Bid Submittal Guidelines and Checklist

In effort to eliminate confusion and to standardize the bid submission process the Contracts Unit of the Division of Highways has created the following standard guidelines and checklist for submitting bids at all IDOT lettings.

This information has been compiled from questions received from contractors and from inconsistencies noted on bids received at the bid openings. If you have additional questions please refer to the contact information listed below.

Questions: pre-letting up to execution of the contract

Contractor/Subcontractor pre-qualification	217-782-3413
Small Business, Disadvantaged Business Enterprise (DBE)	217-785-4611
Contracts, Bids, Letting process or Internet downloads	217-785-0230
Estimates Unit	217-785-3483

Questions: following contract execution

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

Standard Guidelines for Submitting 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. This page has the Item number 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 submitted only if you are awarded the contract.
- 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 accepted if it is delivered after 10 AM.
- Do not submit your Substance Abuse Prevention Program (SAPP) with your bid. This form is to be submitted to the district engineer at the pre-construction conference if you are awarded the contract.

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. The actual reading of the bids does not begin until approximately 10:20 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 page of the current letting.

If you are the apparent low-bidder, there is nothing further for you to do until the contract is officially awarded to your company. If your bid is not within the engineer's estimate it does not mean that the bid will be rejected. The award or rejection of the bids that are not within the engineer's estimate will be determined at the Awards Meeting. The Awards Meeting is usually held approximately two weeks after the letting. The responsive and responsible low-bidders of those contracts recommended for award will be notified by mail.

Use the following checklist to assure completeness and the correct order in assembling your bid

☐ **Cover page followed by the Pay Items.** If you are using special software or a CBID to generate your schedule of prices, do not include the blank schedule of prices.

☐ **Page 4 (Item 9)** – Check "Yes" if you will use a subcontractor. Include the subcontractor name, address and the dollar amount (if over $25,000). 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 your Cost Adjustments for Steel, Bituminous and Fuel (if applicable), and your State Board of Elections Business Registration (if applicable).

☐ **Page 10 (Paragraph J)** – Check Yes or No whether your company has any business in Iran.

☐ **Page 10 (Paragraph K)** – list the Union Local Name and number or certified training programs that you have in place. Do not include certificates with your bid. Keep the certificates in your office in case they are requested by IDOT.

☐ **Page 11 (Paragraph L)** Insert a copy of your State Board of Elections Business Registration after page 4 of the bid proposal. Only include the page that has the date stamp on it. Do not include any other certificates or forms showing that you are an Illinois business.

☐ **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 Form A that is filled out.

☐ **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 financial information changes. The certification signature and date must be original for each letting. Do not staple the forms together.

If you are not required to submit Form A; 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)** This Form is for disclosing active and pending contracts with agencies *other than* IDOT. The Department already has your company Affidavit of Availability (BC 57) on file showing all current and pending IDOT contracts. Do not attach or reference the BC 57 on Form B. If you check YES to having other current or pending contracts outside of IDOT; list the agency followed by the contract number on the form or reference an additional information sheet and insert it after the form.

☐ **Page 20 (Workforce Projection)** – Be sure to include the Duration of the Project. It is acceptable to use the phrase "Per Contract Specifications".

☐ **Bid Bond –** Submit your bid bond using the current Bid Bond Form provided in the proposal package. The Power of Attorney page should be stapled to the Bid Bond. If you are using an electronic bond, include your bid bond number on the form and attach the Proof of Insurance printed from the Surety 2000 Web Site.

☐ **Disadvantaged Business Utilization plan and/or Good Faith Effort –** The last item in your bid should be the DBE Utilization Plan (SBE 2026), DBE Participation Statement (SBE 2025) and supporting paperwork. If you have documentation for a Good Faith Effort, it should follow the SBE Forms.

If you plan to submit a bid directly to the Department of Transportation

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 that 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.

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. This does not apply to Small Business Set-Asides.

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. This does not apply to Small Business Set-Asides.

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 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 form within a reasonable time of complete and correct original document submittal should contact the department as to status. This is critical in the week before the letting. These documents must be received three days before the letting date. 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 contractor'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 will be placed with the contract number. 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 server e-mails are an added courtesy the Department provides. It is suggested that bidders check IDOT's website at http://www.dot.il.gov/desenv/delett.html before submitting final bid information.

IDOT IS NOT RESPONSIBLE FOR ANY E-MAIL FAILURES.

Addenda Questions may be directed to the Plans and Contracts Office at (217)782-7806 or D&Econtracts@dot.il.gov

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

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	**Call**
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of plans and proposals	217/782-7806

ADDENDUMS AND REVISIONS TO THE PROPOSAL FORMS

Bidders should verify that they have received and incorporated any addendum and/or revision prior to submitting their bid. Failure by the bidder to include an addendum or revision could result in a bid being rejected as irregular.

RETURN WITH BID

2

Proposal Submitted By **Name**
Address
City

Letting September 23, 2011

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

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. This does not apply to Small Business Set-Asides.
(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

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

Illinois Department of Transportation

Springfield, Illinois 62764

Contract No. 60I34
Various Counties
Section 2009-087I
Various Routes
Project CM-000S(860)
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

Prepared by

F

Checked by

(Printed by authority of the State of Illinois)

INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond. In addition, this proposal contains new statutory requirements applicable to the use of subcontractors and, in particular, includes the State Required Ethical Standards Governing Subcontractors to be signed and incorporated into all subcontracts.

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. To request authorization, a potential bidder must complete and submit Part B of the Request for Authorization to Bid/or Not For Bid Status form (BDE 124) and submit an original Affidavit of Availability (BC 57). This does not apply to Small Business Set-Asides.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "**Authorization to Bid or Not for Bid**" form, 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 a **Authorization to Bid or Not for Bid Report**, approved by the Central Bureau of Construction, 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. If a contractor has requested to bid but has not received a **Authorization to Bid or Not for Bid Report**, they should contact the Central Bureau of Construction in advance of the letting date.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond

2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	Call
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806

RETURN WITH BID

Illinois Department of Transportation

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. 60I34
Various Counties
Section 2009-087I
Project CM-000S(860)
Various Routes
District 1 Construction Funds

Integrating video and data systems to allow the sharing of video and incident management information between District One Headquarters and Illinois State Police District Headquarters that operate in District One.

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 shall govern performance and payments.

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned 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 proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned 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, 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:

Amount of Bid			Proposal Guaranty	Amount of Bid			Proposal Guaranty
Up to		$5,000	$150	$2,000,001	to	$3,000,000	$100,000
$5,001	to	$10,000	$300	$3,000,001	to	$5,000,000	$150,000
$10,001	to	$50,000	$1,000	$5,000,001	to	$7,500,000	$250,000
$50,001	to	$100,000	$3,000	$7,500,001	to	$10,000,000	$400,000
$100,001	to	$150,000	$5,000	$10,000,001	to	$15,000,000	$500,000
$150,001	to	$250,000	$7,500	$15,000,001	to	$20,000,000	$600,000
$250,001	to	$500,000	$12,500	$20,000,001	to	$25,000,000	$700,000
$500,001	to	$1,000,000	$25,000	$25,000,001	to	$30,000,000	$800,000
$1,000,001	to	$1,500,000	$50,000	$30,000,001	to	$35,000,000	$900,000
$1,500,001	to	$2,000,000	$75,000	over		$35,000,001	$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual 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 shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall 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 shall become void or the proposal guaranty check shall 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 proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

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

Item _____

Section No. _____

County _____

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

6. **COMBINATION BIDS.** The undersigned 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 proposal 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 shall 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 (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 do business in the State of Illinois prior to submitting the bid.

9. **The services of a subcontractor will or may be used.**

Check box Yes ☐
Check box No ☐

For known subcontractors with subcontracts with an annual value of more than $25,000, the contract shall include their name, address, and the dollar allocation for each subcontractor.

_____

_____

10. **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 or the State Purchasing Officer is for approval of the procurement process and execution of the contract by the Department. Neither the Chief Procurement Officer nor the State Purchasing Officer shall be responsible for administration of the contract or determinations respecting performance or payment there under except as otherwise permitted in the Illinois Procurement Code.

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 60I34

State Job # - C-91-021-10
PPS NBR - 1-78332-0000
County Name - VARIOUS- -
Code - 0 - -
District - 0 - -
Section Number - 2009-087I

Project Number
CM-000S/860/

Route
VARIOUS

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
XX006614	MOD CABINET EQUIP APP	EACH	1.000				
X0322920	COMM CABINET & EQUIP	EACH	1.000				
X0327322	CCTV SERVER UPGRADES	L SUM	1.000				
X0327323	ELECT WORK IDOT ETP	L SUM	1.000				
X0327324	ELECT WORK IDOT BLD E	L SUM	1.000				
X0327325	ELECT WORK ISP D 2	L SUM	1.000				
X0327326	ELECT WORK ISP D 5	L SUM	1.000				
X0327327	ELECT WORK ISP D 15	L SUM	1.000				
X0327328	ELECT WORK ISP D CHI	L SUM	1.000				
X0327329	ELECT WORK ISTHA M5	L SUM	1.000				
X0327330	ELECT WORK ISTHA P 99	L SUM	1.000				
X0327331	FIB CONN IDOT D R CAB	L SUM	1.000				
X0327332	FIB CONN IDOT DIST 1	L SUM	1.000				
X0327333	FIB CONN ISTHA M5 FAC	L SUM	1.000				
X0327334	FIB CONN ISTHA PLZ 99	L SUM	1.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 60I34

State Job # - C-91-021-10
PPS NBR - 1-78332-0000
County Name - VARIOUS- -
Code - 0 - -
District - 0 - -
Section Number - 2009-087I

Project Number CM-000S/860/

Route VARIOUS

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0327335	FIB CONN ISTHA HQ D15	L SUM	1.000				
X0327336	MICROWV L 1 D2 M5	L SUM	1.000				
X0327337	MICROWV L 2 D5 PLZ 99	L SUM	1.000				
X0327338	MICROWV L 3 ETP DR	L SUM	1.000				
X0327339	MONOPOLE 100 FT MH	EACH	1.000				
X0327340	TOWER REINFRCMNT D 2	L SUM	1.000				
X0327341	TOWER REINFRCMNT D 5	L SUM	1.000				
X0327342	VIDEO WALL UPGRD D 1	L SUM	1.000				
X0327343	VIDEO WALL UPGRD TSC	L SUM	1.000				
X0327344	WAVEGUIDE ICE BRIDGE	L SUM	1.000				
X0327345	WORKSTATION FURN D 1	L SUM	1.000				
X8101002	CON T 2 PVC CTD R GVS	FOOT	100.000				
X8710036	FIB OPT CBL 12F SM	FOOT	1,580.000				
67100100	MOBILIZATION	L SUM	1.000				
70100825	TRAF CONT-PROT 701456	L SUM	1.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 60I34

State Job # - C-91-021-10
PPS NBR - 1-78332-0000
County Name - VARIOUS- -
Code - 0 - -
District - 0 - -
Section Number - 2009-087I

Project Number: CM-000S/860/
Route: VARIOUS

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
70102630	TR CONT & PROT 701601	L SUM	1.000				
81017510	CON T 1 CNC	FOOT	150.000				
81702450	EC C XLP USE 3-1C 10	FOOT	150.000				
81900200	TR & BKFIL F ELECT WK	FOOT	190.000				
87900100	DRILL EX FOUNDATION	EACH	1.000				
87900200	DRILL EX HANDHOLE	EACH	2.000				

CONTRACT NUMBER **60I34**

THIS IS THE TOTAL BID **$** _____

NOTES:

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 Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, 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 chief procurement officer to void the contract, or subcontract, and may result in the suspension or debarment of the bidder or subcontractor.

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

1. The Illinois Procurement Code provides in pertinent part:

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 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 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 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.

2. 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 and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

B. Negotiations

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) 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.

2. 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

1. The Illinois Procurement Code provides:

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 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 or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. 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

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, State purchasing officers, 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.

2. 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

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, 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 chief procurement officer.

2. 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 is submitted.

F. Confidentiality

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, 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.

2. 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.

G. Insider Information

1. The Illinois Procurement Act provides:

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.

2. 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.

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 Illinois Procurement 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 chief procurement officer 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

1. The Illinois Procurement Code provides:

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 1961.

(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 Procurement 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 chief procurement officer 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.

2. The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50.5.

B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. 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.

3. Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Procurement 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 chief procurement officer may declare the related contract void if any of the certifications required by this Section are false.

C. Debt Delinquency

1. The Illinois Procurement Code provides:

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 Procurement 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 chief procurement officer 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

1. The Illinois Procurement Code provides:

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 Procurement 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 chief procurement officer 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 Procurement 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 chief procurement officer may declare the contract void if this certification is false.

F. Educational Loan

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. 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

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-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. The State and units of local government shall provide the appropriate forms for such certification.

(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.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 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 permanently barred 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.

2. 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.

H. International Anti-Boycott

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. 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.

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

I. Drug Free Workplace

1. 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.

2. The bidder certifies that if awarded a contract in excess of $5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor’s workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor’s policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

J. Disclosure of Business Operations in Iran

Section 50-36 of the Illinois Procurement Code, 30ILCS 500/50-36 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 shall cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid, offer, or proposal 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 the attached document.

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

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement 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.**

_____**NA-FEDERAL**_____

_____

_____

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision 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.

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

Sections 20-160 and 50-37 of the Illinois Procurement 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 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 Illinois Procurement Code, and that it makes the following certification:

The undersigned business entity 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. A copy of the certificate of registration shall be submitted with the bid. The bidder is cautioned that the Department will not award a contract without submission of the certificate of registration.

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 Illinois Procurement Code. This provision does not apply to Federal-aid contracts.

M. Lobbyist Disclosure

Section 50-38 of the Illinois Procurement 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 chief procurement officer 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 Procurement 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: _____
_____
_____
_____

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 chief procurement officer 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 suspended or debarred for violations of the Procurement Code. Furthermore, the chief procurement officer 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 Illinois Procurement Code provides that all bids of more than $25,000 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 Procurement 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 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person 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 person 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 person 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. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **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 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person 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 a person 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 person 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 a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable**. The person signing can be, but does not have to be, the person 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 a person that is authorized to execute contracts for your company.

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 the Section 50-35 of the Illinois Procurement 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 $25,000, 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. _____
_____

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 71/2% 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 statues 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 __

_____

(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. 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: 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: ☐ _____ _____

Signature of Individual or Authorized Representative — Date

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.

☐ _____ _____

Signature of Authorized Representative — Date

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

RETURN WITH BID

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Other Contracts & Procurement 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 the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of $25,000, and for all open-ended contracts.

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 the bottom of 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

RETURN WITH BID

SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations 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 Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. 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

Illinois Department of Transportation

Contract No. 60I34
Various Counties
Section 2009-087I
Project CM-000S(860)
Various Routes
District 1 Construction Funds

PART I. IDENTIFICATION

Dept. Human Rights # _____ Duration of Project: _____

Name of Bidder: _____

PART II. WORKFORCE PROJECTION

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

TOTAL Workforce Projection for Contract												
			MINORITY EMPLOYEES						TRAINEES			
JOB CATEGORIES	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES	
	M	F	M	F	M	F	M	F	M	F	M	F
OFFICIALS (MANAGERS)												
SUPERVISORS												
FOREMEN												
CLERICAL												
EQUIPMENT OPERATORS												
MECHANICS												
TRUCK DRIVERS												
IRONWORKERS												
CARPENTERS												
CEMENT MASONS												
ELECTRICIANS												
PIPEFITTERS, PLUMBERS												
PAINTERS												
LABORERS, SEMI-SKILLED												
LABORERS, UNSKILLED												
TOTAL												

TABLE B

CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT			
TOTAL EMPLOYEES		MINORITY EMPLOYEES	
M	F	M	F

TABLE C

TOTAL Training Projection for Contract								
EMPLOYEES IN TRAINING	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.	
	M	F	M	F	M	F	M	F
APPRENTICES								
ON THE JOB TRAINEES								

*Other minorities are defined as Asians (A) or Native Americans (N).
Please specify race of each employee shown in Other Minorities column.

FOR DEPARTMENT USE ONLY

BC 1256 (Rev. 12/11/08)

Note: See instructions on page 2

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 **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. 60I34
Various Counties
Section 2009-087I
Project CM-000S(860)
Various Routes
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.

Firm Name _____

(IF AN INDIVIDUAL) Signature of Owner _____

Business Address _____

_____

Firm Name _____

By _____

(IF A CO-PARTNERSHIP) Business Address _____

_____
Name and Address of All Members of the Firm:

_____ _____

Corporate Name _____

By _____
Signature of Authorized Representative

(IF A CORPORATION)

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

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

Corporate Name _____

By _____
Signature of Authorized Representative

(IF A JOINT VENTURE)

_____
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.

Illinois Department of Transportation

Return with Bid

Division of Highways
Proposal Bid Bond
(Effective November 1, 1992)

Item No. _____

Letting Date _____

KNOW ALL MEN BY THESE PRESENTS, That We _____

_____

as PRINCIPAL, and _____

_____ as SURETY, are 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 Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of 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, submit a DBE Utilization Plan that is accepted and approved by the Department; 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 make the required DBE submission or 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 and the said SURETY have caused this instrument to be signed by

their respective officers this _____ day of _____ A.D., _____ .

PRINCIPAL	**SURETY**
_____ (Company Name)	_____ (Company Name)
By _____ (Signature & Title)	By: _____ (Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
County of _____

I, _____ , a Notary Public in and for said County, do hereby certify that

_____ and _____
(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____ A.D. _____

My commission expires _____ _____
Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing the proposal and marking the check box next to the Signature and Title line below, 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

Illinois Department of Transportation

DBE Utilization Plan

(1) Policy

It is public policy that disadvantaged 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 disadvantaged 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
2300 South Dirksen Parkway
Springfield, Illinois 62764

Local Let Projects
Submit forms to the
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.

Illinois Department of Transportation

DBE Participation Statement

Subcontractor Registration _____ Letting _____

Participation Statement Item No. _____

(1) Instructions Contract _____

This form must be completed for each disadvantaged business participating in the Utilization Plan. This form shall be submitted in accordance with the special provision and will be attached to the Utilization Plan form.. If additional space is needed complete an additional form for the firm.

(2) Work

Pay Item No.	Description	Quantity	Unit Price	Total
			Total	

(3) Partial Payment Items

For any of the above items which are partial pay items, specifically describe the work and subcontract dollar amount:

(4) Commitment

The undersigned certify that the information included herein is true and correct, and that the DBE firm listed below has agreed to perform a commercially useful function in the work of the contract item(s) listed above and to execute a contract with the prime contractor. The undersigned further understand that no changes to this statement may be made without prior approval from the Department's Bureau of Small Business Enterprises and that complete and accurate information regarding actual work performed on this project and the payment therefore must be provided to the Department.

_____ _____

Signature for Prime Contractor Signature for DBE Firm

Title _____ Title _____

Date _____ Date _____

Contact _____ Contact Person _____

Phone _____ Phone _____

Firm Name _____ Firm Name _____

Address _____ Address _____

City/State/Zip _____ City/State/Zip _____

E _____

WC _____

The Department of Transportation is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under the 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 Management Center.

PROPOSAL ENVELOPE

Illinois Department of Transportation

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. 60I34
Various Counties
Section 2009-087I
Project CM-000S(860)
Various Routes
District 1 Construction Funds

Illinois Department of Transportation

SUBCONTRACTOR DOCUMENTATION

Public Acts 96-0795 and 96-0920, enacted substantial changes to the provisions of the Illinois Procurement 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 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 Chief Procurement Officer within 20 calendar days after execution of the subcontract.

The subcontract shall contain the certifications required to be made by subcontractors pursuant to Article 50 of the Illinois Procurement 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 Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, 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 chief procurement officer may terminate or void the subcontract approval if it is later determined that the bidder or subcontractor rendered a false or erroneous certification.

Section 50-2 of the Illinois Procurement 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 chief procurement officer 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

1. The Illinois Procurement Code provides:

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 1961.

(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 Procurement 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 chief procurement officer 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.

2. The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50.5.

B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. 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.

2. Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Procurement 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 chief procurement officer may declare the related contract void if any of the certifications required by this Section are false.

RETURN WITH SUBCONTRACT

C. Debt Delinquency

1. The Illinois Procurement Code provides:

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 Procurement 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 chief procurement officer 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

1. The Illinois Procurement Code provides:

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 Procurement 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 chief procurement officer 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 Procurement 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 chief procurement officer 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.

_____
Name of Subcontracting Company

_____ _____
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 chief procurement officer 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 suspended or debarred for violations of the Procurement Code. Furthermore, the chief procurement officer may void the contract or subcontract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Illinois Procurement Code provides that all subcontracts with a total value of $25,000 or more, from subcontractors identified in Section 20-120 of the Illinois Procurement 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 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person 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 person 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 person 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. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies.

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 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person 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 a person 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 person 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 a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable**. The person signing can be, but does not have to be, the person 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 a person 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.

RETURN WITH SUBCONTRACT

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 the Section 50-35 of the Illinois Procurement 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 $25,000 or more, from subcontractors identified in Section 20-120 of the Illinois Procurement 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. _____

_____

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 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 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 __

(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. 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: 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: ☐ _____ _____

Signature of Individual or Authorized Officer — Date

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.

☐ _____ _____

Signature of Authorized Officer — Date

RETURN WITH SUBCONTRACT

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Subcontractor: Other Contracts & Procurement Related Information 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 the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for subcontracts with a total value of $25,000 or more, from subcontractors identified in Section 20-120 of the Illinois Procurement Code, and for all open-ended contracts.

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 the bottom of 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 Officer Date

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., September 23, 2011. 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 the 10:00 a.m. cut off time.

2. **DESCRIPTION OF WORK**. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 60I34
   Various Counties
   Section 2009-087I
   Project CM-000S(860)
   Various Routes
   District 1 Construction Funds

Integrating video and data systems to allow the sharing of video and incident management information between District One Headquarters and Illinois State Police District Headquarters that operate in District One.

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

Ann L Schneider,
Acting Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2011

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and frequently used RECURRING SPECIAL PROVISIONS.

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

TABLE OF CONTENTS

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2007; the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the “Manual of Test Procedure of Materials” in effect on the date of invitation for bids; and the "Supplemental Specifications and Recurring Special Provisions", indicated on the Check Sheet included herein; which apply to and govern the construction of Various Routes, Project CM-000S (860), Section Number 2009-0871, within Various Counties, Contract 60I34 and in case of conflict with any part or parts of said specifications, said Special Provisions shall take precedent and shall govern.

Various Routes
Project CM-000S (860)
Section 2009-0871
Various Counties
Contract 60I34

LOCATION OF PROJECT

This project is located at the following site locations and facilities within District One:

Site No.	Location Description	Address	County
1	IDOT District 1 Headquarters	201 W. Center Ct, Schaumburg	Cook
2	IDOT Traffic Systems Center	445 Harrison St., Oak Park	Cook
3	ISP District 2	777 S. State St., Elgin	Kane
4	ISTHA M5 Facility	SW Corner I-90 & IL Rt 53, Schaumburg	Cook
5	ISP District 5	16648 S. Broadway St., Lockport	Will
6	ISTHA Toll Plaza 99	I-355 between 167th St. & Bruce Rd, Lockport	Will
7	IDOT Emergency Traffic Patrol	3501 S. Normal Ave., Chicago	Cook
8	Proposed Communications Cabinet	SW Corner Dan Ryan & 33rd St., Chicago	Cook
9	ISP District Chicago	9511 W. Harrison St., Des Plaines	Cook
10	IDOT Building E	Junction of Kennedy & Edens Expressway, Chicago	Cook
11	ISP District 15/ISTHA Headquarters	2700 Ogden Ave, Downers Grove	Dupage

DESCRIPTION OF IMPROVEMENT

The project consists of improvements at various locations within IDOT District 1 (D1) to enable IDOT to share Internet Protocol (IP) video data from IDOT D1 CCTV cameras with the Illinois State Police (ISP) and IDOT Emergency Traffic Patrol (ETP). Improvements include fiber optic cable, IP switches, video decoding software, computer workstations, LCD monitors, microwave links and miscellaneous upgrades to provide video sharing and viewing capabilities at ISP District 2 (Elgin), ISP District 5 (Joliet), ISP District Chicago(Des Plaines), ISP District 15 (Downers Grove/ISTHA), IDOT ETP, and IDOT District 1 Headquarters.

TRAFFIC CONTROL PLAN

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

Special attention is called to Section 701, Article 107.09 & 107.14 of the Standard Specification 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, Illinois State Toll Highway Authority, Illinois State Police and contracted Resident Engineer at least 72 hours in advance of beginning work.

STANDARDS: 701456, 701601, 701901

SPECIAL PROVISIONS:

Post Mounting of Signs
Traffic Control Deficiency Deduction

VANDALISM

Special attention is called to Article 107.30 of the STANDARD SPECIFICATIONS. Any defaced work shall be corrected or replaced by the CONTRACTOR at his sole expense prior to final payment. The ILLINOIS DEPARTMENT OF TRANSPORATION (IDOT), ILLINOIS STATE TOLL HIGHWAY AUTHORITY (ISTHA) AND ILLINOIS STATE POLICE (ISP) shall cooperate with the CONTRACTOR to minimize vandalism, but the CONTRACTOR shall be ultimately responsible to correct any damage. This shall be considered incidental to the contract.

COMMUNICATIONS CABINET AND EQUIPMENT

Description. The communications cabinet and equipment provides space to mount, secure, and interface electronic equipment in a non-protected, outdoor environment.

Materials. The Contractor shall furnish a ground-mounted equipment cabinet and concrete foundation with the following characteristics:

The cabinet shall be a NEMA 3-R enclosure suitable for outdoor mounting. The enclosure shall meet or exceed the requirements of NEMA 3-R and shall be U.L. listed. The cabinet and doors shall be constructed from 304 stainless steel with a minimum thickness of 14 gauge. The Heliarc welding method shall be utilized for all external welds. The Wire Welding method shall be utilized for all internal welds. All welds shall be neatly formed and free of cracks, blowholes and other irregularities.

The cabinet shall be equipped with two doors.

All inside and outside edges of the cabinet shall be free of burrs and the cabinet shall be designed with a crowned top to prevent the accumulation of water on the top surface. The door openings shall be double flanged on all (4) sides for increased strength.

The nominal size of the cabinet shall be as indicated in the Plans. The internal compartment shall be equipped with two 19 in. (482 mm wide) rack mount assemblies, which will be utilized for installing equipment. These rack mount assemblies shall come equipped with pre-drilled 10-32 holes with EIA-standard spacing for both front and rear access of the assembly. The rack shall accommodate a minimum total of 34U (59.5") of vertical equipment. All rack components, excluding handles, hinges or other components made from corrosion-resistant materials or furnished with a plated or anodized coating, shall be fabricated from a steel of 20 gauge minimum, and primed and painted using an electro statically applied polyester or enamel coating after welding is completed. Equipment racks shall be equipped with all hardware required to mount standard 19" rack mounted equipment. The door opening shall be a minimum of 80% of the front surface area. The door shall be furnished with a gasket that meets or exceeds the physical requirements of UL508-Table 21.1. The gasket shall form a weather tight seal between the cabinet and door. The closed door will be flush with the side(s) of the enclosure. The hinges shall be continuous and bolted to the cabinet and door utilizing 1/4-20 stainless steel carriage bolts and nylock nuts. The hinges shall be made of 0.93 in. (24 mm) thick aluminum and shall have a 0.25 in. (6 mm) diameter stainless steel hinge pin. The hinge pin shall be capped at the top and bottom by a weld, which shall render it tamper resistant. Hinge leaves shall not be exposed externally when the door is closed.

The latching mechanism shall be a 3-point draw roller type using an overlapping door design. Pushrods will be turned edgewise at the outward supports and shall be 0.25 in. by .75 in. (6 mm by 19 mm) metal, minimum. Rollers shall have a minimum diameter of 0.875 in. (22 mm) and shall be made of nylon. The center catch shall be fabricated from 0.187 in. (4.7 mm) metal, minimum. An operating handle shall be furnished for the door. The handle will be stainless steel with a 0.75 in. (19 mm) diameter shank. The latching handle shall have a provision for padlocking in the closed position. The cabinet shall be supplied with a Corbin #2 dead bolt lock or equal. The key shall be removable in the locked position only.

A heavy-duty pad-lock and key shall be provided for each door, which shall provide additional security over that provided by the standard handle assembly. All pad locks supplied for the project must use identical keys. Four sets of keys for the communications cabinet shall be provided to the Department.

The cabinet shall be provided with louvered vents in the front doors with a removable air filter. The louvers shall satisfy the NEMA rod entry test for 3R-ventilated enclosures. The filter will cover the vents and shall be held firmly in place with bottom and side brackets and a spring loaded upper clamp. Exhaust air will be vented out between the top of the cabinet and door. The exhaust area shall be a series of 0.12 in X 1.0 in (3 mm X 25 mm) rectangular holes. The ventilation plenum area shall be equipped with a removable plate with provisions for mounting a fan assembly.

Power Distribution. The power distribution section shall come complete with two 15 amp main circuit breakers. Circuit #1 shall be utilized to power the electronics equipment in the cabinet. Circuit #2 shall be utilized to power the heater and ventilation fans.

Surge Protector. A surge protector shall protect each leg of the primary power feed. This surge protector shall be installed as a precautionary measure against possible damage resulting from voltage surges on all incoming power lines. The 120 V AC single-phase surge protector shall incorporate a series choke at a maximum clamp voltage of 340 V at 20 KA with a 5 ns response. In addition, the surge protector shall have the capability of removing high-energy surges and shall block high-speed transients. The surge protector shall comply with the following specifications:

Peak Current: 20,000 amps (8 X 20 us wave shape) Occurrences: 20 times at peak current Minimum Series Inductance: 200 micro henries Continuous Series Current: 50 A Temperature Range: -40°F to +185°F (-40°C to +85°C).

Ventilation Fan. The ventilation system shall consist of sufficient fans to produce a minimum of 450 cubic feet of air per minute. The ventilation shall be controlled via a thermostat. The thermostat shall have adjustable settings for fan on and off and threshold settings for the temperature alarms. The thermostat shall be set to turn on ventilation at 90° F (32 ° C) and turn it off at 73° F (23 °C).

Heater. The heating system shall consist of one or more heavy-duty radiant heaters sufficient to produce a minimum of 1,700 BTU per hour. The heaters shall be equipped with an adjustable thermostat, which shall initially be set to activate the heaters whenever cabinet temperature falls below 39°F (4 °C) and turn-off at 45°F (7 °C).

Construction Requirements

General. The Contractor shall install conduit and fabricate a foundation for the cabinet in accordance with the Plans.

The Contractor shall secure the cabinet to the foundation and seal the interface between the slab and the cabinet with weatherproofing caulk.

The Contractor shall install all electrical components and connect the cabinet to the electrical service point as indicated in the Plans. The Contractor shall install the fiber optic termination panels in the cabinet as indicated on the Plans.

The Contractor shall power up the cabinet and verify the performance of all components. This shall include demonstrating the operation of the fans and heaters, and verification of all power distribution circuits.

Warranty. The Contractor shall warranty all materials and workmanship including labor for a period of two years after the completion and acceptance of the installation, unless other warranty requirements prevail. The warranty period shall begin when the Contractor completes all construction obligations related to this item and when the components for this item have been accepted, which shall be documented as the final completion date in the construction status report. The warranty shall warrant and guarantee repair of the component parts of the Communications Cabinet and Equipment furnished by the Contractor that prove to be defective in workmanship and materials during the first two years of operation as defined and noted above at no additional cost to the Department.

The Engineer will notify the Contractor that a warranted item needs repair. The Contractor shall acknowledge the notification within 24 hours and replace or correct any part or parts of materials and equipment that are found defective within the two-year in-service warranty period. All items needing repair shall be returned to the Department in two weeks from the date of receipt at the Contractor's facility or replaced in-kind by the Contractor, and the Contractor shall be responsible for any return shipping costs. No compensation will be made to the Contractor for such replacements or corrections.

The Contractor shall provide a warranty certificate for this item and its related components to the Department. The Department reserves the right to transfer this service to other parties who may be contracted with in order to provide overall maintenance of this item.

Method of Measurement. The communications cabinet and equipment will be measured as each cabinet installed and tested.

Basis of Payment. Payment for the COMMUNICATIONS CABINET AND EQUIPMENT shall be paid for at the unit price for each cabinet installed and tested.

MODIFY EXISTING CABINET EQUIPMENT AND APPURTENANCES

Description. This item shall consist of modifying an existing surveillance cabinet to provide a new branch circuit to power a proposed communications cabinet, at the location shown on the drawings.

Materials. This work shall include all materials, labor, and equipment necessary to add a new circuit breaker, power distribution blocks, upgrade service wiring, upgrade service disconnect breaker and make all required electrical connections. See drawings for more information.

Construction. All new and revised circuits and wiring shall be labeled with circuit identification markers. Proposed conduit shall be routed into the existing controller base by drilling the concrete foundation, drilling shall be paid for separately.

Proposed modifications will result in a power outage to the existing cabinet, this outage shall not exceed 6 hours. The contractor shall coordinate outage with IDOT prior to starting this work.

All work shall be in accordance with Section 811, 817, 825, 1066 and 1068 in the Standard Specifications.

This work shall be constructed and installed as show on the drawings.

Method of Measurement. Modifying the existing cabinet equipment and appurtenances will be measured as each cabinet modified.

Basis of Payment. Payment for MODIFY EXISTING CABINET EQUIPMENT AND APPURTENANCES shall be paid for at the contract unit price each which shall be payment in full for all work listed herein or as directed by the Owner.

CCTV CONTROL SYSTEM

Description. The work includes upgrading existing CCTV server control and display software currently in place at IDOT District 1. Also included are upgrades at remote sites to enable four Illinois State Police headquarters (Districts 2, 5 15 and Chicago), Cook County Sheriff and IDOT Emergency Traffic Patrol (ETP) to have access (viewing only, no pan-tilt-zoom (ptz) control) to all of IDOT's traffic cameras. All locations shall be able to view up to four cameras at one time. Work at the remote sites include installing new equipment such as computer workstations, video decoders, auxiliary display monitors, Ethernet switches, routers, multiplexers, network/video cabling, etc.

Submittals. The Contractor shall assemble and submit a complete and detailed description of the system including the proposed equipment, system interconnects, and software.

At the preconstruction meeting, the contractor shall at a minimum identify the following:

> CCTV System Integrator and Subcontractors, CCTV Control and video management software vendor, radio/antenna manufacturer, video decoder manufacturer and Ethernet switch/router manufacturer.

The system submittal package shall be complete and shall document compliance with all specified system requirements. It shall include product data of all manufactured components, interconnecting cabling, accessories and appurtenances. It shall include dimensioned shop drawings of any fabricated equipment and sub-assemblies (such as equipment rack layouts). The submittal shall include overall system diagrams and detailed interconnection diagrams for all parts of the system. The submittal package shall identify the details of non-equipment requirements of the system, such as specified maintenance training, and it shall include letters of commitment relative to specified extended maintenance support of key vendor items as specified. As a minimum, the submittal package shall include, but not be limited to:

1. System installation schedule
2. System hardware, complete
3. Fiber Optic Transceivers & other fiber optic hardware
4. Video Decoders
5. Video Monitors
6. Video Workstation equipment and software
7. Video Administration and Central Control Hardware and software
8. Power Supplies and associated appurtenances
9. Equipment racks associated appurtenances
10. All interconnecting power, signal and control cable, connectors and appurtenances
11. All mounting accessories and hardware
12. Overall System Diagram
13. Sub-System Location Diagrams
14. Point-to-Point Interconnection Diagrams
15. Dimensioned Rack Layout Drawings
16. All installation and maintenance manuals or a schedule to provide them
17. Shop Floor Testing Plan, location and interconnection details
18. Video and Communications Maintenance Training Plans
19. Documentation of Extended Warranty provisions, as specified
20. Plan for providing specified documentation
21. Cable Tray Schedule for submitting Test Plans

Products.

Video Surveillance Control and Management System
The software solution allows viewing and control of IP and analog video simultaneously through a single interface. The software solution has the ability to integrate equipment from different manufacturers and link external access control and alarm systems. The software solution has the ability to provide automated actions in response to alarms, display video on external monitors and/or video walls, secure system access through operator passwords and access privileges, use mouse controls to pan, tilt, zoom, and focus a camera, archive video on network video recorders or digital video recorders, support client-multiple server and server to server architectures, and provide a scripting language that can be used to automate common tasks.

Quality Assurance. The system shall be manufactured for the intended purpose of an installation in a commercial / industrial, 24 hour day, 7 days per week, and 365 days per year operating environment.

Warranty. Provide original equipment manufacturers warranty documentation for acceptance by the Owner.

1. Warranty and Software Assurance Period: 5 years
2. Premium software Assurance is required.

Manufacturer:

1. Standard of Acceptance: Cameleon ITS Version 4 Control and Management System by ICx 360 Surveillance, Inc.
2. Contacts: Mark Brown (250) 388-7232 mark.brown@icxt.com.

General Specifications:
Minimum Operating System Specifications:

1. The minimum operating requirements are 64 bit, Windows 2000 Professional SP4, Windows 2000 Server SP4, Windows 2003 Server SP2, and Windows XP Professional SP2.
2. Microsoft .NET Framework 1.1 and Microsoft .NET Framework 2.0 SP1 are required.

Development Environment Specifications: The software is programmed using the Microsoft Visual Studio 6.0 and Visual Studio .NET development environments.

Architecture Specifications:

1. Components:
    a. The software is comprised of the following components: server application, client application, and device driver applications.
    b. The various software components are able to be started in any order.
    c. The software allows clients, servers, and device drivers to be added at any time during or after initial configuration.
    d. The software allows devices to be added at any time during or after initial configuration.
    e. The software allows equipment from different manufacturers to be combined.
    f. The unexpected or unplanned termination of a component will not cause any other component to fail.
2. The software supports client-to-server and client-to-multiple-server communications and operation.

3. The software supports server-to-server communications and operation to allow video and alarm sharing.
4. The software is capable of linking to external access control and alarm systems to create an integrated security system.
5. The software provides the means to automatically detect when one or more device drivers is not running.
6. The software provides the means to automatically detect when one or more archive servers is not running.

Server Application Specifications:

1. The server application will have backup server capability with automatic switchover from primary to backup server on primary server failure.
2. The configuration interface provides a connection manager for defining switchable connections within the system.
3. The switching algorithm routes video based on configurable parameters for path selection.
4. Modes Specifications:
    a. The server application will have two modes of operation, a run mode and a configuration mode.
    b. In the run mode, the server application accepts client connections.
    c. In the configuration mode, the server application presents a graphical user interface that allows all aspects of the software to be configured.
    d. The configuration and run modes are capable of running simultaneously to allow configuration to take place without interfering with the client connections and operation.
    e. A single interface will be used to configure all devices, including equipment from different manufacturers.
5. Devices Specifications:
    a. The configuration interface provides the ability to add, remove, and modify devices controlled by any configured device driver.
    b. The software provides a configurable arbitration and priority system that eliminates resource conflicts and allows users to take exclusive control of specific devices.
6. User Access Privileges Specifications:
    a. The software provides configurable user groups with access privileges assigned to them.
    b. Access privileges allow a user's access to administrative functions to be restricted.
    c. Access privileges allow a user's access to be restricted to each map independently.
    d. Access privileges allow a user's access to be restricted to each device independently.
    e. Access privileges allow a user's access to be restricted to a subset of a device's features.
    f. Access privileges allow a user's access to workspaces to be restricted.
    g. Access privileges allow a user's access to be restricted for each script independently.
7. Scripts and Expressions Specifications:
    a. The software provides an expression service that allows events to be triggered based on system states or conditions of devices.

b. The software provides a scripting language to allow automation of common tasks.
c. The software supports local and global scripts and variables.
d. The scripting language supports conditionals to ensure the correct conditions exist before a particular action takes place.
e. Scripts are capable of executing in response to user input, conditions within the system, access or alarm input, changing device properties or according to a schedule.
f. The scripting language provides a means to automatically capture live video images and upload them to a Web host.
g. The software provides wizards and context-sensitive help to optionally help the user write scripts.
h. The software provides notification of script errors prior to committing database changes.

8. Labels Specifications:
    a. The software provides user-definable labels with scripting capability.
    b. The software provides the ability to change label text and color through scripting.
9. Prompts Specifications:
    a. The software provides user-definable prompts with scripting capability.
    b. The configuration interface supports notification and archiving of user comments in response to a prompt.
10. Timers and Schedules Specifications:
    a. The software provides configurable timer and schedule services for executing specific tasks on a one-time or repetitive basis.
    b. Scheduling will support seconds, minutes, hours, days, weeks, months and sunrise/sunset based on latitude and longitude entries.
    c. Scheduling will allow for recurring events on specific days of the week and exclusion of specific days.
    d. Schedules will have adjustable system priority for device locking.
    e. The configuration interface provides a mechanism for configuring a group of users to notify when a scheduled event occurs.
11. Alarms Specifications:
    a. The software provides user-definable alarms that are triggered when specific conditions occur within the system, including device state changes and system-internal events.
    b. The configuration interface provides a mechanism for configuring a group of users to notify when an alarm occurs.
    c. The configuration interface provides the means to specify what form notification should take, including any combination of event viewer entry, alarm sound, icon animation, prompts, and e-mail notification.
    d. The software will provide the means to require user acknowledgement of alarms with forced or optional comments.
    e. The configuration interface provides the means to configure a plan for dynamically escalating user notification of alarms.
    f. The software will provide the means to create categories of alarms with associated color, priority, sound, recipient groups and acknowledgement parameters.
    g. The software will show alarm status through icon animation and configurable color when in normal state, in alarm, and when acknowledged.
    h. The software provides an archive engine capable of categorizing and storing up to 1 million alarms per day.

i. The archive engine will have the capability of retaining alarm data using SQL, MS Access, Oracle or MySQL database formats.
j. Alarms will be capable of being automatically deleted after a user specified duration.
k. Alarms will have scripting capability.
l. Alarms will have the capability to run three different automated actions: one when the alarm is triggered, a second when the alarm is selected in the alarm manager, and a third when the alarm is acknowledged. Additionally, a second Normal Event may be configured to perform an action when the alarm returns to a normal condition.
m. The configuration interface provides a mechanism for associating a video source or device with an alarm, to allow video for the alarm to be loaded and cued automatically.
n. Operational activities raise events that are handled directly by the alarm management system, without the need for configuration.
o. The configuration interface provides the means to reconfigure how operational events are handled by the alarm management system, including discarding them.

12. Maps Specifications:
    a. The software supports the importation of maps in a variety of standard graphics file formats: .jpg, .wmf, .emf, .bmp.
    b. Maps will be able to be customized by placing device icons, user-defined labels, user-defined hotlinks, and alarm icons on them.
    c. The configuration interface provides drag-and-drop capability for placing labels, hotlinks, device icons, and alarm icons on maps.
    d. Device icons on maps will be capable of showing the active status of the physical devices they represent.
    e. Labels on maps have single-click or double-click scripting capability.
    f. Hotlinks will be capable of being a polygon will an arbitrary number of vertices to allow for the creation of scriptable areas of a map. Hotlinks will have single-click or double-click scripting capability.
    g. Hotlinks will have configurable and scriptable color, transparency, and borders. Cameras icons will have a right click menu option for executing automation scripts.
13. Lanes:
    a. The software shall support user-definable lanes, to allow systems such as reversible lanes, parking management systems, and congestion warning systems.
    b. Lanes shall have an unlimited number of user-definable states.
    c. Lanes shall have user-definable transitions that change a lane from one state to another.
    d. Access privileges shall allow a user's access to transitions to be restricted.
    e. The software shall support interlocks that conditionally prevent a transition from executing.
    f. The software shall support configurable control panels with user-supplied button graphics for controlling lanes.

14. Signs:
    a. The software shall support multiline, multiphase messages with adjustable dwell times and interphase blank times.

b. The software shall support message levels that allow multiple messages to be buffered and prioritized for each sign.
c. The software shall support a global message library that allows the user to send stored messages to any make and model of sign.
d. The software shall support templating of global library messages, whereby a message serves as a prototype that is edited at the time it is sent to the sign.
e. The software shall support configurable sign groups that allow the user to broadcast a message to multiple signs without having to select the signs individually.
f. The software shall support message broadcasting to multiple signs by dynamically selecting sign groups and/or individual signs.
g. The software shall support configurable permitted/excluded words lists that limit the set of words that can be used in messages.
h. The software shall supply a sign status viewer that shows the current state of every message level of every sign in the system.
i. The sign status viewer shall refresh at an adjustable frequency.
j. Signs in the status viewer and sign icons on maps shall be color coded to indicate the sign's current state.

15. Logging Specifications:
    a. The software automatically logs server configuration details to provide a configuration audit trail.
    b. The configuration interface provides the means to view configuration logs.
16. Trending Specifications:
    a. The software provides the means to log and archive properties of devices and other objects.
    b. The software provides the means to filter, categorize, and chart the logged data for trending analysis.
    c. The software provides the means to print the data in chart or tabular format.
    d. The software provides the means to export the data for use in other applications.

Client Application Specifications:

1. The client application provides a means of specifying which server(s) to log in to and a default home server.
2. The client application provides server autodiscover functionality.
3. The client application will optionally disable if a configurable number of failed login attempts occur in a row.
4. The client application automatically synchronizes with the server application after a valid username and password have been entered. This synchronization shall include all support and graphical files (e.g. maps) necessary for the client to run.
5. The client interface will be comprised of a main map display area, an event viewer, a device list, and any number of custom windows.
6. The client application provides multi-monitor support.
7. The client application provides the ability to add custom menu items to any device. Custom menu items provide access to any script commands.
8. The client application may be supplied with optional parameters to allow communication to devices that appear to have a different IP address based on network topology.
9. Common Interface Specifications:
    a. The same interface will be used to control equipment from different manufacturers.

b. The same interface will be used to retrieve archived video from different devices, no matter what type of device the video was recorded on.
c. Any particular custom window will be capable of displaying IP and analog video, and the client interface shall be capable of displaying IP and analog video simultaneously in different custom windows.

10. Workspaces Specifications:
    a. The client application will have configurable workspaces that can be saved and loaded.
    b. There will be no limit on the number of workspaces.
    c. Workspaces allow configuration of which predefined and custom windows are visible.
    d. Workspaces allow configuration of the size of predefined and custom windows, including the ability to make them fixed size or dynamically sizeable.
    e. Workspaces allow configuration of the position of predefined and custom windows, including the ability to make them fixed position or moveable.
    f. Workspaces allow configuration of the content of custom windows, including the permitted types of content and the default content.
    g. Workspaces allow configuration of the appearance of custom windows, including their borders and how they are layered.
    h. Workspaces support multi-monitor systems
    i. Workspaces will have functionality to allow administrators to load workspace files from the server.
11. Custom Windows Specifications:
    a. The client interface supports any number of custom windows.
    b. Custom windows allow users to view live and archived video, load maps, connect to and control remote PCs, or connect to the Internet via an integral browser window.
    c. Custom windows have context sensitive toolbars to control the different types of window content.
    d. Custom windows have the ability to be opened and closed, moved, locked in place, and sized.
    e. Custom windows shall be independent of each other, allowing different types of content to be displayed at the same time and different types of devices to be controlled.
    f. Custom windows allow video to be loaded by dragging the camera from a map or from the device list to the window's display area.
    g. Custom windows allow video or other content to be loaded by scripts in response to alarms or operator actions.
    h. Custom windows support user defined captions and colors, these user defined captions and colors. Captions and color are automated through scripts.
    i. Custom windows act as live control pads, allowing the user to control the currently loaded camera using the mouse or mouse wheel.
    j. Custom windows provide a search and filter utility to aid in locating archived alarms and archived video.
12. Event Viewer Specifications:
    a. The client application provides an event viewer that shows activities as they occur, including alarms, scheduled events, and scripts.
    b. The event viewer provides the means to view archived alarms.
    c. The event viewer provides the means to view alarms whose condition is true.
    d. The event viewer provides the means to view trending information.

e. The event viewer will have the ability to filter and sort activities on date, priority, event category, and key words in description fields.
f. The event viewer provides a search and filter utility to aid in locating archived alarms.
g. The event viewer provides the means to automatically cue video to the time of an alarm.

13. Maps Specifications:
    a. The user will be able to select a map from the list of available maps.
    b. The user will be able to adjust the view of the currently loaded map by zooming in, zooming out, zooming to fit, and loading a stored view.
    c. Maps show icons representing physical devices and alarms.
    d. Double-clicking a device icon on a map provides access to controls for the device represented by that icon.
    e. The device list and event viewer provide all the functionality of maps, effectively making maps optional.
14. Device List Specifications:
    a. The device list lists all the devices for which the user has access privileges.
    b. The device list provides access to each device's controls.
    c. The device list provides a means to load maps.
    d. The device list provides a means to switch devices.
    e. The device list provides a means for the user to create a personal list of "favorite" devices that can be used for switching.
    f. The device list provides the means to display lists of most frequently used and most recently used devices that can be used for switching.
    g. The device list provides a means to search for devices based on device name, description, or device number.
    h. The device list provides a means to simultaneously switch multiple sources to multiple destinations.
15. Text Messenger Specifications:
    a. The software provides the means for users to send and receive text messages to and from other users logged in to the same server.
    b. Text messenger activity may be optionally logged.
16. Viewing Restrictions Specifications: The software provides the ability for users with the necessary permission to blank video on one or more destinations from one or more video sources.
17. Monitor Locking Specifications: The software provides the ability for users with the necessary permission to lock a video (or Audio/VGA) source onto a monitor or destination device.

Device Driver Applications Specifications:

1. Device drivers will be capable of communicating with any device via direct serial, IP, or modem pool.
2. Multiple device drivers will be able to share all or a portion of a modem pool.
3. Each device driver will be unique to the type of equipment it controls.
4. The addition of a new device driver requires no modification to the client or server application.
5. Device drivers will run anywhere on the network, not necessarily where the server is installed.
6. Device drivers have the ability to raise alarms that are handled directly by the alarm management system, without the need for configuration.

7. Driver-raised alarms have scripting capability.
8. The configuration interface provides the means to reconfigure how a driver's alarms are handled by the alarm management system, including discarding them.
9. CCTV Equipment Specifications:
    a. Device drivers will be provided for existing CCTV equipment and be expandable to include new manufacturer's in the future. At a minimum, drivers shall be included for Pelco IP Spectradomes, Endura encoders, Cortec encoders and Jupiter monitor walls.
    b. Camera advanced functions such as on-screen displays, patterns, and presets will be available through the driver interface.

10. A backup utility will be provided to collect all configuration files and create a single, self-extracting executable for easy system backup.
11. ITS Equipment:
    a. Device drivers shall be provided for controlling dynamic message signs, detector stations, gates, and signal heads. All device drivers shall have control dialogs and icons with animation capability.
    b. The system shall support NTCIP control of dynamic message signs and cameras.
12. Dynamic Message Signs:
    a. Dynamic message sign drivers shall support control of different manufacturer's signs from a single interface.
    b. Dynamic message sign drivers shall support driver-specific message libraries that allow the user to send stored messages to signs controlled by that driver.
    c. Dynamic message sign drivers shall support templating of driver-specific library messages, whereby a message serves as a prototype that is edited at the time it is sent to the sign.
    d. Dynamic message sign drivers shall have an XML interface to external systems that supports bidirectional data flow.
13. Detector Stations:
    a. Detector station drivers shall support configurable thresholds for speed, volume, and occupancy.
    b. The software shall support automation based on detector station speed levels.
    c. Detector icons shall be color coded to indicate the current speed, volume, or occupancy level.
    d. Detector station drivers shall have an XML interface to external systems that supports bidirectional data flow.
    e. Detector station drivers shall support logging of speed, count, volume, and occupancy data to parsable files.
    f. The software shall support trending of detector speed data.

<u>Included Accessories</u>:
Client Manual:

1. The Client Manual clearly outlines all steps necessary to operate the software.
2. The Client Manual includes screen captures taken directly from the software to illustrate the instructions.
3. The Client Manual contains a table of contents.
4. The Client Manual contains an index.
5. The Client Manual contains a glossary.

Server Manual:

1. The Server Manual clearly outlines all steps necessary to configure the software.
2. The Server Manual includes screen captures taken directly from the software to illustrate the instructions.
3. The Server Manual contains a table of contents.
4. The Server Manual contains an index.
5. The Server Manual contains a glossary.

Driver Application Notes:

1. Each device driver has Driver Application Notes that document configuration and operation of the driver and its devices.
2. The Driver Application Notes clearly outline all steps necessary to configure the software.
3. The Driver Application Notes include screen captures taken directly from the software to illustrate the instructions.
4. The Driver Application Notes contain a table of contents.

Computer Work Station

Manufacturer: Dell or approved equal.

General Specifications: Minimum system requirements:

CPU	Quad Core Processor E5504, 2.0 GHz, 4M, 4.8GT/s
Installed Memory	2 GB DDR3 ECC SDRAM
Hard Drive	80 GB SATA, 7.2KRPM with 8MB Data Burst Cache
Video Card	Dual 512MB PCIe x 16 NVIDIA Quadro FX 580 Quad Monitor DVI + 2DP
Operating System	Windows XP Professional
Case	Tower Case
Dimensions	W: 6.73 in H: 17.64 in D: 18.54 in (Approx.)
Power Supply	875W (Approx.)
Ports	11 USB 2.0, 1 Serial, 1 Parallel, 2 PS/2, 1 RJ-45, 1 ESATA, Stereo Line In and Out
Expansion Slots	2 PCI-e x 16 Slots Wire as x 8, 2 PCI-e x 16 Gen 2 (150W each), 1 PCIX 64 bit
DVD	16X DVA+/- RW Data Only
Keyboard	Dell, USB, Quiet Keyboard, No Hot Keys
Mouse	USB 2 Button Optical Mouse with Scroll
Monitor	Flat panel, 21.5",16:9 ratio, antiglare, 192x1080 at 60Hz

Video Decoder

Section Includes: Video Decoder.

Manufacturer: Impath Networks; Model I-Volution; i1000-D or approved equal.

Specifications		I-Volution VSG 1000
Video	Analog Video	NTSC (30 fps), PAL (25 fps)
	Channels/Connector	(2) BNC, 75 ohms
	IP Connectivity	Unicast and Multicast (UDP)
	Digital Encoding	MPEG-1 (ISO/IEC 11172-2) and MPEG-2 (ISO/IEC 13818-1 Transport Stream or ISO/IEC 13818-2 Elementary Stream) MP@ML

	Data Rate	128 kbps to 8 Mbps aggregate in Transport Stream and up to 12 Mbps aggregate in Elementary Stream	
	Digital Decoding	Decoder automatically detects incoming MPEG-1/2 TS or ES Stream	
	Data Rate	128 kbps to 12 Mbps aggregate in both Transport and Elementary Stream	
	Resolution	NTSC	PAL
	Full	720 x 480	720 x 576
	HHR	352 x 480	352 x 576
	SIF	352 x 240	352 x 288
	QSIF	192 x 128	160 x 128
	Latency	170 ms with Optimal Setting	
Data	Format	Serial/Asynchronous	
	IP Connectivity	Unicast and Multicast (UDP)	
	Channels/Connectors	(2) D89-F	
	Interface	EIA-232/422/485 – 2/4 Wire, Half/Full Duplex, Software Programmable	
	Data Rate	300 bps to 115.2 kbps	
LAN	Format	IEEE 802.3 Ethernet	
	Channels/Connector	(1) / RJ45	
	Interface	10/100 Base-T Ethernet, Half/Full Duplex, Auto-Sensing	
	Data Rate	10/100 Mbps	
	Protocol	TCP, UDP, IPv4, IGMPv2, RTP, Diffserv, SAP, SNMPv2	
Motion Detection	Zone	Full Screen	
	Sensitivity	User Selectable: Low to High (1 to 10)	
	Re-Arm Delay	User Selectable: 100 ms to 25 seconds	
Alarms	Via NMS/SNMP	Video Loss Detection	
		Video Motion Detection	
		Unit Configuration Change and Reset	
Management	Local Management	Via Serial (Console) Maintenance Port, LED Status Display	
	Remote Management	Via I-Volution NMS (TeleVue), Telnet, SNMPv2	
	Software Updates	Via Network Download – One or multiple units simultaneously	
Power	Input Voltage	11.4-12.6V DC	
	Consumption	7 W	
Physical	Height	1.7”	
	Width	9.1”	
	Depth	9.1”	
Environmental	Temperature	-34°C to +74°C with relative humidity of 5% to 95%, Non-Condensing	
	Environmental Protection	PCB Conformal Coating	
Regulatory Approvals	Safety	EN 60950, AS/NZS 3548, U11950 (VSG)/EN 60950, U11419 (VSG-L)	
	Emissions North America	FCC47 CFR Part 15, Subpart B: 1999 Class B	
	Immunity	EN55024	

Auxiliary Display Monitor

Section includes: Auxiliary Display Monitor.

Manufacturer: Samsung Model No. SMT-3211 or approved equal.

Specifications		SMT-3211
Picture	Screen Size	32”
	Resolution	1366 x 768 pixels, 500TV Lines
	Brightness (Typ.)	410 cd/m^2
	Color Supported	16.7 Mil
Panel	Contrast Ratio	1,000:1
	Response Time (G to G)	8 msec
	Viewing Angle (H/V)	178°/178°
	Type	Internal
Video Signal		Analog RGB, DIV-D, Composite S-Video, Component Video
Sync. Signal		Separate H/V, Composite, SOG
Connector		D-Sub, RS232C Cable, DVI-D, USB 2.0, S-Video, CVBS Video, BNC
Power	Power Consumption	160W
	Power Consumption at Stand-By	<1W
	Power Supply	120V
Multimedia Speakers		10W x 2ch (Option)
Wall Mount	VESA Wall Mount Standard	Mounting Kit Available
Cabinet Color		Black
Physical Specifications	Product Weight (with/ without Stand)	47.0/35.4 lbs
	Dimension (w/o Stand)	30.7” x 18.9” x 4.2”
Environmental Conditions	Operating Temperature	50°F-104°F (10°C - 40°C)
Special Features		- Anti-Image Retention - Matrix Video Wall - PIP/PBP - Safety Lock - Signal Balance - Vertical Input - External AC Devices
Accessories		- RCA RCA Adapter - Power Cord - Remote Controller
Operation		Rated for 24/7 operation

Ethernet Switch

Manufacturer: Cisco Model 2960 or approved equal.

Environmental	Temperature:	0 to 40 ºC (32 to 113 ºF)
	Humidity	10% to 85% (non-condensing)
Backplane	10,100 Mbps full duplex	
Port Density	8	
Physical Characteristics	Weight (maximum)	3 pounds
	Dimensions (nominal)	1.73” x 8.1” x 10.6”; the equipment shall mount in a standard EIA 19-inch rack
Power	120VAC±10%; redundant power supplies (The power supplies shall be removable while the equipment is operating with no degradation.)	

Optical Interface	GBIC; single mode long haul and multimode short haul	
Link Power Budget	17 dB at 1310 nm; 8.3 µm fiber core	
Network Interface	Physical Connector	RJ-45
	Network Rates	10/100 MHz Ethernet
Regulatory Compliance	Safety UL Listed	UL 60950
	EMC	47 CFR (FCC) Part 15, Type A certification
	Environmental	GR-63-Core Network Equipment Building Standards
	Telecom	47 CFR (FCC) Part 68 compliance
Supported protocols	Ethernet	IEEE 802.3; 10BaseT
	Fast Ethernet	IEEE 802.3u; 100BaseTX
	Virtual LAN trunking/tagging	IEEE 802.1Q; IEEE 802.3ad
	Spanning Tree Protocol	IEEE 802.1D; IEEE 902.1w; and IEEE 802.1s
	Security	IEEE 802.1x

Optical Switch

Section includes: Optical switch for ISP District Chicago tower hut.

Manufacturer: Cisco or approved equal.

IDOT has a microwave repeater at ISP District Chicago. This repeater is only in-out and has no capability to connect the ISP facility to IDOT's network. The proposed switch shall connect in between the repeater radios to pull off a 100 Mbps fiber line into the ISP Building. The existing repeater line shall be fully operational throughout construction. The contractor shall coordinate and determine work required.

RG-6 Coaxial Cable

Section includes: RG-6 Coaxial Cable and Cable Connectors.

Manufacturer: The coax cable shall be a Belden 1695A precision video cable, or approved equal complying with the following specifications. The center conductor shall be an 18 AWG, Solid Bare Copper conductor, the insulation shall be plenum rated foam FEP insulation, and the shield shall consist of an Aluminum Foil-Polyester outer shield with 100% shield coverage plus tinned copper Braid Shield with 95% shield coverage.

Coaxial connectors shall be BNC or as required by the equipment to which the cables connect. The connectors shall attach to the cable by crimping or by a cord-grip clamping action. Connectors shall be plated for corrosion resistance and good electrical connections. All BNC connectors shall be physically designed to fit the specified cable without adaptation and shall have a characteristic impedance of 75 ohms. Connectors with a characteristic impedance of 50 ohms are not acceptable and shall be replaced by the Contractor at no additional cost to the State.

The connectors shall be Amphenol part number 31-70000 or approved equal.

Electrical Characteristics	Impedance	75 +/- 1.5 ohms					
	Inductance	0.106 microH/ft.					
	Capacitance Conductor Shield	16.2 pF/ft. (nominal)					
	Velocity of Propagation	82 % (nominal)					
	Delay	1.24 nS/ft. (nominal)					
	Nom. Conductor Dc Resistance @ Deg. C	206.4 ohms/1000 ft.					
	Nom. Shield Dc Resistance @ 20 Deg. C	2.8 ohms/1000 ft.					
	Return Loss	23dB min, 5-850 MHz; 21dB min, 851–3000 MHz					
	Max. Operating Voltage	not less than 300 Vrms (UL)					
	Nominal Attenuation	MHz	dB/100'	MHz	dB/100'	MHz	dB/100'
		1.0	.24	100	1.84	750	5.00
		3.6	.45	135	2.10	1000	5.89
		5.0	.54	143	2.16	1500	7.33
		7.0	.63	180	2.42	2000	8.57
		10.0	.72	270	2.97	2250	9.14
		67.5	1.57	360	3.43	3000	10.67
		71.5	1.60	540	4.25		
		88.5	1.75	720	4.95		
Physical Characteristics	Temperature Rating	- 30 to +75 DEG. C					
	Min. Bend Radius	10x cable O.D. or 2.75"					
	Max. Pulling Tension	69 LBS					
	Nom. Weight/1000 ft	40 LBS					
	Jacket Color	BLACK for CMG cable; Violet for CMP cable					
	Applicable Specifications	UL/NEC: CMR/CMP C(UL)/CEC: CMG					
	Flame Resistance	UL: 1666 VERTICAL SHAFT CSA: FT4					

Cat-6 Ethernet Cable

Section includes: Cat-6 Ethernet Cable Connectors.

Manufacturer: The cable shall be Belden part number 1874A or approved equal. The terminations shall be crimp-on RJ-45, Ideal Industries 85-396 or approved equal.

Cable Type	4 twisted pair, 23 AWG bare copper with polyolefin insulation
Insulation Requirements	Unshielded with plenum rated FEP Teflon insulation
Applicable Specifications	ANSI/TIA/EIA-568-B.2-1 Category 6, UL verified to Category 6

Fiber Optic Multiplexer

Manufacturer: Optimux-45 Model OP-45B-8X-48 or approved equal.

Main & Backup Links	Data Range (T3)	44.736 Mbps
Electrical Interface	DC Power Module	-48 VDC
	Standards	G.703, G.824
	Line Code	B3ZS
	Impedance	75Ω, unbalanced
	Range	According to ITU-T Rec. G.703
	Connectors	Two shielded BNC connectors

Tributary Channels	Interface Type	Balanced or unbalanced (according to order)
	Number of Channels	E1: 6 T1:8
	Standards	G.703, G.823, G.824
	Date Rate	E1: 2.048 Mbps T1: 1.544 Mbps
	Line Code	E1: HDB3 or AMI T1: B8ZS or AMI
	Impedance	E1: 120Ω, balanced or 75Ω, unbalanced T1: 100Ω, unbalanced
	Range	According to ITU-T Rec. G.703
	Jitter	E1: According to ITU-T G.823; T1: According to ITU-T Rec. G.703
	Connectors	Balanced: Shielded RJ-45 Unbalanced: Two shielded mini-BNC
Supervisory and Management Ports	Control Port	Interface: RS-232 Connector: DB-9
	Ethernet Port	Interface: 10BaseT Connector: RJ-45

Execution.

Installation Qualifications:

1. Installer shall be certified by the manufacturer as qualified to install, operate and maintain product(s) specified.
2. Install the system in accordance with the equipment manufacturers recommended procedures.

Commissioning

Manufacturer's Engineer shall be on site for configuration, commissioning assistance and owner turnover. Manufacturer's Engineer shall be available for min. of 5 workdays (8hrs/day) including travel, lodging and meal expenses for Engineer.

User/Owner Training: Manufacturer shall provide training course for users consisting of min. of 3 working days (8hrs/day) including travel, lodging and meal expenses for Training Technician.

Site Work Descriptions

CCTV Server Upgrades

Furnish and install:

- Upgrade existing CCTV server software "Chameleon Enterprise" to "Chameleon Enterprise ITS Version 4" Control and Management System at IDOT District 1 Communications Center.

Electrical Work, IDOT ETP

Furnish and install:

- Computer work station including monitor, keyboard and mouse
- 360 surveillance software license
- Video decoder
- (2) 32" auxiliary display monitors including all required mounting hardware

- Cat-6 cabling
- RG-6 coax cabling
- (2) new 20A-120V circuits in existing electrical panel including all wiring, conduit, junction boxes, fittings, anchors, mounting hardware and receptacles

Electrical Work, IDOT Building E

This item shall consist of upgrading an existing SONET node at IDOT Building E as shown on the Drawings. The existing SONET currently takes fiber optic backbone running eastward down the Kennedy Expressway and connects it to IDOT District One Headquarters via microwave transmission. IDOT also has fiber line at Building E running westward to IDOT Headquarters that can be used as alternate path; however current mode of operation for a transfer from microwave to fiber path in the event of a microwave transmission failure would have to be performed manually due to existing SONET configuration. This work shall include all labor, materials and equipment required for SONET to automatically switch over from primary microwave path to back up fiber path. The contractor shall coordinate and determine work required. The existing SONET shall be fully operational throughout construction.

Electrical Work, ISP District 2

Furnish and install:

- Computer work station including monitor, keyboard and mouse
- 360 surveillance software license
- Video decoder
- Network Ethernet switch
- 32” auxiliary display monitor and all required mounting hardware
- (2) M13 T1 to fiber multiplexers
- Cat-6 cabling
- RG-6 coax cabling
- (1) new 20A-120V circuit in existing electrical panel including all wiring, conduit, junction boxes, fittings, anchors, mounting hardware and receptacles

Electrical Work, ISP District 5

Furnish and install:

- Computer work station including monitor, keyboard and mouse
- 360 surveillance software license
- Video decoder
- 32” auxiliary display monitor and all required mounting hardware
- Cat-6 cabling
- RG-6 coax cabling

Electrical Work, ISP District Chicago

Furnish and install:

- (2) Computer work stations each with a monitor, keyboard and mouse
- (2) 360 surveillance software licenses
- (2) Video decoders
- (3) 32” auxiliary display monitors and all required mounting hardware
- Network Ethernet switch
- Optical switch
- Cat-6 cabling
- RG-6 coax cabling

Electrical Work, ISP District 15
Furnish and install:

- Computer work stations including monitor, keyboard and mouse
- 360 surveillance software license
- Video decoder
- 32" auxiliary display monitor and all required mounting hardware
- Cat-6 cabling
- RG-6 coax cabling

Electrical Work, ISTHA M5
Furnish and install:

- Core wall of new tower building for proposed conduit
- Install new junction box inside new tower building
- Route/extend/connect existing Cat-6 cable between new/old tower building to radios
- (1) new 20A-120V circuit in existing electrical panel including all wiring, conduit, junction boxes, fittings, anchors, mounting hardware and receptacles

Electrical Work, ISTHA Plaza 99
Furnish and install:

- (1) new 20A-120V circuit in existing electrical panel including all wiring, conduit, junction boxes, fittings, anchors, mounting hardware and receptacles

Method of Measurement. Work for each individual location shall be counted separately and measured as lump sum for payment when furnished, installed, connected, field tested and accepted.

Basis of Payment. Payment shall be made for each location as follows:

CCTV SERVER UPGRADES
ELECTRICAL WORK, IDOT ETP
ELECTRICAL WORK, IDOT BUILDING E
ELECTRICAL WORK, ISP DISTRICT 2
ELECTRICAL WORK, ISP DISTRICT 5
ELECTRICAL WORK, ISP DISTRICT CHICAGO
ELECTRICAL WORK, ISP DISTRICT 15
ELECTRICAL WORK, ISTHA M5
ELECTRICAL WORK, ISTHA PLAZA 99

CONDUIT IN TRENCH, 2" DIA., PVC COATED RIGID GALVANIZED STEEL

Description. This item shall consist of furnishing and installing PVC coated rigid galvanized steel conduit at the locations shown on the drawings.

Materials. Material shall be in accordance with Section 1088.01 in the Standard Specifications.

Construction. PVC Coated Rigid Steel Conduit. In addition to the methods described in Article 810.03(a) the following methods shall be observed when installing PVC coated conduit. PVC coated conduit pipe vise jaw adapters shall be used when the conduit is being clamped to avoid damaging the PVC coating. PVC coated conduit shall be cut with a roller cutter or by other means approved by the conduit manufacturer.

After any cutting or threading operations are completed, the bare steel shall be touched up with the conduit manufacturer's touch up compound.

Method of Measurement. This work will be measured for payment of linear feet of conduit, actually furnished and installed.

Basis of Payment. Payment for the CONDUIT IN TRENCH, 2" DIA., PVC COATED RIGID GALVANIZED STEEL shall be paid for at the contract unit price per foot installed which shall be payment in full for all work listed herein or as directed by the Owner.

FIBER OPTIC WORK

Description. This work includes furnishing/installing fiber optic cable and connecting various sites to IDOT's fiber optic network. This work includes all material, equipment and labor required such as cable installation, patch panels, splicing/terminating, testing, etc. to place two fibers at each site into operation. Contractor shall be responsible to determine and coordinate all work required, and as directed by the Engineer.

Other ancillary components, required to complete the fiber optic cable plant, including but not limited to, moisture and water sealants, cable caps, fan-out kits, etc., shall be supplied under these items for fiber optic cable and will not be paid for separately.

Materials. The single-mode, fiber optic cable shall incorporate a loose, buffer-tube design. The cable shall be qualified to the requirements of RUS 7 CFR1755.900 (PE-90) for a single sheathed, non-armored cable, and shall be new, unused and of current design and manufacture.

The cables shall use dispersion unshifted fibers. The optical and physical characteristics of the un-cabled fibers shall include:

Core Diameter 8.3 µm (nominal)
Numerical Aperture 0.14
Zero Dispersion Wavelength 1300-1322 nm
Zero Dispersion Slope 0.092 ps/(nm^2*km) (maximum)
Cladding Diameter 125.0±0.7µm
Core-Clad Concentricity 0.05µm maximum
Cladding Non-Circularity 1% maximum
Coating Diameter 245±10 µm
Coating-Cladding Concentricity 12 µm maximum
Mode Field Diameter 9.2µm±0.4µm at 1310nm
Mode Field Diameter 10.4µm±0.5µm at 1550nm
Dispersion 18.0 ps/(nm*km) maximum at 1550nm

The number of fibers in each cable shall be as specified on the plans.

For cables with more than 12 fibers, the core construction shall consist of individual buffer tubes, each containing 12 fibers. These buffer tubes shall be stranded around a dielectric central strength member using a reverse oscillation process. For cables containing 12 fibers or less, the core shall use a unitube construction with either 6 or 12 fibers in a single tube.

The maximum attenuation of any cabled fiber shall not exceed 0.4 dB/km at 1310 nm and shall not exceed 0.3 dB/km at 1550 nm.

The cable shall be capable of withstanding a minimum-bending radius of 20 times its outer diameter during installation and 10 times its outer diameter during operation without changing the characteristics of the optical fibers.

The cable shall meet all of specified requirements under the following conditions:

Shipping/storage temperature: -58° F to +158° F (-50° C to +70° C) Installation temperature: -22° F to +158° F (-30° C to +70° C) Operating temperature: -40° F to +158° F (-40° C to +70° C) Relative humidity from 0% to 95%, non-condensing.

Optical Patch Cords and Pigtails. The optical patch cords and pigtails shall comply with the following:

- The optical patch cords furnished under this contract shall consist of a section of single fiber, jacketed cable equipped with optical connectors at both ends.
- The factory installed connector furnished as part of the optical patch cords and pigtails shall meet or exceed the requirements for approved connectors specified herein.
- The fiber portion of each patch cord and pigtail shall be a single, jacketed fiber with optical properties identical to the optical cable furnished under this contract.
- The twelve fiber single-mode fiber optic cable shall be installed as a pigtail with factory installed ST compatible connectors.
- The patch cords shall comply with Telcordia GR-326-CORE.

Connectors. The optical connectors shall comply with the following:

- All connectors will be factory installed ST compatible connectors. Field installed connectors shall not be allowed.
- Maximum attenuation 0.4dB, typical 0.2dB.
- No more than 0.2dB increase in attenuation after 1000 insertions.
- Attenuation of all connectors will be checked and recorded at the time of installation with an insertion test minimum 5 times checked with an OTDR.
- All fibers shall be connected at each end.
- All fibers shall terminate at a fiber patch panel.
- Unused fibers will be protected with a plastic cap to eliminate dust and moisture.
- Termination shall be facilitated by splicing factory OEM pigtails on the end of the bare fiber utilizing the fusion splicing method. Pigtails shall be one meter in length.

Construction requirements.

All work at ISTHA facilities, on ISTHA property, or in ISTHA owned handholes/conduits shall be performed by G4S Technology, LLC (formerly Adesta). Costs for all work by G4S shall be included in the respective pay items.

Experience Requirements. Personnel involved in the installation, splicing and testing of the fiber optic cables shall meet the following requirements:

- A minimum of three (3) years experience in the installation of fiber optic cables, including fusion splicing, terminating and testing single mode fibers.

- Install two systems where fiber optic cables are outdoors in conduit and where the systems have been in continuous satisfactory operation for at least two years. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel who can be contacted regarding the installed fiber optic systems.
- One fiber optic cable system (which may be one of the two in the preceding paragraph), which the Contractor can arrange for demonstration to the Department representatives and the Engineer.

Installers shall be familiar with the cable manufacturer's recommended procedures for installing the cable. This shall include knowledge of splicing procedures for the fusion splicer being used on this project and knowledge of all hardware such as breakout (furcation) kits and splice closures. The Contractor shall submit documented procedures to the Engineer for review and to be used by Construction inspectors.

Personnel involved in testing shall have been trained by the manufacturer of the fiber optic cable test equipment to be used, in fiber optic cable testing procedures. Proof of this training shall be submitted to the Engineer for review. In addition, the Contractor shall submit documentation of the testing procedures for review by the Engineer.

Installation in Conduit. The Contractor shall provide a cable-pulling plan, identifying where the cable will enter the underground system and the direction of pull. This plan will address locations where the cable is pulled out of a handhole, coiled in a figure eight, and pulled back into the hand hole. The plan shall address the physical protection of the cable during installation and during periods of downtime. The cable-pulling plan shall be provided to the Engineer for review a minimum of 10 working days prior to the start of installation. The Engineer's review shall be for the operation on the freeway and does not include an endorsement of the proposed procedures. The Contractor is responsible for the technical adequacy of the proposed procedures.

During cable pulling operations, the Contractor shall ensure that the minimum bending of the cable is maintained during the unreeling and pulling operations. Entry guide chutes shall be used to guide the cable into the handhole conduit ports. Lubricating compound shall be used to minimize friction. Corner rollers (wheels), if used, shall not have radii less than the minimum installation-bending radius of the cable. A series array of smaller wheels can be used for accomplishing the bend if the cable manufacturers specifically approve the array.

The pulling tension shall be continuously measured and shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable. Fuse links and breaks can be used to ensure that the cable tensile strength is not exceeded. The pulling system shall have an audible alarm that sounds whenever a pre-selected tension level is reached. Tension levels shall be recorded continuously and shall be given to the Engineer upon request.

The cable shall be pulled into the conduit as a single component, absorbing the pulling force in all tension elements. The central strength member and Aramid yarn shall be attached directly to the pulling eye during cable pulling. "Basket grip" or "Chinese-finger type" attachments, which only attach to the cable's outer jacket, shall not be permitted. A breakaway swivel, rated at 95% of the cable manufacturer's approved maximum tensile loading, shall be used on all pulls. When simultaneously pulling fiber optic cable with other cables, separate grooved rollers shall be used for each cable.

To minimize the exposure of the backbone cable and to facilitate the longer lengths of fiber optic cable, the Contractor shall use a “blown cable” (pneumatically assisted) technique to place the fiber optic cable.

Construction Documentation Requirements. Installation Practices for Outdoor Fiber Optic Cable Systems:

The Contractor shall examine the proposed cable plant design. At least one month prior to starting installation of the fiber optic cable plant, the Contractor shall prepare and submit to the Engineer for review and approval, ten (10) copies of the Contractor’s “Installation Practices for Outdoor Fiber Optic Cable Systems” manual. This manual shall address the Contractor’s proposed practices covering all aspects of the fiber optic cable plant. This submittal shall include all proposed procedures, list of installation equipment, and splicing and test equipment. Test and quality control procedures shall be detailed as well as procedures for corrective action.

Operation and Maintenance Documentation. After the fiber optic cable plant has been installed, ten (10) complete sets of Operation and Maintenance Documentation shall be provided. The documentation shall, as a minimum, include the following:

- Complete and accurate as-built diagrams showing the entire fiber optic cable plant including locations of all splices.
- Final copies of all approved test procedures.
- Complete performance data of the cable plant showing the losses at each splice location and each terminal connector.
- Complete parts list including names of vendors.

Testing Requirements. The Contractor shall submit detailed test procedures for review by the Engineer. All fibers shall be tested bi-directionally end to end at both 1310 nm and 1550 nm with both an Optical Time Domain Reflectometer (OTDR) and a power meter and optical source. For testing, intermediate breakout fibers may be concatenated and tested end-to-end. Any discrepancies between the measured results and these specifications will be resolved to the satisfaction of the Engineer.

The Contractor shall provide the date, time and location of any tests required by this specification to the Engineer at least 5 days before performing the test. Upon completion of the cable installation, splicing, and termination, the Contractor shall test all fibers for continuity, events above 0.1 dB, and total attenuation of the cable. The test procedure shall be as follows:

A Certified Technician utilizing an Optical Time Domain Reflectometer (OTDR) and Optical Source/Power Meter shall conduct the installation test. The Technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

The method of connectivity between the OTDR and the cable shall be a factory patch cord of a length equal to the "dead zone" of the OTDR. Optionally, the Technician can use a factory "fiber box" of 328 ft (100 m) minimum with no splices within the box. The tests shall be conducted at 1310 and 1550 nm for all fibers.

At the completion of the test, the Contractor shall provide two copies of documentation of the test results to the Project Engineer. The test documentation shall be submitted as both a bound copy and a CDROM and shall include the following:

Cable & Fiber Identification:

- Cable ID Cable Location - beginning and end point Fiber ID, including tube and fiber color Operator Name Date & Time Setup Parameters Wavelength.
- Pulse width (OTDR) Refractory index (OTDR) Range (OTDR) Scale (OTDR) Setup Option chosen to pass OTDR “dead zone”.

Test Results:

A. OTDR Test Total Fiber Trace Splice Loss/Gain Events > 0.10 dB Measured Length (Cable Marking) Total Length (OTDR).

   The OTDR test results file format must be Bellcore/Telcordia compliant according to GR-196-CORE Issue 2, OTDR Data Standard. -GR 196, Revision 1.0 -GR 196, Revision 1.1 -GR 196, Revision 2.0 (SR-4731).

B. Optical Source/Power Meter Total Attenuation Attenuation (dB/km).

   These results shall be provided in tabular form. The following shall be the criteria for the acceptance of the cable:

   The test results shall show that the dB/km loss does not exceed +3% of the factory test or 1% of the cable's published production loss. However, no event shall exceed 0.10 dB. If any event is detected above 0.10 dB, the Contractor shall replace or repair the fiber including that event point.

   The total loss of the cable (dB), less events, shall not exceed the manufacturer's production specifications as follows: 0.5 dB/km at both 1310 and 1550 nm.

   If the total loss exceeds these specifications, the Contractor shall replace or repair that cable run at the Contractor's expense, both labor and materials. Elevated attenuation due to exceeding the pulling tension during installation shall require the replacement of the cable run at the Contractor's expense, including labor and materials.

   Label the destination of each trunk cable onto the cable in each handhole, vault or cable termination panel.

Splicing Requirements. The Contractor shall be responsible to determine all splicing work required to provide connectivity to the specified sites. The Contractor shall submit detailed shop drawings of all proposed splices including detailed splicing tables.

Slack Storage of Fiber Optic Cables. As part of these items, slack fiber shall be supplied as necessary to allow splicing the fiber optic cables in a controlled environment, such as a splicing van or tent. After splicing has been completed, the slack fiber shall be stored underground in handholes or in the raised base adapters of ground mounted traffic controller cabinets.

Where identified on the plans, or as directed by the Engineer, additional lengths of fiber shall be stored, as maintenance coils. The aggregate lengths of the maintenance coils and the slack fiber will be used to repair and maintain the fiber optic cable.

Fiber optic cable shall be tagged inside handholes with yellow tape containing the text: "CAUTION - FIBER OPTIC CABLE." In addition, permanent tags, as approved by the engineer, shall be attached to all cable in a hand hole or other break-out environment. These tags shall be stainless steel, nominally 0.75" by 1.72", and permanently embossed. These tags shall be attached with stainless steel straps, and shall identify the cable number, the number of fibers, and the specific fiber count. Tags and straps shall be Panduit or approved equal.

Method of Measurement. The fiber optic cable of the number of fibers specified will be measured for payment as the number of linear feet of cable, including lengths stored as splicing slack and maintenance coils, actually furnished installed and tested. Connectivity to each site will be measured as lump sum for payment when work has been performed, connected, field tested and accepted.

Basis of Payment. Payment shall be made as follows:

Fiber Optic Cable
Fiber Connectivity to IDOT District 1
Fiber Connectivity to IDOT Dan Ryan Cabinet
Fiber Connectivity to ISTHA M5 Facility
Fiber Connectivity to ISTHA Plaza 99
Fiber Connectivity to ISTHA Headquarters/ISP District 15

MICROWAVE SYSTEMS

Description. The Contractor shall provide three (3) microwave systems. Each system shall be capable of carrying 45 Mbps or more of IP traffic between existing fiber access points to end user locations. Where applicable, the Contractor shall be responsible for all frequency coordination, Prior Coordination Notices (PCN's), and FCC licensing. Contractor shall provide path surveys and path reliability calculations demonstrating >99.999% availability.

All proposed antennas are to be installed on towers that can adequately support them (see Tower Reinforcement Special Provision).

<u>System 1 – ISHTA M5 Facility to ISP District 2</u>
System 1 is an upgrade to an existing link between the Illinois State Toll Highway Authority (ISTHA) Maintenance (M5) and the Illinois State Police (ISP) District 2. The M5 site has two (2) towers: a new taller tower and an old tower slated to be removed in the near future. The upgraded microwave link shall be placed in operation on the new tower. ISP currently operates a Harris DVM 10.5 GHz system between the ISP Chicago District (Des Plaines) tower and District 2 via a repeater at M5. This project will replace only the District 2 to M5 portion of that system.

The link shall be Monitored Hot Standby (MHSB) and will operate in the FCC Part 101 licensed upper 6 GHz band. This system shall transport both IP traffic and DS1 traffic, each in its native state, i.e. pseudo-wire DS1 circuits are not acceptable.

At M5 the new radio will be located in the new shelter and microwave dish installed on the new tower.

The vendor must crossconnect, via existing CAT-6 cable, DS1 circuits to the DVM repeater located in the old shelter for continuation on the M5 to ISP Chicago District microwave link.

At M5 the existing antenna and cable shall be removed from the old tower. AT ISP District 2 the existing radio, antenna and cable shall be removed. The link outage shall not exceed 48 hours. Contractor shall dispose of all removed equipment.

At ISP District 2 the radio will be located in an equipment shelter near the tower.

Both locations have existing:

a. -48 VDC power
b. A dehydrator
c. 4 inch waveguide entry port

System 2 – ISP District 5 to ISTHA Toll Plaza 99

System 2 is a link between ISTHA 167th Street Toll Plaza (Plaza 99) and ISP District 5. The link shall be Monitored Hot Standby (MHSB) and will operate in the FCC Part 101 licensed 11 GHz band. Both locations have existing towers and shelters in place.

Both locations have existing:

a. A dehydrator
b. 4 inch waveguide entry port

System 3 – IDOT Emergency Traffic Patrol to monopole on Dan Ryan

System 3 is a link between a new equipment shelter to be located on the west side of the Dan Ryan Expressway south of 33rd Street and the Emergency Traffic Patrol (ETP) Center. The link shall be Monitored Hot Standby (MHSB) and will operate in the FCC Part 15 unlicensed 5.8 GHz band.

At the Dan Ryan site the Contractor shall install antenna on a new 100 ft. monopole and equipment rack inside a new cabinet. The radios shall be located in the cabinet and connected to the antenna via coaxial cable. The monopole and cabinet/cabinet foundation will be paid for separately.

At the ETP site the radios shall be rack mounted and connected to the antenna via coaxial cable. In addition, the Contractor shall provide 10 foot long pipe mount to be attached to the side of the building for antenna placement, install a ground bar, and install a 4 inch coaxial cable entry port.

Each site will have 120 VAC available but the Contractor shall provide -48 VDC power.

Radio Specifications.

Introduction: The equipment shall operate in the upper 6 & 11 GHz licensed bands and in the 5.8 GHz unlicensed bad. The equipment shall provide advanced transport solutions for both TDM and packet-based data services.

Clause by Clause Compliance Statement: The Supplier shall furnish clause-by-clause compliance for each and every clause and sub-clause within this document. Where appropriate the Supplier should include detailed supporting information for each compliance / partial compliance.

The following terms shall be used in the preparation of a compliance statement:

"FULLY COMPLIANT" Definition. If the systems and functions offered fully meet the tender requirement.

"PARTIALLY COMPLIANT" Definition. If the systems and functions offered partially meet the tender requirement. The reason why the offer is partially compliant shall be stated. If the vendor is able to fulfill the specified requirement later, the time schedule for this shall also be stated. In such cases, the Supplier shall clearly mention the extent to which other requirements or specifications are affected.

"NON-COMPLIANT" Definition. If the systems and functions offered cannot meet the requirements, the Supplier shall also state the reasons for it.
In case of absence or unclear statements of compliance for any specified requirement, that particular requirement will be interpreted as being "NON-COMPLIANT".

MTBF: The terminal MTBF for the transmission system shall be not less than 30 years. Supplier shall provide measured field return data for the proposed equipment. Calculated MTBFs must be determined according to Bellcore methods TR332.

General Requirements: TL 9000 Compliance: The manufacturing facilities for microwave equipment shall be certified to the TL 9000 quality standard.

Product Lifetime and Support: The equipment shall have a lifetime of at least 10 years, and repair and return support shall be available throughout that period.

Point of Manufacture: Supplier shall state the location (city, state/province, country) where the proposed equipment is manufactured.

Technical Requirements:
Overview of Basic Requirements:

- All-indoor operation for FCC Part 15 unlicensed 5.8 GHz band
- All-indoor operation for FCC Part 101 Upper 6 & 11 GHz licensed bands
- Support 10 MHz channel bandwidth
- Ability to transport up to DS1 circuits in native state, pseudo-wire DS1's are not acceptable
- Ethernet airlink capacities at a minimum of 45 Mbps
- Software configurable DS1 traffic add/drop
- Comprehensive link, network and interface protection options.
- A protected (1+1) embedded Ethernet switch option with advanced QoS
- Adaptive modulation
- Secure network management
- 19" rack mounting.
- Operation from -48 VDC.

Frequency Band Coverage: The equipment shall be available for the following frequency bands:

Band (GHz)	Range (GHz)	T/R Spacing (MHz)
5.8	5.725 – 5.850 GHz	65
Upper 6	6.525 – 6.875 GHz	160
11	10.700 – 11.700	490

Table 1 - Platform Frequency Band Coverage

Capacity:

TDM Link Capacity: The equipment shall support the use of TDM circuits in native TDM state. Pseudo-wire TDM circuits are not acceptable. The radios shall provide access of up to 16 DS1 circuits on a single plug-in module.

Ethernet Link Capacity: When operating as an IP only radio in a 10 MHz RF channel the equipment shall provide the following aggregate bit rates measured at the user interface.

Modulation	Layer 2 1518 byte	Layer 2 64 byte
64 QAM Maximum Gain	38	37
64 QAM Maximum Throughput	41	40
256 QAM Maximum Gain	53	52
256 QAM Maximum Throughput	57	55

Modulation:

Modulation: The digital microwave equipment shall employ Adaptive Coding & Modulation (ACM) using 64 QAM and 256 QAM.

Channel Bandwidth: The radio shall use 10 MHz RF channels

Adaptive Coding and Modulation (ACM):

Modulation States: Adaptive modulation shall be supported over a minimum of four modulation states. The minimum and maximum allowed modulation state must be configurable. It must be possible to switch error-free between modulation states for Ethernet and TDM traffic.

Maximum Gain / Maximum Throughput: Adaptive coding shall support adjustment of the adaptive modulation states for maximum-throughput, or maximum-gain.

Documentation of ACM Implementation and Operation: The Supplier must explain its implementation of ACM. Explanations to include:

a. The criteria used to switch to a lower modulation state and back.
b. The effect of the coding options on system gain and throughput.
c. The QoS awareness and prioritization options supported for Ethernet and/or PDH traffic for a change in modulation state.

Radio Performance Data to be Provided: The supplier shall provide guaranteed radio performance for each frequency band, for each channel bandwidth and modulation state. The data supplied and any supporting data must include:

a. Transmitter output power
b. Receiver threshold
c. System gain
d. Maximum receiver input level (error free)
e. Manual transmitter power control range

Co and Adjacent Channel Interference Sensitivity: The Supplier shall state the threshold to interference (T/I) sensitivity for the equipment offered. The information shall be provided for all modulation/capacity options.

Equipment and Path Protection Requirements:

Transmit and Receive Protection Options: The equipment shall be Monitored Hot Standby (MHSB) protected.

Errorless Receive Switching: Receiver switching shall be errorless.

General Protection Requirements:

a. All essential platform management and power supply functions shall be protected.
b. Link transmitter and interface protection switching times shall be less than 200ms, including alarm detection, switch-over, and data recovery.
c. A protection feature shall be used to guard against non-detected transmitter failures.

Radio Frequency Units:

Rack-Mountable: The indoor Radio Frequency Unit (RFU) shall be 19” rack-mountable for co-location with its indoor baseband unit (IDU).

Basic Requirements:

a. Support frequency bands 5.8, Upper 6 & 11 GHz
b. RFU shall operate full duplex continuous duty cycle. Half duplex “ping pong” radios are not acceptable
c. RFU shall be maximum 3 RMS
d. RFU’s shall be 1+1 protected using a low loss coaxial switch to switch between transmitters; and an unequal loss receiver splitter favoring the A side receiver by no less than 6.1 dB.
e. Have industry-standard waveguide ports
f. All connections between the RF tuning filters and RF port must be via waveguide. Use of low loss flex cable is not acceptable.
g. Incorporate a filter-based ACU to support paired and non-paired frequency assignments.

Transmitter Power Output: The RFU transmitter shall meet or exceed the following power levels at the RFU antenna port.

Transmitter Power (dBm)	5.8 GHz	6 GHz	11 GHz
64 QAM Maximum Gain	27.5	27.5	28.5
64 QAM Maximum Throughput	25.5	25.5	26.5
256 QAM Maximum Gain	25.5	25.5	26.5
256 QAM Maximum Throughput	22.5	22.5	23.5

Receiver Sensitivity: The RFU receiver sensitivity at BER = 10E-6 shall meet or exceed the following power levels at the RFU antenna port.

Receiver Sensitivity A Side Receiver (dBm)	5.8 GHz	6 GHz	11 GHz
64 QAM Maximum Gain	-77.50	-78.50	-77.05
64 QAM Maximum Throughput	-76.75	-77.75	-76.30
256 QAM Maximum Gain	-71.75	-72.75	-71.30
256 QAM Maximum Throughput	-67.75	-68.75	-67.30

Receiver Sensitivity B Side Receiver (dBm)	5.8 GHz	6 GHz	11 GHz
64 QAM Maximum Gain	-71.40	-72.40	-70.95
64 QAM Maximum Throughput	-70.65	-71.65	-70.20
256 QAM Maximum Gain	-65.65	-66.65	-65.20
256 QAM Maximum Throughput	-61.65	-62.65	-61.20

ACU Expansion Port: The RFU ACU shall include an integral waveguide expansion ports for concatenating multiple T/R's onto a single waveguide.

Indoor Baseband Unit (IDU):

Basic Functionality: The IDU shall provide required traffic interfaces, service interfaces, IF interfaces for the RFU, and network management interfaces.

Basic Requirements:

a. Support plug-in cards to provide required user interfaces. Cards should be hot-swappable for service and upgrade purposes.
b. 19" rack mounting with a maximum of 2 RMS.
c. DS1 interface shall have 1+1 protection using "Y" cables connected to the front of the radios and unterminated ends for connection to the punch down block or crossconnect panel.
d. Ethernet interface shall have 1+1 protection using "Y" cables connected to the front of the radios and LC connections for connection to the switch or router.

Standards Compliance: The equipment shall comply with all relevant standards for EMC, radio frequency, link operation, safety, security, and transportation. Specific standards include:

a. FCC part 15 for a Class A digital device for (EMC)
b. UL 60950-1 for safety
c. CFR 47, Part 101 for radio frequency
d. GR-63-CORE, GR-1089-CORE, Level 3, for NEBS compliance.

Power Supply and Power Consumption: The equipment shall operate from a -48 VDC.

Reverse Voltage Protection: The equipment shall be protected against reverse voltage.

Power Consumption: The equipment must be energy efficient. The Supplier shall provide details of typical and maximum power consumptions.

User Interface Requirements:

DS1 Interfaces
Basic Requirements:
a. Support for 127xDS1 on one IDU.
b. Up to 16xDS1 ports per DS1 card.
c. 120 ohm balanced ports with individual selection of AMI or B8ZS.
d. Ethernet over NxDS1 mode to support transport of Ethernet data over legacy DS1 radios or leased-lines.
e. Port and card redundancy.
f. Compact interface connectors and cable sets, as options, for connection to punch-blocks or wire wrap terminations.
g. A facility to set a looped or both-way BER test on a selected trib.
h. AIS on out-tributary ports during link failure or BER test.
i. DS1 interfaces shall be G.703 / G.824 compliant.

Ethernet Interface Option
Overview: The equipment shall incorporate a Layer 2 (L2) switch function for 10/100/1000Base-T/LX Ethernet traffic.

Basic Requirements:
a. A programmable, non-blocking 1000 Mbps switching fabric with support for transparent, mixed and VLAN modes.
b. Low latency. The Supplier to state 1-way link latencies for frame sizes from 64 to 1518 bytes.
c. Programmable mapping of Ethernet traffic to radio or fiber links.
d. A minimum of three RJ-45 ports for 10/100/1000Base-T, and two (2) GigE 1000Base-LX optical ports.
e. The optical port shall be supported on an SFP, with SFP options for 850nm multi-mode, 1310nm single-mode, or 1310nm multi-mode.
f. Synchronous Ethernet with clock sourcing and prioritization options.
g. Active traffic shaping when operated with the adaptive modulation option.
h. Comprehensive QoS policing and prioritization options (802.1p).
i. VLAN tagging (802.1Q and 802.1Q-in-Q).
j. Carrier-class RSTP (802.1d).
k. Flow control through 802.3x pause-frame option.

l. Jumbo frames to 7000 bytes bi-directional, and to 9600 bytes uni-directional.
m. Comprehensive RMON and graphics-based performance indicators.

Auxiliary Data Interface Requirements

Overview:

a. Preference will be given to equipment that uses plug-in cards to provide auxiliary data service interfaces.
b. Auxiliary data shall be transported in the radio overhead. It must not impact the configured radio payload.
c. Not less than three auxiliary data service channels shall be configurable for each link installed on the equipment.

Basic Requirement:

a. Multiple and configurable auxiliary ports for synchronous data to 64 kbit/s and/or asynchronous data to 19.2 kbps.
b. Synchronous to TIA/EIA-422 / V.11, with internal or external clock selection.
c. A selectable external clock phase (rising or dropping edge).
d. Asynchronous to TIA/EIA-562 (electrically compatible with RS-232 / V.24).
e. Asynchronous baud rates of 1200, 2400, 4800, 9600, or 19200bps with selectable start, data, parity, and stop options.

External Alarm Interface Requirements

Overview:

a. Preference will be given to equipment that uses plug-in cards to provide the required alarm interfaces.
b. Alarm outputs are required to support export of internal alarm actions on relay interfaces.
c. Alarm inputs are required to capture external alarm actions on TTL interfaces.
d. Alarm inputs shall be map-able to alarm outputs.
e. A programmable mapping capability shall be provided to select and direct internal equipment alarms and/or external alarm inputs from any node within the network to any other node or nodes within the network.
f. Not less than three auxiliary data service channels shall be configurable for each link installed on the equipment.

Basic Requirements:

a. Up to 6 TTL alarm inputs and up to 4 Form C relay outputs.
b. Naming of individual alarm inputs and relay outputs.
c. Assignment of a severity level on alarm inputs.
d. Configurable input high, or input low selection for TTL alarm triggers.
e. Nominal TTL input thresholds of 2V min high, and 0.8V min low.
f. High voltage (spike) protection on TTL inputs.
g. Capture of input state changes on the NMS alarm log.
h. Alarm output relay configuration for energized on receipt of an alarm event, or de-energized on receipt.
i. Access to normally closed and normally open contacts on the relay output.
j. Capture of alarm output actions on the NMS event log.
k. A minimum 50W rating on the relay contacts with voltages to 115V, or currents to 2A.

Platform Operation and Management

Overview: Through appropriate selection of plug-in cards, the platform shall enable practical and cost efficient solutions for:

a. Simple links.
b. Provisioning TDM links with Ethernet.
c. Provisioning all-Ethernet links.

Capacity and Feature Licenses: The Supplier shall state if capacity and/or feature licenses apply and if so, provide details on such licensing.

Plug-in Cards Basic Requirements:
a. There shall be programmable interconnection between the plug-in cards for traffic, services and management.
b. Plug-in cards shall be hot-swappable.
c. Replacement plug-in cards shall automatically assume the software configuration of the replaced card.

Software Stability:
a. The software configuration of the platform and its services shall not be affected by power-off situations.
b. The software configuration of the platform and its services shall be portable to other platforms.

TDM and Ethernet Traffic Support: The platform shall support native TDM and/or native Ethernet traffic over the radio links up to 1 Gbps. This represents the sum of the air-link capacities provided for Ethernet transport using multiple radio links.

Date/Time Configuration Capability Requirement: The platform shall have a date/time configuration capability with synchronization to the craft tool PC, to network time, or to an external time server using SNTP or NTP.

Equipment and Platform Redundancy: There shall be redundancy for essential platform power supply and management functions, and for any forced-air (fan) cooling.

Front Panel Indicators: The platform and its plug-in cards shall provide visible front-panel indications of operational status.

Loopback Requirement: The platform shall provide local and remote loop-back facilities with tributary and IF loopbacks as a minimum

Environmental Requirements
Basic Requirements: The platform (IDU + RFU) shall operate to specification under ambient temperatures of 23° to 113° F, and 0% to 93% humidity (non-condensing).

The Supplier shall state the impact on operation when temperatures are outside those specified.

The platform shall operate to specification to altitudes of 10,000 ft.

Platform Security Requirements
Overview: The platform shall support basic and strong security options.

Basic Security Requirement:
a. Administration for access authorization and password setting.
b. Engineering for read/write access.

c. Operator for read-only access.

Strong Security Requirement: Strong Security shall provide three functions,

a. Payload encryption
b. Secure management access

Multiple Levels of Authorization: Strong security shall provide multiple levels of authorization for user access. These shall be made available as individual levels or in any combination. The levels shall support:

a. Read.
b. Control/diagnostic.
c. File/software download.
d. Configuration modification.
e. Creating/managing accounts (User Administration).
f. Encryption selection & Key management (Crypto Management).

Payload Encryption: Payload encryption shall prevent eavesdropping on radio links. Both the payload and the radio overheads including the NMS channel shall be encrypted.

a. Operation shall be FIPS-197 compliant, and allow for independent enabling/disabling on each wireless link.
b. The cipher suite shall include AES counter mode data encryption and CBC-MAC data integrity validation.
c. 128, 192 and 256-bit symmetric keys shall be supported. The key agreement method used between each side of the link shall include measures to ensure only radios that belong to the group can negotiate an encryption key.
d. Key change options shall specify the maximum time a particular key can be used. Key change shall be errorless.

Secure Management: Secure management access shall prevent unauthorized local and remote access to platform management and configuration. The protection provided shall prevent mechanized attacks.

Only secure versions of the management protocols shall be allowed to access the NMS port. This shall apply to physical connections and to software downloads.

a. Physical connections shall be held secure using selectable encryption cipher suites. Suites should include:
   - CFB-AES-128
   - CFB-AES-192
   - CFB-AES-256
   - CBC-3DES
   - CBC-DES
b. SNMPv3 shall be used to secure remote network management communications. HTTPS (or similar) shall be used to secure software downloads.
c. All password storage, configuration data, event logs and performance data files on the radio shall be encrypted.
d. There shall be support for complex password requirements.

<u>Platform Software Maintenance Requirements</u>

Overview: The platform shall support software version management for software upgrades.

Platform Craft Tool: The platform craft tool shall provide a means to source and save software upgrades and to download the software to the platform.

Basic Requirements (Options to be provided):

a. Transfer and activate the new software.
b. Transfer only.
c. Activate transferred software.

Status Monitoring: During the download and activation the status of the process shall be indicated through to completion and confirmation.

Rollback to Prior Build: A facility shall be available to roll back to the prior build of software.

Platform Craft Tool

Overview: A PC-based craft tool shall provide local and remote platform monitoring, configuration, and diagnostic services. There shall be no front-panel controls or externally-connected keypads to provide the required capabilities. It shall be possible to select, view, configure and set diagnostics on any platform within the network when connected from any one platform within the network.

PC Host Device:

a. The PC shall operate as a host device on a LAN supported from the platform.
b. The PC shall use Ethernet 10/100Base-T Ethernet as its primary connection to the platform, whereby the PC and the platform operate on a common LAN.

Auto-versioning of Craft Tool Software: The craft tool software shall always match the version of system software in use on the platform.

a. To avoid the potential for software miss-alignment between the craft tool and the platform system software, auto-versioning of craft tool software is required. When initially connected to a platform, the craft tool software shall detect the version of system software in use, and auto-align to that version.

Craft Tool Connectivity in absence of known IP Address: A mechanism shall be provided to ensure craft tool connectivity is always possible in the absence of a known IP address for the platform it is connected to.

Currency with Windows Operating Systems: The craft tool software shall maintain currency with all recent and future Windows operating systems.

User Interface: The craft tool shall use a graphics-rich user interface to provide operator-friendly screens for its various configuration and diagnostics functions.

Context-Sensitive Help Support: The craft tool shall be supported by context-sensitive help for its screens.

a. Preference will be given to context-sensitive help systems that use an online version of the platform user manual.
b. Preference will be given to systems that ensure the version of online help always matches the version of platform system software (and craft tool SW).

Diagnostic Capabilities: Craft tool shall include the following diagnostic tools:

a. An event log.
b. Alarms status.
c. History options to review operation over one month, or over 7 days using a higher resolution.
d. A real-time performance summary for radio link and Ethernet network connections.
e. RMON performance for Ethernet traffic ports.
f. Systems controls for setting loopbacks, AIS, protection locks, Transmitter mute, and BER testing.

Network Management Control: The craft tool shall include capabilities to view and set network management variables for the platforms.

Network Management Routing Requirements

Overview: For network management purposes the platform shall include a router function to manage the NMS IP routing between platforms, and from platforms to other management connected devices.

Routing Options: Static and dynamic routing options shall be provided

Dynamic Routing: Dynamic routing options shall include RIPv1, RIPv2 (Routing Internet Protocol) and OSPF (Open Shortest Path First). For OSPF, there shall be support for stub and not-so-stubby areas.

Addresses: There shall be an ability to set one IP address for a platform or to set an address for each NMS interface on the platform.

Trap Destinations: There shall be an ability to set trap destinations to the platform EMS or to a 3rd party EMS.

Warranty: All equipment shall be warranted against defects in material and workmanship for a minimum of 24 months for factory parts and factory labor. Detailed terms and conditions of warranty shall be provided by the Supplier.

Post Warranty Support and Change of Status Notification: The Supplier shall provide support in the form of repair/return services for a period of up to 10 years from the date of the last sale. Notification shall be given not less than 1 year ahead of any change of status from regular production to maintenance only (MO).

Technical Training

Overview: The Contractor shall provide a comprehensive technical training program.

Basic Requirement: Classes shall be conducted with substantial hands-on involvement, and course content shall include the following:

a. Documentation structure, numbering system, and configuration control system.
b. Principles of digital transmission.
c. Product/system description.
d. Installation procedures.
e. Configuration procedures.
f. Turn-on, alignment and testing procedures.
g. Diagnostic procedures.
h. Unit replacement procedures.

i. Operating, safety, and traffic continuity procedures.

Documentation
Overview: An equipment instruction manual in PDF format shall provide comprehensive information on the equipment. It shall provide information on application, installation, configuration, alignment and troubleshooting.

Online (web-version) Documentation: Online (web-based) versions of the instruction manuals shall also be available.

a. The online version of the equipment manual should be accessible from the craft tool for context-sensitive and general viewing.
b. Similarly, the online version of the EMS operations manual should be accessible from the EMS terminals for context-sensitive and general viewing.

Search Capability: The instruction manuals shall have user-friendly search capabilities.

Materials and Installation.

General: Each defined subsystem shall be one or more, self-contained assemblies of rack-mounted components. These components are assembled, integrated and coordinated as required for the defined functionality, complete with all interfaces and interconnecting cabling, suitable for advanced shop staging and testing, as defined elsewhere herein, with other subsystem assemblies. Each shall be installed at its indicated located and connected to power and communications circuits as indicated and as required. The interconnections are generally as depicted on the Plans. The Contractor shall be responsible for submitting a complete, integrated interconnection diagram, all as part of shop drawings required for the work, and shall mark the Plans during construction as part of Record Drawing requirements. It shall be noted that the Plans may not show every detail of interconnecting wiring and that the Contractor is required to provide all the interconnections within each location to satisfy the requirements of the system being furnished.

Product information and shop drawings shall be submitted for review in detail. The submittal shall include, but not be limited to:

- Product information on all components, highlighted to indicate specification compliance.
- Product information that applies to more than a single specific model or variation, and may list optional equipment or features, shall clearly indicate the model, variation and options selected.
- All warranty information.
- Shop drawings of assemblies and equipment, with layout and dimensions.
- Interconnection wiring diagrams shall be of such detail that a competent electrician, though unfamiliar with the equipment, is able to properly select and terminate all wiring required for proper system operation.
- Installation drawings, detailing dimensioned placement at facilities and all connections.
- Description of location and arrangements for Shop Staging Tests.

All submitted information shall be provided in both hard copy and electronic format on CD-ROM.

Although not explicitly detailed on each plan sheet, the Contractor shall bond and ground all equipment, cable trays, and hardware.

This bonding and grounding shall comply with the National Electric Code, Motorola R56 Standard, and manufacturers' recommendations for the equipment being installed.

ISP District 2

a. Furnish and install new MHSB Terminal, 6 GHz. Aviat Networks model Eclipse IRU600 or equal.
b. Furnish and install new 7'0" x 19" self-supporting aluminum equipment rack. Chatsworth model 46075-503 or equal.
c. Furnish and install new -48 VDC circuit breaker panel e/w A & B side power feeds. Trimm model 9072101001 or equal.
d. Furnish and install new 6 ft. antenna, FCC Class A, with gray radome and tie-back. Andrew model PAR6-65-PXA/B or equal.
e. Furnish and install new 6 GHz waveguide, connectors & miscellaneous mounting hardware. Andrew model EW63 or equal.
f. Furnish and install new 3 ft. flex twist e/w CPR137 flanges. Andrew model F137CCCS3 or equal.
g. Furnish and install new adjustable tapered antenna pipe mount. Andrew model PM-412T63 or equal.
h. Furnish and install new Universal Saddle Mount. Andrew model SM-U2080 or equal.
i. Remove and dispose of existing radio, antenna and wave guide.

ISTHA M5

a. Furnish and install new MHSB Terminal, 6 GHz. Aviat Networks model Eclipse IRU600 or equal.
b. Furnish and install new 7'0" x 19" self-supporting aluminum equipment rack. Chatsworth model 46075-503 or equal.
c. Furnish and install new -48 VDC circuit breaker panel e/w A & B side power feeds. Trimm model 9072101001 or equal.
d. Furnish and install new 6 ft. antenna, FCC Class A, with gray radome and tie-back. Andrew model PAR6-65-PXA/B or equal.
e. Furnish and install new 6 GHz waveguide, connectors & miscellaneous mounting hardware. Andrew model EW63 or equal.
f. Furnish and install new 3 ft. flex twist e/w CPR137 flanges. Andrew model F137CCCS3 or equal.
g. Furnish and install new adjustable tapered antenna pipe mount. Andrew model PM-412T63 or equal.
h. Furnish and install new Universal Saddle Mount. Andrew model SM-U2080 or equal.
i. Furnish and install new 16 DS1 Jackfield. Aviat Networks model 010-0632-0100 or equal.
j. Remove and dispose of existing antenna and wave guide.
k. Furnish and install new vertical wave guide ladder.

ISP District 5

a. Furnish and install new MHSB Terminal, 11 GHz. Aviat Networks model Eclipse IRU600 or equal.

b. Furnish and install new 7'0" x 19" self-supporting aluminum equipment rack. Chatsworth model 46075-503 or equal.
c. Furnish and install new -48 VDC circuit breaker panel e/w A & B side power feeds. Trimm model 9072101001 or equal.
d. Furnish and install new 3 ft. antenna, FCC Class A, with radome and tie-back. Andrew model VHLP3-11W-6GR or equal.
e. Furnish and install new 11 GHz waveguide, connectors & miscellaneous mounting hardware. Andrew model EW90 or equal.
f. Furnish and install new 3 ft. flex twist e/w CPR90 flanges. Andrew model F090CCB3 or equal.
g. Furnish and install new adjustable tapered antenna pipe mount. Andrew model PM-412T63 or equal.
h. Furnish and install new Universal Saddle Mount. Andrew model SM-U2080 or equal.

ISTHA Plaza 99

a. Furnish and install new MHSB Terminal, 11 GHz. Aviat Networks model Eclipse IRU600 or equal.
b. Furnish and install new 7'0" x 19" self-supporting aluminum equipment rack. Chatsworth model 46075-503 or equal.
c. Furnish and install new -48 VDC circuit breaker panel e/w A & B side power feeds. Trimm model 9072101001 or equal.
d. Furnish and install new 3 ft. antenna, FCC Class A, with radome and tie-back. Andrew model VHLP3-11W-6GR or equal.
e. Furnish and install new 11 GHz waveguide, connectors & miscellaneous mounting hardware. Andrew model EW90 or equal.
f. Furnish and install new 3 ft. flex twist e/w CPR90 flanges. Andrew model F090CCB3 or equal.
g. Furnish and install new adjustable tapered antenna pipe mount. Andrew model PM-412T63 or equal.
h. Furnish and install new Universal Saddle Mount. Andrew model SM-U2080 or equal.
i. Furnish and install new vertical wave guide ladder.

Dan Ryan Expressway

a. Furnish and install new MHSB Terminal, 5.8 GHz. Aviat Networks model Eclipse IRU600 or equal.
b. Furnish and install new CPR-137 to N Female transition
c. Furnish and install new -48 VDC circuit breaker panel e/w A & B side power feeds. Trimm model 9072101001 or equal.
d. Furnish and install new 2 ft. antenna with radome and N Female connection. Andrew model P2F-57W-NXA or equal.
e. Furnish and install new coaxial cable w/ N Male connectors & miscellaneous mounting hardware. Andrew model LDF4.5-50 or equal.
f. Furnish and install new coaxial lightning/surge protection
g. Furnish and install new adjustable tapered antenna pipe mount. Andrew model PM-412T63 or equal.

Emergency Traffic Patrol Facility

a. Furnish and install new MHSB Terminal, 5.8 GHz. Aviat Networks model Eclipse IRU600 or equal.
b. Furnish and install new CPR-137 to N Female transition
c. Furnish and install new 7'0" x 19" self-supporting aluminum equipment rack. Chatsworth model 46075-503 or equal.
d. Furnish and install new -48 VDC circuit breaker panel e/w A & B side power feeds. Trimm model 9072101001 or equal.
e. Furnish and install new 2 ft. antenna with radome and N Female connection. Andrew model P2F-57W-NXA or equal.
f. Furnish and install new coaxial cable w/ N Male connectors & miscellaneous mounting hardware. Andrew model LDF4.5-50 or equal.
g. Furnish and install new coaxial grounding kit. Andrew model SG58-06B2A or equal.
h. Furnish and install new Copper Ground Bar. Andrew model UGBKIT-0210 or equal.
i. Furnish and install new adjustable tapered antenna pipe mount. Andrew model PM-412T63 or equal.
j. Furnish and install new adjustable wall mount. Andrew model MT-22L or equal.

Method of Measurement. Each individual subsystem shall be counted separately and measured as lump sum for payment when furnished, installed, connected, field tested and accepted.

Basis of Payment. Payment shall be made for each subsystem as follows:

Microwave Link 1 – ISP District 2 to ISTHA M5
Microwave Link 2 – ISP District 5 to ISTHA Plaza 99
Microwave Link 3 – IDOT ETP to Dan Ryan

MONOPOLE, 100 FOOT MOUNTING HEIGHT

Description. This item shall consist of furnishing and installing a proposed monopole to support a microwave antenna dish.

Materials. The monopole shall be direct embedded type constructed of unpainted hot dipped galvanized steel. The pole shall have an overall length of 120 feet with a 100 foot mounting height and 20 foot embedment. The pole shall be multi-sided and constructed in 3 sections. The pole shall have an approximate top diameter of 9 inches and butt diameter of 25 inches.

The pole will support a 2 foot diameter parabolic microwave dish at the top. The pole shall be constructed so as not to exceed the maximum deflection as required by the antenna manufacturer, contractor to coordinate.

The pole shall be Rohn Model No. T110MA or approved equal.

Construction. The monopole shall be constructed and installed as show on the drawings.

Method of Measurement. The monopole will be measured as each pole installed.

Basis of Payment. Payment for the MONOPOLE, 100 FOOT MOUNTING HEIGHT shall be paid for at the contract unit price for each pole installed which shall be payment in full for all work listed herein or as directed by the Owner.

TOWER REINFORCEMENTS

Description. This work includes reinforcing an existing antenna tower at Illinois State Police District 2 (Elgin) and also District 5 (Joliet) to accommodate the proposed antenna upgrades in this contract. The scope of work shall be as described in the Recommendations provided in the included Structural Reports as prepared by Fullerton Engineering Consultants. Painting of all new components and all existing painted areas disturbed during construction shall be included.

Submittals. The Contractor shall assemble and submit a complete and detailed description of the proposed work.

There shall be a separate submittal package for each tower which shall be complete and shall document compliance with all specified system requirements. It shall include product data of all components, accessories and appurtenances. Each submittal shall have structural design calculations prepared and sealed by a licensed State of Illinois Structural Engineer, and shall be submitted for approval prior to fabrication.

General Requirements. The Contractor shall perform all work in accordance with all applicable standards and regulations. Materials shall be rated same or better as existing. This work shall not cause any disruption to any existing antennas. All work shall be coordinated with the State Police, work shall not commence until all shop drawings have been reviewed and approved.

SITE WORK DESCRIPTIONS

Tower Reinforcement, ISP District 2
Illinois State Police District 2
777 S. State Street
Elgin, IL 60123

Existing 400 foot self supporting tower

Furnish and install:

- The lower redundant diagonals in the 150.0'-120.0' AGL section should be removed and replaced with 2" standard pipe.
- The redundant diagonal in the 210.0'-190.0' AGL section should be removed and replaced with 2" standard pipe.
- The upper redundant horizontals in the 120.0'-90.0' section should be removed and replaced with 2.5" standard pipe.
- The lower redundant horizontals in the 60.0'-30.0' AGL section should be removed and replaced with 2" standard pipe.
- All of the above members shall be bolted into existing bolt holes with new 5/8" dia. A325 bolts.

See Partial Copy of Structural Report for Tower at ISP District 2.

Tower Reinforcement, ISP District 5
Illinois State Police District 5
16648 S> Broadway Street
Lockport, IL 60441

Existing 265 foot guyed tower

Furnish and install:

- The guy wires at 65ft AGL shall be replaced with 1/2" EHS guys.
- The guy wires at all other elevations shall be replaced with 5/8" EHS guys.
- All guys shall be installed at 10% initial tension.
- The torque arms at 195ft AGL shall be replaced with C10x22 A36 steel torque arms.
- The sections from 205ft AGL to 5ft AGL shall have half-pipes made from SS3.0x8.66 (50ksi steel) welded with 2" long, 1/4" E70 fillet welds at 12" o.c. on each leg.

See Partial Copy of Structural Report for Tower at ISP District 5

Method of Measurement. Work for each individual location shall be counted separately and measured as lump sum for payment when furnished, installed, connected, field tested and accepted.

Basis of Payment. Payment shall be made for each location as follows:

TOWER REINFORCEMENT, ISP DISTRICT 2
TOWER REINFORCEMENT, ISP DISTRICT 5

VIDEO WALL UPGRADES

Description. This item shall consist of furnishing and installing a video wall at IDOT District 1 Communication Center and IDOT Traffic Systems Center. The video wall shall be comprised of an array of LCD monitors as described below driven by an LCD controller. The controller shall be compatible and integrated with the iCX Cameleon ITS system. All monitors shall be identical and both controllers shall be identical. This work also includes all mounting hardware and cabling required.

Submittals. The Contractor shall assemble and submit a complete and detailed description of the equipment to be installed and work required at each location.

There shall be a separate submittal package for each video wall which shall be complete and shall document compliance with all specified system requirements. It shall include product data of all components, accessories and appurtenances. Each submittal shall include dimensioned video wall (including components), detailed electrical wiring diagrams for all electrical components and location of power source. The submittal package shall also identify the details of non-equipment requirements of the system, such as specified maintenance training, and it shall include letters of commitment relative to specified warranty and maintenance support.

Products.

LCD Display Monitor

Manufacturer: Barco, Sharp, Samsung or approved equal.

Display Technology	- Direct View LCD - SPVA, normally black - DID technology for extensive usage (rated for 24/7 operation) - AIR Anti-Image Retention Circuitry
Resolution	WXGA (1366x768 pixels)
Absolute Resolution	35 dpi
Brightness	500 Cd/m^2 (typ.); 700 Cd/m^2 (max.)
Viewing Angle	H: 178° & V: 178°
Contrast	3,000:1
Color	10 bit color resolution – 1.07 B colors
Response Time	8 msec
Light Source	- Backlight - White Point: 10,000 K (other color temp. avail.) - Dimming range: >3
Light Source Lifetime	50,000 hours
Screen Gap	< 6.7 mm (0.24”)
Dimensions	1026.1mm x 580.2 mm x 98 mm (40.4” x 22.8” x 4.0”)
Bezel Width	<2.4 mm (right, bottom): <4.3 mm (left, top)
Weight	29.8 kg (65.7 lbs)
Power Supply	100-240VAC , 60-50 Hz
Power Consumption	300W
Inputs and Outputs	- Pixelclock: 25.2 MHz - 165 MHz - Horizontal Range: 30.0 – 68.0 KHz - Vertical Range • 50-60 Hz • Connector: DSUB-15P in/out, DVI-D in/out • Sync: Separate - VGA/DVI • Connector: DSUB-15P in/out, DVI-D in/out • Sync: Separate - S-Video • Connector: S-terminal in/out • Color System: PAL/NTSC - CVBS • Connector: BNC in/out • Color System: PAL/NTSC
Warranty	3 Years

LCD Controller

Manufacturer: Jupiter Systems, or approved equal.

CPU	- Processor: Standard Dual Intel Xeon (3.2 GHz) - System Memory: ECC protected, Standard 1GB - Form Factor: 4U CPU chassis, 8U Switch Fabric Chassis - Expansion Slots: 6 PCI-X slots (4-64bit/100MHz and 2-64bit/133 MHz slots) - Switch Fabric: Chassis 8U chassis with enhanced PICMG 2.17 StarFabric Backplane
Disk Storage – Hard Disk	Standard single removable 320GB, 7200RPM SATA drive

Network Interface – Ethernet	Standard integrated dual 10/100/1000 Mbps RJ45 ports
Graphic Display Capabilities	- Graphics Memory: 16MB SGRAM per graphics channel - Number of outputs: 2-80 - Wall Configuration: Any rectangular array - Resolution: 640x480 to 1920x1080 pixels per output (1920x1080 max. digital) - Color Depth: 16 or 32 bits per pixel - Cursor: Hardware cursor, 64x64 pixels - Output Signal: DVI-I connector (both analog and digital, DVI-I to HD15 adapters included)
Video Input	- Inputs: 32 composite BNC and 16 S-Video mini-DIN per Switch Fabric chassis - Input Format: NTSC, PAL, SECAM - Scaling and Display: Up to 10,240x7680 pixel window size, multiple video windows per display channel
Electrical Requirements	- Input Voltage: 100-240VAC, auto-ranging power supply - Line Frequency: 50-60 Hz - Power Consumption: 400W (max.)
Outputs	(12) DVI or HDMI
Inputs	(4) Component Video (BNC) (16) Composite Video (BNC) (3) S-Video (6) VGA (3) DVI

Execution.

Installer Qualifications:

3. Installer shall be certified by the manufacturer as qualified to install, operate and maintain product(s) specified.
4. Install the system in accordance with the equipment manufacturers recommended procedures.

Commissioning: Manufacturer's Engineer shall be on site for configuration, commissioning assistance and owner turnover. Manufacturer's Engineer shall be available for min. of 5 workdays (8hrs/day) including travel, lodging and meal expenses for Engineer.

User/Owner Training: Manufacturer shall provide training course for users consisting of min. of 3 working days (8hrs/day) including travel, lodging and meal expenses for Training Technician.

Site Work Descriptions

IDOT District 1 Communication Center
Furnish and install:

- 46" LCD Display Monitors (approximate size)
- Monitors shall be mounted 4 wide by 3 high (for a total of 12 monitors)
- Maximum dimensions of video wall is 165" wide x 71" high
- LCD controller

IDOT Traffic Systems Center
Remove and dispose:

- Existing video wall shall be removed and disposed of

The video wall cannot be offline for more than **ONE WEEK** during removal and installation of new video wall. The Contractor shall be responsible for coordinating video wall shut down and down time with Engineer.

Furnish and install:

- 52" LCD Display Monitors (approximate size)
- Monitors shall be mounted 3 wide by 3 high (for a total of 9 monitors)
- Maximum dimensions of video wall is 141" wide x 79" high
- LCD controller

Method of Measurement. Work for each individual location shall be counted separately and measured as lump sum for payment when furnished, installed, connected, field tested and accepted.

Basis of Payment. Payment shall be made for each location as follows:

VIDEO WALL UPGRADES, IDOT DISTRICT 1
VIDEO WALL UPGRADES, IDOT TRAFFIC SYSTEMS CENTER

WAVEGUIDE ICE BRIDGE

Description. A horizontal waveguide ice bridge shall be provided between the tower and the building at ISP District 5 (Joliet).

Materials. It shall be supported from 4" diameter galvanized steel posts that are direct buried. Connections to the shelter wall or tower shall not be permitted. The distance between tower and the building shall be as shown on the site plan. The bridge shall be capable of supporting and covering the specified waveguide/coax and all existing waveguide/coax runs between the tower and the building and shall provide protection against falling ice.

Construction. The bridge shall be constructed around the existing waveguide/coax runs, which shall not be disconnected nor have service disrupted during installation. Contractor shall take extreme care resupporting existing runs. The ice bridge shall be constructed as shown on drawings. The Contractor shall verify existing conditions.

Method of Measurement. The WAVEGUIDE ICE BRIDGE shall be measured for payment per Lump Sum for the bridge installed as described above.

Basis of Payment. Payment for the waveguide ice bridge shall be paid for at the contract Lump Sum price for WAVEGUIDE ICE BRIDGE and shall include all material, equipment and labor necessary to provide a complete, freestanding, cable support device as shown on the drawings.

WORKSTATION FURNITURE

Description. The work includes furnishing and installation of two complete workstation furniture sets at the location as shown on the Drawings.

Submittals. The Contractor shall assemble and submit a complete and detailed description of the workstation furniture including the proposed equipment, accessories, and electrical requirements.

At the preconstruction meeting, the contractor shall at a minimum identify the following:

> Available space, furniture requirements, electrical outlets and panelboard(s) locations, existing branch circuit loads and installation considerations.

The workstation furniture submittal package shall be complete and shall document compliance with all specified furniture requirements. It shall include product data of all manufactured components, cable management and electrical systems, accessories and appurtenances. It shall include dimensioned shop drawings of any fabricated furniture and sub-assemblies (such as equipment rack and storage shelves). The submittal shall include overall furniture layout diagrams and dimensions, and detailed electrical wiring diagrams for all electrical components. The submittal package shall identify the details of non-equipment requirements of the system, such as specified maintenance training, and it shall include letters of commitment relative to specified warranty and maintenance support. As a minimum, the submittal package shall include, but not be limited to:

22. Overall Furniture Layout and Dimensions
23. Workstation Adjustment Controls
24. Furniture Material Specifications
25. Dimensioned Storage System Layout Drawings
26. Dimensioned Equipment Rack Layouts and associated appurtenances
27. Power and surge suppression requirements
28. Electrical, voice and data outlet locations
29. Detailed Cable Management System Drawings
30. Component Power Supplies and associated appurtenances
31. Monitor Lift Stand catalog cuts
32. All mounting accessories and hardware
33. All installation and maintenance manuals
34. Warranty Documentation and contact information, as required

Products

Workstation Furniture

Workstation furniture shall be designed specifically for 24/7 operations in an Emergency Communications Center environment. Office quality furniture will not be acceptable.

Quality Assurance. The system shall be manufactured for 24/7 operating environment and the manufacturer shall have the following experience:

1. Have a proven record of use within the harsh 24-hour operating environment of public safety dispatch centers, specifically of similar size to this request.

2. Minimum of 15 years experience in designing and manufacturing ergonomic workstation furniture will be allowed to bid.
3. A minimum of 8 installed centers of similar size or product shall be included with this proposal. Please include agency name, location, and number of positions.
4. Shall be the manufacturer all major components such as work surfaces, workstation panels, structural system or environmental controls.

Warranty. Provide original manufacturer's warranty documentation for acceptance by the Owner. The furniture manufacturer shall also be responsible for providing the following:

1. All components manufactured shall be replaced at no charge for as long as the original purchaser owns the product.
2. Replace adjustment mechanisms, environmental control components, monitor arms, task lighting and heating devices will be replaced at no charge for the first three years of original ownership.
3. Provide labor and all associated installation for defective products covered by the warranty for three years from the date of purchase.
4. Assume responsibility for all shipping and return shipping expenses of any defective product covered by the warranty.
5. Cover any defects in materials and workmanship for the lifetime of the covered product based on 24/7 usage.
6. Under no circumstances provide less than a limited lifetime warranty.
7. A copy of the warranty certificate.

Manufacturer and Model:

1. Watson Dispatch – Synergy 2 Linear Type Console, or approved equal.

General Specifications:

1. Stability – Function:
   a. The workstation furniture shall be designed specifically for 24/7 operations in an Emergency Communications Center environment. Standard office furniture will not be acceptable.
   b. Construction of workstation walls shall be of solid core materials utilizing a post and panel design. Hollow core panel systems using cantilevered surfaces will not be acceptable.
   c. A structural framework utilizing a unified frame construction design shall be provided featuring full undersurface cavities that lock each element of the workstation subsurface into a contiguous whole, stabilizing all movement.
   d. Workstation furniture shall be modular in design for ease of reconfiguration and upgrading.
   e. Sit-to-stand legs shall be bolted to the workstation undercarriage with a footprint designed to allow maximum stability based on the overall size of the monitor surface.
   f. There shall be no obstructions for side-to-side movement by the user within the workstation footprint.

2. Input Surface:
   a. Shall lower to at least 22" to accommodate the 5th percentile seated female.
   b. Shall raise to at least 57" to accommodate the 95th percentile standing male.

c. Shall provide an infinite travel range from 5” above to 5” below the monitor surface.
d. Shall be available in a wrap design large enough to allow multiple input devices such as keyboards, mice, and writing surface.
e. Shall be available in a tilt design that allows a 15 degree +/- manual adjustment (ANSI/HFES 100-2007 Human Factors Engineering of Computer Workstations p. 83-84).
f. Shall allow elbow angles between 70 and 135 degrees (ANSI/HFES 100-2007 Human Factors Engineering of Computer Workstations p. 12).
g. Shall be electronically adjustable independent of the monitor surface.
h. Shall adjustment through the use of an integrated single point interface with precise digital replication.
i. Shall adjust simultaneously with the monitor surface in order to retain relative positioning between both surfaces.
j. Shall have a static load capacity of 250 lbs. and an equipment load capacity of 200 lbs.
k. Shall have a zero gravity safety feature in order to prevent damage or injury. Safety bars mounted underneath surface will not be acceptable.
l. Shall be secured to the monitor surface by metal-to-metal connection utilizing steel plates and 1” bolts. Wood screws will not be acceptable. Separate, free-standing, independent, floor supported adjustable input platforms will not be acceptable.
m. Shall be designed to provide unobstructed knee clearance in the seated operating position in accordance with ANSI standards.

3. Monitor Surface:
   a. Shall lower to at least 27” to allow for appropriate viewing angles of monitor so that the gaze angle to the center of the screen ranges between -15° and -20° from horizontal eye level for the 5th percentile seated female.
   b. Shall raise to at least 52 to allow for appropriate viewing angles of monitor so that the gaze angle to the center of the screen ranges between -15° and -20° from horizontal eye level for the 95th percentile standing male.
   c. Full Lift applications shall have a static load capacity of 3,000 lbs. and an equipment load capacity of 500 lbs.
   d. Center Lift and Linear applications shall have a static load capacity of 1,500 lbs. and an equipment load capacity of 325 lbs.
   e. Shall be provided with depth adjustment platforms.
   f. Shall adjust through the use of an integrated single point interface with precise digital replication.
   g. Shall be 24V DC motors. Components shall be UL listed.

4. Adjustments:
   a. Monitor and input surface individual adjustments shall be through the use of an integrated single point interface with precise digital.
   b. Adjustment speed shall not be less than 1.25” per second and not greater than 1.5” per second.
   c. A minimum safety clearance of 1.25” shall be required between all moving surfaces.
   d. Software for workstation control will not be acceptable.

e. Intelligent leg system shall support an anti-collision safety feature in order to prevent damage or injury. Upon contact with an obstruction, the monitor surface must automatically stop its downward path and reverse in order to remove the obstruction. Safety bars mounted underneath surface will not be acceptable.
f. Workstation adjustment controls shall be accessible from a seated position for ADA compliance. Workstation adjustment controls mounted on top of the input surface will not be acceptable.
g. Design shall accept uneven load distribution.
h. All moveable components of the workstation shall be designed and tested to at least 40,000 cycle full range adjustments.

5. Materials:
   a. Acoustical Workstation Walls:
      i. Acoustical walls shall be solid core of a minimum 45 lb. density 1" thick wood core material. Hollow core workstation walls will not be acceptable.
      ii. Core shall be covered with a 3/8" high density subsurface, then wrapped with fabric.
      iii. Top edges of these partitions shall either be arched or straight and shall be treated in a long wear, replaceable, washable 3mm thick high impact vinyl edging.
      iv. All fasteners shall be completely concealed.

   b. Mounting Posts

      i. All mounting posts shall be round or octagonal, in 2-1/4" and 3" diameter.
      ii. Posts shall be constructed of aluminum grade extrusions with a 6051 hardness.
      iii. Finish shall be powder coated to match edge treatments. Enamel paint is not sufficiently durable and will not be acceptable.
      iv. Leveling glides shall be an integral part of the system to accommodate uneven floors.

   c. Undercarriage

      i. All supports, doors, cavity caps, and fixed shelves shall be rated for 25 lbs. psf and shall be constructed of an industrial grade 3/4" thick wood core material with a thermally fused laminate surface on both sides to prevent deflection.
      ii. All outside end panels shall be a minimum 45 lb. density 1-1/8" thick wood core material, pressure bonded with a high-pressure laminate surface on both sides.
      iii. Zero-clearance rear access doors shall be locking and be of lightweight metal material utilizing a spring tension for easy lifting and lowering of door. Doors shall be perforated for passive airflow, and finished in a powder coat to match the workstation mounting posts. Snap on access panels will not be acceptable.
      iv. Front access cavity doors shall be hinged and locking for safety and security purposes.

d. Surfaces

i. All monitor and input surfaces shall be a minimum 45 lb. density, 1-1/8" thick wood core material, pressure bonded with a high-pressure horizontal grade laminate top and sealing horizontal grade backing sheet of laminate on the underside to prevent deflection.
ii. Any surface with a span of 48" or more shall have additional support members under the surface for increased structural integrity.
iii. Monitor work surfaces and extensions shall include cable drop areas for access into the fixed full-width equipment cavities.
iv. All edges shall be treated in a high impact vinyl edging material.

e. Edge Material

i. Vinyl edging material shall be a minimum 2mm thick thermoplastic vinyl extrusion with self-healing properties against abrasion for all undercarriage, pedestals, and monitor surfaces and a minimum 13mm thick for all input platforms.

f. Laminates

i. High pressure laminate shall meet ANSI/ASME A 17.1; 1986 requirements for Class "B" laminate, providing a non-glare matte finish.
ii. All monitor and input surfaces shall be a minimum of .0625" thickness horizontal grade laminate on the top surface, and on the backing sheet, all to prevent deflection.
iii. Thermally fused laminate shall meet NEMA LI-1-1998. Low pressure laminate is not acceptable.

g. Fabric

i. Abrasion resistance at a minimum shall meet ASTM D-3597 MVPTS-198 standards.
ii. Flammability requirements shall adhere to ASTM E-84 (Tunnel Test) or Class A or 1 and the State of California Technical Bulletin 117 Sec. E (SC-191-53).
iii. Fabric shall be made from 100% recyclable materials.

6. CPU Storage

i. Fixed full-width equipment cavity storage underneath the monitor surface shall be provided for CPU equipment and cable routing, keeping the knee space below the workstations unobstructed to allow dispatchers a full range of movement to reach necessary equipment. A non-integrated technology tower placed outside the perimeter of the workstation will not be acceptable.
ii. Side cavities shall be a minimum 22.5"D x 20"H x 19.5"W for a front-to-back CPU configuration.
iii. Center cavities shall be a minimum 12"D x 20"H x 27.25"W for a side-to-side CPU configuration.
iv. Cavities shall be vented for passive airflow.

v. Access to the cavities shall be from the front and/or rear depending on the configuration.
vi. Maximum weight capacity for any standard cavity shelf shall be at least 25 psf load.

7. Electrical Requirements

i. Every workstation shall include a minimum of three 8-outlet surge suppressors with room for three transformer plugs on a UL listed and CSA rated 15 amps, 120-volt power center. These power centers shall include a circuit breaker with 1900 joules AC surge suppression to shield equipment from the strongest surges and line noise and an 8' cord.
ii. Total power draw for an individual workstation shall not exceed 15 amps.
iii. Surface mounted, user-accessible power, voice, and data connections shall be provided.

8. Cable Management

i. Each workstation shall include two cable access drops with energy chains for vertical interconnectivity from monitor surface to equipment cavities.
ii. A keyboard energy chain that runs from input surface to monitor surface shall be provided for cable management for keyboards, mice, etc.
iii. Cable drops on extensions and bridges shall be included to each fixed cavity section.
iv. Full Lift designs shall include cable trays with knockouts mounted under the rear perimeter of the monitor surface.
v. A horizontal raceway within each equipment cavity shall be required to provide full workstation perimeter cable routing.
vi. Cables routed within the furniture panel system will not be acceptable.

9. Installation

a. Only the manufacturer's factory installers or their trained and authorized designees experienced with the working environment of a public safety dispatch center shall assemble and install the workstation furniture.
b. A post-installation walkthrough shall be required with the Owner's Representative to verify compliance with the workstation furniture layout drawings, design, and material specifications.
c. Product training shall be provided upon completion of the installation.

Monitor Lift Stand

The lift stands shall lift three monitor displays on a single base while providing five inches of height adjustment. Monitor display shall simultaneously lift and tilt with just a touch of the hand for maximum ergonomic comfort.

Manufacturer and Model:
1. Ergotron – LX Triple Display Lift Stands, or approved equal.

General Specifications:

Display Interface Options	VESA FD MI MIS-D, 100/75, C (hole pattern: 100 x 100mm & 75 x 75 mm)
Weight Capacity	Dual Lift Stands – 12-24 lbs (5.4-15.5 kg) Triple Lift Stands – 18-48 lbs (8.1-21.8 kg)
Maximum Monitor Display Size	24" (verify exact maximum width dimensions with manufacturer based on display depth)
Display Height Adjustment	+/- 5 inches
Display Tilt	20º (+15/-5º)
Display Rotation	90º portrait/landscape
Warranty	5 year

Method of Measurement. Work for each individual location shall be counted separately and measured as lump sum for payment when furnished, installed, connected, field tested and accepted.

Basis of Payment. Payment shall be made for at the contract Lump Sum price for WORKSTATION FURNITURE, IDOT DISTRICT 1 and shall include all material, equipment and labor necessary to furnish, install and test workstation furniture.

GENERAL ELECTRICAL REQUIREMENTS (D-1)
Effective: January 1, 2007

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."

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 will be paid for separately"

Add the following to Section 801.11(a) of the Standard Specifications:

"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 and 3rd sentences of the second paragraph of Article 801.02 of the Standard Specifications to read:

"Unless otherwise indicated, materials and equipment shall bear the UL label, or an approved equivalent, whenever such labeling is available for the type of material or equipment being furnished."

EXPOSED RACEWAY (D-1)
Effective: January 1, 2007

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 105º 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.

All iron and steel products, which are to be incorporated into the work, including conduit and all conduit fittings, shall be domestically manufactured or produced and fabricated as specified in Article 106."

Revise 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 0º F. to Federal Specifications PL-406b, Method 2051, Amendment 1 of 25 September 1952 (ASTM D 746)
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 a national recognized 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 (RN1). 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 105º C."

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."**

TRENCH AND BACKFILL FOR ELECTRICAL WORK (D-1)
Effective: January 1, 2011

Revise the first sentence of Article 819.03(a) of the Standard Specifications to read:

"Trench. Trenches shall have a minimum depth of 30 in. (760 mm) or as otherwise indicated on the plans, and shall not exceed 12 in. (300 mm) in width without prior approval of the Engineer."

Revise the second sentence of Article 819.03(b) of the Standard Specifications to read:

"The installation depth shall have a minimum depth of 30 in. (760 mm) below the finished grade or as shown on the plans."

Revise the first sentence of Article 819.05 of the Standard Specifications to read:

"Underground cable marking tape shall have a reinforced metallic detection strip."

Revise the second paragraph of Article 1066.05 of the Standard Specifications to read:

"The tape shall be a woven reinforced polyethylene tape with a metallic core or backing that is detectable."

UNDERGROUND RACEWAYS (D-1)
Effective: January 1, 2007

Revise Article 810.03 of the Standard Specifications to read:

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

Add the following to Article 810.03 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 810.03 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 or 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."

Add the following to Article 810.03(c) of the Standard Specifications:

"Coilable non-metallic conduit shall be machine straightened to remove the longitudinal curvature caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 6 mm (0.25")." The longitudinal axis of the straightened conduit shall not deviate by more than 20 mm per meter (0.25" per foot" from a straight line. The HDPE and straightening mechanism manufacturer operating temperatures shall be followed.

UNIT DUCT (D-1)
Effective: January 1, 2007

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 (D-1)
Effective: January 1, 2007

Revise the second sentence of the first paragraph of Article 1066.02(a) to read:

"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 second paragraph of Article 1066.02(b) to read:

"Uncoated conductors shall be according to ASTM B3, ICEA S-95-658/NEMA WC70, and UL Standard 44. Coated conductors shall be according to ASTM B 33, ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44."

Revise the third paragraph of Article 1066.02(b) to read:

"All conductors shall be stranded. Stranding meeting ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44. Uncoated conductors meeting ASTM B 3, ICEA S-95-658/NEMA WC70 and UL Standard 44."

Revise the first sentence of Article 1066.03(a)(1) to read:

"General. Cable insulation designated as XLP shall incorporate cross-linked polyethylene (XLP) insulation as specified and shall meet or exceed the requirements of ICEA S-95-658, NEMA WC70, U.L. Standard 44."

Add the following to Article 1066.03(a)(1) of the Standard Specifications:

"The cable shall be rated 600 volts and shall be UL Listed Type RHH/RHW/USE."

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

Revise the first paragraph of Article 1066.03(b) to read:

"EPR Insulation. Cable insulation shall incorporate ethylene propylene rubber (EPR) as specified and the insulation shall meet or exceed the requirements of ICEA S-95-658, NEMA Standard Publication No. WC70, and U.L. Standard 44, as applicable."

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."

Revise Article 1066.08 to read:

"Electrical Tape. Electrical tape shall be all weather vinyl plastic tape resistant to abrasion, puncture, flame, oil, acids, alkalies, and weathering, conforming to Federal Specification MIL-I-24391, ASTM D1000 and shall be listed under UL 510 Standard. Thickness shall not be less than 0.215 mm (8.5 mils) and width shall not be less than 20 mm (3/4-inch)."

STRUCTURAL REPORTS

Structural Report

Prepared for: Illinois State Police

Existing 400 ft. Self-Support Tower

Site Name: ISP District 2 (Elgin)
777 S. State Street
Elgin, IL 60123

May 9, 2011

Abraham J. Rokach, S.E.
Illinois SE License No.081-004073
Expires 11/30/2012

I certify that this report was prepared by me, or under my direct supervision and control, and, to the best of my knowledge and belief, complies with the requirements of the applicable building code.

Fullerton Engineering Consultants
9600 West Bryn Mawr Ave, Suite 200, Rosemont, IL 60018
Phone: (847) 292 0200 Fax: (847) 292 0206

Summary

The structural analysis was performed by Fullerton Engineering Consultants, as requested by the client, to determine the compliance of existing structure with the governing building code and the industry standard, TIA/EIA-222-F (Structural Standards for Steel Antenna Towers and Antenna Supporting Structures). The analysis considers the tower properties, existing antennas and proposed antennas and the required loading criteria.

In conclusion, the tower member stresses will be adequate for the loading considered provided the tower is modified as described below.

Analysis Criteria

The structural analysis was performed with the following criteria:

Codes & Requirements	International Building Code 2006
	TIA/EIA-222-F (1996)
Basic Wind Speed	90mph (fastest mile) / 105mph (3-second gust), with 3/4" radial ice

Appurtenance Loading Schedule

Elev. (ft.– AGL)	Appurtenance	Transmission Lines
	Proposed	
130'	(1) 3 ft. Parabolic Dish Mounted on tower leg	(1) 7/8" Coaxial
	Existing	
400'	(1) Decibel DB201 Omni (1) Decibel DB224 Omni (1) Decibel DB809 Omni Mounted on Standoff Mounts	(3) 7/8" Coaxial
395'	(1) Decibel DB201 Omni Mounted on Standoff Mount	(1) 7/8" Coaxial
380'	(2) Sinclair SRL-410C9R105 Omnis Mounted on Standoff Mounts	(2) 1-5/8" Coaxial
340'	(1) Decibel DB212-3 Omni Mounted on tower leg	(1) 7/8" Coaxial
300'	(1) 8 ft. Parabolic Dish Mounted on Dish Mount	(1) EW90 Coaxial
250'	(1) 6 ft. Parabolic Dish Mounted on Dish Mount	(1) 1-5/8" Coaxial
240'	(1) Decibel DB408 Omni Mounted on tower leg	(1) 7/8" Coaxial

Results

The results of the overstressed structural analysis are summarized as follows:

Tower Members — The tower members are **overstressed** for new loads, with a maximum stress ratio of 144.8% in the lower redundant diagonals @ 150.0'-120.0' AGL.

Recommendations

The lower redundant diagonals in the 150.0'-120.0' AGL section should be removed and replaced with 2" standard pipe. The redundant diagonal in the 210.0'-190.0' AGL section should be removed and replaced with 2" standard pipe. The upper redundant horizontals in the 120.0'-90.0' section should be removed and replaced with 2.5" standard pipe. The lower redundant horizontals in the 60.0'-30.0' AGL section should be removed and replaced with 2" standard pipe. All of the above members shall be bolted into existing bolt holes with new 5/8" dia. A325 bolts.

Results

The results of the reinforced structural analysis are summarized as follows:

Tower Mast — The tower members are **acceptable** for new loads, with a maximum stress ratio of 86.0% in the lower redundant diagonals @ 30.0'-0.0' AGL.

Deflection/Tilt/Twist — Design wind speed

Max. 3.320" / 0.1883 deg. / 0.0068 deg. @ Elev. 130' AGL

Service Wind Speed (60 mph)

Max. 1.414" / 0.0800 deg. / 0.0032 deg. @ Elev. 130' AGL

Foundation — **Tower Base** – The reactions at the base of the tower are less than the original design loads for the foundation. Therefore, the tower base foundation is **adequate**.

Geotechnical — No geotechnical information is available during this analysis.

Analysis Data

The following is based on information provided by the client, field investigation, and other determination by Fullerton Engineering Consultants or third parties.

Site Location	777 S. State Street Elgin, IL 60123
Configuration	400' self-support tower.
References	Original Tower Drawings and Calculations by Rohn, file no. 33338AE, dated 12/19/95

Assumptions

This analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. The analysis is based solely on the information supplied, and the results, in turn, are only as accurate as data extracted from this information. Fullerton has been instructed by the client to assume the information supplied is accurate, and Fullerton has made no independent determination of its accuracy. The following assumptions were made for this structural analysis:

- The tower member sizes and geometry are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and stated in the materials section.
- The existing tower is assumed to have been properly maintained in accordance with the TIA/EIA Standard and/or its original manufacturer's recommendations. The existing tower is assumed to be in good condition with no structural defects and with no deterioration to its member capacities.
- The antenna configuration is as supplied and/or stated in the analysis section. It is assumed to be complete and accurate. All antennas, mounts, coaxial cables and waveguides are assumed to be properly installed and supported as per the manufacturer's requirements.
- The antennas, mounts and lines stated in the appurtenance loading schedule represent Fullerton's understanding of the overall antenna configuration. If the actual configuration is different than above, then this analysis is invalid. Please refer to the Appendix for the projected wind areas used in the calculations for antennas and mounts. If variations or discrepancies are identified, please inform Fullerton.
- Some assumptions are made regarding antenna and mount sizes and their projected areas based on a best interpretation of the data supplied and a best knowledge of antenna type and industry practice.
- The existing foundation is assumed to be in good condition with no structural defects and with no deterioration to its member capacities.
- The soil parameters are as per data supplied, or as assumed, and stated in the calculations.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per date supplied/ available, to be properly installed and to be fully effective.

Scope and Limitations

The engineering services rendered by Fullerton Engineering Consultants, Inc. (Fullerton) in connection with this structural analysis are limited to a computer analysis of the tower structure, size and capacity of its members. Fullerton does not analyze the fabrication, including welding and connection capacities, except as included in this Report.

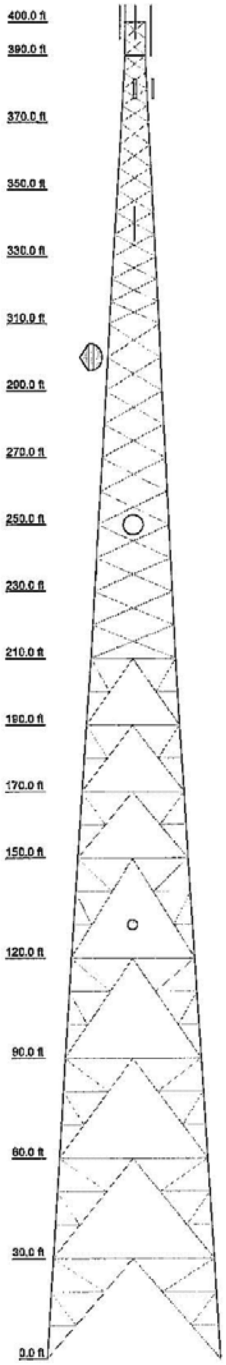
The information and conclusions contained in this report were determined by application of the current "state of the art" engineering and analysis procedures and formulae, and Fullerton assumes no obligation to revise any of the information or conclusions contained in this report in

the event such engineering and analysis procedures and formulae are hereafter modified or revised.

Fullerton makes no warranties, expressed or implied in connection with this report and disclaims any liability arising from original design, material, fabrication and erection deficiencies or the "as-built" condition of this tower. Fullerton will not be responsible whatsoever for or on account of consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report.

Installation procedures and loading are not within the scope of this report and should be performed and evaluated by a competent tower erection contractor.

Section	T18	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	P12.75 x 0.5 (P12 XS)				P10.75 x 0.5 (P10 XS)		P8.625 x 0.5 (P8 XS)		P8.625 x 0.322 (P8 STD)			D	ROHN 5 EH	ROHN 4 EH	C	ROHN 3 EH	B	A
Leg Grade	A572-50																	
Diagonals	P4 x 0.226 (P3.5 STD)			P3.5 x 0.3 (P3 XS)				F	L5x5x3/8		L4x4x3/8	L4x4x5/16		L3x3x1/4	E	L2x2x1/4		
Diagonal Grade	A572-50															A36		
Top Girts	N.A.																L2x2x1/4	
Horizontals	ROHN 5 STD	P4.5 x 0.337 (P4 XS)		G	P3.5 x 0.3 (P3 XS)		ROHN 3 STD		N.A.									
Red. Horizontals	ROHN 2 STD	P1.9 x 0.145 (P1.5 STD)							N.A.									
Red. Diagonals	P2.25 ODx0.25		ROHN 2 STD		H	A	I	H	N.A.									
Red. Hips	P1.9 x 0.145 (P1.5 STD)								N.A.									
Inner Bracing	ROHN 4 STD	P4 x 0.226 (P3.5 STD)		ROHN 3 STD					N.A.									
Face Width (ft) 51.729	47.979	44.229	40.479	36.729	32.833	30.333	27.877	25.177	23.104	20.979	18.854	16.729	14.604	12.479	10.354	8.229	6	
# Panels @ (ft)	5 @ 29.8333					3 @ 19.8333			10 @ 9.91667					9 @ 6.61111			6 @ 4.95833	
Weight (K) 109.0	14.5	13.7	12.8	11.8	9.5	7.8	5.9	5.2	5.6	5.3	4.3	3.1	3.1	2.2	1.7	1.3	1.2	0.5



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB201	400	SRL-410C9-R105	380
DB224	400	DB5001	380
DB809	400	DB5001	380
Lightning Rod	400	DB212-3	340
DB5001	400	T50UM	300
DB5001	400	8 ft. Dish	300
DB5001	400	T80UM	250
DB201	395	6 ft. Dish	250
DB5001	395	DB408	240
SRL-410C9-R105	380	3 ft. Dish	130

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 2 STD	F	ROHN 3 STD
B	ROHN 2.5 EH	G	P4 x 0.318 (P3.5 XS)
C	ROHN 3.5 EH	H	P1.9 x 0.145 (P1.5 STD)
D	P8.625 x 0.28 (P8 STD)	I	P2.25 ODx0.25
E	L2 1/2x2 1/2x1/4		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Kane County, Illinois.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 78 mph basic wind with 0.75 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 144.8%

MAX. CORNER REACTIONS AT BASE:
DOWN: 530 K
UPLIFT: -385 K
SHEAR: 67 K

AXIAL 165 K
SHEAR 107 K
MOMENT 21275 kip-ft
TORQUE 14 kip-ft
78 mph WIND - 0.7500 in ICE

AXIAL 113 K
SHEAR 103 K
MOMENT 20357 kip-ft
TORQUE 16 kip-ft
REACTIONS - 90 mph WIND

Fullerton Engineering Consultants, Inc.
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Rosemont, IL 60018
Phone: (847) 292-0200
FAX: (847) 292-0206

Job: ***400' Self Support Tower (overstressed***
Project: ***ISP District 2 (Elgin)***
Client: Illinois State Police | Drawn by: PK | App'd:
Code: TIA/EIA-222-F | Date: 05/09/11 | Scale: NTS
Path: | Dwg No. E-1

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 1 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Input Data

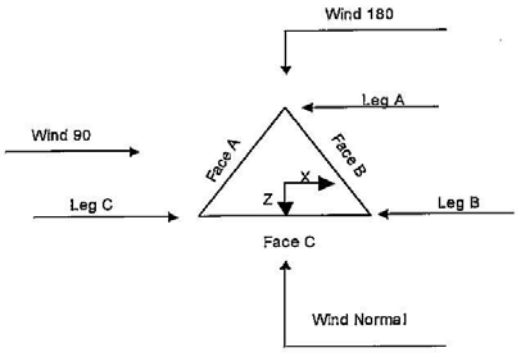
The main tower is a 3x free standing tower with an overall height of 400.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.00 ft at the top and 51.73 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Kane County, Illinois.
Basic wind speed of 90 mph.
Nominal ice thickness of 0.7500 in.
Ice density of 56 pcf.
A wind speed of 78 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	√ Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	√ Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	√ SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 2 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	400.00-390.00			6.00	1	10.00
T2	390.00-370.00			6.00	1	20.00
T3	370.00-350.00			8.23	1	20.00
T4	350.00-330.00			10.35	1	20.00
T5	330.00-310.00			12.48	1	20.00
T6	310.00-290.00			14.60	1	20.00
T7	290.00-270.00			16.73	1	20.00
T8	270.00-250.00			18.85	1	20.00
T9	250.00-230.00			20.98	1	20.00
T10	230.00-210.00			23.10	1	20.00
T11	210.00-190.00			25.18	1	20.00
T12	190.00-170.00			27.68	1	20.00
T13	170.00-150.00			30.33	1	20.00
T14	150.00-120.00			32.83	1	30.00
T15	120.00-90.00			36.73	1	30.00
T16	90.00-60.00			40.48	1	30.00
T17	60.00-30.00			44.23	1	30.00
T18	30.00-0.00			47.98	1	30.00

Tower Section Geometry *(cont'd)*

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 3 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	400.00-390.00	4.96	X Brace	No	No	0.0000	1.0000
T2	390.00-370.00	4.96	X Brace	No	No	1.0000	1.0000
T3	370.00-350.00	6.61	X Brace	No	No	1.0000	1.0000
T4	350.00-330.00	6.61	X Brace	No	No	1.0000	1.0000
T5	330.00-310.00	6.61	X Brace	No	No	1.0000	1.0000
T6	310.00-290.00	9.92	X Brace	No	No	1.0000	1.0000
T7	290.00-270.00	9.92	X Brace	No	No	1.0000	1.0000
T8	270.00-250.00	9.92	X Brace	No	No	1.0000	1.0000
T9	250.00-230.00	9.92	X Brace	No	No	1.0000	1.0000
T10	230.00-210.00	9.92	X Brace	No	No	1.0000	1.0000
T11	210.00-190.00	19.83	K1 Down	No	Yes	1.0000	1.0000
T12	190.00-170.00	19.83	K1 Down	No	Yes	1.0000	1.0000
T13	170.00-150.00	19.83	K1 Down	No	Yes	1.0000	1.0000
T14	150.00-120.00	29.83	K2 Down	No	Yes	1.0000	1.0000
T15	120.00-90.00	29.83	K2 Down	No	Yes	1.0000	1.0000
T16	90.00-60.00	29.83	K2 Down	No	Yes	1.0000	1.0000
T17	60.00-30.00	29.83	K2 Down	No	Yes	1.0000	1.0000
T18	30.00-0.00	29.83	K2 Down	No	Yes	1.0000	1.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 400.00-390.00	Pipe	ROHN 2 STD	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T2 390.00-370.00	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T3 370.00-350.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T4 350.00-330.00	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T5 330.00-310.00	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T6 310.00-290.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T7 290.00-270.00	Pipe	P6.625 x 0.28 (P6 STD)	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T8 270.00-250.00	Pipe	P8.625 x 0.322 (P8 STD)	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T9 250.00-230.00	Pipe	P8.625 x 0.322 (P8 STD)	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A572-50 (50 ksi)
T10 230.00-210.00	Pipe	P8.625 x 0.322 (P8 STD)	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A572-50 (50 ksi)
T11 210.00-190.00	Pipe	P8.625 x 0.5 (P8 XS)	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 190.00-170.00	Pipe	P8.625 x 0.5 (P8 XS)	A572-50 (50 ksi)	Pipe	P3.5 x 0.3 (P3 XS)	A572-50 (50 ksi)
T13 170.00-150.00	Pipe	P10.75 x 0.5 (P10 XS)	A572-50 (50 ksi)	Pipe	P3.5 x 0.3 (P3 XS)	A572-50 (50 ksi)
T14 150.00-120.00	Pipe	P10.75 x 0.5 (P10 XS)	A572-50 (50 ksi)	Pipe	P3.5 x 0.3 (P3 XS)	A572-50 (50 ksi)
T15 120.00-90.00	Pipe	P12.75 x 0.5 (P12 XS)	A572-50 (50 ksi)	Pipe	P3.5 x 0.3 (P3 XS)	A572-50 (50 ksi)
T16 90.00-60.00	Pipe	P12.75 x 0.5 (P12 XS)	A572-50 (50 ksi)	Pipe	P4 x 0.226 (P3.5 STD)	A572-50 (50 ksi)
T17 60.00-30.00	Pipe	P12.75 x 0.5 (P12 XS)	A572-50	Pipe	P4 x 0.226 (P3.5 STD)	A572-50

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 4 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T18 30.00-0.00	Pipe	P12.75 x 0.5 (P12 XS)	(50 ksi) A572-50 (50 ksi)	Pipe	P4 x 0.226 (P3.5 STD)	(50 ksi) A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 400.00-390.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T2 390.00-370.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T11 210.00-190.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 190.00-170.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T13 170.00-150.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3.5 x 0.3 (P3 XS)	A572-50 (50 ksi)
T14 150.00-120.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3.5 x 0.3 (P3 XS)	A572-50 (50 ksi)
T15 120.00-90.00	None	Flat Bar		A36 (36 ksi)	Pipe	P4 x 0.318 (P3.5 XS)	A572-50 (50 ksi)
T16 90.00-60.00	None	Flat Bar		A36 (36 ksi)	Pipe	P4.5 x 0.337 (P4 XS)	A572-50 (50 ksi)
T17 60.00-30.00	None	Flat Bar		A36 (36 ksi)	Pipe	P4.5 x 0.337 (P4 XS)	A572-50 (50 ksi)
T18 30.00-0.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 5 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T11 210.00-190.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 190.00-170.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 5 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T13 170.00-150.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T14 150.00-120.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T15 120.00-90.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T16 90.00-60.00	Solid Round		A572-50 (50 ksi)	Pipe	P4 x 0.226 (P3.5 STD)	A572-50 (50 ksi)
T17 60.00-30.00	Solid Round		A572-50 (50 ksi)	Pipe	P4 x 0.226 (P3.5 STD)	A572-50 (50 ksi)
T18 30.00-0.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 4 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T11 210.00-190.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Diagonal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip Diagonal		ROHN 2.5 STD	1
T12 190.00-170.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Diagonal (1)	Pipe	P2.25 ODx0.25	1
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip Diagonal		ROHN 2.5 STD	1
T13 170.00-150.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip Diagonal		ROHN 3 STD	1
T14 150.00-120.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Horizontal (2)		ROHN 2 STD	
		Diagonal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Diagonal (2)		ROHN 2 STD	
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip (2)		P1.9 x 0.145 (P1.5 STD)	
		Hip Diagonal		ROHN 2 STD	1
T15 120.00-90.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Horizontal (2)		ROHN 2 STD	
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Diagonal (2)		ROHN 2.5 STD	
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip (2)		ROHN 2 STD	
		Hip Diagonal		ROHN 2.5 STD	1
T16 90.00-60.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Horizontal (2)		ROHN 2.5 STD	
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Diagonal (2)		ROHN 2.5 STD	
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip (2)		P4 x 0.226 (P3.5 STD)	
		Hip Diagonal		ROHN 2.5 STD	1
T17 60.00-30.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Horizontal (2)		ROHN 2.5 STD	
		Diagonal (1)	Pipe	P2.25 ODx0.25	1

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 6 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
		Diagonal (2)		ROHN 3 STD	
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip (2)		P4 x 0.226 (P3.5 STD)	
		Hip Diagonal		ROHN 3 STD	1
T18	A572-50	Horizontal (1)	Pipe	ROHN 2 STD	1
30.00-0.00	(50 ksi)	Horizontal (2)		ROHN 3 STD	
		Diagonal (1)	Pipe	P2.25 ODx0.25	1
		Diagonal (2)		ROHN 3 STD	
		Hip (1)	Pipe	P1.9 x 0.145 (P1.5 STD)	1
		Hip (2)		P4 x 0.226 (P3.5 STD)	
		Hip Diagonal		ROHN 3 STD	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1	0.00	0.0000	A36	1	1	1	36.0000	36.0000
400.00-390.00			(36 ksi)					
T2	0.00	0.0000	A36	1	1	1	36.0000	36.0000
390.00-370.00			(36 ksi)					
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000
370.00-350.00			(36 ksi)					
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000
350.00-330.00			(36 ksi)					
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000
330.00-310.00			(36 ksi)					
T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000
310.00-290.00			(36 ksi)					
T7	0.00	0.0000	A36	1	1	1	36.0000	36.0000
290.00-270.00			(36 ksi)					
T8	0.00	0.0000	A36	1	1	1	36.0000	36.0000
270.00-250.00			(36 ksi)					
T9	0.00	0.0000	A36	1	1	1	36.0000	36.0000
250.00-230.00			(36 ksi)					
T10	0.00	0.0000	A36	1	1	1	36.0000	36.0000
230.00-210.00			(36 ksi)					
T11	0.00	0.0000	A36	1	1	1	36.0000	36.0000
210.00-190.00			(36 ksi)					
T12	0.00	0.0000	A36	1	1	1	36.0000	36.0000
190.00-170.00			(36 ksi)					
T13	0.00	0.0000	A36	1	1	1	36.0000	36.0000
170.00-150.00			(36 ksi)					
T14	0.00	0.0000	A36	1	1	1	36.0000	36.0000
150.00-120.00			(36 ksi)					
T15	0.00	0.0000	A36	1	1	1	36.0000	36.0000
120.00-90.00			(36 ksi)					
T16	0.00	0.0000	A36	1	1	1	36.0000	36.0000
90.00-60.00			(36 ksi)					
T17	0.00	0.0000	A36	1	1	1	36.0000	36.0000
60.00-30.00			(36 ksi)					
T18 30.00-0.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 7 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors[1] X Brace Diags X	K Factors[1] X Brace Diags Y	K Factors[1] Single Diags X	K Factors[1] Single Diags Y	K Factors[1] Girts X	K Factors[1] Girts Y	K Factors[1] Horiz. X	K Factors[1] Horiz. Y	K Factors[1] Sec. Horiz. X	K Factors[1] Sec. Horiz. Y	K Factors[1] Inner Brace X	K Factors[1] Inner Brace Y
T1	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
400.00-390.00				1	1	1	1	1	1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
390.00-370.00				1	1	1	1	1	1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
370.00-350.00				1	1	1	1	1	1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
350.00-330.00				1	1	1	1	1	1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
330.00-310.00				1	1	1	1	1	1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
310.00-290.00				1	1	1	1	1	1	1	1	1	1	1	1
T7	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
290.00-270.00				1	1	1	1	1	1	1	1	1	1	1	1
T8	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
270.00-250.00				1	1	1	1	1	1	1	1	1	1	1	1
T9	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
250.00-230.00				1	1	1	1	1	1	1	1	1	1	1	1
T10	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
230.00-210.00				1	1	1	1	1	1	1	1	1	1	1	1
T11	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
210.00-190.00				1	1	1	1	1	1	1	1	1	1	1	1
T12	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
190.00-170.00				1	1	1	1	1	1	1	1	1	1	1	1
T13	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
170.00-150.00				1	1	1	1	1	1	1	1	1	1	1	1
T14	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
150.00-120.00				1	1	1	1	1	1	1	1	1	1	1	1
T15	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
120.00-90.00				1	1	1	1	1	1	1	1	1	1	1	1
T16	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
90.00-60.00				1	1	1	1	1	1	1	1	1	1	1	1
T17	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
60.00-30.00				1	1	1	1	1	1	1	1	1	1	1	1
T18	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
30.00-0.00				1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
400.00-390.00														

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 8 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T2 390.00-370.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 370.00-350.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 350.00-330.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 330.00-310.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 310.00-290.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 290.00-270.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 270.00-250.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 250.00-230.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 230.00-210.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 210.00-190.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 190.00-170.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 170.00-150.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 150.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 120.00-90.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 90.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 60.00-30.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 30.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
7/8	C	No	Ar (CfAe)	400.00 - 8.00	3	3	1.1100	1.1100		0.54
7/8	C	No	Ar (CfAe)	395.00 - 8.00	1	1	1.1100	1.1100		0.54
1 5/8	C	No	Ar (CfAe)	380.00 - 8.00	2	2	1.9800	1.9800		1.04
7/8	C	No	Ar (CfAe)	340.00 - 8.00	1	1	1.1100	1.1100		0.54
EW90	C	No	Af (CfAe)	300.00 - 8.00	1	1	0.9869	0.9869	3.2550	0.32
1 5/8	C	No	Ar (CfAe)	250.00 - 8.00	1	1	1.9800	1.9800		1.04
7/8	C	No	Ar (CfAe)	240.00 - 8.00	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CfAe)	130.00 - 8.00	1	1	1.1100	1.1100		0.54

Feed Line/Linear Appurtenances Section Areas

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 9 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	400.00-390.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	3.237	0.000	0.000	0.000	0.02
T2	390.00-370.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	10.700	0.000	0.000	0.000	0.06
T3	370.00-350.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	14.000	0.000	0.000	0.000	0.08
T4	350.00-330.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	14.925	0.000	0.000	0.000	0.09
T5	330.00-310.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	15.850	0.000	0.000	0.000	0.10
T6	310.00-290.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	15.850	0.822	0.000	0.000	0.10
T7	290.00-270.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	15.850	1.645	0.000	0.000	0.10
T8	270.00-250.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	15.850	1.645	0.000	0.000	0.10
T9	250.00-230.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	20.075	1.645	0.000	0.000	0.13
T10	230.00-210.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	21.000	1.645	0.000	0.000	0.13
T11	210.00-190.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	21.000	1.645	0.000	0.000	0.13
T12	190.00-170.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	21.000	1.645	0.000	0.000	0.13
T13	170.00-150.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	21.000	1.645	0.000	0.000	0.13
T14	150.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	32.425	2.467	0.000	0.000	0.21
T15	120.00-90.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	34.275	2.467	0.000	0.000	0.22
T16	90.00-60.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	34.275	2.467	0.000	0.000	0.22
T17	60.00-30.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	34.275	2.467	0.000	0.000	0.22
T18	30.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	25.135	1.809	0.000	0.000	0.16

Feed Line/Linear Appurtenances Section Areas - With Ice

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 10 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	400.00-390.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		3.263	3.700	0.000	0.000	0.08
T2	390.00-370.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		14.500	7.400	0.000	0.000	0.26
T3	370.00-350.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		20.300	7.400	0.000	0.000	0.33
T4	350.00-330.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		22.475	7.400	0.000	0.000	0.35
T5	330.00-310.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		24.650	7.400	0.000	0.000	0.37
T6	310.00-290.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		24.650	9.056	0.000	0.000	0.39
T7	290.00-270.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		24.650	10.712	0.000	0.000	0.41
T8	270.00-250.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		24.650	10.712	0.000	0.000	0.41
T9	250.00-230.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		32.625	10.712	0.000	0.000	0.51
T10	230.00-210.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		34.800	10.712	0.000	0.000	0.53
T11	210.00-190.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		34.800	10.712	0.000	0.000	0.53
T12	190.00-170.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		34.800	10.712	0.000	0.000	0.53
T13	170.00-150.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		34.800	10.712	0.000	0.000	0.53
T14	150.00-120.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		54.375	16.067	0.000	0.000	0.82
T15	120.00-90.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		58.725	16.067	0.000	0.000	0.86
T16	90.00-60.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		58.725	16.067	0.000	0.000	0.86
T17	60.00-30.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		58.725	16.067	0.000	0.000	0.86
T18	30.00-0.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		43.065	11.783	0.000	0.000	0.63

Discrete Tower Loads

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 11 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DB201	B	From Leg	2.00	0.0000	400.00	No Ice	1.10	1.10	0.03
			0.00			1/2" Ice	1.98	1.98	0.03
			0.00			1" Ice	2.86	2.86	0.04
DB224	A	From Leg	2.00	0.0000	400.00	No Ice	3.15	3.15	0.03
			0.00			1/2" Ice	5.67	5.67	0.04
			0.00			1" Ice	8.19	8.19	0.05
DB809	C	From Leg	2.00	0.0000	400.00	No Ice	2.85	2.85	0.03
			0.00			1/2" Ice	4.03	4.03	0.05
			0.00			1" Ice	5.21	5.21	0.08
DB201	B	From Leg	2.00	0.0000	395.00	No Ice	1.10	1.10	0.03
			0.00			1/2" Ice	1.98	1.98	0.03
			0.00			1" Ice	2.86	2.86	0.04
DB212-3	A	From Leg	0.00	0.0000	340.00	No Ice	4.40	4.40	0.07
			0.00			1/2" Ice	7.92	7.92	0.08
			0.00			1" Ice	11.44	11.44	0.10
SRL-410C9-R105	A	From Leg	2.00	0.0000	380.00	No Ice	17.55	2.63	0.04
			0.00			1/2" Ice	18.29	3.52	0.11
			0.00			1" Ice	19.04	4.44	0.19
SRL-410C9-R105	B	From Leg	2.00	0.0000	380.00	No Ice	17.55	2.63	0.04
			0.00			1/2" Ice	18.29	3.52	0.11
			0.00			1" Ice	19.04	4.44	0.19
DB408	C	From Leg	0.00	0.0000	240.00	No Ice	1.90	1.90	0.02
			0.00			1/2" Ice	3.42	3.42	0.02
			0.00			1" Ice	4.94	4.94	0.03
Lightning Rod	C	From Leg	0.00	0.0000	400.00	No Ice	2.50	2.50	0.00
			0.00			1/2" Ice	5.00	5.00	0.00
			0.00			1" Ice	7.50	7.50	0.00
DB5001	B	None		0.0000	400.00	No Ice	1.83	1.83	0.03
						1/2" Ice	3.31	3.31	0.05
						1" Ice	4.79	4.79	0.07
DB5001	A	None		0.0000	400.00	No Ice	1.83	1.83	0.03
						1/2" Ice	3.31	3.31	0.05
						1" Ice	4.79	4.79	0.07
DB5001	C	None		0.0000	400.00	No Ice	1.83	1.83	0.03
						1/2" Ice	3.31	3.31	0.05
						1" Ice	4.79	4.79	0.07
DB5001	B	None		0.0000	395.00	No Ice	1.83	1.83	0.03
						1/2" Ice	3.31	3.31	0.05
						1" Ice	4.79	4.79	0.07
DB5001	A	None		0.0000	380.00	No Ice	1.83	1.83	0.03
						1/2" Ice	3.31	3.31	0.05
						1" Ice	4.79	4.79	0.07
DB5001	B	None		0.0000	380.00	No Ice	1.83	1.83	0.03
						1/2" Ice	3.31	3.31	0.05
						1" Ice	4.79	4.79	0.07
T50UM	C	None		0.0000	300.00	No Ice	2.64	2.64	0.04
						1/2" Ice	3.69	3.69	0.05
						1" Ice	4.74	4.74	0.07
T80UM	A	None		0.0000	250.00	No Ice	2.64	2.64	0.04
						1/2" Ice	3.69	3.69	0.05
						1" Ice	4.74	4.74	0.07

RISATower	Job: 400' Self Support Tower (overstressed)	Page: 12 of 59
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 2 (Elgin)	Date: 09:58:56 05/09/11
	Client: Illinois State Police	Designed by: PK

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
8 ft. Dish	C	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.0000		300.00	8.00	No Ice 1/2" Ice 1" Ice	50.27 51.32 52.37	0.47 1.01 1.55
6 ft. Dish	A	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.0000		250.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.07 29.87	0.38 0.62 0.86
3 ft. Dish	A	Paraboloid w/Radome	From Leg	0.00 0.00 0.00	0.0000		130.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.87	0.21 0.43 0.65

Tower Pressures - No Ice

$G_H = 1.070$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg % %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	395.00	2.032	42	61.979	A	5.985	3.958	3.958	39.81	0.000	0.000
400.00-390.00					B	5.985	3.958		39.81	0.000	0.000
					C	5.985	7.196		30.03	0.000	0.000
T2	380.00	2.01	42	147.089	A	12.145	9.603	9.603	44.16	0.000	0.000
390.00-370.00					B	12.145	9.603		44.16	0.000	0.000
					C	12.145	20.303		29.60	0.000	0.000
T3	360.00	1.979	41	191.672	A	11.052	11.689	11.689	51.40	0.000	0.000
370.00-350.00					B	11.052	11.689		51.40	0.000	0.000
					C	11.052	25.689		31.81	0.000	0.000
T4	340.00	1.947	40	235.006	A	16.015	13.358	13.358	45.48	0.000	0.000
350.00-330.00					B	16.015	13.358		45.48	0.000	0.000
					C	16.015	28.283		30.16	0.000	0.000
T5	320.00	1.914	40	278.341	A	21.983	15.028	15.028	40.60	0.000	0.000
330.00-310.00					B	21.983	15.028		40.60	0.000	0.000
					C	21.983	30.878		28.43	0.000	0.000
T6	300.00	1.879	39	322.615	A	23.996	18.578	18.578	43.64	0.000	0.000
310.00-290.00					B	23.996	18.578		43.64	0.000	0.000
					C	24.819	34.428		31.36	0.000	0.000
T7	280.00	1.842	38	366.887	A	26.320	22.125	22.125	45.67	0.000	0.000
290.00-270.00					B	26.320	22.125		45.67	0.000	0.000
					C	27.965	37.975		33.55	0.000	0.000
T8	260.00	1.804	37	412.725	A	28.599	28.804	28.804	50.18	0.000	0.000
270.00-250.00					B	28.599	28.804		50.18	0.000	0.000
					C	30.244	44.654		38.46	0.000	0.000
T9	240.00	1.763	37	455.225	A	38.974	28.804	28.804	42.50	0.000	0.000
250.00-230.00					B	38.974	28.804		42.50	0.000	0.000
					C	40.619	48.879		32.18	0.000	0.000
T10	220.00	1.72	36	497.204	A	42.205	28.801	28.801	40.56	0.000	0.000
230.00-210.00					B	42.205	28.801		40.56	0.000	0.000
					C	43.850	49.801		30.75	0.000	0.000
T11	200.00	1.673	35	542.943	A	0.000	63.173	28.825	45.63	0.000	0.000
210.00-190.00					B	0.000	59.574		48.38	0.000	0.000
					C	1.645	76.976		36.66	0.000	0.000
T12	180.00	1.624	34	594.507	A	0.000	65.851	28.834	43.79	0.000	0.000

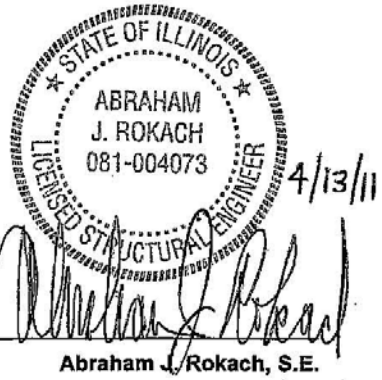
Structural Report

Prepared for: Illinois State Police

Existing 265 ft. Guyed Tower

Site Name: ISP District 5 (Joliet)
W. Division St. & IL Rte. 7
Lockport, IL 60441

April 13, 2011



Abraham J. Rokach, S.E.
Illinois SE License No.081-004073
Expires 11/30/2012

I certify that this report was prepared by me, or under my direct supervision and control, and, to the best of my knowledge and belief, complies with the requirements of the applicable building code.

Fullerton
Engineering Consultants

9600 West Bryn Mawr Ave, Suite 200, Rosemont, IL 60018
Phone: (847) 292 0200 Fax: (847) 292 0206

Summary

The structural analysis was performed by Fullerton Engineering Consultants, as requested by the client, to determine the compliance of existing structure with the governing building code and the industry standard, TIA/EIA-222-F (Structural Standards for Steel Antenna Towers and Antenna Supporting Structures). The analysis considers the tower properties, existing antennas and proposed antennas and the required loading criteria.

In conclusion, the tower member stresses will be adequate for the loading considered provided the tower is modified as described below and a foundation analysis is performed that shows the foundation to be adequate.

Analysis Criteria

The structural analysis was performed with the following criteria:

Codes & Requirements International Building Code 2003
TIA/EIA-222-F (1996)

Basic Wind Speed 90mph (fastest mile) / 105mph (3-second gust), with 3/4" radial ice

Appurtenance Loading Schedule

Elev. (ft.– AGL)	Appurtenance	Transmission Lines
	Proposed	
120'	(1) 4 ft. Parabolic Dish Mounted on tower leg	(1) EW63 Coaxial
	Existing	
265'	(2) Decibel DB201 Omni (1) Decibel DB224 Omni Mounted on Standoff Mounts	(3) 7/8" Coaxial
260'	(1) Decibel DB212 Omni Mounted on tower leg	(1) 7/8" Coaxial
240'	(2) Decibel DB810PS Omnis Mounted on Standoff Mount	(1) 1-5/8" Coaxial (1) 7/8" Coaxial
235'	(1) Decibel DB212 Omni Mounted on tower leg	(1) 7/8" Coaxial
215'	(1) 6 ft. Parabolic Dish (1) Decibel DB212 Omni Mounted on tower leg	(1) EW63 Coaxial (1) 7/8" Coaxial
205'	(1) 6 ft. Parabolic Dish Mounted on tower leg	(1) EW63 Coaxial
200'	(1) 12 ft. Omni Mounted on Standoff Mount	(1) 7/8" Coaxial
160'	(1) 20 ft. Omni Mounted on Standoff Mount	(1) 7/8" Coaxial
36'	(1) 8 ft. Omni Mounted on tower leg	(1) 7/8" Coaxial

Results

The results of the overstressed structural analysis are summarized as follows:

Tower Members — The tower members are **overstressed** for new loads, with a maximum stress ratio of 163.0% in the guy wires @ 195.0' AGL.

Recommendations

The guy wires at 65ft AGL shall be replaced with 1/2" EHS guys. The guy wires at all other elevations shall be replaced with 5/8" EHS guys. All guys shall be installed at 10% initial tension. The torque arms at 195ft AGL shall be replaced with C10x22 A36 steel torque arms. The sections from 205ft AGL to 5ft AGL shall have half-pipes made from HSS3.0x8.66 (50ksi steel) welded with 2" long, 1/4" E70 fillet welds at 12" o.c. on each leg.

Results

The results of the reinforced structural analysis are summarized as follows:

Tower Mast — The tower members are **adequate** for new loads, with a maximum stress ratio of 88.7% in the legs @ 5.0' AGL – 0.0' AGL.

Deflection/Tilt/Twist — Design wind speed

Max. 9.025" / 0.1740 deg. / 1.0122 deg. @ Elev. 120' AGL

Service Wind Speed (60 mph)

Max. 1.727" / 0.0166 deg. / 0.2832 deg. @ Elev. 120' AGL

Foundation — Required foundation analysis could not be completed. A mapping is necessary to analyze foundation.

Geotechnical — No geotechnical information is available during this analysis.

Analysis Data

The following is based on information provided by the client, field investigation, and other determination by Fullerton Engineering Consultants or third parties.

Site Location	W. Division St. & IL Rte. 7 Lockport, IL 60441
Configuration	265' guyed tower.
References	Previous structural analysis by Fullerton Engineering Consultants, dated 2/25/03. Tower mapping by Vertical Investigations, dated 2/24/03.

Assumptions

This analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. The analysis is based solely on the information supplied, and the results, in turn, are only as accurate as data extracted from this information. Fullerton has been instructed by the client to assume the information supplied is accurate, and Fullerton has made no independent determination of its accuracy. The following assumptions were made for this structural analysis:

- The tower member sizes and geometry are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and stated in the materials section.
- The existing tower is assumed to have been properly maintained in accordance with the TIA/EIA Standard and/or its original manufacturer's recommendations. The existing tower is assumed to be in good condition with no structural defects and with no deterioration to its member capacities.
- The antenna configuration is as supplied and/or stated in the analysis section. It is assumed to be complete and accurate. All antennas, mounts, coaxial cables and waveguides are assumed to be properly installed and supported as per the manufacturer's requirements.
- The antennas, mounts and lines stated in the appurtenance loading schedule represent Fullerton's understanding of the overall antenna configuration. If the actual configuration is different than above, then this analysis is invalid. Please refer to the Appendix for the projected wind areas used in the calculations for antennas and mounts. If variations or discrepancies are identified, please inform Fullerton.
- Some assumptions are made regarding antenna and mount sizes and their projected areas based on a best interpretation of the data supplied and a best knowledge of antenna type and industry practice.
- The existing foundation is assumed to be in good condition with no structural defects and with no deterioration to its member capacities.
- The soil parameters are as per data supplied, or as assumed, and stated in the calculations.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per date supplied/ available, to be properly installed and to be fully effective.

Scope and Limitations

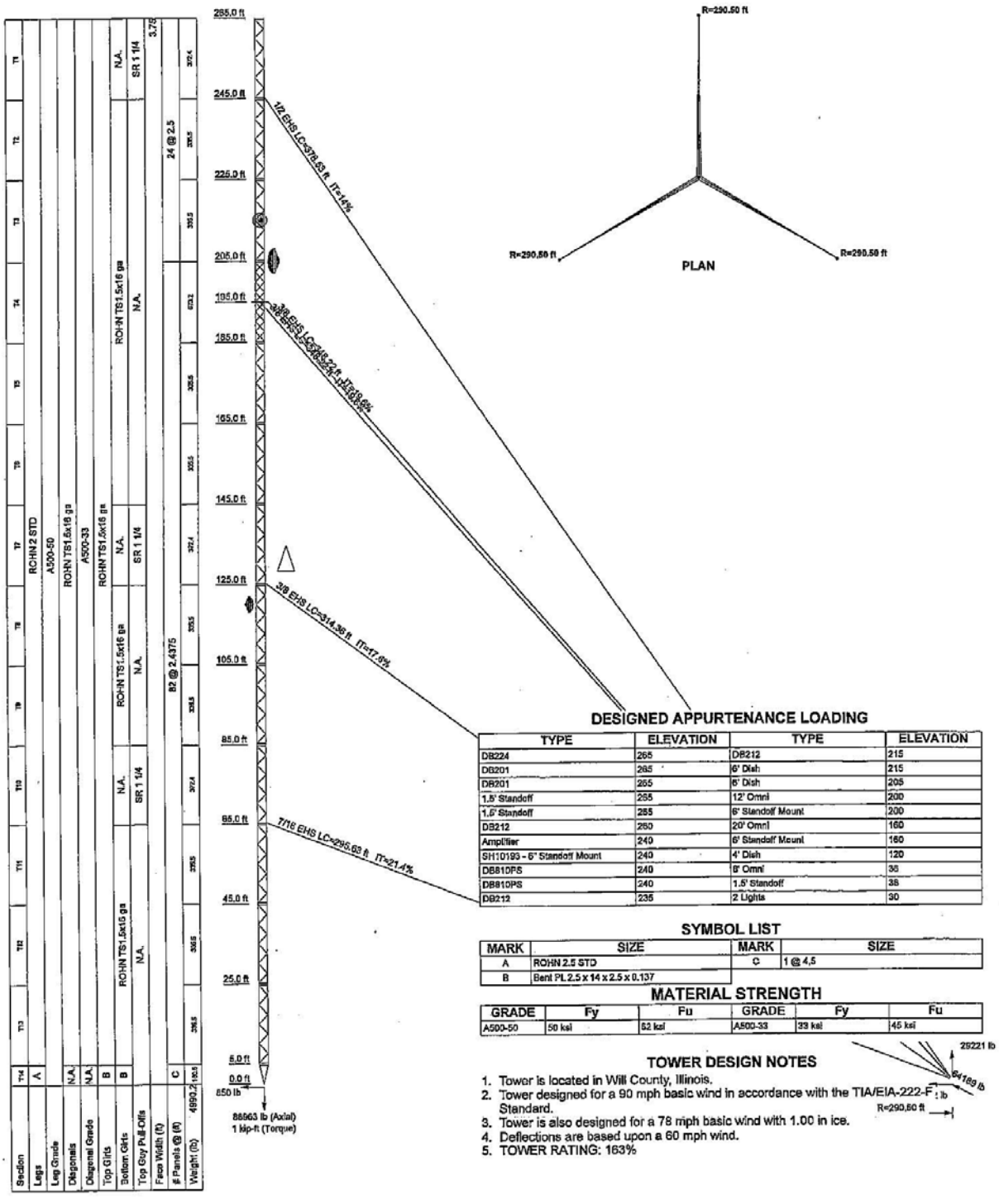
The engineering services rendered by Fullerton Engineering Consultants, Inc. (Fullerton) in connection with this structural analysis are limited to a computer analysis of the tower structure, size and capacity of its members. Fullerton does not analyze the fabrication, including welding and connection capacities, except as included in this Report.

The information and conclusions contained in this report were determined by application of the current "state of the art" engineering and analysis procedures and formulae, and Fullerton assumes no obligation to revise any of the information or conclusions contained in this report in

the event such engineering and analysis procedures and formulae are hereafter modified or revised.

Fullerton makes no warranties, expressed or implied in connection with this report and disclaims any liability arising from original design, material, fabrication and erection deficiencies or the "as-built" condition of this tower. Fullerton will not be responsible whatsoever for or on account of consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report.

Installation procedures and loading are not within the scope of this report and should be performed and evaluated by a competent tower erection contractor.



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB224	265	DB212	215
DB201	265	6' Dish	215
DB201	265	6' Dish	205
1.5' Standoff	255	12' Omni	200
1.5' Standoff	255	6' Standoff Mount	200
DB212	250	20' Omni	160
Amplifier	240	6' Standoff Mount	160
SH10193 - 6' Standoff Mount	240	4' Dish	120
DB810PS	240	8' Omni	38
DB810PS	240	1.5' Standoff	38
DB212	235	2 Lights	30

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 2.5 STD	C	1 @ 4.5
B	Bent PL 2.5 x 14 x 2.5 x 0.137		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A500-33	33 ksi	45 ksi

29221 lb
64189 lb
R=290.50 ft

TOWER DESIGN NOTES

1. Tower is located in Will County, Illinois.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 78 mph basic wind with 1.00 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 163%

Fullerton Engineering Consultants, Inc.
9600 W. Bryn Mawr Ave. Ste. 200
Rosemont, IL 60018
Phone: (847) 292-0200
FAX: (847) 292-0206

Job:	*265' Guyed Tower (overstressed)*
Project:	*ISP District 5 (Joliet)*
Client:	Illinois State Police
Drawn by:	PK
App'd:	
Code:	TIA/EIA-222-F
Date:	04/13/11
Scale:	NTS
Path:	
Dwg No.	E-

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 1 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
	Client: Illinois State Police	Designed by: PK

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 265.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.75 ft at the top and tapered at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Will County, Illinois.
Basic wind speed of 90 mph.
Nominal ice thickness of 1.0000 in.
Ice density of 56 pcf.
A wind speed of 78 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	√ Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	√ Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	√ SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 2 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave, Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
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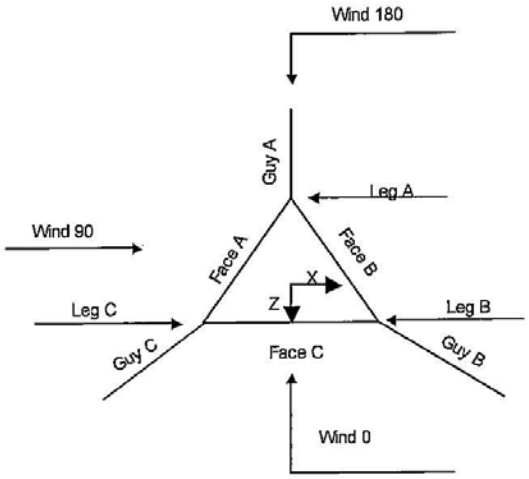

Corner & Starmount Guyed Tower

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 3 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
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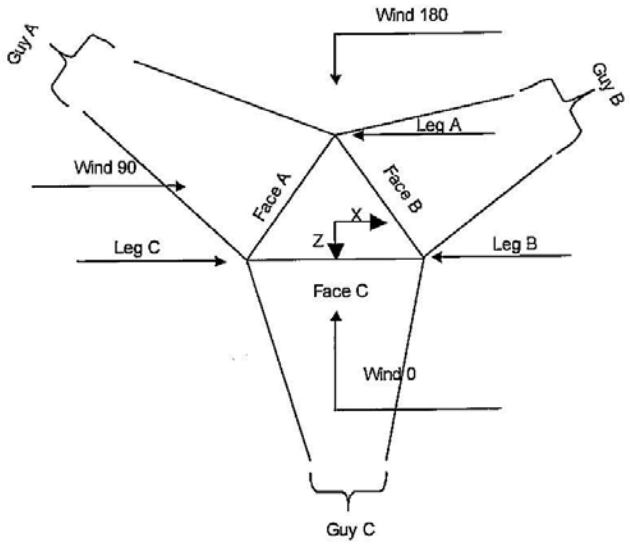

Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1-T3	265.00-205.00			3.75	3	20.00
T4	205.00-185.00			3.75	1	20.00
T5-T13	185.00-5.00			3.75	9	20.00
T14	5.00-0.00			3.75	1	5.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1-T3	265.00-205.00	2.50	K Brace Left	No	No	3.0000	3.0000

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Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
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Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T4	205.00-185.00	2.44	X Brace	No	No	3.0000	3.0000
T5-T13	185.00-5.00	2.44	K Brace Left	No	No	3.0000	3.0000
T14	5.00-0.00	4.50	X Brace	No	Yes	3.0000	3.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1-T3 265.00-205.00	Pipe	ROHN 2 STD	A500-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)
T4 205.00-185.00	Pipe	ROHN 2 STD	A500-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)
T5-T13 185.00-5.00	Pipe	ROHN 2 STD	A500-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)
T14 5.00-0.00	Pipe	ROHN 2.5 STD	A500-50 (50 ksi)	Pipe		A500-33 (33 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1-T3 265.00-205.00	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)
T4 205.00-185.00	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)
T5-T13 185.00-5.00	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)	Pipe	ROHN TS1.5x16 ga	A500-33 (33 ksi)
T14 5.00-0.00	Arbitrary Shape	Bent PL 2.5 x 14 x 2.5 x 0.137	A36 (36 ksi)	Arbitrary Shape	Bent PL 2.5 x 14 x 2.5 x 0.137	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T14 5.00-0.00	1	Arbitrary Shape	Bent PL 2.5 x 14 x 2.5 x 0.137	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 5 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
	Client: Illinois State Police	Designed by: PK

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1-T3 265.00-205.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 205.00-185.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5-T13 185.00-5.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T14 5.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1-T3	No	No	1	1	1	1	1	1	1	1
265.00-205.00				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
205.00-185.00				1	1	1	1	1	1	1
T5-T13	No	No	1	1	1	1	1	1	1	1
185.00-5.00				1	1	1	1	1	1	1
T14 5.00-0.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1-T3 265.00-205.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 205.00-185.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5-T13 185.00-5.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 5.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Guy Data

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 6 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
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Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_n ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
245.25	EHS	A	1/2	3766.00	14%	21000	0.517	378.09	290.50	0.0000	0.00	100%
		B	1/2	3766.00	14%	21000	0.517	378.09	290.50	0.0000	0.00	100%
		C	1/2	3766.00	14%	21000	0.517	378.09	290.50	0.0000	0.00	100%
195	EHS	A	3/8	3018.40	19.6%	21000	0.273	347.59	290.50	0.0000	0.00	100%
		B	3/8	3018.40	19.6%	21000	0.273	347.59	290.50	0.0000	0.00	100%
		C	3/8	3018.40	19.6%	21000	0.273	347.59	290.50	0.0000	0.00	100%
125.25	EHS	A	3/8	2710.40	17.6%	21000	0.273	313.86	290.50	0.0000	0.00	100%
		B	3/8	2710.40	17.6%	21000	0.273	313.86	290.50	0.0000	0.00	100%
		C	3/8	2710.40	17.6%	21000	0.273	313.86	290.50	0.0000	0.00	100%
65.25	EHS	A	7/16	4451.20	21.4%	21000	0.399	295.09	290.50	0.0000	0.00	100%
		B	7/16	4451.20	21.4%	21000	0.399	295.09	290.50	0.0000	0.00	100%
		C	7/16	4451.20	21.4%	21000	0.399	295.09	290.50	0.0000	0.00	100%

Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
245.25	Corner						
195	Torque Arm	7.00	0.0000	Channel	A36 (36 ksi)	Channel	C8x11.5
125.25	Corner						
65.25	Corner						

Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
245.25	A572-50 (50 ksi)	Solid Round			No	A572-50 (50 ksi)	Solid Round	1 1/4
195.00	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
125.25	A572-50 (50 ksi)	Solid Round			No	A572-50 (50 ksi)	Solid Round	1 1/4
65.25	A572-50 (50 ksi)	Solid Round			No	A572-50 (50 ksi)	Solid Round	1 1/4

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
245.25	195.47	195.47	195.47		9.66	9.66	9.66	

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 7 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
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Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
					5.4 sec/pulse	5.4 sec/pulse	5.4 sec/pulse	
195	94.89	94.89	94.89		5.43	5.43	5.43	
					4.0 sec/pulse	4.0 sec/pulse	4.0 sec/pulse	
125.25	85.68	85.68	85.68		4.94	4.94	4.94	
					3.8 sec/pulse	3.8 sec/pulse	3.8 sec/pulse	
65.25	117.74	117.74	117.74		3.90	3.90	3.90	
					3.4 sec/pulse	3.4 sec/pulse	3.4 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
245.25	No	No			1	1	1	1
195	No	No	1	1	1	1	1	1
125.25	No	No			1	1	1	1
65.25	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
245.25	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
195	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
125.25	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
65.25	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
245.25	A	122.63	30	23	1.0000
	B	122.63	30	23	1.0000
	C	122.63	30	23	1.0000
195	A	97.50	28	21	1.0000
	B	97.50	28	21	1.0000
	C	97.50	28	21	1.0000
125.25	A	62.63	25	19	1.0000
	B	62.63	25	19	1.0000
	C	62.63	25	19	1.0000

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 8 of 50
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Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
65.25	A	32.63	21	16	1.0000
	B	32.63	21	16	1.0000
	C	32.63	21	16	1.0000

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top / Bottom lb	F_x lb	F_y lb	F_z lb	M_x kip-ft	M_y kip-ft	M_z kip-ft
245.25	A	40.3836	3892.64 3766.00	0.00	2578.58	-2916.08	-5.58	0.00	0.00
	B	40.3836	3892.64 3766.00	2525.40	2578.58	1458.04	2.79	0.00	-4.83
	C	40.3836	3892.64 3766.00	-2525.40	2578.58	1458.04	2.79	-0.00	4.83
			Sum:	0.00	7735.75	-0.00	0.00	0.00	0.00
195	A	34.0551	3071.54 3018.40	-30.60	1752.53	-2522.31	-3.54	8.89	-6.13
	A	34.0551	3071.54 3018.40	30.60	1752.53	-2522.31	-3.54	-8.89	6.13
	B	34.0551	3071.54 3018.40	2199.69	1752.53	1234.65	7.08	8.89	0.00
	B	34.0551	3071.54 3018.40	2169.08	1752.53	1287.66	-3.54	-8.89	-6.13
	C	34.0551	3071.54 3018.40	-2169.08	1752.53	1287.66	-3.54	8.89	6.13
	C	34.0551	3071.54 3018.40	-2199.69	1752.53	1234.65	7.08	-8.89	0.00
			Sum:	0.00	10515.17	0.00	-0.00	0.00	0.00
125.25	A	23.4797	2744.54 2710.40	0.00	1129.49	-2501.35	-2.45	0.00	0.00
	B	23.4797	2744.54 2710.40	2166.23	1129.49	1250.67	1.22	0.00	-2.12
	C	23.4797	2744.54 2710.40	-2166.23	1129.49	1250.67	1.22	-0.00	2.12
			Sum:	0.00	3388.48	0.00	0.00	0.00	0.00
65.25	A	12.7512	4477.19 4451.20	0.00	1044.17	-4353.72	-2.26	0.00	0.00
	B	12.7512	4477.19 4451.20	3770.44	1044.17	2176.86	1.13	0.00	-1.96
	C	12.7512	4477.19 4451.20	-3770.44	1044.17	2176.86	1.13	-0.00	1.96
			Sum:	0.00	3132.52	0.00	0.00	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top / Bottom lb	F_x lb	F_y lb	F_z lb	M_x kip-ft	M_y kip-ft	M_z kip-ft

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 9 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
	Client: Illinois State Police	Designed by: PK

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	kip-ft	kip-ft	kip-ft
245.25	A	40.3836	6505.42 5930.13	0.00	4470.67	-4725.84	-9.68	0.00	0.00
	B	40.3836	6505.42 5930.13	4092.70	4470.67	2362.92	4.84	0.00	-8.38
	C	40.3836	6505.42 5930.13	-4092.70	4470.67	2362.92	4.84	-0.00	8.38
			Sum:	0.00	13412.02	-0.00	0.00	0.00	0.00
195	A	34.0551	4781.46 4401.58	-46.04	2908.98	-3794.48	-5.88	13.37	-10.18
	A	34.0551	4781.46 4401.58	46.04	2908.98	-3794.48	-5.88	-13.37	10.18
	B	34.0551	4781.46 4401.58	3309.14	2908.98	1857.37	11.76	13.37	0.00
	B	34.0551	4781.46 4401.58	3263.10	2908.98	1937.11	-5.88	-13.37	-10.18
	C	34.0551	4781.46 4401.58	-3263.10	2908.98	1937.11	-5.88	13.37	10.18
	C	34.0551	4781.46 4401.58	-3309.14	2908.98	1857.37	11.76	-13.37	0.00
			Sum:	0.00	17453.90	0.00	-0.00	0.00	0.00
125.25	A	23.4797	4490.50 4246.47	0.00	2045.75	-3997.44	-4.43	0.00	0.00
	B	23.4797	4490.50 4246.47	3461.88	2045.75	1998.72	2.21	0.00	-3.84
	C	23.4797	4490.50 4246.47	-3461.88	2045.75	1998.72	2.21	-0.00	3.84
			Sum:	0.00	6137.25	0.00	0.00	0.00	0.00
65.25	A	12.7512	6277.14 6136.83	0.00	1687.42	-6046.08	-3.65	0.00	0.00
	B	12.7512	6277.14 6136.83	5236.06	1687.42	3023.04	1.83	0.00	-3.16
	C	12.7512	6277.14 6136.83	-5236.06	1687.42	3023.04	1.83	-0.00	3.16
			Sum:	0.00	5062.25	0.00	0.00	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	kip-ft	kip-ft	kip-ft
245.25	A	40.3836	3892.64 3766.00	0.00	2578.58	-2916.08	-5.58	0.00	0.00
	B	40.3836	3892.64 3766.00	2525.40	2578.58	1458.04	2.79	0.00	-4.83
	C	40.3836	3892.64 3766.00	-2525.40	2578.58	1458.04	2.79	-0.00	4.83
			Sum:	0.00	7735.75	-0.00	0.00	0.00	0.00
195	A	34.0551	3071.54 3018.40	-30.60	1752.53	-2522.31	-3.54	8.89	-6.13
	A	34.0551	3071.54 3018.40	30.60	1752.53	-2522.31	-3.54	-8.89	6.13
	B	34.0551	3071.54	2199.69	1752.53	1234.65	7.08	8.89	0.00

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 10 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
	Client: Illinois State Police	Designed by: PK

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	kip-ft	kip-ft	kip-ft
			3018.40						
	B	34.0551	3071.54	2169.08	1752.53	1287.66	-3.54	-8.89	-6.13
			3018.40						
	C	34.0551	3071.54	-2169.08	1752.53	1287.66	-3.54	8.89	6.13
			3018.40						
	C	34.0551	3071.54	-2199.69	1752.53	1234.65	7.08	-8.89	0.00
			3018.40						
			Sum:	0.00	10515.17	0.00	-0.00	0.00	0.00
125.25	A	23.4797	2744.54	0.00	1129.49	-2501.35	-2.45	0.00	0.00
			2710.40						
	B	23.4797	2744.54	2166.23	1129.49	1250.67	1.22	0.00	-2.12
			2710.40						
	C	23.4797	2744.54	-2166.23	1129.49	1250.67	1.22	-0.00	2.12
			2710.40						
			Sum:	0.00	3388.48	0.00	0.00	0.00	0.00
65.25	A	12.7512	4477.19	0.00	1044.17	-4353.72	-2.26	0.00	0.00
			4451.20						
	B	12.7512	4477.19	3770.44	1044.17	2176.86	1.13	0.00	-1.96
			4451.20						
	C	12.7512	4477.19	-3770.44	1044.17	2176.86	1.13	-0.00	1.96
			4451.20						
			Sum:	0.00	3132.52	0.00	0.00	0.00	0.00

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8	B	No	Ar (CfAe)	240.00 - 15.00	1	1	1.9800	1.9800		1.04
7/8	B	No	Ar (CfAe)	240.00 - 15.00	1	1	1.1100	1.1100		0.54
7/8	B	No	Ar (CfAe)	235.00 - 15.00	1	1	1.1100	1.1100		0.54
EW63	A	No	Af (CfAe)	215.00 - 15.00	1	1	1.5742	1.5742	5.0668	0.51
EW63	B	No	Af (CfAe)	205.00 - 15.00	1	1	1.5742	1.5742	5.0668	0.51
7/8	B	No	Ar (CfAe)	36.00 - 15.00	1	1	1.1100	1.1100		0.54
7/8	A	No	Ar (CfAe)	210.00 - 15.00	1	1	1.1100	1.1100		0.54
7/8	A	No	Ar (CfAe)	265.00 - 15.00	2	2	1.1100	1.1100		0.54
7/8	C	No	Ar (CfAe)	265.00 - 15.00	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CfAe)	200.00 - 15.00	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CfAe)	160.00 - 15.00	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CfAe)	260.00 - 15.00	1	1	1.1100	1.1100		0.54
1/2	C	No	Ar (CfAe)	30.00 - 15.00	1	1	0.5800	0.5800		0.25
EW63	C	No	Af (CfAe)	120.00 - 15.00	1	1	1.5742	1.5742	5.0668	0.51

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	265.00-245.00	A	3.700	0.000	0.000	0.000	21.60
		B	0.000	0.000	0.000	0.000	0.00
		C	3.237	0.000	0.000	0.000	18.90

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 11 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave. Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
	Client: Illinois State Police	Designed by: PK

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T2	245.00-225.00	A	3.700	0.000	0.000	0.000	21.60
		B	4.787	0.000	0.000	0.000	29.10
		C	3.700	0.000	0.000	0.000	21.60
T3	225.00-205.00	A	4.162	1.312	0.000	0.000	29.40
		B	7.000	0.000	0.000	0.000	42.40
		C	3.700	0.000	0.000	0.000	21.60
T4	205.00-185.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	5.088	0.000	0.000	0.000	29.70
T5	185.00-165.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	5.550	0.000	0.000	0.000	32.40
T6	165.00-145.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	6.938	0.000	0.000	0.000	40.50
T7	145.00-125.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	7.400	0.000	0.000	0.000	43.20
T8	125.00-105.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	7.400	1.968	0.000	0.000	50.85
T9	105.00-85.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	7.400	2.624	0.000	0.000	53.40
T10	85.00-65.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	7.400	2.624	0.000	0.000	53.40
T11	65.00-45.00	A	5.550	2.624	0.000	0.000	42.60
		B	7.000	2.624	0.000	0.000	52.60
		C	7.400	2.624	0.000	0.000	53.40
T12	45.00-25.00	A	5.550	2.624	0.000	0.000	42.60
		B	8.018	2.624	0.000	0.000	58.54
		C	7.642	2.624	0.000	0.000	54.65
T13	25.00-5.00	A	2.775	1.312	0.000	0.000	21.30
		B	4.425	1.312	0.000	0.000	31.70
		C	4.183	1.312	0.000	0.000	29.20
T14	5.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	265.00-245.00	A	1.000	5.183	3.700	0.000	0.000	119.33
		B		0.000	0.000	0.000	0.000	0.00
		C		9.071	0.000	0.000	0.000	109.12
T2	245.00-225.00	A	1.000	5.183	3.700	0.000	0.000	119.33
		B		11.454	0.000	0.000	0.000	148.16
		C		10.367	0.000	0.000	0.000	124.71
T3	225.00-205.00	A	1.000	6.479	6.123	0.000	0.000	174.44
		B		17.000	0.000	0.000	0.000	218.33
		C		10.367	0.000	0.000	0.000	124.71
T4	205.00-185.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		14.254	0.000	0.000	0.000	171.48
T5	185.00-165.00	A	1.000	10.367	8.546	0.000	0.000	260.74

RISATower	Job: 265' Guyed Tower (overstressed)	Page: 12 of 50
Fullerton Engineering Consultants, Inc. 9600 W. Bryn Mawr Ave, Ste. 200 Rosemont, IL 60018 Phone: (847) 292-0200 FAX: (847) 292-0206	Project: ISP District 5 (Joliet)	Date: 14:31:19 04/13/11
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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
		B		17.000	4.846	0.000	0.000	297.38
		C		15.550	0.000	0.000	0.000	187.07
T6	165.00-145.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		19.438	0.000	0.000	0.000	233.84
T7	145.00-125.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		20.733	0.000	0.000	0.000	249.43
T8	125.00-105.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		20.733	3.634	0.000	0.000	308.72
T9	105.00-85.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		20.733	4.846	0.000	0.000	328.48
T10	85.00-65.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		20.733	4.846	0.000	0.000	328.48
T11	65.00-45.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		17.000	4.846	0.000	0.000	297.38
		C		20.733	4.846	0.000	0.000	328.48
T12	45.00-25.00	A	1.000	10.367	8.546	0.000	0.000	260.74
		B		19.851	4.846	0.000	0.000	331.68
		C		21.808	4.846	0.000	0.000	339.38
T13	25.00-5.00	A	1.000	5.183	4.273	0.000	0.000	130.37
		B		11.092	2.423	0.000	0.000	179.87
		C		12.517	2.423	0.000	0.000	186.04
T14	5.00-0.00	A	1.000	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
DB810PS	B	From Leg	6.00	0.0000	240.00	No Ice	2.28	2.28	29.00	
			0.00			1/2" Ice	3.04	3.04	58.00	
			5.50			1" Ice	3.80	3.80	87.00	
DB810PS	B	From Leg	6.00	0.0000	240.00	No Ice	2.28	2.28	29.00	
			0.00			1/2" Ice	3.04	3.04	58.00	
			-5.50			1" Ice	3.80	3.80	87.00	
Amplifier	B	From Leg	0.00	0.0000	240.00	No Ice	1.40	1.40	30.00	
			0.00			1/2" Ice	1.70	1.70	36.00	
			0.00			1" Ice	2.00	2.00	42.00	
SH10193 - 6" Standoff Mount	B	From Leg	3.00	0.0000	240.00	No Ice	9.70	9.70	169.00	
			0.00			1/2" Ice	13.73	13.73	242.00	
			0.00			1" Ice	17.76	17.76	315.00	
DB224	A	From Leg	0.00	-30.0000	265.00	No Ice	3.78	3.78	32.00	
			0.00			1/2" Ice	5.94	5.94	64.00	
			10.00			1" Ice	8.10	8.10	96.00	
DB201	B	From Leg	1.50	20.0000	265.00	No Ice	1.32	1.32	25.00	
			0.00			1/2" Ice	2.64	2.64	50.00	
			4.00			1" Ice	3.96	3.96	75.00	

ALKALI-SILICA REACTION FOR CAST-IN-PLACE CONCRETE (BDE)
Effective: August 1, 2007 Revised: January 1, 2009

Description. This special provision is intended to reduce the risk of a deleterious alkali-silica reaction in concrete exposed to humid or wet conditions. The special provision is not intended or adequate for concrete exposed to potassium acetate, potassium formate, sodium acetate or sodium formate. The special provision shall not apply to the dry environment (humidity less than 60 percent) found inside buildings for residential or commercial occupancy. The special provision shall also not apply to precast products or precast prestressed products.

Aggregate Expansion Values. Each coarse and fine aggregate will be tested by the Department for alkali reaction according to ASTM C 1260. The test will be performed with Type I or II cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.90 percent or greater. The Engineer will determine the assigned expansion value for each aggregate, and these values will be made available on the Department's Alkali-Silica Potential Reactivity Rating List. The Engineer may differentiate aggregate based on ledge, production method, gradation number, or other factors. An expansion value of 0.05 percent will be assigned to limestone or dolomite coarse aggregates and 0.03 percent to limestone or dolomite fine aggregates (manufactured stone sand); however the Department reserves the right to perform the ASTM C 1260 test.

Aggregate Groups. Each combination of aggregates used in a mixture will be assigned to an aggregate group. The point at which the coarse aggregate and fine aggregate expansion values intersect in the following table will determine the group.

AGGREGATE GROUPS			
Coarse Aggregate or Coarse Aggregate Blend ASTM C 1260 Expansion	Fine Aggregate or Fine Aggregate Blend ASTM C 1260 Expansion		
	≤ 0.16%	> 0.16% - 0.27%	> 0.27%
≤ 0.16%	Group I	Group II	Group III
> 0.16% - 0.27%	Group II	Group II	Group III
> 0.27%	Group III	Group III	Group IV

Mixture Options. Based upon the aggregate group, the following mixture options shall be used; however, the Department may prohibit a mixture option if field performance shows a deleterious alkali-silica reaction or Department testing indicates the mixture may experience a deleterious alkali-silica reaction.

Group I - Mixture options are not applicable. Use any cement or finely divided mineral.
Group II - Mixture options 1, 2, 3, 4, or 5 shall be used.
Group III - Mixture options 1, 2 and 3 combined, 4, or 5 shall be used.
Group IV - Mixture options 1, 2 and 4 combined, or 5 shall be used.

For Class PP-3 concrete the mixture options are not applicable, and any cement may be used with the specified finely divided minerals.

a) Mixture Option 1. The coarse or fine aggregates shall be blended to place the material in a group that will allow the selected cement or finely divided mineral to be used.

When a coarse or fine aggregate is blended, the weighted expansion value shall be calculated separately for the coarse and fine aggregate as follows:

Weighted Expansion Value = (a/100 x A) + (b/100 x B) + (c/100 x C) + …

Where: a, b, c... = percentage of aggregate in the blend;
A, B, C…= expansion value for that aggregate.

b) Mixture Option 2. A finely divided mineral shall be used as described in 1), 2), 3), or 4) that follow. The replacement ratio is defined as “finely divided mineral:portland cement”.

1) Class F Fly Ash. For Class PV, BS, MS, DS, SC, and SI concrete and cement aggregate mixture II (CAM II), Class F fly ash shall replace 15 percent of the portland cement at a minimum replacement ratio of 1.5:1.

2) Class C Fly Ash. For Class PV, MS, SC, and SI Concrete, Class C fly ash with 18 percent to less than 26.5 percent calcium oxide content, and less than 2.0 percent loss on ignition, shall replace 20 percent of the portland cement at a minimum replacement ratio of 1:1; or at a minimum replacement ratio of 1.25:1 if the loss on ignition is 2.0 percent or greater. Class C fly ash with less than 18 percent calcium oxide content shall replace 20 percent of the portland cement at a minimum replacement ratio of 1.25:1.

For Class PP-1, RR, BS, and DS concrete and CAM II, Class C fly ash with less than 26.5 percent calcium oxide content shall replace 15 percent of the portland cement at a minimum replacement ratio of 1.5:1.

3) Ground Granulated Blast-Furnace Slag. For Class PV, BS, MS, SI, DS, and SC concrete, ground granulated blast-furnace slag shall replace 25 percent of the portland cement at a minimum replacement ratio of 1:1.

For Class PP-1 and RR concrete, ground granulated blast-furnace slag shall replace 15 percent of the portland cement at a minimum replacement ratio of 1.5:1.

For Class PP-2, ground granulated blast-furnace slag shall replace 25 to 30 percent of the portland cement at a minimum replacement ratio of 1:1.

4) Microsilica or High Reactivity Metakaolin. Microsilica solids or high reactivity metakaolin shall be added to the mixture at a minimum 25 lb/cu yd (15 kg/cu m) or 27 lb/cu yd (16 kg/cu m) respectively.

c) Mixture Option 3. The cement used shall have a maximum total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.60 percent. When aggregate in Group II is involved, any finely divided mineral may be used with a portland cement.

d) Mixture Option 4. The cement used shall have a maximum total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.45 percent. When aggregate in Group II or III is involved, any finely divided mineral may be used with a portland cement.

e) Mixture Option 5. The proposed cement or finely divided mineral may be used if the ASTM C 1567 expansion value is ≤ 0.16 percent when performed on the aggregate in the concrete mixture with the highest ASTM C 1260 test result. The ASTM C 1567 test will be valid for two years, unless the Engineer determines the materials have changed significantly. For latex concrete, the ASTM C 1567 test shall be performed without the latex. The 0.20 percent autoclave expansion limit in ASTM C 1567 shall not apply.

   If during the two year time period the Contractor needs to replace the cement, and the replacement cement has an equal or lower total equivalent alkali content ($Na_2O + 0.658K_2O$), a new ASTM C 1567 test will not be required.

Testing. If an individual aggregate has an ASTM C 1260 expansion value > 0.16 percent, an ASTM C 1293 test may be performed by the Contractor to evaluate the Department's ASTM C 1260 test result. The ASTM C 1293 test shall be performed with Type I or II cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.80 percent or greater. The interior vertical wall of the ASTM C 1293 recommended container (pail) shall be half covered with a wick of absorbent material consisting of blotting paper. If the testing laboratory desires to use an alternate container or wick of absorbent material, ASTM C 1293 test results with an alkali-reactive aggregate of known expansion characteristics shall be provided to the Engineer for review and approval. If the expansion is less than 0.040 percent after one year, the aggregate will be assigned an ASTM C 1260 expansion value of 0.08 percent that will be valid for two years, unless the Engineer determines the aggregate has changed significantly.

The Engineer reserves the right to verify a Contractor's ASTM C 1293 or 1567 test result. The Engineer will not accept the result if the precision and bias for the test methods are not met.

The laboratory performing the ASTM C 1567 test shall either be accredited by the AASHTO Materials Reference Laboratory (AMRL) for ASTM C 227 under Portland Cement Concrete or Aggregate; or shall be inspected for Hydraulic Cement - Physical Tests by the Cement and Concrete Reference Laboratory (CCRL) and shall be approved by the Department. The laboratory performing the ASTM C 1293 test shall be inspected for Portland Cement Concrete by CCRL and shall be approved by the Department.

APPROVAL OF PROPOSED BORROW AREAS, USE AREAS, AND/OR WASTE AREAS (BDE)

Effective: November 1, 2008 Revised: November 1, 2010

Replace the first paragraph of Article 107.22 of the Standard Specifications with the following:

"All proposed borrow areas, including commercial borrow areas; use areas, including, but not limited to temporary access roads, detours, runarounds, plant sites, and staging and storage areas; and/or waste areas are to be designated by the Contractor to the Engineer and approved prior to their use. Such areas outside the State of Illinois shall be evaluated, at no additional cost to the Department, according to the requirements of the state in which the area lies; and approval by the authority within that state having jurisdiction for such areas shall be forwarded to the Engineer. Such areas within Illinois shall be evaluated as described herein.

A location map delineating the proposed borrow area, use area, and/or waste area shall be submitted to the Engineer for approval along with an agreement from the property owner granting the Department permission to enter the property and conduct cultural and biological resource reconnaissance surveys of the site for archaeological resources, threatened or endangered species or their designated essential habitat, wetlands, prairies, and savannahs. The type of location map submitted shall be a topographic map, a plat map, or a 7.5 minute quadrangle map. Submittals shall include the intended use of the site and provide sufficient detail for the Engineer to determine the extent of impacts to the site. The Engineer will initiate cultural and biological resource reconnaissance surveys of the site, as necessary, at no cost to the Contractor. The Engineer will advise the Contractor of the expected time required to complete all surveys. If the proposed area is within 150 ft (45 m) of the highway right-of-way, a topographic map of the proposed site will be required as specified in Article 204.02."

CEMENT (BDE)
Effective: January 1, 2007 Revised: April 1, 2011

Revise Section 1001 of the Standard Specifications to read:

"**SECTION 1001. CEMENT**

1001.01 Cement Types. Cement shall be according to the following.

(a) Portland Cement. Acceptance of portland cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland cement shall be according to AASHTO M 85, and shall meet the standard physical and chemical requirements. The Contractor has the option to use any type of portland cement listed in AASHTO M 85 unless a specific cement is specified for a construction item. Inorganic processing additions shall be limited to granulated blast-furnace slag according to the chemical requirements of AASHTO M 302, Class C or F fly ash according to the chemical requirements of AASHTO M 295, and cement kiln dust.

(b) Portland-Pozzolan Cement. Acceptance of portland-pozzolan cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland-pozzolan cement shall be according to AASHTO M 240 and shall meet the standard physical and chemical requirements. The Contractor has the option to use portland-pozzolan cement unless a specific cement is specified for a construction item. Inorganic processing additions shall be limited to granulated blast-furnace slag according to the chemical requirements of AASHTO M 302, Class C or F fly ash according to the chemical requirements of AASHTO M 295, and cement kiln dust. The pozzolan constituent for Type IP using Class F fly ash shall be a maximum of 25 percent of the weight (mass) of the portland-pozzolan cement. The pozzolan constituent for Type IP using Class C fly ash shall be a maximum of 30 percent of the weight (mass) of the portland-pozzolan cement. The pozzolan constituent for Type IP using microsilica or high-reactivity metakaolin shall be a maximum of ten percent. The pozzolan constituent for Type IP using other materials shall have the approval of the Engineer.

Portland-pozzolan cement may be used in concrete mixtures when the air temperature is below 40 ºF (4 ºC), but the Engineer may request a trial batch of the concrete mixture to show the mix design strength requirement will be met.

(c) Portland Blast-Furnace Slag Cement. Acceptance of portland blast-furnace slag cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland blast-furnace slag cement shall be according to AASHTO M 240 and shall meet the standard physical and chemical requirements. The Contractor has the option to use portland blast-furnace slag cement unless a specific cement is specified for a construction item. Inorganic processing additions shall be limited to granulated blast-furnace slag according to the chemical requirements of AASHTO M 302, Class C or F fly ash according to the chemical requirements of AASHTO M 295, and cement kiln dust. The blast-furnace slag constituent for Type IS shall be a maximum of 35 percent of the weight (mass) of the portland blast-furnace slag cement.

Portland blast-furnace slag cement may be used in concrete mixtures when the air temperature is below 40 ºF (4 ºC), but the Engineer may request a trial batch of the concrete mixture to show the mix design strength requirement will be met.

(d) Rapid Hardening Cement. Rapid hardening cement shall be used according to Article 1020.04 or when approved by the Engineer. The cement shall be on the Department's current "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs", and shall be according to the following.

(1) The cement shall have a maximum final set of 25 minutes, according to Illinois Modified AASHTO T 131.
(2) The cement shall have a minimum compressive strength of 2000 psi (13,800 kPa) at 3.0 hours, 3200 psi (22,100 kPa) at 6.0 hours, and 4000 psi (27,600 kPa) at 24.0 hours, according to Illinois Modified AASHTO T 106.
(3) The cement shall have a maximum drying shrinkage of 0.050 percent at seven days, according to Illinois Modified ASTM C 596.
(4) The cement shall have a maximum expansion of 0.020 percent at 14 days, according to Illinois Modified ASTM C 1038.
(5) The cement shall have a minimum 80 percent relative dynamic modulus of elasticity; and shall not have a weight (mass) gain in excess of 0.15 percent or a weight (mass) loss in excess of 1.0 percent, after 100 cycles, according to Illinois Modified AASHTO T 161, Procedure B.

(e) Calcium Aluminate Cement. Calcium aluminate cement shall be used according to Article 1020.04 or when approved by the Engineer. The cement shall meet the standard physical requirements for Type I cement according to AASHTO M 85, except the time of setting shall not apply. The chemical requirements shall be determined according to AASHTO T 105 and shall be as follows: minimum 38 percent aluminum oxide (Al_2O_3), maximum 42 percent calcium oxide (CaO), maximum 1 percent magnesium oxide (MgO), maximum 0.4 percent sulfur trioxide (SO_3), maximum 1 percent loss on ignition, and maximum 3.5 percent insoluble residue.

1001.02 Uniformity of Color. Cement contained in single loads or in shipments of several loads to the same project shall not have visible differences in color.

1001.03 Mixing Brands and Types. Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall not be mixed or used alternately in the same item of construction unless approved by the Engineer.

1001.04 Storage. Cement shall be stored and protected against damage, such as dampness which may cause partial set or hardened lumps. Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall be kept separate."

CONCRETE ADMIXTURES (BDE)
Effective: January 1, 2003 Revised: April 1, 2009

Replace the first paragraph of Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. The use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted when approved by the Engineer. Admixture dosages shall result in the mixture meeting the specified plastic and hardened properties. The Department will maintain an Approved List of Corrosion Inhibitors. Corrosion inhibitor dosage rates shall be according to Article 1020.05(b)(12). The Department will also maintain an Approved List of Concrete Admixtures, and an admixture technical representative shall be consulted when determining an admixture dosage from this list. The dosage shall be within the range indicated on the approved list unless the influence by other admixtures, jobsite conditions (such as a very short haul time), or other circumstances warrant a dosage outside the range. The Engineer shall be notified when a dosage is proposed outside the range. To determine an admixture dosage, air temperature, concrete temperature, cement source and quantity, finely divided mineral sources(s) and quantity, influence of other admixtures, haul time, placement conditions, and other factors as appropriate shall be considered. The Engineer may request the Contractor to have a batch of concrete mixed in the lab or field to verify the admixture dosage is correct. An admixture dosage or combination of admixture dosages shall not delay the initial set of concrete by more than one hour. When a retarding admixture is required or appropriate for a bridge deck or bridge deck overlay pour, the initial set time shall be delayed until the deflections due to the concrete dead load are no longer a concern for inducing cracks in the completed work. However, a retarding admixture shall not be used to further extend the pour time and justify the alteration of a bridge deck pour sequence.

When determining water in admixtures for water/cement ratio, the Contractor shall calculate 70 percent of the admixture dosage as water, except a value of 50 percent shall be used for a latex admixture used in bridge deck latex concrete overlays."

Revise Section 1021 of the Standard Specifications to read:

"**SECTION 1021. CONCRETE ADMIXTURES**

1021.01 **General.** Admixtures shall be furnished in liquid form ready for use.

The admixtures shall be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. Containers shall be readily identifiable as to manufacturer and trade name of the material they contain.

Corrosion inhibitors will be maintained on the Department's Approved List of Corrosion Inhibitors. All other concrete admixture products will be maintained on the Department's Approved List of Concrete Admixtures. For the admixture submittal, a report prepared by an independent laboratory accredited by the AASHTO Materials Reference Laboratory (AMRL) for Portland Cement Concrete shall be provided. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications. However, for corrosion inhibitors the ASTM G 109 test information specified in ASTM C 1582 is not required to be from and independent lab. All other information in ASTM C 1582 shall be from and independent lab.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. Per the manufacturer's option, the cement content for all required tests shall either be according to applicable specifications or 5.65 cwt/cu yd (335 kg/cu m). Compressive strength test results for six months and one year will not be required.

Prior to the approval of an admixture, the Engineer reserves the right to request a sample for testing. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 5.65 cwt/cu yd (335 kg/cu m). For freeze-thaw testing, the Department will perform the test according to AASHTO T 161, Procedure B. The flexural strength test will be performed according to AASHTO T 177. If the Engineer decides to test the admixture, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The test and reference concrete mixture shall contain a cement content of 5.65 cwt/cu yd (335 kg/cu m). The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by AASHTO.

The manufacturer shall include in the submittal the following admixture information: the manufacturing range for specific gravity, the midpoint and manufacturing range for residue by oven drying, and the manufacturing range for pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

For air-entraining admixtures according to Article 1021.02, the specific gravity allowable manufacturing range shall be established by the manufacturer and the test method shall be according to ASTM C 494. For residue by oven drying and pH, the allowable manufacturing range and test methods shall be according to ASTM C 260.

For admixtures according to Articles 1021.03, 1021.04, 1021.05, 1021.06, and 1021.07, the pH allowable manufacturing range shall be established by the manufacturer and the test method shall be according to ASTM E 70. For specific gravity and residue by oven drying, the allowable manufacturing range and test methods shall be according to ASTM C 494.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory accredited by AASHTO.

All admixtures, except chloride-based accelerators, shall contain a maximum of 0.3 percent chloride by weight (mass).

Random field samples may be taken by the Department to verify an admixture meets specification. A split sample will be provided to the manufacturer if requested. Admixtures that do not meet specification requirements or an allowable manufacturing range established by the manufacturer shall be replaced with new material.

1021.02 Air-Entraining Admixtures. Air-entraining admixtures shall be according to AASHTO M 154.

1021.03 Retarding and Water-Reducing Admixtures. The admixture shall be according to the following.

(a) The retarding admixture shall be according to AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).
(b) The water-reducing admixture shall be according to AASHTO M 194, Type A.
(c) The high range water-reducing admixture shall be according to AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

1021.04 Accelerating Admixtures. The admixture shall be according to AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating).

1021.05 Self-Consolidating Admixtures. The self-consolidating admixture system shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a concrete mixture that can flow around reinforcement and consolidate under its own weight without additional effort and without segregation.

The high range water-reducing admixture shall be according to AASHTO M 194, Type F.

The viscosity modifying admixture shall be according to ASTM C 494, Type S (specific performance).

1021.06 Rheology-Controlling Admixture. The rheology-controlling admixture shall be capable of producing a concrete mixture with a lower yield stress that will consolidate easier for slipform applications used by the Contractor. The rheology-controlling admixture shall be according to ASTM C 494, Type S (specific performance).

1021.07 Corrosion Inhibitor. The corrosion inhibitor shall be according to one of the following.

(a) Calcium Nitrite. The corrosion inhibitor shall contain a minimum 30 percent calcium nitrite by weight (mass) of solution, and shall comply with the requirements of AASHTO M 194, Type C (accelerating).

(b) Other Materials. The corrosion inhibitor shall be according to ASTM C 1582."

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)
Effective: June 1, 2010

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/otaq/retrofit/verif-list.htm), or verified by the California Air Resources Board (CARB) (http://www.arb.ca.gov/diesel/verde/verdev.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.

CONSTRUCTION AIR QUALITY - DIESEL VEHICLE EMISSIONS CONTROL (BDE)
Effective: April 1, 2009 Revised: July 1, 2009

Diesel Vehicle Emissions Control. The reduction of construction air emissions shall be accomplished by using cleaner burning diesel fuel. The term “equipment” refers to any and all diesel fuel powered devices rated at 50 hp and above, to be used on the project site in excess of seven calendar days over the course of the construction period on the project site (including any “rental” equipment).

All equipment on the jobsite, with engine ratings of 50 hp and above, shall be required to: use Ultra Low Sulfur Diesel fuel (ULSD) exclusively (15 ppm sulfur content or less).

Diesel powered equipment in non-compliance will not be allowed to be used on the project site, and is also subject to a notice of non-compliance as outlined below.

The Contractor shall submit copies of monthly summary reports and include certified copies of the ULSD diesel fuel delivery slips for diesel fuel delivered to the jobsite for the reporting time period, noting the quantity of diesel fuel used.

If any diesel powered equipment is found to be in non-compliance with any portion of this specification, the Engineer will issue the Contractor a notice of non-compliance and identify an appropriate period of time, as outlined below under environmental deficiency deduction, in which to bring the equipment into compliance or remove it from the project site.

Any costs associated with bringing any diesel powered equipment into compliance with these diesel vehicle emissions controls 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 also not be grounds for a claim.

Environmental Deficiency Deduction. When the Engineer is notified, or determines that an environmental control deficiency exists, he/she will notify the Contractor in writing, and direct the Contractor to correct the deficiency within a specified time period. The specified time-period, which begins upon Contractor notification, will be from 1/2 hour to 24 hours long, based on the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge regarding the time period.

The deficiency will be based on lack of repair, maintenance and diesel vehicle emissions control.

If the Contractor fails to correct the deficiency within the specified time frame, 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.

If a Contractor or subcontractor accumulates three environmental deficiency deductions 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 contract time, waiver of penalties, or be grounds for any claim.

CONSTRUCTION AIR QUALITY - IDLING RESTRICTIONS (BDE)
Effective: April 1, 2009

Idling Restrictions. The Contractor shall establish truck-staging areas for all diesel powered vehicles that are waiting to load or unload material at the jobsite. Staging areas shall be located where the diesel emissions from the equipment will have a minimum impact on adjacent sensitive receptors.

The Department will review the selection of staging areas, whether within or outside the existing highway right-of-way, to avoid locations near sensitive areas or populations to the extent possible. Sensitive receptors include, but are not limited to, hospitals, schools, residences, motels, hotels, daycare facilities, elderly housing and convalescent facilities. Diesel powered engines shall also be located as far away as possible from fresh air intakes, air conditioners, and windows. The Engineer will approve staging areas before implementation.

Diesel powered vehicle operators may not cause or allow the motor vehicle, when it is not in motion, to idle for more than a total of 10 minutes within any 60 minute period, except under any of the following circumstances:

1) The motor vehicle has a gross vehicle weight rating of less than 8000 lb (3630 kg).
2) The motor vehicle idles while forced to remain motionless because of on-highway traffic, an official traffic control device or signal, or at the direction of a law enforcement official.
3) The motor vehicle idles when operating defrosters, heaters, air conditioners, or other equipment solely to prevent a safety or health emergency.
4) A police, fire, ambulance, public safety, other emergency or law enforcement motor vehicle, or any motor vehicle used in an emergency capacity, idles while in an emergency or training mode and not for the convenience of the vehicle operator.
5) The primary propulsion engine idles for maintenance, servicing, repairing, or diagnostic purposes if idling is necessary for such activity.
6) A motor vehicle idles as part of a government inspection to verify that all equipment is in good working order, provided idling is required as part of the inspection.
7) When idling of the motor vehicle is required to operate auxiliary equipment to accomplish the intended use of the vehicle (such as loading, unloading, mixing, or processing cargo; controlling cargo temperature; construction operations, lumbering operations; oil or gas well servicing; or farming operations), provided that this exemption does not apply when the vehicle is idling solely for cabin comfort or to operate non-essential equipment such as air conditioning, heating, microwave ovens, or televisions.
8) When the motor vehicle idles due to mechanical difficulties over which the operator has no control.
9) The outdoor temperature is less than 32 °F (0 °C) or greater than 80 °F (26 °C).

When the outdoor temperature is greater than or equal to 32 °F (0 °C) or less than or equal to 80 °F (26 °C), a person who operates a motor vehicle operating on diesel fuel shall not cause or allow the motor vehicle to idle for a period greater than 30 minutes in any 60 minute period while waiting to weigh, load, or unload cargo or freight, unless the vehicle is in a line of vehicles that regularly and periodically moves forward.

The above requirements do not prohibit the operation of an auxiliary power unit or generator set as an alternative to idling the main engine of a motor vehicle operating on diesel fuel.

Environmental Deficiency Deduction. When the Engineer is notified, or determines that an environmental control deficiency exists based on non-compliance with the idling restrictions, he/she will notify the Contractor, and direct the Contractor to correct the deficiency.

If the Contractor fails to correct the deficiency a monetary deduction will be imposed. The monetary deduction will be $1,000.00 for each deficiency identified.

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)
Effective: September 1, 2000 Revised: August 2, 2011

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.

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 **0.00%** 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 www.dot.il.gov.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement. The failure of the bidder to comply will render the bid not responsive.

(a) The bidder shall submit a Disadvantaged Business Utilization Plan on Department forms SBE 2025 and 2026 with the bid.

(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 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 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 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 if not met, evidence of good faith efforts.

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 performance 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.

(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.

(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 and/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 is 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 regular dealer or 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 Participation 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) TERMINATION OR REPLACEMENT. 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 the Special Provision.

(c) 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, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, than 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.

(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 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 1,200 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 contractor 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.

(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 Regional 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 BDE 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 my 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.

EQUIPMENT RENTAL RATES (BDE)
Effective: August 2, 2007 Revised: January 2, 2008

Replace the second and third paragraphs of Article 105.07(b)(4)a. of the Standard Specifications with the following:

"Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4)."

Replace Article 109.04(b)(4) of the Standard Specifications with the following:

"(4) Equipment. Equipment used for extra work shall be authorized by the Engineer. The equipment shall be specifically described, be of suitable size and capacity for the work to be performed, and be in good operating condition. For such equipment, the Contractor will be paid as follows.

a. Contractor Owned Equipment. Contractor owned equipment will be paid for by the hour using the applicable FHWA hourly rate from the "Equipment Watch Rental Rate Blue Book" (Blue Book) in effect when the force account work begins. The FHWA hourly rate is calculated as follows.

FHWA hourly rate = (monthly rate/176) x (model year adj.) x (Illinois adj.) + EOC
Where: EOC = Estimated Operating Costs per hour (from the Blue Book)

The time allowed will be the actual time the equipment is operating on the extra work. For the time required to move the equipment to and from the site of the extra work and any authorized idle (standby) time, payment will be made at the following hourly rate: 0.5 x (FHWA hourly rate - EOC).

All time allowed shall fall within the working hours authorized for the extra work.

The rates above include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhaul and maintenance of any kind, depreciation, storage, overhead, profits, insurance, and all incidentals.

The rates do not include labor.

The Contractor shall submit to the Engineer sufficient information for each piece of equipment and its attachments to enable the Engineer to determine the proper equipment category. If a rate is not established in the Blue Book for a particular piece of equipment, the Engineer will establish a rate for that piece of equipment that is consistent with its cost and use in the industry.

b. Rented Equipment. Whenever it is necessary for the Contractor to rent equipment to perform extra work, the rental and transportation costs of the equipment plus five percent for overhead will be paid. In no case shall the rental rates exceed those of established distributors or equipment rental agencies.

All prices shall be agreed to in writing before the equipment is used."

LIQUIDATED DAMAGES (BDE)
Effective: April 1, 2009 Revised: April 1, 2011

Revise the table in Article 108.09 of the Standard Specifications to read:

"Schedule of Deductions for Each Day of Overrun in Contract Time			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Calendar Day	Work Day
$ 0	$ 100,000	$ 475	$ 675
100,000	500,000	750	1,050
500,000	1,000,000	1,025	1,425
1,000,000	3,000,000	1,275	1,725
3,000,000	6,000,000	1,425	2,000
6,000,000	12,000,000	2,300	3,450
12,000,000	And over	5,800	8,125"

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM / EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE)
Effective: April 1, 2007 Revised: November 1, 2009

Revise Article 105.03(a) of the Standard Specifications to read:

"(a) National Pollutant Discharge Elimination System (NPDES) / Erosion and Sediment Control Deficiency Deduction When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, or the Contractor's activities represents a violation of the Department's NPDES permits, the Engineer will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 1 week based on the urgency of the situation and the nature of the work effort required. The Engineer will be the sole judge.

A deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the Department's NPDES permits.

A deficiency may also be applied to situations where corrective action is not an option such as the failure to participate in a jobsite inspection of the project, failure to install required measures prior to initiating earth moving operations, disregard of concrete washout requirements, or other disregard of the NPDES permit.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or portion of a calendar day until the deficiency is corrected to the satisfaction of the Engineer. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The base value of the daily monetary deduction is $1000.00 and will be applied to each location for which a deficiency exists. The value of the deficiency deduction assessed for each infraction will be determined by multiplying the base value by a Gravity Adjustment Factor provided in Table A. Except for failure to participate in a required jobsite inspection of the project prior to initiating earthmoving operations which will be based on the total acreage of planned disturbance at the following multipliers: <5 Acres: 1; 5-10 Acres: 2; >10-25 Acres: 3; >25 Acres: 5. For those deficiencies where corrective action was not an option, the monetary deduction will be immediate and will be valued at one calendar day multiplied by a Gravity Adjustment Factor.

Table A
Deficiency Deduction Gravity Adjustment Factors

Types of Violations	Soil Disturbed and Not Permanently Stabilized At Time of Violation			
	< 5 Acres	5 - 10 Acres	>10 - 25 Acres	> 25 Acres
Failure to Install or Properly Maintain BMP	0.1 - 0.5	0.2 - 1.0	0.5 - 2.5	1.0 - 5
Careless Destruction of BMP	0.2 - 1	0.5 - 2.5	1.0 - 5.	1.0 - 5
Intrusion into Protected Resource	1.0 - 5	1.0 - 5	2.0 - 10	2.0 - 10
Failure to properly manage Chemicals, Concrete Washouts or Residuals, Litter or other Wastes	0.2 - 1	0.2 - 1	0.5 - 2.5	1.0 - 5
Improper Vehicle and Equipment Maintenance, Fueling or Cleaning	0.1 - 0.5	0.2 - 1	0.2 - 1	0.5 - 2.5
Failure to Provide or Update Written or Graphic Plans Required by SWPPP	0.2 - 1	0.5 - 2.5	1.0 - 5	1.0 - 5
Failure to comply with Other Provisions of the NPDES Permit	0.1 - 0.5	0.2 - 1	0.2 - 1	0.5 - 2.5"

PAYMENTS TO SUBCONTRACTORS (BDE)
Effective: June 1, 2000 Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause.

The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section 7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

POST MOUNTING OF SIGNS (BDE)
Effective: January 1, 2011

Revise the second paragraph of Article 701.14 of the Standard Specifications to read:

"Post mounted signs shall be a breakaway design. The sign shall be within five degrees of vertical. Two posts shall be used for signs greater than 16 sq ft (1.5 sq m) in area or where the height between the sign and the ground exceeds 7 ft (2.1 m)."

PUBLIC CONVENIENCE AND SAFETY (BDE)
Effective: January 1, 2000

Add the following paragraph after the fourth paragraph of Article 107.09 of the Standard Specifications.

"On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical."

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)
Effective: April 2, 2005 Revised: April 1, 2011

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting according to Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

The mobilization payment to the subcontractor is an advance payment of the reported amount of the subcontract and is not a payment in addition to the amount of the subcontract; therefore, the amount of the advance payment will be deducted from future progress payments.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)
Effective: August 1, 2011

Revise the third sentence of the third paragraph of Article 105.03(b) of the Standard Specifications to read:

"The daily monetary deduction will be $2,500."

UTILITY COORDINATION AND CONFLICTS (BDE)
Effective: April 1, 2011

Revise Article 105.07 of the Standard Specifications to read:

"**105.07 Cooperation with Utilities.** The Department reserves the right at any time to allow work by utilities on or near the work covered by the contract. The Contractor shall conduct his/her work so as not to interfere with or hinder the progress or completion of the work being performed by utilities. The Contractor shall also arrange the work and shall place and dispose of the materials being used so as not to interfere with the operations of utility work in the area.

The Contractor shall cooperate with the owners of utilities in their removal and rearrangement operations so work may progress in a reasonable manner, duplication or rearrangement of work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted.

The Contractor shall coordinate with any planned utility adjustment or new installation and the Contractor shall take all precautions to prevent disturbance or damage to utility facilities. Any failure on the part of the utility owner, or their representative, to proceed with any planned utility adjustment or new installation shall be reported promptly by the Contractor to the Engineer."

Revise the first sentence of the last paragraph of Article 107.19 of the Standard Specifications to read:

"When the Contractor encounters unexpected regulated substances due to the presence of utilities in unanticipated locations, the provisions of Article 107.40 shall apply; otherwise, if the Engineer does not direct a resumption of operations, the provisions of Article 108.07 shall apply."

Revise Article107.31 of the Standard Specification to read:

"**107.31 Reserved.**"

Add the following four Articles to Section 107 of the Standard Specifications:

"**107.37 Locations of Utilities within the Project Limits.** All known utilities existing within the limits of construction are either indicated on the plans or visible above ground. For the purpose of this Article, the limits of proposed construction are defined as follows:

(a) Limits of Proposed Construction for Utilities Paralleling the Roadway.

(1) The horizontal limits shall be a vertical plane, outside of, parallel to, and 2 ft (600 mm) distant at right angles from the plan or revised slope limits.

In cases where the limits of excavation for structures are not shown on the plans, the horizontal limits shall be a vertical plane 4 ft (1.2 m) outside the edges of structure footings or the structure where no footings are required.

(2) The upper vertical limits shall be the regulations governing the roadbed clearance for the specific utility involved.

(3) The lower vertical limits shall be either the top of the utility at the depth below the proposed grade as prescribed by the governing agency or the limits of excavation, whichever is less.

(b) Limits of Proposed Construction for Utilities Crossing the Roadway in a Generally Transverse Direction.

(1) Utilities crossing excavations for structures that are normally made by trenching such as sewers, underdrains, etc. and all minor structures such as manholes, inlets, foundations for signs, foundations for traffic signals, etc., the limits shall be the space to be occupied by the proposed permanent construction, unless otherwise required by the regulations governing the specific utility involved.

(2) For utilities crossing the proposed site of major structures such as bridges, sign trusses, etc., the limits shall be as defined above for utilities extending in the same general direction as the roadway.

It is understood and agreed that the Contractor has considered in the bid all of the permanent and temporary utilities in their present and/or adjusted positions as indicated in the contract. It is further understood the actual location of the utilities may be located anywhere within the tolerances provided in 220 ILCS 50/2.8 or Administrative Code Title 92 Part 530.40(c), and the proximity of some utilities to construction may require extraordinary measures by the Contractor to protect those utilities.

No additional compensation will be allowed for any delays, inconveniences, or damages sustained by the Contractor due to the presence of or any claimed interference from known utility facilities or any adjustment of them, except as specifically provided in the contract.

107.38 Adjustments of Utilities within the Project Limits. The adjustment of utilities consists of the relocation, removal, replacement, rearrangements, reconstruction, improvement, disconnection, connection, shifting, new installation, or altering of an existing utility facility in any manner.

Utilities which are to be adjusted shall be adjusted by the utility owner or the owner's representative or by the Contractor as a contract item. Generally, arrangements for adjusting known utilities will be made by the Department prior to project construction; however, utilities will not necessarily be adjusted in advance of project construction and, in some cases, utilities will not be removed from the proposed construction limits as described in Article 107.37. When utility adjustments must be performed in conjunction with construction, the utility adjustment work will be indicated in the contract.

The Contractor may make arrangements for adjustment of utilities indicated in the contract, but not scheduled by the Department for adjustment, provided the Contractor furnishes the Department with a signed agreement with the utility owner covering the adjustments to be made. The cost of any such adjustments shall be the responsibility of the Contractor.

107.39 Contractor's Responsibility for Locating and Protecting Utility Property and Services. At points where the Contractor's operations are adjacent to properties or facilities of utility companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

Within the State of Illinois, a State-Wide One Call Notice System has been established for notifying utilities. Outside the city limits of the City of Chicago, the system is known as the Joint Utility Locating Information for Excavators (JULIE) System. Within the city limits of the City of Chicago the system is known as DIGGER. All utility companies and municipalities which have buried utility facilities in the State of Illinois are a part of this system.

The Contractor shall call JULIE (800-892-0123) or DIGGER (312-744-7000), a minimum of 48 hours in advance of work being done in the area, and they will notify all member utility companies involved their respective utility should be located.

For utilities which are not members of JULIE or DIGGER, the Contractor shall contact the owners directly.

The plan general notes will indicate which utilities are not members of JULIE or DIGGER.

The following table indicates the color of markings required of the State-Wide One Call Notification System.

Utility Service	Color
Electric Power, Distribution and Transmission	Safety Red
Municipal Electric Systems	Safety Red
Gas Distribution and Transmission	High Visibility Safety Yellow
Oil Distribution and Transmission	High Visibility Safety Yellow
Telephone and Telegraph System	Safety Alert Orange
Community Antenna Television Systems	Safety Alert Orange
Water Systems	Safety Precaution Blue
Sewer Systems	Safety Green
Non-Potable Water and Slurry Lines	Safety Purple
Temporary Survey	Safety Pink
Proposed Excavation	Safety White (Black when snow is on the ground)

The State-Wide One Call Notification System will provide for horizontal locations of utilities. When it is determined that the vertical location of the utility is necessary to facilitate construction, the Engineer may make the request for location from the utility after receipt of notice from the Contractor. If the utility owner does not field locate their facilities to the satisfaction of the Engineer, the Engineer will authorize the Contractor in writing to proceed to locate the facilities in the most economical and reasonable manner, subject to the approval of the Engineer, and be paid according to Article 109.04.

The Contractor shall be responsible for maintaining the excavations or markers provided by the utility owners.

The Contractor shall take all necessary precautions for the protection of the utility facilities. The Contractor shall be responsible for any damage or destruction of utility facilities resulting from neglect, misconduct, or omission in the Contractor's manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials. Whenever any damage or destruction of a utility facility occurs as a result of work performed by the Contractor, the utility company will be immediately notified. The utility company will make arrangements to restore such facility to a condition equal to that existing before any such damage or destruction was done.

In the event of interruption of utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with the said authority in the restoration of service. If water service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

107.40 Conflicts with Utilities. Except as provided hereinafter, the discovery of a utility in an unanticipated location will be evaluated according to Article 104.03.

It is understood and agreed that the Contractor has considered in the bid all facilities not meeting the definition of a utility in an unanticipated location and no additional compensation will be allowed for any delays, inconveniences, or damages sustained by the Contractor due to the presence of or any claimed interference from such facilities.

When the Contractor discovers a utility in an unanticipated location, the Contractor shall not interfere with said utility, shall take proper precautions to prevent damage or interruption of the utility, and shall promptly notify the Engineer of the nature and location of said utility.

(a) Definition. A utility in an unanticipated location is defined as an active or inactive utility, which is either:

(1) Located underground and (a) not shown in any way in any location on the contract documents; (b) not identified in writing by the Department to the Contractor prior to the letting; or (c) not located relative to the location shown in the contract within the tolerances provided in 220 ILCS 50/2.8 or Administrative Code Title 92 Part 530.40(c); or

(2) Located above ground or underground and not relocated as provided in the contract.

Service connections shall not be considered to be utilities in unanticipated locations.

(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work applicable to the utility or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows:

(1) Minor Delay. A minor delay occurs when the Contractor's operation is completely stopped by a utility in an unanticipated location for more than two hours, but not to exceed three weeks.

(2) Major Delay. A major delay occurs when the Contractor's operation is completely stopped by a utility in an unanticipated location for more than three weeks.

(3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the contractor's rate of production decreases by more than 25 percent and lasts longer than seven days.

(c) Payment. Payment for Minor, Major and Reduced Rate of Production Delays will be made as follows.

(1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work will be paid for according to Article 109.04(b)(4). The length of time paid for will be the time between start of delay and eight hours working time from start of shift being worked.

For delays exceeding the initial shift, excluding Saturdays, Sundays, and holidays, Contractor-owned equipment idled by the delay which cannot be used on other work and remaining at the work site, will be paid at one-half the rate permitted in Article 109.04(b)(4) using a maximum eight hours per day for computation purposes. Equipment rented from an independent source will be paid at rates being paid by the Contractor plus move-in move-out costs, but the total amount paid will not exceed three weeks rental.

(2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to three weeks plus the cost of move-out to either the Contractor's yard or another job, whichever is less. Rental equipment may be paid for longer than three weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

(3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Whether covered by (1), (2) or (3) above, additional traffic control required as a result of the operation(s) delayed will be paid for according to Article 109.04 for the total length of the delay.

If the delay is clearly shown to have caused work, which would have otherwise been completed, to be done after material or labor costs have increased, such increases may be paid. Payment for materials will be limited to increased cost substantiated by documentation furnished by the Contractor. Payment for increased labor rates will include those items in Article 109.04(b)(1) and (2), except the 35 percent and ten percent additives will not be permitted. On a working day contract, a delay occurring between November 30 and May 1, when work has not started, will not be considered as eligible for payment of measured labor and material costs.

Project overhead (not including interest) will be allowed when all progress on the contract has been delayed, and will be calculated as 15 percent of the delay claim.

(d) Other Obligations of Contractor. Upon payment of a claim under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this Provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this Provision."

WORKING DAYS (BDE)
Effective: January 1, 2002

The Contractor shall complete the work within **140** working days.

STEEL COST ADJUSTMENT (BDE) (RETURN FORM WITH BID)
Effective: April 2, 2004 Revised: April 1, 2009

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices 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 indicate contract number, company name, and sign and date the form shall make this contract exempt of steel cost adjustments for all items of steel. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in has a contract value of $10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

(a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.

(b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

SCA = Q X D

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$D = MPI_M - MPI_L$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

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

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness)	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness)	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness)	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 – 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 – 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 – 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 – 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 – 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 – 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 – 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

RETURN WITH BID

ILLINOIS DEPARTMENT OF TRANSPORTATION

OPTION FOR STEEL COST ADJUSTMENT

The bidder shall submit this completed form with his/her bid. Failure to submit the form or properly complete contract number, company name, and sign and date the form shall make this contract exempt of steel cost adjustments for all items of steel. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment. 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 plans for the following items of work?

Metal Piling	Yes	☐
Structural Steel	Yes	☐
Reinforcing Steel	Yes	☐
Dowel Bars, Tie Bars and Mesh Reinforcement	Yes	☐
Guardrail	Yes	☐
Steel Traffic Signal and Light Poles, Towers and Mast Arms	Yes	☐
Metal Railings (excluding wire fence)	Yes	☐
Frames and Grates	Yes	☐

Signature: _____ **Date:** _____

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

ATTACHMENTS

A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all word 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.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4 and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 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 DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

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 and 41 CFR 60 (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 Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American 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 State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his 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, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO 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 minority group employees.

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 minority groups 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 employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group 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, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group 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 his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.
c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
b. The contractor will use best efforts to incorporate an 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 SHA and shall set forth what efforts have been made to obtain such information.
d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quailifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. 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.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees.
Contractors shall obtain lists of DBE construction firms from SHA

personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. 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 completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA 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. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers 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 (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) 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. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, 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 paragraphs 4 and 5 of this Section IV.

b. 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.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification 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 DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour 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.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional 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 question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advised the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. 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 or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost 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.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) 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 DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/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 Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees 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 employee 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 listed in 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 or subcontractor 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-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) 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 journeyman-level 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 for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) 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 DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. 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.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level 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-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration

withdraws approval of a training program, the contractor or subcontractor 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. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. 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.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor 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, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's 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 SHA contracting officer 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.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her 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, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall; upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies 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 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof 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. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found 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 and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely

all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for submitting payroll copies of all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such 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 the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. 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 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U/S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, 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 SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions 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.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on /Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

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 State. 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 contractors' own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly 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, assignee, or agent of the prime contractor.

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 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 VII 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 SHA 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 SHA 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 SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

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 SHA 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. 333).

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. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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, the following notice 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:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

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 not more than $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more).

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

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary 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 participant shall submit an 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 primary 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 department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is
submitted if any time the prospective primary 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,""lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal

is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary 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 primary 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 Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions

and in all solicitations for lower tier covered transactions.

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 may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. 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.

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.

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Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-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;

c. 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 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

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," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tie 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.

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 may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

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 dealing.

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.

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Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:

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 participation in this transaction 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.

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XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(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 his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

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.

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at http://www.dot.state.il.us/desenv/delett.html.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at http://www.dot.state.il.us/desenv/subsc.html.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.