," paragraph B, "Mechanical Joints/Retained Mechanical Joints." Compression couplings shall be as specified in Section 1-8, paragraph E, "Compression Couplings."
- K. The Contractor shall furnish the Engineer/Design Engineer with certified copies of all tests, inspection, reports and analyses of tests of samples for all materials furnished under Item 1 in accordance with Part C, Supplemental General Conditions, Section C-54, "Tests, Inspection and Reports," of these specifications.

1-7 PIPE LAYING

- A. The Contractor shall provide proper and suitable tools and appliances for the safe and convenient handling and laying of the pipe and fittings. Great care shall be taken to prevent the exterior coating of pipe and fittings from being damaged, and in particular, the interior cement mortar lining on the inside of the pipes and fittings. Any such damage shall be remedied by the Contractor, at his own expense, to the satisfaction of the Engineer/Design Engineer. All pipes and fittings shall be carefully examined by the Contractor for damage and defects just before laying and no pipe or fittings shall be laid which is known to be damaged or defective.
- B. All pipe, fittings and specials shall be inspected before lowering the pipe, fitting or special into the trench. The interior cement mortar lining and the exterior protective coatings also shall be inspected. Any damaged area shall be repaired in the field with material equal to the original and to the satisfaction of the Engineer/Design Engineer. If any damaged or defective pipe is discovered after having been laid in the trench, it shall be removed and replaced with a sound pipe or fitting by the Contractor, at his own expense, in a manner satisfactory to the Engineer/Design Engineer.
- C. All pipes and fittings shall be thoroughly cleaned before they are laid, shall be kept clean until they are used in the completed work. When pipe laying is not in progress all open ends of pipes shall be kept closed with a night plug, night cap, bulkhead or other approved means.
- D. All pipe and fittings when laid, shall conform to the lines and grades shown in the Contract Drawings. Pipe laid in trench shall be laid to a firm and even bearing for its full length. Precautions shall be taken against floating or water from entering into the trench.
- E. It is the intention of these specifications to secure first class workmanship in the placing of pipe and accessories. In such details as are not specifically mentioned herein or called for on the Contract Drawings, the Contractor shall be required to conform with the applicable sections of the latest American National Standard, ANSI/AWWA C600-87, "INSTALLATION OF GRAY AND DUCTILE CAST IRON WATER MAINS AND APPURTENANCES," and all subsequent amendments thereto, as adopted by the American Water Works Association.



1-8 JOINTS

A. Push-on Joints:

All pipe, unless otherwise required, shown on Contract Drawings, directly specified, or connected to fittings, valves and hydrants, shall have socket by plain end rubber-gasket push-on joints with radially compressed locked in place rubber ring gaskets. Push-on compression joints shall conform to the regular and special requirements for push-on joints in the American National Standard, ANSI/AWWA C111/A21.11-90, "RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS," and all subsequent amendments thereto.

B. Mechanical Joints/Retained Mechanical Joints:

1. Unless otherwise required, shown on the Contract Drawings, or directly specified, all fittings and all pipe ends connected to fittings, such as bends, tees, crosses, hydrant branches, etc., shall have bell or plain end joints of the Mechanical Bolted Stuffing-Box type with sealing gasket and bolted Ductile Iron follower gland and shall be of the specified retained type. Bolts and nuts for mechanical joints shall be corrosion resistant, high strength, low alloy steel. Mechanical joint pipe and fittings shall conform with the regular and special requirement that all glands shall be Ductile Iron with joint dimensions and tolerances, bolt holes and slots, gaskets, rubber, quality control, bolts and nuts, and marking, be manufactured in accordance with American National Standard, ANSI/AWWA C111/A21.11-90, "RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS," and all subsequent amendments thereto.
2. For pipe diameter sizes up to and including 16-inches, retained mechanical joints shall be furnished and installed at all bends, tees, crosses, special fittings, and between vertical offsets or bends on hydrant branches, and such mechanical joints shall be "retained" as specified in Section 1-8, B, paragraph 3. Pipe and Fittings within "Restrained Distance" shown on the Contract Drawings, or where directly specified, shall be furnished with boltless restrained push-on joints as specified in Section 1-8, D: "Boltless Restrained Slip-On Joints."
3. Pipe and fitting bell joint and gaskets shall be furnished as specified. Glands for retained mechanical joints shall be bolted type of Ductile-Iron material conforming to American National Standard, ANSI/AWWA C111/A21.11-90, "RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS," and conforming with ASTM A 536-84, "SPECIFICATION FOR DUCTILE-IRON CASTINGS." Retained mechanical joint follower glands shall be equal to the "Meg-a-Lug" as manufactured by EBAA Iron Sales, Inc.; the "One-Lok" as manufactured by the Sigma Corporation; or the Uni-Flange Series 1400 "Block Buster" as manufactured by the Ford Meter Company. Proper torque shall be that as recommended by the retainer gland manufacturer. Where joint deflection is necessary for alignment such deflection shall be limited to manufacturer's maximum joint opening. All retained joints shall be rated for minimum 350 psi working pressure. All retained joints shall be polyethylene encased as specified in Section 1-8, C, "Polyethylene Encasement," except where such retained

1-8 JOINTS (Cont'd)

mechanical joints are also bonded joints in which case no polyethylene encasement will be required.

4. Retainer glands using perpendicular set screws as a means of restraining the follower gland shall not be permitted.

C. Polyethylene Encasement:

1. Except those pipe and fitting joints which are bonded joints, all retained mechanical joints, flanges, victaulic and compression type bolted sleeved couplings, and all pipe and fittings having bolts or other type of fasteners in joint construction shall be polyethylene encased. Pipe, fittings and other joints that are bonded joints need not be polyethylene encased. Polyethylene Encasement for retained mechanical joints, or any joint requiring bolts and nuts, shall be wrapped in accordance with American National Standard, ANSI/AWWA C105/A21.5-93, "POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS," and all subsequent amendments thereto. Retained Mechanical Joints and all bolted joints shall have double Polyethylene Encasement of Class "C" (black) film, Method "C" doubling sheet and providing one foot (1') minimum overlap on pipe or fitting on both sides of joint.
2. When shown on the Contract Drawings, or where otherwise required, all pipe and fittings required to be polyethylene encased shall be encased using Class "C" film, Method "B". Polyethylene Encasement shall be securely taped snug around all pipe and fittings.
3. All bolts and nuts on all retained mechanical joints, flanges, victaulic and compression type bolted sleeved couplings, shall have field applied three (3) coats of bitumastic coating prior to polyethylene encasement.

D. Boltless Restrained Push-on Joints:

All Ductile Iron Pipe and Fittings within the limits shown on the Contract Drawings by "Restrained Distance" shall be of the Boltless Restrained Push-on Joint type. Valves within "restrained distances" shall be of the type noted on the Contract Drawings or as indicated in the Schedule of Bid Items. Boltless restrained push-on joints shall be of a design consisting of a shop welded retainer ring or segment on the spigot end of the pipe that when the joint is fully assembled "locks" into the bell of the adjacent pipe or fitting providing a positive restrained joint. No field welded restrained joints are permitted except on lengths of pipe less than nominal length where short lengths are required as closures. Boltless restrained joints shall be of a design that provides restraining action between the spigot and bell of the pipe or fitting independent of the gasket. Boltless restrained push-on joints shall be equal to: "Flex-Ring" as manufactured by American Cast Iron Pipe Company; "Super-Lock" as manufactured by Clow Corporation (McWane, Inc.); or "TR-Flex" as manufactured by U.S. Pipe and Foundry.

1-8 JOINTS (Cont'd)

E. Compression Couplings:

1. All pipe compression couplings shall be of a gasketed, sleeve type with diameters to properly fit plain end iron pipe. Each coupling shall consist of one (1) middle ring furnished without pipe stops; two (2) follower glands; two (2) rubber-compound, Buna-N Blend, wedge section gaskets; and sufficient trackhead stainless steel bolts and nuts to properly compress the gaskets. The bolts and nuts shall meet the requirements of ASTM A 276-89a, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES." Type 304, and of ASTM A 193/A 193m-89, "SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.

The middle ring shall have a thickness not less than 3/8". The middle ring and follower glands shall be of either steel conforming to ASTM A 36-93a, "SPECIFICATION FOR STRUCTURAL STEEL," or ductile iron conforming to ASTM A 536-84, "SPECIFICATION FOR DUCTILE-IRON CASTINGS." The compression coupling shall be furnished without pipe stops and be rated for a minimum working pressure of 250 psi and shall be equal to the Dresser Style Nos: 38, 138, or 162 (transition type), or Smith-Blair 441 Straight and Transition Couplings.

2. All compression couplings shall be coated in the shop with a factory coating compatible with field applied primer and enamel coatings. Compression couplings shall be cleaned and painted with three (3) field coats of Koppers Bitumastic Super Tank Solution or equivalent.

F. Flanged Joints:

1. Flanged joints shall be installed where shown on the Contract Drawings or where specified. Flanges shall be either cast iron, ductile iron, cast steel, forged or rolled steel, or properly welded and machined fabricated steel plates welded to ductile iron pipe with two (2) full and continuous welds for the full circumference of the pipe. All flanges shall be cast solid and faced accurately at right angles to the axis of the pipe. They shall have plain faces and shall be spot faced on the back.

All flanged pipe and fittings shall be faced and drilled to the proper drilling pattern. For connecting flanges 12-inch and smaller ANSI B16.1, 125 lb., unless special drilling is otherwise called for on the Contract Drawings. For connecting flanges 16-inch and larger ANSI B16.1, 125 lb. or ANSI B16.1, 250 lb., unless special drilling is otherwise called for on the Contract Drawings.

All flanges shall be shop coated with one (1) coat of coal tar epoxy. All machined steel surfaces at the ends of flanged pipe and fittings or pipe ends having steel flanges shall have face of flange shop coated with one (1) coat of an approved zinc rich primer at the shop immediately after they have been faced and drilled.

1-8 JOINTS (Cont'd)

All cast iron and ductile iron flanges shall be shop coated with one (1) coat of coal tar epoxy, except the face of the flange which shall receive one (1) coat of a zinc rich primer at the shop immediately after they have been faced and drilled.

2. Blind flanges shall be rated for minimum 250 psi working pressure and shall be of either cast iron or ductile iron and have bosses tapped at top and bottom for two (2) inch standard iron pipe, each furnished with malleable iron plugs.
3. All bolts and nuts used in the finished work for flanges shall be made of stainless steel conforming with the requirements of ASTM A 276-89a, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES," Type 304, and with ASTM A 193/A 193m-89, "SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex. The ends of all bolts shall be finished to standard radius in acceptable manner. All screw threads shall be American Standard Coarse Thread (N.C.). Stud bolts double end (rod) shall be used to make the flanged joints on pipe. All dimensions to be according to American Standard Heavy. Bolts and nuts shall be delivered to the field free from grease, rust and dirt and shall be properly protected from moisture and dirt in the field.
4. Gaskets for flanged pipe and fittings shall be full-faced rubber one-eighth (1/8) inch thick equal to Rainbow Style 9 as manufactured by the U. S. Rubber Company; Ring gasket (per AWWA C207-94), one-eighth (1/8) inch thick, cloth-inserted rubber equal to Johns-Manville No. 109, John Crane Co. Style 777, or approved equal. Gaskets shall be suitable for a water pressure of 350 psi at a temperature of 180 degrees F.
5. Where flanged valve or flanged joint insulators are required as shown on the Contract Drawings, or where ordered, each of the flange bolt holes shall be increased by 1/16" to accept a bolt insulator sleeve. The Contractor's attention is herewith directed to Part E-4, Valves," Section 4-20, "Flanged Valve Insulators." In lieu of insulated flanged joint connections, the Contractor may furnish and install an insulated coupling equal to that manufactured by Smith-Blair Coupling No: 438.

G. Victaulic Type Joints:

1. Where shown on the Contract Drawings, or where specified or required, the Contractor shall furnish and install Victaulic type joints, including couplings, for connection of pipe ends to victaulic end valves. Pipe ends shall be shouldered joints, of either cast pipe or with welded end ring, adapted for installation of a Style 44 joint and coupling.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-8 JOINTS (Cont'd)

Victaulic Couplings shall be Style 44 and shall be composed of malleable iron housings held together with steel bolts heat treated and "Hot-Dip" galvanized according to ASTM A 123-89a, "SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS," and with a continuous, hollow, molded rubber sealing ring of such type that the seal becomes tight as the pressure within the pipe increases. The joints shall be constructed and installed and be equal in all respects to those manufactured by the "Victaulic Company of America." Malleable housings shall conform to ASTM A 47-89, "SPECIFICATION FOR FERRITIC MALLEABLE IRON CASTINGS," or to the requirements of ASTM A 536-84, "SPECIFICATION FOR DUCTILE-IRON CASTINGS."

2. Bolts and nuts shall be manufactured by the coupling manufacturer and shall be stainless steel, complying in material with the requirements of ASTM A 276-89a, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES," Type 304, and with ASTM A 193/A 193m-89, "SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.
3. All machined steel surfaces at the ends of pipe to receive Victaulic type couplings shall be coated with one (1) shop coat of an approved zinc rich paint. All metal parts of the couplings shall be coated at the shop with one (1) coat of bituminous primer furnished by the same manufacturer who furnishes the coatings as specified under "D-15, Painting."

1-9 FIELD JOINTS/CUTTING PIPE

Whenever existing water mains require cutting, or newly installed pipes require cutting to fit into the lines, as required for closure pieces, the work shall be done in a satisfactory manner so as to leave a smooth end at right angles to the axis of the pipe. When a piece of pipe is cut to fit into the line, no payment will be made for the portion cut off and not used in the line. The Contractor's attention is herewith called to Section D-26, "Work to Be Done By the City," paragraph B. Connection of pipe ends and closure pieces shall be made using retained mechanical joint solid sleeves (long pattern) or approved type compression couplings.

1-10 BONDED JOINTS/ELECTROLYSIS

A. General:

When specified, Ductile Iron Pipe Joints and Pipe Fitting Joints shall have approved type bonded joints. The bonded type joints shall be of a type that can be used in conjunction

1-10 BONDED JOINTS/ELECTROLYSIS (Cont'd)

with a cathodic protection system to be furnished and installed under Item 11, "Cathodic Protection," and be of a type that provides positive electrical continuity across the joints of all Push-on Joint Pipe; all Retained Mechanical Joint Pipe and Fittings; all Boltless Restrained Joint Push-on Joint Pipe and Fittings; all Flanged Joints, except where "insulated" flanged joints are required or ordered; all compression type coupling joints, except where "insulated" compression couplings are required or ordered; all Victaulic type joints; and all other specials. Electrolysis test stations shall be furnished and installed where shown on the Contract Drawings and/or where required. The bonding wire, connectors, and test station assemblies shall be furnished and installed in accordance with the Standard Detail Drawings. On pipe sizes up to and including 24" in diameter one (1) set of bonding connectors shall be installed at the top of each pipe/fitting joint. On pipe sizes 30" and larger, two (2) sets of bonding connectors shall be installed, one (1) set each at twelve (12") inches clockwise and counterclockwise from top of each pipe/fitting joint. After the joint bonding has been installed the Contractor shall complete the exterior pipe/fitting joint in accordance with the Standard Detail Drawing(s), including exterior coating repair.

B. Electrolysis Test Stations:

Where shown on the Contract Drawings, and/or where ordered, the Contractor shall furnish and install Electrolysis Test Station Assemblies. All materials required for the Electrolysis Test Station Assemblies shall conform with the details shown on the Standard Detail Drawing(s) or as specified elsewhere in these specifications.

C. Payment:

Payment for furnishing and installing bonded joints and electrolysis test stations shall be deemed to be included in the price bid per lineal foot of Ductile Iron Pipe and Fittings furnished and installed under this contract. Additional joint bonding and test stations required as a result of Cathodic Protection requirements shall be furnished, installed and paid for under Item 11, "Cathodic Protection."

1-11 CEMENT LINING

At the point of manufacture a cement mortar lining shall be given to the inside of all pipe, fittings and specials. The lining shall be of standard thickness and shall conform to the American National Standard, ANSI/AWWA C104/A21.4-95, "CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER," and all subsequent amendments thereto.

1-12 EXTERIOR COATINGS/PAINTING

A. Unless otherwise specified herein, the exterior of all ductile iron pipe, fittings, and specials shall have shop applied a one (1) mil bitumastic coating applied in accordance with ANSI/AWWA C151/A21.51-91, "DUCTILE-IRON PIPE, CENTRIFUGALLY CAST, FOR WATER OR OTHER LIQUIDS."

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-12 EXTERIOR COATINGS/PAINTING (Cont'd)

- B. Where called for in the Schedule of Bid Items, all ductile iron pipe, fittings and specials of water mains twenty (20") inch and larger shall have shop applied a minimum sixteen (16) mil thickness of an approved coal tar epoxy exterior coating. The coating shall be applied in two (2) coats in accordance with the manufacturer's instructions and shall have a dry film thickness (DFT) of 16 mils. Ductile iron pipe, fittings and specials up to and including 16" in diameter shall have the standard bitumastic coating noted in paragraph A.
- C. After installation and before Polyethylene Encasement any damaged coating shall be cleaned and repainted as specified herein. All bolts and nuts on retained mechanical joints, flanges, victaulic or compression type bolted sleeved couplings, and other bolted type pipe or fitting joints, shall be cleaned and painted with three (3) field coats of Koppers Bitumastic Super Tank Solution, or equivalent.

1-13 MARKING

All pipe shall be suitably marked, on or near the pipe bell, clear and legible, the manufacturer, nominal diameter, class, date of manufacture, weight, and other elements of identification. All fittings shall be marked, clear and legible, the manufacturer, nominal diameter, date of manufacture, weight, pressure rating, in the case of bends the degree of bend, and other elements of identification.

1-14 HYDROSTATIC TESTING

After valved sections of the pipe, fittings and appurtenances have been installed they shall be pressure tested by the Contractor to the test pressures and in the manner specified in Part D, Section D-29, "Testing Mains," of these specifications.

The tests shall be continued and repeated as often as necessary to ensure that all leaks have been made tight to the satisfaction of the Engineer/Design Engineer. The Contractor shall furnish and install all required test bulkheads, appliances, and other materials and taps as required to make the test.

1-15 DISINFECTION/CHLORINATION

The Contractor shall cooperate with the City in the disinfection of all ductile iron pipe, fittings and specials installed in the work. The disinfection procedure shall consist of the (a) the preliminary flushing; (b) the chlorination procedure; (c) final flushing; and (d) sampling, all as described in Part D, Section D-30, "Water Main Disinfection."

1-16 INSPECTION AND TESTING

All pipe shall be inspected and tested at the manufacturing facility. The Contractor shall furnish eight (8) copies of the manufacturer's certified inspection and testing reports for all pipe and fittings to be furnished and installed in the work.

1-16 INSPECTION AND TESTING (Cont'd)

All ductile iron pipe, fittings and specials shall be subject to inspection and approval by the Engineer/Design Engineer after delivery of material to the job site. No mis-shapen, imperfectly coated, or damaged pipe, fittings, or appurtenances shall be installed in the work.

The Contractor shall furnish to the Engineer/Design Engineer eight (8) sets of lists of all pipe and fittings and of all appurtenances in each shipment of materials delivered to the job site. The lists shall contain the serial or mark number, weight, size, and description of each item received at the job site.

The City reserves the right to test all materials furnished by the Contractor during the life of the proposed contract. The City may elect to randomly test materials or cause to have materials randomly tested. No compensation for delays will be made to the Contractor either during or as a result of these tests. The Contractor shall be responsible, at his sole expense, to remedy any deficiencies, to the satisfaction of the City, found as a result of these tests.

1-17 SHIPPING, HANDLING AND STORAGE

- A. The Contractor shall transport, deliver and distribute along the line of the work, the ductile iron pipe, specials and appurtenances thereof. Pipe shall be loaded for shipment upon suitable cars or trucks and secured thereto. In loading and unloading the pipe more than ordinary care shall be taken to prevent any injury to the pipe and fitting ends, linings and coatings. Such work shall be done slowly and under no circumstances shall the pipe be dropped.
- B. In distributing the pipe along the work, each pipe and fitting shall be placed as nearly as possible to the point where it is to be laid, and facing in the proper direction. Coated pipe shall be handled with wide belt slings. Iron chains, cables or other equipment likely to cause damage to the pipe wall or coatings shall not be used. Pipe which has been improperly distributed and which shall be moved longitudinally along the trench shall be reloaded on a suitable car or truck or lifted and swung by a derrick or moved by such means as may be satisfactory to the Engineer/Design Engineer.
- C. If in the process of manufacture, transportation, or handling, any ductile iron pipe, fitting or special receives any damage to the exterior coating, the interior cement mortar lining or the pipe wall, the repair of which will in any degree further injure it, such pipe, fitting or special shall be rejected and replaced at the Contractor's expense.
- D. Pipe which is placed in storage or on street treelawns shall be so arranged as not to cause undue interference or inconvenience to vehicle or pedestrian traffic. All pipe, fittings and specials shall be sufficiently protected to prevent any injury to such, including the interior and exterior coatings.

1-18 MATERIALS DATA WITH PROPOSAL

Each bidder shall submit with his proposal, and on the form provided, the information called for below:



**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-18 MATERIALS DATA WITH PROPOSAL (Cont'd)

- A. Name of Pipe Manufacturer and Location of Plant.
- B. Name of Coupling Manufacturer and Location of Plant.
- C. Name of Interior Pipe Coating Manufacturer and Exterior Pipe Coating Manufacturer and Location of Application of each.

Failure of the Bidder to complete all of the information in the Materials List Form provided in the Proposal may be cause for rejection of his bid.

1-19 SHOP DRAWINGS

- A. The Contractor shall submit to the Engineer/Design Engineer for review and/or approval eight (8) sets of prints of all shop drawings for pipe and fittings and miscellaneous or special details of pipe and fitting joints which are not standard construction or fully detailed in the regular catalogue of the company furnishing the pipe, fittings and specials. No work shall be done in the shop or in the field until after the shop drawings have been approved.
- B. The Contractor shall submit to the Engineer/Design Engineer for review and/or approval, a minimum of eight (8) complete sets of all detail drawings for fittings and specials, and miscellaneous details, such as air relief outlets and drain outlets, bonding of joints, anchors, pitometer outlets, restrained joint, access openings, drain pipe assembly, piping for gate valve assembly, etc.
- C. The Contractor shall also submit the Engineer/Design Engineer for review and/or approval, a minimum of eight (8) sets of a complete assembly plan for the entire length of the pipe line consisting of the horizontal pipe alignment, the pipe profile, and accompanied with a detailed tabulated laying schedule. This assembly plan and laying schedule shall show the correct plan location and elevation, by both survey and watermain stationing, of all fittings to be furnished, and shall include location of all air relief valves, drains assemblies, anchors, manholes, pitometer vaults, valve vaults, restrained joints, access manholes, electrolysis test stations, valves assemblies, etc. This water main assembly plan and profile shall be a double lined drawing, including pipe centerline, similar to that shown on the Contract Drawings, and shall show by survey and water main stationing all horizontal points of intersections (HPI), including degree of deflection. The water main assembly plan profile shall also include pipe centerline elevations, and shall show by survey and water main stationing all vertical points of intersections (VPI), including degree of deflection. The assembly plan and tabulated laying schedule shall show the limits of the restrained distances, class(es) of pipe and other pertinent information.
- D. Two (2) sets each of the detailed drawings, assembly plan and laying schedule submitted will be returned to the Contractor with the criticisms or approval of the Engineer/Design Engineer. In case the drawings are not approved, the Contractor shall again submit for review and/or approval, eight (8) complete sets of revised detail drawings, assembly plan, and laying schedule. After the shop drawings have been finally approved, the Contractor shall furnish to the Engineer/Design Engineer a sufficient number of additional sets of shop

1-19 SHOP DRAWINGS (Cont'd)

drawings, on paper, for his use and for the City's internal distribution. No work shall be done in the shop or in the field until all of the shop drawings have been finally approved.

- E. Finally, the Contractor shall furnish the City one (1) mylar or reproducible cloth tracing of each of the approved shop drawings. Mylar tracings shall be submitted as specified under Part E, Section 14-2, "Shop Drawings," paragraph E, "Final Mylar Tracings," and Section 14-3, "As-Built Drawings," paragraph C, "As-Built Shop Drawings." The pipe fabricator shall obtain the "as-built" data from the Contractor and shall revised the finally approved Laying Schedules and Line Assembly Drawings to reflect actual line and grade of the pipe including the actual stationing and elevation of the pipe, horizontal and vertical deflections, air relief/flushing outlet, drain assembly, valve assembly, and the actual placement of the various pipe, fittings, specials, extra fittings, joint type, etc. The "As-Built" Laying Schedules Line Assembly Drawings shall be furnished in the manner specified under Section 14-2, paragraph E and payment made as part of the final mylar submittals required under Item 14B, "Shop Drawings."
- F. The approval of the drawings by the Engineer/Design Engineer shall not relieve the Contractor of any of his obligations in connection with this contract, including the material and performance requirements thereof.

1-20 EXTRA DUCTILE IRON FITTINGS

- A. For any additional ductile iron pipe fittings ordered by the Engineer/Design Engineer or extra work due to revision of Contract Drawings, except as otherwise indicated herein, the Contractor shall furnish and install, all in accordance with that specified for ductile iron fittings, under Item 1, including all necessary labor, equipment tools and incidentals at the following unit prices:

6" - \$ 90.00	8" - \$140.00	10" - \$185.00
12" - \$235.00	16" - \$560.00	

- B. A quantity of XXXXXX (xx) XX" extra fittings, ductile iron Class 250/350, is provided in the Schedule of Bid Items. These extra fittings shall be of the various types as required by the Contractor to have on hand in order to compensate for field conditions. The type of fitting and fitting joint shall be determined by the Contractor, meeting the specifications for fittings as described under this item.
- C. The provisions of this item shall not relieve the Contractor of his responsibilities to investigate existing facilities as indicated in these specifications, nor to use less than normal diligence in excavating or laying pipe to anticipate possible difficulties.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-20 EXTRA DUCTILE IRON FITTINGS (Cont'd)

- D. The unit prices stipulated per each for the various sizes of extra ductile iron fittings under Item 1 shall be in full compensation for the furnishing and installing of such extra fittings as are ordered by the Engineer/Design Engineer and which are not shown on the Contract Drawings or approved shop drawings, and shall include extra excavation, sheeting and shoring, backfilling, sand and premium backfill, seeding and sodding, temporary and permanent repaving required therefore, and the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown.
- E. No compensation for extra fittings used to furnish and install supplemental connections from the supply main to the distribution main will be entertained, but the cost thereof shall be deemed to be included in the price bid per lineal foot of ductile iron pipe and fittings, classified as to size and type, actually furnished and installed in the work as measured from the center of the supply main to the center of the distribution main. Likewise, no payment will be made under Item 1 for extra fittings which are installed for the convenience of the Contractor without specific orders or approvals from the Engineer/Design Engineer.

1-21 MEASUREMENT

The number of linear feet of water main to be paid for under Item 1, "Ductile Iron Pipe and Fittings," classified as to size and type, shall be that actually furnished and placed in accordance with that shown in the Contract Drawings and these specifications, as measured along the axis of the pipe, including fittings and valves connected up in place. For connections between new and existing mains, measurement shall be the distance from center line to center line of mains and the actual length of existing main ordered to be removed to make the connection.

1-22 PAYMENT

- A. Under Item 1, "Ductile Iron Pipe and Fittings," the unit price stipulated to be paid for each linear foot of ductile iron pipe and fittings shall include the furnishing of all the materials, labor, tools, equipment, and incidentals for and to properly construct and connect in place, as shown on the Contract Drawings and as specified herein, all Ductile Iron Pipe and Fittings, including providing all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; sheeting and shoring, including use of trench box; all shop drawing submittals; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; hydrostatic pressure testing of the water main and all appurtenances and the repair and/or replacement of materials due leakage or defects; assisting in the chlorination and flushing procedures; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement

1-22 PAYMENT (Cont'd)

of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; final site restoration; and the furnishing of "as-built" drawings. Payment under Item 1, shall also include the cutting into and removal of existing pipe, removal of existing concrete thrust blocks, removal of existing plugs/caps, connecting, furnishing and installing restrained joints, victaulic joints and compression couplings, painting, special exterior coating, joint bonding, electrolysis test stations, removal and restoration of miscellaneous items, and the furnishing of all labor, materials, tools, equipment, and other incidentals required to complete the work shown on the Contract Drawings and as specified, or as ordered, all for the proper completion of the work included under this contract.

B. Labor and material required to complete the work covered under other items shall be paid for under the applicable items:

- 1) All 2-inch Brass and Galvanized Iron Pipe used for the 2" Air Relief/Flushing Outlet Assembly shall be paid for under Item 4A;
- 2) All Valves, including couplings and adapters, shall be paid for under the appropriate Item 4;
- 3) All Vitrified Pipe/Concrete Sewer Pipe and Specials or PVC Pipe and Specials shall be paid for under the appropriate Item 5;
- 4) All Brick Masonry shall be paid for under Item 6;
- 5) All Concrete Masonry shall be paid for under Item 7;
- 6) All Valve Box and Manhole/Vault Castings shall be included under the appropriate Item 4, Item 6, or Item 7.
- 7) Steel Casing Pipe shall be paid for under Item 10;
- 8) Cathodic Protection requirements including additional bonded joints and test stations where ordered shall be paid for under Item 11; and
- 9) Shop Drawings, including "as-built" shop drawings shall be paid for under Item 14B.

1-23 ADDITIONAL WORK

A. Due to changes determined necessary in the field to the depth of the water main in order to avoid unforeseen obstructions, or when otherwise required, and as approved by the Director, or the Engineer/Design Engineer, the Contractor shall perform the same, when ordered by the Director or the Engineer/Design Engineer, at unit prices stated as follows:

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

1-23 ADDITIONAL WORK (Cont'd)

- 1) Additional excavation in excess of two (2) feet below bottom of trench as originally shown on the Contract Drawings, based on volume as measured by normal width of trench times the excess depth: in rock \$50.00 per cubic yard; in shale \$30.00 per cubic yard; in earth \$15.00 per cubic yard.
- 2) Additional sand backfill \$12.00 per cubic yard;
- 3) Additional premium backfill \$18.00 per cubic yard;
- 4) Additional permanent paving \$23.00 per square yard; and
- 5) Additional breaking and removal of pavement \$12.00 per lineal foot of trench.

Authorization for payment for work performed under paragraph (A) shall be requested in writing by the Contractor and approved by the Engineer/Design Engineer prior to any work being performed. Payment for such additional work performed under paragraph (A) shall be made in accordance with the requirements set forth under Item 15, "Underground Structures."

- B. The Contractor shall place temporary repaving where ordered by the Engineer/Design Engineer. The unit price to be paid for each square yard of temporary repaving where ordered by the Engineer/Design Engineer shall be \$6.00 and shall include the furnishing and removing, spreading and rolling of asphaltic concrete, complete and as specified under Section D-42, "Pavements, Road Surfaces, Berms, Sidewalks, Driveways, Curbing and Underdrains," paragraph I, and the furnishing of all labor, materials, tools and equipment to complete the work as specified, or ordered.
- C. In locations where temporary repaving is not sufficient to meet traffic requirements, the Contractor shall place repaving meeting the specifications of this paragraph, when ordered by the Engineer/Design Engineer. The unit price to be paid for each square yard of this repaving shall be \$15.00 and shall include the furnishing and placing of 7" concrete, complete as specified under Section D-42, "Pavements, Road Surfaces, Berms, Sidewalks, Driveways, Curbing and Underdrains," paragraph N, of these specifications and the furnishing of all labor, materials, tools and equipment to complete the work as ordered.
- D. Work performed under paragraphs (B) and (C) will be requested in writing by the City and only after an estimate for the requested work is provided by the Contractor and is approved by the Engineer/Design Engineer the work shall be performed. Payment for such additional work performed under this paragraphs (B) and (C) shall be requested by the Contractor and shall be made in accordance with the requirements set forth under Section B-34, "Changes or Modifications of Contract."

**DETAIL SPECIFICATIONS**

**PART E - BID ITEMS**

**ITEM 4**

**E-4 VALVES**

**4-1 WORK INCLUDED**

Under Item 4, the Contractor shall furnish all the materials for and shall properly set in place and connect at the locations shown on the Contract Drawings, or as directed, valves, all as required for the proper completion of the work included under this contract. In general, this work shall include the furnishing, shop testing, placing, field testing, and painting of valves of the various types, sizes and joint types as herein specified or as ordered, including air relief/flushing outlet valve assembly with valve boxes complete, drain valve with valve box complete, vertical gate valve with valve box complete, horizontal gate valve with bypass valve and valve box complete, pitometer tap assembly, cut-in-valve assembly with valve box complete, tapping sleeve for iron pipe and tapping valve with valve box complete, tapping saddle for concrete pipe and tapping valve with valve box complete, welded tapping hat flange for steel pipe and tapping valve with valve box complete. All valves shall have CWD standard sized operating nuts and all other accessories and appurtenances, including where required valve stem extension (in valve box) and/or valve rod extension (in valve vault) and the furnishing of all labor, tools and appliances necessary to complete the work as specified or as shown. The contractor's attention is herewith directed to Part D, Section D-26, "Work To Be Done By The City," of these specifications.

**4-2 DEFINITIONS/STANDARDS**

Valves furnished and set in place under this item shall be manufactured in accordance with the applicable AWWA minimum standards and in accordance with the supplemental requirements of these specifications. Size and type of valves shall be as noted on the Contract Drawings and as specified herein or indicated in the Schedule of Bid Items. Standards referenced herein shall be latest revision thereof, except as modified herein:

ANSI/AWWA C111/A21.11-90: RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS;

ANSI/AWWA C203-91: COAL-TAR PROTECTIVE COATINGS AND LININGS FOR STEEL WATER PIPELINES - ENAMEL AND TAPE - HOT APPLIED;

ANSI/AWWA C500-93: METAL-SEATED GATE VALVES FOR WATER SERVICE SUPPLY;

ASTM A 126-84: SPECIFICATION FOR GRAY-IRON CASTINGS FOR VALVES, FLANGES, AND PIPE FITTINGS;

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

4-2 DEFINITIONS/STANDARDS (Cont'd)

ASTM A 193/A 193m-89:	SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE;
ASTM A 194/A 194m-88:	SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE;
ASTM A 276-89a:	SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES;
ASTM A 536-84:	SPECIFICATION FOR DUCTILE-IRON CASTINGS;
ASTM B 62-86:	SPECIFICATION FOR COMPOSITION BRONZE OR OUNCE METAL CASTINGS;
ASTM B 98-84:	SPECIFICATION FOR COPPER-SILICON ALLOY ROD, BAR, AND SHAPES;
ASTM B 584-90:	SPECIFICATION FOR COPPER ALLOY SAND CASTINGS FOR GENERAL APPLICATIONS; and
ASTM D 2000-86:	CLASSIFICATION SYSTEM FOR RUBBER PRODUCTS IN AUTOMOTIVE APPLICATIONS;

4-3 GATE VALVES - GENERAL

A. Strength of Valves:

Gate valves, 3" to 12", shall be designed for minimum 200 psi working pressure and gate valves 16" and above for minimum 150 psi working pressure; and shall withstand an internally applied hydrostatic pressure at all points of at least twice the rated working pressure, except as specified in Section 4-6, Paragraph J, "Hydrostatic Tests at Shop". Should tests reveal any weakness, the valves from that design shall be rejected and a new design made.

B. Parts to be Interchangeable:

All parts of valves of the same size and manufacturer shall be perfectly interchangeable and all work shall be done in a thorough and workmanlike manner.

C. Valve Body:

The valve body shall be of short body design. The valve body shall have cast thereon in a conspicuous place the manufacturer's name or initials, rated working pressure, and the year of manufacture. These letters shall be 1/8-inch in relief and of an approved height.

4-3 GATE VALVES - GENERAL (Cont'd)

D. Castings:

All castings, whether of bronze, iron, or steel, shall be sound and smooth without cold shuts, swells, lumps, scabs, blisters, sand holes or other imperfections, and shall be made in accordance with the best modern foundry practice to obtain castings of the best quality and of uniform thickness. No welding, plugging or filling of holes or other defect shall be permitted. For parts whose thickness is less than one (1") inch, castings being thinner than the specified thickness by .06 inch or more shall be rejected; and for parts for whose thickness is one (1") inch or more, castings being thinner than specified by .08 inch or more shall be rejected.

E. Mechanical Joint Ends:

All valves requiring mechanical joint ends shall be furnished with Retained Mechanical Joint ends complete with gaskets and retainer type glands and shall fit the plain-end of all ductile iron pipe, manufactured in conformance with Specifications ANSI/AWWA C111/A21.11-90, "RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS," including the plain-end of all makes of ductile iron pipe of the push-on joint type.

F. Victaulic Ends:

Victaulic Ends, when required, shall conform to the dimensions given on the Contract Drawings. Victaulic Couplings furnished and installed to connect the valve end to the pipe end shall be included and paid for under the appropriate victaulic end valve item.

G. Flanged Ends:

Flanges shall be faced and drilled. Bolt holes shall be spot faced on the back to secure an even bearing. Spot facing shall be required on the back of valve flanges where such is not parallel to the face of the flange within three (3) degrees as specified in ASME/ANSI B16.1. All spot facing, shall be in accordance with the Manufacturers Standardization Society (MSS) Standard Practices, SP-9. All bolt holes shall be accurately drilled from templates, spaced equal distances apart and shall straddle both the horizontal and vertical axis of the valve, unless special drilling pattern is called for on the detail drawings. Flanges shall be plain faced with a smooth finish. The dimensions and drilling of all end flanges shall conform to the proper drilling pattern. For connecting flanges 12-inch and smaller, ANSI B16.1, 125 lb., and for connecting flanges 16-inch and larger, ANSI B16.1, 125 lb. or ANSI B16.1, 250 lb. for Class 250 valves, unless special drilling is otherwise called for on the Contract Drawings.

Where flanged valve insulators are required at supplemental connections, connecting to existing mains, or where ordered, each of the flange bolt holes shall be increased by 1/16" to accept a bolt insulator sleeve. Contractor's attention is directed to Section E-4, Paragraph 4-20, "Flanged Valve Insulators," of these specifications. In lieu of insulated flanged connections, including the flanged end valve, at supplemental connections the contractor may furnish retained mechanical joint bell end gate valve and install an insulated coupling equal to that manufactured by Smith-Blair Coupling No: 438.



4-4 GATE VALVES - SUPPLEMENTAL REQUIREMENTS

A. Type of Valves:

The gate valves shall be manufactured in full compliance with the ANSI/AWWA C500-93, "METAL-SEATED GATE VALVES FOR WATER SERVICE SUPPLY," or latest revision thereof, and in addition shall comply with the supplementary requirements herein specified. All gate valves shall be of the double-disc parallel seat bottom wedge or side wedge type or double revolving disc parallel seat bottom wedge or side wedge type. All gate valves 20-inches and over in size shall include bypass valves attached thereto. In opening or closing the valve, the gates shall be forced to ascent or descent by reason of the thrust exerted upon the gates directly by the valve stem wrench nut, this thrust being generated by the rotation of the valve stem. In closing the valve, the discs, when opposite the ports, shall be pressed firmly against the body seats by wedges or some other device of equally suitable and approved means.

The design of the mechanical wedging action shall be such that seating force is applied equally to two or more contact points near the outer edge of each disc at or above and below the horizontal centerline of disc. The mechanism shall be designed so that all wedging members are activated at one time. It shall be of the type which will eliminate unbalanced seating pressure and minimize distortion of the discs.

B. Iron Parts:

The valve bodies, covers, discs, frames, etc., of all gate valves 3-inch and over, shall be of cast iron or ductile iron.

C. Vertical and Horizontal Valves:

All gate valves, 16-inch and under, shall be constructed to work vertically. Valves having 20-inch and over waterway shall be constructed to work horizontally.

D. Waterway Opening:

With the gate valve open, an unobstructed waterway shall be afforded; the diameter of which is not to be less than the full nominal diameter of the valve, except where lugs are provided for inserting or removing the body-seat rings. The lugs need not be removed after the valve is assembled.

E. Stuffing Boxes:

The stuffing box on each gate valve 3-inch or over, shall be separate from the dome and fastened to it by bolts. For 2-inch valves and under, the stuffing boxes may be formed in the dome of the valve. Valves 16-inch and smaller, shall be furnished with "O" Ring type seals. The seals shall be fitted with at least two (2) "O" Rings; the lower "O" Ring serving as the pressure seal and the upper "O" Ring as a combined dirt and moisture seal. The "O" Ring shall be compounded to meet ASTM D 2000-86, "CLASSIFICATION SYSTEM FOR RUBBER PRODUCTS IN AUTOMOTIVE APPLICATIONS," and have physical properties suitable for the application.

4-4 GATE VALVES - SUPPLEMENTAL REQUIREMENTS (Cont'd)

The dimensions of the stuffing box flanges shall be of a thickness and uniformity proportioned to fit the various externally applied torque and internal thrust pressure. Bolt holes shall be fitted and of a number such that leaves a sufficient cross sectional area of metal thereby providing satisfactory strength to the upper and lower stuffing box flange.

F. Valve Stem:

The stem shall be of sufficient length to allow the removal of packing without necessitating the removal of the operating nut. The stem opening and thrust bearing recess shall be bronze bushed with two (2) "O" Rings located above the thrust collar and one (1) "O" Ring below forming a lubricant chamber. The number of threads per inch shall be not less than that indicated in ANSI/AWWA C500-93.

G. Valves with Stationary Stems:

All gate valves, unless otherwise ordered, shall be made with single, non-rising stems (NRS).

H. Valves to Open Clockwise, Except 2-inch and Under:

All gate valves 3-inch and over, including bypass valves, shall be made to open by turning in a clockwise direction. Valves 2-inch and under shall be made to open by turning in a counterclockwise direction. All valves to be made so that they can be easily operated.

I. Wrench Caps:

The wrench caps (operating nuts) and retaining nuts on heads of valve stems and pinion shafts shall be of Bronze specification ASTM B 584-90, C.A. 867, "SPECIFICATION FOR COPPER ALLOY SAND CASTINGS FOR GENERAL APPLICATIONS," or Ductile Iron specification ASTM A 536-84, "SPECIFICATION FOR DUCTILE-IRON CASTINGS." On valves 24-inch and over, wrench caps shall be 2-inch square and 2-inch deep. On valves 3-inch thru 20-inch inclusive, they shall be 1-3/4 inch square on top, 1-7/8 inch square at base and 1-3/4 inch deep. On 2-inch valves and under, they shall be 1-1/4 inch square on top, 1-3/8 inch square at base and 1-1/2 inch deep. Machined wrench caps for valves 3-inch to 48-inch inclusive shall be fitted to a machined square stem or pinion shaft and held in place by a retaining nut of Bronze, ASTM B 584-90, C.A. 867. Wrench caps shall have a cut-away skirt to permit easy access to gland bolts. On 1-1/2 inch and 2-inch valves the wrench cap shall be secured to the shaft with a brass pin.

J. Facing of Gates:

All discs of gates and threads for seat rings in the body shall be machined true and any groove or grooves shall be machined in each disc or gate for the reception of the face ring. The rings are to be finished to a true surface. The disc and seat rings shall be securely and rigidly attached to the discs or body seats in a manner approved by the Engineer/Design Engineer.

4-4 GATE VALVES - SUPPLEMENTAL REQUIREMENTS (Cont'd)

K. Outside Screw and Yoke Valves:

Gate valves with outside screw and yokes, shall be made with single rising stems. All outside screw and yoke valves shall be equipped with wheels for operating same. Wheels are to be of cast iron or ductile iron. Wheels shall have cast on them an arrow indicating the direction of turning for opening the valve.

Outside screw and yoke gate valves 6-inch and larger in size shall be provided with two bosses on one side of the body, located on the horizontal centerline of gate valves, to permit the installation of bypass around the gate. Bosses are to be left solid and of ample size to permit drilling and tapping for bypasses.

L. Marking:

All gate valves 3-inch and over shall have the identity of the maker, size and year when made and also the letters "C.W.D." cast upon its body or dome in raised letters or have an permanent bronze tag of sufficient size affixed to the body of the valve with the identity of the maker, size and year when made and the letters "C.W.D." indicated thereon.

4-5 GATE VALVES - 20 INCH AND LARGER

A. Bypasses:

Bypasses on gate valves shall be provided on valves 20-inch and larger. The bypasses shall be located on or below the horizontal centerline of the valves. Bypass valves shall be of the same size as the bypass and shall be double-disc valves conforming to the requirements of these specifications for gate valves. The size requirements of bypasses shall be as follows: 20-inch valves shall be provided with 3-inch bypasses; valves 24-inch thru 30-inch inclusive, shall be provided with 4-inch bypasses; valves 36-inch and 42-inch shall be provided with 6-inch bypasses; and 48-inch valves shall be provided with 8-inch bypasses.

B. Indicators:

All valves 20-inches in diameter and over shall be equipped with indicators denoting the positions of the gate. The moving parts and bearings to be of bronze or bronze-lined.

C. Grease Cases:

All valves 20-inches in diameter and larger shall have watertight grease cases installed. The grease cases shall be of the extended type and shall be made of cast iron conforming to ASTM A 126-84, Class B, "SPECIFICATION FOR GRAY-IRON CASTINGS FOR VALVES, FLANGES, AND PIPE FITTINGS," or any subsequent amendments thereto. Bearing surfaces for valve stem and pinion shaft shall be bronzed bushed with Bronze, Copper ALLOY UNS No: C83600, conforming to ASTM B 62-86, "SPECIFICATION FOR COMPOSITION BRONZE OR OUNCE METAL CASTINGS". The grease cases shall be securely bolted to the valve bonnet through a heavy cast iron yoke. The yoke shall

4-5 GATE VALVES - 20 INCH AND LARGER (Cont'd)

be of sufficient length to provide space for repacking valve and grease case stuffing boxes. All grease cases shall be provided with a removable cover securely bolted in place to allow easy access to the gears. There shall also be provided convenient filling and draining plugs and sufficient oil to fully submerge the pinion gear. The valves shall be furnished and delivered with the grease cases filled with the proper oil as recommended by the manufacturer.

D. Rollers and Scrapers:

In all valves 20-inches in diameter and larger, designed to lie horizontally, each gate or disc shall be provided with two (2) bronze rollers travelling on bronze tracks and provided with suitable bronze scraper; or two stainless steel rollers travelling on stainless steel faced tracks and provided with suitable stainless steel scrapers.

E. Gearing:

All valves 20-inches in diameter and larger shall be equipped with enclosed cut-tooth steel gears. Gears, shafts and bearings shall be such as to produce easy operating without bending or twisting.

4-6 MATERIAL SPECIFICATIONS

A. Bolts and Nuts:

All bolts and nuts on the external valve bodies, valve flanges and tapping flanges shall be made of stainless steel meeting the requirements of ASTM A 276-89a, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES," Type 304 and ASTM A 193/A 193m-89, "SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.

B. Bronze Parts:

All grades of bronze shall be in accordance with ANSI/AWWA C500-93, "METAL-SEATED GATE VALVES FOR WATER SERVICE SUPPLY," unless otherwise specified herein.

C. Cast Iron:

Cast iron shall conform to ASTM specification A 126-84, Class B, "SPECIFICATION FOR GRAY IRON CASTINGS FOR VALVES, FLANGES, AND PIPE FITTINGS," or latest revision thereof. All iron castings shall be tough and without brittleness, such as may be cut, drilled and chipped by hand with due ease. A blow from a hammer shall produce an indentation on the edge of the casting without flaking the metal.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

4-6 MATERIAL SPECIFICATIONS (Cont'd)

D. Ductile Iron:

Ductile Iron shall conform to ASTM specification A 536-84, "SPECIFICATION FOR DUCTILE-IRON CASTINGS," or latest revision thereof. All iron castings shall be tough and without brittleness, such as may be cut, drilled and chipped by hand with due ease. A blow from a hammer shall produce an indentation on the edge of the casting without flaking the metal.

E. Silicon Bronze:

Bronze shall conform to ASTM specification B 98-84, Alloy 655, "SPECIFICATION FOR COPPER-SILICON ALLOY ROD, BAR, AND SHAPES."

F. Stainless Steel:

Stainless steel shall conform to ASTM specification A 276-89a, Type 304 and Type 316, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES."

G. Other Materials:

All other materials used in the manufacture of these valves and not specified in the specifications, shall be of the best quality of their respective kinds, and subject to inspection, tests, and approval by the Engineer/Design Engineer.

H. Chemical Analysis:

Chemical analysis of the material used shall be furnished by the Contractor to the Engineer/Design Engineer whenever required.

I. Cleaning of Castings:

All iron castings shall be thoroughly cleaned on the outside and inside surfaces and protected from rain or moisture until they are painted.

J. Hydrostatic Tests at Shop:

All gate valves shall be tested in the shop by hydrostatic pressure, by closing the valve and applying the required test pressure in the body and dome of the valve as specified below:

3" thru 12"	400 psi. -	No time requirement;
14" thru 20"	300 psi. -	for 15 minutes, drop pressure to 150 psi, then elevate again to 300 psi for 15 minutes, a total of 1/2 hour;
24" thru 48"	300 psi -	for 1/2 hour, drop pressure to 150 psi, then elevate again to 300 psi for 30 minutes, a total of 1 hour.

4-6 MATERIAL SPECIFICATIONS (Cont'd)

This is modification of Section 5.1.2.1 and Section 5.1.2.2 of the Standard, ANSI/AWWA C 500-93. All leaks, flaws or other defects developed in making these tests shall be corrected to the satisfaction of the Engineer/Design Engineer or the entire piece shall be rejected. After testing, all valves shall be thoroughly drained. All equipment for testing and all tests shall be made at the Contractor's expense.

The Contractor shall include with each valve three (3) certified copies of reports showing the results of all shop tests, and a brief description of how the tests were performed.

K. Performance Tests:

To demonstrate the free and perfect functioning of all parts of the valves in their intended manner, prior their installation, the Contractor shall make a performance test by operating each valve, in the position that the valve will assume in service, and for the full length of gate travel in both directions. Any defects of workmanship of the valves and/or with functioning parts thereof shall be corrected by the Contractor at his expense, to the satisfaction of the Engineer/Design Engineer, and the test repeated until satisfactory performance is demonstrated.

4-7 AIR RELIEF/FLUSHING OUTLET VALVE ASSEMBLY WITH VALVE BOXES COMPLETE

Each "2" Air Relief/Flushing Outlet Valve Assembly Complete" shall consist of a 2-inch bronze ball angle meter valve (F.I.P. x Meter Flange), 2-inch iron pipe threaded meter companion flange, and a 2-inch extra heavy brass "Close" (2-inch long) nipple, tapered at each end. The bronze 2-inch air relief ball angle meter valve shall be rated for minimum 300 psi working pressure and be equal in all respects to the 2-inch ball angle meter valve manufactured by Ford Meter Box Co. No: BFA13-777W; A.Y. McDonald Mfg. Co. No: 4604B; or Mueller Co. No: B-24286. The threaded meter companion flange shall also be rated for minimum 300 psi working pressure. The Air Relief/Flushing Outlet Valve Assembly shall also include all 2" Galvanized Black Iron Pipe and Brass Pipe as required and specified in Section E-9, "2-INCH GALVANIZED BLACK IRON AND BRASS PIPE" and all Valve Boxes as required and specified in Section E-8, "MISCELLANEOUS METAL." The Air Relief/Flushing Outlet Valve Assembly with Valve Boxes Complete shall conform with the details shown on the Contract Drawings.

Payment for each "2" Air Relief/Flushing Outlet Valve Assembly Complete" shall be made under Item 4 and shall include: a 2-inch bronze ball angle meter valve (F.I.P. x Meter Flange); a 2-inch iron pipe threaded meter companion flange; a 2-inch extra heavy brass "Close" (2-inch long) nipple, tapered at each end; all 2" Galvanized Black Iron Pipe and Brass Pipe, including all fittings; and a Double Valve Box Assembly.

4-8 DRAIN VALVE WITH VALVE BOX COMPLETE

Contractor shall furnish and install "Drain Valve with Valve Box Complete" at the locations shown on the Contract Drawings or where ordered. Drain valve shall be double-disc gate valve conforming with these specifications for vertical gate valves, including the supplemental requirements thereof as specified herein.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

4-8 DRAIN VALVE WITH VALVE BOX COMPLETE (Cont'd)

For Ductile Iron Pipe and Fittings, furnished under Item 1, the double-disc gate drain valve shall have Retained Mechanical Joint Bell Ends connected to the supply main piping in accordance with the drain assembly detail for ductile iron pipe shown on the Standard Detail Drawings. For Prestressed Concrete Cylinder Pipe and Fittings, furnished under Item 2, or Steel Pipe and Fittings, furnished under Item 3, the double-disc gate drain valve shall have either Flanged by Flanged Ends or Flanged by Retained Mechanical Joint Bell End, connected to the supply main piping in accordance with the drain assembly details for concrete and steel pipe shown on the Standard Detail Drawings.

Drain Valve shall be of the size shown on the Standard Detail Drawings for the various size water main installed and shall be furnished and installed with valve box complete, properly set in place. All drain valves shall be furnished and installed with a valve stem extension of the proper length conforming to the detail shown on the Standard Detail Drawings.

Payment for each "Drain Valve with Valve Box Complete" shall be made under Item 4 and shall include a vertical gate valve; a valve box complete; and a valve stem extension of the proper length. Payment for the drain vault shall be made under Item 6, "Brick Masonry and Vault/Manhole Structures."

4-9 VERTICAL GATE VALVE WITH VALVE BOX COMPLETE

Contractor shall furnish and install "Gate Valve with Valve Box Complete" at the locations shown on the Contract Drawings or where ordered. Gate valve shall be a double-disc valve conforming with these specifications for vertical gate valves, including the supplemental requirements thereof as specified herein.

Gate Valves shall be of the size and joint type shown on the Contract Drawings and noted in the Schedule of Bid Items and shall be furnished and installed with valve box complete, properly set in place. Where depth of water main is such where top of the valve operating nut exceeds four (4) foot depth the gate valve shall be furnished and installed with a valve stem extension of the proper length conforming to the detail shown on the Standard Detail Drawings.

Payment for each "Valve with Valve Box Complete," classified as to size and joint type, shall be made under Item 4 and shall include a vertical gate valve; a valve box complete; and, if so required, a valve stem extension of the proper length.

4-10 HORIZONTAL GATE VALVE WITH BYPASS VALVE AND VALVE BOX COMPLETE

Contractor shall furnish and install "Horizontal Gate Valve with Bypass Valve and Valve Box Complete" at the locations shown on the Contract Drawings or where ordered. Horizontal Gate valve shall be double-disc gate valve conforming with these specifications for horizontal gate valves, including the supplemental requirements thereof as specified herein.

On Ductile Iron Pipe and Fittings, furnished under Item 1, where the working pressure does not exceed 150 psi, the double-disc horizontal gate valve shall have Retained Mechanical Joint Bell

4-10 HORIZONTAL GATE VALVE WITH BYPASS VALVE AND VALVE BOX COMPLETE  
(Cont'd)

Ends with shorts and mechanical joint solid sleeves to connect to the water supply main piping. In lieu of retained mechanical bell end valves, Contractor may furnish Victaulic End Valves with shouldered pipe ends or victaulic adapters; or Flanged End Valves with flanged adapters, to connect to the supply main piping in accordance with the valve assembly detail for ductile iron pipe shown on the Standard Detail Drawings. On Prestressed Concrete Cylinder Pipe and Fittings, furnished under Item 2, or Steel Pipe and Fittings, furnished under Item 3, where the working pressure does not exceed 150 psi, the double-disc horizontal gate valve shall have Victaulic Ends with victaulic adapters or, in lieu thereof, be furnished with Flanged Ends with flanged adapters, connected to the supply main piping in accordance with the valve assembly details for concrete and steel pipe shown on the Standard Detail Drawings. Where working pressure exceeds 150 psi all horizontal gate valves on ductile iron pipe, prestressed concrete cylinder pipe and steel pipe shall be furnished with flanged ends.

Horizontal Gate Valves shall be of the size shown on the Contract Drawings and noted in the Schedule of Bid Items and shall be furnished and installed with valve box complete, properly set in place over the bypass valve. Where depth of water main is such where top of the valve operating nuts exceeds four (4) foot depth the horizontal gate valve shall be furnished and installed with a valve stem/rod extension, secured to the valve vault walls, of the proper length and as shown on the Standard Detail Drawings, and the bypass gate valve shall be furnished and installed with a valve stem extension, of the proper length conforming to the detail shown on the Standard Detail Drawings.

Payment for each "Horizontal Gate Valve with Bypass Valve and Valve Box Complete," classified as to size, shall be made under Item 4 and shall include a horizontal gate valve; couplings and/or adapters; a bypass valve with valve box complete; and, if so required, a valve stem/rod extensions of the proper length. Payment for the valve vault shall be made under Item 6, "Brick Masonry and Vault/Manhole Structures."

4-11 PITOMETER TAP ASSEMBLY COMPLETE

Where shown on the Contract Drawings, or where ordered, the Contractor shall furnish and install "2" Pitometer Tap Assembly Complete." Pitometer taps shall be installed out of 2" iron pipe threaded (NPT) outlets furnished with and paid for as part of the appropriate pipe item. Pitometer Tap Assembly Complete shall consist of a 2" to 1" bronze bushing and a 1" bronze corporation valve.

Payment for furnishing and installing each "2" Pitometer Tap Assembly Complete" shall be made under Item 4 and shall include a 2" to 1" bronze bushing and a 1" bronze corporation valve. Payment for furnishing and installing the pitometer vault shall be made under Item 7, "Concrete Masonry and Vault/Manhole Structures."

4-12 CUT-IN-VALVE ASSEMBLY WITH VALVE BOX COMPLETE

Where shown on the Contract Drawings, or where ordered, the Contractor shall install under supervision of the Division of Water, "Cut-in-Valve Assembly Complete with Valve Box Complete." The Division of Water will determine the time of installation. The Contractor shall furnish all materials in accordance with these specifications and shall do all pipe cutting as required.



**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

4-12 CUT-IN-VALVE ASSEMBLY WITH VALVE BOX COMPLETE (Cont'd)

The Contractor's attention is herewith directed to Part D, Section D-26, "Work to be Done By the City," paragraph B, pertaining to cutting pipe. The Contractor shall furnish and install a retained mechanical joint bell end gate valve, valve box complete, either retained mechanical joint solid sleeves (long pattern) or compression couplings equal to Dresser Style No. 38, 138 or 162 or Smith-Blair No. 441, having stainless steel bolts and nuts (ASTM A276/ASTM A193/ASTM A194, Type 304, Heavy Hex), ductile iron pipe shorts and, if required, a valve stem extension. The compression couplings shall be furnished without pipe stops and be rated for a minimum working pressure of 250 psi. The Contractor shall perform all excavation, provide sheeting and bracing as required, perform all backfilling as specified, seeding and sodding, sidewalk replacement, pavement replacement (both temporary and permanent) or other incidentals necessary to complete the work.

Payment for each "Cut-in-Valve Assembly Complete with Valve Box Complete," classified as to size, shall be made under Item 4 and shall include a vertical gate valve; a valve box complete; a valve stem extension of the proper length, if so required; ductile iron class 52 cement lined pipe; and retained mechanical joint solid sleeves (long pattern) or compression couplings.

4-13 TAPPING SLEEVE FOR IRON PIPE & TAPPING VALVE W/VALVE BOX COMPLETE

- A. Tapping Sleeve: Tapping sleeve shall be properly sized to fit the existing cast/ductile iron pipe to be tapped. The outside diameter of the existing pipe shall be determined by the field measurements made by the Contractor.
1. Compression Type Tapping Sleeve: Tapping sleeves for cast/ductile iron pipe sizes to 16-inches shall be of a two (2) part Ductile-iron Bolted Compression Seal type with sealing gasket of rubber compressed by outlet half of bolted sleeve and internal pipe pressure. Maximum outlet size shall be one (1) nominal pipe diameter less than pipe to be tapped. Back half of bolted tapping sleeve shall be one (1) piece section and have provision for support and locking action.
  2. Mechanical Joint Type Tapping Sleeve: Tapping sleeves for cast/ductile pipe shall be of Gray or Ductile Cast Iron two (2) part bolted type having Ductile-Iron Split-Gland Mechanical Joint Ends. Bolts and nuts used for the tapping sleeve shall be copper bearing ductile iron or equivalent high-strength, low-alloy corrosion resistant steel.
  3. Tapping Sleeve Outlet: Outlet of tapping sleeve shall be flanged to receive flanged end of the tapping valve and shall be designed to safely withstand a minimum working pressure of 150 psi and a minimum test pressure of 250 psi. Outlet of tapping sleeve shall be furnished with a drilled and tapped iron pipe thread and plugged in the shop with Gray or Ductile-Iron threaded plug, before shipment. Iron pipe threaded outlet shall be for tapping sleeve installation pressure test before tapping. Tapping sleeve assembly shall be tested using a blind flange to the pressures noted in Part D, Section D-3, "General Notes," before tapping valve is installed. Bolting material for tapping sleeve shall meet the requirements for valves.

4-13 TAPPING SLEEVE FOR IRON PIPE & TAPPING VALVE W/VALVE BOX COMPLETE  
(Cont'd)

B. Tapping Valve:

Tapping valve shall meet the specifications for Gate Valves (see Section 4-3 and Section 4-4) except that oversized seat rings shall be provided to permit the use of full sized cutters through the valve. One end of the tapping valve shall be flanged to mate with the tapping sleeve. The outlet end of the tapping valve shall be provided with special provisions for bolting onto the tapping machine. Outlet end of tapping valve shall be as shown on the Contract Drawings or as indicated in the Schedule of Bid Items.

All bolts and nuts on the external valve bodies of all tapping valves, including those mating the sleeve to the tapping valve flange, shall be made of Stainless Steel: ASTM A 276-89a, Type 304, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING SHEET BARS AND SHAPES" and ASTM A 193/A 193m-89, "ALLOY-STEEL and STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.

C. Installation:

1. The existing cast/ductile iron pipe to be tapped shall be thoroughly cleaned in the area to be covered by the tapping sleeve. The sleeve shall be properly installed in position and the bolts tightened.
2. All exposed ferrous metal surfaces of buried tapping sleeves and valves, shall, after installation, be cleaned and painted with two (2) field coats of coal tar pitch paint equal to Koppers Bitumastic Super Tank Solution. Painting shall be according to Sec. 4-17, "Painting." Mechanical joint type tapping sleeve and mechanical joint valve bell ends shall be polyethylene encased.
3. See Part D, Detail Specifications, Section D-26, "Work To Be Done By the City".
4. Where depth of water main is such where top of the valve operating nut exceeds four (4) foot depth the installation of the tapping gate valve shall include the furnishing and installing of a valve stem extension of the proper length conforming to the detail shown on the Standard Detail Drawings.

D. Payment:

Payment for each "Tapping Sleeve and Tapping Gate Valve with Valve Box Complete," classified as to size, shall be made under Item 4 and shall include a ductile iron mechanical joint tapping sleeve; a vertical gate tapping valve; a valve box complete; a valve stem extension of the proper length, if so required; and all arrangements required for the tapping of the water main.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**

**CUY-West Sixth Street Streetscape, Part 1, PID 89722**

**CUY-Professor Street Intersections, Part 2, PID 90218**

**4-14 TAPPING SADDLE/SLEEVE FOR CONCRETE/IRON PIPE & TAPPING VALVE FOR SUPPLY MAINS**

**A. Tapping Saddle/Sleeve:**

1. On water supply mains, 20-inch and larger the tapping saddle/sleeve shall be properly sized to fit the existing concrete/iron pipe to be tapped. The outside diameter of the existing pipe shall be determined by the field measurements made by the Contractor.
2. Tapping Saddle/Sleeve Outlet: Outlet of tapping sleeve shall be flanged to receive flange end of tapping valve and shall be designed to safely withstand a working pressure of 150 psi and test pressure of 250 psi. Outlet of tapping saddle/sleeve shall be furnished with a drilled and tapped iron pipe thread and plugged in the shop with Gray or Ductile-Iron threaded plug, before shipment. Iron pipe threaded outlet shall be for tapping sleeve installation pressure test before tapping. Tapping saddle/sleeve assembly shall be tested using a blind flange to the pressures noted in Part D, Section D-3, "General Notes," before tapping valve is installed. All bolting material and saddle straps used in assembly of the tapping saddle/sleeve shall be made of Stainless Steel: ASTM A 276-89a, Type 304, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING SHEET BARS AND SHAPES." Bolts and nuts shall also conform with ASTM A 193/A 193m-89, "ALLOY-STEEL and STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.

**B. Tapping Valves:**

Tapping valves on pipe sizes 20-inch and larger shall meet the specifications (including pressure rating) for Gate Valves except that oversized seat rings shall be provided to permit the use of full sized cutters through the valve. One end of the tapping valve shall be flanged to mate with the tapping saddle. The outlet end of the tapping valve shall be provided with special provisions for bolting onto the tapping machine. Outlet end of tapping valve shall be as shown on the Contract Drawings or indicated in the Schedule of Bid Items.

All bolts and nuts on the external valve bodies of all tapping valves, including those mating the sleeve to the tapping valve flange, shall be made of stainless steel: ASTM A 276-89a, Type 304, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING SHEET BARS AND SHAPES," and ASTM A 193/A 193m-89, "ALLOY-STEEL and STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE."

**C. Installation:**

1. The existing concrete/iron pipe to be tapped shall be thoroughly cleaned in the area to be covered by the tapping saddle/sleeve. The saddle/sleeve shall be properly installed in position and the bolts tightened.

4-14 TAPPING SADDLE/SLEEVE FOR CONCRETE/IRON PIPE & TAPPING VALVE FOR SUPPLY MAINS (Cont'd)

2. All exposed ferrous metal surfaces of buried tapping saddles/sleeves on concrete/iron pipe shall be coated with a minimum of two (2) inches of a non-shrinking grout provided and installed by the contractor; valves, shall, after installation, be cleaned and painted with two (2) field coats of coal tar pitch paint equal to Koppers Bitumastic Super Tank Solution. Painting shall be according to Sec. 4-17, "Painting."
3. See Part D, Detail Specifications, Section D-26, "Work To Be Done By the City".
4. Where depth of water main is such where top of the valve operating nut exceeds four (4) foot depth the installation of the tapping gate valve shall include the furnishing and installing of a valve stem extension of the proper length conforming to the detail shown on the Standard Detail Drawings.

D. Payment:

Payment for each "Tapping Saddle/Sleeve and Tapping Gate Valve Complete," classified as to size, shall be made under Item 4 and shall include a tapping saddle for concrete pipe or a ductile iron mechanical joint tapping sleeve for iron pipe; a vertical or horizontal gate tapping valve; bypass gate valve with a valve box complete, if so required; a valve stem extension of the proper length, if so required; and all arrangements required for the tapping of the water main. Valve vaults shall be of the type and size shown on the Standard Detail Drawings and shall include Manhole Frame and Cover Complete, steps and other necessary incidentals. Valve Vault shall be paid for under Item 6, "Brick Masonry and Vault/Manhole Structures."

4-15 WELDED TAPPING HAT FLANGE FOR STEEL PIPE AND TAPPING VALVE WITH VALVE BOX COMPLETE

A. Hat Flange and Tapping Saddle:

Where connecting or tapping to existing steel pipe is required the Contractor shall furnish and install a welded hat flange with tapping saddle. The tapping saddle shall be properly sized to fit the existing steel pipe to be tapped. The outside diameter of the existing pipe shall be determined by field measurements made by the Contractor. The tapping hat flange shall have an outlet flange sized to receive the tapping valve and shall conform with the details provided in the Contract Drawing. The welded hat flange shall be of steel, and shall be rated for 250 test pressure and a minimum working pressure of 150 psi. Tapping hat flange assembly shall be tested using a blind flange to the pressures noted in Part D, Section D-3, "General Notes," before tapping valve is installed.

All exposed ferrous metal surfaces of existing pipe, tapping hat flange and valve, shall, after installation, be cleaned and painted with two (2) field coats of coal tar pitch paint equal to Koppers Bitumastic Supertank Solution in accordance with ANSI/AWWA C203-91, "COAL-TAR PROTECTIVE COATINGS AND LININGS FOR STEEL WATER PIPELINES - ENAMEL AND TAPE - HOT APPLIED."

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

4-15 WELDED TAPPING HAT FLANGE FOR STEEL PIPE AND TAPPING VALVE WITH VALVE BOX COMPLETE (Cont'd)

B. Tapping Valves:

Tapping valves on pipe sizes 20-inch and larger shall meet the specifications for Gate Valves except that oversized seat rings shall be provided to permit the use of full sized cutters through the valve. One end of the tapping valve shall be flanged to mate with the tapping saddle. The outlet end of the tapping valve shall be provided with special provisions for bolting onto the tapping machine. Outlet end of tapping valve shall be as shown on the Contract Drawings or as specified.

All bolts and nuts on the external valve bodies of all tapping valves, including those mating the sleeve to the tapping valve flange, shall be made of Stainless Steel: ASTM A 276-89a, Type 304, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING SHEET BARS AND SHAPES," and ASTM A 193/A 193m-89, "ALLOY-STEEL and STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.

C. Installation:

1. The existing steel pipe to be tapped shall be thoroughly cleaned in the area to be covered by the tapping hat flange. The saddle shall be properly installed in position and the bolts tightened.
2. All exposed ferrous metal surfaces of buried hat flange, tapping saddle, and tapping valve and bypass valve, shall, after installation, be cleaned and painted with two (2) field coats of coal tar pitch paint equal to Koppers Bitumastic Super Tank Solution. Painting shall be according to Section 4-17, "Painting".
3. See Part D, Detail Specifications, Section D-16, "Work to be Done by the City".
4. Where depth of water main is such where top of the valve operating nut exceeds four (4) foot depth the installation of the tapping gate valve shall include the furnishing and installing of a valve stem extension of the proper length conforming to the detail shown on the Standard Detail Drawings.

D. Payment:

Payment for each "Welded Tapping Hat Flange and Tapping Gate Valve Complete", classified as to size, shall be made under Item 4 and shall include a welded tapping hat flange for steel pipe; a vertical or horizontal gate tapping valve; bypass gate valve with a valve box complete, if so required; a valve stem extension of the proper length, if so required; and all arrangements required for the tapping of the water main. Valve vaults shall be of the type and size shown on the Standard Detail Drawings and shall include Manhole Frame and Cover Complete, steps and other necessary incidentals. Valve Vault shall be paid for under Item 6, "Brick Masonry and Vault/Manhole Structures."

4-16 PLACING AND TESTING

- A. All valves shall be tested accurately and carefully placed to the lines and grades given. All connections to pipe shall have the necessary mechanical joint, victaulic, or flanged ends as required.
- B. After the valves are set in place and ready to operate, the Contractor shall pressure test them under the test pressure and conditions specified under paragraph D-3, "General Conditions." Any valve found to leak shall be made watertight and, if found to be of faulty design, shall be satisfactorily repaired or replaced, to the satisfaction of the Engineer/Design Engineer, by the Contractor at his expense.
- C. All buried gate valves shall be furnished complete with valve boxes vertically set plumb and set to grade.

4-17 PAINTING

- A. The body of all iron valves shall either be dipped in coal tar rich paint and all bronze internal parts cleaned, or after passing the hydraulic test, the iron bodied valves shall be given at least two (2) coats of approved paint.
- B. All interior or exterior ferrous metal surfaces, except machine surfaces, shall be thoroughly cleaned of all rust, wire brushed and washed with benzene before painting or coating.
- C. After installation, all exposed metal surfaces of valves except brass or bronze shall be painted with two (2) field coats of coal tar pitch paint equal to Koppers Bitumastic Super Tank Solution.

4-18 INSPECTION

The Engineer/Design Engineer, or his authorized designate, will inspect the material and work done, as the interest of the City may require. Such officer shall have unrestricted access to the Contractor's plant, and to all parts of the work and other places at which the preparation of the material and the construction of the different parts of the work to be done under these specifications are carried on, and he shall receive all facilities and assistance to carry out his work of inspection and testing, in a manner satisfactory to the Engineer/Design Engineer. Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the specifications, or any modifications thereof, as herein provided, and work not so constructed shall be removed and made good by the Contractor, at his own expense.

4-19 DATA WITH PROPOSALS

Proposals shall be accompanied by drawings furnished by the manufacturer, fully and distinctly illustrating, describing and giving the weight of each of the valves proposed to be furnished. Valve drawings previously approved and on file with Division of Water need not be furnished in proposal but shall be required as submittal for approval as describe in Section 4-21 "Drawings".

#### 4-20 FLANGED VALVE INSULATORS

The Contractor shall furnish, where required, flanged valve insulators. All of the flanged bolt holes on each of the two (2) flanges of the valve shall be increased by 1/16 inch in diameter to accept the bolt insulator sleeves. The bolt insulator sleeve shall extend for the full thickness of the two (2) mating flanges. The drilling of the enlarged flange bolt holes shall be done by the valve manufacturer in the shop.

Flange insulating materials for each flange shall be provided at each of the supplemental connections, and/or where ordered, and shall include the following:

- 1) Two (2) full faced insulating flange gaskets of Pyrox 1E glass reinforced epoxy, 1/8 inch thick;
- 2) One full length mylar bolt insulating sleeve, 1/32 inch thick, for each flange bolt on each of the two (2) valve flanges;
- 3) Two (2) flat phenolic laminate insulating washers, 1/8 inch thick, for each flange bolt on each of the two (2) valve flanges;
- 4) Two (2) flat steel washers, 1/8 inch thick, for each flange bolt on each of the two (2) valve flanges. The outside diameter of the insulating washer shall not be less than the outside diameter of the steel washer.

Flange insulator sizes shall be as required for the type and size flanges specified herein or as shown on the detail drawings for each of the insulated flange locations required.

Test to verify the integrity of the insulated flanged valve installations shall be performed by the Contractor. The Contractor shall provide all necessary equipment, materials, and labor for the performance of the tests. If the tests indicate that an insulating flanged connection is not providing satisfactory isolation of connecting piping, the Contractor shall perform additional tests and work as required to locate and correct any such deficiencies that may exist.

Payment for the furnishing and installation of the flanged valve insulators shall be included, under Item 4, with the appropriate insulated flanged valve to be bid as indicated in the Schedule of Bid Items. Payment for the performance and all necessary equipment, materials and labor for the testing for the acceptability of the insulated flanged valve connections shall be included in the appropriate testing made under Item 11, "Cathodic Protection."

#### 4-21 DRAWINGS

- A. The Contractor shall submit to the Engineer/Design Engineer for review and/or approval eight (8) sets of prints of all shop drawings for valves. These shop drawings shall be manufacturer's generated complete working, detail, and fully dimensioned drawings showing thicknesses, weight, direction of turning, type and specification of materials, and of similar information. No work shall be done in the shop or in the field until after the shop drawings have been approved.

4-21 DRAWINGS (Cont'd)

- B. Two (2) sets each of the valve shop drawings submitted will be returned to the Contractor with the criticisms or approval of the Engineer/Design Engineer. In case the drawings are not approved, the Contractor shall again submit for review and/or approval, eight (8) complete sets of revised valve shop drawings. After the shop drawings have been finally approved, the Contractor shall furnish to the Engineer/Design Engineer a sufficient number of additional sets of shop drawings, on paper, for his use and for the City's internal distribution. No work shall be done in the shop or in the field until all of the shop drawings have been finally approved.
- C. Finally, the Contractor shall furnish the City one (1) mylar or reproducible cloth tracing of each of the approved valve shop drawings. Mylar tracings shall be submitted as specified under Part E, Section 14-2, "Shop Drawings," paragraph E.
- D. The approval of the valve shop drawings by the Engineer/Design Engineer shall not relieve the Contractor of any of his obligations in connection with this contract, including the material and performance requirements thereof.

4-22 PAYMENT

The unit price stipulated to be paid for Item 4, "Valves," classified as to size and type, shall include the furnishing, shop testing, placing, field testing and painting of the valves of the various sizes and joint types herein specified or as ordered, including air relief/flushing outlet valve assembly with valve boxes complete, drain valve with valve box complete, vertical gate valve with valve box complete, horizontal gate valve with bypass valve and valve box complete, pitometer tap assembly, cut-in-valve assembly with valve box complete, tapping sleeve for iron pipe and tapping valve with valve box complete, tapping saddle for concrete pipe and tapping valve with valve box complete, welded tapping hat flange for steel pipe and tapping valve with valve box complete, flanged valve insulator, operating nuts, valve stem extension when required and other accessories and appurtenances and the furnishing of all labor, tools and appliances necessary to complete the work as specified or as shown. Payment for the furnishing and placing of valves under this item shall also include providing all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; sheeting and shoring, including use of trench box; all shop drawing submittals; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; hydrostatic pressure testing of the water main and all appurtenances and the repair and/or replacement of materials due leakage or defects; assisting in the chlorination and flushing procedures; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer



**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

4-22 PAYMENT (Cont'd)

connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; final site restoration. The furnishing for review and approval of shop drawings shall be paid for under Item 14-2, "Shop Drawings," and the furnishing of the mylar "as-built" drawings shall be paid for under Item 14-3, "As-Built Drawings." Furnishing and installation of Valve Vaults shall be paid for under Item 6, "Brick Masonry and Vault/Manhole Structures."

**DETAIL SPECIFICATIONS**

**PART E - BID ITEMS**

**ITEM 8**

**E-8 MISCELLANEOUS METAL WORK**

**8-1 WORK INCLUDED**

- A. The Contractor shall, under Item 8, furnish and install all miscellaneous metal work which is required for the proper completion of the work included under this contract and is not specifically included under other items of these specifications.
- B. In general, Miscellaneous Metal, furnished and installed under Item 8, or furnished and installed in conjunction with other items of work, shall include manhole steps, valve boxes, extension stems and brace, manhole/vault castings, structural members, bolting material, reinforcing steel and other similar metal items required for the proper completion of the work. All miscellaneous metal work furnished and installed shall be in accordance with this specification.

**8-2 CASTINGS**

- A. Manhole Frames and Covers shall be of gray iron castings, be smooth and free from blow holes and other defects, and shall conform to the dimensions given on the Standard Detail Drawings, and meet the requirements of ASTM A 48-83, "SPECIFICATION FOR GRAY IRON CASTINGS," Class 30C. All castings shall be true and where required shall fit properly together. The contact surfaces of the frames and covers for manholes and openings shall be chipped and machined if necessary, in order to give an even bearing for the cover on the frame, and to render them tight. Where required, the surfaces of plates and covers shall be cast with suitable checkered or other raised pattern.
- B. Cast Iron Valves Boxes and Covers shall be of gray iron castings, in which appearance and dimension tolerances are primary considerations and strength is not a primary or major consideration. Castings shall meet the requirements of ASTM A 48-83, "SPECIFICATION FOR GRAY IRON CASTINGS," with no specific requirement as to Class. Chemical composition shall not be considered, but the material shall be of good quality and of such character as shall make the metal of the castings strong, tough and of even grain. The metal shall be made without any admixture of cinder iron or other inferior metal.
- C. Workmanship and finish shall conform substantially to the dimensions and weights shown on the Standard Detail Drawings. The castings or moldings shall be free from injurious defects, cracks, gas holes, flaws, and excessive shrinkage. Additional inspection shall be made at the work site. Inspection shall be visual inspection for appearance and surface smoothness in comparison with samples accepted as standard.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

8-2 CASTINGS (Cont'd)

Sample castings or moldings from each pattern, when required by the Engineer/Design Engineer, shall be submitted by the manufacturer for the purpose of establishing standards of appearance and dimensional tolerances. The manufacturer shall certify that his product conforms to these specifications. Each certification so furnished shall be signed by an authorized agent of the manufacturer.

8-3 MATERIALS

- A. Steel: Unless specified otherwise, all steel furnished and installed shall meet the requirements ASTM A-36-93a, "SPECIFICATION FOR STRUCTURAL STEEL."
- B. Galvanized Coatings: Where iron or steel is shown galvanized, cadmium plated, parkerized or otherwise treated, or where such is so ordered, no additional allowance will be made for such treatment, but the cost thereof shall be deemed to be included in the price bid per the appropriate item of work or bid per pound of Miscellaneous Metal Work furnished and installed under this item. All metal to be galvanized shall be thoroughly cleaned, by immersion in pickling liquors. Galvanizing shall be performed by dipping in a hot zinc bath and keeping the metal immersed until the temperature of the metal has obtained the same temperature as that of the bath. Galvanizing shall meet the requirements of ASTM A 123-89a, "SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS." Cadmium plating shall be done by an approved process and plating shall be from 0.0003 inch to 0.0005 inch in thickness.
- C. Aluminum: Aluminum, except as otherwise required, shall be Alloy 6063 meeting the requirements of ASTM B 221-90, "SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY EXTRUDED BARS, RODS, WIRE, SHAPES AND TUBES;" for extruded shapes shall be Alloy 6063-T5 meeting the requirements of ASTM B 241/B 241M-90, "SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY SEAMLESS PIPE AND SEAMLESS EXTRUDED AND TUBE;" for aluminum plate and structural shapes shall meet the requirements of ASTM B 308/B 308M-90a, "SPECIFICATION FOR ALUMINUM-ALLOY 6061-T6 STANDARD STRUCTURAL SHAPES;" and for rivets and screws shall be Alloy 2017 meeting the requirements of ASTM B 316-90, "SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY RIVET AND COLD-HEADING WIRE AND RODS."
- D. Brass: Unless otherwise specified, brass shall be of a commercial grade meeting the requirements of ASTM B 36-89, "SPECIFICATION FOR BRASS PLATE, SHEET, STRIP AND ROLLED BAR," Alloy No. 3.
- E. Bronze: Bronze for bolts, nuts and anchor bolts shall be manganese bronze meeting the requirements of ASTM B 584-90, "SPECIFICATION FOR COPPER ALLOY SAND CASTINGS FOR GENERAL APPLICATIONS."
- F. Copper-Silicon: Copper-Silicon Alloy shall meet the requirements of ASTM B 96-86, "SPECIFICATION FOR COPPER-SILICON ALLOY PLATE SHEET, STRIP, AND ROLLED BAR FOR GENERAL PURPOSES AND PRESSURE VESSELS," (formerly B 97-70, Type B).

8-3 MATERIALS (Cont'd)

- G. Stainless Steel: Stainless steel bolts, nuts, rods and fasteners shall conform to the requirements of ASTM A 276-89a, "SPECIFICATION FOR STAINLESS AND HEAT-RESISTING STEEL BARS AND SHAPES," Type 304, and to ASTM A 193/A 193m-89, "SPECIFICATION FOR ALLOY-STEEL AND STAINLESS STEEL BOLTING MATERIALS FOR HIGH TEMPERATURE SERVICE," Heavy Hex, and ASTM A 194/A 194m-88, "SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS FOR BOLTS FOR HIGH-PRESSURE AND HIGH-TEMPERATURE SERVICE," Heavy Hex.
- H. Wrought Iron: Wrought iron shall meet the requirements of ASTM A 860-89, "SPECIFICATION FOR HIGH STRENGTH BUTT WELDING FITTINGS OF WROUGHT HIGH STRENGTH FOR ALLOY STEEL."

8-4 CLEANING AND TESTING

All castings shall be thoroughly cleaned and subjected to a careful hammer test. No castings shall be coated unless clean and free from rust, and approved in these respects by the Engineer/Design Engineer, or his authorized Inspector, immediately before being coated.

8-5 SHOP COATING

Each casting shall be sprayed or brushed inside and out with one (1) shop coat of asphaltic compound varnish. The varnish shall be made of high grade asphalt, fluxed and blended with properly treated drying oils and thinned to a proper consistency with a volatile solvent. The varnish shall be equal to Black Asphalt Varnish as manufactured by the Excelsior Varnish and Chemicals, Cleveland, Ohio 44104. Other methods of coating and types of coating materials shall be subject to the approval of the Engineer/Design Engineer. Each casting shall also receive at the shop one (1) coat of an approved bitumastic coating before the metal has rusted and after the grease, dirt and scale has been removed. In addition to this shop coat, the castings shall receive two (2) field coats of an approved paint as specified under Section 8-12, "Painting".

8-6 INSPECTION

The Engineer/Design Engineer, or his authorized designee, shall have the right to inspect the material and work done, as the interest of the City may require. Such inspection shall not relieve the Contractor from any obligation to furnish and perform said work strictly in accordance with the specifications, or any modifications thereof, as herein provided, and work not so constructed shall be removed and made good by the Contractor, at his own expense. All manhole frames and covers, valve boxes, and other castings and miscellaneous metal shall be sound and shall conform to these specifications, and any defective castings or other metals which may have passed inspection at the place of manufacture, or elsewhere, shall be at all times liable to rejection when discovered, until the date of final payment under this contract.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**  
8-7 STEPS AND LADDERS

Steps and ladders built into the brick vault/manhole structures and concrete masonry vault/manhole structures shall be galvanized wrought iron steps or ductile iron steps of the size and shape shown on the Contract Drawings or approved type polypropylene plastic steps.

8-8 VALVE BOXES AND COVERS

- A. The Contractor shall furnish and install, over each vertical gate valve, horizontal gate bypass valve, air relief/flushing outlet assembly, cut-in-valve, etc., at the locations shown on the Contract Drawings, or where required, valve boxes with covers complete, of the assembled types, sizes and weights shown on the Standard Detail Drawings. Assembled type valve boxes and covers shall extend from the valve bonnet to the finished grade or the elevation required, being carefully and vertically set over the valve operating nut and shall be set plumb and true as required.
- B. Valve boxes and cover assemblies shall be complete and their parts shall comply with those shown on Standard Detail Drawings.

8-9 VAULT/MANHOLE FRAME AND COVERS

- A. The Contractor shall furnish and install, at locations shown on the Contract Drawings and as required, together with all gate valve vaults (chambers), drain manholes, access manhole and anchorage assemblies, and pitometer vaults, and where otherwise required, manhole frame and cover complete, of the assembled types and sizes shown on Standard Detail Reference Drawing SM-31. Assembly and placement of the manhole frame and covers shall be made in accordance with the configurations shown on the various details shown on the Standard Detail Drawings.
- A. All cast iron manhole frames and covers shall be of the forms, dimensions, weights and details as shown on the Contract Drawings, furnished and installed as directed.
- C. The frames shall be properly set in place in a full bed of mortar or poured monolithic in the masonry, at such elevation as to make the top of the rim of the frames conform to the finished grade as shown on the Contract Drawings or as otherwise directed.
- D. Required manhole frame and cover assemblies shall be complete as follows:
  - 1) 20" thru 48" Gate Valve Vaults (Chambers) - (Included with applicable Item 6):

Manhole Frame and Cover Mark SM-31B: Cast iron round double-cover styled casting consisting of Manhole Frame, Pattern SM-31-B1; Top Cover, Pattern SM-31-B2; and Inside Cover, Pattern SM-31-B3;
  - 2) 4"/6" Drain Manhole - (Included with applicable Item 6):

Manhole Frame and Cover Mark No: 3: Cast iron round single-cover styled casting consisting of Manhole Frame, Pattern SM-31-C1; and Top Cover, Pattern SM-31-B2;

8-9 VAULT/MANHOLE FRAME AND COVERS (Cont'd)

- 3) Access Manhole and Anchorage, Type "A" - (Included with applicable Item 7):

Manhole Frame and Cover Mark SM-31A: Cast iron rectangular double-cover styled casting consisting of Manhole Frame, Pattern SM-31-A1; Top Cover, Pattern SM-31-A2; and Inside Cover, Pattern SM-31-A3;

- 4) Access Manhole and Anchorage, Type "B" - (Included with applicable Item 7):

Manhole Frame and Cover Mark SM-31B: Cast iron round double-cover styled casting consisting of Manhole Frame, Pattern SM-31-B1; Top Cover, Pattern SM-31-B2; and Inside Cover, Pattern SM-31-B3;

- 5) Access Manhole and Anchorage, Type "C" - (Included with applicable Item 7):

Manhole Frame and Cover Mark SM-31A: Cast iron rectangular double-cover styled casting consisting of Manhole Frame, Pattern SM-31-A1; Top Cover, Pattern SM-31-A2; and Inside Cover, Pattern SM-31-A3;

- 6) Pitometer Vaults - (Included with applicable Item 7):

Manhole Frame and Cover Mark SM-31B: Cast iron round double-cover styled casting consisting of Manhole Frame, Pattern SM-31-B1; Top Cover, Pattern SM-31-B2; and Inside Cover, Pattern SM-31-B3.

8-10 VALVE STEM EXTENSION/BRACING

Where depth of water main is such where top of the valve operating nut exceeds four (4) foot depth the vertical gate valve shall be furnished and installed with a valve stem extension. Where depth of water main is such where top of the valve operating nut exceeds four (4) foot depth the horizontal gate valve in vault shall be furnished and installed with a valve stem extension with bracing to the vault to secure the valve stem extension. The valve stem extension and valve stem extension/bracing shall be of the proper length conforming to the details shown on the Standard Detail Drawings.

8-11 SHOP DRAWINGS

Complete detailed shop drawings showing all dimensions, thicknesses, weights, and material specifications of all manhole frames and covers, valve boxes and covers, other castings, and of all other miscellaneous metal, work shall be submitted to the Engineer/Design Engineer for review and approval prior to the manufacture of any work to be furnished under this item, or in conjunction with other items, in accordance with that called for under Item 14-2, "Shop Drawings," of these specifications.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

8-12 PAINTING

All miscellaneous metal work not galvanized shall be thoroughly cleaned and given two (2) field coats of coal tar pitch equal to Koppers Bitumastic Super Tank Solution or equivalent. Bolts and nuts shall not be shop coated, but shall receive three (3) coats or approved paint after installation.

8-13 MEASUREMENT

The miscellaneous metal work to be paid for under Item 8, "Miscellaneous Metal Work," shall be that metal work actually furnished and placed in accordance with these specifications and the Standard Detail Drawings. In the computing of weights, if not determined by weighing, one (1) cubic foot of cast iron shall be assumed to weigh four hundred and fifty (450) pounds; and one (1) cubic foot of steel shall be assumed to weigh four hundred and ninety (490) pounds. The weight of cast iron shall be used for cast iron valve boxes and covers, any cast iron sections of valve boxes and covers, and manhole frame and covers.

8-14 PAYMENT

Payment for "Miscellaneous Metal Work" specified under Item 8, and not included under other items of work, shall include the furnishing, installation, machining, fitting, adjusting, bolting, cleaning, galvanizing, shop coating and field painting of all iron castings and other miscellaneous metal work, and shall include the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown.

Payment for valve box with cover complete and manhole frame and cover complete, manhole steps, reinforcing steel or other miscellaneous metal, furnished under Item 4, "Valves", Item 6, "Brick Masonry and Vault/Manhole Structures," and Item 7, "Concrete Masonry and Vault/Manhole Structures," shall be paid for under those respective items and shall include the furnishing, installation, machining, fitting, adjusting, bolting, cleaning, galvanizing, shop coating and field painting of all iron castings and other miscellaneous metal work, and shall include the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown.

DETAIL SPECIFICATIONS

PART E - BID ITEMS

ITEM 12

E-12 REMOVAL OF HYDRANTS, PLUGGING MAINS, ETC.

12-1 WORK INCLUDED

The Contractor, under Item 12, "Removal of Hydrants, Plugging Mains, Etc.," shall furnish all the materials, labor, tools, and equipment required for the various work items described herein and where shown on the Contract Drawings, or where ordered. The work shall include all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; sheeting and shoring, including use of trench box; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; the repair and/or replacement of materials due leakage or defects; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; final site restoration; and the furnishing of "as-built" drawings, all as required for the proper completion of the work included under this contract.

In general, the work under Item 12 shall be stipulated and designated on the Contract Drawings as follows:

Item                      Description

12A Hydrants:

12A1	Remove Existing Hydrant
12A2a	Remove Existing Hydrant, Extend Hydrant Branch and Reset Existing Hydrant
12A2b	Remove Existing Hydrant, Shorten Hydrant Branch and Reset Existing Hydrant
12A3	Remove Existing Hydrant, and Relocate and Reset Existing Hydrant
12A4	Lower/Raise Existing Hydrant Branch and Adjust Hydrant to Grade

12B Remove Castings:

12B1	Remove Existing Valve and/or Valve Box
12B2	Remove Existing Curb Shut-Off Valve Box
12B3	Remove Existing Vault/Manhole Frame and Cover



**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

12-1 WORK INCLUDED (Cont'd)

12C Adjust Castings:

- 12C1 Adjust Existing Valve Box to Grade
- 12C2 Adjust Existing Curb Shut-Off Valve Box to Grade
- 12C3 Adjust Existing Vault/Manhole Frame and Cover to Grade

12D Plugging Watermains and Service Connections:

- 12D1 Plug Existing Water Main End
- 12D2a Plug Existing Service/Fire Line Connection (Caulk Type)
- 12D2b Plug Existing Service/Fire Line Connection

12E Abandoned Castings/Structures:

- 12E1 Filling Abandoned Valve Box
- 12E2 Removing Existing Vault/Manhole and Backfill

12-2 REMOVE EXISTING HYDRANT (ITEM 12A1)

The Contractor, under Item 12A1, "Remove Existing Hydrant," shall remove existing hydrants, perform all work necessary at the locations shown on the Contract Drawings, or where ordered; plug or cap existing mains, tees, or crosses; deliver the removed material to Harvard Yards; excavate, provide sheeting and shoring, backfill, seeding and sodding, sidewalk replacement and paving (both temporary and permanent), and all other work as required. Payment for removal and delivery of existing hydrants shall be made under Item 12A1, "Remove Existing Hydrant;" payment for removing existing valves and/or valve boxes shall be made under Item 12B1, "Remove Existing Valve and/or Valve Box;" payment for plugging/capping existing mains tees or crosses shall be made under Item 12D1, "Plug Existing Water Main End."

12-3 REMOVE EXISTING HYDRANT, EXTEND HYDRANT BRANCH AND RESET EXISTING HYDRANT (ITEM 12A2a);  
REMOVE EXISTING HYDRANT, SHORTEN HYDRANT BRANCH AND RESET EXISTING HYDRANT (ITEM 12A2b);  
REMOVE EXISTING HYDRANT, AND RELOCATE AND RESET EXISTING HYDRANT (ITEM 12A3)

- A. The Contractor, under Item 12A2a, "Remove Existing Hydrant, Extend Hydrant Branch and Reset Existing Hydrant;" under Item 12A2b, "Remove Existing Hydrant, Shorten Hydrant Branch and Reset Existing Hydrant;" or under Item 12A3, "Remove Existing Hydrant, and Relocate and Reset Existing Hydrant," shall remove existing hydrants, perform all work necessary at the locations shown on the Contract Drawings, including inspecting and cleaning hydrants, to extend or shorten existing hydrant branch as called for; and to relocate and reset existing hydrants to the locations shown on the Contract Drawings or where ordered; excavate, provide sheeting and shoring, backfill, seeding and sodding, sidewalk replacement and paving (both temporary and permanent) and all other work as required. All setting of hydrants shall conform with Section 12-5, "Setting Hydrants."

- 12-3 REMOVE EXISTING HYDRANT, EXTEND HYDRANT BRANCH AND RESET EXISTING HYDRANT (ITEM 12A2a);  
REMOVE EXISTING HYDRANT, SHORTEN HYDRANT BRANCH AND RESET EXISTING HYDRANT (ITEM 12A2b);  
REMOVE EXISTING HYDRANT, AND RELOCATE AND RESET EXISTING HYDRANT (ITEM 12A3) (Cont'd)

- B. Where existing hydrant is to be removed and relocated and reset, by extending hydrant branch or by shortening hydrant branch, or with horizontal offset, and the existing hydrant assembly is of lead joint type construction, the existing hydrant branch may be cut between the branch valve and the hydrant at either 18-inches from hydrant bell joint or 18-inches from branch valve bell. The existing hydrant shall be relocated and reset with reconnection made with new ductile iron cement lined pipe and fittings, ductile iron retained mechanical joint solid sleeves, or approved compression type couplings as required. Where existing hydrant assembly is of the mechanical joint or swivel type joints, the pipe and joints may be disassembled and the existing hydrant shall be relocated and reset with reconnection made with new ductile iron cement lined pipe and fittings and new gaskets. Payment for this work shall be made under Item 12A2a, "Remove Existing Hydrant, Extend Hydrant Branch and Reset Existing Hydrant;" Item 12A2b, "Remove Existing Hydrant, Shorten Hydrant Branch and Reset Existing Hydrant;" or Item 12A3, "Remove Existing Hydrant, and Relocate and Reset Existing Hydrant." Payment for furnishing and installing ductile iron pipe and fittings, including special fittings, shall be made under Item 1, "Ductile Iron Pipe and Fittings."
- C. Where existing hydrant is to be removed and relocated and reset, and the existing hydrant branch cannot be cut between the existing lead joint branch valve and the hydrant to facilitate the hydrant relocation the entire hydrant assembly shall be replaced including new retained mechanical joint tee (all bell), new ductile iron cement lined branch pipe and fittings, new branch gate valve with valve box complete, and new CWD standard hydrant. The new 6-inch hydrant assembly shall be "sleeved" into existing waterline with ductile iron retained mechanical joint solid sleeves and ductile iron shorts or with approved type compression type couplings and shorts, as required. Payment for this work shall be made under Item 12A2a, "Remove Existing Hydrant, Extend Hydrant Branch and Reset Existing Hydrant;" Item 12A2b, "Remove Existing Hydrant, Shorten Hydrant Branch and Reset Existing Hydrant;" or Item 12A3, "Remove Existing Hydrant, and Relocate and Reset Existing Hydrant." Payment for furnishing and installing ductile iron pipe and fittings, including special fittings, shall be made under Item 1, "Ductile Iron Pipe and Fittings." Payment for furnishing and setting 6-inch hydrant shall be made under Item 17, "Furnishing and Setting 6-inch Hydrant." Payment for furnishing and installing 6" retained mechanical joint bell end gate valve with valve box complete shall be made under Item 4, "Valves."

- 12-4 LOWER/RAISE EXISTING HYDRANT BRANCH AND ADJUST HYDRANT TO GRADE (ITEM 12A4)

The Contractor, under Item 12A4, "Lower/Raise Existing Hydrant Branch and Adjust Hydrant to Grade," shall furnish all material, labor, tools, and equipment required to lower or raise existing hydrant branch piping to clear obstacles and to vertically adjust existing hydrant to grade. A minimum of eighteen (18) inches clearance is required when crossing over or under sanitary sewers;

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

**12-4 LOWER/RAISE EXISTING HYDRANT BRANCH AND ADJUST HYDRANT TO GRADE (ITEM 12A4) (Cont'd)**

a minimum of twelve (12) inches clearance is required when crossing over or under and storm sewers; a minimum of twelve (12) inches clearance required between lowered or raised hydrant branches and other water mains and other utilities and structures. Depth of cover over raised hydrant branch shall in no case be less than five (5) feet to top of pipe. The lowering or raising of the existing branch piping shall extend from the existing branch valve to a point beyond the obstruction to permit reconnection to the existing hydrant. All pipe, fittings and specials used for the branch lowering/raising shall conform with Item 1, "Ductile Iron Pipe and Fittings." Payment for lowering or raising hydrant branches to clear obstacles shall be made under Item 12A4, "Lower/Raise Existing Hydrant Branch and Adjust Hydrant to Grade." Payment for furnishing and installing ductile iron cement lined pipe, fittings, including specials, shall be made under Item 1, "Ductile Iron Pipe and Fittings."

**12-5 SETTING HYDRANTS**

**A. General Location:**

Hydrants shall be horizontally located a minimum of ten (10) feet away from sanitary sewers and five (5) feet away from storm sewers and in a manner to provide complete accessibility, and in such a manner that the possibility of damage from vehicles or injury to pedestrians is minimized. Unless otherwise directed, the setting of any hydrant shall conform to the following:

**B. Location Regarding Curb Lines:**

When placed behind the curb, the hydrant barrel shall be set so that the center of the barrel shall be no less than three (3) feet from the gutter face of the curb, or deviate from such location or deviate from the location indicated on the Contract Drawings, except by consent of the Engineer/Design Engineer.

**C. Location Regarding Sidewalks:**

When set in the lawn space between the curb and the sidewalk, or between the sidewalk and the property line, no portion of the nozzle or hydrant cap shall be within six (6) inches of the sidewalk.

**D. Position of Nozzles:**

The hydrant shall stand plumb with the 4-inch steamer nozzle pointing toward the curb. Where hydrant branch piping is parallel with, or not at right angles to the curb, the Contractor shall release the swivel head bolts and adjust hydrant 4-inch steamer nozzle to face the curb at the proper angle. Hydrant without swivel heads will be adjusted by the City where necessary to correct the position of the steamer nozzle. Height of hydrant shall conform to the established grade with tops of frost casing at least four (4) inches above grade.

12-5 SETTING HYDRANTS (Cont'd)

E. Connection to Main:

The hydrant shall be connected to the distribution water main with a ductile iron pipe branch controlled by an independent gate valve of the same size as the hydrant, except as otherwise directed.

F. Drainage of Hydrant:

Drainage shall be provide at the base of the hydrant by filling around the elbow with coarse gravel or crushed stone to at least six (6) inches above the waste opening. Wherever the hydrant is set in rock, clay, or other impervious soil, the trench shall be widened and deepened on each side of the hydrant base, which space shall be filled compactly with coarse gravel, crushed stone, or broken stone and mixed with coarse sand of sufficient quantity to absorb all water to be drained from the hydrant when branch valve is closed.

G. Anchorage for Hydrant:

The hydrant shall be set on a stone slab or similar foundation and the base of the hydrant shall be well braced against unexcavated earth to the end of the trench with concrete backing, and it shall be restrained to the branch piping with swivel joints or retained mechanical joint or tied to the branch piping with suitable rods, clamps, or other approved restraint as approved or directed by the Engineer/Design Engineer.

H. Cleaning:

The interior of the hydrant shall be thoroughly cleaned of all dirt and foreign matter before setting.

12-6 REMOVE EXISTING VALVE AND/OR VALVE BOX (ITEM 12B1)  
REMOVE EXISTING CURB SHUT-OFF VALVE BOX (ITEM 12B2)  
REMOVE EXISTING VAULT/MANHOLE FRAME AND COVER (ITEM 12B3)

Where shown on the Contract Drawings, or as ordered, the Contractor, under Item 12B1, "Remove Existing Valve and/or Valve Box"; Item 12B2, "Remove Existing Curb Shut-off Valve Box;" or Item 12B3, "Remove Existing Vault/Manhole Frame and Cover," shall deliver the same to Harvard Yards. The Contractor shall perform all work necessary at the locations shown on the Contract Drawings, or where ordered, including all excavating, sheeting and shoring, backfilling, seeding and sodding, and repaving, and all other work as required.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

- 12-7 ADJUST EXISTING VALVE BOX TO GRADE (ITEM 12C1)  
ADJUST EXISTING CURB SHUT-OFF VALVE BOX TO GRADE (ITEM 12C2)  
ADJUST EXISTING VAULT/MANHOLE FRAME AND COVER TO GRADE (ITEM 12C3)

Where shown on the Contract Drawings, or where ordered, the Contractor under, Item 12C1, "Adjust Existing Valve Box to Grade;" under Item 12C2, "Adjust Existing Curb Shut-off Valve Box to Grade;" or under Item 12C3, "Adjust Existing Vault/Manhole Frame and Cover to Grade," shall reset existing valve box, existing curb shut-off valve box, or existing vault/manhole frame and cover to established grade by raising or lowering the existing castings or by adding the appropriate stem sections. In raising of the castings, no inserts shall be permitted. Any valve boxes, curb shut-off valve boxes and/or vault/manhole frame and cover found to be damaged or unsuitable for reuse shall be replaced by the Contractor. All replacement valve boxes, castings and appropriate stem sections shall conform with Item 8, "Miscellaneous Metal Work." Payment for replacement for damaged or unsuitable castings shall be included under Item 8, "Miscellaneous Metal."

The Contractor shall provide all labor, materials, tools and equipment necessary to perform the work at the locations shown or where ordered including all excavating, sheeting and shoring, backfilling, seeding and sodding, and repaving, and all other work as required.

- 12-8 PLUGGING EXISTING WATER MAIN END (ITEM 12D1)

Where shown on the Contract Drawings, or where ordered, the Contractor, under Item 12D1, "Plugging Existing Water Main End," shall furnish all materials for and shall cap or plug existing water main ends including tees or crosses. The Contractor shall do all the excavation, backfilling, seeding and sodding, and repaving, and all other work as required. The cap or plug shall be a restrained fitting and shall be furnished with rods and clamps complete, backed with a concrete pier to undisturbed earth. Plug and/or caps to be installed as part of new or relocated installations shall be furnished, installed and paid for under Item 1, "Ductile Iron Pipe and Fittings."

Where existing water main end, tee, or cross to be plugged is a lead joint fitting, the Contractor shall cut out the lead joint fitting and sleeve-in a ductile iron spool piece. The spool piece shall be sleeved-in using retained mechanical joint solid sleeves (long pattern) or approved compression couplings equal to Dresser Style Nos: 38, 138, or 162 (transition type), or Smith-Blair 441 Straight and Transition Couplings with trackhead stainless steel bolts and nuts (ASTM A276-89a, Type 304, and ASTM A193-89/ASTM A194-88, Heavy Hex). The compression coupling shall be furnished without pipe stops and be rated for a minimum working pressure of 250 psi.

Payment for furnishing material for and to cap or plug existing water main ends shall be made under Item 12D1, "Plugging Existing Water Main End." Payment for furnishing and placing concrete pier shall be made under Item 7A, "Plain Concrete Masonry." The Contractor shall provide all labor, materials, tools and equipment necessary to perform the work at the locations shown, or where ordered, including all excavating, sheeting and shoring, backfilling, seeding and sodding, and repaving, and all other work as required.

12-9 PLUG EXISTING SERVICE/FIRE LINE CONNECTION, CAULK TYPE (ITEM 12D2a);  
PLUG EXISTING SERVICE/FIRE LINE CONNECTION (ITEM 12D2b)

- A. Existing Mains: On existing water mains to remain in service, where shown on the Contract Drawings, or where ordered, the Contractor, under Item 12D2a, "Plug Existing Service/Fire Line Connection, Caulk Type;" and Item 12D2b, "Plug Existing Service/Fire Line Connection" shall plug the water service connection or fire line connection at the main, and do all the necessary excavation, sheeting and shoring, backfilling, seeding and sodding, and repaving and all other work as required therefor. All water service connections and fire line connections shall be plugged at the main, but all lead type fittings shall be cut out of the mains by sleeving-in a ductile iron spool piece connected to existing main with retained mechanical joint solid sleeves (long pattern) or with approved type compression couplings equal to Dresser Style Nos: 38, 138, or 162 (transition type), or Smith-Blair 441 Straight and Transition Couplings with trackhead stainless steel bolts and nuts (ASTM A276-89a, Type 304, and ASTM A193-89/ASTM A194-88, Heavy Hex). The compression coupling shall be furnished without pipe stops and be rated for a minimum working pressure of 250 psi.
1. Connections 2" and Smaller Having Corporation Valve: The Contractor shall turn off the corporation valve and shall cut and crimp the copper tubing ends, or in the case of lead or galvanized piping, shall cut and crimp or fill with concrete the ends of all water service connections designated to be plugged on the Contract Drawings, or where ordered. The "plugging" shall include the placement of a one (1) foot long poured in place concrete block fully encompassing the corporation and copper tubing or lead/galvanized pipe, poured from vertical centerline of the pipe to the trench wall.
  2. Ferrule Type Connections (1/2" or 5/8"): The Contractor shall install an approved type 18-8 stainless steel two (2) section, double range, repair clamp centered over the pipe opening drilled for the connection.
  3. Connections 3" and Larger (Lead Joint Type Branch Sleeves): Where service connections indicated to be "plugged" on the Contract Drawings, or where ordered, are found to be lead type branch sleeves, the Contractor shall cut out the lead joint type branch sleeve and/or fitting(s) and sleeve-in a ductile iron spool piece. The spool piece shall be sleeved-in using retained mechanical joint solid sleeves (long pattern) or approved compression couplings equal to Dresser Style Nos: 38, 138, or 162 (transition type), or Smith-Blair 441 Straight and Transition Couplings with trackhead stainless steel bolts and nuts (ASTM A276-89a, Type 304 and ASTM A193-89/ASTM A194-88, Heavy Hex). The compression coupling shall be furnished without pipe stops and be rated for a minimum working pressure of 250 psi.
  4. Connections 3" and Larger: The Contractor, where connections 3-inch and larger are designated to be plugged on the Contract Drawings, or where ordered, shall close all connections valves at the main, plug the valve with a restrained plug with rods and clamps and concrete pier, remove valve box casting, and fill with concrete the ends of all abandoned water service connections. The "plugging" shall be done in the relocated water main trench after the connections have been transferred, or if such connection is not to be transferred is to be plugged at the time the relocated water installation.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

**12-9 PLUG EXISTING SERVICE/FIRE LINE CONNECTION, CAULK TYPE (ITEM 12D2a);  
PLUG EXISTING SERVICE/FIRE LINE CONNECTION (ITEM 12D2b) (Cont'd)**

- B. Abandoned Mains: On abandoned water mains to be taken out of service the contractor shall plug the water service connection or fire line connection as follows:
1. Connections 2" and Smaller: The Contractor shall cut and crimp the copper tubing ends, or in the case of lead or galvanized piping, shall crimp or fill with concrete the ends of all water service connections designated to be plugged on the Contract Drawings, or where ordered. The "plugging" shall be done in the relocated water main trench after the connections have been transferred, or if such connection is not to be transferred is to be plugged at the time the relocated water installation.
  2. Connections 3" and Larger: The Contractor, where connections 3-inch and larger are designated to be plugged on the Contract Drawings, or where ordered, shall close all connections valves at the main, fill abandoned lower valve box casting with concrete, and fill with concrete the ends of all water service connections. The "plugging" shall be done in the relocated water main trench after the connections have been transferred, or if such connection is not to be transferred is to be plugged at the time the relocated water installation.
- C. The Contractor shall provide all labor, materials, tools and equipment necessary to perform the work at the locations shown or where ordered including all excavating, sheeting and shoring, concrete, backfilling, seeding and sodding, and repaving, and all other work as required. Payment to plug existing service/fire line connection, caulk type, shall be made under Item 12D2a, "Plug Existing Service/Fire Line Connection, Caulk Type," classified as to size. Payment to plug existing service/fire line connection (non-caulk type) shall be made under Item 12D2b, "Plug Existing Service/Fire Line Connection," classified as to size. Payment for removal of existing valve boxes on connections shall paid for under Item 12B1, "Remove Existing Valve and/or Valve Box." Payment for removal of existing curb shut-off valve boxes shall paid for under Item 12B2, "Remove Existing Curb Shut-off Valve Box." Payment for removal of existing manhole frame and cover shall paid for under Item 12B3, "Remove Existing Vault/Manhole Frame and Cover."

**12-10 FILL ABANDONED VALVE BOX (ITEM 12E1)**

Where shown on the Contract Drawings, or where ordered, the Contractor, under Item 12E1, "Fill Abandoned Valve Box," shall remove the existing valve box top and cover, fill the abandoned valve box bottom and sectional extensions thereof with concrete, and replace the rim of the removed valve box top/cover with surface material corresponding to the pavement requirements for repairing the type of existing pavement.

**12-11 REMOVE EXISTING VAULT/MANHOLE AND BACKFILL (ITEM 12E2)**

Where shown on the Contract Drawings, or where ordered, the Contractor, under Item 12E2, "Remove Existing Vault/Manhole and Backfill," shall remove the existing vault structures and/or manhole structures and backfill same. The Contractor shall provide all labor, materials, tools and equipment necessary to perform the work at the locations shown, or where ordered, including all excavating, sheeting and shoring, backfilling, seeding and sodding, and repaving, and all other work as required. The Contractor shall include suitable backfill material in the price bid, under Item 12E2, "Remove Existing Vault/Manhole and Backfill," classified as to size and type.

**12-12 PAYMENT**

The unit prices stipulated for each of the various items of work indicated herein shall include the furnishing of all labor, material and incidentals, including all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; sheeting and shoring, including use of trench box; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; the repair and/or replacement of materials due leakage or defects; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; final site restoration; and the furnishing of shop drawings and the final mylar "as-built" drawings, all as required for the proper completion of the work included under this contract.



**DETAIL SPECIFICATIONS**

**PART E - BID ITEMS**

**ITEM 13**

**E-13 WATER SERVICE CONNECTIONS**

Item 13A: General Supply Connection

Item 13B: Fire Service Connection

**13-1 WORK INCLUDED**

The Contractor, under Item 13A, "General Supply Connection," and Item 13B, "Fire Service Connection," shall furnish all materials for and shall arrange with the Division of Water for work required for general supply connection work or fire service connection work at the locations shown on the Contract Drawings, or where ordered. In addition, the Contractor shall replace all lead and galvanized pipe service connections disturbed by him for his convenience with copper service connections, in accordance with these specifications, at his expense.

The Contractor shall be responsible for providing and installing all material for the work to be performed herein. All work, material, and arrangements shall be subject to the inspection and approval of the Division of Water. The Division of Water reserves the right to determine the configuration of all water service connection installation. The Contractor shall furnish all material, labor, equipment and do all work including providing all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; tunneling and boring and/or jacking; sheeting and shoring, including use of trench box; all shop drawing submittals; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; testing and the repair and/or replacement of materials due leakage or defects; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; and final site restoration; all as required for the proper completion of the work included under this contract. The Division of Water will install the pressure tap in accordance with Sec. D-26, "Work to be Done by the City," assemble and install meter setting, and install meter assembly furnished by the Contractor. All meters furnished by Contractor shall be approved by the Division of Water. Where additional materials are required for installation of the meter assembly, or as ordered, the Contractor shall furnish same. The work of boring and/or jacking and excavation for service connections shall be as herein specified to complete the work under the various Items 13A, "General Supply Connection," and Items 13B, "Fire Service Connection."

13-1 WORK INCLUDED (Cont'd)

In general, the work under Items 13A and 13B shall be stipulated and designated as follows:

Item 13A: General Supply Connection:

<u>Item</u>	<u>Description</u>
13A1-3	General Supply Connection Lowered/Raised and/or Extended or Replaced
13A2	Water Meter New, Removed and Reset
13A3	Meter Vault New, Relocated and/or Rebuilt Complete

Item 13B: Fire Service Connection:

<u>Item</u>	<u>Description</u>
13B1-3	Fire Service Connection, Lowered/Raised and/or Extended or Replaced
13B2	Outside Screw & Yoke (O.S.& Y.) and Check Valves, New, Removed & Reset
13B3	Fire Service Vault New, Relocated and/or Rebuilt Complete

13-2 GENERAL REQUIREMENTS FOR GENERAL SERVICE/FIRE SERVICE CONNECTIONS

The Contractor shall furnish all new and unused materials, provide all labor, tools, equipment and other incidentals to perform the various service connection work described herein and, in addition, adhere to the following general requirements:

- A. Where a general supply or fire service connection damaged or is disturbed for lowering, raising, extending, or relocating between the water main at the "Corporation Shutoff Valve" and the "Curb Shutoff Valve", it shall be totally replaced with new and unused materials from the "Corporation Shutoff Valve" to "Curb Shutoff Valve."
- B. Where an existing connection requires total replacement and is found to have a ferrule type "tap" the connection shall be reinstalled by the contractor with a bronze double strap tap saddle. Replacement of existing 5/8" and 3/4" service connections shall include all fittings, adapters, corporations and strap saddles as required to install a 3/4" copper water service connection complete. Existing one (1") inch service connections, when required to be totally replaced, shall be replaced as a one (1") inch copper water service connection complete including all fittings, corporations and adapters. When replacing existing lead or galvanized 5/8" water service connections the replacement shall also include a new curb shut-off valve and curb valve box complete.
- C. Where an existing copper general supply or fire service connection is damaged or is disturbed for lowering, raising, extending between the "Corporation Shutoff Valve" and the "Curb Shutoff Valve", it may be reconnected using approved compression coupling. No more than two (2) such compression couplings shall be used on one (1) water service connection.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

**13-2 GENERAL REQUIREMENTS FOR GENERAL SERVICE/FIRE SERVICE CONNECTIONS**  
**(Cont'd)**

- D. Where a general supply or fire service connection is disturbed on the "Property Side" of the curb shut-off valve, for lowering, raising and/or extending, or needs replacement because it is of lead or galvanized piping material, the piping materials and fittings shall be totally replaced with new and unused materials from the existing curb shut-off valve to the new curb shut-off valve required as a result of the extension lowering, raising or replacement.
- E. Where a general supply or fire service connection is disturbed for lowering, raising and/or extending, it shall be extended in a straight prolongation of the existing connection. Where the "Property Side" connection piping is not immediately contiguous to the extended connection curb shutoff, all labor, materials and equipment required to reconnect shall be included in the work. All reconnection on the "Property Side" of the curb shut-off shall be parallel to the street centerline or right-of-way from the curb shut-off. If upon inspection of the "Property Side" piping it is found unsuitable for such reconnection, the connection shall not be disturbed until such time as the Engineer/Design Engineer has arranged for replacement.
- F. Where a copper connection is advertently damaged or broken which was not to be disturbed, only the damaged portion needs to be replaced. Where a lead/galvanized connection is advertently damaged or broken which was not to be disturbed, the connection shall be replaced as noted in paragraph A at the Contractor's expense. If the extent of damage to the connection cannot be fully assessed, the connection shall be replaced as noted in paragraph A at the Contractor's expense.
- G. Valve Boxes, Curb Shut-off Valve Boxes or other castings damaged during construction or found unsuitable for reuse shall be replaced with new and unused material in accordance with Item 8, "Miscellaneous Metal Work." Payment for replacement for any required Valve Boxes, Curb Shut-off Valve Boxes or other castings shall be made under Item 8, "Miscellaneous Metal Work."
- H. All general supply and fire service connections shall be laid not less than six (6) feet below established street grade and not less than five and one-half (5-1/2) feet below ground surface.

**13-3 GENERAL SUPPLY CONNECTION LOWERED/RAISED AND/OR EXTENDED**  
**OR REPLACED (ITEM 13A1-3)**  
**FIRE SERVICE CONNECTION LOWERED/RAISED AND/OR EXTENDED OR REPLACED**  
**(ITEM 13B1-3)**

Where shown on the Contract Drawings, or where ordered, the Contractor, under Item 13A1-3, "General Supply Connection Lowered/Raised and/or Extended or Replaced," and under Item 13B1-3, "Fire Service Connection Lowered/Raised and/or Extended or Replaced," shall furnish all materials and provide all labor and equipment required to lower, raise and/or extend or replace general supply and fire service connections as required in accordance with the general requirement specified in Section 13-2.

13-4 METER SETTING INSTALLATION REQUIREMENTS

A. General:

Where shown on the Contract Drawings, or where ordered, the Contractor shall furnish and install all new and unused materials required for the proper completion of the work. The Contractor shall make all arrangements with the Division of Water.

Copper Meter Setter: Also referred to as a copper meter yoke, is used to connect 1" (or under) meters to a water service connection. A copper meter setter with all required piping and fittings and with a 1" (or under) meter installed completes a 1" (or under) meter setting.

Bypass Piping Assembly: All materials, piping, valves and fittings, but without a meter, required to install a meter setting on a 1-1/2" thru 12" water service connection.

Meter Setting: All materials, piping, valves, fittings and meter required to install a complete meter setting on a 1-1/2" thru 12" water service connection.

B. Procedures for installation of an 1-inch or under meter setting where new meter vault is to be installed or where existing meter vault is to be relocated with new meter vault the following water work is required.

- 1) Install 1" (or under) meter vault complete: Contractor shall install new meter vault complete including new manhole frame and cover complete at the location(s) shown on the Contract Drawings, or where ordered.
- 2) Install 1" (or under) copper setter complete: Contractor shall furnish all materials for and shall install new copper meter setter (less meter) in new meter vault or new relocated vault. For existing 5/8" or 3/4" water service connections contractor shall furnish and install new 3/4" copper setter. For existing 1" or new 1" water service connections contractor shall furnish and install new 1" copper setter.
- 3) Install new 1" (or under) meter: Division of Water will install new 3/4" or 1" meter in new copper setter installed by the Contractor in new meter vault or in relocated vault.
- 4) Remove existing 1" (or under) meter: Contractor shall remove existing meter under Division of Water inspection. The existing meter shall be given to the Inspector. The existing copper/galvanized meter setter shall become property of the Contractor.
- 5) Remove existing 1" (or under) meter vault and backfill: The existing meter vault shall be removed by the Contractor to one (1) foot below grade and backfilled. Existing meter manhole ring and cover shall be delivered to Harvard Yards.

13-4 METER SETTING INSTALLATION REQUIREMENTS (Cont'd)

- C. Procedures for 1-1/2" or 2" meter setting (bypass piping assembly) installation: Where new meter vault is to be installed or where existing meter vault is to be relocated the following water work is required.
- 1) Install 1-1/2" or 2" meter vault complete: The Contractor shall install new meter vault complete including new manhole frame and cover complete of the size(s) noted and at the location(s) shown on the Contract Drawings, or where ordered.
  - 2) Assemble 1-1/2 " or 2" bypass piping assembly (without meter): The Contractor shall furnish and deliver all new materials to Harvard Yards required for bypass piping assembly (less meter) for Division of Water to assemble meter setting without the meter. Contractor shall then pick up the bypass piping assembly at Harvard Yards and install the meter setting (with spacer in lieu of meter) in new vault or new relocated vault. All 1- 1/2" and 2" bypass piping assemblies will be provided to the Contractor with spacers in lieu of meters. See "Special Note."
  - 3) Install 1-1/2" or 2" meter: After the bypass piping assembly is installed by the Contractor the Division of Water will then remove the spacer and install a new meter in the new meter vault or new relocated meter vault.
  - 4) Remove existing 1-1/2" or 2" meter setting complete: All existing 1-1/2" and 2" meter settings will remain in the existing meter vaults. When installing new meters the Division of Water will record the meter reading and forward the reading to customer account services. The Division of Water will then remove existing meter from existing meter vault. Existing meter shall remain the property of the Division of Water. The existing bypass piping assembly shall become property of Contractor.
  - 5) Remove existing 1-1/2" or 2" meter vault and backfill: The existing meter vault shall be removed to one (1) foot below grade and backfilled by the Contractor. Existing meter manhole ring and cover shall be delivered to Harvard Yards.

Special Note: All meters 1-1/2" and 2" will only be given out in quantities of one (1) or two (2). Only when the Inspector determines that more water service connections are ready for setting will any additional meter settings (bypass piping assemblies) be released. Note that spacers in 1-1/2" and 2" bypass piping assemblies will be installed in place of the meter. With limiting the number of meter installations to one (1) or two (2) and having meters set by the Division of Water, the correct meter will therefore be assigned to the correct location.

- D. Procedures for 3" thru 12" meter setting (bypass piping assembly) installation: Where new meter vault is to be installed or where existing meter vault is to be relocated by installing new meter vault in new location:
- 1) Install (x") meter vault complete: The Contractor shall install new meter vault complete and new manhole frame and cover complete of the size(s) noted and at the locations shown on the Contract Drawings, or where ordered.

13-4 METER SETTING INSTALLATION REQUIREMENTS (Cont'd)

- 2) Assemble (x") bypass piping and install meter setting complete: The Contractor shall furnish and deliver all new and unused materials to Harvard Yards required for 3" thru 12" bypass piping assemblies (less meter) for the Division of Water to assemble meter setting with meter. Meter will be furnished by the Division of Water. All 3" thru 12" meter settings will be sent out with meter installed in the bypass piping assembly. Contractor shall install meter setting complete under the supervision of the Inspector of the Division of Water.
- 3) Remove existing (x") meter: The Division of Water will remove the existing meter which will remain property of the City, record the old meter reading and forward all pertinent information to customer service accounts. Where possible the old meter shall be rebuilt and reused. The Contractor shall remove the existing bypass piping assembly (less meter). The existing bypass piping assembly (less meter) shall become property of the Contractor.
- 4) Remove existing (x)" meter vault and backfill: The existing meter vault shall be removed by Contractor to one (1) foot below grade and backfilled. Existing meter manhole ring and cover to be delivered to Harvard Yards.

13-5 WATER METER NEW, REMOVED AND RESET COMPLETE (ITEM 13A2)

The Contractor, under Item 13A2, "Water Meter New, Removed and Reset Complete," shall furnish all materials for and shall arrange with the Division of Water for work required for general supply connection work or fire service connection work at the locations shown on the Contract Drawings, or where ordered. Contractor shall furnish all materials and perform all work in accordance with the requirements set forth under Section 13-4, "Meter Setting Installation Requirements."

13-6 FIRE SERVICE CONNECTION, OUTSIDE SCREW AND YOKE (O.S. & Y.) AND CHECK VALVES NEW, REMOVED, AND RESET (ITEM 13B2)

The Contractor, under Item 13B2, "Fire Service Connection, Outside Screw and Yoke (O.S. & Y.) and Check Valves New, Removed, and Reset," shall be required to furnish all materials including Outside Screw and Yoke (O.S. & Y.) and check valves in accordance with that specified in the list of materials required for installation specified herein. The Division of Water shall determine the suitability of existing O.S. & Y. and check valves for removal and resetting. The Contractor shall furnish all materials required in the removal and resetting including bolts, nuts, washers and gaskets. Only those settings less than one (1) year old shall be considered for removal and resetting.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

**13-7 METER VAULT NEW, RELOCATED AND/OR REBUILT COMPLETE (ITEM 13A3);  
FIRE SERVICE VAULT NEW, RELOCATED AND/OR REBUILT COMPLETE (ITEM 13B3)**

The Contractor, under Item 13A3, "Meter Vault New, Relocated and/or Rebuilt Complete," and Item 13B3, "Fire Service Vault New, Relocated and/or Rebuilt Complete," shall furnish and install all material, labor and equipment necessary for meter and/or fire service vault new, relocated and/or rebuilt, all in conformance with Rules and Regulations of the Department of Public Utilities. Vaults shall be in accordance with those approved by the Department of Public Utilities as to size and use designation as on file in the Permits and Sales Section of the Division of Water. Special vaults shall be constructed only after approval by the Department of Public Utilities. Relocated and/or rebuilt vaults shall conform to requirements of approved vaults with all relocations and/or rebuilding subject to approval of the Commissioner of Water. The Contractor shall do all related work including all the necessary excavation, sheeting and shoring, bedding preparation, handling, setting, backfilling, seeding and/or sodding, repaving and replacement of sidewalk required to complete the work. Vaults to be removed or abandoned shall be performed as work under Item 12.

**13-8 BORING AND/OR JACKING FOR SERVICE CONNECTIONS**

Wherever the distance between the new or relocated main and the existing main exceeds three (3) feet, or where service connection reinstallation is required, the Contractor shall furnish all labor, tools and equipment for and shall bore or jack openings of sufficient size to permit the installation, transfer and extension of service connections. If borings or jacking is found to be impossible, he shall make the necessary trench excavation, backfilling, sand and premium backfill, temporary and permanent repaving required for the installation, transfer, extension and plugging of service connections. Payment for the boring and/or jacking for service connection shall be deemed to be included in the price bid for the various Items 13A and 13B, classified as to size and type.

**13-9 WIDTH OF TRENCH**

The trench width may vary with and depend upon the depth of trench and the nature of the excavated material encountered; but in any case shall be of ample width to permit the pipe to be laid and jointed properly and the backfill to be placed and compacted properly. The maximum width of unsheeted trench for service connection work shall be twenty-four (24) inches. When sheeting and bracing is used, the trench shall be increased accordingly.

**13-10 PAYMENT**

The unit prices stipulated, under the various Items 13A and Items 13B, shall include the cost of each service connection work, classified as to size and type, required to be performed. The unit price shall include the cost for work as herein specified and shall include all materials, tools, labor and equipment required. The Contractor, in addition to furnishing all of the foregoing, shall include providing all traffic maintenance; providing and maintaining traffic control and warning devices, including temporary and permanent pavement markings; pavement cutting (both for trench and for pavement removal and restoration); all excavations, including pavements, water main trench, and sewer and/or utility trenches; tunneling and boring and/or jacking; sheeting and shoring, including

13-10 PAYMENT (Cont'd)

use of trench box; all shop drawing submittals; the furnishing and installing of all approved materials as herein specified and as required to complete the work; sand bedding backfill; backfill and/or premium backfill; testing and the repair and/or replacement of materials due leakage or defects; pavement replacement, including base pavement replacement, berm replacement/repair and shoulder replacement/repair; final pavement restoration, including traffic markings, signs and traffic loop detectors; protection of trees, shrubbery and lawns and/or their removal and replacement; seeding and/or sodding; sidewalk removal and replacement; curb removal and replacement; underdrain removal and replacement; removal and replacement of mailboxes; removal and replacement of drainage culverts and/or piping; fence removal and replacement; guard rail removal and replacement; storm and sanitary sewer work; storm and sanitary sewer connection work; protecting and maintaining utilities and utility services; repair of site damage due to construction, including traffic maintenance; and final site restoration; all as required for the proper completion of the work included under this contract.



**DETAIL SPECIFICATIONS**

**PART E - BID ITEMS**

**ITEM 14**

**E-14 FIELD SERVICES**

**14-1 PRECONSTRUCTION PHOTOGRAPHY**

**A. General:**

Prior to the delivery of any materials or supplies to the site of any work, or to the beginning of any of the construction work, the Contractor, under Item 14A, "Preconstruction Photography," shall provide, in the manner specified herein for the purpose of establishing the surface conditions existing in all of the areas to be affected by the work contemplated under this contract.

The preconstruction photography shall be performed by an independent company having experience in similar type work. The name of the company shall be submitted to the Engineer/Design Engineer for approval prior to engaging in the work.

**B. Ground Photography:**

1. **Scope of Work - Ground Photography** shall consist of color video taping of surface features in all the areas of work shown on the Contract Drawings. Prior to audio-video taping of the project, all areas to be inventoried shall be investigated visually with notation made to items not readily visible by taping methods.
2. **Purpose of Video Taping** - The purpose of the color audio-video taping of the project is to provide necessary information for restoration of surface features after completion of the project. This audio-video taping is to assist in the repairing, replacing and restoration of those areas affected by construction to their original condition with as little controversy as possible.
3. **Qualifications** - Color audio-video taping shall be compiled by a professional electographer actively engaged in color audio-video tape recordings of similar type projects for municipal agencies. The name of the company shall be submitted to the Engineer/Design Engineer for approval prior to engaging in the work.
4. **Coverage of Taping** - Such coverage shall include, but not be limited to, all existing pavements, curbs, driveways, sidewalks, treelawn areas, signs, poles, mailboxes, fences, guardrails, drainage ditches, rocks, trees, shrubbery, special landscape features, buildings, and visible utilities located within the area of the proposed work. Of particular concern are any existing faults, fractures, defects, or other imperfections exhibited by the above mentioned surface features. Audio description shall be made simultaneously with and support the video coverage.

14-1 PRECONSTRUCTION PHOTOGRAPHY (Cont'd)

5. Electronic Requirements - Audio-video tape shall be VHS format, T120, and shall be interchangeable with a 3/4 inch color video VHS format cassette player/recorder, EIAJ Standard NTSC Color Signal. Video output from camera(s) shall be capable of producing NTSC-525 lines/60 fields. Resolution in the Y channel shall be minimum 500 TV lines at center, utilizing a bias lit beam split prism, in combination with Plumbicon pick-up tubes, for optimum color imagery and minimum lag through ten (10) foot candles, with Geometric Distortion not to exceed 1.5% Picture Height at any point in picture area.
6. Location Information - All tapes (cassettes and cases) shall be properly identified by project name, tape number and location in a manner acceptable to the Engineer/Design Engineer. A printed record of the contents of each tape shall be furnished along with the audio-video tapes shall be furnished identifying each segment in the tape by location, i.e., street or easement, viewing side, traveling direction, engineering stationing as shown on the Contract Drawings, all referenced by tape counter numbers.

A brief report and inventory of all tapes completed and furnished, referenced by tape number and location shall be furnished to the Engineer/Design Engineer upon completion of the work and delivery of the tapes. This report shall bring to the Engineer's/Design Engineer's attention any defects in the area of the work that may give rise to controversy.

All video recordings shall begin with the date and time of recording, the project name, the sheet numbers of engineering stationing as shown on the Contract Drawings, the name of the street or easement being taped, the direction of travel, and the viewing side (left or right of station).

Houses and buildings shall be identified visually by house or building number, when possible, in such a manner that the progress of the taping may be located by reference to the houses and buildings.

The engineering stationing numbers shall be continuous and shall correspond to the project stationing shown on the contract Drawings and include the standard engineering symbols (for example: 37+38). This information shall appear in the lower half or lower corner of the viewing screen. Below the engineering stationing shall appear the name of the project, name of the area covered, direction of travel, viewing side, etc.

7. Entering Property - If it becomes necessary to enter onto private property, the Contractor shall notify the owner of such property at least 24 hours in advance of the planned entry to obtain his permission to do so. Should the owner of the property refuse to give his permission for said entry the contractor shall notify the Engineer/Design Engineer.

The Contractor is advised that he shall not enter any private property before permission is granted to do so or before the Engineer/Design Engineer notifies the Contractor that legal right to do so has been obtained. The Contractor shall be held liable for entry made other than that stated herein.

14-1 PRECONSTRUCTION PHOTOGRAPHY (Cont'd)

8. Ownership of Tapes - All tapes produced shall become the permanent property of the City of Cleveland, Division of Water. The Contractor shall deliver all tapes to the Engineer/Design Engineer prior to the beginning of any construction work. Tapes furnished to those listed in, Part C, Section C-34, of the Supplemental General Conditions, shall become the permanent property of those listed.

Any portion of the tape coverage deemed unacceptable by the Engineer/Design Engineer shall be retaped by the Contractor at his expense.

9. Site Recording Conditions - All taping shall be done during times of good visibility. No outside taping shall be done during periods of visible precipitation or when the ground area is covered with snow, leaves, or debris unless otherwise authorized by the Engineer/Design Engineer.

In order to produce the proper detail and perspective, adequate auxiliary lighting shall be required to fill in shadow areas caused by trees, utility poles, road signs and other such objects, as well as other conditions requiring artificial illumination.

The average rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 48 feet per minute. Panning rates and zoom-in and zoom-out rates shall be controlled sufficiently such that play back produces adequate clarity of the objects being viewed.

When conventional wheeled vehicles are used as conveyances for the taping, the distance from the camera lens to the ground shall not be less than eight (8) feet to insure proper perspective. In instances where tape coverage is required in areas not accessible to conventional wheeled vehicles, such coverage shall be obtained by walking or by special conveyance approved by the Engineer/Design Engineer, but with the same requirements for tape quality and content as specified herein, except as may be specifically exempted by the Engineer/Design Engineer.

C. Number of Copies:

The Contractor shall provide one complete (1) copy of the preconstruction photography for the sections of work herein specified to each of those listed in Part C, Section C-34. The cost of this work shall be included in the Lump Sum Price bid for Item 14A, "Preconstruction Photography."

D. Basis of Payment:

The full cost of furnishing all labor, material and equipment to perform the required audio-video taping as described herein, including any required re-taping, shall be included for payment in the Lump Sum Price bid for Item 14A, "Preconstruction Photography."

14-2 SHOP DRAWINGS

A. Submittals:

As soon as possible after the execution of the Contract, the Contractor shall cause to be prepared and shall submit to the Engineer/Design Engineer for review and approval, fully dimensioned, manufacturer or fabricator generated detailed working drawings or detailed shop drawings of all piping, valves and miscellaneous details. All working and shop drawing submittals shall be full sized drawings, true to scale. No reduced copies or previously used drawings from other contracts shall be accepted. No work shall be done in the shop or in the field until after the shop drawings have been finally approved by the Engineer/Design Engineer.

B. Reviews and Approvals:

Shop drawings, until approved, shall be submitted in a minimum of eight (8) sets or copies, corrected as directed by the Engineer/Design Engineer and resubmitted as often as necessary for final approval. All such drawings shall be accompanied with a Contractor's "Letter of Transmittal" listing the drawings, their contents, the item number for which the submittal is made, and the project for which they are intended. After such approval, the Contractor shall furnish not less than eight (8) sets or copies for the Engineer's/Design Engineer's use. The Contractor shall distribute a sufficient number of additional sets as may be required for the work, including at least one (1) set for the field office, all bearing the Engineer's/Design Engineer's "Approval" stamp or other written documentation indicating approval.

C. Contractor's Responsibility:

The Engineer/Design Engineer will not release final approved shop drawings until the Contractor furnishes field data, in writing, on his company stationary, addressed to the Engineer/Design Engineer, explicitly stating that the Contractor has made throughout the full limits of the work contemplated herein, thorough field investigations and field verifications of all utilities and utility service connections, both public and private, including all sewers, all sewer service connections, and appurtenances thereof, and of any other obstruction that may be encountered in the work, and that according to his field investigations and field verifications, no known utilities, utility service connections or obstructions will affect the pipelaying as shown on the Contract Drawings. Where the Contractor finds variations will be required to the proposed pipeline alignment and/or profile as shown on the Contract Drawings, he shall document those variations in accordance with paragraph.

In addition, it shall the responsibility of the Contractor to verify all field dimensions and all design criteria, including design and pressure requirements, prior to preparing the various shop drawing submittals in order to ascertain that all materials to be furnished meet or exceed the requirements of this contract. At the time of each submission, the Contractor shall give the Engineer/Design Engineer specific written notice of each variation that the Shop Drawings may have from the requirements of the Contract Documents. The Contractor shall cause a specific notation to be made on each Shop Drawing submitted to the Engineer/Design Engineer for review of each such variation.

14-2 SHOP DRAWINGS (Cont'd)

The Engineer's/Design Engineer's review and approval of Shop Drawings shall not relieve the Contractor from responsibility for any variation from the requirements of the Contract Documents. The Engineer's/Design Engineer's approval shall not extend to any such variation unless Contractor has, in writing, conspicuously called to the Engineer's/Design Engineer's attention each such variation at the time of the submittal, as required by this paragraph, and the Engineer/Design Engineer has given written approval of that particular variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing review and/or approval.

The field data shall be obtained by the Contractor, and submitted to the Engineer/Design Engineer, in sufficient time in advance of the proposed work in order to determine if any adjustments to the line and grade of the proposed water main or adjustments to the existing water main is required due to the information obtained in the field data. The information obtained in the field data shall also be forwarded to the pipe fabricator with sufficient time to allow for the preparation of revised shop drawings and for fabrication of those pipe and fittings required to make the connection. No extra compensation to the Contractor shall be made for any delays and/or additional, pipe, fittings, and specials, or equipment, tools and incidentals, for failure to having properly obtained and forwarded in a timely manner to the Engineer/Design Engineer the required field information data for review and approval and the same to the pipe fabricator.

D. Accuracy/Completeness:

The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable the Engineer/Design Engineer to review the information as required. It is, among other things, the responsibility of the Contractor to verify all field dimensions prior to preparing the various shop drawing submittals.

Shop drawings shall be checked by the Contractor for accuracy of information prior to submission. Whenever it is evident that such checking has not been done, review of the shop drawings by the Engineer/Design Engineer will not be considered further and will be returned to the Contractor for checking and resubmission.

At the time of each submission, the Contractor shall give the Engineer/Design Engineer specific written notice of each variation that the Shop Drawings may have from the requirements of the Contract Documents. In addition, the Contractor shall cause a specific notation to be made on each Shop Drawing submitted to the Engineer/Design Engineer for review and approval of each such variation.

The Engineer's/Design Engineer's review and approval of Shop Drawings shall not relieve the Contractor from responsibility for any variation from the requirements of the Contract Documents. The Engineer's/Design Engineer's approval shall not extend to any such variation unless Contractor has, in writing, conspicuously called the Engineer's/Design Engineer's attention to each such variation at the time of submittal, as required by this paragraph and in paragraph C, "Contractor's Responsibility," and the Engineer/Design Engineer has given written approval of that particular variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing approval.

14-2 SHOP DRAWINGS (Cont'd)

The Engineer/Design Engineer will review and approve with reasonable promptness Shop Drawings submitted by the Contractor. However, the Engineer/Design Engineer's review and approval will be only for conformance with the design concept of the work and for compliance with the requirements set forth in the Contract Documents. Such review and approval do not extend to:

1. Means, methods, techniques, sequences or procedures of construction, except where a specific means, method, technique, sequence or procedure of construction is specified in or required by the Contract Documents due to its effect on the conformance of the completed work with the design requirements, or to safety precautions or programs incident thereto.
2. Design data reflected in the Shop Drawing submittal which is within the special expertise of the manufacturer/designer of that equipment, upon which the City and the Engineer/Design Engineer have a right to rely.
3. Safety aspects of the equipment to be installed, including, but not limited to, OSHA requirements and installation procedures.
4. Approval of a separate and specific item of work, for which such approval is given and, therefore, governs.
5. The approval by the Engineer/Design Engineer of any Shop Drawing shall not relieve the Contractor from its responsibility to the City and others for errors or omissions in the Shop Drawings or the resulting installation.
6. Where a Shop Drawing is required by the specifications, any related work performed prior to the Engineer's/Design Engineer's review and approval of the pertinent submission will be the sole expense and responsibility of Contractor.

E. Final Mylar Tracings:

After the drawings have been finally approved, the Contractor shall furnish the Engineer/Design Engineer with reproducible tracings on Mylar of each of the final shop drawings. Laying Schedules and Line Assembly Drawings shall be revised by the pipe fabricator to reflect "As-Built" data furnished by the Contractor; see Section 14-3, "As-Built Drawings," paragraph C, "As-Built Shop Drawings." Mylar shall be of minimum 4-mil thickness, shall be of a single base stock with an etched surface to provide a matte finish on the front and shall be of a permanent non-erasable, "wash-off" type, of which the image on the mylar medium cannot be removed by erasure. All shop drawings shall be reproduced from their full sized original tracings and not as reduced sizes as may have been submitted during the review process. Small full scale sized drawings pertaining to a given item shall be grouped for reproduction so that all tracings shall be 24" x 36" overall. Tracings not 24" X 36" in size will not be accepted. All mylar tracings of all working and shop drawing submittals shall be of full sized drawings, true to scale. No mylar tracings of reduced copies or previously used drawings from other contracts will be accepted.

14-2 SHOP DRAWINGS (Cont'd)

F. Drawing Identification:

All drawings submitted for approval shall be identified as follows:

CITY OF CLEVELAND - DIVISION OF WATER  
(NAME) WATER SUPPLY MAIN  
ITEM NUMBER and DESCRIPTION OF ITEM

G: As-Built Shop Drawings :

After the "As-Built Drawings have been completed by the Contractor and his engineer/surveyor and such has been reviewed by the Inspector the Contractor shall submit the original set of "as-built" prints and the original field book to the City for its permanent files. One (1) copy of the "As-Built" drawings and other pertinent field data shall be forwarded to the pipe fabricator so that the finally approved Laying Schedules and Line Assembly Drawings shall be revised to reflect actual line and grade of the pipe including the actual stationing and elevation of the pipe, horizontal and vertical deflections, air relief/flushing outlets, drain assemblies, valve assemblies, and the actual placement of the various pipe, fittings, specials, extra fittings, restrained distances, joint type(s), etc.

H. Basis of Payment:

The full cost of furnishing all labor, material and equipment to provide the required shop drawing submittals, including the final mylar submittals, as described herein shall be included for payment in the Fixed Lump Sum Price stipulated by the City, for Item 14B, "Shop Drawings," and as indicated in the Schedule of Bid Items.

Payment of the Fixed Lump Sum Price stipulated by the City, for Item 14B, "Shop Drawings," shall be as follows: 50%, less retainage, of the fixed lump sum for Item 14B shall be paid only after all of the paper shop drawings for all pertinent items have been submitted by the Contractor and reviewed and approved by the Engineer/Design Engineer. The remaining 50%, less retainage, shall be paid after all of the mylar shop drawings have been submitted, in the manner herein specified, by the Contractor, including "As-Built" shop drawings of the Laying Schedule and Line Assembly Drawings by the pipe fabricator, and same is accepted and approved by the Engineer/Design Engineer.

Payment for the preparation and furnishing of the "As-Built" Laying Schedules and Line Assembly Drawings in the manner herein specified as described under Section 14-2, "Shop Drawings," paragraph E, "Final Mylar Tracings," shall be made as part of the final mylar submittals required under Item 14B, "Shop Drawings."

**DETAIL SPECIFICATIONS**

**PART E - BID ITEMS**

**ITEM 15**

**E-15 UNDERGROUND STRUCTURES**

**15-1 WORK INCLUDED**

Work, under Item 15, "Underground Structures," shall include changes required to the watermain installation from that shown on the Contract Drawings but within the scope of this contract and payment therefor, where additional work is required due to conflicts or interference with underground structures, necessitating additional excavation, additional backfill, additional paving, utility conflicts, repair of existing underground structures, sheeting ordered left in place. Work under this item shall be confined to the normal lines of excavation. Not included under Item 15 are those changes or modifications to the scope of work to that shown in the Contract Documents, or that specified in these specifications, in which case the Contractor shall follow and adhere to the procedures set forth under Part B, Section B-34, "Changes or Modifications of Work."

Notwithstanding the requirements of Part C, Section C-60, "Underground Structures Encountered," particularly those structures unforeseen and/or not shown on the Contract Drawings, or that which may have been installed, modified, and/or relocated since the Contract Documents have been executed, and where such unforeseen structures encountered interferes or conflicts with the proper prosecution of this contract and deemed within the scope of work under this contract, the Contractor shall relocate, support, protect, repair, reinstall, or as otherwise required, any underground structure, or where necessary, make required field adjustments to the proposed water main work contemplated herein, all in accordance with these specifications.

The Contractor shall not proceed with or perform any work under Item 15 without first having provided written notification to the Engineer/Design Engineer in accordance with Part C, Section C-5, "Contract Drawings and Specifications - Part of Contract," of these specifications, detailing the nature of the interference or conflict, his proposed method of remedy, and his proposed costs to rectify the interference or conflict, and the Engineer's/Design Engineer's written approval of the work and notice to proceed. Where work required under Item 15 includes work for which there are bid items in this contract or where fixed unit prices for "Additional Work" are provided in this contract, the Contractor shall include in his cost for the work, under Item 15, those bid prices and unit prices of all applicable contract items.

**15-2 INTERFERENCES OR CONFLICTS INCLUDED**

Where it becomes necessary to remove, relocate, support, protect, repair, reinstall, or as otherwise required, any underground structure, either unforeseen or not shown on the Contract Drawings, or make required field adjustments to the water main installation, in order to resolve interferences or conflicts with the proposed work the Contractor shall prepare and submit to the Engineer/Design Engineer for approval a cost estimate for the work, under Item 15, limited to the following:



15-2 INTERFERENCES OR CONFLICTS INCLUDED (Cont'd)

- A. Adjustments to the proposed water main line and/or grade necessitating the installation of additional footage of pipe or additional pipe joint restraint per Contract Item 1, "Ductile Iron Pipe and Fittings," Contract Item 2, "Prestressed Concrete Pressure Pipe and Fittings," or Contract Item 3, "Steel Pipe and Fittings;" Air Relief/Flushing Outlet Valve Assembly with Valve Boxes Complete per Contract Item 4, "Valves;" Drain Valve with Valve Box Complete per Contract Item 4, "Valves;" Drain Vault Complete per Contract Item 6, "Brick Masonry and Vault/Manhole Structures;" Steel Pipe Casings per Contract Item 10, "Steel Pipe Casing"; or any other applicable Contract Item, all as required for the proper completion of the work shown on the Contract Drawings and in accordance with these specifications.
- B. Additional excavation:
- Additional excavation in excess of two (2) feet below bottom of trench as originally shown on the Contract Drawings, based on volume as measured by normal width of trench times the excess depth:
- 1) Additional excavation in rock \$50.00 per cubic yard;
  - 2) Additional excavation in shale \$30.00 per cubic yard; and
  - 3) Additional excavation in earth \$15.00 per cubic yard.
- C. Additional backfill:
- 1) Additional sand backfill \$12.00 per cubic yard; and
  - 2) Additional premium backfill \$18.00 per cubic yard.
- D. Additional Paving:
- 1) Additional permanent paving \$23.00 per square yard; and
  - 2) Additional breaking and removal of pavement \$12.00 per lineal foot of trench.
- E. Utility/traffic poles not shown on the Contract Drawings, but falling within the normal lines of excavation.
- F. Repair of existing culverts to repair damaged culvert or integrity of culvert as result of excavation.
- G. Unforeseen underground structures, or those not shown on the Contract Drawings, such as gas lines, electric ducts, phone ducts, traffic loops, and water service connections, required to be removed, relocated, supported, and/or replaced.

15-2 INTERFERENCES OR CONFLICTS INCLUDED (Cont'd)

- H. Sheeting or that portion of the sheeting ordered to be left in place will be paid for at the rate of Three Hundred and Fifty Dollars (\$350.00) per thousand feet board measure. No payment will be made for wasted ends. Sheeting furnished and installed by the Contractor and either not called to be removed or that sheeting not ordered left in place shall be at the expense of the Contractor.

15-3 INTERFERENCES OR CONFLICTS EXCLUDED

Interferences or conflicts encountered that shall be excluded under Item 15 but may be included per Part C, Section C-60, "Underground Structures Encountered", or under other bid items are as follows:

- A. Sewer laterals, catch basin replacement, etc., - covered under Part D, Section D-24, "Changes in Sewers, Catch Basins, Etc.," and to be paid for under Item 5, "Vitrified/PVC/Concrete Sewer Pipe and Specials," classified as to size and type.
- B. Utilities, culverts, drainage pipes, mailboxes, guardrails, support posts, etc., shown on the Contract Drawings, but may or may not specifically be called for their removal, relocation, support, and/or replacement, that fall within the normal lines of excavation. Such utilities, culverts, drainage pipes, mailboxes, guardrails, support posts, etc., falling within the normal limits of excavation that are required to be removed, relocated, supported, and/or replaced shall be deemed to be included in the price bid per lineal foot of water main furnished and installed under this contract. In off pavement areas, normal lines of excavation shall mean the width of the trench, which is maximum two (2) feet plus outside diameter of the pipe when pipe is laid at six (6) depth to top of pipe. In paved areas the normal lines of excavation shall include, where applicable, the concrete base cutbacks and the wearing surface cutbacks. Normal lines of excavation, or normal width of trench, may be increased by one (1) foot for every additional three (3) foot depth as measured to top of the pipe. No compensation will made to the Contractor for trench width excavations in excess of that specified herein but the cost thereof shall be deemed to be included in the price bid per lineal foot of water main furnished and installed under this contract.

15-4 CHANGES OR MODIFICATIONS TO WORK

Where a major deviation in the plan location or profile of the water main from the original scope requires a design change, or where additional mainline sewers must be laid or additional permanent pavement is required when such is not part of the original Modifications or scope of work or where other work is required or determined necessary by the Engineer/Design Engineer and such is not part of the original scope of work, the Contractor's attention is herewith directed to Part B, Section B-34, "Changes or Modifications of Contract."

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

15-5 PAYMENT

The full cost of furnishing additional labor, material and equipment to perform work required under Item 15, "Underground Structures," shall include additional excavation, additional sheeting and/or shoring, additional backfill, additional seeding and sodding, additional pavement (permanent only) and any additional site restoration required for the removal, relocation, support, protection, repair, reinstallation, or as otherwise required, of any underground structure, either unforeseen or not shown on the Contract Drawings, that interferes with the proper prosecution of the work required under this contract and as shown on the Contract Drawings or as specified in these specifications, or where required to make necessary field adjustments to the water main installation, all within the scope of this contract.

The Contractor shall provide written notification to the Engineer/Design Engineer detailing the nature of the interference, proposed method of remedy, and his proposed costs to rectify the interference, and the Engineer's/Design Engineer written approval of the work and notice to proceed. Where work is required under Item 15 includes work under bid items in this contract, the applicable bid items shall be used.

A Fixed Lump Sum Price is stipulated by the City on the Schedule of Bid Items for payment for work to be performed under Item 15, "Underground Structures." The Contractor shall not assume that this Fixed Lump Sum amount will be made part of the Contract Price nor shall he assume that payment will be made for unauthorized work under this item.

**DETAIL SPECIFICATIONS**

**PART E - BID ITEMS**

**ITEM 17**

**E-17 FURNISHING AND SETTING 6-INCH HYDRANT**

**17-1 WORK INCLUDED**

The Contractor, under Item 17, "Furnishing and Setting 6-inch Hydrant," shall furnish all hydrants, materials, labor, tools and equipment for and shall properly connect at the locations shown on the Contract Drawings 6" hydrants, complete as required, for the proper completion of the work included under this contract.

In general, this work shall include the furnishing, setting, testing, painting, the excavation, sheeting, shoring, backfilling, seeding and/or sodding, sidewalk and pavement replacement (both temporary and permanent) and the furnishing of all labor, materials, tools, and appliances necessary to complete the work as specified or as shown.

**17-2 HYDRANTS**

The 6" hydrants shall be City of Cleveland Standard and shall conform with the Division of Water's specifications and approved hydrant drawings on file with the Division of Water at the Carl B. Stokes, Public Utilities Building, 1201 Lakeside Avenue, Cleveland, Ohio 44114. See hydrant assembly detail following this section.

**17-3 SETTING**

**A. General Location:**

Hydrants shall be horizontally located a minimum of ten (10) feet away from sanitary sewers and five (5) feet away from storm sewers and in a manner to provide complete accessibility, and in such a manner that the possibility of damage from vehicles or injury to pedestrians is minimized. Unless otherwise directed, the setting of any hydrant shall conform to the following:

**B. Location Regarding Curb Lines:**

When placed behind the curb, the hydrant barrel shall be set so that the center of the barrel shall be no less than three (3) feet from the gutter face of the curb, or deviate from such location or deviate from the location indicated on the Contract Drawings, except by consent of the Engineer/Design Engineer.

**C. Location Regarding Sidewalks:**

When set in the lawn space between the curb and the sidewalk, or between the sidewalk and the property line, no portion of the nozzle or hydrant cap shall be within six (6) inches of the sidewalk.

**PART E - DETAIL SPECIFICATIONS - BID ITEMS**  
**CUY-West Sixth Street Streetscape, Part 1, PID 89722**  
**CUY-Professor Street Intersections, Part 2, PID 90218**

17-3 SETTING (Cont'd)

D. Position of Nozzles:

The hydrant shall stand plumb, with the 4-inch steamer nozzle pointing toward the curb. Where hydrant branch piping is parallel with, or not at right angles to the curb, the Contractor shall release the swivel head bolts and adjust hydrant 4-inch steamer nozzle to face the curb at the proper angle. Hydrant without swivel heads will be adjusted by the City where necessary to correct the position of the 4-inch steamer nozzle to face the curb. Height of hydrant shall conform to the established grade with tops of frost casing at least four (4) inches above grade.

E. Connection to Main:

The hydrant shall be connected to the distribution water main with a ductile iron pipe branch controlled by an independent gate valve of the same size as the hydrant, except as otherwise directed.

F. Drainage of Hydrant:

Drainage shall be provide at the base of the hydrant by filling around the elbow with coarse gravel or crushed stone to at least six (6) inches above the waste opening. Wherever the hydrant is set in rock, clay, or other impervious soil, the trench shall be widened and deepened on each side of the hydrant base, which space shall be filled compactly with coarse gravel, crushed stone, or broken stone and mixed with coarse sand of sufficient quantity to absorb all water to be drained from the hydrant when branch valve is closed.

G. Anchorage for Hydrant:

The hydrant shall be set on a stone slab or similar foundation and the base of the hydrant shall be well braced against unexcavated earth to the end of the trench with concrete backing, and it shall restrained to the branch piping with swivel joints or retained mechanical joints or be tied to the branch pipe with suitable rods, clamps, or other approved restraint as approved or directed by the Engineer/Design Engineer.

H. Cleaning:

The interior of the hydrant shall be thoroughly cleaned of all dirt and foreign matter before setting.

17-4 PAYMENT

- A. The unit price, under Item 17, "Furnishing and Setting 6-inch Hydrant," stipulated to be paid for each hydrant setting, shall include the furnishing, setting, testing, painting, the excavation, sheeting and shoring, backfilling, seeding and/or sodding, sidewalk and pavement replacement (both temporary and permanent); and shall include the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown or as directed.

17-4 PAYMENT (Cont'd)

- B. The ductile iron pipe, fittings and specials furnished and installed in the hydrant branch shall be paid under Item 1, "Ductile Iron Pipe and Fittings."
- C. The hydrant branch gate valve and valve box complete shall be paid for under Item 4, "Valves."
- D. The concrete piers or thrust blocks shall be paid for under Item 7A, "Plain concrete Masonry."



# CLERK OF COUNCIL

The following Ordinance was passed by the Council of the City of Cleveland

December 5, 2011

Ord. No. 1570-11.  
By Council Members Cimperman, Miller, Cleveland and Sweeney (by departmental request).  
An emergency ordinance authorizing the Director of Capital Projects to hire one or more consultants for design, engineering and construction services necessary for the rehabilitation of Professor Avenue at the intersections of Jefferson Avenue, College Avenue, Literary Avenue and Fairfield Avenue; determining the method of making the public improvement; authorizing the Director to enter into one or more public improvement contracts for the making of the improve-

ment; authorizing the Director to accept cash contributions from public and private entities, NEORSB, and GCRTA for costs associated with the improvement and to enter into agreements; authorizing the Director to enter into agreements with private utility companies to pay charges for the installation of underground lines; authorizing the Director to enter into a local public agency agreement with the Ohio Department of Transportation to fund and construct the improvement; and authorizing the Commissioner of Purchases and Supplies to acquire for right-of-way purposes real property necessary to make the public improvement.

Whereas, this ordinance constitutes an emergency measure providing for the usual daily operation of a municipal department; now, therefore,

Be it ordained by the Council of the City of Cleveland:

**Section 1.** That the Director of Capital Projects is authorized to employ by contract or contracts one or more consultants or one or more firms of consultants for the purpose of supplementing the regularly employed staff of the several departments of the City of Cleveland in order to provide professional design, engineering and construction services necessary for Professor Avenue at the intersections of Jefferson Avenue, College Avenue, Literary Avenue and Fairfield Avenue (the "Improvement").

The selection of the consultants for the services shall be made by the Board of Control on the nomination of the Director of Capital Projects from a list of qualified consultants available for employment as may be determined after a full and complete canvass by the Director of Capital Projects for the purpose of compiling a list. The compensation to be paid for the services shall be fixed by the Board of Control. The contract or contracts shall be prepared by the Director of Law, approved by the Director of Capital Projects and certified by the Director of Finance.

**Section 2.** That under Section 167 of the Charter of the City of Cleveland, this Council determines to make the public improvement as described in this ordinance, for the Office of Capital Projects, by one or more contracts duly let to the lowest responsible bidder or bidders after competitive bidding on a unit basis for the Improvement.

**Section 3.** That the Director of Capital Projects is authorized to enter into one or more contracts for the making of the public improvement with the lowest responsible bidder or bidders after competitive bidding on a unit basis for the improvement, provided, however, that each separate trade and each distinct component part of the improvement may be treated as a separate improvement, and each, or any combination, of the trades or components may be the subject of a separate contract on a unit basis.

**Section 4.** That the Director of Capital Projects is authorized to accept cash contributions from public or private entities, NEORSB, and GCRTA for infrastructure restoration costs associated with relocating, rehabilitating or reconstructing utility infrastructure for the improvement. That the Director of Capital Projects is authorized to enter into agreements with the entities for this purpose.

**Section 5.** That the Director of Capital Projects is authorized to enter into one or more agreements with private utility companies to pay charges for the installation of underground lines in connection with the improvement.

**Section 6.** That the Director of Capital Projects is authorized to enter into a local public agency agreement with the Ohio Department of Transportation to fund and to construct the improvement.

**Section 7.** That notwithstanding any provision of the Codified Ordinances of Cleveland, Ohio, 1976, to the contrary, the Commissioner of Purchases and Supplies is authorized to acquire for right-of-way purposes real property necessary to make the improvement. The consideration to be paid for the property shall not exceed fair market value to be determined by the Board of Control.

**Section 8.** That the Director of Capital Projects is authorized to execute, on behalf of the City, all documents necessary to acquire property and to employ and pay all fees for title companies, surveys, escrows, appraisers, and all other costs necessary for the acquisition of the property.

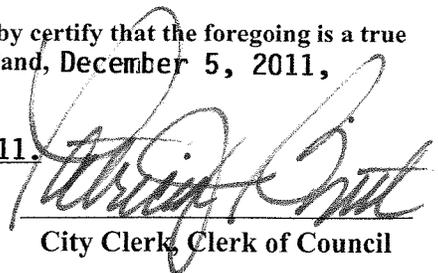
**Section 9.** That the cost of the contracts, payments, property acquisition, and other expenditures authorized shall be paid from Fund Nos. 20 SF 380, 20 SF 383, 20 SF 394, 20 SF 500, 20 SF 506, 20 SF 510, 20 SF 520, 20 SF 528, 20 SF 534, 20 SF 540, from the fund or funds to which are credited any grant proceeds, fund or funds to which are credited any funds received under the local public agency agreement, fund or cash contributions accepted and appropriated under this ordinance, and from any other funds approved by the Director of Finance. (RQS 4002, RL 2011-194)

**Section 10.** That this ordinance is declared to be an emergency measure and, provided it receives the affirmative vote of two-thirds of all the members elected to Council, it shall take effect and be in force immediately upon its passage and approval by the Mayor; otherwise it shall take effect and be in force from and after the earliest period allowed by law.

Referred to Directors of Capital Projects, City Planning Commission, Finance, Law; Committees on Public Service, City Planning, Finance.

I, Patricia J. Britt, City Clerk, Clerk of Council of the City of Cleveland, do hereby certify that the foregoing is a true and correct copy of Ordinance No. 1570-11 passed by the Council of the City of Cleveland, December 5, 2011, effective December 9, 2011.

WITNESS my hand and seal at Cleveland, Ohio this 12th day of December 2011.

  
City Clerk, Clerk of Council



# CLERK OF COUNCIL

The following Ordinance was passed by the Council of the City of Cleveland

December 5, 2011

Ord. No. 1571-11.

By Council Members Cimperman, Miller, Cleveland and Sweeney (by departmental request).

An emergency ordinance authorizing the Director of Capital Projects to hire one or more consultants for design, engineering and construction services necessary for the rehabilitation of West 6th Street from St. Clair Avenue to Lakeside Avenue; determining the method of making the public improvement; authorizing the Director to enter into one or more public improvement contracts for the making of the improvement; authorizing the Director to accept cash contributions from public and private entities, NEORS, and GCRTA for costs associated with the improvement and to enter into agreements; authorizing the Director to enter into agreements with private utility companies to pay charges for the installation of underground lines; authorizing the Director to enter into a local public agency agreement with the Ohio Department of Transportation to fund and construct the improvement; and authoriz-

ing the Commissioner of Purchases and Supplies to acquire for right-of-way purposes real property necessary to make the public improvement.

Whereas, this ordinance constitutes an emergency measure providing for the usual daily operation of a municipal department; now, therefore,

Be it ordained by the Council of the City of Cleveland:

**Section 1.** That the Director of Capital Projects is authorized to employ by contract or contracts one or more consultants or one or more firms of consultants for the purpose of supplementing the regularly employed staff of the several departments of the City of Cleveland in order to provide professional design, engineering and construction services necessary for West 6th Street from St. Clair Avenue to Lakeside Avenue (the "Improvement").

The selection of the consultants for the services shall be made by the Board of Control on the nomination of the Director of Capital Projects from a list of qualified consultants available for employment as may be determined after a full and complete canvass by the Director of Capital Projects for the purpose of compiling a list. The compensation to be paid for the services shall be fixed by the Board of Control. The contract or contracts shall be prepared by the Director of Law, approved by the Director of Capital Projects and certified by the Director of Finance.

**Section 2.** That, under Section 167 of the Charter of the City of Cleveland, this Council determines to make the public improvement as described in this ordinance, for the Office of Capital Projects, by one or more contracts duly let to the lowest responsible bidder or bidders after competitive bidding on a unit basis for the Improvement.

**Section 3.** That the Director of Capital Projects is authorized to enter into one or more contracts for the making of the public improvement with the lowest responsible bidder or bidders after competitive bidding on a unit basis for the improvement, provided, however, that each separate trade and each distinct component part of the Improvement may be treated as a separate improvement, and each, or any combination, of the trades or components may be the subject of a separate contract on a unit basis.

**Section 4.** That the Director of Capital Projects is authorized to accept cash contributions from public or private entities, NEORS, and GCRTA for infrastructure restoration costs associated with relocating, rehabilitating or reconstructing utility infrastructure for the Improvement. That the Director of Capital Projects is authorized to enter into agreements with the entities for this purpose.

**Section 5.** That the Director of Capital Projects is authorized to enter into one or more agreements with private utility companies to pay charges for the installation of underground lines in connection with the Improvement.

**Section 6.** That the Director of Capital Projects is authorized to enter into a local public agency agreement with the Ohio Department of Transportation to fund and to construct the Improvement.

**Section 7.** That notwithstanding any provision of the Codified Ordinances of Cleveland, Ohio, 1976, to the contrary, the Commissioner of Purchases and Supplies is authorized to

acquire for right-of-way purposes real property necessary to make the Improvement. The consideration to be paid for the property shall not exceed fair market value to be determined by the Board of Control.

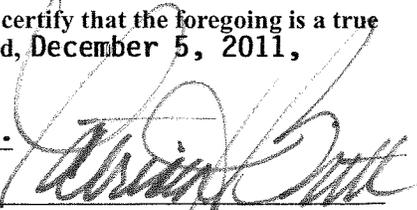
**Section 8.** That the Director of Capital Projects is authorized to execute, on behalf of the City, all documents necessary to acquire property and to employ and pay all fees for title companies, surveys, easements, appraisers, and all other costs necessary for the acquisition of the property.

**Section 9.** That the cost of the contracts, payments, property acquisition, and other expenditures authorized shall be paid from Fund Nos. 20 SF 380, 20 SF 383, 20 SF 394, 20 SF 500, 20 SF 506, 20 SF 510, 20 SF 520, 20 SF 528, 20 SF 534, 20 SF 540, from the fund or funds to which are credited any grant proceeds, fund or funds to which are credited any funds received under the local public agency agreement, fund or cash contributions accepted and appropriated under this ordinance, and from any other funds approved by the Director of Finance. (RQS 4002, RL 2011-195)

**Section 10.** That this ordinance is declared to be an emergency measure and, provided it receives the affirmative vote of two-thirds of all the members elected to Council, it shall take effect and be in force immediately upon its passage and approval by the Mayor; otherwise it shall take effect and be in force from and after the earliest period allowed by law.

I, Patricia J. Britt, City Clerk, Clerk of Council of the City of Cleveland, do hereby certify that the foregoing is a true and correct copy of Ordinance No. 1571-11 passed by the Council of the City of Cleveland, December 5, 2011, effective December 9, 2011.

WITNESS my hand and seal at Cleveland, Ohio this 12th day of December 2011.

  
City Clerk, Clerk of Council



# NORTHERN IRELAND FAIR EMPLOYMENT PRACTICES DISCLOSURE

INSTRUCTIONS:  Pursuant to Codified Ordinance Sec. 181.36, the information requested on this page must be supplied by all contractors and any subcontractors having more than a fifty percent (50%) interest in the proposed contract prior to any contract being awarded by the City of Cleveland. Any contractor or subcontractor who is deemed to have made a false statement shall be declared to have acted in default of its contract and shall be subject to the remedies for default contained in its contract. For failure to cure such a default, the contractor or subcontractor shall be automatically excluded from bidding for the supply of any goods or services for use by the City for a period of two (2) years.

## CHECK WHICHEVER IS APPLICABLE:

A.  The undersigned or any controlling shareholder,\* subsidiary, or parent corporation of the undersigned is **NOT ENGAGED IN ANY BUSINESS OR TRADING FOR PROFIT IN NORTHERN IRELAND.** (if paragraph A. is checked, proceed to the signature line.)

B.  The undersigned or any controlling shareholder,\* subsidiary, or parent corporation **IS ENGAGED IN ANY BUSINESS OR TRADING FOR PROFIT IN NORTHERN IRELAND.** (if paragraph B. is checked, please either check the stipulation contained in paragraph C. or attach documentation that shows that the undersigned has complied with the stipulation contained in paragraph C.)

C.  The undersigned and all enterprises identified in paragraph B. are **TAKING LAWFUL AND GOOD FAITH STEPS TO ENGAGE IN FAIR EMPLOYMENT PRACTICES WHICH ARE RELEVANT TO THE STANDARDS EMBODIED IN THE "MacBRIDE PRINCIPLES FOR FAIR EMPLOYMENT IN NORTHERN IRELAND."** A copy of the MacBride Principles can be obtained from the Office of the Commissioner of Purchases and Supplies. In lieu of checking this paragraph, the undersigned must attach documentation which the undersigned believes shows compliance with the stipulation contained in this paragraph C.

\_\_\_\_\_  
Name of Contractor of Subcontractor

By: \_\_\_\_\_

Title: \_\_\_\_\_

\* "Controlling shareholder" means any shareholder owning more than fifty percent (50%) of the stock in the corporation or more than twenty-five percent (25%) of the stock in the corporation if no other shareholder owns a larger share of stock in the corporation.

NOTE: Sections 181.23 and 185.04 of The Codified Ordinances of Cleveland, Ohio 1976 require that this affidavit, properly executed and containing all required information, accompany your bid. IF YOU FAIL TO COMPLY, YOUR BID WILL NOT BE CONSIDERED.

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_



SS

**AFFIDAVIT**

\_\_\_\_\_ being first duly sworn deposes and says:

**Individual only:** That he/she is an individual doing business under the name of \_\_\_\_\_  
\_\_\_\_\_  
at \_\_\_\_\_, in the City of \_\_\_\_\_, State of \_\_\_\_\_

**Partnership only:** That he/she is the duly authorized representative of a partnership doing business under the name of \_\_\_\_\_  
\_\_\_\_\_, in the City of \_\_\_\_\_, State of \_\_\_\_\_

**Corporation only:** That he/she is the duly authorized, qualified and acting \_\_\_\_\_ of \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_;

**Individual only:** Affiant further says that the following is a complete and accurate list of the names and addresses of all persons interested in said proposed contract: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Affiant further says that he/she is represented by the following attorneys:

\_\_\_\_\_ and is also represented by the following resident agents in the City of Cleveland: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Partnership only:** Affiant further says that the following is a complete and accurate list of the names and addresses of the members of said partnership: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Affiant further says that said partnership is represented by the following attorneys:

\_\_\_\_\_ and is also represented by the following resident agents in the City of Cleveland: \_\_\_\_\_  
\_\_\_\_\_

**Corporation only:**

Affiant further says that the following is a complete and accurate list of the officers, directors and attorneys of said corporation:

President

Directors:

Vice President

Secretary

Treasurer

Cleveland Manager or Agent

Attorneys

And that the following officers are duly authorized to execute contracts on behalf of said corporation:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Affiant further says that the bid filed herewith is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation; that such bid is genuine and not collusive or sham; that said bidder has not, directly or indirectly, induced or solicited any other bidder to put in a false or sham bid, and has not, directly or indirectly, colluded, conspired, connived or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the bid price of said bidder or of any other bidder, or to fix any overhead, profit, or cost element of such bid price or that of any other bidder, or to secure any advantage against the City of Cleveland or anyone interested in the proposed contract; that all statements contained in such bid are true; that said bidder has not, directly or indirectly, submitted his bid price or any break-down thereof or the contents thereof, or divulged information or data relative thereto, or paid or agreed to pay, directly or indirectly, any money, or other valuable consideration for assistance or aid rendered or to be rendered in procuring or attempting to procure the contract above referred to, to any corporation, partnership, company, association, organization, or to any member or agent thereof, or to any other individual, except to such person or persons as hereinabove disclosed to have a partnership or other financial interest with said bidder in his general business; and further that said bidder will not pay or agree to pay, directly or indirectly, any money or other valuable consideration to any corporation, partnership, company, association, organization or to any member or agent thereof, or to any other individual, for aid or assistance in securing contract above referred to in the event the same is awarded to \_\_\_\_\_

\_\_\_\_\_  
(name of individual, partnership or corporation)

Further affiant said not.

(Sign Here) 

Sworn to before me and subscribed in my presence this \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_  
Notary Public

NOTE: THIS BID MUST BE SIGNED IN THE SPACE INDICATED. ERASURES MAY INVALIDATE THIS BID.

---

---

CITY OF CLEVELAND

BID - UNIT PRICE

To:

The Commissioner of Purchases and Supplies:

BID FOR CUY-West Sixth Street Streetscape, Part 1, PID 89722;

CUY-Professor Street Intersections, Part 2, PID 90218

---

---

---

---

---

for the Department of MAYOR'S OFFICE OF CAPITAL PROJECTS

The Undersigned certifies that he has carefully examined the Contract Documents as defined in the General Conditions of the Invitation to Bid and has inspected the site of the projected work.

The Undersigned declares that the amount and nature of the work to be done is understood, and that at no time will misunderstanding of the Contract Documents be pleaded.

On the basis of the Contract Documents the Undersigned proposes to furnish all necessary apparatus, machinery, tools and other means of construction, to do all the work and furnish all the materials in the manner specified, to finish the entire project within the time hereinafter proposed, and to accept as full compensation therefor the sum of the various products obtained by multiplying each unit price herein bid for the work or materials, by the quantities thereof incorporated in the completed project as determined by the City.

The Undersigned further proposes to execute the Contract Agreement and to furnish satisfactory bond within five (5) days, excluding Saturdays, Sundays and holidays, after notice of award of contract has been received.

The Undersigned further proposes to begin work as specified in the General Conditions set forth in the Invitation to Bid, and to complete the work at the time fixed by the Director, which is 12 MONTHS FROM THE DATE OF NOTICE TO PROCEED

The Undersigned understands that the quantities in the following schedule are approximate only, and agrees that the Director reserves the right to increase or diminish, or to omit entirely any of the quantities of items as therein stated without claim for damages for loss of anticipated profit.

The Undersigned deposits with this Bid a Bid Bond to the City of Cleveland signed by a surety company authorized to do business in Ohio, in the sum of \$ \_\_\_\_\_, or a cashier's check or certified check on a solvent bank in the sum of \$ \_\_\_\_\_, payable to the City of Cleveland, as security that if he be awarded the contract, he will enter into a written contract and secure the performance of the same by a bond of an approved surety company authorized to do business in Ohio and satisfactory to the Director of Law, in the sum equal to the total price bid and in conformity with the provisions of The Codified Ordinances of the City of Cleveland.

The Undersigned further agrees that if the Bid is accepted and contract awarded and he shall fail to execute said contract and furnish the satisfactory bond, as required, within the time above specified, then the City may, at its option, declare the contract abandoned and this Bid null and void. Thereupon the penal sum of the Bid Bond shall become due to the City, or the certified or cashier's check shall be forfeited to and become the property of the City, as liquidated damages. Otherwise, the Bid Bond or the certified or cashier's check, or the amount of such check shall be returned to the Undersigned.

The Undersigned further certifies that he (as an individual, firm or corporation making this Bid) is not in arrears or default to the City of Cleveland upon any debt or contract, nor is a defaulter as surety or otherwise upon any obligation to said City, nor has failed to perform faithfully any previous contract with said City and that there is no suit or claim pending as to any such arrears or default.

The Undersigned represents that he (if an individual) and all of the partners in the partnership (if a partnership), are citizens of the United States of America.

The Undersigned agrees to be bound by this Bid until 60 DAYS  
(insert date).

THE UNDERSIGNED UNDERSTANDS THAT THE CITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS.

SIGN HERE

X \_\_\_\_\_

The firm, corporation, or individual name MUST BE SIGNED IN SPACE INDICATED.

\_\_\_\_\_  
Title of Officer

If the Bidder is a firm, or corporation the title of the officer signing and the State in which incorporated must be indicated.

\_\_\_\_\_  
Business Address of Bidder

\_\_\_\_\_  
State where incorporated

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>ROADWAY - PART 1 - WEST SIXTH STREET</b>					
1	ITEM 201 - CLEARING AND GRUBBING	LUMP			
2	ITEM 202 - PAVEMENT REMOVED (D-15)	SQ. YD.	792		
3	ITEM 202 - PAVEMENT REMOVED - DRIVEWAYS (D-15)	SQ. YD.	61		
4	ITEM 202 - WALK REMOVED	SQ FT	14,140		
5	ITEM 202 - GUTTER REMOVED	SQ YD	221		
6	ITEM 202 - GRANITE CURB REMOVED FOR REUSE (DS-1)	FT	1,365		
7	ITEM 202 - CATCH BASIN REMOVED	EACH	4		
8	ITEM 202 - REMOVAL, MISC.: PARKING METER (DS-2)	EACH	20		
9	ITEM 202 - REMOVAL, MISC.: TREE PIT FRAME AND GRATE (DS-3)	EACH	27		
10	ITEM 202 - REMOVAL, MISC.: BENCH (DS-5)	EACH	1		
11	ITEM 202 - REMOVAL, MISC.: TRASH CAN (DS-5)	EACH	5		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
12	ITEM 202 - REMOVAL, MISC.: BIKE RACK (DS-5)	EACH	1		
13	ITEM 202 - REMOVAL, MISC.: TRACK REMOVED (D-17)	SQ YD	200		
14	ITEM 203 - EXCAVATION	CU. YD.	55		
15	ITEM 203 - EMBANKMENT	CU. YD.	551		
16	ITEM 204 - SUBGRADE COMPACTION	SQ. YD.	213		
17	ITEM 204 - SUBGRADE COMPACTION FOR TRACK REMOVAL	SQ. YD.	200		
18	ITEM 604 - MONUMENT BOX ADJUSTED TO GRADE (D-41)	EACH	1		
19	ITEM 604 - MANHOLE ADJUSTED TO GRADE - CPP (D-39)	EACH	2		
20	ITEM 608 - 6" CONCRETE WALK (D-23 AND DS-7)	SQ. FT.	21,172		
21	ITEM SPECIAL - CURB RAMP WITH TILE, INCLUDING LAYOUT (D-23, D-27, AND DS-8)	CORNER	7		
	<b>SUBTOTAL ROADWAY - PART 1 - WEST SIXTH STREET:</b>				

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>EROSION CONTROL - PART 1 - WEST SIXTH STREET</b>					
22	ITEM 832 - EROSION CONTROL	LUMP			
<b>SUBTOTAL EROSION CONTROL - PART 1 - WEST SIXTH STREET:</b>					
<b>DRAINAGE - PART 1 - WEST SIXTH STREET</b>					
23	ITEM 603 - 6" CONDUIT, TYPE F	FT	60		
24	ITEM 603 - 12" CONDUIT, TYPE B, 706.08 (ES)	FT	163		
25	ITEM 604 - CATCH BASIN, CLEVELAND NO. 1 (D-34)	EACH	5		
26	ITEM 604 - MANHOLE, CITY OF CLEVELAND NO. 1	EACH	1		
27	ITEM 604 - MANHOLE ADJUSTED TO GRADE (D-39)	EACH	9		
28	ITEM 604 - MISCELLANEOUS METAL (D-72)	LB	5,000		



**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
29	ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAIN, 706.08, 707.32, OR 707.41 (D-42 AND DS-10)	FT	1,522		
30	ITEM SPECIAL - CLEAN AND TELEVISE CONDUIT - SEWER (D-37)	FT	52		
<b>SUBTOTAL DRAINAGE - PART 1 - WEST SIXTH STREET:</b>					
<b>PAVEMENT - PART 1 - WEST SIXTH STREET</b>					
31	ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (DS-11)	SQ YD	3,162		
32	ITEM 304 - 6" MIN. AGGREGATE BASE	CU. YD.	18		
33	ITEM 304 - 6" MIN. AGGREGATE BASE FOR TRACK REMOVAL	CU. YD.	35		
34	ITEM 304 - 6" MIN. AGGREGATE BASE FOR PAVEMENT RESTORATION	CU. YD.	20		
35	ITEM 305 - 9" MIN. CONCRETE BASE (D-23)	CU. YD.	4		
36	ITEM 305 - 9" MIN. CONCRETE BASE FOR TRACK REMOVAL (D-23)	CU. YD.	85		
37	ITEM 305 - 9" MIN. CONCRETE BASE FOR PAVEMENT RESTORATION (D-23)	CU. YD.	45		
38	ITEM 407 - TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE (DS-12)	GAL.	317		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
39	ITEM 407 - TACK COAT, TRACKLESS TACK, SURFACE COURSE (DS-12)	GAL.	159		
40	ITEM 448 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22 (D-29)	SQ YD	3,170		
41	ITEM 448 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22 (D-29)	SQ YD	3,170		
42	ITEM 448 - 0" MIN ASPHALT CONCRETE INTERMEDIATE COURSE FOR TRACK REMOVAL, TYPE 2, PG 64-22 (D-29)	CU. YD.	20		
43	ITEM 448 - 0" MIN ASPHALT CONCRETE INTERMEDIATE COURSE FOR PAVEMENT RESTORATION, TYPE 2, PG 64-22 (D-29)	CU. YD.	10		
44	ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT (D-23)	SQ YD	115		
45	ITEM 452 - 10" NON-REINFORCED CONCRETE PAVEMENT (D-23)	SQ YD	98		
46	ITEM SPECIAL - SURCHARGE FOR CLASS MS CONCRETE (D-25)	CU. YD.	100		
47	ITEM 609 - CURB, TYPE 6 (DS-13)	FT	207		
48	ITEM 609 - CURB, MISC.: GRANITE CURB RESET (DS-14)	FT	1,280		
<b>SUBTOTAL PAVEMENT - PART 1 - WEST SIXTH STREET:</b>					

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>WATERWORK - PART 1 - WEST SIXTH STREET</b>					
49	ITEM 613 - LOW STRENGTH MORTAR BACKFILL	CU. YD.	50		
50	ITEM SPECIAL - 6" DUCTILE IRON PIPE AND FITTINGS (E-1)	FT	35		
51	ITEM SPECIAL - 8" DUCTILE IRON PIPE AND FITTINGS (E-1)	FT	11		
52	ITEM SPECIAL - 12" DUCTILE IRON PIPE AND FITTINGS (E-1)	FT	11		
53	ITEM SPECIAL - 6" VALVE WITH VALVE BOX COMPLETE (E-4)	EACH	2		
54	ITEM SPECIAL - 10" CUT-IN VALVE ASSEMBLY COMPLETE WITH VALVE BOX COMPLETE (E-4)	EACH	1		
55	ITEM SPECIAL - MISCELLANEOUS METAL WORK (E-8)	LB	2,000		
56	ITEM SPECIAL - REMOVE EXISTING HYDRANT (E-12A1)	EACH	2		
57	ITEM SPECIAL - REMOVE EXISTING HYDRANT, EXTEND HYDRANT BRANCH, AND RESET EXISTING HYDRANT (E-12A2a)	EACH	2		
58	ITEM SPECIAL - LOWER/RAISE EXISTING HYDRANT BRANCH, AND RESET EXISTING HYDRANT (E-12A4)	EACH	1		
59	ITEM SPECIAL - REMOVE EXISTING VALVE AND/OR VALVE BOX (E-12B1)	EACH	8		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
60	ITEM SPECIAL - REMOVE EXISTING VAULT/MANHOLE FRAME AND COVER (E-12B3)	EACH	10		
61	ITEM SPECIAL - ADJUST EXISTING VALVE BOX TO GRADE (E-12C1)	EACH	60		
62	ITEM SPECIAL - ADJUST EXISTING VAULT/MANHOLE FRAME AND COVER TO GRADE (E-12C3)	EACH	8		
63	ITEM SPECIAL - FURNISH AND SETTING 6-INCH HYDRANT (E-17)	EACH	2		
64	ITEM SPECIAL - REMOVE EXISTING VAULT/MANHOLE (DS-15)	EACH	10		
65	ITEM SPECIAL - RECONSTRUCT EXISTING VAULT/MANHOLE FRAME AND COVER TO GRADE (DS-16)	EACH	2		
<b>SUBTOTAL WATERWORK - PART 1 - WEST SIXTH STREET:</b>					
<b>TRAFFIC CONTROL - PART 1 - WEST SIXTH STREET</b>					
66	ITEM 630 - GROUND MOUNTED SUPPORT, NO. 3 POST	FT	162.5		
67	ITEM 630 - ONE WAY SUPPORT, NO. 3 POST	FT	11.5		
68	ITEM 630 - STREET NAME SIGN SUPPORT, NO. 3 POST	FT	25		
69	ITEM 630 - SIGN SUPPORT ASSEMBLY, POLE MOUNTED	EACH	16		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
70	ITEM 630 - SIGN, FLAT SHEET	SQ FT	35.25		
71	ITEM 630 - SIGN, FLAT SHEET (DS-17)	SQ FT	53.0		
72	ITEM 630 - STREET NAME SIGN - 16" (DS-18)	EACH	3		
73	ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	EACH	15		
74	ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	EACH	7		
75	ITEM 630 - REMOVAL OF POLE MOUNTED SIGN AND STORAGE	EACH	36		
76	ITEM 644 - EDGE LINE	MILE	0.05		
77	ITEM 644 - CENTER LINE	MILE	0.23		
78	ITEM 644 - CHANNELIZING LINE	FT	222		
79	ITEM 644 - STOP LINE	FT	131		
80	ITEM 644 - CROSSWALK LINE	FT	634		

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
81	ITEM 644 - TRANSVERSE/DIAGONAL LINE	FT	807		
82	ITEM 644 - LANE ARROW	EACH	9		
	<b>SUBTOTAL TRAFFIC CONTROL - PART 1 - WEST SIXTH STREET:</b>				
	<b>LIGHTING AND ELECTRICAL - PART 1 - WEST SIXTH STREET</b>				
83	ITEM 625 - LIGHT POLE FOUNDATION REMOVED (D-19)	EACH	1		
84	ITEM 625 - LIGHTING, MISC.: PULL BOX REMOVED AND REPLACED (DS-19)	EACH	34		
	<b>SUBTOTAL LIGHTING AND ELECTRICAL - PART 1 - WEST SIXTH STREET:</b>				
	<b>STREETSCAPING - PART 1 - WEST SIXTH STREET</b>				
85	ITEM 625 - 2" CONDUIT, ODOT 725.051 OR ODOT 725.052	FT	708		
86	ITEM 625 - CONDUIT TRENCH	FT	708		
87	ITEM SPECIAL - STREETScape, MISC.: PUBLIC ART FOUNDATION (DS-26)	EACH	2		
88	ITEM SPECIAL - STREETScape, MISC.: TREE PIT (DS-29)	EACH	27		

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
89	ITEM SPECIAL - STREETScape, MISC.: BIKE RACK (DS-32)	EACH	6		
90	ITEM SPECIAL - STREETScape, MISC.: TRASH RECEPTACLE (DS-32)	EACH	6		
91	ITEM SPECIAL - STREETScape, MISC.: BENCH (DS-32)	EACH	14		
92	PUBLIC ART DESIGN, FABRICATION & INSTALLATION (DS-25) - ALLOWANCE <b>100% LOCAL COST</b>	ALLW	1		\$10,000.00
<b>SUBTOTAL STREETScape - PART 1 - WEST SIXTH STREET:</b>					
<b>MAINTENANCE OF TRAFFIC - PART 1 - WEST SIXTH STREET</b>					
93	ITEM 410 - TRAFFIC COMPACTED SURFACE, TYPE B	CU. YD.	10		
94	ITEM 608 - 2" ASPHALT CONCRETE WALK	SQ FT	1,000		
95	ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	CU. YD.	20		
96	ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (DS-22)	HOUR	50		
97	ITEM 616 - WATER	M GAL	1		
<b>SUBTOTAL MAINTENANCE OF TRAFFIC - PART 1 - WEST SIXTH STREET:</b>					

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>MISCELLANEOUS - PART 1 - WEST SIXTH STREET</b>					
98	ITEM 108 - CPM PROGRESS SCHEDULE, AS PER PPN 107	LUMP			
99	ITEM 614 - MAINTAINING TRAFFIC	LUMP			
100	ITEM 614 - MAINTENANCE OF TRAFFIC, MISC.: MAINTENANCE OF PEDESTRIAN TRAFFIC (DS-23)	LUMP			
101	ITEM SPECIAL - PRECONSTRUCTION VIDEO PHOTOGRAPHY (D-36)	LUMP			
102	ITEM SPECIAL - RECORD DRAWINGS (DS-35)	LUMP			
103	ITEM 619 - FIELD OFFICE, TYPE B (D-45 AND DS-33)	MONTH	6		
104	ITEM SPECIAL - MOBILE PHONE (D-45)	MONTH	6		
105	ITEM SPECIAL - COMPUTER EQUIPMENT REMAINING CONTRACTORS (DS-34)	MONTH	6		
106	ITEM 623 - CONSTRUCTION LAYOUT STAKES (D-47)	LUMP			
107	ITEM 624 - MOBILIZATION	LUMP			
108	ITEM SPECIAL - CONCRETE, COMPRESSION, SLUMP, AIR CONTENT, AND TEMPERATURE CHECK SET - FIELD (D-73)	SET	2		

Signature \_\_\_\_\_

Date \_\_\_\_\_



**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
109	ITEM SPECIAL - CONCRETE, COMPRESSION, SLUMP, AIR CONTENT, AND TEMPERATURE CHECK SET - FIELD (D-73)	EACH	2		
110	ITEM SPECIAL - CONCRETE CORE SAMPLE FOR THE DETERMINATION OF CONCRETE COMPRESSIVE STRENGTH (D-73)	EACH	1		
111	ITEM SPECIAL - TECHNICIAN WITH NUCLEAR DENSITY METER (D-73)	HOUR	80		
112	ITEM SPECIAL - ASPHALT DENSITY TEST (D-73)	EACH	5		
113	ITEM SPECIAL - ASPHALT EXTRACTION TEST (D-73)	EACH	5		
114	ITEM SPECIAL - THICKNESS OF COMPACTED ASPHALT TEST (D-73)	EACH	5		
<b>SUBTOTAL MISCELLANEOUS - PART 1 - WEST SIXTH STREET:</b>					
<b>UNOFFICIAL TOTAL - BASE BID - PART 1 - WEST SIXTH STREET (ITEMS 1 THROUGH 114) :</b>					

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>PART 1 - WEST SIXTH STREET, ALTERNATE 1 - ALUMINUM FENCING AT TREE PITS</b>					
	<b>ADD ITEMS</b>				
A1-1	ITEM SPECIAL - STREETScape, MISC.: ORNAMENTAL FENCING FOR TREE PITS PER DS-30	EACH	27		
<b>UNOFFICIAL NET INCREASE FOR PART 1 - WEST SIXTH STREET, ALTERNATE 1:</b>					
<b>UNOFFICIAL TOTAL SUM - PART 1 - WEST SIXTH STREET BASE BID PLUS ALTERNATE 1:</b>					
<b>PART 1 - WEST SIXTH STREET, ALTERNATE 2 - TREE PIT PLANTINGS</b>					
	<b>ADD ITEMS</b>				
A2-1	ITEM SPECIAL - LANDSCAPING, MISC.: TREE PIT PLANTINGS (DS-31)	EACH	27		
<b>UNOFFICIAL NET INCREASE FOR PART 1 - WEST SIXTH STREET, ALTERNATE 2:</b>					
<b>UNOFFICIAL TOTAL SUM - PART 1 - WEST SIXTH STREET BASE BID PLUS ALTERNATE 2:</b>					
<b>UNOFFICIAL TOTAL SUM - PART 1 - WEST SIXTH STREET BASE BID PLUS ALTERNATES 1 AND 2:</b>					

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>ROADWAY - PART 2 - PROFESSOR STREET</b>					
115	ITEM 201 - CLEARING AND GRUBBING	LUMP			
116	ITEM 201 - TREE REMOVED, 9-INCH (D-70)	EACH	17		
117	ITEM 201 - TREE REMOVED, 15-INCH (D-70)	EACH	2		
118	ITEM 202 - PAVEMENT REMOVED - BRICK BASE (D-15)	SQ. YD.	1,634		
119	ITEM 202 - PAVEMENT REMOVED - DRIVEWAYS (D-15)	SQ. YD.	106		
120	ITEM 202 - WALK REMOVED	SQ FT	16,593		
121	ITEM 202 - CURB REMOVED	FT	1,590		
122	ITEM 202 - CATCH BASIN REMOVED	EACH	9		
123	ITEM 202 - REMOVAL, MISC.: TREE PIT FRAME AND GRATE (DS-3)	EACH	6		
124	ITEM 202 - REMOVAL, MISC.: CURBED TREE PIT (DS-4)	EACH	11		
125	ITEM 202 - REMOVAL, MISC.: BENCH (DS-5)	EACH	1		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
126	ITEM 202 - REMOVAL, MISC.: TRASH CAN (DS-5)	EACH	1		
127	ITEM 202 - REMOVAL, MISC.: BIKE RACK (DS-5)	EACH	2		
128	ITEM 202 - REMOVAL, MISC.: TRACK REMOVED (D-17)	SQ YD	200		
129	ITEM 203 - EXCAVATION	CU. YD.	267		
130	ITEM 203 - EMBANKMENT	CU. YD.	487		
131	ITEM 204 - SUBGRADE COMPACTION	SQ. YD.	581		
132	ITEM 204 - SUBGRADE COMPACTION FOR TRACK REMOVAL	SQ. YD.	200		
133	ITEM 604 - MONUMENT ASSEMBLY (D-40)	EACH	5		
134	ITEM 604 - MONUMENT BOX ADJUSTED TO GRADE (D-41)	EACH	1		
135	ITEM 608 - 6" CONCRETE WALK (D-23 AND DS-7)	SQ FT	9,420		
136	ITEM 608 - 6" CONCRETE WALK, SCORING PATTERN PER PLAN (D-23 AND DS-7)	SQ FT	6,780		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
137	ITEM SPECIAL - CURB RAMP WITH TILE, INCLUDING LAYOUT (D-23, D-27, AND DS-8)	CORNER	16		
138	ITEM SPECIAL - BIORETENTION CELL (DS-6)	SQ YD	220		
<b>SUBTOTAL ROADWAY - PART 2 - PROFESSOR STREET:</b>					
<b>EROSION CONTROL - PART 2 - PROFESSOR STREET</b>					
139	ITEM 653 - TOPSOIL FURNISHED AND PLACED	CU. YD.	103		
140	ITEM 659 - COMMERCIAL FERTILIZER (D-68)	TON	0		
141	ITEM 659 - LIME	ACRE	0		
142	ITEM 659 - WATER (D-67)	M GAL	4		
143	ITEM 660 - SODDING, UNSTAKED	SQ YD	877		
144	ITEM 832 - EROSION CONTROL	LUMP			
<b>SUBTOTAL EROSION CONTROL - PART 2 - PROFESSOR STREET:</b>					

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>DRAINAGE - PART 2 - PROFESSOR STREET</b>					
145	ITEM 603 - 12" CONDUIT, TYPE B, 706.08 (ES)	FT	523		
146	ITEM 603 - 15" CONDUIT, TYPE B, 706.08 (ES)	FT	28		
147	ITEM 604 - 2-2B CATCH BASIN WITH SUMP (D-34)	EACH	1		
148	ITEM 604 - 2-2B CATCH BASIN WITH SUMP AND TRAP (D-34 AND DS-9)	EACH	12		
149	ITEM 604 - CATCH BASIN, CLEVELAND NO. 1 (D-34)	EACH	3		
150	ITEM 604 - INLET BASIN WITH SUMP (D-34)	EACH	2		
151	ITEM 604 - MANHOLE, CITY OF CLEVELAND NO. 1	EACH	1		
152	ITEM 604 - MANHOLE ADJUSTED TO GRADE (D-39)	EACH	5		
153	ITEM 604 - MISCELLANEOUS METAL (D-72)	LB	5,000		
154	ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAIN, 706.08, 707.32, OR 707.41 (D-42 AND DS-10)	FT	1,000		
<b>SUBTOTAL DRAINAGE - PART 2 - PROFESSOR STREET:</b>					

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>PAVEMENT - PART 2 - PROFESSOR STREET</b>					
155	ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (DS-5)	SQ YD	3,598		
156	ITEM 304 - 6" MIN. AGGREGATE BASE	CU. YD.	62		
157	ITEM 304 - 6" MIN. AGGREGATE BASE FOR TRACK REMOVAL	CU. YD.	35		
158	ITEM 304 - 6" MIN. AGGREGATE BASE FOR PAVEMENT RESTORATION	CU. YD.	30		
159	ITEM 305 - 9" MIN. CONCRETE BASE (D-23)	CU. YD.	142		
160	ITEM 305 - 9" MIN. CONCRETE BASE FOR TRACK REMOVAL (D-23)	CU. YD.	85		
161	ITEM 305 - 9" MIN. CONCRETE BASE FOR PAVEMENT RESTORATION (D-23)	CU. YD.	75		
162	ITEM 407 - TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE (DS-12)	GAL.	367		
163	ITEM 407 - TACK COAT, TRACKLESS TACK, SURFACE COURSE (DS-12)	GAL.	184		
164	ITEM 448 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22 (D-29)	SQ YD	3,665		
165	ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22 (D-29)	CU. YD.	189		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
166	ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE FOR PAVEMENT RESTORATION, TYPE 1, PG 64-22 (D-29)	CU. YD.	5		
167	ITEM 452 - 6" NON-REINFORCED CONCRETE PAVEMENT (D-23)	SQ YD	70		
168	ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT (D-23)	SQ YD	144		
169	ITEM SPECIAL - SURCHARGE FOR CLASS MS CONCRETE (D-25)	CU. YD.	100		
170	ITEM 609 - CURB, TYPE 6 (D-23)	FT	1,753		
<b>SUBTOTAL PAVEMENT - PART 2 - PROFESSOR STREET:</b>					
<b>WATERWORK - PART 2 - PROFESSOR STREET</b>					
171	ITEM SPECIAL - MISCELLANEOUS METAL WORK (E-8)	LB	500		
172	ITEM SPECIAL - LOWER/RAISE EXISTING HYDRANT BRANCH, ADJUST HYDRANT TO GRADE (E-12A4)	EACH	3		
173	ITEM SPECIAL - ADJUST EXISTING VALVE BOX TO GRADE (E-12C1)	EACH	21		
174	ITEM SPECIAL - ADJUST EXISTING CURB SHUT-OFF BOX TO GRADE (E-12C2)	EACH	7		
175	ITEM SPECIAL - ADJUST EXISTING VAULT/MANHOLE FRAME AND COVER TO GRADE (E-12C3)	EACH	5		

Signature \_\_\_\_\_

Date \_\_\_\_\_



**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
176	ITEM SPECIAL - GENERAL SUPPLY CONNECTION RAISED/LOWERED AND/OR EXTENDED OR REPLACED (E-13A1-3)	EACH	5		
177	ITEM SPECIAL - RECONSTRUCT EXISTING VAULT/MANHOLE FRAME AND COVER TO GRADE (DS-16)	EACH	2		
<b>SUBTOTAL WATERWORK - PART 2 - PROFESSOR STREET:</b>					
<b>TRAFFIC CONTROL - PART 2 - PROFESSOR STREET</b>					
178	ITEM 630 - GROUND MOUNTED SUPPORT, NO. 3 POST	FT	505		
179	ITEM 630 - SIGN SUPPORT ASSEMBLY, POLE MOUNTED	EACH	14		
180	ITEM 630 - SIGN, FLAT SHEET	SQ FT	79		
181	ITEM 630 - SIGN, FLAT SHEET (DS-17)	SQ FT	53		
182	ITEM 630 - STREET NAME SIGN - 12" (DS-18)	EACH	14		
183	ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	EACH	27		
184	ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	EACH	20		
185	ITEM 630 - REMOVAL OF POLE MOUNTED SIGN AND STORAGE	EACH	41		

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
186	ITEM 644 - STOP LINE	FT	230		
187	ITEM 644 - CROSSWALK LINE	FT	958		
<b>SUBTOTAL TRAFFIC CONTROL - PART 2 - PROFESSOR STREET:</b>					
<b>STREETSCAPING - PART 2 - PROFESSOR STREET</b>					
188	ITEM SPECIAL - PATTERNED CROSSWALKS AS PER PLAN (DS-33)	SQ FT	2,176		
189	FABRICATION AND INSTALLATION OF PUBLIC ART (DS-28)	LUMP			
190	PUBLIC ART DESIGN (DS-27) - ALLOWANCE <b>100% LOCAL COST</b>	ALLW			<b>\$10,000.00</b>
<b>SUBTOTAL STREETSCAPING - PART 2 - PROFESSOR STREET:</b>					
<b>LANDSCAPING - PART 2 - PROFESSOR STREET</b>					
191	ITEM SPECIAL - LANDSCAPING, MISC.: PROFESSOR STREET AND WEST TENTH STREET INTERSECTION LANDSCAPING (DS-31)	LUMP			
192	ITEM SPECIAL - LANDSCAPING, MISC.: PROFESSOR STREET AND LITERARY AVENUE INTERSECTION LANDSCAPING (DS-31)	LUMP			
193	ITEM SPECIAL - LANDSCAPING, MISC.: PROFESSOR STREET AND COLLEGE AVENUE INTERSECTION LANDSCAPING (DS-31)	LUMP			

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
194	ITEM SPECIAL - LANDSCAPING, MISC.: PROFESSOR STREET AND JEFFERSON AVENUE INTERSECTION LANDSCAPING (DS-31)	LUMP			
<b>SUBTOTAL LANDSCAPING - PART 2 - PROFESSOR STREET:</b>					
<b>MAINTENANCE OF TRAFFIC - PART 2 - PROFESSOR STREET</b>					
195	ITEM 410 - TRAFFIC COMPACTED SURFACE, TYPE A OR B	CU. YD.	10		
196	ITEM 608 - 2" ASPHALT CONCRETE WALK	SQ FT	1,000		
197	ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	CU. YD.	20		
198	ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION (DS-22)	HOUR	15		
199	ITEM 616 - WATER	M GAL	1		
<b>SUBTOTAL MAINTENANCE OF TRAFFIC - PART 2 - PROFESSOR STREET:</b>					
<b>MISCELLANEOUS - PART 2 - PROFESSOR STREET</b>					
200	ITEM 108 - CPM PROGRESS SCHEDULE PER PN 107 (DS-39)	LUMP			
201	ITEM 614 - MAINTAINING TRAFFIC	LUMP			

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
202	ITEM 614 - MAINTENANCE OF TRAFFIC, MISC.: MAINTENANCE OF PEDESTRIAN TRAFFIC (DS-23)	LUMP			
203	ITEM SPECIAL - PRECONSTRUCTION VIDEO PHOTOGRAPHY (D-36)	LUMP			
204	ITEM SPECIAL - RECORD DRAWINGS (DS-35)	LUMP			
205	ITEM 619 - FIELD OFFICE, TYPE B (D-45 AND DS-33)	MONTH	6		
206	ITEM SPECIAL - MOBILE PHONE (D-45)	MONTH	6		
207	ITEM SPECIAL - COMPUTER EQUIPMENT REMAINING CONTRACTORS (DS-34)	MONTH	6		
208	ITEM 623 - CONSTRUCTION LAYOUT STAKES (D-47)	LUMP			
209	ITEM 624 - MOBILIZATION	LUMP			
210	ITEM SPECIAL - CONCRETE, COMPRESSION, SLUMP, AIR CONTENT, AND TEMPERATURE CHECK SET - FIELD (D-73)	SET	2		
211	ITEM SPECIAL - CONCRETE, COMPRESSION, SLUMP, AIR CONTENT, AND TEMPERATURE CHECK SET - FIELD (D-73)	EACH	2		
212	ITEM SPECIAL - CONCRETE CORE SAMPLE FOR THE DETERMINATION OF CONCRETE COMPRESSIVE STRENGTH (D-73)	EACH	1		

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

<b>REF. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>TOTAL QUANTITY</b>	<b>UNIT COST</b>	<b>ITEM TOTAL</b>
213	ITEM SPECIAL - TECHNICIAN WITH NUCLEAR DENSITY METER (D-73)	HOUR	80		
214	ITEM SPECIAL - ASPHALT DENSITY TEST (D-73)	EACH	5		
215	ITEM SPECIAL - ASPHALT EXTRACTION TEST (D-73)	EACH	5		
216	ITEM SPECIAL - THICKNESS OF COMPACTED ASPHALT TEST (D-73)	EACH	5		
	<b>SUBTOTAL MISCELLANEOUS - PART 2 - PROFESSOR STREET:</b>				
	<b>UNOFFICIAL TOTAL - BASE BID- PART 2 - PROFESSOR STREET (ITEMS 110 THROUGH 216):</b>				

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
<b>PART 2 - PROFESSOR STREET - ALTERNATE 1 - STAMPED AND COLORED CONCRETE SIDEWALKS</b>					
<b>ADD ITEMS</b>					
A1-1	ITEM 608 - WALKWAY, MISC.: INTEGRALLY COLORED AND STAMPED CONCRETE SIDEWALK (DS-24)	SQ FT	7,450		
A1-2	ITEM 608, 6" CONCRETE WALK, RADIAL SCORING PATTERN PER PLAN (D-23 AND DS-7)	SQ FT	3,490		
A1-3	ITEM 608, 6" CONCRETE WALK (D-23 AND DS-7)	SQ FT	5,260		
<b>DEDUCT ITEMS (WITH BASE BID)</b>					
A1-4	ITEM 608 - 6" CONCRETE WALK (D-23 AND DS-7)	SQ FT	9,420		
A1-5	ITEM 608, 6" CONCRETE WALK, SCORING PATTERN PER PLAN (D-23 AND DS-7)	SQ FT	6,780		
<b>UNOFFICIAL NET INCREASE / DECREASE FOR PART 2 - PROFESSOR STREET - ALTERNATE 1:</b>					
<b>UNOFFICIAL TOTAL SUM - PART 2 - PROFESSOR STREET BASE BID PLUS ALTERNATE 1:</b>					
<b>PART 2 - PROFESSOR STREET - ALTERNATE 2 - PATTERNED CROSSWALKS</b>					
<b>ADD ITEMS</b>					
A2-1	ITEM SPECIAL , PATTERNED CROSSWALK PAINTING PER PLAN (DS-33)	SQ FT	2,176		

**CITY OF CLEVELAND, MAYOR'S OFFICE OF CAPITAL PROJECTS, DIVISION OF ENGINEERING AND CONSTRUCTION**

**CUY-WEST SIXTH STREET STREETScape, PART 1; CUY-PROFESSOR STREET INTERSECTIONS, PART 2**

**SCHEDULE OF ITEMS**

REF. NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	ITEM TOTAL
	<b>UNOFFICIAL NET INCREASE / DECREASE FOR PART 2 - PROFESSOR STREET - ALTERNATE 2:</b>				
	<b>UNOFFICIAL TOTAL SUM - PART 2 BASE BID PLUS ALTERNATE 2:</b>				
	<b>UNOFFICIAL TOTAL SUM - PART 2 BASE BID PLUS ALTERNATES 1 AND 2:</b>				
	<b>UNOFFICIAL TOTAL SUM FOR BASE BID (ITEMS 1 THROUGH 216):</b>				
	<b>UNOFFICIAL TOTAL SUM FOR BASE BID (ITEMS 1 THROUGH 216) PLUS ALL ALTERNATES:</b>				

The amount of the Bid Bond or Cashier's Check required of all bidders under Section A-7 and the amount of the surety bond required of the successful bidder under Section 19, shall be based upon the dollar figure immediately above. This figure shall also be used to determine the percentage of CSB. This dollar figure shall be used to determine the lowest responsible bidder and shall be the contract dollars. In the event that an alternate bid is awarded, the percentage of CSB participation shall be based on the total contract price. The City of Cleveland reserves the right to award either or both parts of this project and to award alternate to either or both parts and to non-perform individual items as seen fit, based on available funding.

Signature \_\_\_\_\_

Date \_\_\_\_\_

# Document 00 61 13 - Performance and Payment Bond Form

Ohio Department of Administrative Services

General Services Division

State Architect's Office • 4200 Surface Road • Columbus, Ohio 43228-1395

**OhioDAS**

www.ohio.gov/sao

e: StateArchOff@das.state.oh.us

v: 614.466.4761 • f: 614.644.7982

## **PERFORMANCE AND PAYMENT BOND** (As prescribed by Ohio Revised Code Section 153.57)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned

\_\_\_\_\_, as Principal, at \_\_\_\_\_

\_\_\_\_\_ (Address)

and \_\_\_\_\_ as Surety, are hereby held and firmly

bound unto the State of Ohio, as Obligee, in the penal sum of \_\_\_\_\_ dollars, for the payment of which well and truly to be made, we jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns to undertake the Project known as:

Project No: \_\_\_\_\_

Project Name: \_\_\_\_\_

Contract: \_\_\_\_\_

SIGNED AND SEALED this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal did on the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, enter into a Contract with the State of Ohio, which said Contract is made a part of this Bond the same as though set forth herein;

NOW, THEREFORE, if the above-named Principal shall well and faithfully do and perform the things agreed by the Obligee to be done and performed according to the terms of said Contract; and shall pay all lawful claims of Subcontractors, Material Suppliers, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said Contract; we agreeing and assenting that this undertaking shall be for the benefit of any Subcontractor, Material Supplier or laborer having a just claim as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of said Contract or in or to the Plans and Specifications therefore shall in any way affect the obligations of said Surety on its bond, and it does hereby waive notice of any such modifications, omissions or additions in or to the terms of the Contract, the Work or the Contract Documents, including without limitation the Plans and Specifications.



State Architect's Office

---

PRINCIPAL:

\_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

SURETY: \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_  
Attorney-in-Fact

SURETY INFORMATION:

\_\_\_\_\_  
Street

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Telephone Number

SURETY AGENT'S INFORMATION:

\_\_\_\_\_  
Agency Name

\_\_\_\_\_  
Street

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Telephone Number

**END OF DOCUMENT**