

BID PROPOSAL INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals are potential bidding proposals. Each proposal contains all certifications and affidavits, a proposal signature sheet and a proposal bid bond.

PREQUALIFICATION

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later than 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

WHO CAN BID ?

Bids will be accepted from only those companies that request and receive written Authorization to Bid from IDOT's Central Bureau of Construction.

REQUESTS FOR AUTHORIZATION TO BID

Contractors wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124) and the ORIGINAL "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?

When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status"(BDE 124) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued an **Authorization to Bid or Not for Bid Report**, approved by the Central Bureau of Construction and the Chief Procurement Officer that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Authorization to Bid or Not for Bid Report** will indicate the reason for denial.

ABOUT AUTHORIZATION TO BID

Firms that have not received an Authorization to Bid or Not For Bid Report within a reasonable time of complete and correct original document submittal should contact the Department as to the status. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions.

ADDENDA AND REVISIONS

It is the bidder's responsibility to determine which, if any, addenda or revisions pertain to any project they may be bidding. Failure to incorporate all relevant addenda or revisions may cause the bid to be declared unacceptable.

Each addendum or revision will be included with the Electronic Plans and Proposals. Addenda and revisions will also be placed on the Addendum/Revision Checklist and each subscription service subscriber will be notified by e-mail of each addendum and revision issued.

The Internet is the Department's primary way of doing business. The subscription service emails are an added courtesy the Department provides. It is suggested that bidders check IDOT's website at <http://www.idot.illinois.gov/doing-business/procurements/construction-services/construction-bulletins/transportation-bulletin/index#TransportationBulletin> before submitting final bid information.

IDOT IS NOT RESPONSIBLE FOR ANY E-MAIL FAILURES.

Addenda questions may be directed to the Contracts Office at (217)782-7806 or DOT.DE-Contracts@Illinois.gov

Technical questions about downloading these files may be directed to Tim Garman at (217)524-1642 or Timothy.Garman@illinois.gov.

STANDARD GUIDELINES FOR SUBMITTING PAPER BIDS

- All pages should be single sided.
- Use the Cover Page that is provided in the Bid Proposal (posted on the IDOT Web Site) as the first page of your submitted bid. It has the item number in large bold type in the upper left-hand corner and lines provided for your company name and address in the upper right-hand corner.
- Do not use report covers, presentation folders or special bindings and do not staple multiple times on left side like a book. Use only 1 staple in the upper left hand corner. Make sure all elements of your bid are stapled together including the bid bond or guaranty check (if required).
- **Do not include any certificates of eligibility, your authorization to bid, Addendum Letters or affidavit of availability.**
- Do not include the Subcontractor Documentation with your bid (pages i – iii and pages a – g). This documentation is required only if you are awarded the project.
- Use the envelope cover sheet (provided with the proposal) as the cover for the proposal envelope.
- Do not rely on overnight services to deliver your proposal prior to 10 AM on letting day. It will not be read if it is delivered after 10 AM.
- Do not submit your Substance Abuse Prevention Program (SAPP) with your bid. If you are awarded the contract this form is to be submitted to the district engineer at the pre-construction conference.

BID SUBMITTAL CHECKLIST

- Cover page** (the sheet that has the item number on it) – This should be the first page of your bid proposal, **followed by your bid (the Schedule of Prices/Pay Items)**. If you are using special software or CBID to generate your schedule of prices, do not include the blank pages of the schedule of prices that came with the proposal package.
- Page 4 (Item 9)** – Check “YES” if you will use a subcontractor(s) with an annual value over \$50,000. Include the subcontractor(s) name, address, general type of work to be performed and the dollar amount. If you will use subcontractor(s) but are uncertain who or the dollar amount; check “YES” but leave the lines blank.
- After page 4** – Insert the following documents: Cost Adjustments for Steel, Bituminous and Fuel (if applicable) and the Contractor Letter of Assent (if applicable). The general rule should be, if you don’t know where it goes, put it after page 4.
- Page 10 (Paragraph J)** – Check “YES” or “NO” whether your company has any business in Iran.
- Page 10 (Paragraph K)** – (Not applicable to federally funded projects) List the name of the apprenticeship and training program sponsor holding the certificate of registration from the US Department of Labor. If no applicable program exists, please indicate the work/job category. **Do not include certificates with your bid.** Keep the certificates in your office in case they are requested by IDOT.
- Page 11 (Paragraph L)** – Your State Board of Elections certificate of registration is no longer required with your bid.
- Page 11 (Paragraph M)** – Indicate if your company has hired a lobbyist in connection with the job for which you are submitting the bid proposal.
- Page 12 (Paragraph C)** – This is a work sheet to determine if a completed Form A is required. It is not part of the form and you do not need to make copies for each completed Form A.
- Pages 14-17 (Form A)** – One Form A (4 pages) is required for each applicable person in your company. Copies of the forms can be used and only need to be changed when the information changes. The certification signature and date must be original for each letting. **Do not staple the forms together.** If you answered “NO” to all of the questions in Paragraph C (page 12), complete the first section (page 14) with your company information and then sign and date the Not Applicable statement on page 17.
- Page 18 (Form B)** - If you check “YES” to having other current or pending contracts it is acceptable to use the phrase, “See Affidavit of Availability on file”. **Ownership Certification** (at the bottom of the page) - Check N/A if the Form A(s) you submitted accounts for 100 percent of the company ownership. Check YES if any percentage of ownership falls outside of the parameters that require reporting on the Form A. Checking NO indicates that the Form A(s) you submitted is not correct and you will be required to submit a revised Form A.
- Page 20 (Workforce Projection)** – Be sure to include the Duration of the Project. It is acceptable to use the phrase “Per Contract Specifications”.

- Proposal Bid Bond** – (Insert after the proposal signature page) Submit your Proposal Bid Bond (if applicable) using the current Proposal Bid Bond form provided in the proposal package. The Power of Attorney page should be stapled to the Proposal Bid Bond. If you are using an electronic bond, include your bid bond number on the Proposal Bid Bond and attach the Proof of Insurance printed from the Surety’s Web Site.
- Disadvantaged Business Utilization Plan and/or Good Faith Effort – Do Not Submit with Bid** The bidder shall submit a Disadvantaged Business Utilization Plan on completed Department forms SBE 2025 and 2026. (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting. (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to DOT.DBE.UP@illinois.gov or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation
 Bureau of Small Business Enterprises
 Contract Compliance Section
 2300 South Dirksen Parkway, Room 319
 Springfield, Illinois 62764

The Bid Letting is now available in streaming Audio/Video from the IDOT Web Site. A link to the stream will be placed on the main page of the current letting on the day of the Letting. The stream will not begin until 10 AM.

Following the Letting, the As-Read Tabulation of Bids will be posted by the end of the day. You will find the link on the main Web page for the current letting.

QUESTIONS: pre-letting up to execution of the contract

Contractor pre-qualification	217-782-3413
Small Business, Disadvantaged Business Enterprise (DBE)	217-785-4611
Contracts, Bids, Letting process or Internet downloads	217-782-7806
Estimates Unit.....	217-785-3483
Aeronautics.....	217-785-8515
IDNR (Land Reclamation, Water Resources, Natural Resources).....	217-782-6302

QUESTIONS: following contract execution

Subcontractor documentation, payments	217-782-3413
Railroad Insurance	217-785-0275

150

RETURN WITH BID

Proposal Submitted By
Name
Address
City

Letting January 20, 2017

NOTICE TO PROSPECTIVE BIDDERS

This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL

Notice to Bidders, Specifications, Proposal, Contract and Contract Bond



**Illinois Department
of Transportation**

Springfield, Illinois 62764

Contract No. 61D08
WILL County
Section 10-00056-00-PK (Romeoville)
Route FAU 282 (135th Street)
Project TE-CMM-9003(600)
District 1 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included
- An Annual Bid Bond is included or is on file with IDOT.

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)

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RETURN WITH BID



PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

Taxpayer Identification Number (Mandatory) _____

For the improvement identified and advertised for bids in the Invitation for Bids as:

**Contract No. 61D08
WILL County
Section 10-00056-00-PK (Romeoville)
Project TE-CMM-9003(600)
Route FAU 282 (135th Street)
District 1 Construction Funds**

**Construction of an access road, parking lot, pedestrian path, commuter train platforms and shelter,
located at the southwest corner of 135th Street and New Avenue in the Village of Romeoville.**

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents will govern performance and payments.

RETURN WITH BID

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned bidder further declares that he/she has carefully examined the proposal, plans, specifications, addenda form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this bid proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned bidder further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, or as specified in the special provisions, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

<u>Amount of Bid</u>		<u>Proposal Guaranty</u>	<u>Amount of Bid</u>		<u>Proposal Guaranty</u>	
Up to	\$5,000	\$150	\$2,000,000	to	\$3,000,000	\$100,000
\$5,000	to \$10,000	\$300	\$3,000,000	to	\$5,000,000	\$150,000
\$10,000	to \$50,000	\$1,000	\$5,000,000	to	\$7,500,000	\$250,000
\$50,000	to \$100,000	\$3,000	\$7,500,000	to	\$10,000,000	\$400,000
\$100,000	to \$150,000	\$5,000	\$10,000,000	to	\$15,000,000	\$500,000
\$150,000	to \$250,000	\$7,500	\$15,000,000	to	\$20,000,000	\$600,000
\$250,000	to \$500,000	\$12,500	\$20,000,000	to	\$25,000,000	\$700,000
\$500,000	to \$1,000,000	\$25,000	\$25,000,000	to	\$30,000,000	\$800,000
\$1,000,000	to \$1,500,000	\$50,000	\$30,000,000	to	\$35,000,000	\$900,000
\$1,500,000	to \$2,000,000	\$75,000	over		\$35,000,000	\$1,000,000

Bank cashier's checks or properly certified checks accompanying bid proposals will be made payable to the Treasurer, State of Illinois.

If a combination bid is submitted, the proposal guaranties which accompany the individual bid proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ \$(_____). If this proposal is accepted and the undersigned will fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty will become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond will become void or the proposal guaranty check will be returned to the undersigned.

Attach Cashier's Check or Certified Check Here

In the event that one proposal guaranty check is intended to cover two or more bid proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual bid proposal. If the guaranty check is placed in another bid proposal, state below where it may be found.

The proposal guaranty check will be found in the bid proposal for:

Item _____

Section No. _____

County _____

Mark the proposal cover sheet as to the type of proposal guaranty submitted.

RETURN WITH BID

6. **COMBINATION BIDS.** The undersigned bidder further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual contract comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid	
		Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices will govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.
8. **AUTHORITY TO DO BUSINESS IN ILLINOIS.** Section 20-43 of the Illinois Procurement Code (the Code) (30 ILCS 500/20-43) provides that a person (other than an individual acting as a sole proprietor) must be a legal entity authorized to transact business or conduct affairs in the State of Illinois prior to submitting the bid.
9. **EXECUTION OF CONTRACT:** The Department of Transportation will, in accordance with the rules governing Department procurements, execute the contract and shall be the sole entity having the authority to accept performance and make payments under the contract. Execution of the contract by the Chief Procurement Officer (CPO) or the State Purchasing Officer (SPO) is for approval of the procurement process and execution of the contract by the Department. Neither the CPO nor the SPO shall be responsible for administration of the contract or determinations respecting performance or payment there under except as otherwise permitted in the Code.
10. **The services of a subcontractor will be used.**

Check box Yes
 Check box No

For known subcontractors with subcontracts with an annual value of more than \$50,000, the contract shall include their name, address, general type of work to be performed, and the dollar allocation for each subcontractor.
 (30 ILCS 500/20-120)

STATE JOB # - C-91-421-10
 PPS NBR -

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 1
 RUN DATE - 12/09/16
 RUN TIME - 183022

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE		
WILL	197	01	10-00056-00-PK (ROMEDEVILLE)	TE-CMM-9003/600/000	FAU 282		
ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	CENTS	TOTAL PRICE DOLLARS	CTS
XX000959	TRASH RECEPTACLES	EACH	2.000	=			
XX007056	BUILDING	L SUM	1.000	=			
XX007109	LIGHT FIXTURE TYPE A	EACH	10.000	=			
XX007112	LIGHT FIXTURE TYPE B	EACH	4.000	=			
XX008332	FAIR COL MACH SHELTER	L SUM	1.000	=			
XX009020	LUM LED TYPE 3 SPL	EACH	12.000	=			
XX009021	LUM LED TYPE 4 SPL	EACH	14.000	=			
XX009022	LUM LED TYPE 5 SPL	EACH	6.000	=			
XX009156	OVERHEAD PARK NUMBER	L SUM	1.000	=			
X0322924	RETAINING WALL REMOV	SQ FT	10.000	=			
X0323265	REMOVE EXIST RIPRAP	SQ YD	55.000	=			
X0323378	CONC PARKING BLOCKS	EACH	7.000	=			
X0323415	SITE CLEAN-UP	L SUM	1.000	=			
X0327394	HEAT VENTILATION WORK	L SUM	1.000	=			
X0327880	WAYFINDING SIGN SP	L SUM	1.000	=			

FAU 282
 10-00056-00-PK (ROMEDEVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 2
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
X0350805	FOLD DOWN BOLLARDS	EACH	2.000	=			
X5428848	CIP RC END SEC 48 SPL	EACH	2.000	=			
X6640308	CH LK GATES SPL	EACH	1.000	=			
X6640550	CH LK FENCE 4 SPL	FOOT	956.000	=			
X6640570	CH LK FENCE 8 SPL	FOOT	2,847.000	=			
X7010216	TRAF CONT & PROT SPL	L SUM	1.000	=			
X8300001	LIGHT POLE SPECIAL	EACH	4.000	=			
Z0003850	BENCHES	EACH	6.000	=			
Z0033700	LONG JOINT SEALANT	FOOT	1,226.000	=			
Z0048665	RR PROT LIABILITY INS	L SUM	1.000	=			
Z0055905	TEMP CONSTR FENCE	FOOT	500.000	=			
Z0076600	TRAINEES	HOUR	500.000	=	0.80		400.00
Z0076604	TRAINEES TPG	HOUR	500.000	=	15.00		7,500.00
20100500	TREE REMOV ACRES	ACRE	0.250	=			
20200100	EARTH EXCAVATION	CU YD	14,235.000	=			

FAU 282
 10-00056-00-PK (ROMEOVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 3
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
20200200	ROCK EXCAVATION	CU YD	500.000	=			
20201200	REM & DISP UNS MATL	CU YD	250.000	=			
20800150	TRENCH BACKFILL	CU YD	1,347.000	=			
21001000	GEOTECH FAB F/GR STAB	SQ YD	750.000	=			
21101615	TOPSOIL F & P 4	SQ YD	20,170.000	=			
25000210	SEEDING CL 2A	ACRE	3.000	=			
25000310	SEEDING CL 4	ACRE	0.380	=			
25000314	SEEDING CL 4B	ACRE	0.180	=			
25000324	SEEDING CL 5B	ACRE	0.650	=			
25000350	SEEDING CL 7	ACRE	0.600	=			
25000400	NITROGEN FERT NUTR	POUND	380.000	=			
25000500	PHOSPHORUS FERT NUTR	POUND	380.000	=			
25000600	POTASSIUM FERT NUTR	POUND	380.000	=			
25100630	EROSION CONTR BLANKET	SQ YD	20,170.000	=			
28000305	TEMP DITCH CHECKS	FOOT	125.000	=			

FAU 282
 10-00056-00-PK (ROMEDEVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 4
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
28000400	PERIMETER EROS BAR	FOOT	5,095.000				
28000500	INLET & PIPE PROTECT	EACH	8.000				
28000510	INLET FILTERS	EACH	49.000				
28100101	STONE RIPRAP CL A1	SQ YD	80.000				
28100105	STONE RIPRAP CL A3	SQ YD	140.000				
28100107	STONE RIPRAP CL A4	SQ YD	80.000				
28200200	FILTER FABRIC	SQ YD	1,240.000				
30300001	AGG SUBGRADE IMPROVE	CU YD	250.000				
30300112	AGG SUBGRADE IMPR 12	SQ YD	7,900.000				
35101400	AGG BASE CSE B	TON	650.000				
35101600	AGG BASE CSE B 4	SQ YD	1,215.000				
35101800	AGG BASE CSE B 6	SQ YD	2,200.000				
35102200	AGG BASE CSE B 10	SQ YD	5,200.000				
40200800	AGG SURF CSE B	TON	130.000				
40201000	AGGREGATE-TEMP ACCESS	TON	100.000				

FAU 282
 10-00056-00-PK (ROMEDEVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 5
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	CENTS	TOTAL PRICE DOLLARS	CTS
40603080	HMA BC IL-19.0 N50	TON	2,635.000				
40603335	HMA SC "D" N50	TON	1,515.000				
40700100	BIT MATLS TACK CT	POUND	4,100.000				
40800025	BIT MATLS PR CT	POUND	17,615.000				
42000301	PCC PVT 8 JOINTED	SQ YD	195.000				
42400200	PC CONC SIDEWALK 5	SQ FT	9,190.000				
42400800	DETECTABLE WARNINGS	SQ FT	188.000				
44000500	COMB CURB GUTTER REM	FOOT	35.000				
44000600	SIDEWALK REM	SQ FT	1,826.000				
50105220	PIPE CULVERT REMOV	FOOT	42.000				
50901720	BICYCLE RAILING	FOOT	10.000				
542A0220	P CUL CL A 1	FOOT	165.000				
542A0253	P CUL CL A 1	FOOT	172.000				
54213660	PRC FLAR END SEC 15	EACH	8.000				
54213663	PRC FLAR END SEC 18	EACH	1.000				

FAU 282
 10-00056-00-PK (ROMEDEVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 6
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
54213675	PRC FLAR END SEC 30	EACH	1.000				
550A0050	STORM SEW CL A 1 12	FOOT	645.000				
550A0070	STORM SEW CL A 1 15	FOOT	168.000				
550A0090	STORM SEW CL A 1 18	FOOT	62.000				
550A0340	STORM SEW CL A 2 12	FOOT	1,027.000				
550A0360	STORM SEW CL A 2 15	FOOT	362.000				
550A0380	STORM SEW CL A 2 18	FOOT	500.000				
550A0410	STORM SEW CL A 2 24	FOOT	339.000				
550A0430	STORM SEW CL A 2 30	FOOT	329.000				
55100500	STORM SEWER REM 12	FOOT	10.000				
60100060	CONC HDWL FOR P DRAIN	EACH	6.000				
60108200	PIPE UNDERDRAIN 6 SP	FOOT	142.000				
60108206	PIPE UNDERDR T 2 6	FOOT	970.000				
60200105	CB TA 4 DIA T1F OL	EACH	2.000				
60200205	CB TA 4 DIA T1F CL	EACH	4.000				

FAU 282
 10-00056-00-PK (ROMEOVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 7
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
60201105	CB TA 4 DIA T11F&G	EACH	10.000	=			
60201110	CB TA 4 DIA T11V F&G	EACH	14.000	=			
60203905	CB TA 5 DIA T1F CL	EACH	4.000	=			
60206905	CB TC T1F OL	EACH	1.000	=			
60218400	MAN TA 4 DIA T1F CL	EACH	7.000	=			
60221100	MAN TA 5 DIA T1F CL	EACH	1.000	=			
60234200	INLETS TA T1F OL	EACH	3.000	=			
60236800	INLETS TA T11F&G	EACH	4.000	=			
60236825	INLETS TA T11V F&G	EACH	13.000	=			
60250200	CB ADJUST	EACH	1.000	=			
60255500	MAN ADJUST	EACH	1.000	=			
60260100	INLETS ADJUST	EACH	1.000	=			
60500050	REMOV CATCH BAS	EACH	1.000	=			
60603800	COMB CC&G TB6.12	FOOT	6,025.000	=			
66900200	NON SPL WASTE DISPOSL	CU YD	100.000	=			

FAU 282
 10-00056-00-PK (ROMEDEVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 8
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
66900450	SPL WASTE PLNS/REPORT	L SUM	1.000	X			
66900530	SOIL DISPOSAL ANALY	EACH	2.000	X			
67000400	ENGR FIELD OFFICE A	CAL MO	8.000	X			
67100100	MOBILIZATION	L SUM	1.000	X			
72000100	SIGN PANEL T1	SQ FT	72.000	X			
72800100	TELES STL SIN SUPPORT	FOOT	315.000	X			
72900200	METAL POST TY B	FOOT	272.000	X			
78000100	THPL PVT MK LTR & SYM	SQ FT	150.000	X			
78000200	THPL PVT MK LINE 4	FOOT	3,445.000	X			
78000400	THPL PVT MK LINE 6	FOOT	3,025.000	X			
78000600	THPL PVT MK LINE 12	FOOT	680.000	X			
78000650	THPL PVT MK LINE 24	FOOT	26.000	X			
78008250	POLYUREA PM T1 LN 12	FOOT	195.000	X			
80400100	ELECT SERV INSTALL	EACH	3.000	X			
80400200	ELECT UTIL SERV CONN	L SUM	1.000	X			
					12,000		00
						12,000	00

FAU 282
 10-00056-00-PK (ROMEDEVILLE)
 WILL

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT NUMBER - 61D08

ECMS002 DTGECM03 ECMR003 PAGE 9
 RUN DATE - 12/09/16
 RUN TIME - 183022

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
81028170	UNDRGRD C GALVS	FOOT	1,250.000	=			
81028200	UNDRGRD C GALVS	FOOT	570.000	=			
81028320	UNDRGRD C PVC	FOOT	1,455.000	=			
81028750	UNDRGRD C CNC	FOOT	315.000	=			
81400100	HANDHOLE	EACH	2.000	=			
81603090	UD 3#4#6GXLPUSE 1 1/4	FOOT	3,200.000	=			
81702130	EC C XLP USE 1C 6	FOOT	4,320.000	=			
81702410	EC C XLP USE 3-1C 4	FOOT	160.000	=			
81702440	EC C XLP USE 3-1C 1/0	FOOT	300.000	=			
82500350	LT CONT BASEM 240V100	EACH	2.000	=			
83008128	LT P A 40MH 2-8MA	EACH	4.000	=			
83008300	LT P A 40MH 8MA	EACH	6.000	=			
83600200	LIGHT POLE FDN 24D	FOOT	229.000	=			
TOTAL				\$			

NOTE:
 *** PLEASE TURN PAGE FOR IMPORTANT NOTES ***

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.
2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.
3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.
4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

RETURN WITH BID

STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Code establishes the duty of all State CPOs, SPOs, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. Except as otherwise required in subsection III, paragraphs J-M, by execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances have been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for the CPO to void the contract, and may result in the suspension or debarment of the bidder or subcontractor. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

I acknowledge, understand and accept these terms and conditions.

II. ASSURANCES

The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder.

A. Conflicts of Interest

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois State Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois State Toll Highway Authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 calendar days after the officer, member, or employee takes office or is employed. The current salary of the Governor is \$177,412.00. Sixty percent of the salary is \$106,447.20.

RETURN WITH BID

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code. Information concerning the exemption process is available from the Department upon request.

B. Negotiations

Section 50-15. Negotiations.

It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

C. Inducements

Section 50-25. Inducement.

Any person who offers or pays any money or other valuable thing to any person to induce him or her not to provide a submission to a vendor portal or to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract, not making a submission to a vendor portal, or who withholds a bid or submission to a vendor portal in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

D. Revolving Door Prohibition

Section 50-30. Revolving door prohibition.

CPOs, SPOs, procurement compliance monitors, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Reporting Anticompetitive Practices

Section 50-40. Reporting anticompetitive practices.

When, for any reason, any vendor, bidder, contractor, CPO, SPO, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the CPO.

The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid or submission to a vendor portal is submitted.

F. Confidentiality

Section 50-45. Confidentiality.

Any CPO, SPO, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

RETURN WITH BID

G. Insider Information

Section 50-50. Insider information.

It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

I acknowledge, understand and accept these terms and conditions for the above assurances.

III. CERTIFICATIONS

The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

A. Bribery

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government, or subcontracting under such a contract, as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, or which is signatory to the contract which the subcontract relates, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 2012.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50-5.

B. Felons

Section 50-10. Felons.

(a) Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

(b) Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code and every vendor's submission to a vendor portal shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

RETURN WITH BID

C. Debt Delinquency

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

D. Prohibited Bidders, Contractors and Subcontractors

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.

The bidder or contractor or subcontractor, respectively, certifies in accordance with Section 50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

E. Section 42 of the Environmental Protection Act

Section 50-14 Environmental Protection Act violations.

The bidder or contractor or subcontractor, respectively, certifies in accordance with Section 50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

F. Educational Loan

Section 3 of the Educational Loan Default Act, 5 ILCS 385/3.

Pursuant to the Educational Loan Default Act no State agency shall contract with an individual for goods or services if that individual is in default on an educational loan.

The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

G. Bid-Rigging/Bid Rotating

Section 33E-11 of the Criminal Code of 2012, 720 ILCS 5/3BE-11.

(a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article.

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

RETURN WITH BID

H. International Anti-Boycott

Section 5 of the International Anti-Boycott Certification Act provides every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or \$10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

The bidder makes the certification set forth in Section 5 of the Act.

I. Drug Free Workplace

The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

The bidder certifies that if awarded a contract in excess of \$5,000 it will provide a drug free workplace in compliance with the provisions of the Act.

J. Disclosure of Business Operations in Iran

Section 50-36 of the Code provides that each bid, offer, or proposal submitted for a State contract shall include a disclosure of whether or not the Company acting as the bidder, offeror, or proposing entity, or any of its corporate parents or subsidiaries, within the 24 months before submission of the bid, offer, or proposal had business operations that involved contracts with or provision of supplies or services to the Government of Iran, companies in which the Government of Iran has any direct or indirect equity share, consortiums or projects commissioned by the Government of Iran, or companies involved in consortiums or projects commissioned by the Government of Iran and either of the following conditions apply:

- (1) More than 10% of the Company's revenues produced in or assets located in Iran involve oil-related activities or mineral-extraction activities; less than 75% of the Company's revenues produced in or assets located in Iran involve contracts with or provision of oil-related or mineral-extraction products or services to the Government of Iran or a project or consortium created exclusively by that government; and the Company has failed to take substantial action.
- (2) The Company has, on or after August 5, 1996, made an investment of \$20 million or more, or any combination of investments of at least \$10 million each that in the aggregate equals or exceeds \$20 million in any 12-month period, which directly or significantly contributes to the enhancement of Iran's ability to develop petroleum resources of Iran.

The terms "Business operations", "Company", "Mineral-extraction activities", "Oil-related activities", "Petroleum resources", and "Substantial action" are all defined in the Code.

Failure to make the disclosure required by the Code may cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid or awarding the contract. The name of each Company disclosed as doing business or having done business in Iran will be provided to the State Comptroller.

Check the appropriate statement:

Company has no business operations in Iran to disclose.

Company has business operations in Iran as disclosed on the attached document.

RETURN WITH BID

K. Apprenticeship and Training Certification (Does not apply to federal aid projects)

In accordance with the provisions of Section 30-22 (6) of the Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. Applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's forces. Types of work or craft work that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category that does not have an applicable apprenticeship or training program. **The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project as reported on the Construction Employee Workforce Projection (Form BC-1256) and returned with the bid is accounted for and listed.**

Additionally, Section 30-22 of the Code requires that the bidder certify that an Illinois office be maintained as the primary place of employment for persons employed for this contract.

NA-FEDERAL

The requirements of these certifications and disclosures are a material part of the contract, and the contractor shall require these certification provisions to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking, or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract.

RETURN WITH BID

L. Political Contributions and Registration with the State Board of Elections

Sections 20-160 and 50-37 of the Code regulate political contributions from business entities and any affiliated entities or affiliated persons bidding on or contracting with the state. Generally under Section 50-37, any business entity, and any affiliated entity or affiliated person of the business entity, whose current year contracts with all state agencies exceed an awarded value of \$50,000, are prohibited from making any contributions to any political committees established to promote the candidacy of the officeholder responsible for the awarding of the contracts or any other declared candidate for that office for the duration of the term of office of the incumbent officeholder or a period 2 years after the termination of the contract, whichever is longer. Any business entity and affiliated entities or affiliated persons whose state contracts in the current year do not exceed an awarded value of \$50,000, but whose aggregate pending bids and proposals on state contracts exceed \$50,000, either alone or in combination with contracts not exceeding \$50,000, are prohibited from making any political contributions to any political committee established to promote the candidacy of the officeholder responsible for awarding the pending contract during the period beginning on the date the invitation for bids or request for proposals or any other procurement opportunity is issued and ending on the day after the date of award or selection if the entity was not awarded or selected. Section 20-160 requires certification of registration of affected business entities in accordance with procedures found in Section 9-35 of The Election Code.

By submission of a bid, the contractor business entity acknowledges and agrees that it has read and understands Sections 20-160 and 50-37 of the Code, and that it makes the following certification:

The undersigned bidder certifies that it has registered as a business with the State Board of Elections and acknowledges a continuing duty to update the registration in accordance with the above referenced statutes. If the business entity is required to register, the CPO shall verify that it is in compliance on the date the bid or proposal is due. The CPO shall not accept a bid or proposal if the business entity is not in compliance with the registration requirements.

These requirements and compliance with the above referenced statutory sections are a material part of the contract, and any breach thereof shall be cause to void the contract under Section 50-60 of the Code. This provision does not apply to Federal-aid contracts.

M. Lobbyist Disclosure

Section 50-38 of the Code requires that any bidder or offeror on a State contract that hires a person required to register under the Lobbyist Registration Act to assist in obtaining a contract shall:

- (i) Disclose all costs, fees, compensation, reimbursements, and other remunerations paid or to be paid to the lobbyist related to the contract,
- (ii) Not bill or otherwise cause the State of Illinois to pay for any of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration, and
- (iii) Sign a verification certifying that none of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration were billed to the State.

This information, along with all supporting documents, shall be filed with the agency awarding the contract and with the Secretary of State. The CPO shall post this information, together with the contract award notice, in the online Procurement Bulletin.

Pursuant to Subsection (c) of this Section, no person or entity shall retain a person or entity to attempt to influence the outcome of a procurement decision made under the Code for compensation contingent in whole or in part upon the decision or procurement. Any person who violates this subsection is guilty of a business offense and shall be fined not more than \$10,000.

Bidder acknowledges that it is required to disclose the hiring of any person required to register pursuant to the Illinois Lobbyist Registration Act (25 ILCS 170) in connection with this contract.

Bidder has not hired any person required to register pursuant to the Illinois Lobbyist Registration Act in connection with this contract.

Or

Bidder has hired the following persons required to register pursuant to the Illinois Lobbyist Registration Act in connection with the contract:

Name and address of person: _____
All costs, fees, compensation, reimbursements and other remuneration paid to said person: _____

I acknowledge, understand and accept these terms and conditions for the above certifications.

RETURN WITH BID

IV. DISCLOSURES

- A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The bidder further certifies that the Department has received the disclosure forms for each bid.

The CPO may void the bid, or contract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Code provides that all bids of more than \$50,000 and all submissions to a vendor portal shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the contract. Furthermore, pursuant to Section 5-5, the Procurement Policy Board may review a proposal, bid, or contract and issue a recommendation to void a contract or reject a proposal or bid based on any violation of the Code or the existence of a conflict of interest as provided in subsections (b) and (d) of Section 50-35.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each individual making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each individual making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

The current annual salary of the Governor is \$177,412.00.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

C. Disclosure Form Instructions

Form A Instructions for Financial Information & Potential Conflicts of Interest

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on Form A must be signed and dated by an individual that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than 60% of the annual salary of the Governor? YES ___ NO ___
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the bidding entity's or parent entity's distributive income? YES ___ NO ___
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES ___ NO ___

(Note: Only one set of forms needs to be completed per individual per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by an individual that is authorized to execute contracts for your organization. The individual signing can be, but does not have to be, the individual for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT of Form A must be signed and dated by an individual that is authorized to execute contracts for your company.

RETURN WITH BID

Form B: Instructions for Identifying Other Contracts & Procurement Related Information

Disclosure Form B must be completed for each bid submitted by the bidding entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, checked, and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

RETURN WITH BID

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A Financial Information & Potential Conflicts of Interest Disclosure

Contractor Name
Legal Address
City, State, Zip
Telephone Number Email Address Fax Number (if available)

Disclosure of the information contained in this Form is required by Section 50-35 of the Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of \$50,000, and for all open-ended contracts. A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.

The current annual salary of the Governor is \$177,412.00.

DISCLOSURE OF FINANCIAL INFORMATION

- 1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than 60% of the annual salary of the Governor. (Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)

FOR INDIVIDUAL (type or print information)
NAME:
ADDRESS
Type of ownership/distributable income share:
stock sole proprietorship Partnership other: (explain on separate sheet):
% or \$ value of ownership/distributable income share:

- 2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes ___ No ___

If your answer is yes, please answer each of the following questions.

- 1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___ No ___
2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor provide the name the State agency for which you are employed and your annual salary.

RETURN WITH BID

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor? Yes ___ No ___
4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor? Yes ___ No ___

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___ No ___
2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

-
3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess 100% of the annual salary of the Governor? Yes ___ No ___
4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor? Yes ___ No ___

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___ No ___

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___ No ___

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes ___ No ___

RETURN WITH BID

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

3. Communication Disclosure.

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): _____

RETURN WITH BID

4. Suspension or Debarment Disclosure. For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: suspension or debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): _____

Nature of disclosure: _____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.

Completed by: _____ Date _____
Signature of Individual or Authorized Representative

NOT APPLICABLE STATEMENT

Under penalty of perjury, I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

_____ Date _____
Signature of Authorized Representative

The bidder has a continuing obligation to supplement these disclosures under Sec. 50-35 of the Code.

RETURN WITH BID

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B Other Contracts & Financial Related Information Disclosure

Contractor Name, Legal Address, City, State, Zip, Telephone Number, Email Address, Fax Number (if available)

Disclosure of the information contained in this Form is required by Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for all bids.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No ___ If "No" is checked, the bidder only needs to complete the signature box on this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE CHECKED

Signature of Authorized Representative, Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership.

Any remaining ownership interest is held by individuals receiving less than \$106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

Yes No N/A (Form A disclosure(s) established 100% ownership)

RETURN WITH BID

SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights Act are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

- (a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.
- (b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Title 44, Illinois Administrative Code, Section 750.120. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.
- (c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

**Contract No. 61D08
WILL County
Section 10-00056-00-PK (Romeoville)
Project TE-CMM-9003(600)
Route FAU 282 (135th Street)
District 1 Construction Funds**

PART II. WORKFORCE PROJECTION - continued

- B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

- C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

- A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Illinois Department of Human Rights**.
- B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____

Telephone Number _____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: _____ Title: _____ Date: _____

Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.

Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.

Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.

Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

RETURN WITH BID

ADDITIONAL FEDERAL REQUIREMENTS

In addition to the Required Contract Provisions for Federal-Aid Construction Contracts (FHWA 1273), all bidders make the following certifications.

- A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.
- B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:
1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES _____ NO _____
 2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES _____ NO _____

RETURN WITH BID

**Contract No. 61D08
WILL County
Section 10-00056-00-PK (Romeoville)
Project TE-CMM-9003(600)
Route FAU 282 (135th Street)
District 1 Construction Funds**

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL)

Firm Name _____
Signature of Owner _____
Business Address _____

(IF A CO-PARTNERSHIP)

Firm Name _____
By _____
Business Address _____
Name and Address of All Members of the Firm: _____

(IF A CORPORATION)

Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW)

Attest _____
Signature _____
Business Address _____

(IF A JOINT VENTURE)

Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____

Attest _____
Signature _____
Business Address _____

If more than two parties are in the joint venture, please attach an additional signature sheet.



This Annual Proposal Bid Bond shall become effective at 12:01 AM (CDST) on _____ and shall be valid until _____ 11:59 PM (CDST).

KNOW ALL PERSONS BY THESE PRESENTS, That We _____

as PRINCIPAL, and _____

as SURETY, and held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in the bid proposal under "Proposal Guaranty" in effect on the date of the Invitation for Bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that whereas, the PRINCIPAL may submit bid proposal(s) to the STATE OF ILLINOIS, acting through the Department of Transportation, for various improvements published in the Transportation Bulletin during the effective term indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal(s) of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL has caused this instrument to be signed by its officer _____ day of _____ A.D., _____

In TESTIMONY WHEREOF, the said SURETY has caused this instrument to be signed by its officer _____ day of _____ A.D., _____

(Company Name)

(Company Name)

By _____
(Signature and Title)

By _____
(Signature of Attorney-in-Fact)

Notary for PRINCIPAL

Notary for SURETY

STATE OF _____
COUNTY OF _____

STATE OF _____
COUNTY OF _____

Signed and attested before me on _____ (date)

Signed and attested before me on _____ (date)

by _____
(Name of Notary Public)

by _____
(Name of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Date Commission Expires)

(Date Commission Expires)

In lieu of completing the above section of the Annual Proposal Bid Bond form, the Principal may file an Electronic Bid Bond. By signing the proposal(s) the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID #	Company/Bidder Name	Signature and Title
--------------------------	---------------------	---------------------

This bond may be terminated, at Surety's request, upon giving not less than thirty (30) days prior written notice of the cancellation/termination of the bond. Said written notice shall be issued to the Illinois Department of Transportation, Chief Contracts Official, 2300 South Dirksen Parkway, Springfield, Illinois, 62764, and shall be served in person, by receipted courier delivery or certified or registered mail, return receipt requested. Said notice period shall commence on the first calendar day following the Department's receipt of written cancellation/termination notice. Surety shall remain firmly bound to all obligations herein for proposals submitted prior to the cancellation/termination. Surety shall be released and discharged from any obligation(s) for proposals submitted for any letting or date after the effective date of cancellation/termination.



Item No. _____

Letting Date _____

KNOW ALL PERSONS BY THESE PRESENTS, That We _____

as PRINCIPAL, and _____

as SURETY, and held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in the bid proposal under "Proposal Guaranty" in effect on the date of the Invitation for Bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL has caused this instrument to be signed by its officer
_____ day of _____ A.D., _____

In TESTIMONY WHEREOF, the said SURETY has caused this instrument to be signed by its officer
_____ day of _____ A.D., _____

(Company Name)

(Company Name)

By _____
(Signature and Title)

By _____
(Signature of Attorney-in-Fact)

Notary for PRINCIPAL

Notary for SURETY

STATE OF _____
COUNTY OF _____

STATE OF _____
COUNTY OF _____

Signed and attested before me on _____ (date)
by _____

Signed and attested before me on _____ (date)
by _____

(Name of Notary Public)

(Name of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Date Commission Expires)

(Date Commission Expires)

In lieu of completing the above section of the Proposal Bid Bond form, the Principal may file an Electronic Bid Bond. By signing the proposal the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID # _____ Company/Bidder Name _____ Signature and Title _____

(1) Policy

It is public policy that disadvantageded businesses as defined in 49 CFR Part 26 and the Special Provision shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal or State funds. Consequently the requirements of 49 CFR Part 26 apply to this contract.

(2) Obligation

The contractor agrees to ensure that disadvantageded businesses as defined in 49 CFR Part 26 and the Special Provision have the maximum opportunity to participate in the performance of contracts or subcontracts financed in whole or in part with Federal or State funds. The contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 and the Special Provision to ensure that said businesses have the maximum opportunity to compete for and perform under this contract. The contractor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts.

(3) Project and Bid Identification

Complete the following information concerning the project and bid:

Route _____	Total Bid _____
Section _____	Contract DBE Goal _____ (Percent) _____ (Dollar Amount)
Project _____	
County _____	
Letting Date _____	
Contract No. _____	
Letting Item No. _____	

(4) Assurance

I, acting in my capacity as an officer of the undersigned bidder (or bidders if a joint venture), hereby assure the Department that on this project my company : (check one)

- Meets or exceeds contract award goals and has provided documented participation as follows:
Disadvantaged Business Participation _____ percent

Attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

- Failed to meet contract award goals and has included good faith effort documentation to meet the goals and that my company has provided participation as follows:

Disadvantaged Business Participation _____ percent

The contract goals should be accordingly modified or waived. Attached is all information required by the Special Provision in support of this request including good faith effort. Also attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

Company

By _____

Title _____

Date _____

The "as read" Low Bidder is required to comply with the Special Provision.

Submit only one utilization plan for each project. The utilization plan shall be submitted in accordance with the special provision.

Bureau of Small Business Enterprises **Local Let Projects**
2300 South Dirksen Parkway Submit forms to the
Springfield, Illinois 62764 Local Agency

The Department of Transportation is requesting disclosure of information that is necessary to accomplish the purpose as outlined under State and Federal law. Disclosure of this information is **REQUIRED**. Failure to provide any information will result in the contract not being awarded. This form has been approved by the State Forms Manager Center.

PROPOSAL ENVELOPE



PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10" x 13" envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 326
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

**Contract No. 61D08
WILL County
Section 10-00056-00-PK (Romeoville)
Project TE-CMM-9003(600)
Route FAU 282 (135th Street)
District 1 Construction Funds**



Illinois Department of Transportation

SUBCONTRACTOR DOCUMENTATION

Public Acts 96-0795, 96-0920, and 97-0895 enacted substantial changes to the provisions of the Code (30 ILCS 500). Among the changes are provisions affecting subcontractors. The Contractor awarded this contract will be required as a material condition of the contract to implement and enforce the contract requirements applicable to subcontractors that entered into a contractual agreement with a total value of \$50,000 or more with a person or entity who has a contract subject to the Code and approved in accordance with article 108.01 of the Standard Specifications for Road and Bridge Construction.

If the Contractor seeks approval of subcontractors to perform a portion of the work, and approval is granted by the Department, the Contractor shall provide a copy of the subcontract to the Illinois Department of Transportation's CPO upon request within 15 calendar days after execution of the subcontract.

Financial disclosures required pursuant to Sec. 50-35 of the Code must be submitted for all applicable subcontractors. The subcontract shall contain the certifications required to be made by subcontractors pursuant to Article 50 of the Code. This Notice to Bidders includes a document incorporating all required subcontractor certifications and disclosures for use by the Contractor in compliance with this mandate. The document is entitled State Required Ethical Standards Governing Subcontractors.

RETURN WITH SUBCONTRACT

STATE ETHICAL STANDARDS GOVERNING SUBCONTRACTORS

Article 50 of the Code establishes the duty of all State CPOs, SPOs, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

The certifications hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed should the Department approve the subcontractor. The CPO may terminate or void the contract approval if it is later determined that the bidder or subcontractor rendered a false or erroneous certification. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

A. Bribery

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government, or subcontracting under such a contract, as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, or which is signatory to the contract to which the subcontract relates, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 2012.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50-5.

B. Felons

Section 50-10. Felons.

(a) Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

(b) Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

RETURN WITH SUBCONTRACT

C. Debt Delinquency

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

D. Prohibited Bidders, Contractors and Subcontractors

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

E. Section 42 of the Environmental Protection Act

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

The undersigned, on behalf of the subcontracting company, has read and understands the above certifications and makes the certifications as required by law.

<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/>		
Name of Subcontracting Company		
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/>		<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/>
Authorized Officer		Date

RETURN WITH SUBCONTRACT
SUBCONTRACTOR DISCLOSURES

I. DISCLOSURES

A. The disclosures hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed. The subcontractor further certifies that the Department has received the disclosure forms for each subcontract.

The CPO may void the bid, contract, or subcontract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be scuspended or debarred for violations of the Code. Furthermore, the CPO may void the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Code provides that all subcontracts with a total value of \$50,000 or more, from subcontractors identified in Section 20-120 of the Code, shall be accompanied by disclosure of the financial interests of the subcontractor. This disclosed information for the subcontractor, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the Prime Contractor's contract. Furthermore, pursuant to this Section, the Procurement Policy Board may recommend to allow or void a contract or subcontract based on a potential conflict of interest.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the subcontracting entity or its parent entity, whichever is less, unless the subcontractor is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each individual making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each individual making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

The current annual salary of the Governor is \$177,412.00.

In addition, all disclosures shall indicate any other current or pending contracts, subcontracts, proposals, leases, or other ongoing procurement relationships the subcontracting entity has with any other unit of state government and shall clearly identify the unit and the contract, subcontract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification.

C. Disclosure Form Instructions

Form A Instructions for Financial Information & Potential Conflicts of Interest

If the subcontractor is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual or entity holding any ownership share that is in excess of 5%. If a subcontractor is not subject to Federal 10K reporting, the subcontractor must determine if any individuals are required by law to complete a financial disclosure form. To do this, the subcontractor should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the **NOT APPLICABLE STATEMENT** on the second page of Form A must be signed and dated by an individual that is authorized to execute contracts for the subcontracting company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than 60% of the annual salary of the Governor? YES ___ NO ___
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the subcontracting entity's or parent entity's distributive income? YES ___ NO ___

(Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.)

4. Does anyone in your organization receive greater than 5% of the subcontracting entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES ___ NO ___

(Note: Only one set of forms needs to be completed per individual per subcontract even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The subcontractor must determine each individual in the subcontracting entity or the subcontracting entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by an individual that is authorized to execute contracts for your organization. The individual signing can be, but does not have to be, the individual for which the form is being completed. The subcontractor is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the **NOT APPLICABLE STATEMENT** on page 2 of Form A must be signed and dated by an individual that is authorized to execute contracts for your company.

RETURN WITH SUBCONTRACT

Form B: Instructions for Identifying Other Contracts & Procurement Related Information

Disclosure Form B must be completed for each subcontract submitted by the subcontracting entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the subcontractor to ignore Form B. Form B must be completed, checked, and dated or the subcontract will not be approved.*

The Subcontractor shall identify, by checking Yes or No on Form B, whether it has any pending contracts, subcontracts, leases, bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the subcontractor only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the subcontractor must list all non-IDOT State of Illinois agency pending contracts, subcontracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts or subcontracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included.

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**Form A
Subcontractor: Financial
Information & Potential Conflicts
of Interest Disclosure**

Subcontractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by Section 50-35 of the Code (30 ILCS 500). Subcontractors desiring to enter into a subcontract of a State of Illinois contract must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for subcontracts with a total value of \$50,000 or more, from subcontractors identified in Section 20-120 of the Code, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

The current annual salary of the Governor is \$177,412.00.

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the SUBCONTRACTOR (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than 60% of the annual salary of the Governor. **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)	
NAME:	_____
ADDRESS	_____
Type of ownership/distributable income share:	
stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):	
% or \$ value of ownership/distributable income share:	_____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___ No ___

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, provide the name the State agency for which you are employed and your annual salary. _____

RETURN WITH SUBCONTRACT

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___ No ___

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?
Yes ___ No ___

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment services in the previous 2 years.

Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois State Toll Highway Authority?
Yes ___ No ___

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, provide the name of your spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___ No ___

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?
Yes ___ No ___

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years.
Yes ___ No ___

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter.
Yes ___ No ___

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United States of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years.
Yes ___ No ___

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter.
Yes ___ No ___

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government.
Yes ___ No ___

RETURN WITH SUBCONTRACT

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

3 Communication Disclosure.

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): _____

RETURN WITH SUBCONTRACT

4. Suspension or Debarment Disclosure. For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: suspension or debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): _____

Nature of disclosure: _____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.

Completed by: _____ Date _____
Signature of Individual or Authorized Officer

NOT APPLICABLE STATEMENT

Under penalty of perjury, I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the SUBCONTRACTOR listed on the previous page.

_____ Date _____
Signature of Authorized Officer

RETURN WITH SUBCONTRACT

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B Subcontractor: Other Contracts & Financial Related Information Disclosure

Form with fields: Subcontractor Name, Legal Address, City, State, Zip, Telephone Number, Email Address, Fax Number (if available)

Disclosure of the information contained in this Form is required by Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file.

DISCLOSURE OF OTHER CONTRACTS, SUBCONTRACTS, AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The SUBCONTRACTOR shall identify whether it has any pending contracts, subcontracts, including leases, bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No ___ If "No" is checked, the subcontractor only needs to complete the signature box on this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE CHECKED

Signature box with fields for Signature of Authorized Officer and Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership

Any remaining ownership interest is held by individuals receiving less than \$106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

Yes No N/A (Form A disclosure(s) established 100% ownership)



- 1. TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation. Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). Paper-based bids are to be submitted to the Chief Procurement Officer for the Department of Transportation in care of the Chief Contracts Official at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 a.m. January 20, 2017. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after 10:00 a.m.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 61D08
WILL County
Section 10-00056-00-PK (Romeoville)
Project TE-CMM-9003(600)
Route FAU 282 (135th Street)
District 1 Construction Funds**

Construction of an access road, parking lot, pedestrian path, commuter train platforms and shelter, located at the southwest corner of 135th Street and New Avenue in the Village of Romeoville.

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Randall S. Blankenhorn,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2017

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 4-1-16) (Revised 1-1-17)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>		<u>Page No.</u>
106	Control of Materials.....	1
403	Bituminous Surface Treatment (Class A-1, A-2, A-3)	2
420	Portland Cement Concrete Pavement	3
502	Excavation for Structures	5
503	Concrete Structures	7
504	Precast Concrete Structures	10
542	Pipe Culverts	11
586	Sand Backfill for Vaulted Abutments	12
670	Engineer's Field Office and Laboratory	14
704	Temporary Concrete Barrier	15
888	Pedestrian Push-Button	17
1003	Fine Aggregates	18
1004	Coarse Aggregates	19
1006	Metals	21
1020	Portland Cement Concrete.....	22
1103	Portland Cement Concrete Equipment.....	24

CHECK SHEET
FOR
RECURRING SPECIAL PROVISIONS

Adopted January 1, 2017

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>	<u>PAGE NO.</u>
1 X Additional State Requirements for Federal-Aid Construction Contracts	26
2 X Subletting of Contracts (Federal-Aid Contracts)	29
3 X EEO	30
4 Specific EEO Responsibilities Non Federal-Aid Contracts	40
5 Required Provisions - State Contracts	45
6 Asbestos Bearing Pad Removal	51
7 Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	52
8 Temporary Stream Crossings and In-Stream Work Pads	53
9 Construction Layout Stakes Except for Bridges	54
10 Construction Layout Stakes	57
11 Use of Geotextile Fabric for Railroad Crossing	60
12 Subsealing of Concrete Pavements	62
13 Hot-Mix Asphalt Surface Correction	66
14 Pavement and Shoulder Resurfacing	68
15 Patching with Hot-Mix Asphalt Overlay Removal	69
16 Polymer Concrete	70
17 PVC Pipeliner	72
18 Bicycle Racks	73
19 Temporary Portable Bridge Traffic Signals	75
20 Work Zone Public Information Signs	77
21 Nighttime Inspection of Roadway Lighting	78
22 English Substitution of Metric Bolts	79
23 Calcium Chloride Accelerator for Portland Cement Concrete	80
24 Quality Control of Concrete Mixtures at the Plant	81
25 X Quality Control/Quality Assurance of Concrete Mixtures	89
26 Digital Terrain Modeling for Earthwork Calculations	105
27 Reserved	107
28 Preventive Maintenance – Bituminous Surface Treatment (A-1)	108
29 Preventive Maintenance – Cape Seal	114
30 Preventive Maintenance – Micro-Surfacing	129
31 Preventive Maintenance – Slurry Seal	140
32 Temporary Raised Pavement Markers	149
33 Restoring Bridge Approach Pavements Using High-Density Foam	150
34 Portland Cement Concrete Inlay or Overlay	153

CHECK SHEET
FOR
LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

The following LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>	<u>PAGE NO.</u>
LRS 1 Reserved	158
LRS 2 <input type="checkbox"/> Furnished Excavation	159
LRS 3 <input checked="" type="checkbox"/> Work Zone Traffic Control Surveillance	160
LRS 4 <input type="checkbox"/> Flaggers in Work Zones	161
LRS 5 <input type="checkbox"/> Contract Claims	162
LRS 6 <input type="checkbox"/> Bidding Requirements and Conditions for Contract Proposals	163
LRS 7 <input type="checkbox"/> Bidding Requirements and Conditions for Material Proposals	169
LRS 8 Reserved.	175
LRS 9 <input type="checkbox"/> Bituminous Surface Treatments	176
LRS 10 Reserved	177
LRS 11 <input type="checkbox"/> Employment Practices	178
LRS 12 <input type="checkbox"/> Wages of Employees on Public Works	180
LRS 13 <input type="checkbox"/> Selection of Labor	182
LRS 14 <input type="checkbox"/> Paving Brick and Concrete Paver Pavements and Sidewalks	183
LRS 15 <input type="checkbox"/> Partial Payments	186
LRS 16 <input type="checkbox"/> Protests on Local Lettings	187
LRS 17 <input type="checkbox"/> Substance Abuse Prevention Program.....	188
LRS 18 <input type="checkbox"/> Multigrade Cold Mix Asphalt	189

TABLE OF CONTENTS

LOCATION OF PROJECT1
DESCRIPTION OF PROJECT.....1
MAINTENANCE OF ROADWAYS1
TRAFFIC CONTROL PLAN2
STATUS OF UTILITIES (D-1).....2
SHOP DRAWINGS AND SAMPLES5
SAW CUT JOINTS7
DETECTABLE WARNINGS7
BICYCLE RAILING.....7
PIPE UNDERDRAINS (SPECIAL), 6”7
PIPE UNDERDRAINS, TYPE 2, 6”8
BENCHES.....8
LONGITUDINAL JOINT SEALANT.....9
TEMPORARY CONSTRUCTION FENCE10
RETAINING WALL REMOVAL10
REMOVE EXISTING RIPRAP10
CONCRETE PARKING BLOCKS10
SITE CLEAN-UP.....11
HEATING AND VENTILATION WORK.....11
WAYFINDING SIGN, SPECIAL.....12
FOLD DOWN BOLLARDS13
CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 48” (SPECIAL)13
CHAIN LINK GATES (SPECIAL)13
CHAIN LINK FENCE, [HEIGHT]’ (SPECIAL).....14
TRASH RECEPTACLES14
PRECONSTRUCTION VIDEO TAPING16
FAIR COLLECTION MACHINE SHELTER.....17
OVERHEAD PARKING NUMBERING32
GENERAL ELECTRICAL REQUIREMENTS35
UNDERGROUND RACEWAYS.....37
EXPOSED RACEWAYS.....37
UNIT DUCT.....40

WIRE AND CABLE.....	41
ELECTRIC SERVICE INSTALLATION	42
ELECTRIC UTILITY SERVICE CONNECTION (COMED)	43
LIGHTING CONTROLLER, BASE MOUNTED, 240 VOLT, 100 AMP.....	43
LIGHT POLE, ALUMINUM, 40 FT. M.H., 8 FT. MAST ARM	48
LIGHT POLE, ALUMINUM, 40 FT. M.H., 2-8 FT. MAST ARMS.....	50
LIGHT POLE, SPECIAL	51
LUMINAIRE, LED, TYPE 3, SPECIAL	51
LUMINAIRE, LED, TYPE 4, SPECIAL	52
LUMINAIRE, LED, TYPE 5, SPECIAL	53
BUILDING (ELECTRICAL).....	54
POWER SYSTEMS COMPLETE, TRAIN STATION INTERIOR.....	54
LIGHTING SYSTEM COMPLETE, TRAIN STATION INTERIORS	55
LIGHTING RELAY CONTROL PANEL COMPLETE	56
LIGHTING FIXTURE TYPE A.....	58
LIGHT FIXTURE TYPE B	59
BUILDING.....	60
FOOTINGS AND FOUNDATION WALLS	60
EXTERIOR MASONRY WALLS, COMPLETE.....	71
WOOD ROOF TRUSSES, COMPLETE	114
SLAB ON GRADE, COMPLETE	116
GUTTERS AND DOWNSPOUTS COMPLETE	130
RECESSED FLOOR MATS COMPLETE.....	135
ALUMINUM DOORS, COMPLETE.....	136
ALUMINUM WINDOWS COMPLETE.....	141
ROOFING COMPLETE	150
BUILDING SIGNAGE COMPLETE	154
DUST CONTROL.....	155
ADJUSTMENTS AND RECONSTRUCTIONS (D-1)	156
AGGREGATE SUBGRADE IMPROVEMENT (D-1).....	157
COURSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D-1)	159
DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D-1)	160
FRICTION AGGREGATE (D-1).....	162

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1).....	165
HMA MIXTURE DESIGN REQUIREMENTS (D-1)	167
RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1).....	173
IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG)	182
STORM WATER POLLUTION PREVENTION PLAN	184

INDEX LOCAL ROADS AND STREETS SPECIAL PROVISIONS

<u>LR #</u>	<u>Pg #</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
LR SD12		<input type="checkbox"/> Slab Movement Detection Device	Nov. 11, 1984	Jan. 1, 2007
LR SD13		<input type="checkbox"/> Required Cold Milled Surface Texture	Nov. 1, 1987	Jan. 1, 2007
LR 107-2		<input type="checkbox"/> Railroad Protective Liability Insurance for Local Lettings	Mar. 1, 2005	Jan. 1, 2006
LR 107-4	194	<input checked="" type="checkbox"/> Insurance	Feb. 1, 2007	Aug. 1, 2007
LR 108		<input type="checkbox"/> Combination Bids	Jan. 1, 1994	Mar. 1, 2005
LR 109		<input type="checkbox"/> Equipment Rental Rates	Jan. 1, 2012	
LR 212		<input type="checkbox"/> Shaping Roadway	Aug. 1, 1969	Jan. 1, 2002
LR 355-1		<input type="checkbox"/> Bituminous Stabilized Base Course, Road Mix or Traveling Plant Mix	Oct. 1, 1973	Jan. 1, 2007
LR 355-2		<input type="checkbox"/> Bituminous Stabilized Base Course, Plant Mix	Feb. 20, 1963	Jan. 1, 2007
LR 400-1		<input type="checkbox"/> Bituminous Treated Earth Surface	Jan. 1, 2007	Apr. 1, 2012
LR 400-2		<input type="checkbox"/> Bituminous Surface Plant Mix (Class B)	Jan. 1, 2008	
LR 400-3		<input type="checkbox"/> Hot In-Place Recycling (HIR) – Surface Recycling	Jan. 1, 2012	
LR 400-4		<input type="checkbox"/> Full-Depth Reclamation (FDR) with Emulsified Asphalt	Apr. 1, 2012	Jun. 1, 2012
LR 400-5		<input type="checkbox"/> Cold In-Place Recycling (CIR) With Emulsified Asphalt	Apr. 1, 2012	Jun. 1, 2012
LR 400-6		<input type="checkbox"/> Cold In Place Recycling (CIR) with Foamed Asphalt	June 1, 2012	
LR 400-7		<input type="checkbox"/> Full-Depth Reclamation (FDR) with Foamed Asphalt	June 1, 2012	
LR 402		<input type="checkbox"/> Salt Stabilized Surface Course	Feb. 20, 1963	Jan. 1, 2007
LR 403-1		<input type="checkbox"/> Surface Profile Milling of Existing, Recycled or Reclaimed Flexible Pavement	Apr. 1, 2012	Jun. 1, 2012
LR 403-2		<input type="checkbox"/> Bituminous Hot Mix Sand Seal Coat	Aug. 1, 1969	Jan. 1, 2007
LR 403-3		<input type="checkbox"/> Preventive Maintenance - Bituminous Surface Treatment (A-1)	July 1, 2016	
LR 406		<input type="checkbox"/> Filling HMA Core Holes with Non-Shrink Grout	Jan. 1, 2008	
LR 420		<input type="checkbox"/> PCC Pavement (Special)	May 12, 1964	Jan. 2, 2007
LR 442		<input type="checkbox"/> Bituminous Patching Mixtures for Maintenance Use	Jan. 1, 2004	Jun. 1, 2007
LR 451		<input type="checkbox"/> Crack Filling Bituminous Pavement with Fiber-Asphalt	Oct. 1, 1991	Jan. 1, 2007
LR 503-1		<input type="checkbox"/> Furnishing Class Sl Concrete	Oct. 1, 1973	Jan. 1, 2002
LR 503-2		<input type="checkbox"/> Furnishing Class Sl Concrete (Short Load)	Jan. 1, 1989	Jan. 1, 2002
LR 542		<input type="checkbox"/> Pipe Culverts, Type _____ (Furnished)	Sep. 1, 1964	Jan. 1, 2007
LR 663		<input type="checkbox"/> Calcium Chloride Applied	Jun. 1, 1958	Jan. 1, 2007
LR 702		<input type="checkbox"/> Construction and Maintenance Signs	Jan. 1, 2004	Jun. 1, 2007
LR 1000-1		<input type="checkbox"/> Cold In-Place Recycling (CIR) and Full Depth Reclamation (FDR) with Emulsified Asphalt Mix Design Procedures	Apr. 1, 2012	Jun. 1, 2012
LR 1000-2		<input type="checkbox"/> Cold In-Place Recycling (CIR) and Full Depth Reclamation (FDR) with Foamed Asphalt Mix Design Procedures	June 1, 2012	
LR 1004		<input type="checkbox"/> Coarse Aggregate for Bituminous Surface Treatment	Jan. 1, 2002	Jan. 1, 2007
LR 1030		<input type="checkbox"/> Growth Curve	Mar. 1, 2008	Jan. 1, 2010
LR 1032-1		<input type="checkbox"/> Emulsified Asphalts	Jan. 1, 2007	Feb. 7, 2008
LR 1102		<input type="checkbox"/> Road Mix or Traveling Plan Mix Equipment	Jan. 1, 2007	
LR 80029-1		<input type="checkbox"/> Disadvantaged Business Enterprise Participation for Local Lettings	Aug. 26, 2016	

BDE SPECIAL PROVISIONS

The following special provisions indicated by an "x" are applicable to this contract. An * indicates a new or revised special provision for the letting.

<u>File Name</u>	<u>Pg.</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099		Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
80274		Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
80192		Automated Flagger Assistance Device	Jan. 1, 2008	
80173	195	X Bituminous Materials Cost Adjustments	Nov. 2, 2006	July 1, 2015
80241		Bridge Demolition Debris	July 1, 2009	
5026I		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5048I		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5049I		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5053I		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
80366		Butt Joints	July 1, 2016	
80198		Completion Date (via calendar days)	April 1, 2008	
80199		Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293		Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
80311		Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
80277		Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
80261	198	X Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80029	201	X Disadvantaged Business Enterprise Participation	Sept. 1, 2000	July 2, 2016
* 80378	212	X Dowel Bar Inserter	Jan. 1, 2017	
80229		Fuel Cost Adjustment	April 1, 2009	July 1, 2015
80304		Grooving for Recessed Pavement Markings	Nov. 1, 2012	Aug. 1, 2014
80246	219	X Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2016
80347		Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	April 1, 2016
80376	220	X Hot-Mix Asphalt – Tack Coat	Nov. 1, 2016	
80367		Light Poles	July 1, 2016	
80368		Light Tower	July 1, 2016	
80336		Longitudinal Joint and Crack Patching	April 1, 2014	April 1, 2016
80369		Mast Arm Assembly and Pole	July 1, 2016	
80045		Material Transfer Device	June 15, 1999	Aug. 1, 2014
80165		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80349		Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
80371		Pavement Marking Removal	July 1, 2016	
80298		Pavement Marking Tape Type IV	April 1, 2012	April 1, 2016
80377		Portable Changeable Message Signs	Nov. 1, 2016	
* 80359		Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Jan. 1, 2017
80338		Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	April 1, 2014	April 1, 2016
80300		Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
80328	221	X Progress Payments	Nov. 2, 2013	
3426I		Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157	222	X Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
80306		Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	April 1, 2016
* 80340		Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127		Steel Cost Adjustment	April 2, 2004	July 1, 2015
* 80379		Steel Plate Beam Guardrail	Jan. 1, 2017	
80317		Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	April 1, 2016
20338	224	X Training Special Provisions	Oct. 15, 1975	
80318		Traversable Pipe Grate	Jan. 1, 2013	April 1, 2014
* 80381		Traffic Barrier Terminal, Type 1 Special	Jan. 1, 2017	

<u>File Name</u>	<u>Pg.</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
* 80380	227	X	Tubular Markers	Jan. 1, 2017	
80288	228	X	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	230	X	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
80289			Wet Reflective Thermoplastic Pavement Marking	Jan. 1, 2012	
80071	231	X	Working Days	Jan. 1, 2002	

The following special provisions are in the 2017 Supplemental Specifications and Recurring Special Provisions.

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80360	Coarse Aggregate Quality	Article 1004.01	July 1, 2015	
80363	Engineer's Field Office	Article 670.07	April 1, 2016	
80358	Equal Employment Opportunity	Recurring CS #1 and #5	April 1, 2015	
80364	Errata for the 2016 Standard Specifications	Supplemental	April 1, 2016	
80342	Mechanical Side Tie Bar Inserter	Articles 420.03, 420.05, and 1103.19	Aug. 1, 2014	April 1, 2016
80370	Mechanical Splicers	Article 1006.10	July 1, 2016	
80361	Overhead Sign Structures Certification of Metal Fabricator	Article 106.08	Nov. 1, 2015	April 1, 2016
80365	Pedestrian Push-Button	Article 888.03	April 1, 2016	
80353	Portland Cement Concrete Inlay or Overlay	Recurring CS #34	Jan. 1, 2015	April 1, 2016
80372	Preventive Maintenance – Bituminous Surface Treatment (A-1)	Recurring CS #28	Jan. 1, 2009	July 1, 2016
80373	Preventive Maintenance – Cape Seal	Recurring CS #29	Jan. 1, 2009	July 1, 2016
80374	Preventive Maintenance – Micro Surfacing	Recurring CS #30	Jan. 1, 2009	July 1, 2016
80375	Preventive Maintenance – Slurry Seal	Recurring CS #31	Jan. 1, 2009	July 1, 2016
80362	Steel Slag in Trench Backfill	Articles 1003.01 and 1003.04	Jan. 1, 2016	
80355	Temporary Concrete Barrier	Articles 704.02, 704.04, 704.05, and 704.06	Jan. 1, 2015	July 1, 2015

The following special provisions require additional information from the designer. The additional information needs to be included in a separate document attached to this check sheet. The Project Development and Implementation section will then include the information in the applicable special provision. The Special Provisions are:

- Bridge Demolition Debris
- Building Removal-Case I
- Building Removal-Case II
- Building Removal-Case III
- Building Removal-Case IV
- Completion Date
- Completion Date Plus Working Days
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted April 1, 2016 (hereinafter referred to as the Standard Specifications), the "Supplemental Specifications and Recurring Special Provisions", adopted April 1, 2016, the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures for Materials" in effect on the date of the invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein, which apply to and govern the proposed improvement designated as IDOT Section #10-00056-00-PK, Project Number: **TE**-CMM-9003(600), Job Number: C-91-421-10, Contract Number: 61D08, in Will County, and in case of conflict with any part, or parts, of said specifications, the said special provisions shall take precedence and shall govern.

=====

LOCATION OF PROJECT

The project is located in the Village of Romeoville, IL, Will County. The location of the project is in the southwest quadrant of 135th Street (FAU 282) and New Avenue (FAU 361). The gross and net length is 1,564 feet (0.30 miles).

DESCRIPTION OF PROJECT

The work consists of a new access road, bikepath, parking lot, lighting, warming shelter building, commuter platforms, detention pond expansion and related items for a new Romeoville Metra Station along the Canadian National Railway tracks.

This work shall include, but not be limited to, proposed hot-mix asphalt surface and binder (base) course, aggregate subgrade improvement, Portland cement concrete sidewalks, combination curb and gutter, detectable warnings, storm sewers, culverts, street lighting, pavement markings, signage, excavation for detention pond expansion, and restoration. Along the railroad tracks work shall include a brick warming shelter building, hot-mix asphalt commuter platforms, platform lighting, drainage improvements, chain-link fence, and related work.

MAINTENANCE OF ROADWAYS

Effective: September 30, 1985
Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer will be paid for in accordance with Article 109.04 of the Standard Specifications.

TRAFFIC CONTROL PLAN

Effective: September 30, 1985
 Revised: January 1, 2007

Traffic Control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, and the Special Provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS: 701001-02, 701006-05, 701101-05, 701427-04, 701901-05

DETAILS: TC-10 – Traffic Control and Protection for Side Roads, Intersections, and Driveways, TC-13 – Typical Pavement Markings

SPECIAL PROVISIONS: Maintenance of Roadways

PAYMENT: LUMP SUM for TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

STATUS OF UTILITIES (D-1)

Effective: June 1, 2016

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information in regard to their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Department's contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

UTILITIES TO BE ADJUSTED

Conflicts noted below have been identified by following the suggested staging plan included in the contract. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work; in some instances resolution will be a function of the construction staging. The responsible agency must relocate or complete new installations as noted in the action column; this work has been deemed necessary to be complete for the Department's contractor to then work in the stage under which the item has been listed.

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
Railroad ROW Sta 1+00 to 6+00 (East side)	Underground Fiber Optic Lines	Fiber optic lines in conflict with the proposed commuter platform	MCI/Verizon	Contractor for MCI/Verizon to lower fiber optic lines. Number of work days TBD.

Pre-Stage: Days Total Installation

The following contact information is what was used during the preparation of the plans as provided by the Agency/Company responsible for resolution of the conflict.

Agency/Company Responsible to Resolve Conflict	Name of contact	Address	Phone	e-mail address
MCI/Verizon	Tom Buher Jim Todd	Verizon/MCI Engr IV Spec Great Lakes Region Global Transport Engineering & Implementation 7719 West 60th Place P.O. Box 387 Summit, Illinois 60501	708-458-6410	thomas.buher@verizon.com jimtodd@ameritech.net

UTILITIES TO BE WATCHED AND PROTECTED

The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Department's contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances the contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owners part can be secured.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Along western Railroad ROW line Sta 1+00 to 6+00 and beyond north and south	8" Underground high pressure natural gas pipeline	Sidewalks, culverts, and fencing will be constructed in the vicinity and over the top of the pipeline	Aux Sable	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth. Ensure that fence post foundations avoid the utility
Approximately 40' West of Railroad ROW line Sta 1+00 to 6+00	18" Underground Petroleum Pipeline	Sidewalks and fencing will be constructed in the vicinity and over the top of the pipeline	Wolverine	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth.
Access Road from Station 64+00 to New Avenue (South of construction limits)	Underground Petroleum Pipeline	Fencing, railing platform, and underdrains will be constructed in the vicinity and over the top of the pipeline	EnBridge	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth. Ensure that fence post and light pole foundations avoid the utility

New Avenue ROW Sta 1+00 to 6+00 (West Side)	16" & 12" Underground high pressure Petroleum Pipelines	Warming shelter building, fencing, and sidewalks will be constructed in the vicinity of the pipelines (to the west in Railroad ROW)	West Shore	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth.
New Avenue ROW Sta 1+00 to 6+00 (West Side)	12" Underground Petroleum pipeline	Warming shelter building, fencing, and sidewalks will be constructed in the vicinity of the pipeline (to the west in Railroad ROW)	Unocal	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth.
Railroad ROW Sta 1+00 to 6+00 (East and West side)	Underground Fiber Optic Lines	Fiber optic lines in the vicinity of the platform, fence, and sidewalk construction	MCI/Verizon/Sprint	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth.
New Avenue ROW Sta 1+00 to 6+00 (West Side)	Overhead Electric	Warming shelter building, fencing, and sidewalks will be constructed in the vicinity of aerial electric (to the west in Railroad ROW)	ComEd	Caution will be taken when working in this area factoring in the overhead power lines. De-energizing lines may be necessary to accommodate contractor equipment.
New Avenue ROW Sta 1+00 to 6+00 (West Side)	8" Underground Gas line	Warming shelter building, fencing, and sidewalks will be constructed in the vicinity of the gas main (to the west in Railroad ROW)	Nicor	Caution will be taken when excavating/working in this area factoring in the estimated utility location and depth.

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

Agency/Company Responsible to Resolve Conflict	Name of Contact	Address	Phone	E-mail address
ComEd	Tony Cox Arturo Salinas	Commonwealth Edison 1910 S Briggs Street Joliet, Illinois 60433	815-724-5010	anthony.cox@ComEd.com Arturo.Salinas@ComEd .com
Nicor	Connie Lane Bruce Koppang	Nicor Technologies Inc. 1844 Ferry Road Naperville, IL 60563	630-388-3830 630-388-3046	clane@aglresources.com bkoppang@aglresources.co m

West Shore Pipeline	Mike Norris	West Shore Pipeline Company 12920 Bell Road Lemont, Illinois 60439	630-257-7583	MRNorris@buckeye.com
Aux Sable Pipeline	Jeff Gish	Aux Sable Liquid Products 6155 East U.S. Rte 6 Morris, Illinois 60450	888-874-7473	
Wolverine Pipeline	Fred Hipshear Scott Smith (field locates)	Wolverine Pipeline Co 8075 Creekside Drive Suite 210 Portage, Michigan 49024	269-357-6002 815-325-5357	fhipshear@michianalandser vices.com
Unocal (URS) Pipeline	Mike Musial AECOM	URS Corporation 100 S. Wacker Drive – Suite 500 Chicago, IL 60606	312-697-7221	mike.musial@aecom.com
Enbridge Pipeline	Michael Price	Enbridge Energy 1500 West Main Street Griffith, Indiana 46319	219-922-7015	Mike.Price@enbridge.com
Verizon / MCI / Sprint	Tom Buher Jim Todd	Verizon/MCI Engr IV Spec Great Lakes Region Global Transport Engineering & Implementation 7719 West 60th Place P.O. Box 387 Summit, Illinois 60501	708-458-6410	thomas.buher@verizon.com jimtodd@ameritech.net

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be taken into account in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications for Road and Bridge Construction shall apply.

Estimated duration of time provided in the action column for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies will be working toward resolving subsequent conflicts in conjunction with contractor activities in the number of days noted.

The estimated relocation dates must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department's contractor and the utility companies. The Department's contractor is responsible for contacting J.U.L.I.E. prior to any and all excavation work.

SHOP DRAWINGS AND SAMPLES

Submittals – After checking and verifying all field measurements and after complying with applicable procedures specified herein, the Contractor shall submit Shop Drawings to Engineer for review and approval. Unless otherwise

specified, the Contractor shall submit six (6) copies of all Shop Drawings, which will bear a stamp, or specific written indication, that Contractor has satisfied Contractor's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as Engineer may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable Engineer to review information as required.

Electronic Submissions - If the Contractor chooses to prepare electronic submittals in lieu of the paper copy submittals, the electronic submittals shall comply with the following requirements:

1. All shop drawing and product data submittals transmitted to the Engineer in electronic (PDF) format shall be formatted to print on 22" X 34" sheets except in instances where the Contractor has obtained approval by the Engineer prior to the submittal to format a submittal to print on 11" X 17" sheets or 8 1/2" X 11" sheets.
2. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
3. The Contractor shall not be allowed to use electronic submittals for the following unless approved by the Engineer:
 - a. Color samples, color charts and physical material samples.
 - b. Applications for payment, requests for information, construction schedules, reports, and other submittals not related to shop drawings and product data.

Samples – Contractor shall also submit all samples required by the Contract Documents to Engineer for review and approval with such promptness as to cause no delay in work. All samples shall be checked by, and accompanied by, a specific written indication that Contractor has satisfied Contractor's responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended.

Verification – Before submission of each Shop Drawing, Contractor shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing with other Shop Drawings and with the requirements of the work and the Contract Documents.

Variations – At the time of each submission, Contractor shall give Engineer specific written notice of each variation that the Shop Drawings may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

Review – Engineer will review and approve with reasonable promptness Shop Drawings, but Engineer's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

Responsibility – Engineer's review and approval of Shop Drawings shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has in writing called Engineer's attention to

each such variation at the time of submission as required above and Engineer has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing approval; nor will any approval by Engineer relieve Contractor from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions herein.

Payment – Where a Shop Drawing is required by the Specifications, any related work performed prior to Engineer's review and approval of the pertinent submission shall be considered included in the cost of the various items.

SAW CUT JOINTS

The removal and/or replacement of any pavement, curb, sidewalk, etc. shall be accomplished by means of a saw cut joint, at the direction of the Engineer. This work will not be paid for separately, but shall be included in the unit price bid for the various removal items.

DETECTABLE WARNINGS

This item shall consist of the placement of detectable warning plates in the sidewalks in accordance with the IDOT Standard for Curb Ramps and Sidewalks. The detectable warning plate(s) shall be red in color and meet the Village of Romeoville Standards which are as follows: The Contractor shall furnish and install detectable warning plates manufactured by East Jordan Iron Works, Heavy Duty Load Rating, Duralast detectable warning plates, Brick Red Powder Coating RAL 3016. The Contractor is responsible for the installation of the device according to the manufacturer's specifications and the handicap ramp as described in the contract plans and specifications. All detectable warning plates shall be approved by the Village of Romeoville Public Works Department. Metra Railroad Forces will furnish and install the Detectable Warnings to be installed on the Railroad Platforms.

This work will be paid for at the contract unit price per SQUARE FOOT for DETECTABLE WARNINGS and will include all materials, equipment and labor required to complete the work as specified above.

BICYCLE RAILING

This work shall consist of furnishing and installing a 4.5-foot high steel bicycle railing as shown on the plans and details and in accordance with Sections 509, 664, and 506 of the Standard Specifications, and as directed by the Engineer. The bicycle railing shall be installed 3 feet from the bikepath in the area of the western twin 48" concrete culvert end section along the Access Road (Station 55+72). The railing shall be anchored to the top of the concrete end section (see the Bicycle Railing detail). A 4-foot high chain link fence will be attached to both sides of the Bicycle Railing posts and the fence on both the north and south side of the Bicycle Railing will be paid for as CHAIN LINK FENCE, 4' (SPECIAL). The connection of the Chain Link fence to the Bicycle Railing post will be included in the cost of the BICYCLE RAILING and shall be performed in accordance with the Bicycle Railing detail in the plans and Highway Standard 664001-02 – Chain Link Fence.

The Bicycle Railing shall be painted black and attached fencing shall be Type IV, Class B PVC coated steel in accordance with Section 1006.27 of the Standard Specifications. The color of the PVC coated chain link fence shall be black.

Basis of Payment – This work will be paid for at the contract unit price per FOOT for BYCYCLE RAILING.

PIPE UNDERDRAINS (SPECIAL), 6"

This work shall consist constructing pipe under drains in accordance with Section 601 of the Standard Specifications, the details shown on the plans and as directed by the Engineer.

The pipe underdrain shall be polyvinyl chloride (PVC) corrugated pipe with a smooth interior pipe. Pipe underdrain shall be designed to withstand the loading from the track structure with an E80 loading.

Basis of Payment – This work will be paid for at the contract unit price per FOOT for PIPE UNDERDRAINS (SPECIAL), 6”.

PIPE UNDERDRAINS, TYPE 2, 6”

This work shall consist constructing pipe under drains in accordance with Section 601 of the Standard Specifications, the details shown on the plans and as directed by the Engineer.

The pipe underdrain shall be polyvinyl chloride (PVC) corrugated pipe with a smooth interior pipe. The perforation dimensions shall be in accordance with ASTM F949 Table 5 and Section 7.9. Pipe underdrain shall be designed to withstand the loading from the track structure with an E80 loading.

All tees, fittings, filter fabric, and course aggregate necessary for a complete system shall be included in the cost for pipe underdrains.

Basis of Payment – This work will be paid for at the contract unit price per FOOT for PIPE UNDERDRAINS TYPE 2, 6”.

BENCHES

This work shall consist of the furnishing and installation of BENCHES. The contractor shall include all the necessary equipment, hardware, tools, and all other miscellaneous items necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

The benches shall have a seat with an integral back and shall be mounted to the concrete slab on grade with stainless steel, tamper resistant anchor bolts. Coordinate attachment methods with manufacturer and install per the manufacturer’s written instructions. The benches shall have arms on each end and a middle arm or intermediate divider. The finish shall be black, powder coated steel.

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Landscapeforms - Plexus II
7800 E. Michigan Ave.
Kalamazoo, MI 49048

Victor Stanley - FMS-324
P.O. Drawer 330
Dunkirk, MD 20754 USA

Anova - Contour Bench
1424 Talmage Avenue
Saint Louis, Missouri 63110-2323

The style shall be 72” Straight three-unit grouped, backed benches with end and intermediate arm rests and shall be surface mounted.

Submit Product Data including the manufacturer’s standard product data, storage and handling requirements and recommendations, installation methods and available colors, styles, patterns and textures. Submit manufacturer’s shop drawings, including plans and elevations, indicating the overall product dimensions. Submit manufacturer’s samples of materials, finishes, and colors. Submit Manufacturer’s standard warranty.

The contractor shall obtain all benches from a single product source. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer. Store materials in clean, dry area in accordance with manufacturer's instructions. Keep materials in manufacturer's original, unopened containers and packaging until installation. Protect materials and finish during handling and installation to prevent damage.

The benches shall carry a warranty indicating that they will be free from defects in material and/or workmanship for a period of three years from the date of invoice.

Materials

Seats: Constructed of a steel wire grid panel welded to a tubular steel frame. Grid panel is constructed of 5/16" diameter and reinforcing wires spaced 2-1/2" apart and 1/8" diameter cross wires spaced 1/2" apart. Frame is constructed of 7/8" outer diameter x 0.120" wall steel tube. Seats are secured to support with (2) 7/16-20 x 1-1/2" hex head cap screws with nuts, all stainless steel with lubricating and locking thread patch. Arm: Constructed with 7/8" outer diameter x 0.120" wall steel tube. Horizontal Supports: Constructed of 3" outer diameter x 0.120" wall steel tube. Vertical Supports: Constructed of 2-1/2" outer diameter x 0.120" wall steel tube. The BENCHES shall be surface mounted.

Finishes

Finish on Metal: The topcoat shall be a thermosetting polyester powdercoat with UV, chip, and flake resistant properties subject to the following test results:

- a. Gloss, Garner 60 Degrees, ASTM D 523: Plus or minus 5.
- b. UV Resistance, Color and Gloss, ASTM G 155, Cycle 7: Delta E less than 2 at 2.0 mils and less than 20 percent loss.
- c. Cross-Hatch Adhesion, ASTM D 3359, Method B: 100 percent pass.
- d. Flexibility Test, Mandrel, ASTM D 522: 3 mm at 2 mils.
- e. Erichsen Cupping, ISO 1520: 8 mm.
- f. Impression Hardness, Buchholz, ISO 2815: 95.
- g. Impact Test, ASTM D 2794: 60 inches/pound at 2.5 mils.
- h. Pencil Hardness, ASTM D 3363: 2H minimum.
- i. Corrosion Resistance, 1,500-Hour Test, ASTM B 117: Max. undercutting 1 mm.
- j. Humidity Resistance, 1,500-Hour Test, ASTM D 2247: Max. blisters 1 mm.

Installation

Install per the manufacturer's written instructions at locations indicated on the drawings. The benches shall be installed level and anchored securely in place. Repair minor damages to finish in accordance with manufacturer's instructions and as indicated by the Engineer or Architect or record. Remove and replace damaged components that cannot be successfully repaired as determined by Engineer or Architect or record. The contractor shall protect the installed benches to ensure that, except for normal weathering, seating will be without damage or deterioration at time of Substantial Completion. Clean after installation at the time of substantial completion in accordance with manufacturer's instructions. Do not use harsh cleaning materials or methods that could damage finish.

This work shall be measured and paid for at the contract unit price per EACH for BENCHES as shown on the drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

LONGITUDINAL JOINT SEALANT

This work shall consist of providing materials only in accordance with the details shown on the plans and as directed by the Engineer.

The contractor shall supply the materials only for this item. Materials shall be delivered to the site as directed by the engineer.

The material provided shall be ¼" x 1 ½" expandable AST Hi-Acrylic sealant. The sealant is used adjacent to the detectable warning tile on the platforms. See Metra Platform Details in the plans

Basis of Payment – This work (materials only) will be paid for at the contract unit price per FOOT for LONGITUDINAL JOINT SEALANT which includes materials and delivery to the site. Metra forces will install the longitudinal joint sealant on the commuter platforms.

TEMPORARY CONSTRUCTION FENCE

This item shall be done in accordance with Article 201.05 (a) of the Standard Specifications with the following additions.

The fence shall be plastic and colored orange.

This item has been included to provide protection and security for the construction site during both operation and non-operation hours for the construction of the warming shelter building on the east side of the Canadian National (CN) Railroad right-of-way. An estimated quantity of 500 linear feet has been provided within this contract for use in securing and protecting the site. At the time of construction, fencing shall be installed at locations in accordance with CN Railroad requirements and will be coordinated through the Resident Engineer on the site.

No extra compensation shall be allowed due to a reduction in quantity. The Contractor shall have sufficient quantity of fencing on site at all times as well as the means to install such fencing at the end of each working day as directed by the Engineer. Fencing installation at designated locations will only be paid for once. Any fencing requiring removal and reinstallation due to the Contractor's operations or vandalism shall be done his own cost. Removal of the temporary fencing is part of this item.

This work will be paid for at the Contract unit price per FOOT of TEMPORARY CONSTRUCTION FENCE, which will be payment in full for supplying fencing and post, miscellaneous materials to install, maintaining and removing the fencing and all other required work to complete the work as set forth above.

RETAINING WALL REMOVAL

This work shall consist of the removal of a portion of the block retaining wall as directed by the Engineer in order to construct the proposed bike path.

Basis of Payment – This work will be paid for at the contract unit price per SQ FT for RETAINING WALL REMOVAL.

REMOVE EXISTING RIPRAP

This work shall consist of removing the existing riprap at the southwest corner of the existing detention pond as shown on the plan in order to expand the pond. The disposal offsite or relocation of the riprap to somewhere else within the pond if necessary will be included in the cost of this item. This work shall be done at the direction of the Engineer.

Basis of Payment – This work will be paid for at the contract unit price per SQ YD for REMOVE EXISTING RIPRAP.

CONCRETE PARKING BLOCKS

This work shall consist of furnishing and installing concrete parking blocks per the detail in the plans at the locations shown on the plans and as directed by the Engineer.

Basis of Payment – This work will be paid for at the contract unit price per EACH for CONCRETE PARKING BLOCK.

SITE CLEAN-UP

In addition to the requirements of the Standard Specifications and as specified herein, the Contractor's attention is called to the need to maintain areas free of accumulations of waste materials and earth, rubbish and other debris resulting from the work. Where truck crossings occur over sidewalks, they shall be kept free from all spilled earth and other materials and shall be at all times be maintained in a passable condition for pedestrian traffic. All damaged sidewalks caused by the Contractor shall be removed and replaced by the Contractor at the Contractor's sole expense as directed by the Engineer.

Generally, the transportation of materials to and from the site shall be over regular streets. When the Contractor's operations or that of its shippers, haulers, or subcontractors are such that dirt, mud, or debris is spilled or otherwise deposited on streets, driveways, sidewalks, or other thoroughfares near the project site, the Contractor shall immediately clean up large chunks after each truck or deposit of any debris on the road and shall, before the close of every day's operations, scrape any mud, dirt or debris from the surface and as directed by the Engineer to maintain safe conditions for the traveling public. Streets, driveways, sidewalks, or other thoroughfares shall be washed if directed by the Engineer. In case of dispute or Contractor's failure to perform this cleanup work, the Engineer may elect to clean the streets and walks, remove the rubbish, etc., and will charge the cost to the Contractor, by withholding monies due to cover all charged work.

All damage due to negligence of the Contractor to the Owner's property shall be removed and replaced at the Contractor's expense as directed by the Engineer.

The Contractor shall haul all debris generated by the Railroad Forces in addition to any railroad track, ties, and spike remnants that have been left behind from past railroad track removals.

Basis of Payment – This work will be paid for at the contract unit price per LUMP SUM for SITE CLEAN-UP.

HEATING AND VENTILATION WORK

This work shall consist of furnishing and installing heating and ventilation systems for the facility interior. The work includes three (3) electric radiant heaters, and a ventilation fan with associated intake and exhaust louver and damper assemblies. The radiant heaters, fans, louvers, and dampers shall be sized as shown on the plan sheets. Radiant heaters shall cycle according to thermostat set points to maintain appropriate building temperature. A sidewall propeller exhaust fan with motorized damper and louver combined with an intake louver with motorized damper and a thermostat shall provide ventilation to the space during warmer months.

Electric radiant heaters shall be infrared type, have quartz lamp with steel coil, polished mirror finish reflector, and powder coated or baked enamel steel enclosure. Electric radiant heaters are scheduled on the drawings and three manufacturers are indicated on the schedule. This shall not limit the Contractor to those manufacturers, but shall serve as indication of the minimum quality and performance desired by this installation.

Sidewall propeller exhaust fan assembly shall have steel or aluminum blades fastened to a steel hub, open drip proof and permanently lubricated direct drive motor, steel wall sleeve, motor guard, and solid state speed control. Fan shall have capacity as indicated in Exhaust Fan Schedule. Fan assembly shall include a galvanized steel, low-leakage motorized damper (class II) interlocked with exhaust fan to open when fan is energized and close when fan is off. Motorized damper actuator operator to be 24V. Fan assembly shall also include a stationary extruded aluminum louver with drainable blade, minimum 45% free area, aluminum bird screen, and finish as selected by project architect. Louver size shall be as indicated on plans. Exhaust fan is scheduled on the drawings and three manufacturers are indicated on the schedule. This shall not limit the Contractor to those manufacturers, but shall serve as indication of the minimum quality and performance desired by this installation.

Ventilation intake assembly shall include a galvanized steel, low-leakage motorized damper (class II) interlocked with exhaust fan to open when fan is energized and close when fan is off. Motorized damper actuator operator to be 24V.

Fan assembly shall also include a stationary extruded aluminum louver with drainable blade, minimum 45% free area, aluminum bird screen, and finish as selected by project architect. Louver size shall be as indicated on plans.

Acceptable Louver and motorized damper manufacturers:

Greenheck
 Ruskin
 Nailor Industries

Ventilation exhaust fan shall be controlled by the programmable wall thermostat. Thermostat shall energize exhaust fan and open intake and exhaust motorized dampers when temperature in space reaches 80°F. When temperature set point is satisfied thermostat shall de-energize exhaust fan and close intake and exhaust motorized dampers.

A digital, programmable electronic thermostat shall be provided for control of the radiant heaters, exhaust fan, and motorized dampers. Thermostat shall be 24V. Relays with transformers shall be provided for control of electric radiant heaters and exhaust fan. Thermostats shall be capable of providing a setback temperature of 55°F, and have battery free backup to save programmed settings after power outage. Provide and install clear thermostat guards with vandal resistant lock to prevent thermostat tampering. All control wiring shall be in rigid conduit and painted to match adjacent finishes where exposed. All necessary control wiring, conduit, relays, transformers, boxes, and additional materials required to provide complete and operation system shall be included in the unit price for HEATING and VENTILATION WORK.

This work will be paid for at the contract unit price LUMP SUM on a schedule of 25%, 50%, 75% and 100% complete stages for HEATING and VENTILATION WORK which shall include all material and work described herein.

WAYFINDING SIGN, SPECIAL

This work shall consist of furnishing Metra wayfinding signage in accordance with Section 720 of the Standard Specifications, the details shown on the plans and as directed by the Engineer.

The Contractor shall furnish and deliver the five (5) signs complete including post to the site as directed by the Engineer. Metra will install the signs according to the plans.

Signs shall be according to Metra Station Sign Program Specifications (dated June 1, 2011) sheets 60 to 62 and the following details.

- Post Height: 72" H from platform surface to top of post.
- Post Material: 2" x 2" Aluminum Series 225 Extended Radius Post
- Post & Reveal Color: Black anodized finish
- Panel Size: 12" H x 72" W
- Frame Material: Sign Panel to be 2" thick, constructed of materials that are vandal-resistant, and scratch, fade and weather resistant.
- Frame Finish: Painted acrylic polyurethane w/UV inhibitors, Eggshell finish (11-19) degree gloss on 60 degree glossimeter). 1" Scotchlite tape on back of sign - 1 1/2" from bottom edge.
- Frame Panel Color: To match PMS 301
- Copy: Exterior grade vinyl die-cut letters applied to the second surface (sub surface) of a 1/8" non- glare lexan polycarbonate face panel. Background color shall be
- PMS 301.
- Letterform: Helvetica Bold Condensed upper lower case
- Copy Size: 4 1/2" Cap height on station name, 2 1/2" Cap height on smaller line
- Letter Spacing: Manual kerning may be needed (provide layouts for approval)
- Copy Color: White

- Symbol: Parallel tip arrow
- Symbol Size: 2 ½" High
- Symbol Color: White

Basis of Payment – This work will be paid for at the contract unit price per LUMP SUM for WAYFINDING SIGN, SPECIAL.

FOLD DOWN BOLLARDS

Description: This work shall consist of the fabrication, storage, delivery and installation of a fold down bollard and footing. All footing reinforcing concrete, bollard base plate, lock pins, hinge pins, and miscellaneous items for complete installation are included in this work. This work will be in accordance with the Bollard construction detail in the plans.

Submittals: Submit shop drawings and product data completely describing items and installation details.

Materials:

Finishes. All surfaces shall be primed with rust and corrosion resistant, zinc rich primer with a 5,000 hour salt spray performance. Finish with TGIC polyester outdoor finish RAL1028 yellow.

Suppliers. The manufacturer shall be a company specializing in the design and manufacture of bollards. The manufacturer shall provide information, to the satisfaction of the Engineer, demonstrating it has successfully provided bollards for other projects of similar scopes.

Design: Bollard will collapse to a 3-inch clearance allowing vehicle traffic to pass. Bollard shall lock in upright position with stainless steel lock pin and padlock.

Installation: Installation shall comply with manufacturer provided instructions and drawings. Anchor as recommended by manufacturer and as shown in the drawings.

Basis of payment: The bollards will be paid for at the contract unit price per EACH for FOLD DOWN BOLLARDS. Any damage to fold down bollards due to contractor operations shall be repaired at no additional cost to the contract.

CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 48" (SPECIAL)

This work shall consist of cast-in-place end sections in accordance with Section 542 and 503 of the Standard Specifications with and the End Section Detail in the plans. Each end section shall be for dual 48" RCP culverts according to the plans and detail and at the direction of the Engineer.

Basis of Payment – This work will be paid for at the contract unit price per EACH for CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS, 48" (SPECIAL).

CHAIN LINK GATES (SPECIAL)

This work shall consist furnishing and installing PVC coated chain link gate and accessories in accordance with Section 664 of the Standard Specifications, the details shown on the plans and as directed by the Engineer.

All post, gates, fittings, hardware and sono-tube forms necessary for a complete system shall be included in the cost chain link gates.

The chain link gate shall be 8' in height and 12' in width. It shall be Type IV, Class B PVC coated steel in accordance with Section 1006.27 of the Standard Specifications. The color of the PVC coated chain link gate shall be black.

Basis of Payment – This work will be paid for at the contract unit price per EACH for CHAIN LINK GATES (SPECIAL).

CHAIN LINK FENCE, [HEIGHT]' (SPECIAL)

This work shall consist of furnishing and installing PVC chain link fence and accessories in accordance with Section 664 of the Standard Specifications, the details shown on the plans and as directed by the Engineer.

All posts, foundations, gates, fittings, hardware and sono-tube forms necessary for a complete system shall be included in the cost chain link fence.

The chain link fence shall be 8' in height in the Railroad right-of-way and 4' in height along the southern border of the access road as shown on the plans and be Type IV, Class B PVC coated steel in accordance with Section 1006.27 of the Standard Specifications. The color of the PVC coated chain link fence shall be black.

Basis of Payment – This work will be paid for at the contract unit price per FOOT for CHAIN LINK FENCE, 4' (SPECIAL) and CHAIN LINK FENCE, 8' (SPECIAL).

TRASH RECEPTACLES

This work shall consist of the furnishing and installation of TRASH RECEPTACLES. The contractor shall include all the necessary equipment, hardware, tools, and all other miscellaneous items necessary to complete this section as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

1.1 SUBMITTALS

- A. Specifications Drawing: Detail drawing of product including overall dimensions and options.
- B. Samples: For units with factory applied finishes
- C. Maintenance Data: include manufacturer's written maintenance and installation instructions.

1.2 DELIVERY, STORAGE, and HANDLING

- A. Delivery: Deliver products to site in manufacturer's original, unopened containers and packaging. Upon delivery, examine packages immediately to ensure all products are complete and undamaged.
- B. Storage: Store products in a protected, dry area in manufacturer's unopened containers and packaging.
- C. Handling: Protect product's finish from damage during handling and installation.

1.3 COORDINATION

- A. All site furnishings shall be laid out in the field and approved prior to installation.

PART 2 PRODUCTS

1.1 MANUFACTURER

- A. Product shall be one of the following:

- a. Victor Stanley, Inc. Model S-42 from the Ironsites Series
 - i. P.O. Drawer 330
Dunkirk, MD 20754 USA
- b. Landscape Forms – Plainwell
 - i. 7800 E. Michigan Ave.
Kalamazoo, MI 49048
- c. Anova – Rendezvous
 - i. 1424 Talmage Avenue
Saint Louis, Missouri 63110-2323

2.3 MATERIALS

- A. 3/8" x 1" (10mm x 25mm) vertical solid steel bar; 1/4" x 2-1/2" (6mm x 64mm) horizontal solid steel bands; 3/8" x 3" (10mm x 76mm) steel support bars; 5/8" (16mm) solid steel top ring; leveling feet with a 3/8" (10mm) diameter threaded steel shaft
- B. 36-gallon (136 liter) capacity high density plastic liner
 - a. Designed to be removable and reusable
- C. Provide receptacle designed to accommodate disposable liners
- D. Plates, shapes and bars: ASTM A36/A 36M
- E. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53, or electric-resistance-welded pipe complying with ASTM A 135.

2.4 OPTIONS

- A. Lids: domed lid and convex lid with self-closing door. Secured with cable.
- B. Color: Black
- C. Mounting plate: with three (3) anchor bolt holes.
- D. Anchor bolts
 - a. Stainless steel tamper resistant
- E. Anti-theft hold-down brackets: for securing trash receptacles to substrate

2.5 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of finished work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same piece are not acceptable.

Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

C. Steel and Galvanized Steel finishes

- a. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking and minimum dry film thickness

PART 3 EXECUTION

3.1 INSTALLATION

- A. Clearance for 3/4" (19mm) square anchor bolt holes
- B. Comply with manufacturer's written installation instructions.
- C. Install trash receptacles level, plumb, true, and securely anchored in locations indicated on drawings, and verified by Engineer or Architect of Record.

3.2 examination

- A. Examine areas and condition, with installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
 - a. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PROTECTION

- A. Protect products prior to installation by having them remain in the manufacturer's packaging and container.

This work shall be measured and paid for at the contract unit price per EACH for **TRASH RECEPTACLES** as shown on the drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

PRECONSTRUCTION VIDEO TAPING

Prior to the start of any construction, the contractor shall video record the area of the construction route. The video recording shall be supplied on a DVD-ROM Disc, for playback in a standard DVD player, and viewing on a television or computer. The contractor shall supply the engineer with two copies of the DVD prior to starting construction. The video recording shall include the following:

Existing Site	Parkway condition	Existing detention pond
Curb condition	Driveway condition	Existing manholes
Fire hydrants	Fences	Trees
Sidewalk	Parking Lots	Railroad tracks and ROW

The contractor shall also narrate the video recording with reference to the location (station or address) the video recording is being produced from. The video recordings shall also supply a continuous audio record of the location

(preferably with address), all anticipated problem areas, items, and features for the complete area to be affected by the construction.

The format of recording and type of recording used shall remain the same throughout the project. The video recording shall produce a clear, stable image with a resolution of not less than 480i. When the recorded information is replayed and reviewed, it shall be free of electrical interference.

The audio portion of the composite signal shall be sufficiently free of electrical interference, background noise, and heavy foreign or regional accents to provide an oral report that is clear and complete and easily discernible. The audio portion of the video recording report shall be recorded by the operating technician as they are being produced and shall include references to the street address and type of construction to be performed at the site as specified in the plans. Audio comments pertaining to special circumstances, which may arise during the excavation, shall also be included. Dubbing the audio information onto the video tract after the video recording is completed will not be permitted.

Two (2) copies of DVD's shall be enclosed in plastic containers, which shall clearly indicate the date the DVD was taken, the designated section(s) of construction contained on the DVD, and the label "Village of Romeoville – Metra Station" (Project #: 07-552.02).

This work shall not be paid for separately but shall be included in the cost of the contract.

FAIR COLLECTION MACHINE SHELTER

PART 1: GENERAL

- 1.01 **DESCRIPTION OF WORK:** This work shall consist of constructing a parking fare collection box and shelter at the location shown in the plans (and Parking Fare Collection Box and Shelter Details in the plans), or as directed by the Engineer. This work shall include all excavation and backfill; preparation of subgrade; furnishing, placing, and compacting subbase granular material, Type B; furnishing, installing, and removal of formwork; furnishing and installing of reinforcement; furnishing and placing concrete, class SI, and protective coat; furnishing and installing joint sealants; constructing expansion and contraction joints; regrading; installation of pre-fabricated shelter (bus type passenger shelter); 2 fare collection boxes; and all labor, tools, and equipment necessary to complete the work as specified, including clean-up and restoration of the location.
- 1.02 **REFERENCES:** Work under this item shall be performed in accordance with Sections 201, 202, 204, 205, 301, 311, 420, 424, 508, 664, 1003, 1004, 1006, 1020, 1021, 1022, 1023, 1050, 1051, 1058, and 1103 of the Standard Specifications, except as herein modified.
- 1.03 **STANDARDS:**
- A. Fare Collection Box and Shelter details, as shown on the Drawings.
 - B. Typical Pad for Shelter details, as shown on the Drawings.
- 1.04 **SUBMITTALS:**
- A. The Contractor shall submit manufacturers' brochures or catalogues and shop drawings for the

prefabricated shelter and fare collection box.

- B. The Contractor shall furnish three samples each of actual extruded aluminum tube sections to establish the color shade range of Duranodic aluminum coating for Village approval prior to proceeding with production. These samples shall be used for comparison purposes during production to determine the limits of acceptable color variation for the finish.
- C. Cast-in-Place Concrete: The Contractor shall submit the following:
1. The proposed concrete mix design(s) for review and approval by the Engineer. All mix designs shall be IDOT mix designs approved for the ready-mix supplier.
 2. Manufacturer's Data: Furnish copies of the manufacturer's specifications for the admixtures, bonding agent, patching and surfacing compound, non-slip material, form oil, joint fillers and vapor barrier, including methods of application and installation.
- D. The Contractor shall submit to the Engineer a certificate from the supplier indicating the grade of steel being furnished to the job.
- E. Prefomed Expansion Joint Filler: The Contractor shall submit the following:
1. Manufacturer's Literature: Material descriptions and installation instructions for each type of compound and filler to be used.

1.05 QUALITY CONTROL:

- A. Concrete Formwork: The Work shall be performed in accordance with the applicable portions of Sections 420 and 424 of the Standard Specifications and the following requirements.
1. Qualifications of Workmen: Provide at least one person who shall be present at all times during execution of this portion of the Work and who shall be thoroughly familiar with the type of materials installed, the referenced standards and the requirements of this Work, who shall direct all Work performed under this section.
 2. Codes and Standards: Unless otherwise shown or specified, design, construct, erect, maintain and remove forms and related structures for cast-in-place concrete work in compliance with American Concrete Institute Standards ACI 347, "Recommended Practice for Concrete Formwork".
 3. Allowable Tolerances: Except as specified in this section herein, construct formwork to provide completed cast-in-place concrete surfaces complying with the tolerances specified in ACI 347. Before concrete placement, check the lines and levels of erected formwork. Make corrections and adjustments to ensure proper size and location of concrete members and stability of forming systems. During concrete placement, check formwork and related supports to ensure that forms are not displaced and that completed work will be within specified tolerances.

4. The Contractor shall submit to the Engineer his proposed installation. The Contractor shall make modifications, if required, to his procedure to the satisfaction of the Engineer, but it is understood that the Engineer's approval shall not relieve the Contractor from his sole responsibility for obtaining satisfactory results.

B. Cast-in-Place Concrete:

1. All work included in this section shall be performed in accordance with applicable portions of Sections 420, 424, 508, 1020, 1021, 1022, 1023, 1051, and 1058 of the Standard Specifications.
2. Correction of Defective Work: All concrete work which does not conform to the requirements of the Contract Documents, including strength, tolerances, and finishing, shall be corrected as directed by the Engineer at the Contractor's expense. The Contractor shall be resulting from corrections to the concrete work.

- C. Shelters: Manufacturer shall provide and pay for the services of an independent testing laboratory. Testing laboratory shall take three (3) random samples from production lots of finished aluminum materials, which will be incorporated in the shelter for testing in accordance with ASTM B137-45 - coating weight, ASTM B244-62T - coating thickness, and ASTM B135-63T - sealing. Testing laboratory shall provide certification for Village's Engineer stating compliance with the specification requirements.

1.06 STRENGTH AND QUALITY STANDARDS:

- A. Shelter design to be such that the structure is stable with all windows, roof, fascia and ground fastenings removed.
- B. Shelters to be virtually vandal-resistant, water tight, maintenance-free, structurally sound, and weather resistant.
- C. All aluminum to conform to the standards of the Aluminum Association.
- D. Shelters to be designed to withstand minimum loads for the following:
 1. Wind pressure of 20 psf of wall area for wind from any direction.
 2. Roof live load of 25 psf of roof area normal to surface (including snow load).
 3. Concentrated load of 200 pounds occupying an area of two and one half square feet so placed to produce maximum stress on roof framing.

PART 2: PRODUCTS

- 2.01 BORROW: Borrow material shall be provided by the Contractor, as required, from a borrow site approved by the Village. It shall meet the requirements of Section 204 of the Standard Specifications.

- 2.02 SUB-BASE GRANULAR MATERIAL, TYPE B: The material shall have a CA-6 gradation conforming to Article 1004.04 of the Standard Specifications, except wet bottom boiler slag as defined in Article 1004.01 will not be permitted.
- 2.03 FORMWORK: Formwork shall meet the requirements of Article 1103.05 of the Standard Specifications.
- A. Form Materials: Form concrete surfaces with plywood, lumber, metal, or other acceptable material. Provide lumber that is dressed on at least two edges and one side for tight fit. Forms shall provide a 3/4" chamfer on all concrete edges.
- B. Form Coating: Provide commercial formulation, form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatment of concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compound.
- 2.04 CONCRETE MATERIALS: Concrete materials shall meet the requirements of Sections 1020, 1021, 1022, and 1023 of the Standard Specifications. The concrete shall be Class Sl and meet the following requirements:
- A. Portland Cement: ASTM C150, domestic brand, Type I, normal Portland Cement; Type III for high-early strength Portland cement as per the requirements of Section 1001 of the Standard Specifications. The same brand of Portland Cement shall be used for exposed concrete throughout the job unless a change is approved by the Engineer. Air entraining cement is not acceptable.
- B. High-early strength concrete may be used subject to Engineer's approval. All provisions of the specifications shall apply except that the 7-day compressive strength shall equal the 28-day compressive strength required for normal concrete.
- C. Admixtures: Admixtures shall meet the requirements of Article 1020.05 and Section 1021 of the Standard Specifications.
- D. Water-Reducing Admixture: As per the requirements of Article 1021.03 of the Standard Specifications.
- E. Air-Entraining Admixture: Use air-entraining admixtures in all concrete, as per the requirements of Article 1021.02 of the Standard Specifications. Add air entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having an air content of not less than 5% nor more than 8% of the volume of the concrete.
- G. Calcium Chloride: Shall not be used.
- H. Concrete Curing Materials: Burlap curing blankets, waterproof paper blankets, white polyethylene sheeting, and burlap-polyethylene blanket shall meet the requirements of Section 1022 of the Standard Specifications.
- I. Curing and Finishing Materials:
1. Liquid Membrane-Forming Compounds for Curing Concrete: Fed. Spec. TT-C-800A, Type I Styrene Acrylate or Type II Chlorinated Rubber; non-pigmented; "Kure-N-Seal"

(Sonneborn Div. of Contech Inc.), "Dekote T130" (W.R. Grace & Co.) or "CR-26" (W.R. Meadows, Inc.)

2. Curing compounds shall be guaranteed not to affect the bond, adhesion or effectiveness of damp-proofing, or surface treatments.

J. Ready Mix Concrete:

1. All ready-mixed concrete shall comply with Article 1020.11 of the Standard Specifications
2. The ready-mixed concrete producer shall submit duplicate delivery tickets, one for the Contractor and one for the Engineer, with each load of concrete delivered to the site.
3. Delivery tickets shall provide the following information:
 - a. Date
 - b. Name of ready-mix concrete plant
 - c. Contractor
 - d. Job Location
 - e. Type of cement (Standard or H.E.S.)
 - f. Cement content in bags per cubic yard of concrete
 - g. Truck number
 - h. Time dispatched, and time unloaded
 - i. Amount of concrete in load in cubic yards
 - j. Admixtures in concrete, if any

2.05 REINFORCEMENT:

- A. Reinforcement bars shall be epoxy coated, deformed bars, Grade 60 conforming to Article 1006.10 (b) of the Standard Specifications.
- B. Dowel bars shall be epoxy coated, smooth bars, Grade 70 through 80, conforming to Article 1006.11 (b) of the Standard Specifications.
- C. Welded wire fabric shall be 6" x 6" (W2.9 x W2.9) conforming to Article 1006.10 of the Standard Specifications.
- D. Tie wire shall be black annealed wire, 16 gauge or heavier if necessary for providing cage rigidity. Where the tie wire is in contact with epoxy-coated bars, the tie wire shall be epoxy coated.

2.06 CONCRETE JOINT SEALER:

- A. Polyurethane Sealant Type H: ASTM C920, Grade P, Class 25, Use NT, M, A, O; multi-component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, non-sagging, self-leveling, gun grade type. Use primer recommended by the sealant manufacturer. Primer and sealant shall not cause visible stain on top surface of the substrate to which they are applied. All sealants shall match in color. The following products are acceptable:

1. Horizontal surfaces: Sonneborn "Sonoplastic SL1"
 2. Vertical surfaces: Sonneborn "Sonolastic NP1"
- B. Primers, Solvents, Cleaners: Non-staining materials recommended by sealant manufacturer for conditions of application; primer as necessary as required for the particular joint materials and sealant to be used and solvents which will clean substrate and remove sealant without deleterious effect.
- C. Backer Rods and Strips ASTM D1056 Round: Closed-cell, expanded polyethylene foam. "Ethafoam" (The Dow Chemical Co.), "Expand-O-Foam" (Williams Products). Furnish continuous lengths over-sized, larger than 30% to 50% joint width, and depth as indicated on Plans or as directed.
- D. Bond Breaker: Polyethylene tape film or other approved material compatible with sealant. Bond breaker is required where sealant would otherwise bond to back surface of joint recess.
- 2.07 PROTECTIVE COAT: The material shall meet the requirements of Section 1023 of the Standard Specifications.
- 2.08 SHELTER: Shelters shall be prefabricated assemblies which are glazed at the factory, then shipped knocked down in flat wall panels and roof dome assemblies. Shelter shall be of a modular design with an aluminum structural frame.
- A. Materials:
1. Wall Panels, Roof Assembly, and Glazing Stops: All components shall be extruded aluminum of 6063 T-52 alloy compatible with the specified finish.
 2. Base Assembly: Extruded 0.20" (5 mm) aluminum tubing welded to 0.25" (6 mm) aluminum base flanges, shall be of aluminum alloy compatible with the specified finish of the shelter. Anchor shall be stainless steel expansion bolts.
 3. Glazing:
 - a. Wall panels shall be glazed with 1/4" (6 mm) thick polycarbonate with a mar resistant coating. Average light transmittance shall be 82 percent. A guarantee of three years against failure of the panels shall be provided.
 - b. Roof domes shall be 1/4" (6 mm) thick, polycarbonate sheet translucent white; "Lexan SG 403-82311" as manufactured by General Electric; formed into single or triple dome shape by a thermal heat forming process. Multiple domes shall be uniform dimensions. A guarantee of three years against failure of the domes shall be provided.
 4. Fasteners:

- a. Stainless steel high strength pop-rivets shall be used for structural frame connections (all exposed pop-rivets shall match color of specified Duranodic finish); aluminum pop- rivets for field installation.
 - b. Aluminum pop-rivets are used for glazing stop attachment to wall panels. (Alloy color to match specified Duranodic finish).
 - c. Stainless steel bolts for roof dome assembly attachment to wall panels.
 - d. Stainless steel expansion bolt anchors with washers for attachment of base assembly to concrete walk.
5. Finishes: All aluminum shall be finished in No. 313 dark bronze Duranodic coating in accordance with the procedure established by the Aluminum Company of America. Coating shall be a minimum thickness of 0.7 mil. and a minimum weight of 27 mg per square inch.

B. Construction:

1. General: All exposed surfaces and edges shall be smooth, free from burrs, slivers, and other projections. There shall be no welds on any aluminum components unless specifically approved by the Village. All components of the shelters shall be jig manufactured to provide the interchanging of like components. All frame members shall be a single piece of aluminum for their entire length. All assemblies shall be pre-fit and pre-drilled for field erection and installation by others.
2. Wall Panels and Glazing Stops: 2 1/2" x 2 1/2" x 0.125" (64 mm x 64 mm x 3 mm) thick extruded aluminum tube framing with 1 1/4" x 2 1/2" x 0.125" (32 mm x 64 mm x 3 mm) thick extruded aluminum mullions. Connections shall incorporate 2 1/4" x 2 1/2" x 0.125" (57 mm x 64 mm x 3 mm) and 2 1/4" x 1 1/4" x 0.125" (57 mm x 32 mm x 3 mm) aluminum channel inserts fastened with stainless steel pop-rivets. Glazing shall be placed in a frame which shall be 1 1/4" x 1 3/8" x 0.125" (32 mm x 35 mm x 3 mm) thick extruded aluminum. The glazing shall fit into the glazing frame channel and be gasketed. The glazing frame will then be fastened in the tube frame by aluminum pop- rivets through pre-drilled holes. Glazing stops to have 1/8" self-aligned lips.
3. Roof Assembly: Roof assembly shall be one piece continuous extruded aluminum fascia of minimum 0.125" (3 mm) thickness throughout, including integral gutter, 1 1/4" (32 mm) glazing rabbet, weep holes and rain drip extending beyond the structural frame. Fascia member shall have self-aligning lip to provide alignment with roof frame. Fascia shall have tight fitting mitered comers and include interior reinforcing angles to provide uniform corner rigidity and perfect alignment. Roof assembly shall be designed to allow easy removal and reglazing of roof domes without disturbing the fascia. Roof assembly shall be fastened to wall panels with stainless steel bolts.
4. Glazing:

- a. All glazing shall be pre-sized and fitted to allow for expansion and contraction of the glazing material.
 - b. Wall panel glazing shall be shop cut and inserted in wall panels with the proper gaskets. Installation details shall allow for glazing replacement from the inside of shelter. Gaskets shall be special shaped neoprene or polyvinyl chloride (PVC) for dry-set installation. Gaskets shall be resistant to removal by hand.
 - c. Roof dome glazing shall be one piece units fabricated to a single "bubble" shape by thermal form process to produce a pleasant domed effect. Glazing details shall provide a temper-proof and leak-proof installation. Roof dome glazing shall be inserted in roof assembly with the proper gaskets and sealants. Roof dome assembly shall be packaged to provide adequate protection during shipment and handling to prevent damage. Gaskets shall be special compressible expanded (closed cell) neoprene for dry-set installation. Elastomeric sealant shall be compatible with acrylic, aluminum finish and neoprene.
5. Fasteners: Interconnection of all members shall be made with stainless steel pop-rivet fasteners of sufficient strength for imposed loading. Base anchorage detail shall allow for adjustment and leveling of shelters up to a maximum of 3" (76 mm) in height for any or all of the legs. Posts shall be attached to base assembly by pop-rivets. Each base assembly shall have 2 bolt anchors for attachment to concrete walk. Manufacturer shall provide all fasteners required in sufficient quantity for field erection and installation by others.
6. Finish: All exposed edges or surfaces resulting from cutting and fabricating of aluminum members shall receive a shop applied touch-up coat of protective paint to match Duranodic finish.
7. Front Windscreen: Each shelter shall have a windscreen. Provided windscreens shall have the same details as main structure. Its design shall allow use with a full width front horizontal roof beam. Window size shall be same as a side window. Windscreen shall be centered at front of shelter and consist of two (2) windows.
8. Miscellaneous:
- a. An aluminum shim kit shall be provided for each leg of the shelter. The kit shall consist of one each 1" (25 mm), 1/2" (13 mm), 1/4" (6 mm), and 1/8" (3 mm) shim and a 1/6" (2 mm) flat.
 - b. With each shelter, manufacturer shall send a set of printed instructions. Three (3) copies shall also be provided to the Owner. Instructions shall include at least all of the following:
 - 1.) Content list
 - 2.) Assembly instructions
 - 3.) Tool list
 - 4.) Exploded view, including

- 5.) concrete layout
- 6.) Fastening details
- 7.) Maintenance instructions
- Repair procedures

c. Manufacturer's name or insignia may be placed on shelters, total size not be exceed 1" x 2", placed on inner edge of roof assembly fascia.

C. Packaging: Manufacturer shall ship shelters packaged separately and as complete units consisting the following. Each shelter unit shall be identified by marking the appropriate assembly components.

1. Back wall panel completely assembled with intermediate vertical posts, horizontal frame, seat back rest and glazing installed therein.
2. Side wall panel completely assembled with vertical end posts, horizontal frame and glazing installed therein.
3. Front windscreen with full width horizontal roof beam and glazing installed therein.
4. Each roof dome assembly completely assembled, including fascia frame and roof domes installed therein, shall be attached and separately packaged.
5. Accessories and accessory hardware shall be separately packaged

D. Manufacturers: Shelter to be manufactured by Midwest American Shelter Systems or Brasco International.

2.09 FARE COLLECTION UNIT:

A. Fare Collection Box: Two 100 space pay boxes shall be furnished and installed within the shelter leaving room for a future 3rd box.

1. The fare collection box shall be front opening model SSA-111-100 pick proof as manufactured by Southern Specialties Corporation (1232 East Second Street, Tulsa, Oklahoma 74120, (919) 584-3553).
2. Boxes shall have stainless steel components. The box shall have one hundred compartments.
3. All decals shall be supplied to be compatible with fare collection box manufacturer. Numbers to be supplied shall be as per parking space numbering.
4. The fare collection box to be secured with a locking "T" handle mechanism. Four keys are to be provided to the Owner.

B. Collection Box Mounting Post:

1. The fare collection box mounting posts shall be as for model SSA-111-100 as manufactured by Southern Specialties Corporation (1232 East Second Street, Tulsa, Oklahoma 74120, (919) 584-3553).
2. Color of box and post shall be per Village direction

PART 3: EXECUTION

- 3.01 **EARTHWORK**: Work under this item shall be performed in accordance with Sections 201, 202, 204, and 205 of the Standard Specifications, except as herein modified.
- A. Before any material is placed for construction of embankments, topsoil within the limits of clearing and grubbing shall be excavated and stockpiled on site for subsequent placement on finished embankment, as needed. Excess quantities of topsoil are to be hauled off-site. Placement of embankment may proceed upon acceptance of a proof-rolling test. The equipment used for the proof-rolling shall be approved by the Engineer.
 - B. Embankment shall be compacted in accordance with the requirements of Article 205.06 of the Standard Specifications.
 - C. All material shall be disposed of in accordance with Article 202.03 of the Standard Specifications at the Contractor's expense. The Village shall be informed of the disposal site and shall be given a copy of necessary permit(s). If the disposal site is on private property, the Village shall be given a copy of written permission from the property owner allowing the disposal.
 - D. The Contractor shall support, maintain, and protect all utility lines to remain in service.
 - E. When necessary, due to weather conditions, the Contractor shall remove snow and ice from the work area to the satisfaction of the Engineer.
 - F. Prior to placement of granular sub-base material, the Contractor will coordinate for the Village's engineer to inspect earthwork performed.
 - G. Prior to excavating greater than the estimated amounts (within $\pm 10\%$), the Contractor shall notify the Village's engineer, in writing. Failure to do so will result in additional excavation being paid for by the Contractor, with no additional compensation due.
 - H. The Contractor shall control dust on the site by spraying water or by other means satisfactory to the Engineer.
 - I. The Contractor shall contact J.U.L.I.E. or DIGGER, and have utilities located before any earthwork may begin.
- 3.02 **SUB-BASE GRANULAR MATERIAL, TYPE B**: Work under this item shall be performed in accordance with Section 311 of the Standard Specifications, except as herein modified.

- A. Construct a 4" granular subbase according to Article 311.05(c) and the Engineer's approval. Gradation of granular material shall be CA-6.
- B. The granular material shall be compacted to not less than 95 percent of the standard laboratory density.
- C. The subbase granular material shall not be placed on a wet subgrade, a subgrade rutted by the Contractor's equipment, or a non-compacted and "Proof-rolled" subgrade.
- D. The subgrade shall be prepared. Preparation of the subgrade shall not be paid for separately but shall be considered to be included in the Work.
- E. It is understood that a certain amount of sub-base granular material may be displaced into the existing soil when the material is placed and compacted, however, any such material will not be measured for payment and the cost thereof considered incidental to the item.
- F. The contractor will be required to drain off all rainfall as rapidly as possible and maintain the subgrade in a dry, smooth and compacted condition until the granular material is placed.
- G. The Engineer may restrict hauling over the completed or partially completed work after inclement weather or at any time when the earth subgrade is soft and there is a tendency for the earth to work into the granular material.

3.03 CONCRETE FORMWORK: Work under this item shall be performed in accordance with Sections 420 and 424 of the Standard Specifications, except as herein modified.

- A. Design of Work:
 - 1. The design and engineering of the formwork, as well as its construction, shall be the responsibility of the Contractor and shall conform to "Recommended Practice for Concrete Formwork", ACI 347.
 - 2. Forms shall conform to shape, lines and dimensions shown on the Drawings. They shall be designed to safely resist the pressure and weight of the concrete, and shall be properly tied and braced or shored so as to maintain position and shape.
 - 3. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.
 - 4. Temporary Openings: Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement and for placement of concrete. Brace temporary closures and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms in as inconspicuous locations as possible, consistent with project requirements.
- B. Construction Formwork:

1. General: Construct all required forms to be substantial, sufficiently tight to prevent leakage of mortar, and able to withstand internal pressure when filled with wet concrete.
 2. Layout:
 - a. Form all required cast-in-place concrete to the shapes, sizes, lines and dimensions indicated on the Drawings.
 - b. Exercise particular care in the layout of forms to avoid necessity for cutting of concrete after forms have been removed.
 - c. Make proper provision for all openings, offsets, recesses, anchorage, blocking and other features of the Work as shown or required.
 - d. Carefully examine the Drawings and Specifications and consult with other trades as required, relative to provision for openings, anchor bolts and other items in the forms.
 3. Tolerances: Construct all forms straight, true, plumb and square within a tolerance horizontally of 1/8 inch and a tolerance vertically of 1/8 inch.
 4. Wetting: Keep forms sufficiently wetted to prevent joints opening up before concrete is placed.
- C. Work Prior To Concrete Placement:
1. Form Coatings: Coat form contact surfaces with form-coating compound before reinforcement is placed. Do not allow excess form-coating material to accumulate in the forms or to come into contact with surfaces which will be bonded to fresh concrete. Apply in compliance with manufacturer's instructions. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust stained steel formwork is not acceptable.
 2. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is to be placed. Retighten forms immediately after placement as required to eliminate mortar leaks.
 3. Edge Forms and Screed Strips: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in the finished slab surface. Provide and secure units to support types of screeds required.
 4. Once forms are set and at least 24 hours prior to the placement of concrete, the Contractor shall notify the Village's Engineer that the formwork is ready for final inspection.

- D. Removal of Formwork: Side forms not supporting vertical loads may be removed after cumulative curing at not less than 50° F for 24 hours after placing concrete, providing the concrete is sufficiently hard not to be damaged by form removal operations and providing that curing and protection operations are maintained.
- E. Reuse Forms: Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form-coating compound material to concrete contact surfaces as specified for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces.

3.04 CONCRETE PLACEMENT: Work under this item shall be performed in accordance with Sections 420 and 424 of the Standard Specifications, except as herein modified.

- A. No concrete shall be placed on a frozen subbase.
- B. Pre-placement Inspection: Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other trades to permit the installation of their Work; cooperate with other trades in setting such work as required. Thoroughly wet wood forms immediately before placing concrete, as required where form coatings are not used. Coordinate the installation of joint materials with placement of forms and reinforcing steel.
- C. General Requirements: Comply with Sections 420 and 424 of the Standard Specifications.
- D. Temperature Control for Placement: Comply with Article 1020.14 of the Standard Specifications.
- E. Concrete Curing and Protection: Concrete curing shall meet the requirements of Article 1020.13 of the Standard Specifications.
- F. Concrete Joints: Expansion joints, construction joints, and control joints shall be as shown on the Drawings, and as specified. Additional construction joints shall be subject to approval by the Engineer.
- G. Tooled or sawed construction joints shall be spaced at intervals equaling the width of the concrete pad, but not less than 5 feet, or as shown on the Plans.
- H. Full depth expansion joints (3/4 inch wide) shall be spaced 50 feet maximum on centers.
- I. Concrete Finishing:
 - 1. Horizontal concrete surfaces shall be finished as per Article 424.06 of the Standard Specifications.

2. Vertical concrete surfaces shall be finished smooth and even, and given a light brush finish while the concrete is still workable. The edges shall be rounded with approved finishing tools having the radii shown on the plans.

3.05 REINFORCEMENT: Work under this item shall be performed in accordance with Section 508 of the Standard Specifications, except as herein modified.

- A. The placement of reinforcement shall meet the requirements of Articles 420.09 and 420.10 of the Standard Specifications.
- B. The reinforcement bars shall be securely tied to prevent displacement during the concreting operation.
- C. All reinforcing bars shall be placed with a tolerance of 1/2" to provide for adequate protective concrete cover, unless stated specifically on the Plans.
- D. Coordinate with the Village's Engineer at least 24 hours prior to placement of concrete to arrange for inspection of steel reinforcement.
- E. Reinforcement bar supports shall meet the requirements of Article 420.10 of the Standard Specifications.
- F. The reinforcement bars, when delivered on the job, shall be stored above the surface of the ground on wooden or padded steel cribbing, and shall be protected from mechanical injury and from deterioration by exposure. When placed in the work, they shall be free from dirt, paint, oil or other foreign substances.
- G. All systems for handling epoxy-coated reinforcement bars shall have padded contact areas. The bars or bundles shall not be dropped or dragged.
- H. Epoxy-coated reinforcement bars to be cut in the field shall be either sawed or sheared but shall not be frame cut. Patching of the bars cuts shall be in accordance with ASTM specifications. Placing and securing of the reinforcement bars shall be in accordance with Article 508.05. All tie wire shall be epoxy coated.

3.06 CONCRETE JOINT SEALER: Work under this item shall be performed in accordance with Section 420 of the Standard Specifications, except as herein modified.

- A. Before commencing installation, the Engineer shall examine substrate surfaces to determine that they are free of conditions which might be detrimental to proper and timely completion of the Work.
- B. Verify that joint backing and release tapes are compatible with sealant.
- B. Clean substrate and remove protective coatings which might fail in adhesion or interfere with bond of compound so that surfaces are free of deleterious substances which might impair the Work. Elastomeric sealants shall not be applied to joint surfaces previously treated with paint, lacquer,

sealer, curing compound, water repellent or other coatings unless such coatings have been entirely removed.

- D. Prime substrate in accordance with the instructions of the sealant manufacturer.
- E. Install bond breakers in locations and of type recommended by the sealant manufacturer to surface where such bond might impair the performance of the sealant.
- F. Before applying materials, joints shall be clean. Remove dust and other loose debris with a stiff brush or compressed air. Wire brush to remove rust or corrosion from metals. If concrete joints were "wet" sawed, remove laitance from sides of joint by approved means. Eliminate traces of oil, grease, or lacquers with a solvent wash, using toluene, xylene, or methylethyl ketone (MEK) applied with a clean brush and wiped dry with frequently changed clean rags.
- G. Mix and install all materials in accordance with the manufacturer's printed instructions.

3.07 PROTECTIVE COAT: Work under this item shall be performed in accordance with Section 420 of the Standard Specifications, except as herein modified.

- A. Protective coat shall be applied on all exposed concrete surfaces in accordance with Article 420.21 of the Standard Specifications.
- B. Inspection: Before commencing work, the surface shall be examined to determine that it is clean, dry and free of grease, oil or other surface contaminants which might be detrimental to proper and timely completion of work.
- C. Clean adjoining surfaces of smears, compound, or other soiling due to these operations, as work progresses. Restore, refinish or replace any adjacent surfaces or materials which are marred or damaged to the satisfaction of the Engineer.

3.08 SHELTER:

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects.

3.09 FARE COLLECTION UNIT:

- A. Install in accordance with manufacturer's instructions.
- B. Installation of concrete bases for mounting posts shall be as per the applicable requirements of Article 664.04 of the IDOT Standard Specifications. Concrete bases shall be 2' (610 mm) diameter by 4' (1220 mm) deep.
- C. If accessible (handicapped) parking spaces are to be paid spaces, then the coin slots for these spaces shall be located on the fare collection box no higher than 4' -6" (1370 mm) above the finished ground surface.

PART 4: MEASUREMENT AND PAYMENT

This work will be paid for at the contract unit price per LUMP SUM for FAIR COLLECTION MACHINE SHELTER and will include all materials, equipment and labor required to complete the work as specified above. Two 100 space fare collections boxes will be furnished and installed leaving room for a future 3rd box.

OVERHEAD PARKING NUMBERING

PART 1: GENERAL

- 1.01 **DESCRIPTION OF WORK:** This work shall consist of furnishing and installing parking space numbering signs, posts, post foundations, aerial mounting devices, hardware, hardware, and all other related items at the locations shown in the plans (and Overhead Parking Numbering Details in the plans) or as directed by the Engineer. This work shall include all excavation and backfill; furnishing and placing concrete, Class SI; regrading; furnishing and installing galvanized steel post with cap; furnishing and installing space numbering signs, all mounting devices, hardware, and related appurtenances; and all labor, tools, and equipment necessary to complete the work as specified, including clean-up and restoration of the location.
- 1.02 **REFERENCES:** Work under this item shall be performed in accordance with Articles 664.04, 664.05, 1006.27(a), 1006.29, 1006.34(a), 1085.57, 1090.01, 1091.01, and Sections 729, 826, 1003, 1004, 1020, and 1021 of the Standard Specifications, except as herein modified.
- 1.03 **STANDARDS:**
- A. Parking Layout Plan, as shown in the Drawings.
 - B. Parking space numbering details, as shown in the Drawings.
- 1.04 **SUBMITTALS:** The Contractor shall submit shop drawings for Village's approval for the steel posts and caps, aerial mounting assembly, and numbering signs.

PART 2: PRODUCTS

- 2.01 **CONCRETE MATERIALS:** Concrete materials shall meet the requirements of Sections 1020 and 1021 the Standard Specifications. The concrete shall be Class SI and meet the following requirements:
- A. Portland Cement: ASTM C150, domestic brand, Type I, normal Portland Cement; Type III for high-early strength Portland cement as per the requirements of Section 1001 of the Standard Specifications. Air entraining cement is not acceptable.
 - B. High-early strength concrete may be used subject to Engineer's approval.
All provisions of the specifications shall apply except that the 7-day compressive strength shall equal the 28-day compressive strength required for normal concrete.
 - C. Admixtures: Admixtures shall meet the requirements of Article 1020.05 and Section 1021 of the Standard Specifications.

- D. Water-Reducing Admixture: As per the requirements of Article 1021.03 of the Standard Specifications.
- E. Air-Entraining Admixture: Use air-entraining admixtures in all concrete, as per the requirements of Article 1021.02 of the Standard Specifications. Add air entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having an air content of not less than 5% nor more than 8% of the volume of the concrete.
- G. Calcium Chloride: Shall not be used.
- H. Concrete Curing Materials: Burlap curing blankets, waterproof paper blankets, white polyethylene sheeting, and burlap-polyethylene blanket shall meet the requirements of Section 1022 of the Standard Specifications.
- I. Ready Mix Concrete:
1. All ready-mixed concrete shall comply with Article 1020.11 of the Standard Specifications
 2. The ready-mixed concrete producer shall submit duplicate delivery tickets, one for the Contractor and one for the Engineer, with each load of concrete delivered to the site.
 3. Delivery tickets shall provide the following information:
 - a.) Date
 - b.) Name of ready-mix concrete plant
 - c.) Contractor
 - d.) Job Location
 - e.) Type of cement (Standard or H.E.S.)
 - f.) Cement content in bags per cubic yard of concrete
 - g.) Truck number
 - h.) Time dispatched, and time unloaded
 - i.) Amount of concrete in load in cubic yards
 - j.) Admixtures in concrete, if any
- 2.02 GALVANIZED STEEL POST AND CAP (AERIAL MOUNTED INSTALLATION): The material for the steel post and cap shall meet the requirements of Articles 1006.27(b) of the Standard Specifications. Galvanizing shall conform to Article 1006.34(a) of the Standard Specifications.
- 2.03 SPAN WIRE AND HARDWARE (AERIAL MOUNTED INSTALLATION):
- A. The material shall conform to the requirements of Article 1085.57(a) for tether wire.
- B. All turnbuckles, eye bolts, and all other hardware shall conform to the requirements of Article 1085.57(b).
- 2.04 METAL POST (GROUND MOUNTED INSTALLATION): The material for the metal posts, standard installation, shall conform to the requirements of Section 1006.29 of the Standard Specifications.

2.05 SPACE NUMBERING SIGNS:

- A. Sign base material shall conform to the requirements of Article 1090.01, Type 1, of the Standard Specifications.
- B. Sign face materials shall conform to the requirements of Article 1091.01, of the Standard Specifications.

PART 3: EXECUTION

3.01 CONCRETE PLACEMENT: Work under this item shall be performed in accordance with Section 420 of the Standard Specifications, except as herein modified.

- A. Pre-placement Inspection: Before placing concrete, inspect and complete any formwork installation, and items to be embedded or cast-in. Notify other trades to permit the installation of their Work; cooperate with other trades in setting such work as required.
- B. General Requirements: Comply with Section 420 of the Standard Specifications.
- C. Temperature Control for Placement: Comply with Article 1020.14 of the Standard Specifications.
- D. Concrete Curing and Protection: Concrete curing shall meet the requirements of Article 1020.13 of the Standard Specifications.

3.02 GALVANIZED STEEL POST AND CAP (AERIAL MOUNTED INSTALLATION): The steel post shall be set as outlined in Articles 664.04 and 664.05 of the Standard Specifications. Post holes shall be augured by means of mechanical equipment.

3.03 SPAN WIRE AND HARDWARE (AERIAL MOUNTED INSTALLATION): The span wire and accessories shall be installed in accordance with Section 826 of the Standard Specifications.

3.04 METAL POST (GROUND MOUNTED INSTALLATION): The metal posts shall be set as outlined in Section 729 of the Standard Specifications.

3.05 SPACE NUMBERING SIGNS: The signs shall be installed in accordance with Section 720 of the Standard Specifications.

This work will be paid for at the contract unit price per LUMP SUM for OVERHEAD PARKING NUMBERING and will include all materials, equipment and labor required to complete the work as specified above.

GENERAL ELECTRICAL REQUIREMENTS

Add the following to Article 801 of the Standard Specifications:

"Maintenance transfer and Preconstruction Inspection:

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

Establish the procedures for formal transfer of maintenance responsibility required for the construction period.

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 304.8 mm (one (1) foot) to either side. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition."

Add the following to the 1st paragraph of Article 801.05(a) of the Standard Specifications:

"Items from multiple disciplines shall not be combined on a single submittal and transmittal. Items for lighting, signals, surveillance and CCTV must be in separate submittals since they may be reviewed by various personnel in various locations."

Revise the second sentence of the 5th paragraph of Article 801.05(a) of the Standard Specifications to read:

"The Engineer will stamp the submittals indicating their status as 'Approved', 'Approved as Noted', 'Disapproved', or 'Information Only'.

Revise the 6th paragraph of Article 801.05(a) of the Standard Specifications to read:

"Resubmittals. All submitted items reviewed and marked 'Approved as Noted', or 'Disapproved' are to be resubmitted in their entirety with a disposition of previous comments to verify contract compliance at no additional cost to the state unless otherwise indicated within the submittal comments."

Revise Article 801.11(a) of the Standard Specifications to read:

"Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance the of existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein. Maintenance of lighting systems is specified elsewhere and will be paid for separately

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance."

Add the following to Section 801 of the Standard Specifications:

"Lighting Cable Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible."

"Lighting Cable Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on. Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side."

Revise the 2nd paragraph of Article 801.16 of the Standard Specifications to read:

"When the work is complete, and seven days before the request for a final inspection, the full-size set of contract drawings. Stamped "RECORD DRAWINGS", shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor's supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible."

UNDERGROUND RACEWAYS

Effective: March 1, 2015

Revise Article 810.04 of the Standard Specifications to read:

"Installation. All underground conduits shall have a minimum depth of 30-inches (700 mm) below the finished grade."

Add the following to Article 810.04 of the Standard Specifications:

"All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans."

Add the following to Article 810.04 of the Standard Specifications:

"All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12") or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped.

The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125") thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring."

EXPOSED RACEWAYS

Effective: January 1, 2012

Revise the first paragraph of Article 811 .03(a) of the Standard Specifications to read:

"General. Rigid metal conduit installation shall be according to Article 810.03(a). Conduits terminating in junction and pull boxes shall be terminated with insulated and gasketed watertight threaded NEMA 4X conduit

hubs. The hubs shall be Listed under UL 514B. The insulated throat shall be rated up to 105° C. When PVC coated conduit is utilized, the aforementioned hubs shall also be PVC coated."

Add the following to Article 811.03(b) of the Standard Specifications:

"Where PVC coated conduit is utilized, all conduit fittings, couplings and clamps shall be PVC coated. All other mounting hardware and appurtenances shall be stainless steel."

"The personnel installing the PVC coated conduit must be trained and certified by the PVC coated conduit Manufacturer or Manufacturer's representative to install PVC coated conduit. Documentation demonstrating this requirement must be submitted for review and approval."

Revise Article 1088.01(a) of the Standard Specifications to read:

"Couplings and fittings shall meet ANSI Standard C80.5 and U.L. Standard 6. Elbows and nipples shall conform to the specifications for conduit. All fittings and couplings for rigid conduit shall be of the threaded type. All conduit hubs shall be gasketed and watertight with an integral O-ring seal."

Add the following to Article 1088.01 (a)(3) of the Standard Specifications to read:

- a. PVC Coated Steel Conduit. The PVC coated rigid metal conduit shall be UL Listed (UL 6). The PVC coating must have been investigated by UL as providing the primary corrosion protection for the rigid metal conduit. Ferrous fittings for general service locations shall be UL Listed with PVC as the primary corrosion protection. Hazardous location fittings, prior to plastic coating shall be UL listed.
- b. The PVC coating shall have the following characteristics:

Hardness:	85+ Shore A Durometer
Dielectric Strength:	400V/mil @ 60 Hz
Aging:	1,000 Hours Atlas Weatherometer
Temperature	The PVC compound shall conform at 0°F. to Federal Specifications PL-406b, Method 2051, Amendment 1 of 25 September 1952 (ASTM D746)
Elongation:	200%
- c. The exterior and interior galvanized conduit surface shall be chemically treated to enhance PVC coating adhesion and shall also be coated with a primer before the PVC coating to ensure a bond between the zinc substrate and the PVC coating. The bond strength created shall be greater than the tensile strength of the plastic coating.
- d. The nominal thickness of the PVC coating shall be 1 mm (40 mils). The PVC exterior and urethane interior coatings applied to the conduit shall afford sufficient flexibility to permit field bending without cracking or flaking at temperatures above -1°C (30°F).
- e. An interior urethane coating shall be uniformly and consistently applied to the interior of all conduit and fittings. This internal coating shall be a nominal 2 mil thickness. The interior coating shall be applied in a manner so there are no runs, drips, or pinholes at any point. The coating shall not peel, flake, or chip off after a cut is made in the conduit or a scratch is made in the coating.

- f. Conduit bodies shall have a tongue-in-groove gasket for maximum sealing capability. The design shall incorporate a positive placement feature to assure proper installation. Certified test results confirming seal performance at 15 psig (positive) and 25 in. of mercury (vacuum) for 72 hours shall be submitted for review when requested by the engineer.
- g. The PVC conduit shall pass the following tests:

Exterior PVC Bond test RN1:

Two parallel cuts 13 mm (1/2 inch) apart and 40 mm (1 1/2 inches) in length shall be made with a sharp knife along the longitudinal axis. A third cut shall be made perpendicular to and crossing the longitudinal cuts at one end. The knife shall then be worked under the PVC coating for 13 mm (1/2 inch) to free the coating from the metal.

Using pliers, the freed PVC tab shall be pulled with a force applied vertically and away from the conduit. The PVC tab shall tear rather than cause any additional PVC coating to separate from the substrate.

Boil Test:

Acceptable conduit coating bonds (exterior and interior) shall be confirmed if there is no disbondment after a minimum average of 200 hours in boiling water or exposure to steam vapor at one atmosphere. Certified test results from an independent testing laboratory shall be submitted for review and approval. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D870, a 6" length of conduit test specimen shall be placed in boiling water. The specimen shall be periodically removed, cooled to ambient temperature and immediately tested according to the bond test (RN 1). When the PVC coating separates from the substrate, the boil time to failure in hours shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, a 6" conduit test specimen shall be cut in half longitudinally and placed in boiling water or directly above boiling water with the urethane surface facing down. The specimen shall be periodically removed, cooled to ambient temperature and tested in accordance with the Standard Method of Adhesion by Tape Test (ASTM D3359). When the coating disbonds, the time to failure in hours shall be recorded.

Heat/Humidity Test:

Acceptable conduit coating bonds shall be confirmed by a minimum average of 30 days in the Heat and Humidity Test. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D1151, D1735, D2247 and D4585, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F (66°C) and 95% relative humidity. The specimens shall be periodically removed and a bond test (RN1) performed. When the PVC coating separates from the substrate, the exposure time to failure in days shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F (66°C) and 95% relative humidity. When the coating disbonds, the time to failure in hours shall be recorded.

Add the following to Article 1088.01(a)(4) of the Standard Specifications:

"All liquid tight flexible metal conduit fittings shall have an insulated throat to prevent abrasion of the conductors and shall have a captive sealing O-ring gasket. The fittings shall be listed under UL 514B. The insulated throat shall be rated up to 105° C."

Revise the second paragraph of Article 811.04 of the Standard Specifications to read:

"Expansion fittings and LFNC will not be measured for payment."

Revise Article 811.05 of the Standard Specifications to read:

"811.05 Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for **CONDUIT ATTACHED TO STRUCTURE, OF THE DIAMETER SPECIFIED, RIGID GALVANIZED STEEL** or **CONDUIT ATTACHED TO STRUCTURE, of the diameter specified, RIGID GALVANIZED STEEL, PVC COATED.**"

UNIT DUCT

Effective: January 1, 2012

Revise the second paragraph of Article 816.03(a) to read:

"The unit duct shall be installed at a minimum depth of 760 mm (30-inches) unless otherwise directed by the Engineer."

Revise Article 1088.01(c) to read:

"(c) Coilable Nonmetallic Conduit.

General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

Nominal Size		Nominal I.D.		Nominal O.D.		Minimum Wall	
mm	in	mm	in	mm	in	mm	in
31.75	1.25	35.05	1.380	42.16	1.660	3.556 +0.51	0.140 +0.020
38.1	1.50	40.89	1.610	48.26	1.900	3.683 +0.51	0.145 +0.020

Nominal Size		Pulled Tensile	
mm	in	N	lbs
31.75	1.25	3322	747
38.1	1.50	3972	893

Marking:

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

Performance Tests:

Polyethylene Duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

Duct Diameter		Min. force required to deform sample 50%	
mm	in	N	lbs
35	1.25	4937	1110
41	1.5	4559	1025

WIRE AND CABLE

Effective: January 1, 2012

Add the following to the first paragraph of Article 1066.02(a):

“The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor	Messenger wire
-----------------	----------------

Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Add the following to Article 1066.03(b) of the Standard Specifications:

"Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE."

Revise Article 1066.04 to read:

"Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is "Palomino". The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474."

Revise the second paragraph of Article 1066.05 to read:

"The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing."

ELECTRIC SERVICE INSTALLATION

Effective: January 1, 2012

Description. This item shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under ELECTRIC UTILITY SERVICE CONNECTION. This item may apply to the work at more than one service location and each will be paid separately.

Materials. Materials shall be in accordance with the Standard Specifications.

CONSTRUCTION REQUIREMENTS

General. The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the Drawings or specified herein

Method Of Measurement. Electric Service Installation shall be counted, each.

Basis Of Payment. This work will be paid for at the contract unit price each for **ELECTRIC SERVICE INSTALLATION** which shall be payment in full for the work specified herein.

ELECTRIC UTILITY SERVICE CONNECTION (COMED)

Effective: Effective: January 1, 2012

Description. This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE.

CONSTRUCTION REQUIREMENTS

General. It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of the project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by ComEd for its services. Work provided by the Contractor for electric service will be paid separately as described under **ELECTRIC SERVICE INSTALLATION**. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated as **\$12,000.00**.

Basis Of Payment. This work will be paid for at the contract lump sum price for **ELECTRIC UTILITY SERVICE CONNECTION** which shall be reimbursement in full for electric utility service charges.

LIGHTING CONTROLLER, BASE MOUNTED, 240 VOLT, 100 AMP

1. DESCRIPTION:

This work shall consist of installing a complete cabinet-type lighting controller assembly complete with concrete foundation and wiring for the control of roadway lighting. All work shall be according to Section 825 of the Standard Specifications except as follows:

This work shall consist of all labor and materials required to construct the controller and foundation as shown in the detail drawings. The controller should have a meter fitting. The controller shall include a button-type, electronic, solid state photocell mounted to the bottom of the vented cabinet overhang, and shall include all wiring to connect the photocell.

The completed controller shall be an Industrial Control Panel under UL 508, and shall be suitable for use as service equipment

Enclosure.

Cabinet. The cabinet shall be of the dimensions shown on the plans and fabricated from 1/8 in. thick aluminum alloy No. 5052-H32. The cabinet shall comply with ANSI C 33.71 and UL 50 and be reinforced with aluminum angles.

Door. The door shall be of the same material and thickness as the cabinet. The door shall have stainless steel hinges. The door handle shall be stainless steel, a minimum diameter of 1/2 in. (13 mm) and be furnished with a rain and ice resistant lock. The doors shall be gasketed with a neoprene gasket to exclude the entry of moisture, dirt, and insects. A linkage-arm system, of simple construction, shall be attached to the cabinet doors to allow securing in a wide open position during field operations.

Mounting. The cabinet shall be mounted as indicated on the plans.

Work Pad. Except where the cabinet is facing a sidewalk, a poured, 5 in. thick concrete pad of the dimensions shown on the plans shall be provided in front of the cabinet.

Finish. All aluminum enclosures shall be finished as specified:

Surface Preparation: The cabinet, doors and all other parts to be finished will be submerged in each tank of a 3 step iron phosphate conversion technique. After phosphatizing the parts shall be passed through an oven and baked to eliminate any moisture.

Finish coat: Shall be polyester powder paint applied electrostatically to a minimum thickness of 2 mils and baked at 375°F for 20 minutes.

The color of the finish paint shall be RAL 6005 Green or as specified by the Engineer.

The finish shall be applied according to the paint manufacturer's recommendations and the manufacturer shall certify, in writing, to the Engineer, that the finish has been applied properly.

Submittal data submitted for approval shall address the requirement for the paint manufacturer's certification and shall include a standard, single source paint warranty by the paint manufacturer of the controller manufacturer to the Village of Matteson.

Identification. The cabinet door shall have a stainless steel name plate of the dimensions and engraving indicated on the plans.

Control Components.

Circuit Breakers.

All feeders, branch circuits, and auxiliary and control circuits shall have overcurrent protection. The overcurrent protection shall be by means of circuit breakers.

Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles.

240 V circuit breakers shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated circuit voltage for which the breaker is applied. 480 V applications shall have a UL listed interrupting rating of not less than 14,000 rms symmetrical amperes at rated circuit voltage.

Multi-pole circuit breakers larger than 100 A size shall have adjustable magnetic trip settings.

The number of branch circuit breakers shall be as indicated on the Control Cabinet detail drawing or as indicated in the lighting system wiring diagram which ever is greater.

Contactors.

Contactors shall be electrically operated, mechanically held as specified, with the number of poles required for the service and with operating coil voltage as indicated. The contactor shall have an in-line drive operating mechanism. Ampere rating of contactors shall be not less than required for the duty shown and shall otherwise be rated as indicated.

Contactors shall be complete with a non-conducting inorganic, non-asbestos subpanel for mounting.

Mechanically held contactors shall be complete with coil clearing contacts to interrupt current through the coil once the contactor is held in position.

The main contactor contacts shall be the double break, silver to silver type. They shall be spring loaded and provide a wiping action when opening and closing. The contacts shall be renewable from the front panel, self aligning, and protected by auxiliary arcing contacts.

The line and load terminals shall be pressure type terminals of copper construction and of the proper size for the ampere rating of the contactor.

A lever for manual operation shall be incorporated in the mechanically held contactor. Protection from accidental contact with current carrying parts when operating the contactor manually shall be provided.

The contactor operating coil shall operate at phase to neutral voltage. Single phase contactors shall be two pole devices with continuous rating for the amperage selected per pole.

Open and closed positions for mechanically held contactors shall be clearly indicated and labeled in permanent manner as approved by the Engineer.

The control circuit shall have overcurrent protection as indicated and as required by NEC requirements.

Auto/Manual Switches. The cabinet shall be equipped with automatic and manual operating controls. The hand-off-auto switch shall be premium specification grade, as shown on the plans, rated for the applied duty but not less than 20 A at 240 V and shall be mounted in a 4 in. square box with cover.

Ground & Neutral Bus Bars.

Separate ground and neutral bus bars shall be provided. The ground bus bar shall be copper, mounted on the equipment panel, fitted with connectors of the type shown on the plans, as a minimum. The neutral bar shall be similar. The heads of connector screws shall be painted white for neutral bar connectors and green for ground bar connectors.

Interior Lighting and Receptacle

The cabinet shall have an auxiliary device circuit at 120 V single phase to supply a convenience receptacle and cabinet light as indicated in the plans. Where 120 V is not available directly from the service voltage, an outdoor dry type step-down transformer not less than 1.5 KVA shall be provided as described elsewhere herein.

The auxiliary circuit, including transformer primary and secondary, shall have overcurrent protection according to NEC requirements.

The interior, 60 W incandescent lighting fixture of the enclosed-and-gasketed type, shall be switched from a single pole, single throw, 20 A switch. The switch shall be premium specification grade in a suitable 4 in. (100 mm) box with a cover.

A 20A duplex receptacle, ground fault interrupting, premium specification grade shall be furnished in a 4 in. (100 mm) square box with cover, for 120V auxiliary use.

Surge Arrester.

The control circuit in the cabinet shall be protected by a surge arrester meeting the requirements of Article 1065.02.

Wiring and Identification.

Power wiring within the cabinet shall be of the size specified for the corresponding service conductors and branch circuits and shall be rated RHH/RHW, 600 V.

Control and auxiliary circuit wiring shall be rated RHH/RHW or MTW with jacket, 600 V.

All power and control wiring shall be stranded copper. When specified all wiring shall be tagged with self-sticking cable markers. When the contract drawings do not specifically indicate assigned wire designations, the manufacturer shall assign wire designations and indicate them on the shop drawings.

All switches, controls and the like shall be identified both as to function and position (as applicable) by means of engraved two color nameplates attached with screws, or where nameplate are not possible in the judgement of the Engineer, by the use of cloth-backed adhesive labels as approved by the Engineer.

The cabinet with all of its electrical components and parts shall be assembled in a neat orderly fashion. All of the electrical cables shall be installed in a trim, neat, professional manner. The cables shall be trained in straight horizontal and vertical directions and be parallel, next to, and adjacent to other cables whenever possible.

Transformer, General Purpose.

The transformer shall be dry type and weatherproof so that it may be installed indoors or outdoors without additional housing. It shall have an enclosure for splices with provisions for weather tight conduit connections.

The transformer shall have four taps on the primary side, one at 2 1/2 percent, one at 5 percent, one at 7 1/2 percent and one at ten percent below rated voltage.

Insulation shall be Class F or Class H. The transformer shall meet the applicable ASA and IEEE standards.

Mounting and back plates shall be of Aluminum Alloy 2024, 3003 or 6061. Bolts, nuts and washers shall be of Series 300 stainless steel. Bolts shall have hexheads. Nuts shall be hexagon and self locking. Washers shall be of the flat type.

Installation.

The lighting controller installation shall be according to the details, location, and orientation shown on the plans.

All conduit entrances into the lighting controller shall be sealed with a pliable waterproof material.

Concrete Foundation. The Contractor shall confirm the orientation of the lighting controller, and its door side, with the Engineer, prior to installing the foundation. A portland cement concrete foundation shall be constructed to the details shown on the plans and is included as a part of this pay items and shall not be paid for separately. The top of the foundation shall be 12-inches above grade.

The lighting controller enclosure shall be set plumb and level on the foundation. It shall be fastened to the anchor rods with hot-dipped galvanized or stainless steel nuts and washers. Foundation mounted lighting controllers shall be caulked at the base with silicone.

Where the controller has a metal bottom plate, the plate shall be sealed with a rodent and dust/moisture barrier.

Grounding.

Grounding shall be as shown on the lighting controller detail drawings.

Method of Measurement.

Lighting controllers shall be counted each for payment, of the Amperage and Voltage Specified.

2. BASIS OF PAYMENT:

This work will be paid for at the contract unit price per each for **LIGHTING CONTROLLER, BASE MOUNTED, 240 VOLT, 100 AMP** which shall include all material and work described herein.

LIGHT POLE, ALUMINUM, 40 FT. M.H., 8 FT. MAST ARM

This work shall consist of furnishing and installing specialty light poles with accessories in accordance with Section 830 of the Standard Specifications. The poles and accessories shall be as shown on the detail drawings, including all dimensions and hardware required. All components shall have a factory applied black textured powdercoat finish unless otherwise noted.

LIGHT POLES

Poles, handholes, and anchor bolt covers shall be aluminum. Pole and grounding mechanisms shall be UL or ETL listed.

DUPLEX GFI OUTLETS

The festoon outlets shall be UL listed, of the GFCI type, with weatherproof covers in compliance with NEC article 406.8(B)(2)(a). Outlets shall be rated at 20a, 125 VAC, NEMA 50-20R and constructed as shown on the detail drawings. This work shall include all pole wiring, fuses, and other associated equipment needed to connect the festoon outlets as shown in the pole wiring detail.

BANNER ARMS

Banner arms shall be aluminum and not of the breakaway type. Banner arms shall be bolted directly to (or through) the poles. The use of bands to attach banner arms will not be allowed.

DECORATIVE MAST ARM

The mast arm shall be aluminum, decorative, include a scroll, and shall match the design shown on the plans as closely as possible.

DECORATIVE BASE

Included in the cost of the lighting unit shall be the decorative base cover. The split base shall be aluminum. Hardware shall be tamper resistant stainless steel. Anti-seize lubricant shall be used on all hardware and at all junctions between dissimilar metals. The decorative base cover shall match the design shown on the plans as closely as possible.

This work will be paid for at the contract unit price per each for **LIGHT POLE, ALUMINUM, 40 FT. M.H., 8 FT. MAST ARM**, which shall include all material and work described herein.

UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 2" DIA.

This work shall consist of furnishing and installing coilable nonmetallic conduit in accordance with section 810 of the Standard specifications except as modified herein.

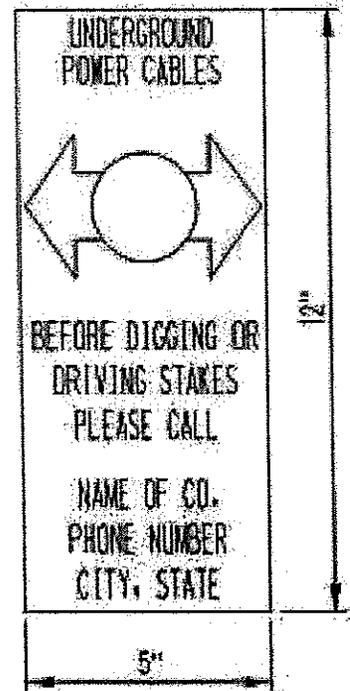
The contractor has the option to use preassembled cable and duct, or install empty conduit and subsequently pull the required cable through the conduit.

This work shall be completed in accordance with CN (Canadian National) "WIRELINE CROSSING AND ENCROACHMENT SPECIFICATIONS.

1. Conduit shall be bored and pulled or installed via another trenchless method.
2. While crossing under rails, the conduit must be at a minimum depth of 5 feet, 6 inches below the base of rail. Within CN ROW and outside of the track ballast section, the depth shall be a minimum of 30 inches. The work shall also meet the minimum dimensions as shown on the plans.
3. All clearances and safety provisions are subject to the applicable national and State Codes. Provisions of that portion of The National Electrical Safety Code (American National Standards Institute) pertaining to railroads apply.
4. The material shall be HDPE, schedule 40 minimum.
5. Contractor shall contact and coordinate with CN prior to installing conduit.
6. Both ends of each crossing shall be marked with the following sign. Signs and posts will not be paid for separately, but shall be considered included in the cost of the conduit.

MARKING OF BURIED POWER CABLES ON RAILROAD RIGHT OF WAY

CABLE ROUTE MUST BE MARKED AT EDGE OF RIGHT OF WAY WHERE CABLE ENTERS OR LEAVES RAILROAD PROPERTY. IN CASES OF PARALLEL CABLE ROUTE, SIGNS AS INDICATED IN FIGURE 1 ON THIS EXHIBIT WILL BE PLACED APPROXIMATELY EVERY 200 FEET. SIGNS TO BE OF A PERMANENT VERTICAL TYPE, NOT SMALLER THAN 5 INCHES WIDE BY 12 INCHES HEIGHT. YELLOW BACKGROUND WITH BOLD BLACK LETTERING. SIGNS TO BE MOUNTED ON METAL POSTS OR AS OTHERWISE AGREED TO AT A HEIGHT OF 3 FEET ABOVE GROUND LEVEL.



This work shall be paid for at the contract unit price per FOOT for UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 2" DIA. which shall include all material and work described herein.

ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 4/0

This work shall consist of furnishing and installing electric cable in accordance with section 817 of the Standard specifications except as modified herein.

The cable shall be installed into HDPE conduit in accordance with the special provision for UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 2" DIA. Included herein.

The cable shall be 600V (XLP-TYPE USE) 3-1/C NO. 4/0.

This work shall be paid for at the contract unit price per FOOT for ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 4/0 which shall include all material and work described herein.

LIGHT POLE, ALUMINUM, 40 FT. M.H., 2-8 FT. MAST ARMS

This work shall consist of furnishing and installing specialty light poles with accessories in accordance with Section 830 of the Standard Specifications. The poles and accessories shall be as shown on the detail drawings, including all dimensions and hardware required. All components shall have a factory applied black textured powdercoat finish unless otherwise noted.

LIGHT POLES

Poles, handholes, and anchor bolt covers shall be aluminum. Pole and grounding mechanisms shall be UL or ETL listed.

DUPLEX GFI OUTLETS

The festoon outlets shall be UL listed, of the GFCI type, with weatherproof covers in compliance with NEC article 406.8(B)(2)(a). Outlets shall be rated at 20a, 125 VAC, NEMA 50-20R and constructed as shown on the detail drawings. This work shall include all pole wiring, fuses, and other associated equipment needed to connect the festoon outlets as shown in the pole wiring detail.

BANNER ARMS

Banner arms shall be aluminum and not of the breakaway type. Banner arms shall be bolted directly to (or through) the poles. The use of bands to attach banner arms will not be allowed.

DECORATIVE MAST ARM

The dual mast arms shall be aluminum, decorative, include a scroll, and shall match the design shown on the plans as closely as possible.

DECORATIVE BASE

Included in the cost of the lighting unit shall be the decorative base cover. The split base shall be aluminum. Hardware shall be tamper resistant stainless steel. Anti-seize lubricant shall be used on all hardware and at all

junctions between dissimilar metals. The decorative base cover shall match the design shown on the plans as closely as possible.

This work will be paid for at the contract unit price per each for **LIGHT POLE, ALUMINUM, 40 FT. M.H., 2-8 FT. MAST ARMS**, which shall include all material and work described herein.

LIGHT POLE, SPECIAL

This work shall consist of furnishing and installing specialty light poles with accessories in accordance with Section 830 of the Standard Specifications. The poles and accessories shall be as shown on the detail drawings, including all dimensions and hardware required. All components shall have a factory applied black textured powdercoat finish unless otherwise noted.

Each pole shall have the number of luminaires and configuration as shown on the plans. No additional payment will be made for poles with mounting provisions and arms for 1, 2, 3, or 4 luminaires.

Poles not protected by barrier curb shall have the foundation exposed 30" above grade.

LIGHT POLES

Poles, handholes, and anchor bolt covers shall be aluminum. Pole and grounding mechanisms shall be UL or ETL listed.

DUPLEX GFI OUTLETS

The festoon outlets shall be UL listed, of the GFCI type, with weatherproof covers in compliance with NEC article 406.8(B)(2)(a). Outlets shall be rated at 20a, 125 VAC, NEMA 50-20R and constructed as shown on the detail drawings. This work shall include all pole wiring, fuses, and other associated equipment needed to connect the festoon outlets as shown in the pole wiring detail.

BANNER ARMS

Banner arms shall be aluminum and not of the breakaway type. Banner arms shall be bolted directly to (or through) the poles. The use of bands to attach banner arms will not be allowed.

BASE COVER

The pole shall include a secured, round cast aluminum anchor bolt and base cover. The cover shall completely conceal the anchor bolts, nuts and other mounting hardware.

This work will be paid for at the contract unit price per each for **LIGHT POLE, SPECIAL**, which shall include all material and work described herein.

LUMINAIRE, LED, TYPE 3, SPECIAL

This work shall consist of furnishing and installing area luminaires in accordance with Section 821 of the Standard Specifications. The luminaires shall be as shown on the detail drawings, including all dimensions and hardware required.

The area luminaire shall have the following features:

- Roof mounted, down lighting optics
- Acrylic lens
- Zero uplight
- Width no greater than 17"
- Height no greater than 8"
- Length no longer than 36" including arm
- EPA no greater than 1.2 SQ FT
- Aluminum construction with black powdercoat finish 2.0 mil minimum thickness
- All exposed screws or hardware shall be stainless steel, installed using anti-seize lubricant
- Rated IP65 or better
- Meet 3G vibration per C136.31-2010
- Equipped with aluminum heat sink for LED driver
- 10kV/5kA surge protection according to IEEE/ANSI C62.42.2 line-ground, line-neutral, and neutral-ground.
- Luminaire and drivers shall be UL or ETL listed for wet locations.
- LED's shall be mounted in arrays, on printed circuit boards designed to maximize heat transfer to the heat sink surface.
- LED life rating data shall be determined in accordance with IESNA LM-80-08. The life expectancy shall be greater than or equal to 100,000 hours at 25° C with not less than 70% lumen maintenance.
- Color temperature shall be 4000K with a minimum of 70 CRI
- Initial lumen rating shall be between 12,700 and 13,000.
- Optical distribution shall be IES Type 4 medium or equivalent.
- LED's and driver shall be rated to operate as low as -40° C.
- The luminaire should have a 5 year warranty from date of manufacture on the LED boards and drivers. Replacement shall be made when more than three LED's are not operating simultaneously.
- Driver shall be wired at 120V
- System wattage shall not exceed 120W
- Include a mounting arm for round pole and 24" wire leads

This work will be paid for at the contract unit price per each for LUMINAIRE, LED, TYPE 3, SPECIAL which shall include all material and work described herein.

LUMINAIRE, LED, TYPE 4, SPECIAL

This work shall consist of furnishing and installing roadway luminaires in accordance with Section 821 of the Standard Specifications. The luminaires shall be as shown on the detail drawings, including all dimensions and hardware required.

ROADWAY LUMINAIRE

The luminaire shall be A 108 watt (nominal) LED luminaire as shown on the plans and have the following features:

- Roof mounted, down lighting optics
- Acrylic lens
- Zero uplight
- Width no greater than 15"
- Height no greater than 8"
- Length no longer than 28"

- EPA no greater than 1 SQ FT
- Aluminum construction with black powdercoat finish 2.0 mil minimum thickness
- All exposed screws or hardware shall be stainless steel, installed using anti-seize lubricant
- Rated IP66
- Meet 3G vibration per C136.31-2010
- Equipped with aluminum heat sink for LED driver
- 10kV/5kA surge protection according to IEEE/ANSI C62.42.2 line-ground, line-neutral, and neutral-ground.
- Luminaire and drivers shall be UL or ETL listed for wet locations.
- LED's shall be mounted in arrays, on printed circuit boards designed to maximize heat transfer to the heat sink surface.
- LED life rating data shall be determined in accordance with IESNA LM-80-08. The life expectancy shall be greater than or equal to 100,000 hours at 25° C with not less than 70% lumen maintenance.
- Color temperature shall be 4000K with a minimum of 70 CRI
- Initial lumen rating shall be between 12,300 - 13,800 lumens
- LED's and driver shall be rated to operate as low as -40° C.
- The luminaire should have a 5 year warranty from date of manufacture on the LED boards and drivers. Replacement shall be made when more than three LED's are not operating simultaneously.
- Driver shall be wired at 120V
- System wattage shall not exceed 130W
- Optical system shall provide an "extra narrow asymmetric" or IES Type 2 distribution.

This work will be paid for at the contract unit price per each for LUMINAIRE, LED, TYPE 4, SPECIAL which shall include all material and work described herein.

LUMINAIRE, LED, TYPE 5, SPECIAL

This work shall consist of furnishing and installing coach luminaires in accordance with Section 821 of the Standard Specifications. The luminaires shall be as shown on the detail drawings, including all dimensions and hardware required.

The luminaire shall be a LED luminaire as shown on the plans and have the following features:

- Clear acrylic lenses with decorative glass chimney
- 15" to 18.5" square cross section
- 27" to 42" height
- Mounted on (17"-18") long, (15"-17") rise decorative arm
- Black powdercoat finish 5.0 mil minimum
- All exposed screws or hardware shall be stainless steel, installed using anti-seize lubricant
- Equipped with aluminum heat sink for LED driver
- 10kV/5kA surge protection according to IEEE/ANSI C62.42.2 line-ground, line-neutral, and neutral-ground.
- LED's shall be mounted in arrays, on printed circuit boards designed to maximize heat transfer to the heat sink surface.
- Initial lumens shall be between 3360 and 3660
- Rated wattage at 120V shall be between 44 to 51 watts
- LED life rating data shall be determined in accordance with IESNA LM-80-08. The L85 system rating shall be a minimum of 50,000 hours.
- Color temperature shall be 4000K with a minimum CRI of 70

- LED's and driver shall be rated to operate as low as -40° C.
- The driver shall contain over-heat protection
- The luminaire should have a 5 year warranty from date of manufacture on the LED boards and drivers. Replacement shall be made when more than three LED's are not operating simultaneously.
- Driver shall be wired at 120V

This work will be paid for at the contract unit price per each for **LUMINAIRE, TYPE 5, SPECIAL** which shall include all material and work described herein.

BUILDING (ELECTRICAL)

The following electrical items shall be included in the cost of the BUILDING pay item:

- POWER SYSTEMS COMPLETE, TRAIN STATION INTERIOR
- LIGHTING SYSTEM COMPLETE, TRAIN STATION INTERIOR
- LIGHTING RELAY CONTROL PANEL COMPLETE

POWER SYSTEMS COMPLETE, TRAIN STATION INTERIOR

This work shall consist of furnishing and installing the distribution of general power for panels, receptacles, mechanical equipment, and other common loads including all general purpose receptacles. See Power Plan on drawings.

Distribution panel LPA shall be 225 Frame with a 150A Main Circuit Breaker (MCB). The panel shall be NEMA 3R (Outdoor Rated) surface mounted with a steel enclosure. Dead-front construction as specified in NEC Section 384-18 and UL 50. Short Circuit Current Rating of 22kA, Bus Material of Shielded Tin Plated Copper, Top or Bottom Feed. Branch breakers shall be bolt on type and shall be as indicated on the drawings. Neutral bus shall have provisions for the main ground conductor and have branch lugs of sufficient size and quantity for the number of circuits in the panelboard. Neutral bus shall be isolated type except when panel board is used as service equipment, neutral bus shall be bonded to the enclosure and to the grounding electrode conductor. Where wire size shown on the drawings is too large for circuit breaker lug, provide watertight compression type connection within the panel board and provide a pigtail to circuit breaker. Pigtail shall be the largest wire accepted by the circuit breaker lug. Ground bus shall have provisions for the main ground conductor and have branch lugs of sufficient size and quantity for the number of circuits in the panelboard. Ground bus shall be bonded to the enclosure. Panel shall be service entrance rated.

Acceptable Manufacturers:

Square D
General Electric
Cutler-Hammer
Siemens

Wiring Devices (receptacles and cover plates). Wiring devices shall be UL listed, heavy duty industrial grade type, 1. Complying with NEMA standard WD 1. 1. Receptacles shall be NEMA 5-20, straight blade, grounding type, complying with Federal Specification WC-596F. Interior cover plates shall be high impact, smooth nylon type; color shall match wiring device. Exterior receptacles shall utilize a NEMA 3R clear plastic "In-Use" cover. Wiring device color shall be ivory.

Acceptable Manufacturers:

20 amp receptacle
Hubbell #5362

Leviton #5362
Pass & Seymour #5362

20 amp GFCI receptacle

Hubbell #GF5362
Leviton #6899
Pass & Seymour #2091-S

Receptacles shall be installed on a 4" square x 2-1/8" deep back box.

Manual motor starters shall be quick-make, quick-break, toggle action with overload thermal trip devices and pilot light and shall be lockable in the off position, 20A.

Acceptable Manufacturers:

Square D.
General Electric
Cutler-Hammer
Siemens
Allen Bradley

Safety switches shall be proper NEMA enclosure as required by location or noted on the drawings. Switches shall be horsepower rated, heavy duty, quick-make and quick-break type non-fused type.

Acceptable Manufacturers:

Square D
General Electric
Cutler-Hammer
Siemens

All conduit and wire shall be installed concealed wherever possible. Where the contractor cannot conceal the conduit and wire, surface mounted pre-manufactured raceway installed parallel and at right angles to surfaces shall be utilized. Surface raceway shall be painted to match adjacent finishes. Contractor shall submit to the engineer a detailed plan indicating all exposed raceways prior to installation.

LIGHTING SYSTEM COMPLETE, TRAIN STATION INTERIORS

This work shall consist of furnishing and installing general lighting, emergency lighting, and lighting controls system for the interior of the Romeoville station including all conduit, wiring, and necessary appurtenances. See Lighting Plan on drawings.

Luminaires are scheduled on the drawings and three manufacturers are indicated on the schedule. This shall not limit the Contractor to those manufacturers, but shall serve as indication of the minimum quality and performance desired by this installation.

The color temperature of all LED light fixtures shall be 3500K; with a CRI greater than 80. The luminaire shall have a pendant length from the ceiling of 48".

Exit Lights and Exit/ Emergency lights shall be provided with a universal mount.

Interior lighting controls shall be a combination of Occupancy Sensors, Daylight Sensors, and Time of Day control as prescribed by the International Energy Conservation Code (IECC).

Override switch (as required by IECC) shall be 20A locking switch

Acceptable Manufacturers:

Hubbell
Leviton
Pass & Seymour

Occupancy sensors shall be ceiling mounted devices mounted to the bottom of the trusses. The system shall be low voltage with all components interconnected via CAT 5 cable with RJ45 connectors. Ceiling sensors shall be multi-technology type, 24 VDC, 20 ma, with 2 RJ45 ports, indoor use, FCC part 15 compliant and UL listed with 5 year warranty

Dimming day light sensors shall be 0-10volt dimming type, 24VDC, 30 ma, with 1 RJ45 port, indoor use, full dimming range (.2vdc to 10vdc), set points 20-60 FTC, FCC part 15 compliant and UL listed with 5 year warranty. Dimming switches shall 1 button, compatible with room controller and daylight sensor.

Room controller shall be multi-volt input/output (120/230/277 VAC 50/60hz) with three RJ45 ports, indoor use, FCC part 15 compliant and UL listed with 5 year warranty

Provide one hand held remote control setup controller for use during commissioning and turn over to owner.

Building layouts shall be confirmed by vendor ultimately by contractor chosen for project.
Commissioning and initial startup will be provided by factory trained representative.

Acceptable Manufacturers:

Wattstopper
Acuity Controls
Eaton-Cooper Controls
Hubbell Building Automation

All conduit and wire shall be installed concealed wherever possible. Where the contractor cannot conceal the conduit and wire, surface mounted pre-manufactured raceway installed parallel and at right angles to surfaces shall be utilized. Surface raceway shall be painted to match adjacent finishes. Contractor shall submit to the engineer a detailed plan indicating all exposed raceways prior to installation.

LIGHTING RELAY CONTROL PANEL COMPLETE

This work shall consist of all the labor and material to install a function Lighting relay control panel. The system shall be as shown on the drawings and specified herein

The lighting relay panel shall use mechanically held relays for switching, controlled as dictated on the drawings.

The Lighting control panel shall be as follows:

A single NEMA 3R enclosure with incoming lighting branch circuits, control circuits, switching relays, and on-board timing and control unit.

The panel shall have vertical barrier separating branch circuits from control wiring.

The control unit: contain the power supply and electronic control for operating and monitoring individual relays.

The timing unit shall include 365-day calendar, astronomical clock, and automatic adjustments for daylight savings and leap year. The clock shall be configurable for 12-hour (a.m./p.m.) or 24-hour format. It shall include a minimum of four (4) independent schedules, each having 24 time periods. The schedule periods shall be settable to the minute, day-of-week, day-of-month, day-of-year with one-time or repeating capability. There shall be provisions for programing 10 special date periods.

The control unit shall have a nonvolatile memory shall retain all setup configurations. After a power failure, the controller shall automatically reboot and return to normal system operation, including accurate time of day and date.

The relays shall be electrically operated, mechanically held single-pole switch, rated at 20 amps at 120-v tungsten, 30 amps at 277-v ballast, 1.5 HP at 120 v, and 3 HP at 277 v. Short-circuit current rating shall be not less than 14 KAIC. Control shall be three-wire, 24-VAC.

The power supply shall comply with NFPA 70, class 2, sized for connected equipment, plus 20 percent spare capacity. Powered from a dedicated branch circuit of the panelboard that supplies power to the line side of the relays, sized to provide control power for the local panel-mounted relays, bus system, low-voltage inputs, field-installed occupancy sensors, and photo sensors.

Operator interface shall be an Integral alphanumeric keypad and digital display, and intuitive drop-down menus to assist in programming. It shall be able to produce, log and display relay on-time. It shall be able to connect relays to one or more time and sequencing schemes.

Acceptable Manufacturers:

- carstriper
- Acuity Controls
- Eaton-Cooper Controls
- Hubbell Building Automation

This work will be measured and paid for at the contract unit price LUMP SUM for **BUILDING** which shall include all material and work described herein.

LIGHTING FIXTURE TYPE A

This work shall consist of furnishing specialty light assemblies with accessories in accordance with Section 821 and 830 of the Standard Specifications. The poles, luminaires, and accessories shall be as shown on the detail drawings, including all dimensions and hardware required.

Poles, handholes, and anchor bolt covers shall be aluminum with black powder coat finish.

Pole and grounding mechanisms shall be UL or ETL listed.

Banner arms shall be aluminum with black powder coat finish, and shall not be of the breakaway type. Banner arms shall be bolted directly to (or through) the poles. The use of bands to attach banner arms will not be allowed.

The festoon outlets shall be UL listed, of the GFCI type, with weatherproof covers in compliance with NEC article 406.8(B)(2)(a). Outlets shall be rated at 20a, 125 VAC, NEMA 50-20R and constructed as shown on the detail drawings. This work shall include all pole wiring, fuses, and other associated equipment needed to connect the festoon outlets as shown in the pole wiring detail.

The pole shall include a secured, round cast aluminum anchor bolt and base cover. The cover shall completely conceal the anchor bolts, nuts and other mounting hardware.

Provide a ¾" x 2" nipple on the pole at an elevation of 11'0" for mounting of "Voice of Metra" (VOM) speaker. Speaker to be installed by Metra Staff.

Luminaires assemblies are scheduled and detailed on the drawings and three manufacturers are indicated on the schedule. This shall not limit the Contractor to those manufacturer, but shall serve as indication of the minimum quality and performance desired by this installation.

Fixture assembly (including poles) shall be provided to Metra and installed by Metra staff, foundation to be by Contractor.

This work will be paid for at the contract unit price per each for XX007109 LIGHT FIXTURE TYPE A which shall include all material and work described herein.

Foundation for this unit shall be 5'0" deep and shall be paid at the contract price per Linear Foot Per LIGHT POLE FOUNDATION, 24" DIAMETER which shall include all material and work for foundation.

LIGHT FIXTURE TYPE B

This work shall consist of furnishing specialty light assemblies with accessories in accordance with Section 821 and 830 of the Standard Specifications. The poles, luminaires, and accessories shall be as shown on the detail drawings, including all dimensions and hardware required.

Poles, handholes, and anchor bolt covers shall be aluminum with black powder coat finish.

Pole and grounding mechanisms shall be UL or ETL listed.

Banner arms shall be aluminum with black powder coat finish, and shall not be of the breakaway type. Banner arms shall be bolted directly to (or through) the poles. The use of bands to attach banner arms will not be allowed.

The festoon outlets shall be shall be UL listed, of the GFCI type, with weatherproof covers in compliance with NEC article 406.8(B)(2)(a). Outlets shall be rated at 20a, 125 VAC, NEMA 50-20R and constructed as shown on the detail drawings. This work shall include all pole wiring, fuses, and other associated equipment needed to connect the festoon outlets as shown in the pole wiring detail.

The pole shall include a secured, round cast aluminum anchor bolt and base cover. The cover shall completely conceal the anchor bolts, nuts and other mounting hardware.

Provide a ¾" x 2" nipple on the pole at an elevation of 11'0" for mounting of "Voice of Metra" (VOM) speaker. Speaker to be installed by Metra Staff.

Luminaires assemblies are scheduled and detailed on the drawings and three manufacturers are indicated on the schedule. This shall not limit the Contractor to those manufacturer, but shall serve as indication of the minimum quality and performance desired by this installation.

Fixture assembly (including poles) shall be provided to Metra and installed by Metra staff, foundation to be by Contractor.

This work will be paid for at the contract unit price per each for LIGHT FIXTURE TYPE B which shall include all material and work described herein.

Foundation for this unit shall be 5'0" deep and shall be paid at the contract price per Linear Foot Per LIGHT POLE FOUNDATION, 24" DIAMETER which shall include all material and work for foundation.

BUILDING

All items in the following table shall be paid for as BUILDING.

S.I.	CODE NO.	ITEM	UNIT	TOTAL QUAN
	XX007056	BUILDING	LSUM	1
X		LIGHTING SYSTEM COMPLETE, TRAIN STATION INTERIOR	LSUM	1
X		LIGHTING RELAY CONTROL PANEL COMPLETE	EACH	1
X		POWER SYSTEMS COMPLETE, TRAIN STATION INTERIOR	LSUM	1
X		FOOTINGS AND FOUNDATION WALLS	FOOT	120
X		EXTERIOR MASONRY WALLS, COMPLETE	FOOT	120
X		WOOD ROOF TRUSSES, COMPLETE	LSUM	1
X		SLAB ON GRADE, COMPLETE	SQ FT	424
X		GUTTERS AND DOWNSPOUTS COMPLETE	LSUM	1
X		RECESSED FLOOR MATS COMPLETE	LSUM	1
X		ALUMINUM DOORS COMPLETE	LSUM	1
X		ALUMINUM WINDOWS COMPLETE	LSUM	1
X		ROOFING COMPLETE	LSUM	1
X		BUILDING SIGNAGE COMPLETE	LSUM	1

FOOTINGS AND FOUNDATION WALLS

This work shall consist of furnishing and constructing cast in place concrete **FOOTINGS AND FOUNDATION WALLS** including but not limited to excavation, concrete, base aggregate, reinforcing bars, formworks, and all other miscellaneous items, tools, and appurtenances necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

Materials will be as specified herein, on the details on the drawings, in the Structural Concrete Notes for Footings, Foundation Walls and Slab on Grade, and other information included on the drawings.

Submittals

Prior to beginning work on the **FOOTINGS AND FOUNDATION WALLS**, the respective contractors shall coordinate as necessary and prepare and submit shop drawings to be reviewed by the Architect / Engineer. Electronic shop drawings shall be submitted via email in PDF format. Collect information into a single submittal for each element of construction and type of product or equipment.

Design Mixtures- For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

Steel Reinforcement Shop Drawings: Placing Drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

Aggregates – provide a material test report.

Formwork – provide Shop Drawings prepared by or under the supervision of a professional engineer, detailing fabrication, assembly, and support of formwork.

Field Conditions

Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

Hot-Weather Placement: Comply with ACI 301 (ACI 301M).

Products

Comply with the following unless modified by requirements in the Contract Documents:

ACI 301 (ACI 301M).

ACI 117 (ACI 117M).

Formwork

The contractor is to furnish and utilize Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

FORMWORK INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301 (ACI 301M), to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 (ACI 117M).
- C. Construct forms tight enough to prevent loss of concrete mortar.
- D. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
- E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- F. Chamfer exterior corners and edges of permanently exposed concrete.

- G. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- H. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- I. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

Steel Reinforcement

Fabricate steel reinforcement according to CRSI's "Manual of standard Practice". Furnish and install reinforcing bars per the following:

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Plain-Steel Wire: ASTM A 1064/A 1064M, as-drawn.
- C. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets.

Furnish and install steel reinforcement to Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

Concrete Materials

- A. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

- B. Cementitious Materials:

Portland Cement: ASTM C 150/C 150M, Type II, gray.

Fly Ash: ASTM C 618, Class F.

- C. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 3S aggregate or better, graded.

Maximum Coarse-Aggregate Size: 1-1/2 inches

Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

- D. Air-Entraining Admixture: ASTM C 260/C 260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
- 1) Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2) Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3) Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4) High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5) High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6) Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
 - 7) Water: ASTM C 94/C 94M and potable.

Repair Materials

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.

Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.

Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6.4 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.

Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

Primer: Product of topping manufacturer recommended for substrate, conditions, and application.

Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.

Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.

Concrete Mixtures for Building elements

- C. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301 (ACI 301M).

- D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
- E. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.
- F. Admixtures: Use admixtures according to manufacturer's written instructions.

Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.

Use corrosion-inhibiting admixture in concrete mixtures where indicated.

- G. Footings: Normal-weight concrete.

Minimum Compressive Strength: 3000 psi (20.7 MPa) at 28 days.

Slump Limit: 5 inches (125 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture plus or minus 1 inch (25 mm).

Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.

- H. Foundation Walls: Normal-weight concrete.

Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.

Slump Limit: 4 inches (125 mm) [8 inches (200 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch (25 mm).

Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.

- I. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

- J. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.

For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).

Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

Embedded Item Installation

- K. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.

Joints

- L. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- M. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- N. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

- O. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

Concrete Placement

- P. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- Q. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M).

Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

- R. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.

Consolidate placed concrete with mechanical vibrating equipment according to ACI 301 (ACI 301M).

Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

- S. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

Maintain reinforcement in position on chairs during concrete placement.

Screed slab surfaces with a straightedge and strike off to correct elevations.

Slope surfaces uniformly to drains where required.

Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

- T. Repair and patch defective areas where noted by the Engineer or Architect of record. Remove and replace concrete that cannot be repaired and patched to Engineer's or Architect of Record's approval.

Concrete Quality Assurance

U. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.

6. Curing procedures and maintenance of curing temperature.

V. Preconstruction Testing Service: Engage a testing agency to perform preconstruction testing on concrete mixtures.

W. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:

Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.

Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.

- a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

Air Content: ASTM C 231/C 231M, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below or 80 deg F (27 deg C) and above, and one test for each composite sample.

Compression Test Specimens: ASTM C 31/C 31M.

- b. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.

Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

- c. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name

and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.

Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

- X. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 24 hours of finishing.
- Y. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- Z. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

- AA. Testing Agency Qualifications: An independent agency, IDOT CERTIFIED, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

- BB. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M.

Concrete Protection and Curing

- CC. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 (ACI 301M) for hot-weather protection during curing.

- DD. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- EE. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
- FF. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- GG. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

- a. Water.
- b. Continuous water-fog spray.
- c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

- d. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
- e. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
- f. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.

Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

- g. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.

Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

HH. Curing Materials

1. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
2. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
3. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
4. Water: Potable. Note that there is no water available onsite. The contractor shall be responsible for providing all water needed for the completion of his work.
6. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
8. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.
9. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.
10. Verify with manufacturer that retained products have been tested against interference with bonding of floor covering.

Concrete Finishing

- II. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

Apply to concrete surfaces not exposed to public view.

- JJ. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner curing material with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
Apply to concrete surfaces to receive a rubbed finish, or to be covered with a coating or covering material directly applied to concrete.

FOOTINGS AND FOUNDATION WALLS will be measured for payment by foot, measured horizontally along the top, inside edge of the foundation wall. Vertical changes will not be measured for payment.

This work will be paid for per LUMP SUM as **BUILDING** as shown on the structural drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

EXTERIOR MASONRY WALLS, COMPLETE

This work shall consist of the furnishing and constructing the **EXTERIOR MASONRY WALLS, COMPLETE** composed of, but not limited to limestone block veneer, concrete masonry units, concrete block lintels, precast wall cap, concrete block bond beam, brick veneer, grout, mortar, mortar net, flashing, rigid insulation, batt insulation, reinforcing bars, steel lintel, weep holes, masonry ties, weather barrier, sills and all other miscellaneous items, tools, and appurtenances necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

Subsection A

1.2 Section Includes:

1. Concrete masonry units.
2. Face brick.
3. Mortar and grout.
4. Steel reinforcing bars.
5. Masonry joint reinforcement.
6. Ties and anchors.
7. Embedded flashing.
8. Miscellaneous masonry accessories.
9. Cast stone window sills, trim, and other items.

1.3 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PRECONSTRUCTION TESTING

- A. Provide decorative rock-face structural unit masonry that develops indicated net-area compressive strengths at 28 days.
 1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
 2. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
1. Masonry Units: Show sizes, colors, textures, profiles, coursing, and locations of special shapes.
 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
 3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
 4. Cast Stone: Show fabrication and installation details for cast stone units. Include dimensions, details of reinforcement and anchorages if any, and indication of finished faces. Included location key plan for all items. Include building elevations showing layout of units and locations of joints and anchors.
- C. Samples for Initial Selection:
1. Exposed CMUs.
 2. Face brick, in the form of straps of five or more bricks.
 3. Colored mortar.
 4. Weep holes/vents.
 5. Accessories embedded in masonry.
 6. Cast stone.
- D. Qualification Data: For testing agency and cast stone manufacturer.
- E. Material Certificates: For each type, color, and size of the following:
1. Masonry units.
 - a. Include material test reports substantiating compliance with requirements.
 - b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
 - c. For exposed brick, include test report for efflorescence according to ASTM C 67.
 - d. For surface-coated brick, include test report for durability of surface appearance after 50 cycles of freezing and thawing per ASTM C 67.
 2. Cementitious materials. Include brand, type, and name of manufacturer.
 3. Pre-blended, dry mortar mixes. Include description of type and proportions of ingredients.
 4. Grout mixes. Include description of type and proportions of ingredients.
 5. Reinforcing bars.
 6. Joint reinforcement.
 7. Anchors, ties, and metal accessories.
- F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

- G. Material Test Reports: For each mix required to produce cast stone, based on testing according to ASTM C 1364, including test for resistance to freezing and thawing. Provide test reports based on testing within previous two years.
- H. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- D. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.
- E. Cast Stone:
 - 1. Manufacturer Qualifications: A qualified manufacturer of cast stone units similar to those indicated for this Project that has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute, the Architectural Precast Association or the Precast/Pre-stressed Concrete Institute for Group A, Category AT.
 - 2. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
 - 3. Source Limitations for Cast Stone: Obtain cast stone units through single source from single manufacturer.
 - 4. Source Quality Control: Engage a qualified independent testing agency to sample and test cast stone units according to ASTM C 1364. Include one test for resistance to freezing and thawing.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

- D. Deliver pre-blended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store pre-blended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.
- F. Cast Stone:
 - 1. Coordinate delivery of cast stone with adhered stone veneer and unit masonry work to avoid delaying the Work and to minimize the need for on-site storage.
 - 2. Pack, handle, and ship cast stone units in suitable packs or pallets.
 - 3. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move cast stone units, if required, using dollies with wood supports.
 - 4. Store cast stone units on wood skids or pallets with non-staining, waterproof covers, securely tied. Arrange to distribute weight evenly and to prevent damage to units. Ventilate under covers to prevent condensation

1.8 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
 - 2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry (including cast stone) has dried, but not less than seven days after completing cleaning.

- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

2.2 ALL CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 2. Provide bull-nose units for all outside corners including at interior and exterior door and window jambs unless otherwise indicated.
 3. Provide bull-nose solid units for all sills at interior windows, and partial height walls.
- B. CMUs: ASTM C 90.
1. Density Classification:
 - a. Above Grade Locations: Lightweight
 2. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
 3. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

2.3 DECORATIVE (ROCK-FACED) CONCRETE MASONRY UNITS

- A. Decorative Concrete Masonry Unit Description:
1. Decorative Concrete Masonry Units shall be one of the following:
 - a. Cordova Stone Masonry Units; Manufactured by Northfield Block Company, 3400 E. Bungalow Rd, Morris IL 60450; (800)358-3003.
Color: Buff
 - b. Riemers Kaufman
6200 Cornhusker Highway
Lincoln, NE--
Color: Cream
 - c. Featherlite
Lubbock, TX 79408
Color - Brownstone
 2. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

- a. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 - b. Provide chamfered units for outside corners unless otherwise indicated.
3. Size for 2-Face Units: Manufactured to width dimensions 1/2 inch less than nominal dimensions X 15-5/8 inches long. (Tolerance = +/- 1/8 inch.)
 4. Finish: Provide rock-face finish on interior exposed sides/faces.
- B. Comply with ASTM C 90.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
 2. Density Classification: Medium weight.
 3. Grade: N
 4. Type: Type I

2.4 CAST STONE UNITS

- A. General: Provide cast stone units complying with ASTM C 1364 using either the vibrant dry tamp or wet-cast method, and the following:
1. Exterior Cast Stone Units: Provide units that are resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.
 2. Provide each sill using a single, full length cast stone unit.
 3. Portland Cement: ASTM C 150, Type I or Type III, containing not more than 0.60 percent total alkali when tested according to ASTM C 114. Provide natural color or white cement as required to produce cast stone color indicated.
 4. Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C 33; gradation and colors as needed to produce required cast stone textures and colors.
 5. Fine Aggregates: Natural sand or crushed stone complying with ASTM C 33, gradation and colors as needed to produce required cast stone textures and colors.
 6. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
 7. Admixtures: Use only admixtures specified.
 - a. Do not use admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious materials. Do not use admixtures containing calcium chloride.
 - b. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.
 - c. Air-Entraining Admixture: ASTM C 260. Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.
 - d. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - e. Water-Reducing, Retarding Admixture: ASTM C 494/C 494M, Type D.
 - f. Water-Reducing, Accelerating Admixture: ASTM C 494/C 494M, Type E.
 8. Reinforcement: Deformed steel bars complying with ASTM A 615/A 615M, Grade 60 (Grade 420). Use galvanized or epoxy-coated reinforcement when covered with less than 1-1/2 inches of cast stone material.
 9. Epoxy Coating: ASTM A 775/A 775M.

10. Galvanized Coating: ASTM A 767/A 767M.
 11. Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666, Type 304.
- B. Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
 2. Provide raised fillets at backs of sills and at ends indicated to be built into jambs.
 3. Provide drips on projecting elements unless otherwise indicated.
- C. Fabrication Tolerances:
1. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch.
 2. Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch, whichever is greater, but in no case by more than 1/4 inch.
 3. Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch, whichever is greater.
 4. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch on formed surfaces of units and 3/8 inch on unformed surfaces.
- D. Cure units as follows:
1. Cure units in enclosed moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
 2. Keep units damp and continue curing to comply with one of the following:
 - a. No fewer than five days at mean daily temperature of 70 deg F or above.
 - b. No fewer than six days at mean daily temperature of 60 deg F or above.
 - c. No fewer than seven days at mean daily temperature of 50 deg F or above.
 - d. No fewer than eight days at mean daily temperature of 45 deg F or above.
- E. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
- F. Texture: Provide units with fine-grained texture resembling Indiana limestone.
- G. Thickness: Match cast stone thickness with veneer thickness.
- H. Anchors: Type and size indicated, fabricated from Type 304 stainless steel complying with ASTM A 240, ASTM A 276, or ASTM A 666
- 2.5 MASONRY LINTELS
- A. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.
- 2.6 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:
1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
 2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
 3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
 4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.
- B. Face Brick: Facing brick complying with ASTM C 216.
1. Grade: SW.
 2. Type: FBS.
 3. Brick for reinforced masonry construction shall comply with ASTM C62
 4. Initial Rate of Absorption: Less than 30 g/30 sq. in. per minute when tested per ASTM C 67.
 5. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
 6. Surface Coating: Brick with colors or textures produced by application of coatings shall withstand 50 cycles of freezing and thawing per ASTM C 67 with no observable difference in the applied finish when viewed from 10 feet.
 7. Size: modular 7 5/8" × 3 5/8" × 2 1/4"
 8. Application: Use where brick is exposed unless otherwise indicated.
 9. Color and Texture: Acme Brick – Amaretto
 - a. Other acceptable manufactures
 - 1) Belden Brick – Claret Velour
 - 2) Granite Red by Sioux City Brick.

2.7 MORTAR AND GROUT MATERIALS

- A. Portland cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color selected by Architect.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of Portland cement and hydrated lime containing no other ingredients.
- D. Masonry Cement: ASTM C 91.
- E. Mortar Cement: ASTM C 1329.
- F. Aggregate for Mortar: ASTM C 144.
1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

- G. Aggregate for Grout: ASTM C 404.
- H. Cold-Weather Admixture: Non-chloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
- I. Water: Potable.

2.8 DECORATIVE CMU MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of Portland Cement and hydrated lime containing no other ingredients.
- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.
- E. Aggregate for Mortar: ASTM C 144.
 - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 - 2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
- F. Aggregate for Grout: ASTM C 404.
- G. Cold-Weather Admixture: Non-chloride, noncorrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
- H. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with decorative CMUs, containing integral water repellent by same manufacturer. All mortar shall include decorative CMU manufacturer-approved matching water-repellent additive added to each batch in the appropriate dosage rates for mortar type (M, S or N) per manufacturer's instructions.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. Basis-of-Design Manufacturer's standard product.
- I. Water: Potable
 - 1. Note that there is no water source available at the site. The contractor shall provide all necessary water to complete his work.

2.9 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

B. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.

1. Interior Walls: Mill-galvanized, carbon steel.
2. Exterior Walls: Hot-dip galvanized, carbon steel.
3. Wire Size for Side Rods: 0.187-inch diameter.
4. Wire Size for Cross Rods: 0.148-inch diameter.
5. Wire Size for Veneer Ties: 0.187-inch diameter.
6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
7. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Ladder type with single pair of side rods.

D. Masonry Joint Reinforcement for Multi-wythe Masonry:

1. Adjustable (two-piece) type, either ladder or truss design, with one side rod at each face shell of backing wythe and with separate adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches. Size ties to extend at least halfway through facing wythe but with at least 5/8-inch cover on outside face.

E. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.187-inch-diameter, hot-dip galvanized, carbon-steel continuous wire.

2.10 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.

1. Decorative CMU = Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
2. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 zinc coating.
3. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Rigid Anchors: Fabricate from steel bars 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins unless otherwise indicated.

1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A 153.

C. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.

D. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.

1. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches long may be used for masonry constructed from solid units.
2. Where wythes do not align are of different materials, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches.
3. Wire: Fabricate from 1/4-inch-diameter, hot-dip galvanized steel wire.

E. Adjustable Masonry-Veneer Anchors:

1. General: Provide anchors that allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal studs, and as follows:
 - a. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in both tension and compression without deforming or developing play in excess of 0.05 inch.

2. Seismic Masonry-Veneer Anchors: Units consisting of a metal anchor section and a connector section designed to engage a continuous wire embedded in the veneer mortar joint.
 - a. Products: Subject to compliance with requirements, Basis of design:
 - 1) Hohmann & Barnard, Inc
9999 S Virginia Avenue
Chicago Ridge, IL 60415
 - a) HB-213-2x S.I.S
 - b) Adjustable veneer anchor with 2X Hook and Seismiclip Interlock System
 - c) Hot dip galvanized
 - d) 14 ga backplate thickness
 - 2) Wire-Bond
2365 Harbor Avenue, Memphis, TN 38113
 - a) RF-711 Adjustable Veneer Seismic Anchor
 - 3) Dayton Superior Corporation, Dur-O-Wal Division;

30 Rasons Court, Hauppauge, NY 11788
 - a) DA3600ES
 - b. Connector Section: Rib-stiffened, sheet metal bent plate, sheet metal clip, or wire tie and rigid PVC extrusion designed to engage continuous wire. Size connector to extend at least halfway through veneer but with at least 5/8-inch cover on outside face.
 - c. Fabricate wire connector sections from 0.187 diameter, hot-dip galvanized, carbon-steel wire.

2.11 MISCELLANEOUS ANCHORS

- A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron wedge-type inserts.
- B. Post-installed Anchors: reference structural drawings.

2.12 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" Division 07 Section "Sheet Metal Flashing and Trim" and as follows:
 1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.
 2. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 feet. Provide splice plates at joints of formed, smooth metal flashing.

3. Fabricate through-wall metal flashing embedded in masonry from stainless steel, with ribs at 3-inch intervals along length of flashing to provide an integral mortar bond.
 4. Fabricate through-wall flashing with snap lock receiver on exterior face where indicated to receive counter-flashing.
 5. Fabricate through-wall flashing with drip edge unless otherwise indicated. Fabricate by extending flashing 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
 6. Fabricate through-wall flashing with sealant stop where indicated. Fabricate by bending metal back on itself 3/4 inch at exterior face of wall and down into joint 1/4 inch to form a stop for retaining sealant backer rod.
 7. Metal Drip Edge: Fabricate from stainless steel. Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
 8. Metal Sealant Stop: Fabricate from stainless steel. Extend at least 3 inches into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch and down into joint 1/4 inch to form a stop for retaining sealant backer rod.
 9. Metal Expansion-Joint Strips: Fabricate from stainless steel to shapes indicated.
- B. Flexible Flashing: Use one of the following unless otherwise indicated:
1. EPDM Flashing: Sheet flashing product made from ethylene-propylene-diene terpolymer, complying with ASTM D 4637, and 0.040 inch thick.
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include:
 - 1) Carlisle Coatings & Waterproofing; Pre-Kleened EPDM Thru-Wall Flashing.
 - 2) Firestone Specialty Products; FlashGuard.
 - 3) Heckmann Building Products Inc.; No. 81 EPDM Thru-Wall Flashing.
 - 4) Hohmann & Barnard, Inc.; Epra-Max EPDM Thru-Wall Flashing.
 - 5) Sandell Manufacturing Co., Inc.; EPDM Flashing.
- C. Application: Unless otherwise indicated, use the following:
1. Where flashing is indicated to receive counter-flashing, use metal flashing.
 2. Where flashing is indicated to be turned down at or beyond the wall face, use metal flashing.
 3. Where flashing is partly exposed and is indicated to terminate at the wall face, use metal flashing with a drip edge or with a sealant stop where shown,
 4. Where flashing is fully concealed, use metal flashing or flexible flashing unless noted otherwise.
- D. Single-Wythe CMU Flashing System: System of CMU cell flashing pans and interlocking CMU web covers made from high-density polyethylene incorporating chemical stabilizers that prevent UV degradation. Cell flashing pans have integral weep spouts that are designed to be built into mortar bed joints and weep collected moisture to the exterior of CMU walls and that extend into the cell to prevent clogging with mortar.
- E. Solder and Sealants for Sheet Metal Flashings
1. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
 2. Elastomeric Sealant: ASTM C 920, chemically curing urethane sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

- F. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.13 MISCELLANEOUS MASONRY ACCESSORIES

- A. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- B. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene, urethane, or PVC.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Weep/Vent Products: Use the following, unless otherwise indicated:
1. Recycled polyester mesh; 1/2 by 2- 5/8 by 3-1/2 inches long.
 - a. Color: white
- E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
1. Provide one of the following configurations:
 - a. Strips, full-depth of cavity and 10 inches wide, with dovetail shaped notches 7 inches deep or dimpled surface designed to catch mortar droppings that prevent mesh from being clogged with mortar droppings.
 2. Products:
 - a. Advanced Building Products Inc.; Mortar Break.
95 Cyro Drive
Sanford, Maine 04073
Phone: 1-800-252-2306
 - b. Mortar Net USA, Ltd.; Mortar Net.
 - 1) Mortar Net USA, Ltd.
Burns Harbor, IN. 46304
219-787-5080
 - c. HB; Mortar trap
 - 1) H&B Illinois
9999 S Virginia Avenue
Chicago Ridge, IL 60415
(P) 773-586-6700
- F. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.142-inch steel wire, hot-dip

galvanized after fabrication. Provide units with either two loops or four loops as needed for number of bars indicated.

1. Products:
 - a. Dayton Superior Corporation, Dur-O-Wal Division; D/A 810, D/A 812, or D/A 817.
 - b. Heckmann Building Products Inc.; No. 376 Rebar Positioner.
 - c. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
 - d. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

2.14 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
- B. Decorative CMU Masonry Cleaner, General: Comply with decorative CMU manufacturer's requirements, instructions and recommendations for cleaning to protect from new masonry surfaces from discoloration or damage.
 1. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
 2. Do NOT use a Muriatic Acid solution or any cleaner with an acid base on the decorative CMU masonry.
 3. Do NOT powerwash.

2.15 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
 1. Do not use calcium chloride in mortar or grout.
 2. Use Portland cement-lime mortar unless otherwise indicated.
 3. For exterior masonry, use Portland Cement-lime mortar.
 4. For reinforced masonry, use Portland Cement-lime mortar.
 5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Pre-blended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a pre-blended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
 1. Decorative CMU: Furnish dry mortar ingredients in form of decorative CMU manufacturer's pre-blended mix.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
 1. For masonry below grade or in contact with earth, use Type M.
 2. For reinforced masonry, use Type S.

3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
 4. For interior non-load-bearing partitions, Type O may be used instead of Type N.
- D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
1. Pigments shall not exceed 10 percent of Portland Cement by weight.
 2. Pigments shall not exceed 5 percent of masonry cement by weight.
 3. Application: Use pigmented mortar for exposed mortar joints with the following units:
 - a. Decorative CMUs.
- E. Grout for Unit Masonry: Comply with ASTM C 476.
1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Comply with decorative CMU manufacturer's instructions and recommendations.
- B. Provide adequate lighting for masonry work by placing all lighting at a reasonable distance from the wall for even illumination.
- C. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

- D. Build chases and recesses to accommodate items specified in this and other Sections.
- E. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- F. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, un-chipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- G. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 - 1. Mix units from several pallets or cubes as they are placed.
- H. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
- I. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

- 1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
- 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
- 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

- 1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
- 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
- 3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
- 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
- 5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
- 6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
- 7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to war page of masonry units within tolerances specified for war page of units.

C. Joints:

- 1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
- 2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.

3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Decorative CMU:
 1. Draw blocks from more than one pallet at a time during installation
 2. Lay units and complete masonry construction using procedures and workmanship consistent with the best concrete masonry practices.
 3. Lay blocks with the faces level, plumb and true to the line strung horizontally at the ground or filled and polished faces. The faces shall conform to the requirements of ASTM C90 when viewed from a distance of twenty (20) feet at right angles to the wall with normal lighting.
 4. Install only quality units; reject all defective units as defined by ASTM C90
- C. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond, accent bond pattern and other patterns as indicated on Drawings; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 8 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- E. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- F. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- G. Install weep holes and vents at proper intervals at courses above grade and at any water stops over windows, doors and beams.
- H. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- I. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- J. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

- K. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
1. Install compressible filler in joint between top of partition and underside of structure above.
 2. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
 3. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 07 Section "Fire-Resistive Joint Systems."

3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.
- E. Decorative CMU Units shall have uniform, 3/8"-wide joints both horizontally and vertically on the finished sides of the wall.

3.6 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
1. Space reinforcement not more than 16 inches o.c.
 2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
 3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 ANCHORING MASONRY VENEERS

- A. Anchor masonry veneers to wall framing and concrete and masonry backup with masonry-veneer anchors to comply with the following requirements:
 - 1. Fasten screw-attached anchors through sheathing to wall framing and with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
 - 2. Embed tie sections in masonry joints. Provide not less than 2 inches of air space between back of masonry veneer and face of sheathing.
 - 3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
 - 4. Space anchors as indicated, but not more than 16 inches o.c. vertically and 24 inches o.c. horizontally with not less than 1 anchor for each 2.67 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 8 inches, around perimeter.

3.8 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry as shown on drawings.
- C. Decorative CMU - Form control joints in concrete masonry as follows:
 - 1. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.
- D. Form expansion joints in brick as shown on drawings.
- E. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 07 Section "Joint Sealants," but not less than 3/8 inch.
 - 1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

3.9 LINTELS

- A. Install steel lintels where indicated.
- B. Provide masonry lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.
- C. Provide minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.10 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.

B. Install flashing as follows unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
2. At multi-wythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and through inner wythe to within 1/2 inch of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches on interior face.
3. At multi-wythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and 1-1/2 inches into the inner wythe. Form 1/4-inch hook in edge of flashing embedded in inner wythe.
4. At masonry-veneer walls, extend flashing through veneer, across air space behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under building paper or building wrap, lapping at least 4 inches.
5. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
6. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
7. Install metal drip edges and sealant stops with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant.
8. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal drip edge.
9. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal flashing termination.
10. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.

C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

D. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:

1. Use specified weep/vent products to form weep holes.
2. Use wicking material to form weep holes above flashing under brick sills. Turn wicking down at lip of sill to be as inconspicuous as possible.
3. Space weep holes 24 inches o.c. unless otherwise indicated.
4. Trim wicking material flush with outside face of wall after mortar has set.

E. Install vents in head joints in exterior wythes at spacing indicated. Use specified weep/vent products to form vents.

1. Close cavities off vertically and horizontally with blocking in manner indicated. Install through-wall flashing and weep holes above horizontal blocking.

3.11 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 - 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
 - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
 - 2. Limit height of vertical grout pours to not more than 60 inches.

3.12 SETTING CAST STONE IN MORTAR

- A. Install cast stone units to comply with requirements of this section.
- B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances.
 - 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - 2. Coordinate installation of cast stone with installation of flashing specified in other Sections.
- C. Wet joint surfaces thoroughly before applying mortar or setting in mortar.
- D. Set units in full bed of mortar with full head joints unless otherwise indicated.
 - 1. Set units with joints 3/8 to 1/2 inch wide unless otherwise indicated.
 - 2. Build anchors and ties into mortar joints as units are set.
 - 3. Fill dowel holes and anchor slots with mortar.
 - 4. Fill collar joints solid as units are set.
 - 5. Build concealed flashing into mortar joints as units are set.
 - 6. Keep head joints in coping and other units with exposed horizontal surfaces open to receive sealant.
 - 7. Keep joints at shelf angles open to receive sealant.
- E. Rake out joints for pointing with mortar to depths of not less than 3/4 inch. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- F. Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch. Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- G. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

- H. Provide sealant joints at copings and other horizontal surfaces, at expansion, control, and pressure-relieving joints, and at locations indicated.
 - 1. Keep joints free of mortar and other rigid materials.
 - 2. Build in compressible foam-plastic joint fillers where indicated.
 - 3. Form joint of width indicated, but not less than 3/8 inch (10 mm).
 - 4. Prime cast stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
 - 5. Prepare and apply sealant of type and at locations indicated.
- I. Installation Tolerances:
 - 1. Variation from Plumb: Do not exceed 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
 - 2. Variation from Level: Do not exceed 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
 - 3. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches or one-fourth of nominal joint width, whichever is less.
 - 4. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch, except where variation is due to warpage of units within tolerances specified

3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 1 special inspections according to the "International Building Code."
 - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
 - 2. Place grout only after inspectors has verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
 - 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
- E. Clay Masonry Unit Test: For each type of unit provided, according to ASTM C 67 for compressive strength.
- F. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- G. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- H. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content.
- I. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
 7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
- E. Decorative CMU:
1. In-Progress Cleaning: Clean unit masonry daily as work progresses by dry brushing, rags and burlap squares to remove mortar fins and smears before tooling joints.
 - a. Do not allow excess mortar lumps or smears to harden on the finished surfaces. Harsh cleaning methods after walls have been erected are not allowed.
 2. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - a. Note: Removal of mortar particles and smears shall be complete during In-Progress Cleaning.
 - b. Comply with decorative CMU manufacturer's requirement, instructions and recommendations.
 - 1) Do not use acid or abrasives on the finished surfaces. Failure to strictly follow manufacturer's instructions can result in permanent damage to the finished faces.
 - 2) Do not apply Burnished Custom Masonry Cleaner with pressure spray above 50 psi.
 - 3) Do not powerwash.
 - c. Protect adjacent non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - d. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
- F. Cast Stone:

1. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.
2. Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
3. Clean cast stone trim to comply with stone supplier's written instructions for "in-progress" and "final" cleaning.
4. In-Progress Cleaning: Clean cast stone as work progresses.
 - a. Remove mortar fins and smears before tooling joints.
 - b. Remove excess sealant immediately, including spills, smears, and spatter.
5. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
 - a. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - b. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
 - c. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - d. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 - e. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - f. Clean cast stone with proprietary cleaner identified by cast stone manufacturer, and applied according to cleaner manufacturer's written instructions.

3.15 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed in accordance with Section 205 of the Standard Specifications for Road and Bridge Construction. All waste pieces shall be less than 2 inches in each dimension.
- C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

Subsection B

4.1 Section Includes:

1. Foam-plastic board insulation.
2. Glass-fiber blanket insulation.
3. Vapor retarders.

4.2 SUBMITTALS

- A. Product Data: For each type of product indicated.

4.3 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

4.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
 - 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site before installation time.
 - 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

4.5 R-VALUE REQUIREMENTS

- A. The following are all minimum requirements per the 2012 International Energy Conservation Code.
 - 1. Roof: R-25 continuous (minimum)
 - 2. Walls: R-20 (minimum)
 - 3. Slab on Grade: R-10 continuous (minimum)

PART 5 - PRODUCTS

5.1 FOAM-PLASTIC BOARD INSULATION

- A. Extruded-Polystyrene Board Insulation: ASTM C 578, of type and minimum compressive strength indicated below, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. DiversiFoam Products.
 - b. Dow Chemical Company (The).
 - c. Owens Corning.
 - 2. Type IV, 25 psi.

- B. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.
- C. Cavity wall insulation serves as thermal insulation and as protection board for fluid-applied membrane air barrier.

5.2 GLASS-FIBER BLANKET INSULATION

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. CertainTeed Corporation.
 - 2. Johns Manville.
 - 3. Owens Corning.
- B. Polypropylene-Scrim-Kraft-Faced, Glass-Fiber Blanket Insulation: ASTM C 665, Type II (non-reflective faced), Class A (faced surface with a flame-spread index of 25 or less); Category 1 (membrane is a vapor barrier).
- C. Sustainability Requirements: Provide glass-fiber blanket insulation as follows:
 - 1. Free of Formaldehyde: Insulation manufactured with 100 percent acrylic binders and no formaldehyde.
 - 2. Low Emitting: Insulation tested according to ASTM D 5116 and shown to emit less than 0.05-ppm formaldehyde.

5.3 VAPOR RETARDERS

- A. Polyethylene Vapor Retarders: ASTM D 4397, 15 mils thick, with maximum permeance rating of 0.0084 perms per ASTM F 1249.
- B. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
- C. Single-Component Non-sag Urethane Sealant: ASTM C 920, Type I, Grade NS, Class 25, Use NT related to exposure, and Use O related to vapor-barrier-related substrates.

PART 6 - EXECUTION

6.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders, or that interfere with insulation attachment.

6.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

6.3 INSTALLATION OF BELOW-GRADE INSULATION

- A. On vertical footing and foundation wall surfaces, set insulation units using manufacturer's recommended adhesive according to manufacturer's written instructions.
 - 1. If not otherwise indicated, extend insulation a minimum of 36 inches. Insert dimension below exterior grade line.
- B. On horizontal surfaces under slabs, loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

6.4 INSTALLATION OF CAVITY-WALL INSULATION

- A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face, and as recommended by manufacturer. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions. Press units firmly against inside substrates.
 - 1. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Division 04 Section "Unit Masonry."

6.5 INSTALLATION OF INSULATION FOR CONCRETE SUBSTRATES

- A. Install board insulation on concrete substrates by adhesively attached, spindle-type insulation anchors as follows:
 - 1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.
 - 2. Apply insulation standoffs to each spindle to create cavity width indicated between concrete substrate and insulation.
 - 3. After adhesive has dried, install board insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation below indicated thickness.
 - 4. Where insulation will not be covered by other building materials, apply capped washers to tips of spindles.

6.6 INSTALLATION OF VAPOR RETARDERS

- A. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives or other anchorage system as indicated. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.
 - B. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs.
 - 1. Before installing vapor retarders, apply urethane sealant to flanges of metal framing including runner tracks, metal studs, and framing around door and window openings. Seal overlapping joints in vapor retarders with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Seal butt joints with vapor-retarder tape. Locate all joints over framing members or other solid substrates.
 - C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.
 - D. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.
- 6.7 PROTECTION
- A. Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.
 - B. Protect areas adjacent to the Spray-Applied Insulation application. Clean all visible substrates from overspray using a manufacturers recommended cleaner.

Subsection C

7.1 Section Includes:

- 1. Silicone joint sealants.
- 2. Urethane joint sealants.
- 3. Latex joint sealants.

7.2 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use ASTM C 1087 / manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Submit not fewer than eight pieces of each kind of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.

4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Engineer or Architect of Record.
 2. Conduct field tests for each application indicated below:
 - a. Each kind of elastomeric sealant and joint substrate indicated.
 3. Notify Engineer or Architect of Record seven days in advance of dates and times when test joints will be erected.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

7.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- and 1-inch wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Joint-Sealant Schedule: Include the following information:
 1. Joint-sealant application, joint location, and designation.
 2. Joint-sealant manufacturer and product name.
 3. Joint-sealant formulation.
 4. Joint-sealant color.

7.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
- C. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
- E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- F. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.
- G. Field-Adhesion Test Reports: For each sealant application tested.
- H. Warranties: Sample of special warranties.

7.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain each kind of joint sealant from single source.
- C. Product Testing: Test joint sealants using a qualified testing agency.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
 - 2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

7.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 - 2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

7.7 ABOVE GRADE WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.
- D. Silicone Sealant Manufacturer's Standard 20 Year Limited Warranty – Warrant that the building sealants indicated for the exterior building envelope will perform as a watertight seal for a period of 20 years from Project's date of Substantial Completion.

PART 8 - PRODUCTS

8.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Sub-part D (EPA Method 24). Confirm compliance with Illinois VOC Regulations.
 1. Architectural Sealants: 250 g/L.
 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 3. Sealant Primers for Porous Substrates: 775 g/L.

- C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
 - 1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Stain-Test-Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- E. Colors: where used at windows, doors, and louvers – match the aluminum color as closely as possible from the sealant manufacturer’s full range.

8.2 SILICONE JOINT SEALANTS

- A. Single-Component, Non-sag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following
 - a. Dow Corning Corporation; 790 Silicone Building Sealant
 - b. GE Advanced Materials – Silicones.
 - c. Pecora Corporation.
 - d. Sika Corporation, Construction Products Division.
 - e. Tremco Incorporated.
- B. Single-Component, Non-sag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 795 Silicone Building Sealant
 - b. GE Advanced Materials - Silicones.
 - c. May National Associates, Inc.
 - d. Pecora Corporation.
 - e. Sika Corporation, Construction Products Division.
 - f. Tremco Incorporated.
- C. Mildew-Resistant, Single-Component, Non-sag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

8.3 URETHANE JOINT SEALANTS

- A. Single-Component, Non-sag, Traffic-Grade, Urethane Joint Sealant: ASTM C 920. Type S, Grade NS, Class 25, for Use T.

1. Products: Subject to compliance with requirements, provide one of the following:

- a. Pecora Corporation; Dynatrol I-XL.
- b. Sika Corporation, Construction Products Division; Sikaflex - 1a.
- c. Tremco Incorporated; Vulkem 116.

B. Single-Component, Pourable, Traffic-Grade, Urethane Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.

1. Products: Subject to compliance with requirements, provide one of the following:

- a. BASF Building Systems; Sonolastic SL 1.
- b. Bostik, Inc.; Chem-Calk 950.
- c. Pecora Corporation; Urexpam NR-201.
- d. Sika Corporation. Construction Products Division; Sikaflex - 1CSL.
- e. Tremco Incorporated; Vulkem 45.

8.4 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, provide one of the following:

- a. BASF Building Systems; Sonolac.
- b. Bostik, Inc.; Chem-Calk 600.
- c. Pecora Corporation; AC-20+.
- d. Schnee-Morehead, Inc.; SM 8200.
- e. Tremco Incorporated; Tremflex 834.

8.5 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: Comply with sealant manufacturer's instructions and recommendations for sealant backing type. Unless other type is required by sealant manufacturer, provide ASTM C 1330, Type C (closed-cell material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

8.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 9 - EXECUTION

9.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

9.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete/precast concrete.
 - b. Masonry.
 - c. Other building finishes indicated on drawings.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Other finishes indicated on drawings.

- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

9.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
 - 4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

9.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

9.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

9.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior and interior joints in horizontal traffic surfaces.
 - 1. Joint Locations:
 - a. Isolation and contraction joints in cast-in-place concrete slabs.
 - b. Joints between different materials listed above.
 - c. Other joints as indicated.
 - 2. Urethane Joint Sealant: Single component, non-sag, traffic grade for small joints and Single component, pourable, traffic grade may be used for larger joints.
 - 3. Joint-Sealant Colors: The color indicated by the Engineer from the manufacturer's standard range of readily available colors which most closely matches the adjacent surfaces.
- B. Joint-Sealant Application: Exterior and Interior, in vertical surfaces and horizontal non-traffic surfaces.
 - 1. Joint Locations:
 - a. Construction joints in cast-in-place concrete.
 - b. Interior and exterior joints between plant-precast architectural concrete units.
 - c. Control and expansion joints in unit masonry.
 - d. Control and expansion joints on exposed interior surfaces of exterior walls.
 - e. Joints between metal building components.
 - f. Joints between different materials listed above.
 - g. Control and expansion joints in ceilings and other overhead surfaces.
 - h. Other joints as indicated.
 - 2. Silicone Joint Sealant: Single component, non-sag, Class 100/50.
 - 3. Joint-Sealant Color: The color indicated by the Engineer from the manufacturer's standard range of readily available colors which most closely matches the adjacent surfaces.
 - 4. Joint-Sealant Color for used for masonry control and expansion joints: The color indicated by the Engineer from the manufacturer's standard range of readily available colors which most closely matches the mortar used in the masonry wall.

- C. Joint-Sealant Application: Exterior and Interior joints in vertical surfaces and horizontal non-traffic surfaces.
1. Joint Locations:
 - a. Interior and exterior perimeter joints between shell materials and frames of doors, windows and louvers.
 2. Silicone Joint Sealant: Single component, non-sag, neutral curing, Class 100/50.
 3. Joint-Sealant Colors: As selected by Engineer or Architect of Record from manufacturer's full range of colors.
- D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces.
1. Joint Locations:
 - a. Vertical joints on exposed surfaces of interior walls and partitions (other than precast architectural concrete units).
 - b. Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances. Refer to Par. B above for interior wall surfaces of exterior walls.
 - c. Other joints as indicated.
 2. Joint Sealant: Latex.
 3. Joint-Sealant Color: The color indicated by the Engineer from the manufacturer's standard range of readily available colors which most closely matches the adjacent surfaces.
- E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal non-traffic surfaces.
1. Joint Sealant Location:
 - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - b. Tile control and expansion joints in wet areas and where indicated.
 - c. Other joints as indicated.
 2. Joint Sealant: Mildew resistant, single component, non-sag, neutral curing, Silicone
 3. Joint-Sealant Colors: The color indicated by the Engineer from the manufacturer's standard range of readily available colors which most closely matches the adjacent surfaces.

Subsection D

10.1 Section Includes

- A. Limestone Veneer

10.2 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for all stone, stonework accessories, and other manufactured products required.

- B. Shop Drawings: Shop Drawings: Submit cutting and setting drawings indicating sizes, dimensions, sections, and profiles of stones; arrangement and provisions for jointing, supporting, anchoring, and bonding stonework; and details showing relationship with, attachment to, and reception or, related work.
- C. Samples: Limestone samples in form of sets of three, consisting of stones not less than 12" square. Sample sets will show a range of variations in color and grain to be expected in completed work.
- D. Qualification Data: Engage an installer with not less than 10 years' experience and who has successfully completed stonework similar in material, design and extent to that indicated for this project.
- E. Product Certificates: For each kind of limestone used, from manufacturer.
- F. Warranties: Sample of special warranties.

10.3 PRECONSTRUCTION TEST

- A. Contractor shall obtain material tests as noted below
 - 1. Preconstruction Testing Service: Contractor shall employ and pay independent testing laboratories to perform preconstruction testing indicated
 - 2. Test limestone for compliance with physical property requirements for Limestone Building Stone, Type III, as listed in ASTM C-568. Conduct tests using specimens randomly selected from, and representative of, actual materials proposed for incorporation in the work.
 - 3. The following test reports shall be submitted:
 - a. ASTM C 99 Modulus of Rupture
 - b. ASTM C 170 Compressive Strength

10.4 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations:
 - 1. Single Source Responsibility for Stone: Obtain limestone from a single quarry source with resources to provide materials of specified consistent quality. The fabricator and the quarry shall have sufficient capacity to quarry, cut, and deliver the stonework on schedule. Both fabricator and quarry must be members in good standing of Indiana Limestone Institute.
 - 2. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality and from one manufacturer for each cementitious and admixture component and from one source or producer for each aggregate.
- C. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

10.5 PROJECT CONDITIONS

A. Protect Stonework during erection as follows:

1. Prevent staining of stone from mortar, grout, sealants, and other sources. Immediately remove such materials from stone without damage to the stonework.
2. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

B. Cold Weather Protection

1. Remove ice or snow formed on stonework beds by carefully applying heat until top surface is dry to the touch.
2. Remove stonework damaged by freezing conditions.
3. Perform the following construction procedures while stonework is progressing:
4. Temperature ranges indicated apply to air temperatures existing at time of installations.
5. In heating mortar materials, maintain mixing temperatures selected within 10 degrees F (6 degrees C); do not heat water for mortar to above 160 degrees F (71 degrees C).
6. Mortar: At 40 degrees F (4.4 degrees C) and below, produce mortar temperatures between 40 degrees F (4.4 degrees C) and 120 degrees F (49 degrees C) by heating mixing water and, at temperatures of 32 degrees F (0 degrees C) and below, sand as well. Always maintain temperature of mortar on boards above freezing.
7. At 25 degrees F (-4 degrees C) to 20 degrees F (-7 degrees C), heat both sides of walls under construction using salamanders or other heat sources and use windbreaks or enclosures when wind is in excess of 15 mph.
8. At 20 degrees F (-7 degrees C) and below, provide enclosure and auxiliary heat to maintain an air temperature of at least 40 degrees F (4.4 degrees C) for 24 hours after setting stonework and

10.6 DELIVERY, STORAGE, AND HANDLING

- ### A. Deliver masonry materials to project in undamaged condition.

- B. All Limestone shall be shipped, unloaded, and stored in such a manner as to avoid excess breakage and stain. Stone shall be stored at the job on planks, pallets, or timbers, clear of all soil and soil splash.
- C. Store and handle stone and related materials to prevent their deterioration or damage.
- D. Do not use pinch or wrecking bars on stonework.
- E. Lift with wide-belt type slings where possible; do not use wire rope or ropes containing tar or other substances which might cause staining.
- F. Store stone on non-staining wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skids and stone to distribute weight evenly and to prevent breakage or cracking of stones.
- G. Store cementitious materials off the ground, under cover and in dry location.

PART 11 - PRODUCTS

11.1 MATERIALS, GENERAL

- A. Comply with referenced standards and other requirements indicated applicable to each type of material required.
- B. Provide stone from a single quarry for each grade, color, and finish of stone required.

11.2 LIMESTONE:

- A. Limestone Building Stone Standard: ASTM C 568.
- B. Classification: Category III (High Density).
- C. Variety: Indiana Limestone.
- D. Furnish Stone in accordance with approved samples
- E. Modular Units
 - 1. Dimensions
 - a. Bed thickness shall be 3-5/8".
 - b. Course heights shall be furnished at 7-5/8"
 - c. Stone lengths shall be 23-5/8"
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Vanderbilt Classic stone veneer of Indiana Limestone quarried in Lawrence, Monroe, and Owen counties and produced by a member of the Indiana Limestone Institute
Color: Full Color Blend

Finish: Smooth

- b. Gary Galassi Stone and Steel
44 East Devonwood Avenue
Romeoville, IL 60446
815-886-3906
Color: Full Color Blend
Finish: Smooth

- c. Tri-State Cut Stone and Brick
10333 Vans Drive
Frankfort, IL 60423
815-469-7550
Color: Full Color Blend
Finish: Smooth

11.3 MORTAR AND GROUT MATERIALS

- A. Setting mortar shall be ASTM C270 non-staining Type N composed of one part Portland cement, one part mason's lime, and six parts sand mixed with potable water, or one part masonry cement and two and three-fourths parts sand mixed with potable water.
- B. Portland Cement: ASTM C 150, Type I except Type III may be used for cold weather construction. Provide gray or white cement as needed to produce mortar color required.
- C. Hydrated Lime: ASTM C 207. Type S.
- D. Aggregate: ASTM C 144; and as indicated below:
- E. Water: Clean, non-alkaline and potable.
 - 1. Note that there is no water source available onsite. The contractor shall be responsible for providing all water necessary for completion of his work.

11.4 STONE ANCHORS AND ATTACHMENTS

- A. Anchor veneer securely to masonry backing using stainless steel anchors. Anchors shall be spaced approximately 24" vertically and 18" horizontally. See anchor requirements in Subsection A

PART 12 - EXECUTION

12.1 EXAMINATION

- A. Require installer to examine surfaces to receive stonework and conditions under which stonework will be installed and to report in writing any conditions which are not in compliance with requirements. Do not proceed with installation until surfaces and conditions comply with requirements indicated in specifications or elsewhere for execution of other work which affects stonework.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

12.2 PREPARATION

- A. Clean stone surfaces which have become dirty or stained prior to setting to remove soil, stains and foreign materials. Clean stones by thoroughly scrubbing stones with fiber brushes followed by a thorough drenching with clear water. Use only mild cleaning compounds that contain no acid, caustic, or abrasives.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

12.3 SETTING STONE, GENERAL

- A. Stone shall be set in strict accordance with approved profile and jointing pattern. Joints shall be 3/8" wide for veneer.
- B. Set stones in full bed of mortar with vertical joints buttered and placed full, except where otherwise specified.
 - 1. Tool joints after initial set has occurred.
- C. Install through-wall flashing membranes at continuous shelf angles, steel lintels, ledges and similar obstructions to the downward flow of water.
- D. Install weep vents at 24" O.C.
- E. Execute stonework by skilled mechanics, and employ skilled stone fitters at the site to do necessary field cutting as stones are set.
- F. Use power saws to cut stones; for exposed edges, produce edges which are cut straight and true. Mallet and chisel will be permitted provided craftsmen are skilled in their use.
- G. Set stones to comply with requirements indicated on drawings and final shop drawings. Install anchors, supports, fasteners and other attachments indicated or necessary to secure stonework in place. Shim and adjust anchors, supports and accessories to set stones accurately in locations indicated with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances.
- H. Dampproofing for stain prevention: coatings of cementitious based waterproof coating shall be applied on backs, beds, and joints of all stones used below grade. Dampproof all adjacent concrete surfaces on which limestone will rest, including concrete or cmu haunches and ledges, as well as support angles. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
 - 1. Dampproof unexposed surfaces of stone to at least 1'-0" above grade.
 - 2. Dampproof joints only to within 1" of finished surfaces when using bituminous or asphaltic solutions.
 - 3. Stones extending below grade shall be dampproofed as above, and in addition shall be dampproofed to the level of grade on their face surfaces which are covered.
 - 4. Cementitious coatings must be allowed to cure before treated stone is set. Due care must be exercised in handling all dampproofed stone to avoid chipping or off-setting.

I. CONSTRUCTION TOLERANCES

1. Variation from Plumb: For lines and surfaces of columns, wall and arises, do not exceed $\frac{1}{4}$ in 10', $\frac{3}{8}$ " in a story height or 20' maximum, nor $\frac{1}{2}$ in 40' or more. For external corners, expansion joints and other conspicuous lines do not exceed $\frac{1}{4}$ in any story or 20' maximum, nor $\frac{1}{2}$ in 40' or more.
2. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls and partitions, do not exceed $\frac{1}{2}$ in any bay or 20' maximum, nor $\frac{3}{4}$ in 40' or more.
3. Variation in Cross-Sectional Dimensions: For columns and thickness of walls from dimensions indicated, do not exceed minus $\frac{1}{4}$, nor plus $\frac{1}{2}$.
4. Provide expansion joints, control joints, and pressure-relieving joints of widths and at locations indicated or required. Refer to Subsection C.
5. Use no mortar or shims in expansion joints
6. Fabricate limestone dimension stone to the following tolerances:
 - a. Unit Length: plus or minus $\frac{1}{8}$ ".
 - b. Unit Height: plus or minus $\frac{1}{8}$ ".
 - c. Deviation From Square: plus or minus $\frac{1}{8}$ ", with measurement taken using the longest edge as the base.
 - d. Bed Depth: plus or minus $\frac{1}{8}$ ".

- J. Keep cavities open where unfilled space is indicated between back of stone veneer and backup wall; do not fill cavities with mortar or grout.

12.4 ADJUSTING AND CLEANING

- A. Repairing Damaged Stone: Repair of stone is an accepted practice and will be permitted.
- B. Remove and replace stonework of the following description:
 1. Stones so damaged that repair is impossible, either structurally or aesthetically.
 2. Defective joints.
 3. Stones and joints not in conformance with approved samples.
 4. Stonework not complying with other requirements indicated
- C. Replace in manner which results in stonework conforming to approved samples and field-constructed mockups, complying with other requirements and showing no evidence of replacement.
- D. Clean stone as work progresses.
- E. Allow mortar droppings on stone to partially dry then remove by means of brushing with a stiff fibre brush.
- F. Post-Construction: Clean as directed below and leave for one week. If no harmful effects appear and after mortar has set and cured, clean masonry as follows:
 1. Protect windows, sills, doors, trim and other work from damage.
 2. Remove large particles with stiff fiber brushes without damaging surface.
 3. Saturate stone with clean water and flush off loose mortar and dirt.
 4. Dilute cleaning agent with clean water in controlled proportions.
 5. Apply solution to pre-soaked wall surface using soft-bristled brush
 6. Thoroughly rinse cleaning solution and residue from wall surface.

- G. Use alternative cleaning solutions and methods for difficult to clean stone only after consultation with stone manufacturer.

12.5 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to fabricator and installer, which ensures stonework being without damage or deterioration at time of substantial completion.
- B. Protect stone from damage resulting from subsequent construction operations.
- C. Use protection materials and methods which will not stain or damage stone
- D. Remove protection materials upon Substantial Completion, or when risk of damage is no longer present.

Exterior Masonry Walls shall be measured for payment in place by foot along the continuous outside face of the wall past indentations for window and door openings regardless of the height of the masonry. Indentations or protrusions perpendicular to the face of the wall shall not be measured separately for payment. The pay length shall include openings for doors and windows: these gaps in the masonry will not be deducted from the pay length.

This work will be paid for at the contract unit price per LUMP SUM for **BUILDING**, as shown on the Architectural drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

WOOD ROOF TRUSSES, COMPLETE

This work shall consist of furnishing and installing the prefabricated **WOOD ROOF TRUSSES COMPLETE**, including all the necessary material, equipment, tools, and other miscellaneous items necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record. Wood trusses shall be delegated design by truss manufacturer and it is the sole responsibility of the contractor to retain services of the truss manufacturer.

Acceptable Truss manufacturers

Bear Creek Truss
615 N Co Rd 250 E,
Tuscola, IL 61953
(217) 543-3313

Trillium Dell
1283 Knox Road 1600 North
Knoxville, IL 61448-9565
309.289.7921 phone

W.W. Timbers
10150 Virginia Avenue · Suite A
Chicago Ridge, IL 60415

Pioneer Truss Company
P.O. Box 537
1104 Highway 28 West
Owensville, Missouri 65066

Materials will be as specified herein, in the details, and in the WOOD ROOF TRUSSES notes and other information included on the drawings.

Prior to beginning work on the Wood Roof Trusses, the respective contractors shall coordinate as necessary and prepare and submit shop drawings to be reviewed by the Architect / Engineer. Electronic shop drawings shall be submitted via email in PDF format. Information shall be collected into a single submittal for each element of construction and type of product or equipment.

1. Mark each copy of each submittal to show which products and options are applicable.
2. Include the following information, as applicable:
3. Manufacturer's catalog cuts.
 - a. Manufacturer's product specifications.
 - b. Statement of compliance with specified referenced standards.
 - c. Testing by recognized testing agency.
 - d. Application of testing agency labels and seals.
 - e. Notation of coordination requirements.
 - f. Availability and delivery time information.
4. Preparation: Fully illustrate requirements in the drawings. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Structural calculations

The wood roof trusses shall be provided with a smooth finish as necessary to accept wood stain and prepared to per the wood stain manufacturer's written instructions. Furnish and apply stain and 2 coats of polyurethane per the manufacturer's written instructions.

Stain shall be:

Minwax - Wood Finish Golden Oak 210B.
Minwax® Company
10 Mountainview Road
Upper Saddle River, NJ 07458
800-523-9299

Varathane – Summer Oak
Rust-Oleum Products
(800) 901-1729

www.rustoleum.com
Cabot - Golden Oak
Cabot
1 Stiles Rd., Suite 300
Salem, NH 03079
<http://www.cabotstain.com/>

Polyurethane Finish shall be:

Minwax: Clear Satin.
Minwax® Company
10 Mountainview Road
Upper Saddle River, NJ 07458
800-523-9299

Varathane: Premium Polyurethane
Rust-Oleum Products
(800) 901-1729
www.rustoleum.com

Cabot: Polyurethane
Cabot
1 Stiles Rd., Suite 300
Salem, NH 03079
<http://www.cabotstain.com/>

The gusset plates and bolts of the wood roof trusses shall be painted black.

This work shall be measured and paid for at the contract unit price per LUMP SUM for **BUILDING** as shown on the structural drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

SLAB ON GRADE, COMPLETE

This work shall consist of furnishing and construction cast in place concrete **Slab on Grade, Complete** including but not limited to, excavation, concrete, base aggregate, reinforcing mesh, formworks, and all other miscellaneous items necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record. Note that there is no water source available on site. The contractor shall be fully responsible for all water required for the project.

Materials will be as specified herein, and in the details, structural concrete notes and other info included on the drawings.

Submittals

Prior to beginning this work, the respective contractors shall coordinate as necessary and prepare and submit shop drawings to be reviewed by the Architect / Engineer. Electronic shop drawings shall be submitted via email in PDF format. Information shall be collected into a single submittal for each element of construction and type of product or equipment.

Design Mixtures- For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

Formwork – provide Shop Drawings prepared by or under the supervision of a qualified professional engineer, detailing fabrication, assembly, and support of formwork.

Field Conditions

Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

Hot-Weather Placement: Comply with ACI 301 (ACI 301M).

Products

Comply with the following unless modified by requirements in the Contract Documents:

ACI 301 (ACI 301M).

ACI 117 (ACI 117M).

Formwork

The contractor is to furnish and utilize Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints

1. Design, erect, shore, brace, and maintain formwork, according to ACI 301 (ACI 301M), to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
2. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 (ACI 117M).
3. Construct forms tight enough to prevent loss of concrete mortar.
4. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
5. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
 - a. Chamfer exterior corners and edges of permanently exposed concrete.

- b. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- c. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- d. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

Steel Reinforcement

Fabricate steel reinforcement according to CRSI's "Manual of standard Practice". Furnish and install reinforcing bars per the following:

1. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
2. Plain-Steel Wire: ASTM A 1064/A 1064M, as-drawn.
3. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets.

Furnish and install steel reinforcement to Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

Concrete Materials

1. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
2. Cementitious Materials:
 - a. Portland Cement: ASTM C 150/C 150M, Type II, gray.
 - b. Fly Ash: ASTM C 618, Class F.
3. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 3S aggregate or better, graded.
 - a. Maximum Coarse-Aggregate Size: 1-1/2 inches
 - b. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

4. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - a. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - b. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - c. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - d. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - e. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - f. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
5. Water: ASTM C 94/C 94M and potable.

Repair Materials

1. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
 - a. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - b. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - c. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
 - d. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.
2. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6.4 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.
 - a. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - b. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 - c. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
 - d. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.

Concrete Mixtures for Building elements

1. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301 (ACI 301M).

2. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
3. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.
4. Admixtures: Use admixtures according to manufacturer's written instructions.
 - a. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 - b. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - c. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.
 - a. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
7. Slabs on grade
 - a. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
 - a. Minimum Cementitious Materials Content: 470 lb/cu. yd. (279 kg/cu. m)
 - a. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
 - a. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.
8. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - a. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
9. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 - a. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 - b. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
 - c. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

Embedded Item Installation

1. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

- a. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.

Joints

1. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
3. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - a. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - a. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
4. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

Concrete Placement

1. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
2. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M).
 - a. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
3. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - a. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - b. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301 (ACI 301M).
 - c. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete

embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

4. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - a. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - b. Maintain reinforcement in position on chairs during concrete placement.
 - c. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - d. Slope surfaces uniformly to drains where required.
 - e. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
5. Repair and patch defective areas where noted by the Engineer or Architect of record. Remove and replace concrete that cannot be repaired and patched to Engineer's or Architect of Record's approval.

Concrete Quality Assurance

1. Inspections:
 - a. Steel reinforcement placement.
 - b. Steel reinforcement welding.
 - c. Headed bolts and studs.
 - d. Verification of use of required design mixture.
 - e. Concrete placement, including conveying and depositing.
 - f. Curing procedures and maintenance of curing temperature.
3. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on concrete mixtures.
4. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:
 - a. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
 - b. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
 - i. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

- d. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 - e. Air Content: ASTM C 231/C 231M, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - f. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below or 80 deg F (27 deg C) and above, and one test for each composite sample.
 - h. Compression Test Specimens: ASTM C 31/C 31M.
 - i. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - k. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - i. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
 - n. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 - o. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
 - p. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
 - q. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
 - r. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
 - s. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 - t. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
7. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 24 hours of finishing.

8. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
9. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
11. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
13. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
15. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
17. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.
19. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M.

Concrete Protection and Curing

1. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 (ACI 301M) for hot-weather protection during curing.
2. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
3. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
4. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
5. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - a. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - i. Water.
 - ii. Continuous water-fog spray.

- iii. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

- b. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
 - i. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - ii. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - iii. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.

- b. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - i. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.

- a. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

Curing Materials

1. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

3. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

4. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

5. Water: Potable.

7. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

9. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

10. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.
11. Verify with manufacturer that retained products have been tested against interference with bonding of floor covering.

Concrete Finishing

1. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - a. Apply to concrete surfaces not exposed to public view.
2. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner curing material with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - a. Apply to concrete surfaces to receive a rubbed finish, or to be covered with a coating or covering material directly applied to concrete.
3. The Contractor shall furnish and install a finish for SLAB ON GRADE. The finish shall be a concrete stain. Subject to the following herein, and noted on the drawings
 - a. Product Data
 - i. Submit Manufacturer's technical data, including Material Safety Data Sheet (MSDS) and installation instructions, for each product specified. Submit color chart indicating all available finishes from manufacturer's full line.
 - b. Quality Assurance
 - i. Installer Qualifications: Trained and approved by Manufacturer of stain products.
 - ii. Manufacturer's Qualifications: Three years' experience manufacturing products required.
 - iii. Source Limitations: Obtain products from same source throughout Project.
 - c. Regulatory Requirements
 - i. Products to comply with United States Clean Air Act for maximum Volatile Organic compound (VOC) content as specified in this Section.
 - d. Environmental Conditions
 - i. Maintain an ambient temperature between 50 deg F and 90 deg F during application and at least 48 hours after application.

e. Materials

- i. Reactive Chemical Concrete Stain: Reactive, water-based solution of metallic salts which react with calcium hydroxide in cured concrete substrates to produce permanent variegated or translucent color effects. Zero VOC content.
- ii. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. L M. Scofield Company
1652 E. Main St., Suite 200
St. Charles, IL 60174
Phone: (630) 377-5959
 - a. "LITHOCHROME Chemstain Classic."
 - i. Color: **CS-2 PADRE BROWN**
 - ii. Sealer: Scofield selectseal Plus.
 2. Butterfield
625 West Illinois Avenue
Aurora, IL 60506
 - a. "Perma Cast Sierra Stain
 - b. BAS-12 Balkan Amber
 - c. Apply manufacturer's standard slip resistant finish
 3. H&C Decorative Concrete Products
2041 ILLINOIS ROUTE 59
PLAINFIELD, IL, 60544
8152543272
 - a. Color – Autumn Breeze
 - b. Apply the manufacturer's standard sealer with anti slip aggregate broadcast
- iii. Apply concrete stain as noted in the drawings, noted herein, and per the manufacture's written instructions. Notify the Engineer of record or Architect of any discrepancies prior to commencing any work and with ample time to evaluate such discrepancies so as not to delay the project schedule.
- f. Examination
 - i. The contractor shall examine areas and conditions under which the concrete stain work will be performed and identify conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.
- g. Interior Applications: Concrete substrates must have a moisture vapor emission rate of less than 5 lbs./1000 sq. ft. per 24 hour based on a 72 hour test period according to ASTM F 1869. Conduct moisture tests, submit tests to the Engineer \ Architect of record and retain one copy for the contractor's records.
- h. Preparation – New Concrete: comply with the following
 - i. Newly placed concrete to sufficiently cure for concrete to become reactive. Minimum cure time is 14 days.

- ii. Interior Applications: Minimum cure time of concrete is 30 to 60 days, or longer if necessary to meet the specified water vapor transmission requirements.
 - iii. Do not use liquid curing materials. Cure concrete flatwork with new, unwrinkled, non-staining, high quality curing paper complying with ASTM C 171. Do not overlap curing paper.
 - iv. Immediately prior to chemically staining, thoroughly clean concrete to remove any contaminants deleterious to subsequent chemical stain application. Sweep surfaces, then pressure wash or scrub using a rotary floor machine with a Mal-Grit Brush from the Malish Corporation. Use suitable, non-acidic, high quality commercial detergents to facilitate cleaning. Rinse surfaces after cleaning until rinse water is completely clean. Allow floor to dry completely prior to application of concrete stain.
 1. Pressure Washing: Use a pressure washer equipped with a fan tip and rated for a minimum pressure capability of 4000 psi.
- i. Surface Preparation for New or Existing Concrete:
 - i. Concrete surfaces should be completely penetrable before applying the initial application of chemical stain. The surface of the concrete should be lightly mechanically abraded to remove weak cement paste and contaminants. The final surface preparation should approximate a Concrete Surface Profile of 1, (CSP1 as designated by the International Concrete Repair Institute, Alexandria, Virginia). Methods for mechanical abrasion include:
 1. Pressure Washing: Use a pressure washer equipped with a fan tip and rated for a minimum pressure capability of 4000 psi.
 2. Scrubbing with a rotary floor machine with a Mal-Grit Brush from the Malish Corporation.
 3. Light sanding of the surface.
4. Surfaces should be tested to receive stain by spotting with water. Water should immediately darken the substrate and be readily absorbed. If water beads and does not penetrate or only penetrates in some areas, perform additional surface preparation and testing. On denser concrete floors, sand lightly to open up surfaces. Retest and continue surface preparation until water spots immediately darken and uniformly penetrate concrete surfaces.
 - a. Rinse concrete substrates until rinse water is completely clean.
 - b. Chemical Stain Application
 - i. General: Comply with chemical stain manufacturer's printed instructions and current recommendations.
 1. Do not mix the specified chemical stain with highly alkaline materials. Doing so will result in a dangerous chemical reaction.
 - ii. Protect surrounding areas, landscaping, and adjacent surfaces from overspray, runoff, and tracking. Divide surfaces into small work sections using walls, joint lines, or other stationary breaks as natural stopping points.

- iii. Apply chemical stains at the coverage rate recommended by the manufacturer and use application equipment according to the chemical stain manufacturer's printed instructions. Note the color of the liquid chemical stain will not be the final color produced on the concrete substrate.
- iv. Transfer chemical stain to the substrate by brush or spray and immediately scrub into surface. Reaction time depends on wind conditions, temperatures, and humidity levels.
- v. When multiple coats of one or more colors are required, washing and drying between colors is desirable to evaluate the color prior to the next coat.
- vi. Rinsing: After the final coat of chemical stain has remained on the surface for a minimum of four hours, neutralize unreacted chemical stain residue and then remove completely prior to sealing. After neutralization, thoroughly rinse surface with clean water several times to remove soluble salts. While rinsing, lightly abrade surface using a low-speed floor machine and red pad to remove residue and weakened surface material. Runoff may stain the adjacent areas or harm plants. Collect rinse water by wet vacuuming or absorbing with an inert material.
 1. Failure to completely remove all residue prior to sealing the surface will cause appearance defects, adhesion loss or peeling, reduced durability, and possible bonding failure and delamination of sealer.
 2. All stain residue, runoff liquid, and rinse water must be collected and disposed of according to applicable Federal regulations and governing authorities having jurisdiction.

c. Sealing Application

- i. Concrete substrate must be completely dry. Test surface for proper pH prior to applying sealer. A pH value of 7 or higher indicates all acid has been neutralized. If the tested pH value is less than 7, repeat neutralization step until the required pH value is achieved.
 - ii. Conduct a moisture vapor emission test prior to applying any sealer. Refer to the specific sealer's Technical-Data Bulletin for acceptable MVER.
 - iii. Apply sealer according to the sealer manufacturer's printed instructions at a rate of 300 to 500 square feet per gallon per coat. Maintain a wet edge at all times.
 - iv. Allow sealer to completely dry before applying additional coats.
 - v. Apply second coat of sealer at 90 degrees to the direction of the first coat using the same application method and rates.
 - vi. Seal horizontal joints in areas subject to pedestrian or vehicular traffic.
- d. Protection: The General Contractor is responsible for using Temporary Floor Protection throughout the project to safeguard the surface quality of concrete slabs before and after application of decorative finishes or installations of other materials.
- i. All concrete floors that will not be covered by other materials will be protected throughout the project. The concrete slab must be treated as a finished floor at all times during construction.
 - ii. Temporary Floor Protection will be removed only while finish work to the concrete is being performed and will be replaced after the final finish has cured sufficiently.
 - iii. Temporary Floor Protection will be Proguard Duracover as manufactured by L. M. Scofield Company, Douglasville, GA (800-800-9900). Seaming of the temporary floor protection will be

performed with Scofield Proguard Heavy Duty Seaming Tape. Both products will be installed following the manufacturer's published installation procedures.

iv. DO NOT APPLY THE HEAVY DUTY SEAMING TAPE TO BARE OR FINISHED FLOORS OR WALL SURFACES AT ANY TIME. IT WILL PERMANENTLY DAMAGE THE FLOOR

The contractor shall provide Sheet Vapor Retarders per ASTM E 1745, Class A. Place, protect, and repair sheet vapor retarder according to ASTM E1643 and manufacturer's written instructions. Provide a sample of the vapor retarder for approval by the Engineer or the Architect of Record. Provide 6" lap joints and seal with manufacturer's recommended adhesive or pressure-sensitive tape. Provide one of the following Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- A. Insulation Solutions, Inc.; Viper VaporCheck 16.
- B. Raven Industries Inc.; Vapor Block 15.
- C. Stego Industries, LLC; Stego Wrap 15 mil Class A.

The **SLAB ON GRADE, COMPLETE** will be measured per square foot of slab installed.

This work will be paid for at the contract unit price per LUMP SUM for **BUILDING** as shown on the structural drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

GUTTERS AND DOWNSPOUTS COMPLETE

This work shall consist of furnishing and installing **GUTTERS AND DOWNSPOUTS COMPLETE**. The contractor shall include all the necessary equipment, hardware, tools, and all other miscellaneous items necessary to complete this section as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

13.1 Section Includes

- 1. Roof edge drainage systems

13.2 Performance Requirements

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. SPRI Wind Design Standard: Manufacture and install copings tested according to SPRI ES-1 and capable of resisting the following design pressures:
 - 1. Design Pressure: As indicated on Drawings.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress

as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

13.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Include plans, elevations, and attachments to other work. Distinguish between plant- and field-assembled works. Include the following:
 1. Pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 2. Details of termination points and assemblies, including fixed points.
 3. Details of special conditions.
- C. Samples for Verification:
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for copings and roof-edge flashings.
- E. Warranty: Sample of special warranty.

13.4 DELIVERY, STORAGE, AND HANDLING

- A. Do not store in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.

13.5 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 14 - PRODUCTS

14.1 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
 - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
 - 2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
- C. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

14.2 ROOF-EDGE DRAINAGE SYSTEMS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. ATAS International, Inc. – Medium Bronze
 - 2. Cheney Flashing Company. – Dark Bronze Anodized
 - 3. Hickman Company, W. P. –Medium bronze
 - 4. Metal-Era, Inc. – Mansard Brown
- B. Gutters: Manufactured in uniform section lengths not exceeding 12 feet, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.
 - 1. Fabricate from the following exposed metal:
 - a. Formed Aluminum: 0.063 inch thick.
 - 2. Gutter Profile: Style K according to SMACNA's "Architectural Sheet Metal Manual."
 - 3. Corners: Factory mitered and mechanically clinched and sealed watertight.
 - 4. Gutter Supports: Gutter brackets with finish matching the gutters.
 - 5. Gutter Accessories:
 - a. Continuous screened leaf guard with sheet metal frame
 - b. Flat ends.
- C. Downspouts: Plain rectangular complete with elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. Formed Aluminum: 0.040 inch thick.
 - 2. Provide boot connection to below grade drain as shown on drawings.
- D. Aluminum Finish: Two-coat fluoropolymer.

1. Color: See paragraph 2.2 A. Color to match aluminum fascia.

14.3 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 15 - EXECUTION

15.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls and roof edges for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

15.2 INSTALLATION, GENERAL

- A. General: Install according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 1. Install level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 3. Install roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 4. Torch cutting of roof specialties is not permitted.
 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 1. Coat concealed side of uncoated aluminum and stainless-steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.

- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
 - 1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise shown on Drawings.
 - 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints with elastomeric sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

15.3 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 24 inches apart. Attach ends with rivets and seal with sealant to make watertight. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion joint caps.
 - 2. Install continuous leaf guards on gutters with noncorrosive fasteners, hinged to swing open for cleaning gutters.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.
 - 1. Provide elbows at base of downspout to direct water away from building.
 - 2. Provide boot connection and connect to below grade drain as shown on drawings.

15.4 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.

- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

This work shall be measured and paid for at the contract unit price per LUMP SUM for **BUILDING** as shown on the drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

RECESSED FLOOR MATS COMPLETE

This work shall consist of the furnishing and installation of **RECESSED FLOOR MATS COMPLETE**. The contractor shall include all the necessary equipment, hardware, tools, and all other miscellaneous items necessary to complete this section as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record. There shall be **RECESSED FLOOR MATS** provided, one at each entrance door location, sized per the drawings and installed in the recess in the slab on grade.

1.1 Section Includes:

- A. Carpet inset link mat.
- B. Recessed mat frames.

1.2 SUBMITTALS

- A. Product Data: Provide data indicating properties of walk-off surface, component dimensions and recessed frame characteristics.
- B. Shop Drawings: Indicate dimensions and details for recessed frame.
 - 1. For recessed frames located within a dimensionally restricted area, show dimensions of space within which the frame will be installed.
- C. Samples: Submit two samples, 12 x 12 inch in size illustrating pattern, color, finish, edging, and carpet insert material.

PART 2 PRODUCTS

2.1 ENTRANCE MATS

- A. Link Mat: Extruded aluminum links fastened with 11 gage galvanized spring steel wire; carpet inset; overall size as indicated on Drawings, 1/2 inch thick; recessed frame; color as selected from manufacturer's full range of available colors.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Construction Specialties, Inc
BLDG #9 unit 63
245 W Roosevelt Road
West Chicago, IL 60185
 - 1) Pedimat AA-M2
 - a. Frame: Standard Mill [M] Finish
 - b. Carpet Tread Insert - 7325 Wrought Iron
 - c. Exterior Brush Tread

- b. Nystrom
9300 73rd Avenue North
Minneapolis, MN 554428
 - 1) GRATEdesign Roll up Grate
 - 2) Premium Carpet Insert – Wrought Iron

- c. Eagle Mat
7917 Cessna Avenue, Unit G
Gaithersburg, MD 20879Perfect Mat

- 1) ¾” Recessed Grill Peditred
- 2) Color – Wrought Iron

- B. Recessed Frame: 1/8 inch thick zinc exposed top strip, zinc coated steel concealed bottom strip, 1/2 inch deep, with anchoring features.

2.2 FABRICATION

- A. Construct recessed mat frames square, tight joints at corners, rigid. Coat surfaces with protective coating where in contact with cementitious materials.
- B. Fabricate mats in single unit sizes; fabricate multiple mats where indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that floor opening for mats are ready to receive work.

3.2 PREPARATION

- A. Mats: Verify size of floor recess before fabricating mats.
- B. Vacuum clean floor recess.

3.3 INSTALLATION

- A. Install frames to achieve flush plane with finished floor surface.
- B. Install walk-off surface in floor recess flush with finish floor after cleaning of finish flooring.

3.4 TOLERANCES

- A. Maximum Gap Formed at Recessed Frame From Mat Size: 1/4 inch.

This work shall be measured and paid for at the contract unit price per LUMP SUM for **BUILDING** as shown on the drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

ALUMINUM DOORS, COMPLETE

This work shall consist of the furnishing and installation of **ALUMINUM DOORS, COMPLETE**. The contractor shall include all the door glazing, frames and sidelights and door hardware as noted on the drawings, sealants, and all necessary equipment, hardware, tools, and all other miscellaneous items necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record. Provide the number and types as shown on the drawings.

1.01 DESCRIPTION

- A. Work included: All entrance and vestibule doors and frames shall be integral "Balanced Door" units consisting of doors, jambs, frames (sidelight and transoms where applicable), thresholds, operating mechanism and all finish hardware as shown on the drawings and specified herein.

1.02 RELATED WORK

- A. Joint Sealants shall be provided as part of **EXTERIOR MASONRY WALLS, COMPLETE**
- B. See drawings for door hardware schedule

1.03 QUALITY ASSURANCE

- A. The manufacturer must have been regularly engaged in the manufacture of "Balanced Doors" for a period of no less than ten (10) years.
- B. All door, frame and balanced hardware must be engineered and fabricated by the same manufacturer.
- C. In order to ensure proper coordination between all elements of the balanced entrance system, the balanced hardware including the hydraulic check must be engineered, cast, machined and assembled in the same facility with the engineering and fabrication of the door and frame material.
- D. The manufacturer must have a quality system registered to the ISO9001 standard including design engineering.

1.04 SUBMITTALS

- A. SHOP DRAWINGS INCLUDING ELEVATIONS AND PLANS, ONE-HALF SIZE DETAIL SECTIONS OF typical composite members, hardware arrangement details and interaction with surrounding material.
- B. Two (2) finish samples shall be submitted:
 - 1. Fluoropolymer coating (kynar) paint finish.
 - a. Color: color match aluminum windows

1.05 WARRANTY

- A. All finished hardware and material not fabricated by Ellison to carry manufacturer's standard warranty.
- B. All Ellison manufactured material furnished and installed to these specifications, including the door operating mechanisms, shall be warranted against defective material and workmanship for a period of ten (10) years from date of substantial completion.
 - 1. This warranty is not intended to cover adjustments made necessary by the shifting or settling of the building structure.
 - 2. This warranty is not intended to cover the breakdown of protective coatings when furnished to the architect's specification and applied as directed.
 - 3. All labor to replace warranted parts is by others.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Materials shall be packed, unloaded, stored and protected to avoid abuse and damage.
- B. Protect finished surfaces with wrapping and/or strippable coating.
- C. When unloading, remove all paper type wrappings that are wet or which could become wet.
- D. Store inside, if possible, in clean well drained area free of dust and corrosive fumes.

- E. Stack vertically or on edge so that water cannot accumulate on or within materials, using wood or plastic shims between components to provide water drainage and air circulation.
- F. Cover materials with tarpaulins or plastic hung on frames to provide air circulation.
- G. When installing protect materials from lime, mortar, run-off from concrete and copper, weld splatter, acids, roofing tar, solvents and abrasive cleaners.

1.07 PERFORMANCE REQUIREMENTS

- A. Materials shall be packed, unloaded, stored and protected to avoid abuse and damage.
- B. Aluminum entrance doors shall comply with ASTM B209-86, ASTM B221-85A, ASTM C 1048-85, AND CPSC-16 CFR PART 1201 – SAFETY STANDARD FOR ARCHITECTURAL GLAZING MATERIALS

PART II – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Ellison Bronze, Inc; 125 W. Main Street, Falconer, NY 14733. Phone: (800) 665-6445 Fax: (716) 665-5552
Web site: www.ellisonbronze.com. Email: info@ellisonbronze.com

2.02 MATERIALS AND FINISHES

- A. Material:
 - 1. Extruded aluminum: alloy 6063-T6 with a minimum wall thickness of .125 inch (3 mm) thick.
 - 2. Aluminum sheet: alloy 5005-H15 or H34 temper with .125 inch (3 mm) minimum thickness.
- B. Finish:
 - 1. Fluoropolymer coating (Kynar) paint finish:
 - a. High performance organic coatings: AAMA 2605-05 [3-coat] min., 70% PVDF fluoropolymers [standard]
 - b. Color:
 - 1. To match color \ finish selected for the aluminum windows.
 - 2. All notching and welding to be done prior to application of the finish to ensure complete seal and coating of all surfaces.
 - 3. All exposed surfaces to be fine satin finished prior to application of the finish to ensure elimination of extrusion die marks and fabrication marks and to ensure uniformity of finish.

2.03 BALANCED DOORS AND FRAMES

- A. Doors:
 - 1. Door thickness: 2 inch
 - 2. Stiles:
 - a. 3-1/2 inch
 - 3. Top rail:
 - a. 3-1/2 inch
 - 4. Bottom rail:
 - a. Height: 24 inch with addition of dress plates.
 - 5. Extruded aluminum doors shall be bolted and welded construction for maximum strength.
 - 6. Glass moldings shall be permanently fixed on exterior side and snap-on type on interior side with vinyl glazing bead.

7. Glass: as specified in section [08 81 00].
- B. Frames:
1. Frames for door jambs and header (sidelights and transom material where applicable) shall be:
 - a. 3 inch (76 mm) face x 5 inch (127 mm) deep.
 2. Frames shall be erected without the use of exposed screws where feasible.
 3. Hinge shaft configuration:
 - a. Concealed with portion of the hinge jamb to be removable for access to operating hardware.
 4. Glass stops (at sidelight and transom areas, where applicable) to be applied to framing and shall be permanently fixed on exterior side and snap-on type on interior side with vinyl glazing bead.
 5. Glass: 1" insulated tempered

2.04 HARDWARE AND WEATHERSTRIPPING – (HDWR SET 1)

- A. Balanced hardware:
1. All balanced door hardware, including hydraulic check, shall be cast bronze and shall be cast, machined and assembled by the door and frame fabricator. Exposed hardware shall be finished as specified below.
 2. Cast bronze mechanism and other integral parts must be heavy duty and must be designed to allow variation in adjustments to meet this particular job with respect to door size, door weight and varying or internal building pressures.
 3. Balanced hardware shall consist of the following items:
 - a. Cast bronze hydraulic check shall be concealed in the head frame and have first and second speed adjustment. The hydraulic check unit must be removable without requiring the removal of the door, head frame or any other hardware. Closer arms are unacceptable.
 - b. Each door to have a heavy duty steel tube hinge shaft 1-3/4 inch (44 mm) diameter with 1/4 inch (6 mm) minimum wall thickness. Hinge shaft to be furnished complete with spring closing mechanism. The spring closer shall be adjustable at the floor to meet varying wind or building conditions. Top and bottom arms shall be one piece bronze castings, welded to hinge shaft. Two piece arms, aluminum arms, or steel painted arms will not be acceptable.
 - c. Hardware shall include a spring-cushioned door roller bumper located in the guide channel. The operating mechanism in the head shall include ball bearing pivots, cast bronze hydraulic check and cast bronze door guide channel with minimum dimensions of 2-3/8 inch (60 mm) by 3/4 inch (19 mm) thick and a minimum wall thickness of 9/16 inch (14 mm).
 - d. Means shall be provided which make possible field adjustment for proper perimeter clearance of each door leaf in relation to its finished framework to accommodate on-site conditions.
 - e. All doors shall have a semi-automatic hold open device located in the bottom rail.
 - f. Doors designated as handicapped entrances shall have a maximum of 8 lbs. spring tension adjustment at pull handle. The clear opening shall be a minimum of 32 inches (813 mm) or greater (depending on local codes). The Ellison hydraulic check shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.
 - g. Bronze hardware finish:
 - (1) Cast bronze painted to match door and frame material.
- B. Finish hardware by door manufacturer (except permanent master keyed lock cylinders which is provided by the contractor):
1. Standard locking hardware:
 - a. Adams Rite dead latch with lever handle or push paddle (for single door). Timed lock hard wired to electric with the following:

- i. Electronic Strike 7100 DC Continuous
 - ii. Securitron Power Supply BPS
 1. Mounted in NEMA 4X box with lockable cover keyed to match electrical panel and lighting panel.
 - iii. Securitron Timer DT-7
 2. Standard push and pull hardware to be 1 inch (25 mm) diameter offset profile with 12 inch (305 mm) centers, in stainless steel finish.
- C. Thresholds:
 1. Provide at all doors unless otherwise detailed.
 2. Thresholds shall be ADA compliant.
 3. Provide woodscrew and rawl plug type fastenings approximately 15 inches (381 mm) on center.
 4. Thresholds shall be set on the finished floor and adequately caulked against water seepage.
 5. Profile:
 - a. Thresholds shall be 1/2 inch (13 mm) high x 6 inch (152 mm) wide saddle type.
 6. Material:
 - a. Extruded aluminum.
- D. Weatherstrip:
 2. Shall be manufacturer's standard polypropylene pile.
 3. Shall occur:
 - a. Vertically at meeting stiles on pairs of doors.
 - b. Concealed at door top and bottom rails.
 - c. At door stops at both hinge and strike jambs.
 - d. At both sides of exposed hinge shaft if used.
- E. Kickplates
 1. Provide kick plates on the push side of all doors
 2. Finish: Satin Stainless Steel US32D
 3. Size: 12" High x 2" less than door width
 4. Heavy duty .062" thick

2.05 SHOP INSPECTION

- A. Prior to leaving factory, all balanced doors and immediate framing shall be assembled and "hung". At this time, adjustment shall be made to provide proper perimeter clearance between door and frame and all coordination between door, frame and finish hardware shall be tested.

PART III – EXECUTION

3.01 EXAMINATION

- A. The installer/erector shall examine substrates, supports and conditions under which this work is to be performed and notify contractor, in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.
- B. The floor material shall be solid (not susceptible to either deterioration or heaving), smooth and level and the adjacent work in its proper place prior to the installation of the door and frame system.
- C. Coordination dimensions, tolerances and method of attachment with other work.
- D. Verify electric power is available and of correct characteristics, if required.

3.02 INSTALLATION/ERECTION

- A. *The installer/erector to install all materials by factory-trained personnel in strict accordance with installation data provided by manufacturer and these specifications.*
- B. *Provide attachments and shims required to fasten system to building structure.*
- C. *Install entrances plumb, level, square in alignment and true plane.*
- D. *Install glass in accordance with manufacturer's instructions.*
- E. *Install perimeter type sealant, backing materials to installation requirements.*

3.03 ADJUSTING AND CLEANING

- A. *The installer/erector to fit, align and adjust door assembly.*
- B. *Adjust door installation and hardware so that doors open and close smoothly.*
- C. *Adjust speed to comply with applicable codes.*
- D. *Remove protective materials from finished metal surfaces.*
- E. *Clean exposed surfaces using materials and methods recommended by manufacturer, exercising care to avoid damage to coatings.*
- F. *Touch-up damaged coatings and finishes.*

3.04 PROTECTION

- A. *The contractor to institute protective measures required throughout the remainder of the construction period to ensure that the balanced door units will be without damage or deterioration, other than normal weathering, at the time of substantial completion.*

This work shall be measured and paid for at the contract unit price per LUMP SUM for **BUILDING** as shown on the drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

ALUMINUM WINDOWS COMPLETE

This work shall consist of the furnishing and installation of **ALUMINUM WINDOWS COMPLETE**. The contractor shall include all the glazing, hardware, sealants, and all necessary equipment, hardware, tools, and all other miscellaneous items necessary to complete this section as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record. Provide the number and types per the dimensions as shown on the drawings.

16.1 SECTION INCLUDES

- 1. Exterior aluminum windows

16.2 DEFINITIONS

- A. ADA/ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities."
- B. Performance class designations for windows according to AAMA/WDMA 101/I.S.2/NAFS:
 - 1. C: Commercial.
- C. Performance grade number for windows according to AAMA/WDMA 101/I.S.2/NAFS:

1. Design pressure number in pounds force per square foot used to determine the structural test pressure and water test pressure.

- D. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.
- E. Minimum Window Test Size: Smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

16.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Aluminum-framed systems of the sizes indicated shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:
1. Movements of supporting structure.
 2. Dimensional tolerances of building frame and other adjacent construction.
 3. Failure includes the following:
 - a. Deflection exceeding specified limits.
 - b. Thermal stresses transferring to building structure.
 - c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
 - d. Glazing-to-glazing contact.
 - e. Noise or vibration created by wind and by thermal and structural movements.
 - f. Loosening or weakening of fasteners, attachments, and other components.
 - g. Sealant failure.
 - h. Failure of operating units.
- B. Deflection of Framing Members:
1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
 2. Deflection Parallel to Glazing Plane: Limited to L/360 of clear span or 1/8 inch, whichever is smaller.
- C. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:
1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
 2. Test Durations: As required by design wind velocity, but not fewer than 10 seconds.
- D. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft.
- E. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

- F. Water Penetration under Dynamic Pressure: Provide aluminum-framed systems that do not evidence water leakage through fixed glazing and framing areas when tested according to AAMA 501.1 under dynamic pressure equal to 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.
- G. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
 2. Test Performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.
 - a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 deg F.
 - b. Low Exterior Ambient-Air Temperature: -20 deg F.
 3. Interior Ambient-Air Temperature: 75 deg F.
- H. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 45 when tested according to AAMA 1503.
- I. Thermal Conductance: Provide aluminum-framed systems with fixed glazing and framing areas having an average U-factor of not more than 0.57 Btu/sq. ft. x h x deg F when tested according to AAMA 1503.
- J. Structural Sealant: Capable of withstanding tensile and shear stresses imposed by aluminum-framed systems without failing adhesively or cohesively. When tested for preconstruction adhesion and compatibility, cohesive failure of sealant shall occur before adhesive failure.
1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
 2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.
- K. Performance class / Design pressure: aluminum framed windows shall withstand a minimum of 20 PSF both inward and outward.

16.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for aluminum-framed systems.
- B. Shop Drawings: For aluminum-framed systems. Include plans, elevations, sections, details, and attachments to other work.
1. Include details of provisions for system expansion and contraction and for drainage of moisture in the system to the exterior.

- C. Samples for Initial Selection: For units with factory-applied color finishes. – submit manufacturer's full range.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for aluminum-framed systems, indicating compliance with performance requirements.
- E. Maintenance Data: For aluminum-framed systems to include in maintenance manuals.
- F. Warranties: Sample of special warranties.

16.5 QUALITY ASSURANCE

- A. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.
- B. Accessible Entrances: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.
- C. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.

16.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

16.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Ten years from date of Substantial Completion.
- B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.
 - 1. Warranty Period: Twenty years from date of Substantial Completion.

PART 17 - PRODUCTS

17.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Kawneer North America; an Alcoa company.
2. EFCO Corporation.
3. TRACO.
4. Tubelite.

17.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
1. Sheet and Plate: ASTM B 209.
 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 3. Extruded Structural Pipe and Tubes: ASTM B 429.
 4. Structural Profiles: ASTM B 308/B 308M.
- B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer, complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
 3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

17.3 FRAMING SYSTEMS

- A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
1. Construction: Thermally broken.
 2. Glazing System: Retained mechanically with gaskets on four sides.
 3. Glazing Plane: Center
- B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with non staining, nonferrous shims for aligning system components.
- C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, nonbleeding fasteners and accessories compatible with adjacent materials.
1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
 2. Reinforce members as required to receive fastener threads.
 3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.
- D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts, complying with ASTM A 123/A 123M or ASTM A 153/A 153M.
- E. Concealed Flashing: Manufacturer's standard corrosion-resistant, non-staining, nonbleeding flashing compatible with adjacent materials.

- F. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.

17.4 WINDOWS

- A. Window Type: Fixed.
- B. AAMA/WDMA Performance Requirements: Provide aluminum windows of performance indicated that comply with AAMA/WDMA 101/I.S.2/NAFS.
 - 1. Performance Class and Grade: C.
- C. Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according to AAMA 1503, showing a CRF of 45.
- D. Thermal Transmittance: Provide aluminum windows with a whole-window, U-factor maximum indicated at 15-mph exterior wind velocity and winter condition temperatures when tested according to ASTM E 1423.
 - 1. U-Factor: 0.35 Btu/sq. ft. x h x deg F or less.
- E. Solar Heat-Gain Coefficient (SHGC): Provide aluminum windows with a whole-window SHGC maximum of 0.40, determined according to NFRC 200 procedures.
- F. Sound Transmission Class (STC): Provide glazed windows rated for not less than 26 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
- G. Air Infiltration: Maximum rate not more than indicated when tested according to AAMA/WDMA 101/I.S.2/NAFS, Air Infiltration Test.
 - 1. Maximum Rate: 0.1 cfm/sq. ft. of area at an inward test pressure of 6.24 lbf/sq. ft.
- H. Water Resistance: No water leakage as defined in AAMA/WDMA referenced test methods at a water test pressure equaling that indicated, when tested according to AAMA/WDMA 101/I.S.2/NAFS, Water Resistance Test.
 - 1. Test Pressure: 15 percent of positive design pressure, but not less than 2.86 lbf/sq. ft. or more than 15 lbf/sq. ft.
- I. Forced-Entry Resistance: Comply with Performance Grade 10 requirements when tested according to ASTM F 588.
- J. Glazing:
 - 1. Glass Type: Low-e-coated insulating glass.
 - a. Overall Unit Thickness: 1 inch.
 - b. Thickness of Each Glass Lite: 6.0 mm.
 - c. Outdoor Lite: Pyrolytic-coated, self-cleaning, low-maintenance, tinted float glass.
 - d. Interspace Content: Argon.
 - e. Indoor Lite: Float glass.

f. Low-E Coating: Sputtered on third surface.

- K. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.
- L. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.
- M. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- N. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
 - 1. Structural Sealant: ASTM C 1184, single-component neutral-curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by a structural-sealant manufacturer for use in aluminum-framed systems indicated.
 - 2. Weather seal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weather seal-sealant, and aluminum-framed-system manufacturers for this use.
 - a. Color: Matching structural sealant.

17.5 ACCESSORY MATERIALS

- A. Joint Sealants: For installation at perimeter of aluminum-framed systems.
- B. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30-mil thickness per coat.

17.6 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations.
 - 2. Accurately fitted joints with ends coped or mitered.
 - 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
 - 4. Physical and thermal isolation of glazing from framing members.

5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 6. Provisions for field replacement of glazing from interior.
 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- E. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
- F. Storefront Framing: Fabricate components for assembly using screw-spline system.
- G. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
1. At exterior doors, provide compression weather stripping at fixed stops.
 2. At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on strike jamb of single-door frames and two silencers on head of frames for pairs of doors.
- H. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.
- 17.7 FINISHES, GENERAL
- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
 - C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- 17.8 ALUMINUM FINISHES
- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 1. Anodic Finish: Class II complying with AAMA 611.
 2. Power Coat Finishes complying with AAMA 2604
 - B. Colors
 1. Kawneer North America; an Alcoa company. – Sepia Brown
 2. EFCO Corporation. – Light Bronze
 3. TRACO – Sepia Brown
 4. Tubelite – Dark Bronze - DB

PART 18 - EXECUTION

18.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate, and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight window installation.
 - 1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
 - 2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
 - 3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
 - 4. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

18.2 INSTALLATION

- A. General:
 - 1. Comply with manufacturer's written instructions.
 - 2. Do not install damaged components.
 - 3. Fit joints to produce hairline joints free of burrs and distortion.
 - 4. Rigidly secure nonmovement joints.
 - 5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
 - 6. Seal joints watertight unless otherwise indicated.
- B. Metal Protection:
 - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
 - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
- D. Set continuous sill members and flashing in full sealant bed.
- E. Install components plumb and true in alignment with established lines and grades, and without warp or rack.
- F. Install glazing as specified in manufacturer's written instructions.

1. Structural-Sealant Glazing:

- a. Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.
- b. Install weather seal sealant according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.

G. Install perimeter joint sealants to produce weather tight installation.

18.3 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet; 1/4 inch over total length.
2. Alignment:
 - a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
 - b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

This work shall be measured and paid for at the contract unit price per LUMP SUM for **BUILDING** as shown on the drawings, and shall include all labor, tools, materials and equipment needed to complete this work.

ROOFING COMPLETE

This work shall consist of the furnishing and installation of the **ROOFING COMPLETE**, composed of prefabricated structural insulated roofing panels, roof sheathing and framing, shingles and roof underlayment, and flashings. Include all the necessary equipment, tools, and other miscellaneous items necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

Section Includes

1. Structural insulated panels (SIPs) with polyurethane core.

19.1 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product; manufacturer-specific installation instructions for SIP system, including preparation instructions and recommendations, and storage and handling requirements and recommendations.
- B. Shop Drawings: Submit shop drawings for SIPs showing layout, elevations, SIP details, product components and accessories. SIP installation drawing shall be reviewed by and sealed by a registered professional

engineer qualified to perform such work. Deviations from standard detail and load design values shall be calculated and signed and sealed by a registered professional engineer.

- C. Samples: Submit 12 inch by 12 inch (305 mm by 305 mm) sample panel.
- D. SIP Code Compliance Report: Submit manufacturer's ICC-ES evaluation report for the International Building Code.
- E. Warranty: Sample of special warranty.

19.2 DELIVERY, STORAGE, AND HANDLING

- A. Ordering: Comply with SIP manufacturer ordering instructions and coordinate lead time requirements to avoid construction delays.
- B. Delivery: Deliver materials from SIP manufacturer with identification labels or markings intact.
- C. Unloading: Off-load SIPs from delivery vehicle using method which will not damage SIPs, and as acceptable to the manufacturer.
- D. Storage: SIPs shall be fully supported using wood stickers, placed in level storage, and prevented from contact with the ground. Stickers shall be placed as recommended by manufacturer.
- E. Protection: SIPs shall remain in the manufacturer's protective wrap until needed for installation. Unused panels will be rewrapped and/or covered with a suitable covering that will prevent exposure to rain, snow, water, sunlight, dirt, mud, and any foreign matter that may affect SIP performance.
- F. Subsequent Construction: Coordinate installation of subsequent construction to avoid exposure of SIPs to rain, snow, high moisture, and ultraviolet light and as recommended by the manufacturer.

19.3 Project Conditions

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer to the greatest extent practical. Do not install products under environmental conditions outside manufacturer's absolute limits.

19.4 Warranty

- A. Panel manufacturer will provide lamination warranty documents for building Owner acceptance and execution upon completion. Manufacturer's standard forms shall be submitted.

19.5 QUALITY ASSURANCE

- A. Installer Qualifications: Installer shall be experienced in performing work of this section and shall specialize in installation of work similar to that required for this project. All work shall be performed in accordance with the manufacturer's installation manuals, and in accordance with manufacturer's panel layout drawings when supplied.

- B. Source Limitations: Obtain all SIPs from one manufacturer, through one source. Accessories shall be acceptable to the SIP manufacturer.
- C. Field Measurements: Provide field measurements of structure to SIPs manufacturer prior to fabrication of panels. Coordinate fabrication schedule to comply with project schedule requirements.

PART 20 - PRODUCTS

20.1 Manufacturers

- A. Shall be one of the following
 1. Murus Compay - OSB-2100PUR
 2. Thermocore
 3. Eco-Panels
 4. Porter SIPS

20.2 Structural Insulation Panels

- A. Polyurethane Structural Insulated Panel (SIP) with Polyurethane Core: A stress skin panel manufactured using the manufacturing method of Uniform Dispersion Molding (UDM) complying with the following:
 - a. Thermal Characteristics: 6-5/8 inches (168 mm) thick SIP with R-40.
 - b. Polyurethane Closed Cell Foam: Minimum of 2.2 pcf (35 kg/cu m) insulation meeting manufacturers quality standards and the following:
 - 1) K Factor (aged foam): 148, ASTM C 518.
 - 2) Compressive Strength: 23 psi, ASTM D 1621.
 - 3) Compressive MOE: 682 psi, ASTM D 1621.
 - 4) Shear Strength: 31 psi, ASTM C 273.
 - 5) Shear Modulus: 203 psi, ASTM C 273.
 - 6) Flexure MOR: 52 psi, ASTM C 203.
 - 7) Flexure Modulus (MD): 587 psi, ASTM C 203.
 - 8) Tensile Strength: 37 psi, ASTM D 1623.
 - 9) Tensile Modulus: 611 psi, ASTM D 1623.
 - 10) WVT/Perm inches: 1.0, ASTM E 96.
 - 11) Foam Fire Rating: Class 1, UL723.
 - 12) Flame Spread: 20, UL723.
 - 13) Smoke Developed: 300, UL723.
 - 14) Transverse Load: ASTM E 72.
 - 15) Combined Axial and Bending: ASTM E 72.
 - c. OSB: APA performance rating mark shall be identified on the panel, with an Exposure 1 durability rating; minimum physical properties shall be tested and described in APA PRP-108 or NIST PS 2. 7/16 inch (11 mm) thickness unless noted otherwise.
 - d. Cam Locks: If indicated or required, shall be installed in the panel during the manufacturing process.
 - e. Wiring Chases: If indicated or required, shall be formed into the panel during the manufacturing process.

- f. Sizes: from 4 feet by 4 feet to 4 feet by 24 feet (1219 mm by 1219 mm to 1219 mm by 7315 mm) as determined by contractor for proper installation and layout per the drawings.

20.3 ACCESSORIES

- A. Fasteners: Galvanized ring shank panel nails, or panel screws, as specified by panel manufacturer, for attachment of panel to frames, roofs, and corners. All fasteners to be sized and provided by manufacturer and installed per manufacturer's requirements. Do not use common fasteners.
- B. Foam Sealant: Compatible with all components of the panel and adjacent materials, provided by manufacturer.
- C. Construction Adhesive for Installing Dimensional Lumber: Supplied by contractor, acceptable to manufacturer.
- D. Dimensional Lumber: SPF #2 kiln-dried or better, or pre-engineered equivalent.

PART 21 - EXECUTION

21.1 EXAMINATION

- A. Do not begin installation until foundation or slab have been properly prepared.
- B. If supporting framing and level line are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

21.2 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

21.3 INSTALLATION, GENERAL

- A. Installation shall be in strict accordance with manufacturer's published instructions, details, and the drawings that are part of the contract documents for this project. Conflicts between these documents shall be resolved in writing prior to start of construction.

Roof sheathing shall be 5/8" thick OSB exposure 1 sheathing. The panel grade and performance category shall be not less than 24/16 with a self-spacing edge profile. Fasten to roof framing and insulated roof panels per the drawings and the insulated roof panel manufacturer's written instructions. Furnish and install a self-adhering seam and flashing tape to seal joints and penetrations in the roof sheathing that is pressure-sensitive, self-adhering, cold-

applied seam tape consisting of polyolefin film with acrylic adhesive, meeting ICC-ES AC148, and tested as part of an assembly meeting performance requirements.

The roof sheathing shall be installed in accordance with manufacturer's written instructions, requirements of applicable Evaluation Reports, and requirements of authorities having jurisdiction. Coordinate sheathing installation with flashing and joint sealant sequencing and installation and with adjacent building air and moisture barrier components, gutters, and flashings to provide complete, continuous air- and moisture- barrier.

Where required by code approvals based upon panel thickness and support spacing, provide panel clips located at each unsupported panel butt joint centered between supports. Attach sheathing panels securely to substrate with manufacturer-approved fasteners in compliance with the following:

1. ICC-ES ESR-1539 or ICC-NES NER-272 for power-driven fasteners.
2. IBC: Table 2304.9.1 Fastening Schedule.
3. IRC: Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments."

Furnish and install a superheavyweight granule surfaced, self-sealing asphalt complying with UL 790 Class A rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; ASTM D 3462; AC438; CSA A123.5-98; Dade County Approved, Florida Building Code Approved, Texas Dept. of Insurance Approved, ICC Report Approval.

All primary roofing products, including shingles, underlayment, leak barrier, and ventilation shall be from a single manufacturer. Installer must be approved for installation of all roofing products to be installed under this section. Install, store, and deliver all shingles in accordance with the manufacturer's written instructions, the specifications and drawings, and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence. Provide the manufacturer's standard warranty and deliver copies of the warranty to the owner at the end of the work.

Furnish and install #30 Roofing Underlayment - Water repellent breather type cellulose fiber building paper that meets or exceeds the requirements of ASTM D-4869 Type II.

Shingles shall be one of the following:

- GAF Camelot – Royal Slate
- Certainteed – Northgate: Max Def Moire Black
- Owenscorning – Berkshire collection – Canterbury Black

This work shall be measured and paid for at the contract unit per LUMP SUM for **BUILDING** as shown on the structural drawings, and including all labor, tools, materials and equipment needed to complete this work.

BUILDING SIGNAGE COMPLETE

This work shall consist of the furnishing and installation of the **BUILDING SIGNAGE COMPLETE** composed of prefabricated building signage as indicated on the drawings. Include all the necessary equipment, tools, and other

miscellaneous items necessary to complete this work as shown on the drawings, noted herein, and as indicated by the Engineer or Architect of record.

The signage shall be of the type, size and material and installed in the locations as shown on the drawings. The three (3) no smoking decals shall be furnished at each entry door. The decal shall be a minimum of 4" x 4" and have the universal image for no smoking, in color.

For the Cast Aluminum lettering provide the following:

- B. Cast Characters: Characters with uniform faces, sharp corners, and precisely formed lines and profiles, and as follows:
 - 1. Character Material: Cast aluminum ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.
 - 2. Character Height: 8"
 - 3. Thickness: minimum ¼"
 - 4. Finishes:
 - a. Integral Aluminum Finish: Clear Anodized. AAMA 611, Class 1.
 - 5. Mounting: Mount with concealed fasteners. Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, substrate, and complying with the following:
 - a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
 - 6. Typeface: Arial.
- C. Installation
 - 1. Locate signs and accessories where indicated on the drawings, using mounting methods of types described and complying with manufacturer's written instructions.
 - a. Install signs level and plumb.
 - 2. After installation clean signs per manufacturer's written instructions.
 - 3. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify that items, including anchor inserts, are sized and located to accommodate signs. Proceed with installation only after unsatisfactory conditions have been corrected.

This work shall be measured and paid for at the contract unit per LUMP SUM for **BUILDING** as shown on the drawings, and including all labor, tools, materials and equipment needed to complete this work.

DUST CONTROL

When ordered by the engineer, the contractor shall use the following method to allay dust and prevent a nuisance within the limits of the construction site. Dust shall be controlled by the uniform application of sprinkled water and shall be applied only when directed by the engineer, in a manner meeting his approval. Calcium chloride shall not be used for this purpose. All equipment used for this work shall meet with the engineer's approval. This work shall consist of the exclusive control of dust resulting from construction operations and is not intended for use in the compaction of earth embankments, as specified under Article 205 of the Standard Specifications. No extra compensation shall be allowed to the contractor for this work.

ADJUSTMENTS AND RECONSTRUCTIONS (D-1)

Effective: March 15, 2011

Revise the first paragraph of Article 602.04 to read:

"602.04 Concrete. Cast-in-place concrete for structures shall be constructed of Class SI concrete according to the applicable portions of Section 503. Cast-in-place concrete for pavement patching around adjustments and reconstructions shall be constructed of Class PP-1 concrete, unless otherwise noted in the plans, according to the applicable portions of Section 1020."

Revise the third, fourth and fifth sentences of the second paragraph of Article 602.11(c) to read:

"Castings shall be set to the finished pavement elevation so that no subsequent adjustment will be necessary, and the space around the casting shall be filled with Class PP-1 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b."

Revise Article 603.05 to read:

"603.05 Replacement of Existing Flexible Pavement. After the castings have been adjusted, the surrounding space shall be filled with Class PP-1 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b."

Revise Article 603.06 to read:

"603.06 Replacement of Existing Rigid Pavement. After the castings have been adjusted, the pavement and HMA that was removed, shall be replaced with Class PP-1 concrete, unless otherwise noted in the plans, not less than 9 in. (225 mm) thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.

The surface of the Class PP concrete shall be constructed flush with the adjacent surface."

Revise the first sentence of Article 603.07 to read:

"603.07 Protection Under Traffic. After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b."

AGGREGATE SUBGRADE IMPROVEMENT (D-1)

Effective: February 22, 2012

Revised: April 1, 2016

Add the following Section to the Standard Specifications:

"SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

303.01 Description. This work shall consist of constructing an aggregate subgrade improvement.

303.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.07
(b).....	Reclaimed Asphalt Pavement (RAP) (Notes 1, 2 and 3) 1031

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradation CS 01 but shall not exceed 40 percent by weight of the total product. The top size of the Coarse RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradation CS 01 is used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders. The final product shall not contain more than 40 percent by weight of RAP.

Note 3. The RAP used for aggregate subgrade improvement shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

303.03 Equipment. The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer. The calibration for the mechanical feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered.

303.04 Soil Preparation. The stability of the soil shall be according to the Department's Subgrade Stability Manual for the aggregate thickness specified.

303.05 Placing Aggregate. The maximum nominal lift thickness of aggregate gradation CS 01 shall be 24 in. (600 mm).

303.06 Capping Aggregate. The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When Reclaimed Asphalt Pavement (RAP) is used, it shall be crushed and screened where 100 percent is passing the 1 1/2 in. (37.5 mm) sieve and being well graded. RAP that has been fractionated to size will not be permitted for use in capping. Capping aggregate will not be required when the aggregate subgrade improvement is used as a cubic yard pay item for undercut applications. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

303.07 Compaction. All aggregate lifts shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

303.08 Finishing and Maintenance of Aggregate Subgrade Improvement. The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

303.09 Method of Measurement. This work will be measured for payment according to Article 311.08.

303.10 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.

Add the following to Section 1004 of the Standard Specifications:

1004.07 Coarse Aggregate for Aggregate Subgrade Improvement. The aggregate shall be according to Article 1004.01 and the following.

- (a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. The top 12 inches of the aggregate subgrade improvement shall be 3 inches of capping material and 9 inches of crushed gravel, crushed stone or crushed concrete. In applications where greater than 36 inches of subgrade material is required, rounded gravel, meeting the CS01 gradation, may be used beginning at a depth of 12 inches below the bottom of pavement.
- (b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials. Non-mechanically blended RAP may be allowed up to a maximum of 5.0 percent.
- (c) Gradation.
 - (1) The coarse aggregate gradation for total subgrade thicknesses of 12 in. (300 mm) or greater shall be CS 01.

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS				
	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)				
	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

- (2) The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10.

COURSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D-1)

Effective: November 1, 2011

Revised: November 1, 2013

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP. Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D-1)

Effective: April 1, 2011
 Revised: April 2, 2011

Add the following to Article 603.02 of the Standard Specifications:

- “(i) Temporary Hot-Mix Asphalt (HMA) Ramp (Note 1).....1030
- (j) Temporary Rubber Ramps (Note 2)

Note 1. The HMA shall have maximum aggregate size of 3/8 in. (95 mm).

Note 2. The rubber material shall be according to the following.

Property	Test Method	Requirement
Durometer Hardness, Shore A	ASTM D 2240	75 ±15
Tensile Strength, psi (kPa)	ASTM D 412	300 (2000) min
Elongation, percent	ASTM D 412	90 min
Specific Gravity	ASTM D 792	1.0 - 1.3
Brittleness, °F (°C)	ASTM D 746	-40 (-40)°

Revise Article 603.07 of the Standard Specifications to read:

“603.07 Protection Under Traffic. After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b.

When castings are under traffic before the final surfacing operation has been started, properly sized temporary ramps shall be placed around the drainage and/or utility castings according to the following methods.

- (a) Temporary Asphalt Ramps. Temporary hot-mix asphalt ramps shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 2 ft (600 mm) around the entire surface of the casting.
- (b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 40 mph or less and when the height of the casting to be protected meets the proper sizing requirements for the rubber ramps as shown below.

Dimension	Requirement
Inside Opening	Outside dimensions of casting + 1 in. (25 mm)
Thickness at inside edge	Height of casting ± 1/4 in. (6 mm)
Thickness at outside edge	1/4 in. (6 mm) max.
Width, measured from inside opening to outside edge	8 1/2 in. (215 mm) min

Placement shall be according to the manufacturer's specifications.

Temporary ramps for castings shall remain in place until surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary ramp shall be removed. Excess material shall be disposed of according to Article 202.03."

FRICITION AGGREGATE (D-1)

Effective: January 1, 2011

Revised: April 29, 2016

Revise Article 1004.03(a) of the Standard Specifications to read:

"1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA). The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	<u>Allowed Alone or in Combination</u> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	<u>Allowed Alone or in Combination</u> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{1/} Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L SMA Binder	<u>Allowed Alone or in Combination</u> ^{5/ 6/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete ^{3/}

Use	Mixture	Aggregates Allowed	
HMA High ESAL Low ESAL	C Surface and Leveling Binder IL-9.5 or IL-9.5L SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/}	
HMA High ESAL	D Surface and Leveling Binder IL-9.5 SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone (other than Limestone) ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/}	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone		
HMA High ESAL	E Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/6/} : Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Dolomite ^{2/}	Any Mixture E aggregate

Use	Mixture	Aggregates Allowed	
		75% Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
		75% Crushed Gravel ^{2/} or Crushed Concrete ^{3/}	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag
HMA High ESAL	F Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/6/} :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel ^{2/} , Crushed Concrete ^{3/} , or Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

- (1) Crushed steel slag allowed in shoulder surface only.
- (2) Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
- (3) Crushed concrete will not be permitted in SMA mixes.
- (4) Crushed steel slag shall not be used as leveling binder.
- (5) When combinations of aggregates are used, the blend percent measurements shall be by volume."
- (6) Combining different types of aggregate will not be permitted in SMA Ndesign 80."

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1)

Effective: June 26, 2006

Revised: April 1, 2016

Add the following to the end of article 1032.05 of the Standard Specifications:

“(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. A quantity of 10.0 to 14.0 percent GTR (Note 1) shall be blended by dry unit weight with a PG 64-28 to make a GTR 70-28 or a PG 58-28 to make a GTR 64-28. The base PG 64-28 and PG 58-28 asphalt binders shall meet the requirements of Article 1032.05(a). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

Test	Asphalt Grade GTR 70-28	Asphalt Grade GTR 64-28
Flash Point (C.O.C.), AASHTO T 48, °F (°C), min.	450 (232)	450 (232)
Rotational Viscosity, AASHTO T 316 @ 275 °F (135 °C), Poises, Pa·s, max.	30 (3)	30 (3)
Softening Point, AASHTO T 53, °F (°C), min.	135 (57)	130 (54)
Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min.	65	65

Note 1. GTR shall be produced from processing automobile and/or light truck tires by the ambient grinding method. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall contain no free metal particles or other materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois modified AASHTO T 27, a 50 g sample of the GTR shall conform to the following gradation requirements:

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 μm)	95 ± 5
No. 50 (300 μm)	> 20

Add the following to the end of Note 1. of article 1030.03 of the Standard Specifications:

“A dedicated storage tank for the Ground Tire Rubber (GTR) modified asphalt binder shall be provided. This tank must be capable of providing continuous mechanical mixing throughout by continuous agitation and recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ± 0.40 percent.”

Revise 1030.02(c) of the Standard Specifications to read:

"(c) RAP Materials (Note 5)1031"

Add the following note to 1030.02 of the Standard Specifications:

Note 5. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

HMA MIXTURE DESIGN REQUIREMENTS (D-1)

Effective: January 1, 2013

Revised: April 1, 2016

1) Design Composition and Volumetric Requirements

Revise the table in Article 406.06(d) of the Standard Specifications to read:

"MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19)
SMA-9.5, IL-9.5, IL-9.5L	1 1/2 (38)
SMA-12.5	2 (50)
IL-19.0, IL-19.0L	2 1/4 (57)"

Revise the table in Article 1004.03(c) of the Standard Specifications to read:

"Use	Size/Application	Gradation No.
Class A-1, 2, & 3	3/8 in. (10 mm) Seal	CA 16
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & 3	Cover	CA 14
HMA High ESAL	IL-19.0 IL-9.5	CA 11 ^{1/} CA 16, CA 13 ^{3/}
HMA Low ESAL	IL-19.0L IL-9.5L Stabilized Subbase or Shoulders	CA 11 ^{1/} CA 16
SMA ^{2/}	1/2 in. (12.5mm) Binder & Surface IL 9.5 Surface	CA13 ^{3/} , CA14 or CA16 CA16, CA 13 ^{3/}

- (1) CA 16 or CA 13 may be blended with the gradations listed.
- (2) The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.
- (3) CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.

Revise Article 1004.03(e) of the Supplemental Specifications to read:

"(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent."

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

"IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours."

Revise the nomenclature table in Article 1030.01 of the Standard Specifications to read:

"High ESAL	IL-19.0 binder; IL-9.5 surface; IL-4.75; SMA-12.5, SMA-9.5
Low ESAL	IL-19.0L binder; IL-9.5L surface; Stabilized Subbase (HMA) ^{1/} ; HMA Shoulders ^{2/}

- (1) Uses 19.0L binder mix.
- (2) Uses 19.0L for lower lifts and 9.5L for surface lift."

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

"1030.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.03
(b) Fine Aggregate	1003.03
(c) RAP Material	1031
(d) Mineral Filler	1011
(e) Hydrated Lime	1012.01
(f) Slaked Quicklime	(Note 1)
(g) Performance Graded Asphalt Binder	(Note 2) 1032
(h) Fibers	(Note 3)
(i) Warm Mix Asphalt (WMA) Technologies	(Note 4)

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be an Elvaloy or SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type 1 or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 4. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, "Warm Mix Asphalt Technologies".

Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

"(1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) ¹⁾										
Sieve Size	IL-19.0 mm		SMA ⁴⁾ IL-12.5 mm		SMA ⁴⁾ IL-9.5 mm		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in. (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 ⁵⁾	16	32 ⁵⁾	34 ⁶⁾	52 ²⁾	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 ³⁾	7.5	9.5 ³⁾	4	6	7	9 ³⁾
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		

- (1) Based on percent of total aggregate weight.
- (2) The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with N_{design} = 90.
- (3) Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
- (4) The maximum percent passing the #635 (20 μm) sieve shall be ≤ 3 percent.
- (5) When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.
- (6) When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

"(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent and for IL-4.75 it shall be 3.5 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

VOLUMETRIC REQUIREMENTS High ESAL				
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA), %
	IL-19.0	IL-9.5	IL-4.75 ^{1/}	
50	13.5	15.0	18.5	65 – 78 ^{2/}
70			65 - 75	
90				

1. Maximum Draindown for IL-4.75 shall be 0.3 percent
2. VFA for IL-4.75 shall be 72-85 percent"

Replace Article 1030.04(b)(3) of the Standard Specifications with the following:

"(3) SMA Mixtures.

Volumetric Requirements SMA ^{1/}			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 ^{4/}	3.5	17.0 ^{2/}	75 - 83
		16.0 ^{3/}	

3. Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.
4. Applies when specific gravity of coarse aggregate is ≥ 2.760.
5. Applies when specific gravity of coarse aggregate is < 2.760.
6. Blending of different types of aggregate will not be permitted.

For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

"During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production."

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

"As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

- (a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.
- (b.) A mix design was prepared based on collected dust (baghouse).

2) Design Verification and Production

Revise Article 1030.04 (d) of the Standard Specifications to read:

"(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department's verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification and shall meet the following requirements:

- (1) Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements ¹¹

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

- 7. When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.
 For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

- (2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for

polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa)."

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

"(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture with a quantity of 3000 tons (2750 metric tons) or more according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip Procedures".

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

"The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day's production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria"

Method of Measurement:

Add the following after the fourth paragraph of Article 406.13 (b):

"The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design's G_{mb}."

Basis of Payment.

Replace the fourth paragraph of Article 406.14 of the Standard Specifications with the following:

"Stone matrix asphalt will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition and N_{design} specified; and POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and N_{design} specified."

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)

Effective: November 1, 2012

Revise: April 2, 2016

Revise Section 1031 of the Standard Specifications to read:

"SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

1031.01 Description. Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.
- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
 - (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
 - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

1031.02 Stockpiles. RAP and RAS stockpiles shall be according to the following.

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP -#4 or Type 2 RAS", etc...)
 - (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mix the FRAP will be used in.

- (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, Superpave (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of Type 1 RAS with Type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

1031.03 Testing. FRAP and RAS testing shall be according to the following.

- (a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.
 - (1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

- (2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.
- (3) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restocking. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

- (b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.
 - (1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.
 - (2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

1031.04 Evaluation of Tests. Evaluation of test results shall be according to the following.

- (a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag), G_{mm} . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	$\pm 6 \%$
No. 8 (2.36 mm)	$\pm 5 \%$

No. 30 (600 μ m)	$\pm 5 \%$
No. 200 (75 μ m)	$\pm 2.0 \%$
Asphalt Binder	$\pm 0.3 \%$
G _{mm}	$\pm 0.03 \%$

- (1) For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)" or Illinois Modified AASHTO T-164-11, Test Method A.

- (b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	$\pm 5 \%$
No. 16 (1.18 mm)	$\pm 5 \%$
No. 30 (600 μ m)	$\pm 4 \%$
No. 200 (75 μ m)	$\pm 2.5 \%$
Asphalt Binder Content	$\pm 2.0 \%$

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision	
	FRAP	RAS
% Passing: ^{1/}		
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	3.0%
No. 200	2.2%	2.5%
Asphalt Binder Content	0.3%	1.0%
G _{mm}	0.030	

- (1) Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

1031.05 Quality Designation of Aggregate in RAP and FRAP.

- (a) RAP. The aggregate quality of the RAP for homogeneous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.
- (1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
 - (2) RAP from Superpave/HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
 - (3) RAP from Class I, Superpave/HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
 - (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.
- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Bureau of Materials and Physical Research Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied

for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

1031.06 Use of FRAP and/or RAS in HMA. The use of FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

(a) FRAP. The use of FRAP in HMA shall be as follows.

- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.
- (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.

(b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

(c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts indicated in the table below for a given N Design.

Max Asphalt Binder Replacement for FRAP with RAS Combination

HMA Mixtures ^{1/2/4/}	Maximum % ABR		
	Binder/Leveling Binder	Surface	Polymer Modified ^{3/}
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
4.75 mm N-50			40
SMA N-80			30

- (1) For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.
- (2) When the binder replacement exceeds 15 % for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 % binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 %, the required virgin asphalt binder grade shall be PG64-28.
- (3) When the ABR for SMA or IL-4.75 is 15 % or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.
- (4) When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

1031.07 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

- (a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.
- (b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design. A RAS stone bulk specific gravity (Gsb) of 2.300 shall be used for mix design purposes.

1031.08 HMA Production. HMA production utilizing FRAP and/or RAS shall be as follows.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

- (a) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.
- (b) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.
 - (1) Dryer Drum Plants.

- a. Date, month, year, and time to the nearest minute for each print.
 - b. HMA mix number assigned by the Department.
 - c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
 - d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
 - e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
 - f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
 - g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
 - h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)
 - i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.
 - j. Accumulated mixture tonnage.
 - k. Dust Removed (accumulated to the nearest 0.1 ton (0.1 metric ton))
- (2) Batch Plants.
- a. Date, month, year, and time to the nearest minute for each print.
 - b. HMA mix number assigned by the Department.
 - c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
 - d. Mineral filler weight to the nearest pound (kilogram).
 - f. RAS and FRAP weight to the nearest pound (kilogram).
 - g. Virgin asphalt binder weight to the nearest pound (kilogram).
 - h. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B. The use of RAP or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

- (c) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75 μ m) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation."

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG)

Effective: August 1, 2012

Revised: February 1, 2014

In addition to the Contractor's equal employment opportunity affirmative action efforts undertaken as elsewhere required by this Contract, the Contractor is encouraged to participate in the incentive program to provide additional on-the-job training to certified graduates of IDOT funded pre-apprenticeship training programs outlined by this Special Provision.

It is the policy of IDOT to fund IDOT pre-apprenticeship training programs throughout Illinois to provide training and skill-improvement opportunities to assure the increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The intent of this IDOT Training Program Graduate (TPG) Special Provision is to place certified graduates of these IDOT funded pre-apprentice training programs on IDOT project sites when feasible, and provide the graduates with meaningful on-the-job training intended to lead to journey-level employment. IDOT and its sub-recipients, in carrying out the responsibilities of a state contract, shall determine which construction contracts shall include "Training Program Graduate Special Provisions." To benefit from the incentives to encourage the participation in the additional on-the-job training under this Training Program Graduate Special Provision, the Contractor shall make every reasonable effort to employ certified graduates of IDOT funded Pre-apprenticeship Training Programs to the extent such persons are available within a reasonable recruitment area.

Participation pursuant to IDOT's requirements by the Contractor or subcontractor in this Training Program Graduate (TPG) Special Provision entitles the Contractor or subcontractor to be reimbursed at \$15.00 per hour for training given a certified TPG on this contract. As approved by the Department, reimbursement will be made for training persons as specified herein. This reimbursement will be made even though the Contractor or subcontractor may receive additional training program funds from other sources for other trainees, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving other reimbursement. For purposes of this Special Provision the Contractor is not relieved of requirements under applicable federal law, the Illinois Prevailing Wage Act, and is not eligible for other training fund reimbursements in addition to the Training Program Graduate (TPG) Special Provision reimbursement.

No payment shall be made to the Contractor if the Contractor or subcontractor fails to provide the required training. It is normally expected that a TPG will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project through completion of the contract, so long as training opportunities exist in his work classification or until he has completed his training program. Should the TPG's employment end in advance of the completion of the contract, the Contractor shall promptly notify the designated IDOT staff member under this Special Provision that the TPG's involvement in the contract has ended and supply a written report of the reason for the end of the involvement, the hours completed by the TPG under the Contract and the number of hours for which the incentive payment provided under this Special Provision will be or has been claimed for the TPG.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting its performance under this Special Provision.

METHOD OF MEASUREMENT: The unit of measurement is in hours.

BASIS OF PAYMENT: This work will be paid for at the contract unit price of \$15.00 per hour for certified TRAINEES TRAINING PROGRAM GRADUATE. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

The Contractor shall provide training opportunities aimed at developing full journeyworker in the type of trade or job classification involved. The initial number of TPGs for which the incentive is available under this contract is **1** . During the course of performance of the Contract the Contractor may seek approval from the Department for additional incentive eligible TPGs. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the TPGs are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this Special Provision. The Contractor shall also insure that this Training Program Graduate Special Provision is made applicable to such subcontract if the TPGs are to be trained by a subcontractor and that the incentive payment is passed on to each subcontractor.

For the Contractor to meet the obligations for participation in this TPG incentive program under this Special Provision, the Department has contracted with several entities to provide screening, tutoring and pre-training to individuals interested in working in the applicable construction classification and has certified those students who have successfully completed the program and are eligible to be TPGs. A designated IDOT staff member, the Director of the Office of Business and Workforce Diversity (OBWD), will be responsible for providing assistance and referrals to the Contractor for the applicable TPGs. For this contract, the Director of OBWD is designated as the responsible IDOT staff member to provide the assistance and referral services related to the placement for this Special Provision. For purposes of this Contract, contacting the Director of OBWD and interviewing each candidate he/she recommends constitutes reasonable recruitment.

Prior to commencing construction, the Contractor shall submit to the Department for approval the TPGs to be trained in each selected classification. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. No employee shall be employed as a TPG in any classification in which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman. Notwithstanding the on-the-job training purpose of this TPG Special Provision, some offsite training is permissible as long as the offsite training is an integral part of the work of the contract and does not comprise a significant part of the overall training.

Training and upgrading of TPGs of IDOT pre-apprentice training programs is intended to move said TPGs toward journeyman status and is the primary objective of this Training Program Graduate Special Provision. Accordingly, the Contractor shall make every effort to enroll TPGs by recruitment through the IDOT funded TPG programs to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance and entitled to the Training Program Graduate Special Provision \$15.00 an hour incentive.

The Contractor or subcontractor shall provide each TPG with a certificate showing the type and length of training satisfactorily completed.



Route 135th Street	Marked Route FAU 282	Section 10-00056-00-PK
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TE- Project Number CMM-9003(600)	County WILL	Contract Number 61D08
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This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issues by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

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.

Print Name Steve Gulden	Title Village Manager	Agency Village of Romeoville
Signature 		Date 5-9-14

I. Site Description

A. Provide a description of the project location (include latitude and longitude):

This project is located in the Village of Romeoville in the southwest quadrant of 135th Street and New Avenue. Latitude 41 degrees, 38', 15" N and Longitude 88 degrees, 03' 02" W

B. Provide a description of the construction activity which is subject of this plan:

The work consists of HMA road and parking lot, storms sewers, pond expansion, railroad platforms, warming shelter building, and related work.

C. Provide the estimated duration of this project:

6 months

D. The total area of the construction site is estimated to be 10 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 8 acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

0.75

F. List all soils found within project boundaries. Include map unit name, slope information and erosivity:

Harpster silty clay loam, 0-2% slopes, Joliet silt loam, 0-2% slopes, Romeo silt loam, 0-2% slopes (see attached map)

G. Provide an aerial extent of wetland acreage at the site:

0.84

H. Provide a description of potentially erosive areas associated with this project:

None

184

- I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of slopes, etc.):

Excavation, storm sewer, HMA pavement construction

- J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent off site sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

- K. Identify who owns the drainage system (municipality or agency) this project will drain into:

Village

- L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located.

Romeoville

- M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

Des Plaines River

- N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

The wetlands adjacent to the project will be protected with perimeter erosion barrier during construction.

- O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity, or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

[Empty box for 303(d) listed receiving waters]

- a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

[Empty box for name(s) of listed water body and pollutants]

- b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

[Empty box for description of erosion and sediment control practices]

- c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

[Empty box for description of direct discharge location(s)]

- d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

[Empty box for description of dewatering discharges]

2. TMDL (fill out this section if checked above)

- a. The name(s) of the listed water body:

[Empty box for name(s) of listed water body]

b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

[Empty box for description]

c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet the allocation:

[Empty box for description]

P. The following pollutants of concern will be associated with this construction project:

- Soil Sediment
- Concrete
- Concrete Truck waste
- Concrete Curing Compounds
- Solid waste Debris
- Paints
- Solvents
- Fertilizers / Pesticides
- Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- Antifreeze / Coolants
- Waste water from cleaning construction equipment
- Other (specify) _____
- Other (specify) _____
- Other (specify) _____
- Other (specify) _____

II. Controls

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed, and maintained to:

B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including

site-specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(B)(1) and II(B)(2), stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- Preservation of Mature Vegetation
- Vegetated Buffer Strips
- Protection of Trees
- Temporary Erosion Control Seeding
- Erosion Control Blanket / Mulching
- Sodding
- Geotextiles
- Other (specify) _____

186

- Temporary Turf (Seeding, Class 7) Other (specify) _____
- Temporary Mulching Other (specify) _____
- Permanent Seeding Other (specify) _____

Describe how the stabilization practices listed above will be utilized during construction:

Temporary Ditch Checks

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

All disturbed areas will be restored with seeding and erosion control blanket

C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following stabilization practices will be used for this project:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier | <input type="checkbox"/> Rock Outlet Protection |
| <input checked="" type="checkbox"/> Temporary Ditch Check | <input checked="" type="checkbox"/> Riprap |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Gabions |
| <input type="checkbox"/> Sediment Trap | <input type="checkbox"/> Slope Mattress |
| <input type="checkbox"/> Temporary Pipe Slope Drain | <input type="checkbox"/> Retaining Walls |
| <input type="checkbox"/> Temporary Sediment Basin | <input type="checkbox"/> Slope Walls |
| <input type="checkbox"/> Temporary Stream Crossing | <input type="checkbox"/> Concrete Revetment Mats |
| <input type="checkbox"/> Stabilized Construction Exits | <input type="checkbox"/> Level Spreaders |
| <input type="checkbox"/> Turf Reinforcement Mats | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Permanent Check Dams | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Permanent Sediment Basin | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Aggregate Ditch | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Paved Ditch | <input type="checkbox"/> Other (specify) _____ |

Describe how the structural practices listed above will be utilized during construction:

Silt fence (perimeter erosion barrier) will be used in areas where water could potentially run off-site. Storm drain inlet protection will be used for drainage structures during construction.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Riprap will prevent erosion after construction.

D. **Treatment Chemicals**

Will polymer flocculents or treatment chemicals be utilized on this project: Yes No

If yes above, identify where and how polymer flocculents or treatment chemicals will be utilized on this project.

E. **Permanent Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water act.

187

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design & Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

seeding, riprap

- F. **Approved State or Local Laws:** The management practices, controls, and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

- G. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:

2. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

III. Maintenance

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

IV. Inspections

189

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by e-mail at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

Additional Inspections Required:

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V. Failure to Comply

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

190

Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractors/subcontractor completing this form.

Route 135th Street	Marked Route FAU 282	Section 10-00056-00-PK
Project Number CMM-9003(600)	County WILL	Contract Number

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

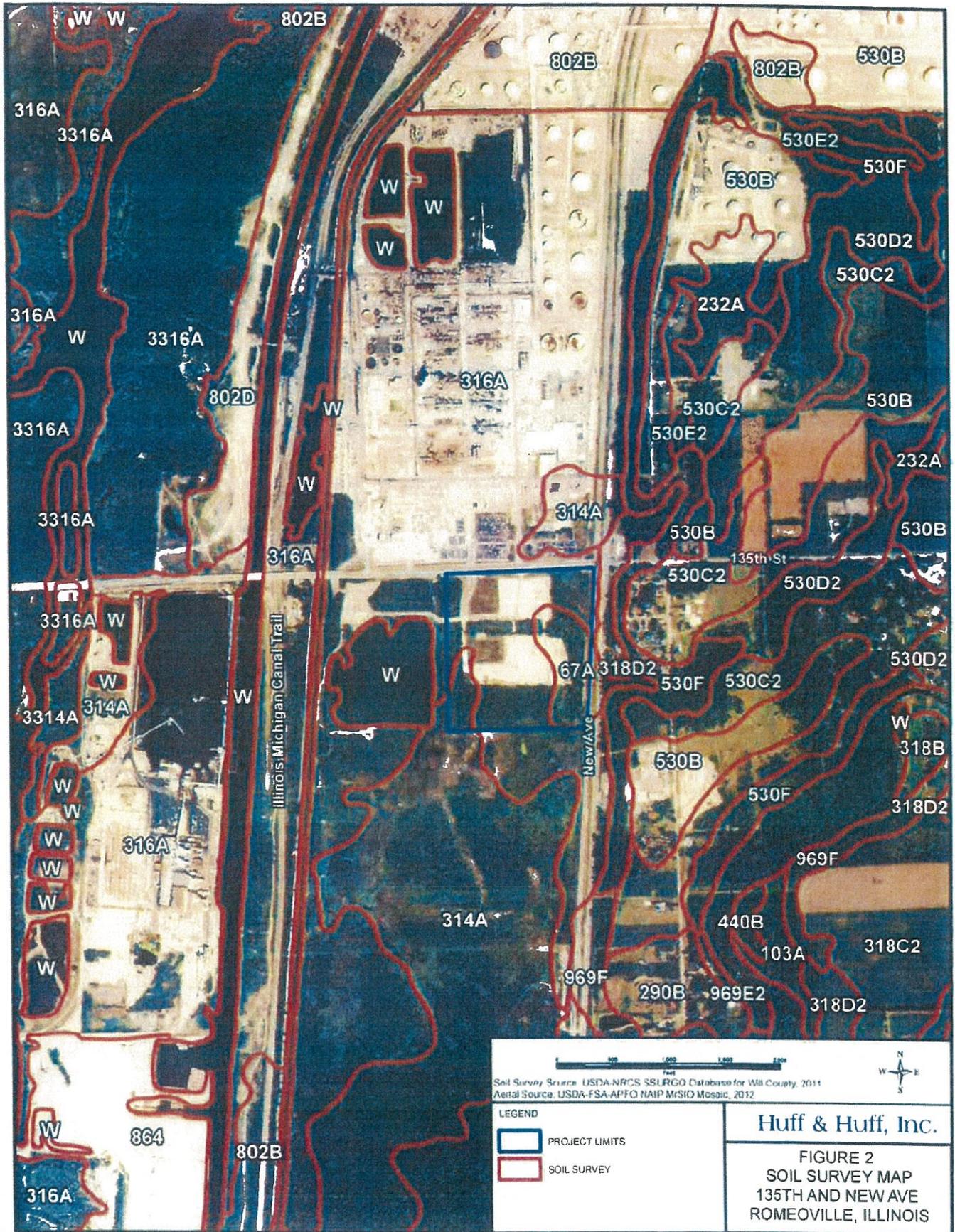
- Contractor
- Sub-Contractor

Print Name	Signature
Title	Date
Name of Firm	Telephone
Street Address	City/State/Zip

Items which the Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

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State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
INSURANCE

Effective: February 1, 2007
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

Village of Romeoville

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE) (RETURN FORM WITH BID)

Effective: November 2, 2006

Revised: July 1, 2015

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method-of-Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_p - BPI_L) \times (\%AC_v / 100) \times Q$$

Where: CA = Cost Adjustment, \$.

BPI_p = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).

BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/ton (\$/metric ton).

%AC_v = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_v will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_v and undiluted emulsified asphalt will be considered to be 65% AC_v.

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$. For HMA mixtures measured in square meters: $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_v.

For bituminous materials measured in gallons: $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$

For bituminous materials measured in liters: $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).

- D = Depth of the HMA mixture, in. (mm).
- G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.
- V = Volume of the bituminous material, gal (L).
- SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Return With Bid

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**OPTION FOR
BITUMINOUS MATERIALS COST ADJUSTMENTS**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments. After award, this form, when submitted, shall become part of the contract.

Contract No.: _____

Company Name: _____

Contractor's Option:

Is your company opting to include this special provision as part of the contract?

Yes No

Signature: _____ **Date:** _____

80173

197

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term “equipment” refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 ^{1/}	600-749	2002
	750 and up	2006
June 1, 2011 ^{2/}	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 ^{2/}	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (DBE)

Effective: September 1, 2000

Revised: July 2, 2016

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, 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 contracts funded in whole or in part with federal or state funds. 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 recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 15.00% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents that enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is required prior to the award of the contract and the failure of the low bidder to comply will render the bid not responsive.

In order to assure the timely award of the contract, the low bidder shall submit:

- (a) The bidder shall submit a DBE Utilization Plan on completed Department forms SBE 2025 and 2026.
 - (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting in accordance with subsection (a)(2) of Bidding Procedures herein.

- (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to DOT.DBE.UP@illinois.gov or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service when the Utilization Plan is received by the Department. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation
Bureau of Small Business Enterprises
Contract Compliance Section
2300 South Dirksen Parkway, Room 319
Springfield, Illinois 62764

The Department will not accept a Utilization Plan if it does not meet the five day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Utilization Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.

- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of Utilization Plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and scanned or faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:

- (1) The names and addresses of DBE firms that will participate in the contract;
- (2) A description, including pay item numbers, of the work each DBE will perform;
- (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
- (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
- (5) If the bidder is a joint venture comprised of DBE companies and non-DBE companies, the Utilization Plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
- (6) If the contract goal is not met, evidence of good faith efforts; the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts, in other words, efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors

are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
- (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with subsection (c)(6) of the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
 - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period in order to cure the deficiency.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration

Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
 - (1) The 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.
 - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement.
- (e) DBE as a material supplier:

- (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
- (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
- (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

- (c) SUBCONTRACT. The Contractor must provide DBE subcontracts to IDOT upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor,

with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department shall provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) PAYMENT RECORDS. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

DOWEL BAR INSERTER (BDE)

Effective: January 1, 2017

Add the following to Article 420.03 of the Standard Specifications.

“(l) Mechanical Dowel Bar Inserter1103.20”

Revise Article 420.05(c) of the Standard Specifications to read:

“(c) Transverse Contraction Joints. Transverse contraction joints shall consist of planes of weakness created by sawing grooves in the surface of the pavement and shall include load transfer devices consisting of dowel bars. Transverse contraction joints shall be according to the following.”

Revise Article 420.05(c)(2) of the Standard Specifications to read:

“(2) Dowel Bars. Dowel Bars shall be installed parallel to the centerline of the pavement and parallel to the proposed pavement surface. Installation shall be according to one of the following methods.

- a. Dowel Bar Assemblies. The assembly shall act as a rigid unit with each component securely held in position relative to the other members of the assembly. The entire assembly shall be held securely in place by means of nails which shall penetrate the stabilized subbase. At least ten nails shall be used for each 10, 11, or 12 ft (3, 3.3, or 3.6 m) section of assembly.

Metal stakes shall be used instead of nails, with soil or granular subbase. The stakes shall loop over or attach to the top parallel spacer bar of the assembly and penetrate the subgrade or subbase at least 12 in. (300 mm).

At the location of each dowel bar assembly, the subgrade or subbase shall be reshaped and re-tamped when necessary.

Prior to placing concrete, any deviation of the dowel bars from the correct horizontal or vertical alignment (horizontal skew or vertical tilt) greater than 3/8 in. in 12 in (9 mm in 300 mm) shall be corrected and a light coating of oil shall be uniformly applied to all dowel bars.

Care shall be exercised in depositing the concrete at the dowel bar assemblies so the horizontal and vertical alignment will be retained.

- b. Dowel Bar Insertion. The dowel bars may be placed in the pavement slab with a mechanical dowel bar inserter (DBI) attached to a formless paver for pavements ≥ 7.0 in. (175 mm) in thickness. A light coating of oil shall be uniformly applied to all dowel bars.

The DBI shall insert the dowel bars with vibration into the plastic concrete after the concrete has been struck off and consolidated without deformation of the slab. After the bars have been inserted, the concrete shall be refinished and no voids shall exist around the dowel bars. The forward movement of the paver shall not be interrupted by the inserting of the dowel bars.

The location of each row of dowel bars shall be marked in a manner to facilitate where to insert the bars, and where to saw the transverse joint.

1. Placement Tolerances for Dowel Bars. The DBI shall place the dowel bars in the concrete pavement within the following tolerances.

(a.) Longitudinal Translation (Mislocation). Longitudinal translation (mislocation) shall be defined as the position of the center of the dowel bar along the longitudinal axis, in relation to the sawed joint.

The quality control tolerance for longitudinal translation shall not exceed 2.0 in (50 mm). If this tolerance is exceeded, adjustments shall be made to the paving operation.

Any joint having two or more dowel bars with an embedment length less than 4.0 in. (100 mm) within 12 in. (300 mm) of the same wheel path will be considered unacceptable. Any joint having an average dowel bar embedment length less than 5.25 in. (130 mm) will also be considered unacceptable. Embedment length shall be defined as the length of dowel bar embedded on the short side of the sawed joint. An unacceptable joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

(b.) Horizontal Translation (Mislocation). Horizontal translation (mislocation) shall be defined as the difference in the actual dowel bar location parallel to the longitudinal or edge joint from its theoretical position as shown on the plans.

The quality control tolerance for horizontal translation shall not exceed 2.0 in. (50 mm). If this tolerance is exceeded, adjustments shall be made to the paving operation.

Any joint having a dowel bar with a translation greater than 4.0 in. (100 mm) will be considered unacceptable, but may remain in place unless the Engineer determines the joint will not function. If the joint is unable to remain in place, the joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

(c.) Vertical Translation (Mislocation). Vertical translation (mislocation) shall be defined as the difference in the vertical position of the dowel bar relative to the theoretical midpoint of the slab.

The quality control tolerance for vertical translation shall be as shown in the following table. If these tolerances are exceeded, adjustments shall be made to the paving operation.

Pavement Thickness	Dowel Bar Diameter	Vertical Translation Tolerance Above Midpoint	Vertical Translation Tolerance Below Midpoint
≥7 in. to <8 in. (≥175 mm to <200 mm)	1.25 in. (31 mm)	0.25 in. (6 mm)	0.5 in. (13 mm)
≥8 in. to <9 in. (≥200 mm to <225 mm)	1.50 in. (38 mm)	0.25 in. (6 mm)	0.5 in. (13 mm)
≥9 in. to <10 in. (≥225 mm to <250 mm)	1.50 in. (38 mm)	0.75 in. (19 mm)	0.75 in. (19 mm)
≥10 in. (≥250 mm)	1.50 in. (38 mm)	0.75 in. (19 mm)	1.0 in. (25 mm)

Any joint having a dowel bar with top concrete cover less than T/3, where T is slab thickness, will be considered unacceptable. Any joint having 2 or more dowel bars with bottom concrete cover less than 2.0 in. (50 mm) will also be considered unacceptable. An unacceptable joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement according to Section 442 for Class B patches.

(d.) Vertical Tilt or Horizontal Skew (Misalignment). Vertical tilt or horizontal skew (misalignment) shall be defined as the difference in position of the dowel bar ends with respect to each other. Vertical tilt is measured in the vertical axis whereas horizontal skew is measured in the horizontal axis. Misalignment shall be measured in terms of a joint score. The joint score shall be defined as the degree of misalignment evaluated for a single transverse joint for each lane of pavement. The joint score shall be determined as follows:

$$\text{Joint Score} = \left(1 + \left(\frac{x}{x-n} \right) \sum_{i=1}^x W_i \right)$$

where:

W_i = weighting factor (Table 1) for dowel i
 x = number of dowels in a single joint

n = number of dowels excluded from the joint score calculation due to measurement interference

Single Dowel Misalignment – The degree of misalignment applicable to a single dowel bar, calculated as:

$$\text{Single Dowel Misalignment} = \sqrt{(\text{Horizontal Skew})^2 + (\text{Vertical Tilt})^2}$$

Table 1. Weighting Factors in Joint Score Determination	
Single Dowel Bar Misalignment (SDM)	W, Weighting Factor
SDM ≤ 0.6 in. (15 mm)	0
0.6 in. (15 mm) < SDM ≤ 0.8 in. (20 mm)	2
0.8 in. (20 mm) < SDM ≤ 1 in. (25 mm)	4
1 in. (25 mm) < SDM ≤ 1.5 in. (38 mm)	5
1.5 in. (38 mm) < SDM	10

The quality control tolerance for vertical tilt or horizontal skew shall not exceed 0.6 in. (15 mm). If the tolerance is exceeded for either one, adjustments shall be made to the paving operation.

Any joint having a dowel bar with a vertical tilt or horizontal skew greater than 1.5 in. (38 mm) shall be cut. If more than one dowel bar is required to be cut in the joint, the joint will be considered unacceptable and shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

Single dowel bar misalignment shall be controlled to provide the joint scores shown in the following table.

Number of Dowel Bars in the Joint	Maximum Joint Score
< 5	4
≥ 5 but ≤ 9	8
> 9	12

A joint score greater than the specified maximum will be considered locked. Three consecutive joints with a score greater than the specified maximum total score will all be considered unacceptable.

Three consecutive locked joints shall be corrected by selecting one joint and cutting a dowel bar. Preference shall be given to cutting a dowel bar within the middle 2.5 ft (0.8 m) of the pavement lane to avoid the wheelpaths. If none of the three locked joints will have a joint score less than or equal to the specified maximum after selecting one dowel bar to cut, one of the joints shall be replaced with a minimum of 6 ft (1.8 m) of

pavement centered over the joint according to Section 442 for Class B patches.

(e.) For unacceptable work, the Contractor may propose alternative repairs for consideration by the Engineer.

2. Testing of Dowel Bar Placement. The placement of the dowel bars shall be tested within 24 hours of paving with a calibrated MIT Scan-2 device according to "Use of Magnetic Tomography Technology to Evaluate Dowel Placement" (Publication No. FHWA-IF-06-006) by the Federal Highway Administration.

A trained operator shall perform the testing, and all testing shall be performed in the presence of the Engineer. The device shall be calibrated to the type and size dowel bar used in the work according to the manufacturer's instructions. Calibration documentation shall be provided to the Engineer prior to construction. The device shall be recalibrated and/or validate readings as required by the Engineer. The device may be utilized as a process control and make necessary adjustments to ensure the dowel bars are placed in the correct location.

(a.) Test Section. Prior to start of production paving, a test section consisting of 30 transverse joints shall be constructed. The test section may be performed on the actual pavement, but production paving shall not begin until an acceptable test section has been constructed. The test section will be considered acceptable when all of the following are met:

- (1.) 90 percent of the dowel bars meet the quality control tolerance for longitudinal, horizontal, or vertical translation (mislocation);
- (2.) 90 percent of the dowel bars meet the quality control tolerance for vertical tilt or horizontal skew deviation (misalignment); and
- (3.) none of the joints are considered unacceptable prior to a corrective measure for mislocation or misalignment.

If the test section fails, another test section consisting of 30 joints shall be constructed.

The test section requirement may be waived by the Engineer if the Contractor has constructed an acceptable test section and successfully used the DBI on a Department contract within the same calendar year.

(b.) Production Paving. After the test section is approved, production paving may begin. The mislocation and misalignment of each dowel bar for the

first ten joints constructed, and every tenth joint thereafter, shall be tested.

If two consecutive days of paving result in 5 percent or more of the joints on each day being unacceptable prior to a corrective measure, production paving shall be discontinued and a new test section shall be constructed.

If any joint is found to be unacceptable prior to a corrective measure, testing of additional joints on each side of the unacceptable joint shall be performed until acceptable joints are found.

(c.) Test Report. Test reports shall be provided to the Engineer within two working days of completing each day's testing. The test report shall include the following.

(1.) Contract number, placement date, county-route-section, direction of traffic, scan date, Contractor, and name of individual performing the tests.

(2.) Provide the standard report generated from the on-board printer of the imaging technology used for every dowel and joint measured.

(3.) For every dowel measured, provide the joint identification number, lane number and station, dowel bar number or x-location, direction of testing and reference joint location/edge location, longitudinal translation, horizontal translation, vertical translation, vertical tilt, and horizontal skew.

(4.) Identify each dowel bar with a maximum longitudinal, horizontal, or vertical translation that has been exceeded. Identify each dowel bar with a maximum vertical tilt or horizontal skew deviation that has been exceeded.

(5.) Joint Score Details: Provide the joint identification number, lane number, station, and calculated joint score for each joint.

(6.) Locked Joint Identification: Identify each joint with a joint score > 12.

(d.) Exclusions. Exclude the following from dowel bar mislocation and misalignment measurements.

(1.) Transverse construction joints (headers).

(2.) Dowel bars within 24 in. (610 mm) of metallic manholes, inlets, metallic castings, or other nearby or underlying steel reinforced objects.

- (3.) The outside dowel bar when tie bars are installed with mechanical equipment in fresh concrete. For tie bar installations involving preformed or drilled holes, installation shall be performed after testing with the MIT Scan-2 device.
- (4.) Joints located directly under high voltage power lines.
- (5.) Subject to the approval of the Engineer, any other contributors to magnetic interference.
- (e.) Deficiency Deduction. When the Contractor has cut 25 dowel bars to correct unacceptable joints, the Contractor shall be liable and shall pay to the Department a deficiency deduction of \$500.00 for the cost of the bars. Thereafter, an additional deficiency deduction of \$20.00 for each additional bar cut will be assessed."

Add the following to Section 1103 of the Standard Specifications.

- ~~"1103.20-Mechanical Dowel Bar Inserter.~~ The mechanical dowel bar inserter (DBI) shall be self-contained and supported on the formless paver with the ability to move separately from the paver. The DBI shall be equipped with insertion forks along with any other devices necessary for finishing the concrete the full width of the pavement. The insertion forks shall have the ability to vibrate at a minimum frequency of 3000 VPM."

80378

HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010
 Revised: April 1, 2016

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

“Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

- a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.
- b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.”

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

“Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign = 50	93.0 – 97.4% ^{1/}	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0%	90.0%
IL-9.5,IL-9.5L	Ndesign < 90	92.5 – 97.4%	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 ^{2/} – 97.4%	90.0%
SMA	Ndesign = 50 & 80	93.5 – 97.4%	91.0% ^{1/}

80246

HOT-MIX ASPHALT – TACK COAT (BDE)

Effective: November 1, 2016

Revise Article 1032.06(a) of the Standard Specifications to read:

“(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts shall be according to AASHTO M 140. SS-1h emulsions used as a tack coat shall have the cement mixing test waived.”

80376

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

"(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved."

80328

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

80157

TRAINING SPECIAL PROVISIONS (BDE) This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 1 . In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall 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 such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

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

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

20338

TUBULAR MARKERS (BDE)

Effective: January 1, 2017

Revise Article 701.03(j) of the Standard Specifications to read:

“(j) Tubular Markers1106.02”

Revise Article 701.15(g) of the Standard Specifications to read:

“(g) Tubular Markers. Tubular markers are used to channelize traffic. They shall only be used when specified.”

Revise the second paragraph of Article 701.18(f) of the Standard Specifications to read:

“Devices no greater than 24 in. (600 mm) wide, may be used in place of tubular markers when the two-way operation is to be in place four days or less.”

Revise the second sentence of the second paragraph of Article 1106.02 of the Standard Specifications to read:

“These include cones, tubular markers, and plastic drums with no attachments.”

Revise the third sentence of the seventh paragraph of Article 1106.02 of the Standard Specifications to read:

“Sheeting used on cones, drums, and tubular markers shall be reboundable as tested according to ASTM D 4956.”

Revise Article 1106.02(f) of the Standard Specifications to read:

“(f) Tubular Markers. Tubular Markers shall be designed to bend under repeated impacts and return to an upright position without damage to the impacting vehicle or the markers. The markers shall be readily removable from the bases to permit field replacement.

The markers shall be orange in color having two white and two fluorescent orange bands.”

80380

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012

Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

"1102.01 Hot-Mix Asphalt Plant. The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(11) Equipment for Warm Mix Technologies.

- a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

- b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(e) Warm Mix Technologies.

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C).
WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

| Revised: April 2, 2015

| The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

| The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within 120 working days.

80071

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If

the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color,

religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. Davis-Bacon and Related Act Provisions

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such

action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for

debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the 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.

Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.