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Letting April 28, 2023

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. DU091
DuPage Airport
West Chicago, Illinois
DuPage County
Illinois Project No. DPA-4980
SBG Project No. N/A**



NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. on April 28, 2023, at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. DU091
DuPage Airport
West Chicago, Illinois
DuPage County
Illinois Project No. DPA-4980
SBG Project No. N/A**

Construct New Automobile Parking Lot

For engineering information, please contact Daniel L. Pape, P.E. of Crawford, Murphy & Tilly, Inc. at 630.820.1022.

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 10-18 of the Illinois Standard Specifications for Construction of Airports (Adopted April 1, 2012), 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 within 90 calendar days 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.

- 5. PRE-BID CONFERENCE.** N/A

- 6. DISADVANTAGED BUSINESS POLICY.** The DBE goal for this contract is 7.0%.

- 7. SPECIFICATIONS AND DRAWINGS.** The work shall be done in accordance with the Illinois Standard Specifications for Construction of Airports (Adopted April 1, 2012), the Special Provisions dated March 3, 2023, and the Construction Plans dated March 3, 2023 as approved by the Illinois Department of Transportation, Division of Aeronautics.

- 8. BIDDING REQUIREMENTS AND BASIS OF AWARD.** When alternates are included in the proposal, the following shall apply:
- a. Additive Alternates
 - (1) Bidders must submit a bid for the Base Bid and for all Additive Alternates.
 - (2) Award of this contract will be made to the lowest responsible qualified bidder computed as follows:

The lowest aggregate amount of (i) the Base Bid plus (ii) any Additive Alternate(s) which the Department elects to award.

The Department may elect not to award any Additive Alternates. In that case, award will be to the lowest responsible qualified bidder of the Base Bid.
 - b. Optional Alternates
 - (1) Bidders must submit a bid for the Base Bid and for either Alternate A or Alternate B or for both Alternate A and Alternate B.
 - (2) Award of this contract will be made to the lowest responsible qualified bidder computed as follows:

The lower of the aggregate of either (i) the Base Bid plus Alternate A or (ii) the Base Bid plus Alternate B.
- 9. CONTRACT TIME.** The Contractor shall complete all work within the specified contract time. Any calendar day extension beyond the specified contract time must be fully justified, requested by the Contractor in writing, and approved by the Engineer, or be subject to liquidated damages.
- The contract time for this contract is Base Bid: 85 calendar days; Additive Alternate #1: 5 additional calendar days; Additive Alternate #2: 22 additional calendar days.
- 10. INDEPENDENT WEIGHT CHECKS.** The Department reserves the right to conduct random unannounced independent weight checks on any delivery for bituminous, aggregate or other pay item for which the method of measurement for payment is based on weight. The weight checks will be accomplished by selecting, at random, a loaded truck and obtaining a loaded and empty weight on an independent scale. In addition, the department may perform random weight checks by obtaining loaded and empty truck weights on portable scales operated by department personnel.
- 11. MATERIAL COST ADJUSTMENTS.** The Illinois Department of Transportation, Division of Aeronautics does not offer any material cost adjustment provisions.
- 12. GOOD FAITH COMPLIANCE.** The Illinois Department of Transportation has made a good faith effort to include all statements, requirements, and other language required by federal and state law and by various offices within federal and state governments whether that language is required by law or not. If anything of this nature has been left out or if additional language etc. is later required, the bidder/contractor shall cooperate fully with the Department to modify the contract or bid documents to correct the deficiency. If the change results in increased operational costs, the Department shall reimburse the contractor for such costs as it may find to be reasonable.

By Order of the
Illinois Department of Transportation

Omer Osman,
Secretary

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
EEO

Effective: July 21, 1978
Revised: November 18, 1980

The requirements of the following provisions written for federally-assisted construction contracts, including all goals and timetables and affirmative action steps, shall also apply to all State-funded construction contracts awarded by the Illinois Department of Transportation.

Notice of Requirement for Affirmative Action to Ensure
Equal Employment Opportunity (Executive Order 11246)

1. The offeror's or bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

APPENDIX A

The following goal for female utilization in each construction craft and trade shall apply to all Contractors holding Federal and federally assisted construction contracts and subcontracts in excess of \$10,000. The goal is applicable to the Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or nonfederally related construction contract or subcontract.

Area Covered (Statewide)

Goals for Women apply nationwide.

GOAL	Goal (percent)
Female Utilization	6.9

APPENDIX B

Until further notice, the following goals for minority utilization in each construction craft and trade shall apply to all Contractors holding federal and federally-assisted construction contracts and subcontracts in excess of \$10,000 to be performed in the respective geographical areas. The goals are applicable to the Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally-assisted or nonfederally related construction contract or subcontract.

<u>Economic Area</u>	Goal (percent)
056 Paducah, KY: Non-SMSA Counties - IL - Hardin, Massac, Pope KY - Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall	5.2
080 Evansville, IN: Non-SMSA Counties - IL - Edwards, Gallatin, Hamilton, Lawrence, Saline, Wabash, White IN - Dubois, Knox, Perry, Pike, Spencer KY - Hancock, Hopkins, McLean, Mublenberg, Ohio, Union, Webster	3.5
081 Terre Haute, IN: Non-SMSA Counties - IL - Clark, Crawford IN - Parke	2.5

083	Chicago, IL: SMSA Counties: 1600 Chicago, IL -	19.6
	IL - Cook, DuPage, Kane, Lake, McHenry, Will 3740 Kankakee, IL -	9.1
	IL - Kankakee Non-SMSA Counties	18.4
	IL - Bureau, DeKalb, Grundy, Iroquois, Kendall, LaSalle, Livingston, Putnam	
	IN - Jasper, Laporte, Newton, Pulaski, Starke	
084	Champaign - Urbana, IL: SMSA Counties: 1400 Champaign - Urbana - Rantoul, IL -	7.8
	IL - Champaign Non-SMSA Counties -	4.8
	IL - Coles, Cumberland, Douglas, Edgar, Ford, Piatt, Vermilion	
085	Springfield - Decatur, IL: SMSA Counties: 2040 Decatur, IL -	7.6
	IL - Macon 7880 Springfield, IL -	4.5
	IL - Menard, Sangamon Non-SMSA Counties	4.0
	IL - Cass, Christian, Dewitt, Logan, Morgan, Moultrie, Scott, Shelby	
086	Quincy, IL: Non-SMSA Counties	3.1
	IL - Adams, Brown, Pike	
	MO - Lewis, Marion, Pike, Ralls	
087	Peoria, IL: SMSA Counties: 1040 Bloomington - Normal, IL -	2.5
	IL - McLean 6120 Peoria, IL -	4.4
	IL - Peoria, Tazewell, Woodford Non-SMSA Counties -	3.3
	IL - Fulton, Knox, McDonough, Marshall, Mason, Schuyler, Stark, Warren	
088	Rockford, IL: SMSA Counties: 6880 Rockford, IL -	6.3
	IL - Boone, Winnebago Non-SMSA Counties -	4.6
	IL - Lee, Ogle, Stephenson	
098	Dubuque, IA: Non-SMSA Counties -	0.5
	IL - JoDaviess	
	IA - Atlamakee, Clayton, Delaware, Jackson, Winnesheik	
	WI - Crawford, Grant, Lafayette	
099	Davenport, Rock Island, Moline, IA - IL: SMSA Counties: 1960 Davenport, Rock Island, Moline, IA - IL -	4.6
	IL - Henry, Rock Island IA - Scott Non-SMSA Counties -	3.4
	IL - Carroll, Hancock, Henderson, Mercer, Whiteside IA - Clinton, DesMoines, Henry, Lee, Louisa, Muscatine MO - Clark	

107	St. Louis, MO:	
	SMSA Counties:	
	7040 St. Louis, MO - IL -	14.7
	IL - Clinton, Madison, Monroe, St. Clair	
	MO - Franklin, Jefferson, St. Charles,	
	St. Louis, St. Louis City	
	Non-SMSA Counties -	11.4
	IL - Alexander, Bond, Calhoun, Clay,	
	Effingham, Fayette, Franklin, Greene,	
	Jackson, Jasper, Jefferson, Jersey,	
	Johnson, Macoupin, Marion, Montgomery,	
	Perry, Pulaski, Randolph, Richland,	
	Union, Washington, Wayne, Williamson	
	MO - Bollinger, Butler, Cape Girardeau,	
	Carter, Crawford, Dent, Gasconade,	
	Iron, Lincoln, Madison, Maries,	
	Mississippi, Montgomery, Perry,	
	Phelps, Reynolds, Ripley, St. Francois,	
	St. Genevieve, Scott, Stoddard, Warren,	
	Washington, Wayne	

These goals are applicable to all the Contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with Executive Order 11246 and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the provisions and specifications set forth in its federally assisted contracts, and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order 11246 and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Illinois Department of Transportation will provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of any construction contract and/or subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. This notification will list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the entire State of Illinois for the goal set forth in APPENDIX A and the county or counties in which the work is located for the goals set forth in APPENDIX B.

STANDARD FEDERAL EQUAL EMPLOYMENT
OPPORTUNITY CONSTRUCTION CONTRACT
SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - (a) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - (b) "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - (c) "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
 - (d) "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000. the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - (a) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working as such sites or in such facilities.
 - (b) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - (c) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractors may have taken.
 - (d) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - (e) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
 - (f) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreements; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - (g) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - (h) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
 - (i) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - (j) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
 - (k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

- (l) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - (m) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - (n) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - (o) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.
 - (p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a Contractor association, joint Contractor-union, Contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
 9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specified minority group of women is underutilized).
 10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
 11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
 12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
 13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
 14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy his requirement, Contractors shall not be required to maintain separate records.
 15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES
NONFEDERAL-AID CONTRACTS

Effective: March 20, 1969
Revised: January 1, 1994

1. General

- a. The requirements set forth herein shall constitute the specific affirmative action requirements under this contract and supplement the non-discrimination requirements contained elsewhere in this proposal.
- b. The Contractor shall work with the Illinois Department of Transportation (IDOT) in carrying out Equal Employment Opportunity (EEO) obligations and in reviews of activities under the contract.
- c. The Contractor, and all subcontractors holding subcontracts (not including material suppliers) of \$10,000 or more, shall comply with the following minimum specific requirement activities of EEO. The Contractor shall include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. Equal Employment Opportunity Policy

The Contractor shall accept as operating policy the following statement which is designed to further the provision of EEO to all persons, and to promote the full realization of equal employment opportunity through a positive continuing program: "It is the policy of this Company to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age, or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

3. Equal Employment Opportunity Officer

The Contractor shall designate and make known to IDOT contracting officers an EEO Officer who will have the responsibility for and 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.

4. Dissemination of Policy

- a. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's 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:
 - (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - (2) 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.
 - (3) 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 and female employees.
- b. In order to make the Contractor's EEO policy known to all employees, prospective employees, and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor shall take the following actions:
 - (1) 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.
 - (2) The Contractor's EEO policy and the procedures to implement such policy shall be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

5. Recruitment

- a. When advertising for employees, the Contractor shall include in all advertisements for employees the notation: "An Equal Opportunity Employer". All such advertisements shall be published in newspapers, or other publications, having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b. The Contractor shall, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants, including, but not limited to, State employment

agencies, schools, colleges and minority and female organizations. To meet this requirement, the Contractor shall, identify sources of potential minority and female employees, and establish with such identified sources procedures whereby minority and female applicants may be referred to the Contractor for employment consideration. In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he/she is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with EEO contract provisions.

- c. The Contractor shall encourage present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority and female applicants shall be discussed with employees.

6. Personnel Actions

Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, will be taken without regard to race, color, religion, sex, national origin, age, or disability. The following procedures shall be followed:

- a. The Contractor shall 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 shall periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The Contractor shall periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor shall 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 shall promptly investigate all complaints of alleged discrimination made to the Contractor in connection with the obligations under this contract, shall attempt to resolve such complaints, and shall 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 shall inform every complainant of all of the avenues of appeal.

7. Training and Promotion

- a. The Contractor shall assist in locating, qualifying and increasing the skills of minority and female 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.
- c. The Contractor shall advise employees and applicants for employment of available training programs and entrance requirements for each.
- d. The Contractor shall periodically review the training and promotion potential of minority and female employees and shall encourage eligible employees to apply for such training and promotion.

8. Unions

If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor shall use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minorities and females 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, shall include the procedures set forth below:

- a. The Contractor shall use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority and female employees for membership in the unions and increasing the skills of minority and female employees so that they may qualify for higher paying employment.
- b. The Contractor shall use best efforts to incorporate an EEO clause into each union agreement to the end that such union shall 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 IDOT 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 female referrals within the time limit set forth in the collective bargaining agreement, the Contractor shall, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and females. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minorities or female employees). In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to these Special Provisions, such Contractor shall immediately notify IDOT.

9. Selection of Subcontractors, Procurement of Materials, and Leasing of Equipment

The Contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

- 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 Part 23, shall have equal opportunity to compete for and perform subcontracts which the Contractor enters into pursuant to this contract. The Contractor shall use best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority and female representation among their employees. Contractors shall obtain lists of DBE construction firms from IDOT personnel.
- c. The Contractor shall use his/her best efforts to ensure subcontractor compliance with their EEO obligations.

10. 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 IDOT.

- a. The records kept by the Contractor shall document the following:
 - (1) the number of minorities, non-minorities and females employed in each work classification on the project;
 - (2) the progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and females;
 - (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 Contractor shall submit to IDOT a monthly report every month for the duration of the project, indicating the number of minority, non-minority and female employees currently engaged in each work classification required by contract work and the number of hours worked. This information is to be reported on Form SBE-956. If on-the-job training is being required by special provision, the Contractor will be required to collect and report training data.

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
REQUIRED PROVISIONS – STATE CONTRACTS

Effective: April 1 1965
Revised: January 1, 2017

I. SELECTION OF LABOR

The Contractor shall comply with all Illinois statutes pertaining to the selection of labor.

EMPLOYMENT OF ILLINOIS WORKERS DURING PERIODS OF
EXCESSIVE UNEMPLOYMENT

Whenever there is a period of excessive unemployment in Illinois, which is defined herein as any month immediately following two consecutive calendar months during which the level of unemployment in the State of Illinois has exceeded five percent as measured by the United States Bureau of Labor Statistics in its monthly publication of employment and unemployment figures, the Contractor shall employ at least 90 percent Illinois laborers. "Illinois laborer" means any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident.

Other laborers may be used when Illinois laborers as defined herein are not available, or are incapable of performing the particular type of work involved, if so certified by the Contractor and approved by the Engineer. The Contractor may place no more than three of his/her regularly employed non-resident executive and technical experts, who do not qualify as Illinois laborers, to do work encompassed by this Contract during period of excessive unemployment.

This provision applies to all labor, whether skilled, semi-skilled, or unskilled, whether manual or non-manual.

II. EQUAL EMPLOYMENT OPPORTUNITY

In the event of the Contractor's noncompliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Illinois Department of Human Rights Rules and Regulations, the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political sub-divisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation.

During the performance of this Contract, the Contractor agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2. That, if it hires additional employees in order to perform this contract or any portion hereof, it will determine the availability (in accordance with the Illinois Department of Human Rights Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
3. That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service.
4. That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and Rules and Regulations, the Contractor will promptly so notify the Illinois Department of Human Rights and IDOT and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
5. That it will submit reports as required by the Illinois Department of Human Rights Rules and Regulations, furnish all relevant information as may from time to time be requested by the Illinois Department of Human Rights or IDOT, and in all respects comply with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.
6. That it will permit access to all relevant books, records, accounts and work sites by personnel of IDOT and the Illinois Department of Human Rights for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.
7. That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the Contractor will be liable for compliance with applicable provisions of this clause by subcontractors; and further it will promptly notify IDOT and the Illinois Department of Human Rights in the event any subcontractor fails or refuses to comply with these provisions. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

III. SUBLETTING OR ASSIGNING THE CONTRACT

1. The Contractor shall perform with his/her own organization contract work amounting to not less than 51 percent of the original total contract price, except that any items designated by the State as "Specialty Items" may be performed by subcontract and the amount of any such "Specialty Items" so performed may be deducted from the original total contract price before computing the amount of work required to be performed by the Contractor with his/her own organization.
 - a. "His/her own organization" shall be construed to include only worker employed and paid directly by the Contractor and equipment owned or rented by him/her, with or without operators.
 - b. "Specialty Items" shall be construed to be limited to work that requires specialized knowledge, craftsmanship or equipment not ordinarily available in contracting organizations qualified to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. In addition to the 51 percent requirement set forth in paragraph 1 above, the Contractor shall furnish (a) a competent superintendent or foreman who is employed by him/her, who has full authority to direct performance of the work in accordance with the contract requirements, and who is in charge of all construction operations (regardless of who performs the work), and (b) such other of his/her own organizational capability and responsibility (supervision, management, and engineering services) as the State highway department contracting officer determines is necessary to assure the performance of the contract.
3. The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of the contract or contracts or any portion thereof, or of his/her right, title or interest therein, without written consent of the Engineer. In case such consent is given, the Contractor will be permitted to sublet a portion thereof, but shall perform with the Contractor's own organization, work amounting to not less than 51 percent of the total contract cost, except that any items designated in the contract as "specialty items" may be performed by subcontract and the cost of any such specialty items so performed by subcontract may be deducted from the total cost before computing the amount of work required to be performed by the Contractor with his/her own organization. Materials purchased or produced by the Contractor must be incorporated into the project by the Contractor's own organization if their cost is to be applied to the 50 percent requirement.

No subcontracts, or transfer of contract, shall in any case release the Contractor of his/her liability under the contract and bonds. All transactions of the Engineer shall be with the Contractor. The Contractor shall have representative on the job at all times when either contract or subcontract work is being performed.

All requests to subcontract shall contain a certification that the subcontract agreement exists in writing and physically contains the required Federal and State Equal Employment Opportunity provisions and Labor compliance provisions, including the contract minimum wage requirements. The Contractor shall permit Department or Federal representatives to examine the subcontract agreements upon notice.

4. Any items that have been selected as "Specialty Items" for the contract are listed as such in the Special Provisions, bid schedule, or elsewhere in the contract documents.
5. No portion of the contract shall be sublet, assigned or otherwise disposed of, except with the written consent of the State highway department contracting officer, or his/her authorized representative, and such consent when given shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract. Request for permission to sublet, assign or otherwise dispose of any portion of the contract shall be in writing and accompanied by (a) a showing that the organization which will perform the work is particularly experienced and equipped for such work, and (b) an assurance by the Contractor that the labor standards provisions set forth in this contract shall apply to labor performed on all work encompassed by the request.

IV. COMPLIANCE WITH THE PREVAILING WAGE ACT

1. **Prevailing Wages.** All wages paid by the Contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended, except where a prevailing wage violates a federal law, order, or ruling, the rate conforming to the federal law, order, or ruling shall govern. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto. If the Department of Labor revises the wage rates, the Contractor will not be allowed additional compensation on account of said revisions. Current wage rate information shall be obtained by visiting the Department of Labor website at <http://www.illinois.gov/idol/Pages/default.aspx>. It is the responsibility of the Contractor to review the rates applicable to the work of this contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the Contractor by means of the Department of Labor website satisfies the notification of revisions by the Department to the Contractor pursuant to the Act, and the Contractor agrees that no additional notice is required.
2. **Payroll Records.** The Contractor and each subcontractor shall make and keep, for a period of three years from the later of the date of final payment under the contract or completion of the contract, records of the wages paid to his/her workers. The payroll records shall include each worker's name, address, telephone number, social security number, classification, rate of pay, number of hours worked each day, starting and ending times of work each day, total hours worked each week, itemized deductions made, and actual wages paid. Upon seven business days' notice, these records shall be available at a location within the State, during reasonable hours, for inspection by the Department or the Department of Labor; and Federal, State, or local law enforcement agencies and prosecutors.
3. **SUBMISSION OF PAYROLL RECORDS (BDE)**

Effective: April 1, 2021
Revised: November 1, 2022

Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month to the Illinois Department of Labor (IDOL) through the Illinois Prevailing Wage Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Prevailing-Wage-Portal.aspx>. Payrolls shall be submitted in the format prescribed by the IDOL.

In addition to filing certified payroll(s) with the IDOL, the Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPTracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option ("No Work", "Suspended", or "Complete") selected."

4. Employee Interviews. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor.

V. NONSEGREGATED FACILITIES

(Applicable to State Financed Construction Contracts and related subcontracts exceeding \$10,000 which are not exempt from the Equal Opportunity clause).

By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement, as appropriate, the bidder, construction Contractor, subcontractor, or material supplier, as appropriate, certifies that (s)he does not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that (s)he does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. (S)He certifies further that (s)he will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that (s)he will not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. (S)He agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, 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, creed, color, or national origin, because of habit, local custom, or otherwise. (S)He agrees that (except where he/she has obtained identical certifications from proposed subcontractors and material suppliers for specific time periods), he/she will obtain identical certifications from proposed subcontractors or material suppliers prior to the award of subcontracts or the consummation of material supply agreements, exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that (s)he will retain such certifications in his/her files.

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SECTION 80 PROSECUTION AND PROGRESS

This Special Provision amends the provisions of the Standard Specifications for Construction of Airports, adopted April 1, 2012 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

80-09 FAILURE TO COMPLETE ON TIME.

DELETE: "See contract documents for current schedule of deductions."

ADD:

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	6,775	9,525

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
SECTION 90 MEASUREMENT AND PAYMENT

This Special Provision amends the provisions of the Standard Specifications for Construction of Airports, adopted April 1, 2012 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

90-07 PARTIAL PAYMENTS.

DELETE: The entire section.

ADD: Partial payments will be made to the Contractor at least once each month as the work progresses. The payments will be based upon estimates, prepared by the Resident Engineer, of the value of the work performed and materials complete and in place in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the Section 90-08 PAYMENT FOR MATERIALS ON HAND. From the amount of partial payment so determined on Federal-Aid projects, there shall be deducted an amount up to ten percent of the cost of the completed work which shall be retained until all conditions necessary for financial closeout of the project are satisfied. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1,000.00 will be approved for payment other than the final payment. A final voucher for under \$5.00 shall not be paid except through electronic funds transfer. (15 ILCS 405/9(b-1))

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders, except when such excess quantities have been determined by the Engineer to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Department to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in Section 90-09 ACCEPTANCE AND FINAL PAYMENT.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610) progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

In accordance with 49 USC § 47111, the Department will not make payments totaling more than 90 percent of the contract until all conditions necessary for financial closeout of the project are satisfied.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved.

90-10 TRUST AGREEMENT OPTION.

DELETE: The entire section.

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Construction of Airports," adopted April 1, 2012, and the Special Provisions included herein which apply to and govern the airport improvement of: Construct New Automobile Parking Lot at DuPage, Contract DU091, and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

SPECIAL PROVISION FOR COMPLETION TIME VIA CALENDAR DAYS

It being understood and agreed that the completion within the time limit is an essential part of the contract, the bidder agrees to complete the work within **Base Bid: 85 calendar days; Additive Alternate #1: 5 additional calendar days; Additive Alternate #2: 22 additional calendar days**, unless additional time is granted by the Engineer in accordance with the provisions of the specifications. In case of failure to complete the work on or before the time named herein, or within such extra time as may have been allowed by extensions, the bidder agrees that the Department of Transportation shall withhold from such sum as may be due him/her under the terms of this contract, the costs, as set forth in Section 80-09 Failure to Complete on Time of the Standard Specifications, which costs shall be considered and treated not as a penalty but as damages due to the State from the bidder by reason of the failure of the bidder to complete the work within the time specified in the contract.

CONSTRUCTION AIR QUALITY – DIESEL VEHICLE EMISSIONS CONTROL (BDE)

Effective: April 1, 2009

Revised: January 2, 2012

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 certify that only ULSD will be used in all jobsite equipment. The certification shall be presented to the Department prior to the commencement of the work.

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 RESTRICTION (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.

SPECIAL PROVISION FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION

Effective: September 1, 2000

Revised: March 2, 2019

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 the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined 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, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 7.0% 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 enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at: <http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

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

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means 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 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 Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the 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 it is otherwise eligible for award. If the Department determines 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 will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person 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 reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. 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 Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) **NO AMENDMENT.** No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) 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) The DBE is aware 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) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;

(3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

(6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) **FINAL PAYMENT.** 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 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) **ENFORCEMENT.** The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) **RECONSIDERATION.** Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

SPECIAL PROVISION FOR WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Resident Engineer on Division of Aeronautics Form "AER 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

SPECIAL PROVISION FOR SUBCONTRACTOR MOBILIZATION PAYMENTS

Effective: November 2, 2017
Revised: April 1, 2019

To account for the preparatory work and the 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 Section 80-01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form AER 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form AER 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%

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.

SPECIAL PROVISION FOR PAYMENTS TO SUBCONTRACTORS

Effective: November 2, 2017

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 90-07 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. If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.

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.

SPECIAL PROVISION FOR SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Subcontractor and Disadvantaged Business Enterprise Payment Reporting

The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment.

SPECIAL PROVISION FOR NPDES CERTIFICATION

In accordance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter I), and the Clean Water Act, and the regulations thereunder, this certification is required for all construction contracts that will result in the disturbance of one or more acres total land area.

The bidder certifies under penalty of law that he/she understands the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR100000) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

The Airport Owner or its Agent will:

- 1) prepare, sign and submit the Notice of Intent (NOI)
- 2) conduct site inspections and complete and file the inspection reports
- 3) submit Incidence of Non-Compliance (ION) forms
- 4) submit Notice of Termination (NOT) form

Prior to the issuance of the Notice-to-Proceed, for each erosion control measure identified in the Storm Water Pollution Prevention Plan, the contractor or subcontractor responsible for the control measure(s) must sign the above certification (forms to be provided by the Department).

ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)

Effective: June 2, 2021

Revised: September 2, 2021

Illinois Works Jobs Program Act (30 ILCS 559/20-1 et seq.). For contracts having an awarded contract value of \$500,000 or more, the Contractor shall comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules. The goal of the Illinois Apprenticeship Works Initiative is that apprentices will perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less. The Contractor may seek from the Department of

Commerce and Economic Opportunity (DCEO) a waiver or reduction of this goal in certain circumstances pursuant to 30 ILCS 559/20-20(b). The Contractor shall ensure compliance during the term of the contract and will be required to report on and certify its compliance. An apprentice use plan, apprentice hours, and a compliance certification shall be submitted to the Engineer on forms provided by the Department and/or DCEO.

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

The Prevailing rates of wages are included in this Contract proposal. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act ([820 ILCS](#) 130/0.01, et seq.) and this Proposal, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx> or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.

SECTION III

Special Provisions

For

CONSTRUCT NEW AUTOMOBILE PARKING LOT

ILLINOIS PROJECT: DPA-4980

at

DUPAGE AIRPORT
WEST CHICAGO, ILLINOIS

March 3, 2023



EXPIRES: 11-30-2023

Prepared By:

CRAWFORD, MURPHY & TILLY, INC.
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21002032-00

GENERAL

These Special Provisions, together with applicable Standard Specifications, Rules and Regulations, Contract Requirements for Airport Improvement Projects, Payroll Requirements and Minimum Wage Rates which are hereto attached or which by reference are herein incorporated, cover the requirements of the State of Illinois, Department of Transportation, Division of Aeronautics for the construction of the subject project at the DuPage Airport, DuPage, Illinois.

GOVERNING SPECIFICATIONS AND RULES AND REGULATIONS

The "Illinois Standard Specifications for Construction of Airports", dated April 1, 2012, State of Illinois Department of Transportation, Division of Aeronautics shall govern the project except as otherwise noted in these Special Provisions. In cases of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern. When noted within the Special Provisions, the "Illinois Department of Transportation Standard Specifications for Road and Bridge Construction", adopted January 1, 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids.

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**DIVISION I – GENERAL PROVISIONS (ILLINOIS STANDARD SPECIFICATIONS
FOR CONSTRUCTION OF AIRPORTS)**

SECTION 40 – SCOPE OF WORK

40-05 MAINTENANCE OF TRAFFIC

ADD:

The Contractor shall be responsible for cleaning and maintaining all haul roads and use a pick-up type sweeper on all pavements and adjacent roadways utilized in hauling operations when material is tracked onto said pavement. **The Contractor shall have a sweeper on site and maintain all pavements clear of dirt and debris at all times or as requested by the Resident Engineer.** If the Contractor fails to comply with the Standard Specifications, Contract Plans or these Special Provisions concerning traffic control, the Resident Engineer shall execute such work as may be deemed necessary to correct deficiencies and the cost thereof shall be deducted from compensation due or which may become due the Contractor under the contract. The Contractor shall be responsible for supplying, maintaining and moving all barricades required for construction. The cost thereof shall not be paid for separately, but shall be considered incidental to the contract unit prices.

40-09 AIRPORT OPERATIONS DURING CONSTRUCTION

ADD:

a. Construction Activity and Aircraft Movements

For construction activity to be performed in areas other than active operational areas, the storage and parking of equipment and materials, when not in use or about to be installed, shall not encroach upon active operational areas. In protecting operational areas, the minimum clearances maintained for runways shall be in conformance with Part 77 of the Federal Aviation Regulations.

All construction operations shall conform to the plans and in accordance with AC 150/5370-2 (Latest Edition) Operational Safety on Airports during Construction.

b. Limitations on Construction

- (1) Open flame welding or torch cutting operations shall be prohibited, unless adequate fire and safety precautions are provided.
- (2) Open trenches, excavations and stockpiled material near any pavements shall be prominently marked with red flags and lighted by light units during hours of restricted visibility and/or darkness.
- (3) Stockpiled material shall be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions.
- (4) The use of explosives shall be prohibited.
- (5) Burning shall not be allowed.

c. Debris

Waste and loose material capable of causing damage to aircraft landing gears, propellers, or being ingested in jet engines shall not be placed on active aircraft movement areas. Material tracked on these areas shall be removed continuously during the work. The Contractor shall provide garbage cans in employee parking areas and storage areas for debris.

SECTION 50 – CONTROL OF WORK

50-06 CONSTRUCTION LAYOUT STAKES

DELETE:

Paragraphs A and B and replace with the following:

- A. The Resident Engineer will locate and reference three (3) control points within the limits of the project.
- B. A benchmark will be established along the project outside of construction lines.

ADD:

M. It is not the responsibility of the Resident Engineer to check the correctness of the Contractor's stakes or forms, except as provided herein; however, any errors that are apparent shall be immediately called to the Contractor's attention, and he shall be required to make the necessary correction before the stakes are used for construction purposes.

RESPONSIBILITY OF THE CONTRACTOR

ADD:

- H. The Contractor shall immediately notify the Resident Engineer of conflicts or discrepancies with the established control points.
- I. Construction layout shall not be paid for separately, but shall be considered incidental to the pay item for which the layout is required.

50-10 INSPECTION OF THE WORK

ADD:

The Contractor shall provide portable flood lighting for nighttime construction. Sufficient units shall be provided so that work areas are illuminated to a level of five horizontal foot candles. The lighting levels shall be calculated and measured in accordance with the current standards of the Illumination Engineering Society. Lights shall be positioned so as not to interfere with Airport operations.

50-12 LOAD RESTRICTIONS

ADD:

Contractor's use of the existing airfield and perimeter pavements by equipment and loaded trucks shall be minimized. **Any damage to existing airfield, landside and perimeter pavements shall be repaired by the Contractor at his own expense to the satisfaction of the Owner. Contractor shall obtain written permission from the Airport Owner to use any airfield pavements.**

The Contractor shall not be allowed to use FAA access roads at any time.

50-18 PLANS AND WORK DRAWINGS

DELETE:

References to "approval" in first paragraph and replace with "review".

REVISE the fifth paragraph to read:

Shop drawings submitted by the Contractor for materials and/or equipment to be provided as a part of the contract shall be reviewed by the Project Engineer for substantial conformance of said materials and/or equipment, to contract requirements. Shop drawings shall be fully descriptive, complete and of sufficient detail for ready determination of compliance.

REVISE the last paragraph to read:

The following information shall be clearly marked on each shop, working, and layout drawing, catalog cut, pamphlet specifications sheet, etc., submitted.

PROJECT LOCATION:	DuPage Airport
PROJECT TITLE:	Construct New Automobile Parking Lot
PROJECT NUMBERS:	IL Project: DPA-4980
CONTRACT ITEM:	(i.e. AR156520 Inlet Protection)
SUBMITTED BY:	(Contractor/Subcontractor Name)
DATE:	(Date Submitted)

SECTION 60 – CONTROL OF MATERIALS

60-01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

ADD: After the last paragraph

The Contractor shall certify all materials contained in the contract. Certification documentation shall be submitted to the Engineer. It shall be the sole responsibility of the Contractor to ensure the delivery of adequate and accurate documentation prior to the delivery of the materials.

If, upon delivery and incorporation of any materials, the Contractor has failed to provide the necessary submittals as required by Sections 50-18, 60-01, 60-03 and 60-11 of the Standard Specifications and Special Provisions, the pay item shall not be included on the Construction Progress Payment report until such submittals have been furnished.

60-03 CERTIFICATION OF COMPLIANCE

ADD:

Additional requirements are specified in Section 60-11 Certification of Materials.

60-11 CERTIFICATION OF MATERIALS

ADD:

The Contractor shall certify all materials incorporated into the contract. Certification documentation shall be submitted to the Resident Engineer. It shall be the **sole** responsibility of the Contractor to ensure the submittal of adequate and accurate documentation in order to satisfy the contract material certification requirements **prior** to the delivery of the materials. Materials without certification or those with certification that demonstrates the materials do not meet the requirements of the plans and specifications shall be considered nonconforming and subject to the provisions of Section 50-02.

As a guide to the certification process and requirements, the Contractor shall use the Illinois Department of Transportation/Division of Aeronautics MANUAL FOR DOCUMENTATION OF AIRPORT MATERIALS dated April 1, 2010 or latest edition including any addendums. Copies of this manual are available by contacting Mr. William Eves - Division of Aeronautics at (217) 542-2362 or from their website at <http://www.idot.illinois.gov/home/resources/Manuals/Manuals-and-Guides>.

The cost of providing the required material documentation and certifications shall not be paid for separately, but shall be considered incidental to the associated item.

SECTION 70 – LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

70-17 CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS

ADD:

Special care shall be taken on all operations, and particularly near pavement edges, to avoid damage to edge lights and all underground electrical cable on the airport. The approximate location of existing underground cable is shown on drawings. Any airfield lights or cable that are broken and require replacement because of the Contractor's operations will be replaced by the contractor at his own expense.

Any airfield cable repairs or replacement to any part of the electrical system made necessary by the Contractor's operations will be made by him in the manner specified in Sections 108 and 125 at no cost to the airport. Cost of replacement to be borne by the Contractor shall include any expense incurred in locating as well as repairing or replacing damaged parts of the system by the owning agency.

It shall be the Contractor's responsibility to locate and protect all airport-owned utilities within the construction limits. This includes all electrical cables, storm sewer, drain tile, sanitary sewer and water main.

Special attention is necessary when working near FAA power and control cables. Any FAA utility that is damaged or cut during construction shall be repaired immediately. FAA requires that any damaged cable be replaced in its entirety, from power/control source to the equipment/service. Splices of any kind will not be permitted. Exposures of any FAA cables must be done by hand digging or hydro-excavation. No additional compensation will be made for locating, replacement or repair of FAA facilities or cables but, shall be incidental to the contract.

When FAA cables are required to be located, or the contractor is planning on working on or around FAA cables, conduits or equipment, a 10 working day advanced notice shall be given to the FAA before any such markings are required. Once FAA marks the cables, the contractor will be required to survey the FAA utilities so they can be replaced during construction without remarking by the FAA. This shall be incidental to the contract. The FAA personnel are only available from 9 am to 3 pm, Monday through Friday with advanced notice.

Should any utilities or cables require location, the following people shall be contacted:

DUPAGE AIRPORT

<u>Utility Service or Facility</u>	<u>Contact (Person)</u>	<u>Contact (Phone)</u>
AT&T – Telephone Cables	J.U.L.I.E. (Joint Utility Locating Information for Excavators)	1-800-892-0123
ComEd - Electric Cables	J.U.L.I.E. (Joint Utility Locating Information for Excavators)	1-800-892-0123
City of West Chicago Water, Sanitary and Storm Sewer	Public Works – City of West Chicago	1-630-293-2255
NICOR - Gas Lines	J.U.L.I.E. (Joint Utility Locating Information for Excavators)	1-800-892-0123
FAA Control and Communication Cables	FAA Sector Office	1-630-587-7801

SECTION 80 – PROSECUTION AND PROGRESS

80-03 NOTICE TO PROCEED

ADD:

The Notice to Proceed will not be given until all materials are certified by the Contractor to be available and on hand and meeting the Buy American requirements per the Contract Documents.

The Contractor shall submit a Safety Plan Compliance Document (SPCD) confirming compliance with the CSPP prior to the issuance of the Notice to Proceed as specified in the FAA AC 150/5370-2 (latest edition).

The work within the contract is an integral part of the overall site development for a new aviation hangar. Given the sequencing of the development, the Contractor will not be allowed to start work until after April 1, 2024. Completion of the parking lot must be made on or before June 24, 2024.

80-05 LIMITATION OF OPERATIONS

ADD:

The Contractor shall not have access to any part of the active airfield (aprons, runways or taxiways) for any equipment or personnel without the prior approval of the Airport Manager.

80-07 TEMPORARY SUSPENSION OF THE WORK

REVISE the second paragraph to read:

In the event that the Contractor is ordered by the Engineer to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the Engineer's order to suspend work to the effective date of the Engineer's order to resume the work. Claims for such compensation shall be filed with the Resident Engineer within the time period stated in the Engineer's order to resume work. The Contractor shall submit with his/her claim information substantiating the amount shown on the claim. The Resident Engineer will forward the Contractor's claim to the Division for their consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather, for suspension made at the request of the Engineer, or for any other delay provided for in the contract, plans, or specifications.

SECTION 90 – MEASUREMENT AND PAYMENT

90-05 PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK

ADD the following to subsection B.7. Statements:

All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after completion of the force account work. If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Division, Airport Owner and Local Sponsor are released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery.

DIVISION II – PAVING CONSTRUCTION DETAILS

ITEM 150510 – ENGINEER'S FIELD OFFICE

150-2.1

REVISE:

Paragraph (G) to the following:

- (G) One (1) electric water cooler dispenser capable of dispensing cold and hot water and a supply of water bottles as needed.

Paragraph (I) to the following:

- (I) One (1) plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. paper shall be provided, including maintenance and operating supplies. The wireless printer shall also be equipped to copy and scan documents in color.

ADD:

- (N) One first-aid cabinet fully equipped.
- (O) One (1) 800 Watt, 0.8 cubic foot microwave oven.
- (P) One (1) Coffee Maker
- (Q) Solid waste disposal consisting of two (2) 28-quart waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service.
- (R) One (1) internet Wi-Fi hotspot with service for use by the Resident Engineer with a minimum advertised download speed of up to 5 Mbps and a minimum advertised upload speed of up to 2 Mbps. The type of internet access device chosen by the Contractor shall allow a minimum of six (6) simultaneous Wi-Fi enabled devices use of the internet connection.
- (S) One post mounted rain gauge.

BASIS OF PAYMENT

150-3.1

DELETE the second sentence of the second paragraph of this section.

Payment will be made under:

ITEM AR150510 ENGINEER'S FIELD OFFICE – PER LUMP SUM.

ITEM 150520 – MOBILIZATION

DESCRIPTION

150-1.1

REVISE the third paragraph to read:

This item also includes all efforts related to restoration of the project site, staging areas and haul roads as directed in the bidding documents at the conclusion of the job. This activity includes, but is not limited to, incidental grading, seeding and clean-up, as required to restore the project site to its original condition.

150-3.1

REVISE:

Paragraph (C) to the following:

- B. When fifty percent of the original contract is earned, an additional 20 percent of the pay item will be paid.

ADD:

- C. When 90 percent of the adjusted contract value is earned, an additional 15 percent of the pay item will be paid along with any bid amount in excess of six percent of the original contract amount up to 95% of the pay item.

The remaining 5 percent of the pay item will be paid upon final acceptance of the project by the Engineer. Final acceptance includes satisfactory completion of all punch list items in accordance with written instruction from the engineer as well as acceptance of all final documentation.

BASIS OF PAYMENT

ADD:

Payment will be made under:

ITEM AR150520 MOBILIZATION – PER LUMP SUM.

ITEM 152 – EXCAVATION AND EMBANKMENT

DESCRIPTION

152-1.1

ADD:

All suitable material taken from excavation shall be used in formation of embankment, subgrade, and for backfilling as indicated on the plans or as directed by the Engineer. When the volume of the excavated material (suitable for embankment) exceeds that required to construct the embankment to the grades indicated, the excess shall be stockpiled on Airport property as directed by the Resident Engineer in consultation with the Airport. When the volume of the topsoil stripping exceeds that required to construct the shoulders to the grades indicated, the excess topsoil shall be disposed of off Airport property.

When the volume of excavation is not sufficient for construction of the fill to the grades indicated, the deficiency shall be supplied by the Contractor from offsite borrow sources.

Compaction control tests shall be in accordance with ASTM D 698 (Standard Proctor).

152-1.2 CLASSIFICATION

DELETE: The 4th paragraph – “Shoulder Adjustment”.

ADD:

All stockpiles left in place as directed by the Resident Engineer shall be shaped to non-uniform, smooth, site-complimentary lines prior to topsoil placement and seeding. The cost of topsoil placement and seeding stockpiles shall be incidental to Unclassified Excavation.

Debris or other materials not suitable for use in earth embankment, as determined by the Resident Engineer, shall be disposed of off the airport property.

Excavation shall be paid for only once. Stockpiling of embankment for later reuse and redistribution shall be done at the Contractor’s expense. Stockpiling necessary for respreading on shoulders, embankments, cut or borrow areas shall be considered incidental to the unit price bid for excavation.

CONSTRUCTION METHODS

152-2.2 EXCAVATION

ADD:

Excavation and embankment shall be compacted to a density of not less than the percentage of the maximum dry density, at optimum moisture, shown in Table 1 as determined by the compaction control tests cited in Division VII for ASTM D698 (Standard Proctor).

In cut areas, where abandoned utilities, including duct bank, gas pipe lines, fuel lines, water mains and sewer pipe are encountered, the utilities shall be removed. The cost of removal shall be considered incidental unless it is specifically called out for removal on the plan sheets. All excavated soil resulting from grading and trimming subgrades below new pavements and infields shall be used for shoulder fill or infield shaping with adequate provisions for topsoil placement.

152-2.12 TOPSOIL

DELETE: The 5th paragraph and REPLACE with:

Any excess topsoil stripping shall be hauled to the indicated onsite location at no additional cost to the contract.

152-2.14 WORK AREA CONDITIONS

ADD:

This work shall consist exclusively of the control resulting from construction operations and is not intended for use in the compaction of earth embankment.

Dust shall be controlled by the uniform applicable of sprinkled water and shall be applied as directed by the Engineer, in a manner meeting his approval.

Dust control watering shall not be paid for separately but shall be considered incidental to this item.

METHOD OF MEASUREMENT

152-3.2

DELETE: This section.

152-3.3

DELETE: This section.

BASIS OF PAYMENT

152-4.1

ADD:

Topsoil excavation, stockpiling, and placement shall not be measured separately for payment.

If, upon delivery and incorporation of any materials, the Contractor has failed to provide the necessary submittals as required by Sections 30-18, 40-01, 40-03 and 40-11 of the Standard and Special Provisions, the pay item shall not be included on the Construction Progress Payment report until such submittals have been furnished.

152-4.2

DELETE: This Section.

152-4.3

DELETE: This Section.

152-4.4

DELETE: This Section.

ADD:

Payment will be made under:

ITEM AR152410	UNCLASSIFIED EXCAVATION – PER CUBIC YARD.
ITEM AT152410	UNCLASSIFIED EXCAVATION – PER CUBIC YARD.

ITEM 152540 – SOIL STABILIZATION FABRIC

MATERIALS

152-2.1 Geotextile fabric for Soil Stabilization

REVISE: This section to read:

The fabric for ground stabilization shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 2 and nonwoven fabrics shall be Class 1 according to AASHTO M 288. The physical properties for ground stabilization fabrics shall be according to Section 1080.02 of the IDOT Standard Specifications for Road and Bridge Construction, current edition.

CONSTRUCTION METHODS

152-3.1

ADD:

Soil Stabilization Fabric shall be delivered to the jobsite in such a manner as to facilitate handling and incorporation into the work without damage. Material shall be stored in such a manner as to prevent exposure to direct sunlight and damage by other construction activities.

ADD:

152-3.2

Prior to the installation of the soil stabilization fabric, the application surface shall be cleared of debris and sharp objects. In the case of subgrades, all wheel tracks or ruts in excess of 75 mm (3 inches) in depth shall be graded smooth or otherwise filled with soil to provide a reasonably smooth surface. Soil stabilization fabric may be installed on the application surface either by hand or by mechanical methods, provided that the fabric is not torn or the surface rutted.

152-3.3

Soil stabilization fabric of insufficient width or length to fully cover the specified area shall be lapped, or sewn. The minimum laps for lap only areas are 600 mm (24 inches) and for sewn areas are 100 mm (4 inches). If sewn, the seam strength shall be equal to or exceed the minimum grab tensile strength of the fabric when tested wet.

152-3.4

The crushed aggregate subbase shall be constructed to the width and depth required on the plans. The material shall be back dumped on the fabric in a sequence of operations beginning at the outer edges of the treatment area with subsequent placement towards the middle. Placement of material on the soil stabilization fabric shall be accomplished by spreading dumped material off of previously placed material with a bulldozer blade or endloader, in such a manner as to prevent tearing or shoving of the fabric. Dumping of material directly on the fabric will only be permitted to establish an initial working platform. No vehicles or construction equipment shall be allowed on the fabric prior to placement of the crushed aggregate subbase. The granular material shall be placed to the full required thickness and compacted to the satisfaction of the Resident Engineer before any loaded trucks are allowed on the area covered.

152-3.5

Soil stabilization fabric which is damaged during installation or subsequent placement of granular material due to failure of the Contractor to comply with these provisions, shall be repaired or replaced at the Contractor's expense, including costs of removal and replacement of the granular material. Torn fabric may be patched in place by cutting and placing a piece of the same fabric over the tear. The dimensions of the patch shall be at least 600 mm (2 ft.) larger than the tear in each direction, and shall be weighted or otherwise secured to prevent the granular material from causing lap separation.

BASIS OF PAYMENT

152-5.1

ADD:

Payment will be made under:

**ITEM AR152540 SOIL STABILIZATION FABRIC - PER SQUARE YARD.
ITEM AT152540 SOIL STABILIZATION FABRIC - PER SQUARE YARD.**

ITEM 156 – EROSION CONTROL

MATERIALS

156-2.4 TEMPORARY MULCH

ADD:

Temporary mulch shall be light-duty hydraulic mulch.

156-2.7 INLET AND PIPE PROTECTION

ADD:

Inlet filters shall meet Article 1081.15(h) of the IDOT Standard Specifications for Road and Bridge Construction, current edition, and as detailed on the Construction Plans.

ADD:

156-2.8 EROSION CONTROL BLANKET

The Contractor shall have the option to install excelsior blanket or knitted straw mat as specified below:

Excelsior Blanket

Excelsior blanket shall consist of a machine produced mat of wood excelsior of 80 percent, 6 in. (150 mm) or longer fiber length. The wood from which the excelsior blanket is cut shall be properly cured to achieve adequately curled and barbed fibers.

The blanket shall be of consistent thickness, with the fiber evenly distributed over the entire area of the blanket. The excelsior blanket shall be covered on the top side with a 90-day biodegradable extruded plastic mesh netting having an approximate minimum opening of 5/8 x 5/8 in. (16 x 16 mm) to an approximate maximum opening of 2 x 1 in. (50 x 25 mm). The netting shall be substantially adhered to the excelsior blanket by a knitting process using biodegradable thread or by an applied degradable adhesive. The netting shall also be entwined with the excelsior blanket for maximum strength and ease of handling.

The excelsior blanket shall also be according to the following:

<u>Parameter</u>	<u>Value</u>
Minimum Width	24 ± 1 in. (600 ± 25 mm)
Weight (Mass)	0.63 lb/sq yd (0.34 kg/sq m) ± 10 %

The excelsior blanket shall be smolder resistant and shall withstand the following test. The excelsior blanket specimen shall not flame or smolder for more than a distance of 12 in. (300 mm) from a spot where a lighted cigarette is placed on the surface of the blanket.

The manufacturer shall furnish a certification with each shipment of excelsior blanket stating the number of rolls furnished and that the material complies with these requirements.

Knitted Straw Mat

Knitted straw mat shall be a machine-assembled blanket whose primary component is clean, weed free straw from agricultural crops. The straw shall be evenly distributed throughout the blanket to a loose thickness of approximately 1/2 in. (13 mm) with a permissible variation of ± 1/8 in. (± 3 mm). The top side of the blanket shall be covered with biodegradable plastic mesh of 3/8 x 3/8 in. (10 x 10 mm)

square openings with a permissible variation of $\pm 1/8$ in. (± 3 mm) and shall be substantially adhered to the straw by a knitting process using biodegradable thread. The plastic mesh shall degrade within 90 days.

The blanket shall be supplied in a protected rolled mat form of 6 1/2 ft (2 m) minimum width and the average dry weight (mass) shall not be less than 0.50 lb/sq yd (0.27 kg/sq m).

The manufacturer shall furnish a certification with each shipment, stating the number of rolls furnished and that the material complies with these requirements.

ADD:

156-2.9 STAKES FOR EROSION CONTROL BLANKET

The blanket shall be secured with biodegradable stakes acceptable to the Engineer. Metal staples will not be allowed.

CONSTRUCTION METHODS

156-3.5 MAINTENANCE AND REMOVAL OF TEMPORARY EROSION CONTROL SYSTEM

ADD:

In the event that temporary erosion and pollution control measures are ordered by the Engineer due to the Contractor's negligence or carelessness, the work shall be performed by the Contractor at no additional cost to the Owner.

ADD:

156-3.7 INLET PROTECTION

Inlet filter sediment traps shall be placed in all proposed and existing inlets and catch basins as shown on the plans or as directed by the Resident Engineer.

METHOD OF MEASUREMENT

156-4.2

DELETE: This section.

156-4.3

DELETE: This section.

BASIS OF PAYMENT

156-5.1

REVISE: This section to read:

Payment will be made at the contract unit price per linear foot for Silt Fence, and per each for Inlet Protection. This price shall be full compensation for furnishing all materials for all preparation and

installation of these materials, including excavation, placement, tie-down stakes, staples, maintenance and removal and for all labor, equipment, tools, and incidentals necessary to complete this item.

Temporary mulching shall not be measured for payment. It shall be considered incidental to the contract.

Temporary seeding, stabilized construction entrances, ditch checks and temporary mulching and any other erosion control measures required at the Contractor staging, storage areas and onsite stockpile area shall not be measured for payment. They shall be considered incidental to the contract.

Payment will be made under:

ITEM AR156510	SILT FENCE – PER LINEAR FOOT.
ITEM AR156520	INLET PROTECTION – PER EACH.
ITEM AT156520	INLET PROTECTION – PER EACH.

ITEM 208 – AGGREGATE BASE COURSE

DESCRIPTION

208-1.1

REVISE: This section to read:

This item shall consist of porous granular embankment and aggregate base composed of coarse aggregate as specified. It shall be constructed on a prepared subgrade underlying course in accordance with these specifications and shall conform to the dimensions and typical cross section and to the lines and grades as shown on the Plans.

MATERIALS

208-2.1 UNCRUSHED COARSE AGGREGATE

DELETE: This Entire Section.

208-2.3 GRADATION

DELETE: This Entire Section.

ADD:

The material shall be free from vegetable matter, lumps or clay, and other objectionable or foreign substances.

When submitting materials for consideration, the Contractor shall provide written certification that the material meets the specified requirements. A written gradation shall also be furnished.

Gradation for Aggregate Base shall be IDOT CA-6, CM-6 or CA10.

Gradation for Porous Granular Embankment shall be one of the following gradations:

Sieve Designation	Percentage by weight passing sieves	
	A	B
	8" maximum	3" maximum
8"	100	
6"	100-94	
4"	100-80	
3 inch		100
2 ½ inch		90-100
2 inch	20-70	45-75
1 ½ inch		0-30
1 inch		0-6
#4	0-40	
IDOT Gradation	CS-1	CA-1

CONSTRUCTION REQUIREMENTS

208-3.2 PREPARING UNDERLYING COURSE

DELETE: This Entire Section.

208-3.3 METHODS OF PRODUCTION

DELETE: This Entire Section.

208-3.4 PLACING

DELETE: This Entire Section.

ADD:

The porous granular embankment shall be placed in lifts no greater than 12-inches for CS-1 and 8-inches for CA-1 or as directed by the Resident Engineer in accordance to the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction" article 207.03.

208-3.5 FINISHING AND COMPACTING

ADD:

The Contractor shall submit copies of all density test results for each lift to the Resident Engineer prior to acceptance testing.

DELETE: Fifth sentence, first paragraph.

ADD: For Porous Granular Embankment:

Rolling the top of the aggregate material with a vibratory roller meeting the requirements of Section 1101 of the IDOT *Standard Specification for Road and Bridge Construction* should be sufficient to obtain the desired keying, interlocking and necessary compaction. The Resident Engineer shall verify that adequate keying and interlocking has been obtained. The base shall be compacted to the satisfaction of the Resident Engineer.

Capping aggregate will not be required when embankment meeting the requirements of Section 208 of the Standard Specifications or granular subbase is placed on top of the porous granular embankment. Capping aggregate (two (2) inch depth) meeting the requirements of Section 208 of the Standard Specifications will be required when embankment meeting the requirements of Section 152 of the Standard Specifications is placed on top of the porous granular embankment.

DELETE: Second paragraph.

ADD:

Proctor's shall be determined using those methods outlined in ASTM D698.

DELETE: Second sentence, third paragraph and REPLACE with:

When the rolling develops irregularities that exceed 3/8 inch when tested using an acceptable method, the irregular surface shall be loosened, refilled with the same kind of material as that used in constructing the course, and rolled again as required.

METHOD OF MEASUREMENT

208-4.1

DELETE: This Entire Section and Replace with:

The quantity of Porous Granular Embankment shall be the number of cubic yards as measured by the Engineer at the specified thickness of the material placed. If required, the thickness of PGE measured for payment will include the thickness of the capping stone.

The porous granular embankment shall be used as shown and as field conditions warrant at the time of construction. No adjustment in unit price will be allowed for an increase or decrease in quantities.

The quantity of 6" Aggregate Base Course shall be the number of square yards as measured by the Engineer at the specified thickness of the material placed satisfactorily removed, replaced and disposed of as shown on the plans or as directed by the Resident Engineer.

The quantity of 8" Aggregate Base Course shall be the number of square yards as measured by the Engineer at the specified thickness of the material placed satisfactorily removed, replaced and disposed of as shown on the plans or as directed by the Resident Engineer.

The Contractor shall furnish approved duplicate load tickets upon which is recorded the net weight of the aggregates in each truck. The Contractor shall submit one (1) load ticket to the Resident Engineer, or his/her duly authorized representative, at the job site when the truck load is incorporated into the work.

208-4.2

DELETE: This Entire Section.

208-4.3

DELETE: This Entire Section.

BASIS OF PAYMENT

208-5.1

DELETE: Entire Section.

ADD:

Porous granular embankment shall be paid for at the contract unit price per cubic yard, of which price shall be full compensation for the two (2) inch capping stone (if necessary), furnishing, spreading, compacting, watering and all incidentals related to equipment, labor and tools necessary to complete this work.

6" Aggregate Base Course shall be paid for at the contract unit price per square yard, of which shall be full compensation for furnishing, spreading, compacting, watering new aggregate base material and all incidentals related to equipment, labor and tools necessary to complete this work.

8" Aggregate Base Course shall be paid for at the contract unit price per square yard, of which shall be full compensation for furnishing, spreading, compacting, watering new aggregate base material and all incidentals related to equipment, labor and tools necessary to complete this work.

Payment will be made under:

ITEM AR208515	POROUS GRANULAR EMBANKMENT – PER CUBIC YARD.
ITEM AT208515	POROUS GRANULAR EMBANKMENT – PER CUBIC YARD.
ITEM AT208606	6" AGGREGATE BASE COURSE – PER SQUARE YARD.
ITEM AR208608	8" AGGREGATE BASE COURSE – PER SQUARE YARD.
ITEM AT208608	8" AGGREGATE BASE COURSE – PER SQUARE YARD.

ITEM 401 – BITUMINOUS SURFACE COURSE - SUPERPAVE (METHOD I)

(Central Plant Hot Mix)

DESCRIPTION

401-1.1

ADD: The following after the third paragraph of this section:

This project shall utilize Method I for the production, placement and acceptance of the bituminous surface course.

At the Contractor's option, an IDOT Division of Highways surface mix may be submitted for approval by the Engineer. The surface mix shall be in accordance with Section 406 Hot-Mix Asphalt Binder and Surface Course of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction". The mix shall be a production mix from the current construction season meeting Mixture Composition:

HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, MIX TYPE IL-9.5 mm.

COMPOSITION

401-3.2 JOB MIX FORMULA

ADD: The following after the third paragraph of this section:

Table 1 Superpave Design Criteria for Automobile, Entrance Roads and Parking Lots shall apply.

CONSTRUCTION METHODS

401-4.12 JOINTS

ADD: The following as the sixth paragraph of this section:

If at any time during the surface course paving operation, it becomes necessary to end a paving lane at a location other than the new finished pavement edge because of ending a day's paving, machinery breakdown, etc., the lane end will be sawed back a sufficient distance to provide a smooth, neat appearing joint from which to resume paving. The sawed face will be painted with a tack coat and this work shall be considered incidental to Item 401, Bituminous Surface Course, and no additional compensation will be allowed.

401-4.14 SHAPING EDGES

ADD: The following as the second paragraph for this section:

All pavement edges, including the pavement ends, must be left in proper alignment, as shown on the plans. This may be accomplished by a trimming method, or, at the Contractor's option, by sawing after the paving has been completed. No additional compensation will be made if the sawing method is used.

401-4.15 ACCEPTANCE TESTING OF HMA MIXES FOR DENSITY

DELETE: All references to Method II for quantities over 2,500 tons.

BASIS OF PAYMENT

401-6.1

Payment will be made under:

ITEM AR401610	BITUMINOUS SURFACE COURSE – PER TON.
ITEM AT401610	BITUMINOUS SURFACE COURSE – PER TON.

ITEM 401900 – REMOVE BITUMINOUS PAVEMENT

DESCRIPTION

401-1.1

ADD:

This item shall consist of full-depth bituminous pavement removal at the locations shown on the plans and as shown in the typical sections.

The type of material to be removed, along with approximate typical pavement section, is shown on the plans. Pavement structure information was taken from airport records, data supplied by airport personnel and soil borings. The Contractor shall verify the type and thickness of material to be removed. **No extra compensation will be allowed for any variations in the pavement sections actually encountered.**

CONSTRUCTION METHODS

401-2.1

REVISE: 1st sentence as follows:

Asphalt pavement to be removed shall be cut to the full depth or partial depth of the asphalt pavement around the perimeter of the area to be removed, as specified in the contract documents at locations determined by the Resident Engineer.

ADD: The following sections:

401-2.2

All existing pavement and associated materials that are removed shall be disposed of off Airport property. No additional compensation will be made for hauling and disposal of any of the removed material.

If additional pavement is removed due to negligence of the Contractor, the additional quantity of pavement removal and replacement will not be measured for payment.

BASIS OF PAYMENT

401-4.1

ADD:

Payment will be made under:

ITEM AR401900 REMOVE BITUMINOUS PAVEMENT – PER SQUARE YARD.

ITEM 403 – BITUMINOUS BASE COURSE - SUPERPAVE (METHOD I)

DESCRIPTION

403-1.1

ADD:

This item shall consist of placing bituminous base course (per Method I), placed as part of the proposed pavement structure at the locations shown on the plans.

At the Contractor's option, an IDOT Division of Highways surface mix may be submitted for approval by the Engineer. The surface mix shall be in accordance with Section 406 Hot-Mix Asphalt Binder and Surface Course of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction". The mix shall be a production mix from the current construction season meeting Mixture Composition:

HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50

COMPOSITION

403-3.2 JOB MIX FORMULA (JMF)

ADD: The following after the third paragraph of this section:

Table 1 Superpave Design Criteria for Automobile, Entrance Roads and Parking Lots shall apply.

CONSTRUCTION METHODS

403-4.11 JOINTS

ADD:

After the first paragraph of this section.

At any time during the bituminous base course paving operation, it becomes necessary to end a paving lane at a location other than the proposed finished pavement edge because of ending a day's paving, machinery breakdown, etc., the lane end will be sawed back a sufficient distance to provide a smooth, neat appearing joint from which to resume paving. The sawed face will be painted with a liquid asphalt and this work shall be considered incidental to Item 403, Bituminous Base Course, and no additional compensation will be allowed.

BASIS OF PAYMENT

403-6.1

ADD:

Payment will be made under:

ITEM AR403610	BITUMINOUS BASE COURSE – PER TON.
ITEM AT403610	BITUMINOUS BASE COURSE – PER TON.

ITEM 501002 – PORTLAND CEMENT CONCRETE PAVEMENT (METHOD 1)

DESCRIPTION

501-1.1

ADD:

At the Contractor's option, an IDOT Division of Highways PV mix may be submitted for approval by the Engineer. The mix shall be in accordance with the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction".

MATERIALS

501-2.4 PREMOLDED JOINT FILLER

REVISE the first sentence to read:

Premolded joint filler for expansion joints shall conform to the requirements of ASTM D-1752 with compression requirement modified to 10 psi minimum and 25 psi maximum and shall be Ceramar by W.R. Meadows, or approved equivalent.

501-2.6 STEEL REINFORCEMENT

DELETE: This section.

ADD:

Reinforcement bars required at fillets and structures shall be deformed steel bar Grade 40 or 60 conforming to ASTM A-615 or ASTM A-616. Reinforcement bars designated as ASTM A-615 can be used for construction requiring bent bars. Reinforcement bars designated as ASTM A-616 can only be used if they are straight.

Reinforcement of odd-shaped panels, if required by the Engineer in the field, shall be panels of welded wire fabric of the size and dimensions shown in the plans conforming to ASTM A-185.

501-2.6 DOWEL AND TIE BARS

ADD:

All dowel bars shall be fastened firmly in position with an approved contraction joint dowel bar assembly prior to the start of paving operations or mechanically inserted per article 420.10 of the IDOT Standard Specifications for Road and Bridge Construction. Loose dowel bars will not be accepted.

Contraction Joint Assembly. The contraction joint assembly shall be an approved welded assembly possessing the rigidity to hold the dowels during the placing and compacting of the concrete to the degree of alignment specified hereinafter. The assembly shall have 4 parallel spacer bars and 2 subgrade-bearing members. An upright support at each end of dowel shall be welded to both the outside spacer bar and the bearing member at appropriate points to hold the dowels at the design height. The two inside spacer bars shall be spaced approximately 2 inches on each side of center.

The dowels shall be spaced as shown on the plans and alternate ends shall be welded to the outside spacer bars. One weld is permitted per bar. The end of each dowel not welded to a spacer bar shall be securely held in place by means of wire loops or metal tubes welded to the other outside spacer

bar. Suitable ties shall be provided to hold the assembly in normal position during shipping, handling and installation. Wire sized shall not be less than W7 for the outside spacer bars, bearing members and upright supports and W5 wire for the 2 inside spacer bars. The tie wires used for securing the spacer bars shall not be less than W3 wires.

The assembly shall be provided with 2 continuous bearing plates of not less than 2-inch width and not less than 0.0359 inches thickness sheet steel. The bearing plates shall be attached by welding to the subgrade members or by suitable clips and shall be punched to receive the protruding ends of the upright supports and stakes. The stakes shall be driven parallel to and next to the upright supports. The subgrade bearing members may be omitted if suitable subgrade plates are shop welded to the assembly and provide equivalent rigidity. Bearing plates will not be required on stabilized subbase.

The welds in the assembly shall be securely made. A broken weld will be sufficient cause for rejection of the length or section of the assembly in which it occurs.

501-2.9 COVER MATERIAL FOR CURING

DELETE: (B), (C) and (D).

REVISE: (A) as follows:

Curing materials shall be liquid membrane-forming compounds conforming to the requirements of ASTM C-309, Type 2 (White Pigmented).

CONSTRUCTION METHODS

501-3.1 EQUIPMENT

501-3.1 (D) CONCRETE SAW

ADD:

Only self-propelled, water-cooled and lubricated saws with diamond blades shall be used on this project.

501-3.1 (e) FORMS

ADD:

All radii and tapers shall be formed with flexible forms.

501-3.1 (f) SLIP-FORM PAVERS

ADD:

The guide wires for pavers shall be set with steel standards (pins) driven into the subbase. An alternate method will be standards set with weighted bases.

501-3.1 (g) DRILLING MACHINE

ADD:

The machine used for drilling the holes for dowel bars in the face of the pavement shall be capable of drilling the size and depth of holes as shown on the plans. A drill support system using the pavement

surface as a reference shall be required to assure hole alignment at the specified depth of the PCC pavement. Hand-held tools will not be allowed.

501-3.2 FORM SETTING

ADD:

In the event that the pavement is constructed utilizing the formed paving technique, the paving lane forms supported by the subbase shall be anchored by steel pins. No formed areas shall be poured until the Engineer has checked and accepted the formwork for both alignment and elevation.

501-3.3 CONDITIONING OF UNDERLYING COURSE, SLIP-FORM CONSTRUCTION

DELETE: The first sentence.

ADD:

The existing grade along the outer edges of the new pavement shall be improved, if necessary, to support the paver without noticeable displacement. Any grading, compacting, or furnishing and installing materials shall be considered incidental to the unit prices for paving and no separate payment will be made.

All areas shall be constructed true to grade and acceptable to the Engineer prior to paving.

During placement of the concrete pavement, the subbase shall be maintained in a moist condition without accumulation of pools of water.

In the event that the underlying course has become over-saturated or unstable, paving operations shall stop until corrected unless otherwise approved by the Engineer.

501-3.4 CONDITIONING OF UNDERLYING COURSE, SIDE-FORM CONSTRUCTION

ADD:

All areas shall be constructed true to grade and acceptable to the Engineer prior to paving.

During placement of the concrete pavement, the subbase shall be maintained in a moist condition without accumulation of pools of water.

In the event that the underlying course has become over-saturated or unstable, paving operations shall stop until corrected unless otherwise approved by the Engineer.

501-3.6(a) PROPORTIONS

DELETE: This section.

501-3.7 FIELD TEST SPECIMENS

ADD:

The Contractor shall provide a system of marking and tracking samples taken in the field. The system shall be provided at the Preconstruction conference and shall, at a minimum, provide location of

sample, lot number and curing and reporting of all test specimens manufactured by the Contractor's personnel.

The Contractor shall provide the forms or molds used to make compressive test cylinders or flexural beam specimens.

501-3.10 PLACING CONCRETE

(a) Side-Form Method

DELETE: Second paragraph.

ADD:

When concrete is to be placed adjoining a previously constructed lane of pavement and when mechanical equipment will be operated upon the existing lane of pavement, the concrete shall have a minimum flexural strength of 550 psi or compressive strength of 3500 psi. If only finishing equipment is carried on the existing lane, paving in adjoining lanes may be permitted after 3 days, if approved by the Engineer.

(b) Slip-Form Method

ADD:

In addition to the requirements of this section, the concrete shall be placed as described in the applicable sections of Section 501-3.10(a). Any equipment used for transporting concrete shall be capable of discharging the material at a minimum specified slump. Concrete that is transported in vehicles not capable of discharging concrete at a minimum specified slump is subject to rejection by the Engineer.

501-3.12 JOINTS

ADD: Paving

(a) Installation

ADD:

All joints shall be saw cut. Only diamond blade saws with water-cooling shall be used on this project. No dry sawing or inserts will be allowed. Protection of previously sawed joints from slip-form operations shall be provided in the form of rubber mats or other means acceptable to the Engineer. The Contractor shall be required to place rubber mats (or other approved material) along the pavement edge prior to drilling dowel bar holes. In addition, any damage to the pavement cause by the drilling operation shall be repaired to the satisfaction of the Engineer at no additional cost to the contract.

501-3.14 SURFACE TEXTURE

ADD:

The surface of the pavement shall be finished with a burlap drag or other approved method acceptable to the Engineer.

501-3.17 CURING

(a) **Impervious Membrane Method** shall be utilized for this project.

ADD:

For slip-form paving, the approved curing media shall be applied uniformly to all surfaces of the pavement, including exposed edges. Membrane curing compounds shall be applied on all concrete surfaces from a suitable self-propelled mechanical application device, which bridges the fresh concrete, designed to provide a uniform application. Other curing systems will not be permitted.

Care shall be taken when this method of curing is used. Should conditions prevail such that curing material is being blown toward buildings or aircraft, appropriate measures shall be taken to eliminate the problems to the satisfaction of the Engineer. Two (2) separate applications applied at least five minutes apart, each at the rate of not less than 1 gallon per 250 square feet will be required upon surfaces and edges of the concrete. Another application shall be necessary to cover any deficient areas less than 1 gallon per 125 square feet. The curing membrane shall be sprayed as soon as possible without damage to the pavement surface. Excessive delays in application of the membrane resulting in shrinkage cracking will be cause for rejection of the affected pavement necessitating removal.

ADD:

501-3.24 TEST SECTION FOR SLIP-FORM PAVERS

Prior to paving using the slip-form paving method, an area of the new pavements designated by the Engineer shall be paved to develop and demonstrate satisfactory procedures and concrete mix. The test section shall be located within the new pavement limits and all costs associated with the test section shall be incidental to this item.

501-3.25 GRADE CONTROL FOR SLIP-FORM PAVERS

Grade control on all free edges of slip-form pavement shall be from string lines. The use of transverse grade control from the paver will not be permitted.

501-3.26 PROTECTION OF PAVEMENT AGAINST RAIN

In order that the concrete may be properly protected against the effects of rain before the concrete is sufficiently hardened, the Contractor will be required to always have available materials for the protection of the edges and surface of the unhardened concrete. Such protective materials shall consist of standard metal forms or wood plank having a nominal thickness of the pavement at its edge for the protection of the pavement edges and covering material such as curing paper or polyethylene sheeting material for the protection of the surface of the pavement. The metal forms, wood planks and curing paper shall be kept on trucks or towable vehicles, within reasonable hauling distance, at a site shown on the plans, or as designated by the Engineer. Or, as an alternate, rolled polyethylene sheeting of sufficient length and width may be used without the temporary side forms and if properly anchored, to cover the plastic concrete slab and exposed edge. The sheeting may be mounted on either the paver or a separate moveable bridge from which it can be unrolled without dragging over the plastic concrete surface. When rain appears imminent, all paving operations shall stop and all available personnel shall begin covering the surface of the unhardened concrete with the protective covering. All pavement damaged shall be removed and replaced at no additional cost to the contract.

501-3.27 REMOVAL OF DEFECTIVE WORK

At locations determined by the Engineer, the contractor shall be required to remove any pavement or sidewalk which is classified as defective. This includes any area where non-controlled (random) cracking occurs, unacceptable surface texturing or any other defect determined unacceptable by the Engineer. The pavement shall be removed to the nearest joint and replaced at the expense of the contractor. Prior to replacement, dowels and tie bars will be provided as directed by the Engineer.

BASIS OF PAYMENT

ADD:

If, upon delivery and incorporation of any materials, the Contractor has failed to provide the necessary submittals as required by Sections 30-18, 40-01, 40-03 and 40-11 of the Standard and Special Provisions, the pay item shall not be included on the Construction Progress Payment report until such submittals have been furnished.

ITEM AT501506 6" PCC PAVEMENT - PER SQUARE YARD.

ITEM 602 – BITUMINOUS PRIME COAT

DESCRIPTION

602-1.1

ADD:

This item shall consist of placing emulsified asphalt prime coat on the proposed aggregate base as part of the proposed pavement structure at the locations shown on the plans.

602-2.1 BITUMINOUS MATERIAL

ADD:

At the Contractor's option, Penetrating Emulsified Prime (PEP) may be used. The use of PEP shall be as outlined in the Standard Specifications for Road and Bridge Construction, Article 406.05(b) 1032.06(d).

BASIS OF PAYMENT

602-5.1

ADD:

Payment will be made under:

ITEM AR602510	BITUMINOUS PRIME COAT – PER GALLON.
ITEM AT602510	BITUMINOUS PRIME COAT – PER GALLON.

ITEM 603 – BITUMINOUS TACK COAT

MATERIALS

603-2.1 BITUMINOUS MATERIAL

ADD:

At the Contractor's option, SS1-vh may be used. The use of SS1-vh shall be as outlined in the Standard Specifications for Road and Bridge Construction, Article 406.02.

CONSTRUCTION METHODS

603-3.3 APPLICATION OF BITUMINOUS MATERIAL

ADD: The following to the second paragraph:

Areas worn from hauling operations shall be re-tacked at no additional cost to the Contract.

BASIS OF PAYMENT

603-5.1

ADD:

Payment will be made under:

ITEM AR603510	BITUMINOUS TACK COAT – PER GALLON.
ITEM AT603510	BITUMINOUS TACK COAT – PER GALLON.

ITEM 610 – STRUCTURAL PORTLAND CEMENT CONCRETE

DESCRIPTION

610-1.1

ADD:

This item shall also consist of providing and constructing bollards and concrete parking blocks at the locations and of the form, dimensions, and details shown on the plans.

CONSTRUCTION METHODS

610-3.2 CONCRETE PROPORTIONS

Replace the last sentence of the sixth paragraph of Standard Specifications with “The air content of the concrete shall be between 5% and 8%, by volume.”

METHOD OF MEASUREMENT

610-4.1

REVISE: This section to read:

The quantity of Structural Portland Cement Concrete will not be measured separately for payment.

610-4.2

REVISE: This section to read:

The quantity of bollards and parking blocks to be paid for shall be the number of each furnished and installed in accordance with the plans and specifications and accepted by the Engineer.

BASIS OF PAYMENT

610-5.1

ADD:

If, upon delivery and incorporation of any materials, the Contractor has failed to provide the necessary submittals as required by Sections 30-18, 40-01, 40-03 and 40-11 of the Standard and Special Provisions, the pay item shall not be included on the Construction Progress Payment report until such submittals have been furnished.

Payment will be made under:

**ITEM AR800185 CONCRETE PARKING BLOCK – PER EACH.
ITEM AT910420 BOLLARD - PER EACH.**

ITEM 620 – PAVEMENT MARKING

DESCRIPTION

620-1.1

ADD:

This item shall consist of placing pavement markings on the surface of roadways at the locations shown on the plans.

MATERIALS

620-2.2 PAINT

ADD:

All paint shall be waterborne. The paint shall contain no lead, chromium, cadmium or barium.

CONSTRUCTION METHODS

620-3.9 CLEAN UP

ADD:

The Contractor shall remove from the work area all debris, waste, loose or un-adhered reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the Resident Engineer. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local and federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1

ADD:

The quantity of permanent markings to be paid for shall be the number of square feet of painting with the specified material **measured only once to apply two coats** in conformance with the specifications and accepted by the Engineer. Quantities will not be distinguished between different colors of paint. Only the top coat of paint shall require reflective media.

BASIS OF PAYMENT

620-5.1

ADD:

Payment will be made under:

ITEM AR800171	PAINT PAVEMENT MARKING – LETTERS AND SY – PER SQUARE FOOT.
ITEM AR800172	PAINT PAVEMENT MARKING – LINE 4” – PER LINEAR FOOT.
ITEM AT620510	PAVEMENT MARKING – PER SQUARE FOOT.

DIVISION IV – DRAINAGE PIPE

ITEM 701 – PIPE FOR STORM AND CULVERTS

MATERIALS

701-2.1

DELETE: Entire Section

ADD:

Pipe and pipe elbows shall be of the type and diameter indicated and installed at the locations shown on the plans. Pipe for storm sewers and storm sewer elbows shall be concrete storm sewer pipe Class IV reinforced concrete conforming to ASTM C-76 (with joints meeting ASTM C-361) unless otherwise called out in the plans.

CONSTRUCTION METHODS

701-3.3 CRADLE

REVISE the last paragraph of Supplemental Specifications to read as follows:

All granular cradles shall be compacted to the satisfaction of the Engineer.

701-3.4 LAYING AND INSTALLING PIPE

ADD:

When sewer installation requires tapping into an existing manhole, the hole shall be cored to allow for appropriate pipe sizing. The work shall be considered incidental to the installation of the pipe.

701-3.7 BACKFILLING

ADD:

At the locations shown on the plans (existing, proposed and future paved areas), the trench excavation shall be backfilled with select granular backfill materials. The material shall meet the requirements set forth for granular cradle for dry trench conditions as set forth in Section 701-3.3 "CRADLE". Selected granular backfill materials shall be compacted in lifts no greater than 6" thick to 95% of the maximum density in accordance with ASTM D-698 (Standard Proctor).

701-3.13 FARM FIELD TILES

ADD:

All farm field tiles encountered during the construction must be protected, replaced, or connected to the proposed storm sewers and culverts, as directed by the Engineer. Protection, replacement, and connection of farm field tiles will not be measured for payment but shall be considered incidental to the associated item.

BASIS OF PAYMENT

701-5.1

ADD:

If, upon delivery and incorporation of any materials, the Contractor has failed to provide the necessary submittals as required by Sections 30-18, 40-01, 40-03 and 40-11 of the Standard and Special Provisions, the pay item shall not be included on the Construction Progress Payment report until such submittals have been furnished.

Payment will be made under:

**ITEM AR701512 12" RCP, CLASS IV – PER LINEAR FOOT.
ITEM AT701515 15" RCP, CLASS IV – PER LINEAR FOOT.**

ITEM 751 – MANHOLES, CATCH BASINS, INLETS & INSPECTION HOLES

MATERIALS

751-1.1 MANHOLES AND CATCH BASINS

ADD:

Specifically, this item consists of the construction of inlets, manholes as shown on the plans or as directed by the Engineer.

Manholes 4' in diameter shall conform to IDOT Standard Detail 602401-07. Manholes shall also conform to IDOT Standard 602701-01.

See drainage sewer schedule shown on the plans for frame and grate sizes and types. Closed manhole lids shall be stamped "Storm".

CONSTRUCTION METHODS

751-3.9 BACKFILLING

REVISE Supplemental Specifications to read as follows:

Backfill material shall be an approved IDOT Division of Highways gradation CA-10 or CA-06 conforming to the material requirements of Item 208.

751-3.11 MANHOLE ADJUSTMENT/RECONSTRUCTION

All adjustments are to be made with precast rings. All adjusting rings must be mortared together and must be mortared to the casting, as well as to the cone section or flat top of the structure. The maximum height of adjusting rings shall be eighteen (18) inches including existing rings for any inlet or manhole adjustment. Reconstruction of existing manholes shall be accomplished by adding or removing barrel sections. Flat tops, eccentric cone sections and adjustment rings (or a combination thereof) to the manhole or inlet to be reconstructed. The maximum number of rings in any structure is three. This may require the Contractor to remove existing rings and replace with larger rings.

Castings placed on concrete shall be set in full mortar beds. Castings shall be set to the finished pavement elevation so no subsequent adjustment will be necessary. Lifting devices will be approved by the Engineer.

The Contractor shall be responsible for field checking existing storm sewer, sanitary sewer, and electrical manhole configurations for the necessary adjustments.

751-3.12 DEWATERING

The Contractor shall, at all times, provide and maintain in operation pumping and/or well point equipment for the complete dewatering of the excavation. No structure shall be permitted to be constructed in an excavated area in which any amount of water flows or is pooled. The cost of dewatering shall be included in the unit price of the structure.

BASIS OF PAYMENT

ADD:

If, upon delivery and incorporation of any materials, the Contractor has failed to provide the necessary submittals as required by Sections 30-18, 40-01, 40-03 and 40-11 of the Standard and Special Provisions, the pay item shall not be included on the Construction Progress Payment report until such submittals have been furnished.

Payment will be made under:

ITEM AR751411	INLET – TYPE A - PER EACH.
ITEM AT751540	MANHOLE 4' - PER EACH.
ITEM AT751927	REPLACE FRAME AND GRATE - PER EACH.
ITEM AT751940	ADJUST INLET - PER EACH.
ITEM AR751943	ADJUST MANHOLE - PER EACH.
ITEM AR751983	RECONSTRUCT MANHOLE - PER EACH.
ITEM AR770945	ADJUST SANITARY MANHOLE – PER EACH.

ITEM 754 – CONCRETE GUTTERS, DITCHES AND FLUMES

DESCRIPTION

754-1.1

ADD:

Combination curb and gutter shall be as shown on the drawings.

METHOD OF MEASUREMENT

754-4.1

Granular bedding, reinforcement, curing and protection for combination curb and gutters shall not be measured separately but shall be considered incidental to the proposed pay item.

BASIS OF PAYMENT

754-5.1

ADD:

Payment will be made at the contract unit price per linear foot for “COMB CURB & GUTTER” in accordance with the plans and specifications. The cost of curb and gutter removal and disposal offsite and full depth saw cut shall be included in the unit price.

Payment will be made under:

ITEM AR754410	COMB CONCRETE CURB & GUTTER - PER LINEAR FOOT.
ITEM AT754410	COMB CONCRETE CURB & GUTTER - PER LINEAR FOOT.

DIVISION V – TURFING

ITEM 901 – SEEDING

DESCRIPTION

901-1.1

ADD:

Restoration, seeding and mulching (such as access roads, haul roads, staging area, storage area) shall be considered incidental to the contract.

MATERIALS

901-2.1 SEED

DELETE: The “seed mixture” table and replace it with the following table:

Aeronautics Seed Mixture

SEED	MINIMUM SEED PURITY	MINIMUM GERMINATION	APPLICATION RATE (LB/ACRE)
*Tall Fescue	98%	90%	60
Annual Ryegrass	98%	90%	20
*Red Fescue	98%	85%	30
*Hard Fescue	96%	85%	30

*Seed shall be of a variety bred to contain high levels of endophyte.

901-2.2 LIME

DELETE: Entire Section.

ADD:

The Contractor has the option to perform a soil test, at their expense, for the on-site or plan specified topsoil sources. If the Contractor proposes an application of lime, the proposal shall be approved by the Engineer. Lime, if used, shall be at no additional cost to the contract.

901-2.3 FERTILIZER

DELETE: The last paragraph and the fertilizer rate table.

ADD:

Fertilizer shall be applied at rates that supply the following amounts of nutrients per acre to the distributed areas of seeding:

<u>NUTRIENTS</u>	<u>POUNDS PER ACRE</u>
Nitrogen Fertilizer Nutrients	90
Phosphorus Fertilizer Nutrients	90
Potassium Fertilizer Nutrients	<u>90</u>
TOTAL	270

The Contractor has the option to perform a soil test, at their expense, to validate that the fertilizer rate specified is suitable for the on-site or plan specified topsoil sources. If the Contractor proposes an alternate mix ratio and weights, the proposal shall be approved by the Engineer. Alternate mix ratio and/or weights shall be at no additional costs to the contract.

CONSTRUCTION METHODS

901-3.2 DRY APPLICATION METHOD

DELETE: Paragraph C. Seeding

ADD:

Grass seed shall be sown at the rate shown in 901-2.1 with a machine that is capable of cutting a slit in the soil free from leaves and debris, placing the seed in the slit and compacting the seed into the soil of the slit in one continuous operation.

The site will be to grade and shaped to the elevations as shown on the plans. The topsoil will be free of clods, stones, roots, sticks, rivulets, gullies, crusting, caking and have a soil particle size of no larger than 1". Seedbed preparation methods shall be approved by the Engineer. Cultivation shall be accomplished at such a time that seeding may occur immediately and without delay. No seeds shall be sown until the Seedbed has been approved by the Engineer.

No seed shall be sown during high winds or when the ground is not in a proper condition for seeding, nor shall any seed be sown until the purity test has been completed for the seeds to be used, and shows that the seed meets the noxious weed seed requirements. All equipment shall be approved by the Engineer prior to being used. Prior to starting work, seeders shall be calibrated and adjusted to sow seeds at the required seeding rate. Equipment shall be operated in a manner to ensure complete coverage of the entire area to be seeded. The Engineer shall be notified forty-eight (48) hours prior to beginning the seeding operations.

901-3.3 WET APPLICATION METHOD

DELETE: Entire Section.

BASIS OF PAYMENT

901-5.1

ADD:

Payment will be made under:

ITEM AR901510	SEEDING – PER ACRE.
ITEM AT901510	SEEDING – PER ACRE.

ITEM 905 - TOPSOILING

METHOD OF MEASUREMENT

905-4.1

DELETE: Entire Section.

BASIS OF PAYMENT

ADD:

No separate measurement or payment will be made for topsoil. Topsoil stripping, hauling, stockpiling, and placement is considered incidental to Item 152

ITEM 908 - MULCHING

DESCRIPTION

908-1.1

ADD:

Mulch shall be placed as designated on the plans or as directed by the Engineer.

MATERIALS

908-2.1 MULCH MATERIAL

REVISE: First sentence to read:

Material used for mulching shall be (g) Manufactured Hydraulic Mulch, Heavy Duty.

BASIS OF PAYMENT

ADD:

Payment will be made under:

ITEM AR908510	MULCHING – PER ACRE.
ITEM AT908510	MULCHING – PER ACRE.

DIVISION VI – LIGHTING INSTALLATION

ITEM 108 – INSTALLATION OF UNDERGROUND CABLE

EQUIPMENT AND MATERIALS

108-2.2 CABLE

ADD:

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type XLP-USE. Conductors for parallel (voltage) circuits shall be the type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, XLP-USE, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of XLP-USE, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Documents.

Plastic conduit and fittings shall be Schedule 80 meeting UL 651A for high-density polyethylene (HDPE) Conduit type III and Class 4 meeting NEC Article 353, ASTM D-3350 UV Black and NEMA TC 7 coilable conduit specification.

108-2.4 CABLE CONNECTIONS

ADD:

To further reduce the possibility of water (moisture) entrance into the connector between the cables and the field-attached connector, heat shrinkable tubing with interior adhesive shall be applied over all cable connections.

The heat shrinkable tubing shall cover the entire L-823 connector. All connections shall be at manholes or light bases. **No direct burial splicing will be allowed.**

No splices will be allowed in the new cable. Cable shall be continuous between pull points. Any repairs necessary to cable damaged during installation shall be done at the Contractor's expense and shall consist of replacing the entire length of damaged cable between pull points.

In line connections for existing cables to be spliced or those that are cut during construction shall be repaired with the cast splice kit. The Contractor shall have a minimum of five (5) splice kits on the jobsite at all times for emergency repairs. Splice markers shall be installed over each splice in cables

not to be abandoned. Cast splice kits shall be as specified in paragraph (a). All field splices shall be covered with a flexible polyolefin heat-shrinkable sleeve.

108-3.1 GENERAL

ADD:

The locations of existing cables are taken from available record maps, and it will be necessary for the contractor to make field investigations to determine the exact locations of underground cable and conduits at critical points.

108-3.3 TRENCHING

Change 24 inches to 30 inches in the last sentence of the second paragraph.

ADD:

The installation of GRS and PVC conduit using the plowing-in method will not be allowed.

All cable in unit-duct may be installed using plowing-in method or direct burial, (refer to Item 108-3.11) except at critical locations where required to protect existing cables or to facilitate construction.

108-3.5 BACKFILLING

If backhoe or comparable equipment is used, sand backfill (IDOT FA-1 or FA-2) shall be required. If trenches are used, marking tape shall be included to delineate cable with no backfill required.

108-3.8 SPLICING

DELETE: Paragraph (b) (c) and (e).

ADD:

Direct burial splicing will not be allowed.

Splices will be allowed in new circuits only at light bases, electric hand holes or manholes. Direct burial splicing will not be allowed.

The Contractor shall use cast splicing kits as described in Article 108-2.4 for any splices made inside the electric hand holes. The cast splicing kit shall be series 82-B1 Scotch cast or 90-B1 Scotch cast as manufactured by 3M or equal. Contractor shall provide shop drawing for splicing method and cast splicing kit. The Contractor shall also leave minimum 30" of slack on each side of the cable being spliced. The cost of splicing shall be incidental to the cost of installation of underground cables.

108-3.13 TERMINATIONS AND CONNECTIONS

ADD:

The Contractor shall have a minimum of five (5) splice kits on the jobsite at all times for emergency repairs.

If, due to the length of spool ordered by the Contractor, it is necessary to install additional hand holes, the Contractor shall supply same at no additional cost to the project. The hand hole shall be the size as directed by the Engineer.

BASIS OF PAYMENT

108-5.1

ADD:

Payment will be made under:

ITEM AS800108 2-1/C #8 XLP-USE WITH 1-1/C #8 GND IN 1-1/4" UD – PER LINEAR FOOT

ITEM 110 – INSTALLATION OF AIRPORT UNDERGROUND ELECTRICAL DUCT

DESCRIPTION

110-1.1

ADD:

This item shall consist of the construction of the concrete encased duct banks, including appropriate duct markers at the locations shown in the plans or as directed by the Engineer.

Contractor shall provide pull wire for each conduit and cap the unused conduits for future use.

EQUIPMENT AND MATERIALS

110-2.9 DUCT MARKER

ADD:

The Contractor shall provide duct markers for each new or existing duct being used as detailed in the plans. The cost of installation of the duct markers shall be incidental to the contract.

CONSTRUCTION METHODS

110-3.5 BACKFILLING

ADD:

Crushed Stone conforming to the requirements of Item 208 gradation shall be used for backfilling at the pavement crossings for the new duct installation. The granular material shall be compacted to not less than 95% of Standard Proctor laboratory density.

BASIS OF PAYMENT

110-5.1

ADD:

Payment will be made at the contract unit price per linear foot for each type and size of conduit completed and accepted. This price shall be full compensation for furnishing all materials and for all preparation, assembly, trenching, aggregate backfill, backfill, compaction, saw cutting and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete these items.

Trenching, aggregate backfill and backfilling shall be included in the installation of the duct and / or conduit and shall not be paid for separately.

Payment will be made under:

ITEM AS110610 ELECTRICAL HANDHOLE – PER EACH

ITEM 125 – INSTALLATION OF AIRPORT LIGHTING SYSTEMS

DESCRIPTION

125-1.1

ADD:

Lighting improvements and modifications shall include:

- Removal of existing roadway light poles and fixtures.
- Relocation and Installation of light poles.
- Installation of new mast arms on existing light poles and.
- Installation of new light fixtures.

EQUIPMENT AND MATERIALS

125-2.1 GENERAL

ADD:

Before any electrical materials are ordered, the Contractor shall furnish the Engineer a list of the materials and equipment to be incorporated in the work. This list shall include the name of each item, the manufacturer's name, the manufacturer's catalog number, and the size, type and/or rating of each item, catalog cuts, test data, fuse curves, outline drawings, nameplate drawings, wiring diagrams, and schematic diagrams.

After the list has been approved by the Engineer and prior to installation, the Contractor shall assemble the equipment and materials at a single location, on-site, and request inspection by the Engineer. None of the equipment or materials, other than duct or conduit, may be used on the job until such as inspection has been completed.

125-2.2 TAPE

ADD:

Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88, respectively, as manufactured by the Minnesota Mining and Manufacturing Company, or an approved equal.

ADD:

125-2.14 LIGHT POLE AND LUMINAIRES

Light poles shall be Octagonal in shape and manufactured with pre-stressed concrete to match with existing poles. Luminaires shall be LED type as specified on the plans. Provide mast arm to accommodate (2) luminaires at 180 degrees on the pole.

CONSTRUCTION METHODS

125-3.1 GENERAL

ADD:

The Contractor shall exercise caution in the installation and removal of all light units. Existing light poles to be removed and relocated shall be stored on-site. Any units damaged by the Contractor's operations shall be repaired or replaced to the satisfaction of the Owner and Engineer at no additional cost to the contract.

ADD:

125-3.4 PHASING AND INTERRUPTIONS

All existing electrical equipment and lighting systems not included in the phase of work being performed must be kept in operation unless prior approval of the Owner has been received and as otherwise specified below and on the Drawings. The Contractor may use salvaged materials for temporary construction where required. Permission for temporary work and using salvaged materials shall be obtained from the Owner. Lighting for active runway and taxiway surfaces shall be maintained. Work shall be coordinated with paving operations.

Refer to the special provision of the specification for notification requirements and other information regarding work interruptions due to airport operational requirements or Contractor anticipation for exceeding the limitations described in the above paragraph.

125-3.5 INSPECTION, TEST AND WARRANTY

VISUAL EXAMINATION

The most important of all inspection and test procedures is thorough visual inspections. Visual inspections shall be made frequently during installation, at completion of installation, and before energizing the circuits. A careful visual inspection can reveal defects that can be corrected prior to acceptance tests and energization. Serious damage may occur if defects are subjected to electrical tests or energization. Visual inspections shall include appraisal of:

- (a) Correctness of external connections.
- (b) Good work performance.
- (c) Cleanliness.
- (d) Safety hazards.
- (e) Specific requirements listed herein for individual items. While all equipment manufactured under specifications pass strict factory tests prior to shipment, it shall be inspected for shipping damage immediately upon receipt.

ELECTRICAL TESTS ON SERIES LIGHTING CIRCUITS

Before modifying any series circuit, verify the performance of the existing circuit by checking the supply voltage to the regulator and measuring the output current from the regulator on all brightness steps under existing load.

- (a) For home run segments that will not be replaced, disconnect at S-1 cutout and at first fixture and verify cable continuity.
- (b) Check cable connections and perform electrical tests on cable as specified in Section 108.

LIGHTING FIXTURES

An inspection shall be made to determine that the color, quantity, and locations of light are in accordance with the installation drawings. Each light shall be inspected to determine that it is operable, glass is not broken or cracked, correct lamps are installed, and it has been properly leveled and aimed, in accordance with technical orders and manufacturer's instructions, where applicable.

CONSTANT CURRENT REGULATORS

The supply voltage and input and output current shall be checked at the regulator to see that they operate properly and that regulators are not overloaded due to shorts to ground or excessive leakage.

- (a) Visual Examination. Each constant current regulator shall be visually examined to insure that porcelain bushings are not cracked, no shipping damage has occurred, internal and external connections are correct, switches and relays operate freely and are not tied or blocked, fuses (if required) are correct, and that the oil level of oil-filled regulators is correct. Relay panel covers only shall be removed for this examination; it is not necessary to open the main tank of oil-filled regulators. The instructions on the plates attached to the regulator shall be accomplished. After examination and tests are completed, replace all covers tightly.
- (b) Electric Tests. The supply voltage and input tap shall be checked to see that they correspond. With the load disconnected, the regulator shall be energized and the open circuit protector observed to see that it de-energizes the regulator within 2 or 3 seconds.

FINAL ACCEPTANCE TESTS

After components and circuits have been inspected, as specified in the preceding paragraphs, the entire system shall be inspected and tested as follows:

- (a) Operate each switch for the modified lighting circuits from the remote control position (ATCT) so that each switch position is reached at least twice. During this process, all lights and vault equipment shall be observed to determine that each switch properly controls the corresponding circuit.
- (b) Repeat the above test using the local control switches on the regulators.
- (c) Each lighting circuit shall be tested by operating it continuously at maximum brightness for at least 6 hours. Visual inspection shall be made at the beginning and end of this test to determine that the correct numbers of lights are operating at full brightness. Dimming of some or all of the lights in a circuit is an indication of grounded cables.
- (d) In addition to the above, all equipment shall be subjected to any and all performance tests specified in the manufacturer's instructions.
- (e) Photometric testing. The Airport may, upon completion of the lighting installation and as part of acceptance testing, perform field photometric testing of each new light fixture to assure the installed runway lights meet the photometric requirements specified by FAA. The test results will be recorded and furnished to the Contractor, with any noted

deficiencies. The Contractor is responsible for correcting any deficiencies at no additional cost to the Owner. The Contractor shall furnish spares in support of this testing, to include 15% lamps and 5% lenses for the new in-pavement lights. Spares not used shall be provided to the Airport upon completion of the work

125-3.6 GUARANTEE

ADD:

All equipment furnished and work performed under the Contract Documents shall be guaranteed against defects in materials or workmanship for a period of one (1) year from the date of final acceptance. This guarantee does not replace any responsibility for errors or omissions as set forth in state law. Any long-term warranties issued or offered by manufacturers for items of equipment shall be turned over to the Airport.

125-3.7

Any failure of equipment or work due to defects in materials or workmanship shall be corrected by the Contractor at no cost to the Airport.

125-3.8

The Contractor shall ascertain that all lighting system components furnished by him (including FAA approved equipment) are compatible in all respects with each other and the remainder of the new/existing system. Any incompatible components furnished by the Contractor shall be replaced by him at no additional cost to the Airport with a similar unit approved by the Project Engineer (different model or manufacturer) that is compatible with the remainder of the airport lighting system.

125-3.9

The Contractor-installed equipment (including FAA approved) shall not generate any electromagnetic interference in the existing and/or new communications, weather and air traffic control equipment. Any equipment generating such interferences shall be replaced by the Contractor at no additional cost with the equipment meeting applicable specifications and not generating any interference.

METHOD OF MEASUREMENT

125-4.1

DELETE: Entire section.

ADD:

The quantities to be paid for under this item shall consist of:

- (a) The number of existing light poles and fixtures removed.
- (b) The number of existing light poles relocated and installed and accepted by the Engineer.
- (c) The number of new mast arms installed on existing light poles and accepted by the Engineer.
- (d) The number of new light fixtures installed on new mast arms and accepted by the Engineer.

BASIS OF PAYMENT

125-5.1

ADD:

Payment will be made at the contract unit price for each complete item furnished and installed in place by the Contractor and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, removals, modifications, relocation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment for trenching, trench backfill, grading, topsoiling and seeding of the light installation areas shall not be paid for separately but shall be considered incidental to the associated item.

Payment will be made under:

ITEM AR106905	REMOVE LIGHT POLE AND FIXTURE – PER EACH
ITEM AS106960	RELOCATE LIGHT POLE – PER EACH
ITEM AS800031	NEW DOUBLE MAST ARM – 4 FOOT – PER EACH
ITEM AS910120	ROADWAY LIGHT FIXTURE – PER EACH

MISCELLANEOUS

AR760 – WATERMAIN

DESCRIPTION

This work shall consist of furnishing all labor, equipment, and materials necessary to remove existing fire hydrants, install new fire hydrants, remove and install watermain, remove existing water valves, and install new water valves in accordance with Section 602 of the Standard Specifications for Road and Bridge Construction (latest edition) and as specified herein.

DUCTILE IRON WATER MAIN

This work shall consist of constructing a water main system at the locations shown on the plans.

All materials shall be domestic and according to the following:

- a. Pipe - Shall be minimum thickness Class 52 Ductile Iron complying with ANSI/AWWA C151/A21.51 and ANSI/AWWA C150/A21.50, with cement coating in accordance with ANSI/AWWA C104/A21.4. Minimum lay length of 18 feet. The exterior of the ductile iron pipe shall be coated with the ac-sprayed zinc per ISO 8179. The mass of the zinc is to be 200 g/m² of pipe surface area. A bituminous topcoat shall be provided on top of the zinc.
- b. Fittings/Plugs – Ductile iron with mechanical joints complying with ANSI A21.10 or A21.53 SSB-Compact. Cement lined in accordance with ANSI/AWWA C104/A21.4. The exterior of the ductile iron fittings shall be coated with the ac-sprayed zinc per ISO 8179. The mass of the zinc is to be 200 g/m² of pipe surface area. A bituminous topcoat shall be provided on top of the zinc.
- c. Joints – Mechanical joints complying with ANSI/AWWA C111/A21.11.
- d. Valves – Valves 3-inch through 16-inch shall be gate valves designed in accordance with AWWA C515 with a ductile iron body, and seat type with non-rising stem and O- ring packing. Valves installed in vaults shall have mechanical joint ends. Valves buried shall have mechanical joint ends. Valves shall be Clow or Waterous as shown on the plan details.
- e. Valve Box – EJIW-664-S or Tyler 664-S (domestic)
- f. Valve Box Stabilizer – As manufactured by Valve Box Stabilizer Inc., Joliet Il. (815-722-2517)
- g. Pipe Restraint – EBAA Mega-Lug, Series 1100 (no exceptions) for all MJ fittings (pre-cast concrete thrust block restraint is required in conjunction with Mega-Lugs).

General: The construction of water mains, including protection from sewers, pressure testing, and disinfection, shall be according to the “Standard Specifications for Water and Sewer Main Construction in Illinois” latest edition and these special provisions. Excavation shall be according to the applicable requirements of Article 550.04 of the “Standard Specifications”.

Construction Requirements: Pipe bedding shall be crushed gravel or crushed stone complying with the requirements of Section 1004, Illinois Department of Transportation, “Standard Specifications for Road and Bridge Construction”, latest edition: The gradation shall be either CA-7, CA-8, CA-11 or CA-13. The pipe shall be laid so that it will be uniformly supported, and the entire length of the pipe barrel will have full bearing. No blocking of any kind shall be used to adjust the pipe to grade. Bedding shall be required for all water main construction and shall be a minimum thickness of four inches (4”) under the pipe barrel and two inches under pipe bells.

Backfill to one foot (1’) above the top of the pipe shall be done with acceptable bedding material as indicated above or crushed gravel or stone complying with gradation CA-6 of the Illinois Department of Transportation’s Standard Specifications for Road and Bridge Construction. placed in six-inch (6”) lifts compacted to ninety-five percent (95%) maximum density as determined according to ASTM D698.

Meg-A-Lug pipe restraints shall be used to protect water main piping from moving at change of directions, plugs, caps, tees, valves, fire hydrants and bends of 11¼ degree or greater. In addition to the Meg-A-Lug Pipe Restraining System, pre-cast concrete thrust blocks shall be used.

Water mains and appurtenances shall be installed in conformance with AWWA C-600, the material manufacturer's recommendations, the Standard Specifications for Water and Sewer Main construction in Illinois and this section.

Trench backfill shall be required in all locations where the water main trench is under or within two feet (2') of existing or proposed pavements including but not limited to streets, sidewalks and driveway. The trench backfill shall be placed in lifts no exceeding eight inches (8") and shall be mechanically compacted to do not less than ninety-five percent (95%) of the standard laboratory density. Backfilling shall not be done in freezing weather nor made with frozen material.

Where water is encountered in the trench, it shall be removed during pipe-laying and joint operations. Trench water shall not be allowed to enter the pipe at any time.

All connections to the existing water system shall be made under full water service pressure unless otherwise approved by the City Engineer. See CONNECTION TO EXISTING WATER MAIN.

All newly laid pipe shall be subjected to a hydrostatic pressure of one hundred fifty (150) pounds per square inch for a duration period of two hours. Each valve isolated section of pipe shall be filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe. Before applying the specified test pressure, all air shall be expelled from the pipe. The pipe must be pressurized and stabilized at a minimum of 150 PSI when the two-hour test begins. If no PSI drop is recorded at the end of the first hour the test is complete with a passing result. However, if a pressure drop is recorded the test will continue for the duration of the two hours. Allowable make-up water will be determined by the City representative according to the AWWA standard listed below for allowable leakage per 1000 feet in gallons per hour.

(Linear footage X GPH X 2 Hours)/1000

Pipe Size	3	4	6	8	10	12
GPH	.28	.37	.55	.74	.92	1.1

If the required amount of make-up water is less than the allowable amount of make-up water the test is complete with a passing result.

NOTE: If at any time after the test begins, a drop of 5 PSI or greater is recorded, the test is complete with a failing result regardless of the allowable make-up.

Leakage is defined as the quantity of water required to be supplied to the newly laid pipe necessary to re-establish the specified leakage test pressure.

All leaks shall be repaired until tight. Any cracked or defective pipes, fittings, valves, or fire hydrants discovered as a result of this pressure test shall be removed and replaced and the test repeated until satisfactory results are obtained.

All pressure tests shall be done in the presence of a representative of the City Water Utility.

Preliminary Flushing: Prior to chlorination, the main shall be flushed as thoroughly as possible with the water pressure and outlets available. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy

material allowed to get into the main during laying. If no fire hydrant is installed at the end of the main, a tap should be provided large enough to effect a velocity in the main of at least 2.5 feet per second.

Disinfection: Water main disinfection will be in accordance with Section 41-2.15 of the Standard Specifications for Water and Sewer Construction in Illinois.

The following procedures shall be followed when disinfection of new water main is required.

1. The contractor shall provide and install corporation cocks with a copper-tube goose-neck assembly for the purpose of sample collection. Fire hydrants shall not be used as sample points. Corporation cocks will be located at a point not more than 10 feet from the beginning of the new main and approximately every 1,000 feet thereafter. Branch and dead-end mains less than 1000 feet shall also have corporation cocks not more than 10 feet from the end of the main. The City Water Utility may require additional corporation cocks at various locations depending on the configuration of the system. All contractors are advised to contact the City Water Utility prior to installing corporation cocks for testing.
2. Water from the existing distribution system shall be made to flow at a constant rate into the new main.
3. At a point not more than 10 feet downstream from the beginning of the new main the water entering the new main will receive a dose of chlorine fed at a constant rate such that the water will have not less than 25 mg/l free chlorine.
4. During the application of chlorine, valves shall be positioned so that the strong chlorine solution in the main being treated will not flow into water mains in active service. Chlorine application shall not cease until the entire main is filled with heavily chlorinated water. The chlorinated water shall be retained in the main for at least 24 hours, and at the end of the 24-hour period the treated water in all portions of the main shall have a residual of not less than 10 mg/l free chlorine.
5. After the applicable retention period, heavily chlorinated water shall be flushed from the main until chlorine residuals are consistent with that of the existing system.
6. The environment to which the chlorinated water is to be discharged shall be inspected. If there are any questions that the chlorinated discharge will cause damage to the environment, then an approved neutralizing agent shall be applied to the water being wasted to thoroughly neutralize the chlorine residual in the water.
7. A minimum of twenty-four hours after the final flush and before the water main is placed into service, 1 set of samples shall be collected from approved sample points. Each sample will be tested for bacterial quality and show the absence of coliform organisms. If all samples tested for bacterial quality are satisfactory the main may be placed into service.
8. If at any sample point the bacterial quality is unsatisfactory, that sample point will be required to resample. The system may be flushed prior to resampling. Resampling will consist of two consecutive samples collected 24 hours apart. Each sample will be tested for bacterial quality and show the absence of coliform organisms. If all samples tested for bacterial quality are satisfactory the main may be placed in service. If samples are unsatisfactory repeat resampling procedures.
9. All system flushing, chlorine injecting, and sampling will be done in the presence of a representative of the Water Superintendent. A representative of the Water Superintendent will deliver all samples to a certified lab of the City's choice.

STORM SEWER ADJACENT TO OR CROSSING WATER MAIN

This work consists of constructing storm sewer adjacent to or crossing a water main, at the locations shown on the plans.

The material and installation requirements shall be according to the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and the applicable portions of Section 550 of the Standard Specifications, which may include concrete collars and encasing pipe with seals if required.

Pipe materials shall meet the requirements of Sections 40 and 41-2.01 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", except PVC pipe will not be allowed. Ductile-Iron pipe shall meet the minimum requirements for Thickness Class 50. Encasing of standard type storm sewer, according to the details for "Water and Sewer Separation Requirements (Vertical Separation)" in the "STANDARD DRAWINGS" Division of the "Standard Specifications for Water and Sewer Main Construction in Illinois", may be used for storm sewers crossing water mains.

FIRE HYDRANT TO BE REMOVED

This work shall consist of the removal and disposal of existing fire hydrants, hydrant auxiliary valves, barrel sections, valve boxes and any water main pipe between the hydrant and auxiliary valve.

Construction Requirements: The backfill for excavations made in the subgrade of the proposed improvement, and trenches where the inner edge of the trench if it is within 2 feet of the proposed edge of pavement, curb and gutter, or sidewalk shall be trench backfill according to Section 208 of the Standard Specifications. Backfill should be Method 1 in accordance with Article 550.07 of the Standard Specifications.

All material resulting from the removal of existing fire hydrant and valve assemblies shall be disposed of by the Contractor according to Article 202.03 of the Standard Specifications. Hydrants removed shall be neatly placed on a wooden pallet and delivered to the City at their public works garage.

WATER MAIN REMOVAL

This work shall consist of the complete removal and disposal of the existing water main, regardless of size, at the locations shown on the plans. The water main between hydrant auxiliary valves and the main branch line will also be included in this work.

Construction Requirements: The backfill for excavations made in the subgrade of the proposed improvement, and trenches where the inner edge of the trench is within 2 feet of the proposed edge of pavement, curb and gutter, or sidewalk shall be trench backfill according to Section 208 of the Standard Specifications. Backfill should be Method 1 in accordance with Article 550.07 of the Standard Specifications.

All material resulting from the removal of the existing water main shall be disposed of by the Contractor according to Article 202.03 of the Standard Specifications.

CONNECTION TO EXISTING WATER MAIN

This work shall consist of all labor and materials required for connecting a proposed water main facility to an existing water main facility in the locations shown on the plans and as described herein. It shall be performed in accordance with applicable portions of Section 41 of the Water and Sewer Specifications with the following clarifications.

All materials shall be domestic and shall be according to the specification for DUCTILE IRON WATER MAIN and the details shown on the plans. The work includes a material allowance of 15 linear feet of ductile iron pipe (of the necessary diameter) and 500 pounds of fittings. Trench backfill shall meet the requirements for CA-6 listed in Article 1004.01.

General Requirements. The new water main shall be connected to existing water main after the new main has passed hydrostatic testing and disinfection. Connections shall be accomplished by the use of mechanical joint fittings and lengths of pipe to make the most direct vertical and horizontal adjustments necessary to complete the connection. This may include cut-ins to the existing main or connections to existing valves or fittings. The contractor shall coordinate with the City Engineer to isolate and depressurize existing water main for connections. Operation of water valves by the Contractor is forbidden.

FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX

This work shall consist of installing a fire hydrant assembly, including all associated items as shown on the plans, including an 8" x 6" M.J. tee and 6" D.I. lead pipe, and as described herein.

All materials shall be domestic and according to the following:

- a. Fire hydrants shall be dry barrel type with breakaway type flange and auxiliary gate valves and shall conform to AWWA C502.
 - a. All fire hydrants shall be East Jordan Iron Works model BR 250 – no substitutions. The fire hydrant shall have a flanged shoe for burying less than 6 feet and an M.J. shoe, minimum 24", maximum 36" stub with Mega-Lug, for bury greater than 6 feet.
 - b. Fire hydrants shall have two (2), two and one-half inch (2-1/2") hose outlets and one (1) four and a half inch (4-1/2") national standard thread outlet.
 - c. Fire hydrants shall have a main valve opening of five and one-quarter inches (5-1/4").
 - d. Fire hydrants shall have a 6-inch auxiliary resilient seat type gate valve in accordance with AWWA C515 with a ductile iron body, non-rising stem and O-ring packing. Valve shall be Clow resilient wedge gate valve.
 - e. Auxiliary Valve Box shall be a Tyler 664-S or EJIW-664 and shall include a valve box stabilizer as manufactured by Valve Box Stabilizer, Inc. Lid should read "WATER".
 - f. Fire hydrant shall be painted Safety Red, with one full application per hydrant. Primer shall be Safety Gray, with one full application per hydrant.
 - i. Paint - Rust-Oleum High Performance – 9800 System DTM Urethane Mastic (Red).
 - ii. Primer – Rust-Oleum High Performance – 9100 System DTM Epoxy Matic.
 - g. All other materials shall be according to the special provision for DUCTILE IRON WATER MAIN, 8" DIAMETER, RESTRAINED JOINT PIPE.

Construction Requirements: Fire hydrants shall have a minimum of one (1) cubic yard of one-quarter (1/4) to three-quarters (3/4) inch of washed river stone placed at the base of the fire hydrant to provide drainage at the barrel. The top of the stone shall be covered with eight (8) mil thick polyethylene plastic prior to backfilling around the fire hydrant.

Auxiliary valves shall be connected to fire hydrants.

The break line flange of fire hydrants shall be not less than one inch (1") nor more than three inches (3")

above finished ground elevation. Fire hydrants in street rights-of-way shall be placed not less than three feet (3'), nor more than five feet (5') from the back of curb.

Zinc anodes shall be installed on every other bolt of each mechanical joint fitting.

Precast concrete thrust blocking shall be installed against undisturbed earth as shown on the plan details.

METHOD OF MEASUREMENT

For Ductile Iron Water Main: This work will be measured for payment in place in feet. The length measured will include stops, fitting, and valves. Fittings shall not be measured separately but shall be considered included in the cost of the watermain of the size specified. Pipe bedding from the base of the trench (4" Min. below pipe) to one foot (1') above the top of the pipe shall not be measured for payment but shall be considered included in the cost of the watermain. Disposal of surplus excavated materials, flushing, chlorinating and testing will not be paid for separately but shall be considered included in the cost of the watermain. Trench backfill shall not be paid for separately but shall be considered included in the cost of the watermain.

For Storm Sewer Adjacent to or Crossing Water Main: This work will not be measured for payment. It is considered incidental to the installation of storm sewers.

For Fire Hydrant to be Removed: This work will be measured for payment per each installed, counted in the field, and accepted.

For Water Main Removal: This work will be measured for payment per linear foot, counted in the field, and accepted.

For Connection to Existing Water Main: This work will be measured for payment per each location requiring a connection of a proposed water main to an existing water main, which shall include all labor, equipment, ductile iron pipe water main (up to 15 linear feet), water main fittings (up to 500 pounds), polyethylene wrapping, disinfection, testing, backfill and joint restraint required to make the connection. If the quantity allowance for ductile iron water main and/or water main fittings are exceeded, quantities in excess of the allowance will be paid for under the items for DUCTILE IRON WATER MAIN.

For Fire Hydrant with Auxiliary Valve and Valve Box: This work will be per each installed, counted in the field, and accepted.

BASIS OF PAYMENT

For Ductile Iron Water Main: This work will be paid for at the contract unit price per foot for WATER MAIN of the diameter specified. Fittings, bends, plugs, restraints, and all other associated items as described herein will not be paid for separately.

For Storm Sewer Adjacent to or Crossing Water Main: This work will not be paid for separately but shall be considered included in the contract unit price for storm sewers.

For Fire Hydrant to be Removed: This work will be paid for at the contract unit price per each for FIRE HYDRANT TO BE REMOVED including the cost of disposal of all materials.

For Water Main Removal: WATER MAIN REMOVAL will be paid for at the contract unit price per linear foot of removed water main. This shall include all labor, materials, equipment, disposal of the removed water main, and backfilling of the excavated trench, and incidentals necessary to complete this item.

For Connection to Existing Water Main. This work will be paid for at the contract unit price per each for CONNECTION TO EXISTING WATER MAIN of the size specified.

For Fire Hydrant with Auxiliary valve and Valve Box: This work will be paid for at the contract unit price per each for FIRE HYDRANT and will include all materials as shown on the plan details including an auxiliary valve, valve box, excavation, trench backfill, 6" hydrant leads, retainer glands, fittings, thrust blocking, valve boxes, field painting and all other labor, equipment and material necessary to complete this item as described herein.

Payment will be made under:

ITEM AR760000	WATER MAIN CONNECTIONS – PER EACH.
ITEM AR760312	12" WATER MAIN – PER LINEAR FOOT.
ITEM AR760800	FIRE HYDRANT – PER EACH.
ITEM AR760900	REMOVE WATER MAIN – PER LINEAR FOOT.
ITEM AR760905	REMOVE FIRE HYDRANT – PER EACH.

AR800152 – EXPLORATORY TRENCH

DESCRIPTION

This work shall consist of excavating a trench of sufficient width, (minimum 24”), length and depth (maximum 7’ below proposed finished sub-base) to expose existing utilities or other obstructions for the purpose of determining the elevation and location.

This work shall be performed only at the direction of the Engineer.

The depth of the trench shall be as required to uncover the existing utilities or other obstructions and of adequate width to allow investigation of the item in the trench. All excess material shall be disposed of according to Section 152.

All excavations shall be backfilled with crushed granular material having a CA-7 or CA-11 gradation, unless the engineer determines the native material is suitable. The cost of the granular backfill shall be considered incidental to this pay item. All surface disturbance shall be restored to the original condition and the cost shall be considered incidental to this pay item.

METHOD OF MEASUREMENT

This item of work shall be measured per linear foot of actual trench constructed.

BASIS OF PAYMENT

This work will be paid for at the contract unit price per linear foot, regardless of depth, which will be payment in full for all required work, labor, and materials necessary to complete the work specified herein.

Payment will be made under:

ITEM AR800152 EXPLORATORY TRENCH – PER LINEAR FOOT.

AR800153 – POTHOLING EXISTING UTILITIES

DESCRIPTION

The Contractor shall locate all existing underground utilities using standard locating methods in the path of the proposed excavation area prior to installation of watermain or parking area excavation. The Contractor shall pot hole to expose the identified utility at locations shown on the plans.

The pothole process is to employ pressurized water and a powerful positive displacement vacuum system to excavate, even through frost. The water is delivered through a handheld wand to cut through the soil, which is simultaneously removed by the vacuum to a on-board debris tank, providing a safe, clean excavation.

The Contractor as needed, including but not limited to, removing existing soils by the hydro-vac method of excavation to protect the existing infrastructure. Locate existing utilities, structures and obstructions, as shown on the plans, by potholing and slot trenching and excavating as needed.

The Contractor is responsible for permits and permission from property owners, utilities, and government agents, surface locates and traffic control, if needed, breaking, removal, and restoration of asphalt and or concrete, if needed, adequate water source and dump site, specific direction and locations for hydro-vac excavation, backfill and site restoration, if necessary, and shoring, dewatering, maintenance and barricading of the excavation.

METHOD OF MEASUREMENT

Measurement for this work will be per Calendar Day.

BASIS OF PAYMENT

This work will be paid for at the contract unit price per calendar day. Payment shall be full compensation for all materials, labor, equipment and incidentals for investigating existing utilities prior to installation of watermain.

Payment will be made under:

ITEM AR800153 POTHOLING EXISTING UTILITIES – PER CALANDER DAY.

AR910 – SIGNAGE

DESCRIPTION

This work shall consist of furnishing and erecting signage, complete with sign faces, legends, and supplemental panels at locations shown in the plans and as designated by the Engineer.

GENERAL

Installation and materials shall follow Section 720 of the State of Illinois Standard Specifications for Road and Bridge Construction (January 1, 2022).

METHOD OF MEASUREMENT

Sign Panels will be measured for payment in square feet. Sign Supports will be measured for payment per linear foot.

BASIS OF PAYMENT

Sign Panels shall be paid for at the contract unit price per square foot. Sign Supports shall be paid for at the contract unit price per linear foot. Payment shall be full compensation for all materials, labor, equipment, and incidentals necessary to complete this work as detailed in the plans and specified herein.

Payment will be made under:

ITEM AR910201	SIGN PANEL – PER SQUARE FOOT.
ITEM AR910246	SIGN SUPPORT – PER LINEAR FOOT.
ITEM AT910230	HANDICAP SIGN – PER SQUARE FOOT.
ITEM AT910243	SIGN SUPPORT – PER EACH.

ITEM 910420 – BOLLARD

DESCRIPTION

800184-1.1

This item shall consist of the installation of bollards as shown on the plans or as directed by the Engineer.

MATERIALS

800184-2.1

Materials shall be as shown on the plans. Concrete shall meet Item 610.

CONSTRUCTION METHODS

800184-3.1

Installation shall be as shown in the plans.

METHOD OF MEASUREMENT

800184-4.1

The bollards shall be measured per each satisfactorily installed and accepted by the Resident Engineer.

BASIS OF PAYMENT

800184-5.1

Payment shall constitute full compensation for the construction of the bollards, including all materials, labor, tools, paint, HDPE cover, equipment and necessary incidentals to complete this item of work.

Payment will be made under:

ITEM AT910420 BOLLARD - PER EACH.

AS800060 – DUMPSTER ENCLOSURE

DESCRIPTION

This work shall consist of furnishing all labor, equipment, and materials necessary to construct a new dumpster enclosure, its cast-stone masonry cap, its footings, and access gate. Manufacturers are listed under various materials but an equal product may be submitted for approval."

DUMPSTER ENCLOSURE

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:

1. Decorative concrete masonry units.
2. Mortar and grout.
3. Reinforcing steel.
4. Masonry joint reinforcement.
5. Ties and anchors.
6. Embedded flashing.
7. Miscellaneous masonry accessories.

1.02 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.03 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Samples for Initial Selection: For the following:

1. Decorative concrete masonry units, in the form of small-scale units.
2. Colored mortar.
3. Weep holes/vents.

D. Samples for Verification: For each type and color of the following:

1. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project. Label Samples to indicate types and amounts of pigments used.
2. Weep holes/vents.

- E. Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:
 - 1. Masonry units.
 - a. Include material test reports substantiating compliance with requirements.
 - b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
 - 2. Cementitious materials. Include brand, type, and name of manufacturer.
 - 3. Pre-blended, dry mortar mixes. Include description of type and proportions of ingredients.
 - 4. Grout mixes. Include description of type and proportions of ingredients.
 - 5. Reinforcing bars.
 - 6. Joint reinforcement.
 - 7. Anchors, ties, and metal accessories.
- F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 - 1. Include test reports, per ASTM C 780, for mortar mixes required to comply with property specification.
 - 2. Include test reports, per ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- G. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
- H. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.04 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.
- D. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by other means, as acceptable to authorities having jurisdiction.
- E. Preinstallation Conference: Conduct conference at Project site to comply with the following requirements:

1. Required attendees: Contractor, installing sub-contractor, all sub-contractors that will be installing components or accessories through, in, or on the masonry walls, including but not limited to electrical and mechanical sub-contractors.
 2. Agenda will include, but not be limited to the following:
 - a. Locations where masonry is required.
 - b. Applicable drawings and specification sections.
 - c. Coordination of work with other disciplines.
 - d. Installation details and requirements.
 - e. Quality control requirements.
- F. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Build mockup of typical exterior (2) color masonry wall section.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver pre-blended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store pre-blended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.06 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
 2. Where 1 wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches (600 mm) down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect the base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 2. Protect sills, ledges, and projections from mortar droppings.
 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Products: Subject to compliance with requirements, provide one of the products specified.

2.02 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.03 DECORATIVE CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows:
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 2. Provide square-edged units for outside corners, unless otherwise indicated.
- B. Integral Water Repellent: Provide exterior units made with integral water repellent for exposed units.
1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested as a wall assembly made with mortar containing integral water-

repellent manufacturer's mortar additive according to ASTM E 514, with test period extended to 24 hours, show no visible water or leaks on the back of test specimen.

- a. Products:
 - i. Addiment Incorporated; Block Plus W-10.
 - ii. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Dry-Block.
 - iii. Master Builders, Inc.; Rheopel.

C. Decorative Concrete Masonry Units (Split Face): ASTM C 90.

- 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi (13.1 MPa).
- 2. Weight Classification: Normal weight.
- 3. Nominal Size: 8" D x 8" H x16" W
- 4. Pattern and Texture:
 - a. Running bond and split-faced.
- 5. Products: Basis of design: Subject to compliance with requirements, provide the following product, by Midwest Brick and Block or a comparable product by comparable manufacturers:
 - a. Architectural Masonry Units – Athenia (Split-Face)
 - b. Owner shall select from Manufacturer's full range of colors
- 6. Integral water repellent as specified in 2.03.B. of this section.

2.04 MASONRY LINTELS

- A. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Temporarily support built-in-place lintels until cured.

2.05 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of Portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.
- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.
 - 1. Products:
 - a. Bayer Corporation, Industrial Chemicals Div.; Bayferrox Iron Oxide Pigments.

- b. Davis Colors; True Tone Mortar Colors.
 - c. Solomon Grind-Chem Services, Inc.; SGS Mortar Colors.
- 2. Color: To be selected by Architect from Manufacturer's full range. Colored mortar required for Exterior Masonry only.
- E. Aggregate for Mortar: ASTM C 144.
 - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 - 2. For joints less than 1/4 inch (6.5 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
 - 3. White-Mortar Aggregates: Natural white sand or crushed white stone.
 - 4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- F. Aggregate for Grout: ASTM C 404.
- G. Cold-Weather Admixture: Non-chloride, non-corrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
 - 1. Products:
 - a. Addiment Incorporated; Mortar Kick.
 - b. Euclid Chemical Company (The); Accelguard 80.
 - c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Morset.
 - d. Sonneborn, Div. of ChemRex; Trimix-NCA.
- H. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units, containing integral water repellent by same manufacturer.
 - 1. Products:
 - a. Addiment Incorporated; Mortar Tite.
 - b. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Dry-Block Mortar Admixture.
 - c. Master Builders, Inc.; Color Cure Mortar Admix or Rheomix Rheopel.
- I. Water: Potable.

2.06 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60 (Grade 420).
- B. Masonry Joint Reinforcement, General: ASTM A 951.
 - 1. Interior Walls: Mill galvanized, carbon steel.
 - 2. Exterior Walls: Hot-dip galvanized, carbon steel.
 - 3. Wire Size for Side Rods: W1.7 or 0.148-inch (3.8-mm) diameter.
 - 4. Wire Size for Cross Rods: W1.7 or 0.148-inch (3.8-mm) diameter.
 - 5. Wire Size for Veneer Ties: W1.7 or 0.148-inch (3.8-mm) diameter.

6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
 7. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units.
- C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.
- D. Masonry Joint Reinforcement for Multi-wythe Masonry:
1. Adjustable (two-piece) type, either ladder or truss design, with one side rod at each face shell of backing wythe and with separate ties that extend into facing wythe. Ties have two hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties extend at least halfway through facing wythe but with at least 5/8-inch (16-mm) cover on outside face. Ties have hooks or clips to engage a continuous horizontal wire in the facing wythe.
- E. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.188-inch- (4.8-mm-) diameter, hot-dip galvanized, carbon-steel continuous wire.

2.07 TIES AND ANCHORS

- A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with eight subparagraphs below, unless otherwise indicated.
1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 641/A 641M, Class 1 coating.
 2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
 3. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
 4. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 (Z180) zinc coating.
 5. Steel Sheet, galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, hot dip galvanized after fabrication to comply with ASTM A 153/A 153M.
 6. Stainless-Steel Sheet: ASTM A 666, Type 304.
 7. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
 8. Stainless Steel bars: ASTM A 276 or ASTM a 666, Type 304.
- B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch (16-mm) cover on outside face. The outer ends of wires are bent 90 degrees and extend 2 inches (50 mm) parallel to face of veneer.
- C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches (100 mm) wide.
1. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches (50 mm) long may be used for masonry constructed from solid units or hollow units laid with cells horizontal.
 2. Where wythes are of different materials, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches (32 mm).
 3. Wire: Fabricate from 3/16-inch- (4.8-mm-) diameter, hot-dip galvanized steel wire. Mill-galvanized wire ties may be used in interior walls, unless otherwise indicated.

- D. Partition Top anchors: 0.097-inch- (2.5-mm-) thick metal plate with 3/8-inch- (10-mm-) diameter metal rod 6 inches (150 mm) long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot dip galvanized after fabrication.

2.08 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing, where flashing is exposed or partly exposed and where indicated, complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:

1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch (0.4 mm) thick.
2. Copper: ASTM B 370, Temper H00 or H01, cold-rolled copper sheet, 10-oz./sq. ft. (3-kg/sq. m) weight or 0.0135-inch (0.34 mm) thick for fully concealed flashing; 16-oz./sq. ft. (5-kg/sq. m) weight or 0.0216 inch (0.55 mm) thick elsewhere.
3. Fabricate continuous flashings in sections 96 inches (2400 mm) long minimum, but not exceeding 12 feet (3.6 m). Provide splice plates at joints of formed, smooth metal flashing.
4. Fabricate through-wall metal flashing embedded in masonry from stainless steel, with ribs at 3-inch (75-mm) intervals along length of flashing to provide an integral mortar bond.

a. Products:

- i. Cheney Flashing Company; Cheney Flashing (Dovetail) or Cheney 3-Way Flashing (Sawtooth).
 - ii. Keystone Flashing Company, Inc.; Keystone 3-Way Interlocking Thruwall Flashing.
5. Fabricate through-wall flashing with snaplock receiver on exterior face where indicated to receive counterflashing.
 6. Fabricate through-wall flashing with drip edge, unless otherwise indicated. Fabricate by extending flashing 1/2 inch (13 mm) out from wall, with outer edge bent down 30 degrees [and hemmed].
 7. Fabricate metal drip edges for ribbed metal flashing from plain metal flashing of same metal as ribbed flashing and extending at least 3 inches (75 mm) into wall with hemmed inner edge to receive ribbed flashing and form a hooked seam. Form hem on upper surface of metal so that completed seam will shed water.
 8. Metal Drip Edges: Fabricate from stainless steel. Extend at least 3 inches (75 mm) into wall and 1/2 inch (13 mm) out from wall, with outer edge bent down 30 degrees [and hemmed].
 9. Metal Flashing Terminations: Fabricate from stainless steel. Extend at least 3 inches (75 mm) into the wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch (19 mm) and down into joint 3/8 inch (10 mm) to form a stop for retaining sealant backer rod.
 10. Metal Expansion-Joint Strips: Fabricate from stainless steel to shapes indicated.

- B. Flexible Flashing: For flashing not exposed to the exterior, use the following, unless otherwise indicated:

1. Copper-Laminated Flashing 7-oz./sq. ft. (2-kg/sq. m) copper sheet bonded with asphalt between 2 layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.

- a. Products:
 - i. Advanced Building Products Inc.; Copper Fabric Flashing.
 - ii. Hohmann & Barnard, Inc.; H & B C-Fab Flashing.
 - iii. York Manufacturing, Inc.; York Copper Fabric Flashing.
- C. Solder and Sealants for Sheet Metal Flashings:
 - 1. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
 - 2. Solder for Copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
 - 3. Elastomeric Sealant: ASTM C 920, chemically curing urethane sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.09 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene, urethane or PVC.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Weep/Vent Products: Use the following unless otherwise indicated:
 - 1. Wicking Material: Absorbent rope, made from cotton or UV-resistant synthetic fiber, 1/4-to-3/8-inch (6 to 10 mm) in diameter, in length required to produce 2-inch (50-mm) exposure on exterior and 18 inches (450 mm) in cavity. Use only for weeps.
 - 2. Round Plastic Weep/Vent Tubing: Medium-density polyethylene, 3/8-inch (9-mm) OD by 4 inches (100 mm) long.
- E. Mortar Net: Open mesh high density polyethylene strands woven into a 90% open mesh. The shape will break up mortar droppings and prohibit mortar from creating a moisture retaining barrier, to allow water to flow freely to the weep holes. 10" height x 4" length x 2" width.
- F. Masonry Sealer (Interior Finish): Clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, architectural concrete block, precast concrete, wood and other porous masonry materials. Basis-of-Design Prosoco Sure Klean Blok-Guard & Graffiti Control.

2.10 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
1. Manufacturers:
 - a. Diedrich Technologies, Inc.
 - b. EaCo Chem, Inc.
 - c. ProSoCo, Inc.

2.11 SOURCE QUALITY CONTROL

- A. Concrete Masonry Unit Test: For each type of unit furnished, per ASTM C 140.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

1. Mix units from several pallets or cubes as they are placed.
- F. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
 2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.
 3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
 4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm). Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
 5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).
 6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch (1.5 mm) except due to warpage of masonry units within tolerances specified for warpage of units.
 7. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch (1.5 mm) from one masonry unit to the next.

3.03 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 8-inch (100-mm) horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 8-inches (100-mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.

- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow concrete masonry units with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
 - 1. Install compressible filler in the joint between top of partition and underside of structure above.
 - 2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch (13-mm) clearance between end of anchor rod and end of tube. Space anchors 48 inches (1200 mm) o.c., unless otherwise indicated.
 - 3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
 - 4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 7 Section "Fire-Resistive Joint Systems."

3.04 MORTAR BEDDING AND JOINTING

- A. Lay hollow concrete masonry units as follows:
 - 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 - 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

3.05 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
 - 1. Space reinforcement not more than 16 inches (406 mm) o.c.
 - 2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
 - 3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.

- a. Reinforcement above is in addition to continuous reinforcement.
 - B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.
 - C. Provide continuity at wall intersections by using prefabricated T-shaped units.
 - D. Provide continuity at corners by using prefabricated L-shaped units.
 - E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, pipe enclosures, and other special conditions.
- 3.06 ANCHORING MASONRY TO STRUCTURAL MEMBERS
- A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:
 - 1. Provide an open space not less than 1 inch (25 mm) in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar and other rigid materials.
 - 2. Anchor masonry to structural members with anchors embedded in masonry joints and attached to structure.
 - 3. Space anchors as indicated, but not more than 24 inches (610 mm) o.c. vertically and 36 inches (915 mm) o.c. horizontally.
- 3.07 CONTROL AND EXPANSION JOINTS
- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
 - B. Form control joints in concrete masonry using one of the following methods:
 - 1. Fit bond-breaker strips into hollow contour in ends of concrete masonry units on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.
 - 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.
 - 4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.
 - C. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section "Joint Sealants," but not less than 3/8 inch (10 mm).
 - 1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.
- 3.08 LINTELS
- A. Install steel lintels where indicated.

- B. Provide masonry lintels where shown and where openings of more than 12 inches (305 mm) for brick-size units and 24 inches (610 mm) for block-size units are shown without structural steel or other supporting lintels.
- C. Provide minimum bearing of 8 inches (200 mm) at each jamb, unless otherwise indicated.

3.09 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows, unless otherwise indicated:
 - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
 - 2. At multi-wythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches (200 mm), and through inner wythe to within 1/2 inch (13 mm) of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches (50 mm) on interior face.
 - 3. At multi-wythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches (200 mm), and 1-1/2 inches (38 mm) into the inner wythe.
 - 4. At lintels and shelf angles, extend flashing a minimum of 6 inches (150 mm) into masonry at each end. At heads and sills, extend flashing 6 inches (150 mm) at ends and turn up not less than 2 inches (50 mm) to form end dams.
 - 5. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 7 Section "Joint Sealants" for application indicated.
 - 6. Install metal drip edges and sealant stops with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Division 7 Section "Joint Sealants" for application indicated.
 - 7. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal drip edge.
 - 8. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal flashing termination.
 - 9. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
- C. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.

- D. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.
- E. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:
 - 1. Use specified weep/vent products to form weep holes.
 - 2. Use wicking material to form weep holes above flashing under brick sills. Turn wicking down at lip of sill to be as inconspicuous as possible.
 - 3. Space weep holes 24 inches (600 mm) o.c., unless otherwise indicated.
 - 4. Cover cavity side of weep holes with plastic insect screening at cavities insulated with loose-fill insulation.
 - 5. Trim wicking material flush with outside face of wall after mortar has set.
- F. Install vents in head joints in exterior wythes at spacing indicated. Use specified weep/vent products to form vents.
 - 1. Close cavities off vertically and horizontally with blocking in manner indicated. Install through-wall flashing and weep holes above horizontal blocking.

3.10 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 - 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ ASCE 6/TMS 602.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
 - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
 - 2. Limit height of vertical grout pours to not more than [60 inches (1520 mm)].

3.11 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
 - 6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.12 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

CAST STONE MASONRY CAP

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings, the Construction Contract, including all Exhibits and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:

- 1. Cast-stone units for wall coping at dumpster enclosure.

1.03 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. For cast-stone units, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

- B. Shop Drawings: Show fabrication and installation details for cast-stone units. Include dimensions, details of reinforcement and anchorages if any, and indication of finished faces.

- C. Samples for Initial Selection: For colored mortar.

- D. Samples for Verification:

2. For each color and texture of cast stone required, 10 inches (250 mm) square in size.
 3. For colored mortar, make Samples using same sand and mortar ingredients to be used on Project.
- E. Full-Size Samples: For each color, texture and shape of cast-stone unit required.
4. Make available for Architect's review at Project site.
 5. Make Samples from materials to be used for units used on Project immediately before beginning production of units for Project.
 6. Approved Samples may be installed in the Work.
- 1.04 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For manufacturer.
1. Include copies of material test reports for completed projects, indicating compliance of cast stone with ASTM C 1364.
- B. Material Test Reports: For each mix required to produce cast stone, based on testing according to ASTM C 1364, including test for resistance to freezing and thawing.
1. Provide test reports based on testing within previous two years.
- 1.05 QUALITY ASSURANCE
- A. Manufacturer Qualifications: A qualified manufacturer of cast-stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute.
- B. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
- 1.06 DELIVERY, STORAGE, AND HANDLING
- A. Coordinate delivery of cast stone to avoid delaying the Work and to minimize the need for on-site storage.
- B. Pack, handle, and ship cast-stone units in suitable packs or pallets.
1. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move cast-stone units if required, using dollies with wood supports.
 2. Store cast-stone units on wood skids or pallets with non-staining, waterproof covers, securely tied. Arrange to distribute weight evenly and to prevent damage to units. Ventilate under covers to prevent condensation.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store mortar aggregates where grading and other required characteristics can be maintained, and contamination can be avoided.

1.07 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until cast stone has dried, but no fewer than seven days after completing cleaning.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Source Limitations for Cast Stone: Obtain cast-stone units from single source from single manufacturer.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

2.02 CAST-STONE MATERIALS

- A. General: Comply with ASTM C 1364.
- B. Portland Cement: ASTM C 150/C 150M, Type I or Type III, containing not more than 0.60 percent total alkali when tested according to ASTM C 114. Provide natural color or white cement as required to produce cast-stone color indicated.
- C. Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C 33/C 33M; gradation and colors as needed to produce required cast-stone textures and colors.
- D. Fine Aggregates: Natural sand or crushed stone complying with ASTM C 33/C 33M, gradation and colors as needed to produce required cast-stone textures and colors.
- E. Color Pigment: ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- F. Admixtures: Use only admixtures specified or approved in writing by Architect.
 - 7. Do not use admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious materials. Do not use admixtures containing calcium chloride.
 - 8. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.
 - 9. Air-Entraining Admixture: ASTM C 260/C 260M. Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.
 - 10. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 11. Water-Reducing, Retarding Admixture: ASTM C 494/C 494M, Type D.

12. Water-Reducing, Accelerating Admixture: ASTM C 494/C 494M, Type E.
- G. Reinforcement: Where required by ASTM C1364, deformed steel bars complying with ASTM A 615/A 615M, Grade 60 (Grade 420). Use galvanized or epoxy-coated reinforcement when covered with less than 1-1/2 inches (38 mm) of cast-stone material.
13. Epoxy Coating: ASTM A 775/A 775M.
14. Galvanized Coating: ASTM A 767/A 767M.
- H. Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666, Type.
- 2.03 CAST-STONE UNITS
- A. Manufacturer: Continental Cast Stone, or equal complying with these specifications.
- B. Cast-Stone Units: Comply with ASTM C 1364.
15. Units shall be resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.
- C. Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
 2. Provide raised fillets at backs of sills and at ends indicated to be built into jambs.
 3. Provide drips on projecting elements unless otherwise indicated.
 4. Provide units as detailed on drawings.
- D. Fabrication Tolerances:
1. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch (3 mm).
 2. Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch (3 mm), whichever is greater, but in no case by more than 1/4 inch (6 mm).
 3. Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch (3 mm), whichever is greater.
 4. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch (3 mm) on formed surfaces of units and 3/8 inch (10 mm) on unformed surfaces.
- E. Cure Units as Follows:
1. Cure units in enclosed, moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F (38 deg C) for 12 hours or 70 deg F (21 deg C) for 16 hours.
 2. Keep units damp and continue curing to comply with one of the following:
 - a. No fewer than five days at mean daily temperature of 70 deg F (21 deg C) or above.
 - b. No fewer than six days at mean daily temperature of 60 deg F (16 deg C) or above.
 - c. No fewer than seven days at mean daily temperature of 50 deg F (10 deg C) or above.
 - d. No fewer than eight days at mean daily temperature of 45 deg F (7 deg C) or above.

- F. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
- G. Colors and Textures: to be selected from manufacturer's standard colors by Owner's representative.

2.04 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Masonry Cement: ASTM C 91/C 91M.
- E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979/C 979M. Use only pigments with a record of satisfactory performance in masonry mortar.
- F. Colored Cement Product: Packaged blend made from portland cement and hydrated lime, masonry cement or mortar cement and mortar pigments, all complying with specified requirements, and containing no other ingredients.
- G. Aggregate for Mortar: ASTM C 144.
 - 16. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 - 17. For joints less than 1/4 inch (6 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
 - 18. White-Mortar Aggregates: Natural white sand or crushed white stone.
 - 19. Colored Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- 20. Water: Potable.

2.05 ACCESSORIES

- A. Anchors: Type and size indicated, fabricated from Type 304 stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666.
- B. Dowels: 1/2-inch- (12-mm-) diameter round bars, fabricated from Type 304 stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666
- C. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cast-stone manufacturer and expressly approved by cleaner manufacturer for use on cast stone and adjacent masonry materials.

2.06 MORTAR MIXES

- A. Do not use admixtures including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 21. Do not use calcium chloride in mortar or grout.
 - 22. Use portland cement-lime, masonry cement or mortar cement mortar unless otherwise indicated.
- B. Comply with ASTM C 270, Proportion Specification.
 - 1. For setting mortar, use Type N.
 - 2. For pointing mortar, use Type N.
- C. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
 - 23. Pigments shall not exceed 10 percent of portland cement by weight.
 - 24. Pigments shall not exceed 5 percent of masonry cement or mortar cement by weight.
 - 25. Application: Use pigmented mortar for exposed mortar joints.

2.07 SOURCE QUALITY CONTROL

- A. Engage a qualified independent testing agency to sample and test cast-stone units according to ASTM C 1364.
 - 1. Include one test for resistance to freezing and thawing.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SETTING CAST STONE IN MORTAR

- A. Set cast stone as indicated on Drawings. Set units accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.
 - 26. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - 27. Coordinate installation of cast stone with installation of flashing specified in other Sections.
- B. Wet joint surfaces thoroughly before applying mortar or setting in mortar.
- C. Set units in full bed of mortar with full head joints unless otherwise indicated.
 - 1. Set units with joints to match existing unless otherwise indicated.
 - 2. Build anchors and ties into mortar joints as units are set.

3. Fill dowel holes and anchor slots with mortar.
 4. Fill collar joints solid as units are set.
 5. Build concealed flashing into mortar joints as units are set.
 6. Keep head joints in copings and between other units with exposed horizontal surfaces open to receive sealant.
- D. Rake out joints for pointing with mortar to depths of not less than 3/4 inch (19 mm). Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- E. Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch (10 mm). Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- F. Tool exposed joints slightly concave when thumbprint hard. Use a smooth plastic jointer larger than joint thickness.
- G. Rake out joints for pointing with sealant to depths of not less than 3/4 inch (19 mm). Scrub faces of units to remove excess mortar as joints are raked.

3.03 INSTALLATION TOLERANCES

- A. Variation from Plumb: Do not exceed 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12 mm) maximum.
- B. Variation from Level: Do not exceed 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12 mm) maximum.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches (3 mm in 900 mm) or one-fourth of nominal joint width, whichever is less.
- D. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch (1.5 mm), except where variation is due to warpage of units within tolerances specified.

3.04 ADJUSTING AND CLEANING

- A. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.
- B. Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
- C. In-Progress Cleaning: Clean cast stone as work progresses.
28. Remove mortar fins and smears before tooling joints.
 29. Remove excess sealant immediately, including spills, smears, and spatter.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
30. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

31. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
32. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
33. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
34. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
35. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

DUMPSTER ENCLOSURE GATE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, the Construction Contract, including all Addendum, and Front-End Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Operable gates with preformed metal panel slats for screening trash enclosure.
2. Aluminum support framing for direct attachment of screen support columns are provided for attachment to concrete pad, piers, or footings.

1.03 REFERENCES

- A. American Society for Testing and Materials: Standard Specifications for
 1. ASTM B 221-13 - Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire Profiles, and Tubes.
- B. The Aluminum Association, Inc.
 1. AA ADM-1516166 (1994) - Aluminum Design Manual
- C. American Society of Civil Engineers.
 1. ASCE 7-95 - Minimum Design Loads for Buildings and Other Structures.

1.04 SYSTEM DESCRIPTION

A. Design Criteria:

1. Manufacturer is responsible for the structural design of all materials, assembly and attachments to resist snow, wind, suction and uplift loading at any point without damage or permanent set.
2. Framing shall be designed in accordance with the Aluminum Design Manual to resist the following loading: 250lbs/ft

- a. ASCE 7-95 - Minimum Design Loads for Buildings and Other Structures; American Society of Civil Engineers.

1.05 SUBMITTALS

- A. Product Data: Submit manufacturer's catalog data, detail sheets, specification and other data sufficient to indicate compliance with these specifications.
- B. Shop Drawings: Indicate layouts heights, component connection details, and details of interface with adjacent construction.
- C. Samples:
 1. Color Selection: Full range of colors available (including custom options) for Owner's selection.
- D. Certification: Manufacturer's Certificate of Compliance certifying that panels supplied meet or exceed requirements specified.
- E. Closeout Submittals: Warranty documents, issued and executed by manufacturer, countersigned by Contractor.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum five (5) years documented experience producing systems specified in this section.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
- B. Storage and Handling: Protect materials and finishes during handling and installation to prevent damage.

1.08 DELIVERY, STORAGE PROJECT CONDITIONS

- A. Field Measurements: Take measurements of supporting paving, footings, or piers. Indicate measurements on shop drawings fully documenting any field condition that may interfere with the screen system installation.

1.09 DELIVERY, STORAGE COORDINATION

- A. Installer for work under this Section shall be responsible for coordination of panel and framing sizes and required options with the Contractor's requirements.
 1. Request information on sizes and options required from the Contractor.
- B. Submit shop drawings to the Engineer and obtain written approval of shop drawing from the Engineer prior to fabrication.
- C. Confirm size, type, and location of supporting construction as adequate to resist column supports.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. ToughGate by CityScapes International Inc. Subject to compliance with requirements. Equal products may be supplied:

2.02 MATERIALS

- A. 1" x 6" wide pvc plank, panel slats. Color chosen from manufacturer's full range.
- B. Framing: Aluminum Plate, Shapes and Bar: ASTM B 221, alloy6005-T5, 6061-T5 or 6063-T5.
- C. 5" diameter schedule 40 steel pipe post, 4' longer than gate height for embed. Finished to match gate metal framing.
- D. Threaded Fasteners: All screws, bolts, nut and washers shall be Stainless steel.
1. Corner assembly fasteners shall be #10-16 x stainless steel TEK screws.
 2. Provide lock washer or other locking device at all bolted connections.

2.03 FABRICATION

- A. Provide factory-formed panel systems with continuous interlocking panel connections and indicated or necessary components: Form all components true to shape, accurate in size, square and free from distortion or defects. Cut panels to precise lengths indicated on approved shop drawings.
- B. Fabricate products to the following configurations:
1. Panel Style: PVC Plank, 6" Vertical Slat Wall.
 2. ToughGate Gate Style: Madison.
 3. Gate Height: As shown on the drawings.
 4. Gate Width: As shown on the drawings.
 5. Standard Gate Post: Schedule 40 Round Steel Pipe
 6. Provide matching Bridge handles and drop pins for each gate.
 7. Provide 2 hold-open pipe hinges per gate.
- C. Trim and Closures: Fabricated and finished with the manufacturers standard coating system, unless shown otherwise on drawings.
- D. Framing: Fabricate and assemble components in largest practical sizes, for delivery to the site.
1. Construct corner assemblies to required shape with joints tightly fitted.
 2. Supply components required for anchorage of framing. Fabricate anchors and related components of material and finish as required, or as specifically noted.
- E. Gate Hardware: Provide manufacturer's standard adjustable hold open pipe hinge of size required to fit support pipe provided.

2.04 FINISHES

- A. Aluminum Framing: Painted finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Installer's Examination: Examine conditions under which construction activities of this section are to be performed.
 - 1. Submit written notification to Architect and Screen manufacturer if such conditions are unacceptable.
 - 2. Beginning erection constitutes installer's acceptance of conditions.

3.02 INSTALLATION

- A. Install units in accordance with the manufacturer's instructions and approved shop drawings. Keep perimeter lines straight, plumb, and level. Provide brackets, anchors, and accessories necessary for a complete installation.
- B. Fasten structural supports to paving, footings, or piers at spacing as indicated on approved shop drawings.
- C. Insert thermoplastic panels into structural supports, except where fixed attachment points are indicated. Butt thermoplastic panels to adjacent panels for uniform fit. Fasten fixed panels in accordance with the shop drawings.
- D. Metal Separation: Where aluminum materials would contact dissimilar materials, insert rubber grommets at attachment points, thus eliminating where dissimilar metals would otherwise be in contact.
- E. Do not cut or abrade finishes which cannot be restored. Return items with such finishes to shop for required alterations.

3.03 ERECTION TOLERANCES

- A. Maximum misalignment from true position: ¼ inch (6.35 mm).

3.04 CLEANING AND PROTECTION

- A. Remove all protective masking from material immediately after installation.
- B. Protection:
 - 1. Ensure that finishes and structure of installed systems are not damaged by subsequent construction activities.
 - 2. If minor damage to finishes occurs, repair damage in accordance with manufacturer's recommendations; provide replacement components if repaired finishes are unacceptable to Architect.
- C. Prior to Substantial Completion: Remove dust or other foreign matter from component surfaces; clean finishes in accordance with manufacturer's instructions.
 - 1. Clean units in accordance with the manufacturer's instructions.

METHOD OF MEASUREMENT

Measurement for this work will be per lump sum.

BASIS OF PAYMENT

Payment for Dumpster Enclosure shall be made at the contract unit price per lump sum. This payment includes the enclosure, enclosure footings, masonry cap and enclosure gate. Payment shall be full compensation for all materials, labor, equipment, and incidentals necessary to complete this work as detailed in the plans and specified herein.

Payment for the six-inch-thick dumpster enclosure concrete slab will be made under Item AS501506. Payment for the six-inch-thick aggregate base and eight-inch porous granular embankment will be made under Items AS208606 and AS 208515. Payment for the bollards located within the dumpster enclosure will be made under Item AS910420.

Payment will be made under:

ITEM AT800060 DUMPSTER ENCLOSURE – PER LUMP SUM.

APPENDIX A - IDOT DIVISION OF AERONAUTICS POLICY MEMORANDA

State of Illinois Department of Transportation
Office of Intermodal Project Implementation
Aeronautics

POLICY MEMORANDUM

February 10, 2022

Springfield, Illinois

Number 22-1

TO: CONSULTING ENGINEERS / CONTRACTORS

SUBJECT: ACCEPTED CEMENT TYPES

- I. This policy memorandum addresses the accepted cement types for use in Items 501 and 610 Concrete mixtures. Type IL cement has been added to the approved list and may be used on all IDOT-Let Aeronautics projects.
- II. The following cement types are approved.
 - a. Type I cement conforming to the requirements of ASTM C 150.
 - b. Type IL cement conforming to the requirements of ASTM C 595.
 - c. All other types are not allowed unless specified by Special Provisions.

William C. Eves, P.E.
Acting Chief Engineer

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

February 20, 2014

Springfield

Number: 87-2

TO: CONSULTING ENGINEERS

SUBJECT: DENSITY ACCEPTANCE OF BITUMINOUS PAVEMENTS

I. Introduction

This Policy Memorandum deals with the implementation of the bituminous density quality assurance specifications as outlined in the Standard Specifications for Construction of Airports, Sections 401-4.15 and 403-4.15.

II. Sampling

After completion of compaction and when the pavement has reached ambient temperature, the paved area shall be divided into Sublots of 500 tons per type of mix. One core sample (2 cores per sample) shall be taken from each Sublot. The longitudinal and transverse location for each sample shall be determined by use of a random number "Deck" provided by the Division. No core shall be taken closer than two (2) feet from the edge of the mat. A core extraction device shall be used to obtain all cores from the mat. All cores are to be taken by the contractor under the supervision and remain in the possession of the Engineer. It is imperative that the Engineer and the contractor realize that the cores are "money" and that improper coring, extraction, shipping and/or testing can be costly.

One mix sample per 1000 tons of mix laid shall be taken for Extraction, Maximum Specific Gravity (G_{mm}) and Air Void tests. The mix samples shall be sampled by the contractor and split in half.

The Resident Engineer shall randomly designate and send the split samples to an independent laboratory for testing. The laboratory will be verified to be ASTM- certified for all the required testing and be contracted through the Consultant. The frequency of testing split samples shall be 1 per 5000 tons. Higher frequencies may be necessary if the contractor's tests, and/or mix quality control are inconsistent.

III. Testing

All cores shall be tested for Bulk Specific Gravity (G_{mb}) in accordance with ASTM D2726 using Procedure 10.1, "For Specimens That Contain Moisture." The Theoretical Maximum Gravity (G_{mm}) shall be determined according to ASTM D2041. From these tests the in-place air voids of the compacted pavement are calculated according to ASTM

D3203 for "dense bituminous paving mixtures." Selection of the proper G_{mm} shall be based on a running average of four (4) tests per Lot.

- E.g. Lot 1 - Use the average of the two (2) tests for Lot 1.
 Lot 2 - Use the average of the four (4) tests from Lots 1 and 2.
 Lot 3 - Use the average of the four (4) tests from Lots 2 and 3.

NOTE: When more than four (4) Sublots are used, still use a running average of four (4) tests per Lot.

IV. Acceptance Calculations

The first step in calculating the quantities for pay is to calculate the Mean (\bar{X}) and the Standard Deviation (S) of the Sublot tests. From this data the Lot samples should first be tested for outliers. After consideration for outliers, the Percent Within Tolerance (PWT) and the Percent Within Limits (PWL) are calculated to determine the final pay quantities for the Lot.

EXAMPLE

1. Test Data

- Lot Quantity = 2000 tons
- Sublot Test 1 = 4.35 % Air Voids
- Sublot Test 2 = 3.96 % Air Voids
- Sublot Test 3 = 6.75 % Air Voids
- Sublot Test 4 = 6.25 % Air Voids

2. Calculating the Mean and Standard Deviation

Sublot	\bar{X}	$(\bar{X} - \bar{X})$	$(\bar{X} - \bar{X})^2$
1	4.35	-0.978	0.956
2	3.96	-1.368	1.871
3	6.75	1.422	2.022
4	<u>6.25</u>	0.922	<u>0.850</u>
Sum =	21.31		5.699

$N = 4$

Mean $\bar{X} = 21.34 / 4 = 5.328$

Variance $(S)^2 = \frac{\text{Sum } (\bar{X} - \bar{X})^2}{3} = \frac{5.699}{3} = 1.900$

Standard Deviation $S = \sqrt{1.900} = 1.378$

3. Test for Outliers

Check for Critical "T" Values

$$T = \frac{|(X_1 - \bar{X})|}{S} = \frac{|3.96 - 5.328|}{1.378} = 0.99$$

* Difference between the suspect test value (X_1) and the Mean (\bar{X}).

If the T value exceeds the critical "T" Value in the table below and no assignable cause can be determined for the outlier, discard the suspected test measurement and obtain another random sample from the Sublot in question. If the new test exceeds the Mean (\bar{X}) in the same direction from the Mean as the suspected test, recalculate the T value including all tests (original test, suspected test, and new test) for an outlier and for computing final payment.

TABLE OF CRITICAL "T" VALUES

Number of observations (N)	Critical "T" Value 5% Significance Level
3	1.15
4	1.46
5	1.67
6	1.82
7	1.94
8	2.03
9	2.11
10	2.18
11	2.23
12	2.29

Based on the above table, the "T" value of 0.99 does not exceed the Critical "T" Value of 1.46 for N = 4. Therefore, the value (3.96) is not an outlier and shall be used in calculating the Lot payment.

4. Calculation of Lot Payment

To calculate the Lot Payment use the Acceptance Criteria as outlined under Item 401-4.15(c) or Item 403-4.15(c).

$$Q_L = \frac{(\bar{X} - 1)}{S} = \frac{5.328 - 1}{1.378} = 3.141$$

$$Q_U = \frac{(7 - \bar{X})}{S} = \frac{7 - 5.328}{1.378} = 1.213$$

From this data the Percentage Within Tolerance (PWT) for both the lower and upper tolerance limits is determined by Table 6 (see Item 401 Bituminous Surface Course and/or Item 403 Bituminous Base Course in the Standard Specifications) for the number (N) of samples tested.

Eq. PWT (lower) = 99.0%
PWT (upper) = 90.4%

We now calculate the Percent Within Limits (PWL) for the Lot.

$$PWL = [PWT (lower)] + [PWT (upper)] - 100$$

$$PWL = (99.0 + 90.4) - 100 = 89.4\%$$

Using Table 5, the % Adjustment in Lot Quantity is:

$$\% \text{ Adjustment} = 0.5 \text{ PWL} + 55.0$$

$$\% \text{ Adjustment} = 0.5 (89.4) + 55.0$$

$$\% \text{ Adjustment} = 99.7$$

$$\text{Adjusted Quantities} = \% \text{ Adjustment} \times \text{Lot Quantities}$$

$$\text{Adjusted Quantities} = 0.997 \times 2000 \text{ tons}$$

$$\text{Adjusted Quantities} = 1994 \text{ tons}$$

5. Resampling and Retesting

The contractor has the right to request the resampling and retesting of a complete Lot. This privilege is only allowed once for each Lot and must be requested in writing by the contractor within 48 hours of receiving the official report from the Engineer.

6. Reporting

After completion of the tests for each Lot, the Engineer shall complete the necessary calculations for final adjustment in quantities on the Form AER-1 and have both the Engineer and the Contractor sign the report for copying to both the FAA and IDOA.

Steven J. Long, P.E. Acting Chief Engineer

Supersedes Policy Memorandum 87-2, dated April 1, 2010

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

February 20, 2014

Springfield

Number: 87-4

TO: CONSULTING ENGINEERS

SUBJECT: DETERMINATION OF BULK SPECIFIC GRAVITY (d) OF COMPACTED BITUMINOUS MIXES

A. SCOPE

This method of test covers the determination of the bulk specific gravity and the percent air, of core samples from compacted bituminous mixtures using a saturated surface-dry procedure.

B. DEFINITIONS

1. Bulk Specific Gravity (G_{mb}) ASTM 2726 or density is the weight per unit volume (gms/cc) of a mixture in its existing state of consolidation. The volume measurement for this specific gravity will include the volume of all the aggregate, asphalt, and air spaces (voids) in the aggregate particles and between the aggregate particles.
2. Theoretical Maximum Specific Gravity (G_{mm}) ASTM 2041 is the weight per unit volume (grams/cc) of a mixture assuming complete consolidation; i.e., all the air spaces (voids) between the aggregate particles are eliminated.
3. Percent Density is a measure of the degree of compaction in relation to the Theoretical Maximum Specific Gravity.
4. Percent Air is a measure of the air voids in the compacted pavement.

C. APPARATUS

1. Balance - The balance shall be accurate to 0.1 gm throughout the operating range. It may be mechanical or electrical and shall be equipped with a suitable suspension apparatus and holder to permit weighing of the core in water while suspended from the balance. If the balance is a beam type, it shall be set up so that the core is placed in the basket that is suspended from the zero (0) end of the balance arm.
2. Water bath - The container for immersing the core in water while suspended from the balance shall be equipped with an overflow outlet for maintaining a constant water level. This water bath should be large enough to handle full-depth cores. When testing several cores at the same time, a dish-pan, sink or suitable container may be used for soaking.

D. PROCEDURE

1. Prior to testing, cores shall be sorted on a flat surface in a cool place. The sample(s) shall be brushed with a wire brush and/or other suitable means, to remove all loose and/or foreign materials, such as seal coat, tack coat, foundation material, soil, paper and foil prior to testing.
2. If a core contains binder and surface or multiple lifts, the lifts shall be separated. This may be done in the following manner:
 - a. Mark the separation line between the two lifts.
 - b. Place the core in a freezer for 20-25 minutes.
 - c. Place a 2 or 3-inch wide chisel on the separation line and tap with a hammer. Rotate the core and continue this process until the core separates. Brush loose pieces with a wire brush if needed.
 - d. Allow 2-3 hours for the core to return to ambient temperature before proceeding.
3. Prepare the water baths for soaking and weighing with water at 77° F. Water baths should be maintained at this temperature throughout testing. Saturate the cores by submerging in the water for a minimum of 20 minutes.
4. With the balance and water bath properly assembled and zeroed, suspend the sample from the balance and submerge it in the water bath. The core must be placed with the original top and bottom in a vertical position. If necessary, add sufficient water to bring the water level up to the overflow outlet. Permit any excess to overflow. Read and record the Saturated Submerged Weight. Designate this weight as (C).
5. Remove the core from the water bath and blot the excess water from the surface of the core with an absorbent cloth or other suitable material. This must be done quickly to prevent the internal water from escaping.
6. Place the core on the balance and read and record the Saturated Surface-dry Weight in air. Designate this weight as (B).
7. Place the core in a tared pan and dry in an oven. When the core is dry (less than 0.5 gm loss in one hour), record the weight and subtract the pan weight. Designate this weight as (A).
8. The following calculation is used to determine the Bulk Specific Gravity of the core.

$$G_{mb} = \frac{A}{B - C}$$

G_{mb} = Bulk Specific Gravity

A = Oven dry weight

B = Saturated surface-dry weight

C = Saturated submerged weight

E. PERCENT DENSITY

The following calculation is used to determine the percent density of the core:

$$\% \text{ Density} = 100 \times \frac{G_{mb}}{G_m}$$

G_{mb} = Bulk Specific Gravity

G_{mm} = Theoretical Maximum Gravity*

Note: The Theoretical Maximum Gravity (G_{mm}) is determined from the mix design until current Vacuum Pycnometer test are available.

F. PERCENT AIR. To calculate the percent air, use the following formula:

$$\% \text{ Air} = 100 - \% \text{ Density}$$

G. WEIGHT PER SQUARE YARD OF COMPACTED MIXTURE. The actual weight per square yard of a compacted mixture can be calculated by using the Bulk Specific Gravity (G_{mb}). The volume of a square yard of pavement one (1) inch thick is 0.75 cubic foot. Taking the weight of a cubic foot of water as 62.37 pounds, one square yard of compacted material, one (1) inch thick weighs:

$$\text{Pounds / Sq. Yd. (1" thick)} = 0.75 \times 62.37 \times G_{mb}$$

Steven J. Long, P.E. Acting Chief Engineer

Supersedes Policy Memorandum 87-4, dated January 1, 2004

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

April 1, 2010

Springfield

Number 96-1

TO: CONSULTING ENGINEERS

SUBJECT: ITEM 610, STRUCTURAL PORTLAND CEMENT CONCRETE:
JOB MIX FORMULA APPROVAL & PRODUCTION TESTING.

- I. This policy memorandum addresses the Job Mix Formula (JMF) approval process and production testing requirements when Item 610 is specified for an airport construction contract.
- II. PROCESS
 - a. The contractor may submit a mix design with recent substantiating test data or he may submit a mix design generated by the Illinois Division of Highways with recent substantiating test data for approval consideration. The mix design should be submitted to the Resident Engineer.
 - b. The Resident Engineer should verify that each component of the proposed mix meets the requirements set forth under Item 610 of the *Standard Specifications for Construction of Airports* and/or the contract special provisions.
 - c. The mix design should also indicate the following information:
 1. The name, address, and producer/supplier number for the concrete.
 2. The source, producer/supplier number, gradation, quality, and SSD weight for the proposed coarse and fine aggregates.
 3. The source, producer/supplier number, type, and weight of the proposed flyash and/or cement.
 4. The source, producer/supplier number, dosage rate or dosage of all admixtures.
 - d. After completion of Items b and c above, the mix with substantiating test data shall be forwarded to the Division of Aeronautics for approval. Once the mix has been approved, the production testing shall be at the rate in Section III as specified herein.

III. PRODUCTION TESTING

- a. One set of cylinders or beams, depending on the strength specified, shall be cast for acceptance testing for each day the mix is used. In addition, at least one slump and one air test shall be conducted for each day the mix is used. If more than 100 c.y. of the mix is placed in a given day, additional tests at a frequency of 1 per 100 c.y. shall be taken for strength, slump, and air. The concrete shall have a maximum slump of three inches (3") and minimum slump of one inch (1") when tested in accordance with ASTM C-143. The air content of the concrete shall be between 5% and 8% by volume. At no time shall the temperature of the concrete exceed 90 degrees Fahrenheit.
- b. If the total proposed amount of Item 610 Structural Portland Cement Concrete as calculated by the Resident Engineer is less than 50 c.y. for the entire project, the following shall apply:
 - The Resident Engineer shall provide calculations of the quantity of Item 610 to the Division of Aeronautics.
 - One set of cylinders or beams, depending on the strength specified, shall be cast for acceptance testing.
 - One air content and one slump test shall be taken for acceptance testing.
 - The concrete shall have a maximum slump of three inches (3") and minimum of one inch (1") when tested in accordance with ASTM C-143. The air content of the concrete shall be between 5% and 8% by volume. At no time shall the temperature of the concrete exceed 90 degrees Fahrenheit.
- c. The Resident Engineer shall collect actual batch weight tickets for every batch of Item 610 concrete used for the project. The actual batch weight tickets shall be kept with the project records and shall be available upon request of the Department of Transportation.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes Policy Memorandum 96-1 dated January 1, 2004

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

February 20, 2014

Springfield, Illinois

Number 96-3

TO: CONSULTING ENGINEERS

SUBJECT: REQUIREMENTS FOR QUALITY ASSURANCE ON PROJECTS WITH
BITUMINOUS CONCRETE PAVING

I. SCOPE

The purpose of this policy memorandum is to define to the Consulting Engineer the requirements concerning Quality Assurance on bituminous concrete paving projects. Specifically, this memo applies whenever the Contractor is required to comply with the requirements set forth in Policy Memorandum 2003-1, "*Requirements for Laboratory, Testing, Quality Control, and Paving of Bituminous Concrete Mixtures*".

II. LABORATORY APPROVAL

The Resident Engineer shall review and approve the Contractor's plant laboratory to assure that it meets the requirements set forth in the contract specifications and Policy Memorandum 2003-1. This review and approval shall be completed prior to utilization of the plant for the production of any mix.

III. QUALITY ASSURANCE DURING PRODUCTION PAVING

- A. At the option of the Engineer, independent assurance tests may be performed on split samples taken by the Contractor for Quality Control testing. In addition, the Resident Engineer shall witness the sampling and splitting of these samples at the start of production and as needed throughout mix production. The Engineer may select any or all split samples for assurance testing. These tests may be performed at any time after sampling. The test results will be made available to the Contractor as soon as they become available.
- B. The Resident Engineer may witness the sampling and testing being performed by the Contractor. If the Resident Engineer determines that the sampling and Quality Control tests are not being performed according to the applicable test procedures, the Engineer may stop production until corrective action is taken. The Resident Engineer will promptly notify the Contractor, both verbally and in writing, of observed deficiencies. The Resident Engineer will document all witnessed samples and tests. The Resident Engineer may elect to obtain samples for testing, separate from the Contractor's Quality Control process, to verify specification compliance.

1. Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits:

<u>Test Parameter</u>	<u>Acceptable Limits of Precision</u>
% Passing	
1/2 in.	5.0 %
No. 4	5.0 %
No. 8	3.0 %
No. 30	2.0 %
No. 200	2.2 %
Asphalt Content	0.3 %
Maximum Specific Gravity (G_{mm}) of Mixture	0.026
Bulk Specific Gravity (G_{mb}) of Gyratory Brix	0.045

2. In the event a comparison of the required plant test results is outside the above acceptable limits of precision, split or independent samples fail the control limits, an extraction indicates non-specification mix, or a continual trend of difference between Contractor and Engineer test results is identified, the Engineer will immediately investigate. The Engineer may suspend production while the investigation is in progress. The investigation may include testing by the Engineer of any remaining split samples or a comparison of split sample test results on the mix currently being produced. The investigation may also include review and observation of the Contractor's technician performance, testing procedure, and equipment. If a problem is identified with the mix, the Contractor shall take immediate corrective action. After corrective action, both the Contractor and the Engineer shall immediately resample and retest.

- C. The Contractor shall be responsible for documenting all observations, records of inspection, adjustments to the mixture, test results, retest results, and corrective actions in a bound hardback field book or bound diary which will become the property of IDA upon completion and acceptance of the project. The Contractor shall be responsible for the maintenance of all permanent records whether obtained by the Contractor, the Contractor's Consultants, or the producer of bituminous mix material. The Contractor shall provide the Engineer full access to all documentation throughout the progress of the work.

Results of adjustments to mixture production and tests shall be recorded in duplicate and sent to the Engineer.

IV. ACCEPTANCE BY ENGINEER

Density acceptance shall be performed according to Policy Memorandum 87-2, or according to the acceptance procedure outlined in the Special Provisions.

Steven J. Long, P.E. Acting Chief Engineer

Supersedes Policy Memorandum 96-3, dated January 1, 2004

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

January 1, 2004

Springfield, Illinois

Number 97-2

TO: CONSULTING ENGINEERS

SUBJECT: PAVEMENT MARKING PAINT ACCEPTANCE

I. SCOPE

The purpose of this policy memorandum is to define the procedure for acceptance of pavement marking paint.

II. RESIDENT ENGINEER'S DUTIES

The Resident Engineer shall follow the acceptance procedure outlined as follows:

- A. Require the painting contractor to furnish the name of the paint manufacturer and the batch number proposed for use prior to beginning work. Notify the I.D.A. Materials Certification Engineer when this information is available.
- B. Require the manufacturer's certification before painting begins. Check the certification for compliance to the contract specifications.
 1. The certification shall be issued from the manufacturer and shall include the specification and the batch number.
 2. The paint containers shall have the manufacturer's name, the specification and the batch number matching the certification.
- C. If no batch number is indicated on the certification or containers, sample the paint according to the procedure for the corresponding paint type.
- D. If the I.D.A. Engineer of Materials indicates that batch number has not been previously sampled and tested, sample the paint according to the procedure for the corresponding paint type. The Division of Aeronautics will provide paint cans upon request by the Resident Engineer. Samples will only be taken in new epoxy lined cans so that the paint will not be contaminated. It is important to seal the sample container immediately with a tight cover to prevent the loss of volatile solvents.

Mark the sample cans with the paint color, manufacturer's name, and batch number. The paint samples and manufacturer's certification shall be placed in the mail within 24 hours after sampling. Address the samples to the Materials Certification Engineer at:

Illinois Department of Transportation
Division of Aeronautics
One Langhorne Bond Drive
Springfield, Illinois 62707

Sampling Procedures for Each Paint Type:

1. Waterborne or Solvent Base Paints
 - a. Take the paint sample from the spray nozzle when the contractor begins marking. A sample consists of two one-pint cans taken per batch number.
 - b. Be sure to indicate to the contractor that acceptance of material is based upon a passing test of the paint material.

2. Epoxy Paint
 - a. Take separate one-pint samples of each paint component prior to marking. Before drawing samples, the contents of each component's container must be thoroughly mixed to make certain that any settled portion is fully dispersed. **Do not combine the two components or sample from the spray nozzle.**
 - b. Be sure to indicate to the contractor that acceptance of material is based upon a passing test of the paint material.

III. TESTING

The paint will be tested for acceptance by the IDOT Bureau of Materials and Physical Research for conformance to the contract specifications.

Steven J. Long, P.E.
Acting Chief Engineer

Supersedes policy memorandum 97-2 dated February 27, 2002

State of Illinois
Department of Transportation
Division of Aeronautics

POLICY MEMORANDUM

June 12, 2014

Springfield, Illinois

Number 2003-1

TO: CONTRACTORS

SUBJECT: REQUIREMENTS FOR LABORATORY, TESTING, QUALITY CONTROL, AND PAVING OF SUPERPAVE HMA CONCRETE MIXTURES FOR AIRPORTS

I. SCOPE

The purpose of this policy memorandum is to define to the Contractor the requirements concerning the laboratory, testing, Quality Control, and paving of HMA mixtures utilizing Superpave technology. References are made to the most recent issue of the Standard Specifications for Construction of Airports (Standard Specifications) and to American Society for Testing and Materials (ASTM) testing methods. The Quality Assurance and acceptance responsibilities of the Resident Engineer are described in Policy Memorandum 96-3.

II. LABORATORY

The Contractor shall provide a laboratory located at the plant and approved by the Illinois Division of Aeronautics (IDA). The laboratory shall be of sufficient size and be furnished with the necessary equipment and supplies for adequately and safely performing the Contractor's Quality Control testing as well as the Resident Engineer's acceptance testing as described in Policy Memorandum 87-2.

The effective working area of the laboratory shall be a minimum of 600 square feet with a ceiling height of not less than 7.5 feet. Lighting shall be adequate to illuminate all working areas. It shall be equipped with heating and air conditioning units to maintain a temperature of 70° F ±5° F.

The laboratory shall have equipment that is in good working order and that meets the requirements set forth in the following ASTM test standards:

ASTM D 70	Test Method for Specific Gravity and Density of Semi-Solid Materials
ASTM C 117	Test Method for Materials Finer than 75 µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 136	Sieve or Screen Analysis of Fine and Coarse Aggregate
ASTM C 566	Total Moisture Content of Aggregate by Drying
ASTM D 75	Sampling Aggregates
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
AASHTO T 308-09	Ignition Method for Determining Asphalt Content (Illinois Modified)
ASTM D 2726	Bulk Specific Gravity of Compacted Bituminous Mixtures using Saturated Surface Dry Specimens
ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Method
ASTM D 4125	Asphalt Content of Bituminous Mixtures by Nuclear Method
ASTM C 127	Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	Standard Test Method for Specific Gravity and Absorption of Fine Aggregate

The laboratory and equipment furnished by the Contractor shall be properly calibrated and maintained. The Contractor shall maintain a record of calibration results at the laboratory. The Engineer may inspect measuring and testing devices at any time to confirm both calibration and condition. If the Engineer determines that the equipment is not within the limits of dimensions or calibration described in the appropriate test method, he may stop production until corrective action is taken. If laboratory equipment becomes inoperable or insufficient to keep up with mix production testing, the Contractor shall cease mix production until adequate and/or sufficient equipment is provided.

III. MIX DESIGN SUBMITTAL

Based upon data and test results submitted by the Contractor, the Illinois Division of Aeronautics Engineer of Construction & Materials shall issue the final Job Mix Formula (JMF) approval letter that concurs or rejects the Contractor's proposed JMF. The Contractor will be required to perform the sampling and laboratory testing and develop a complete mix design, according to the following guidelines: Mix design submittals should be sent to IDA, Construction/Material Section, Attn: Certification and Mixtures Engineer. Note: Quality Control (QC) Managers shall be Level III QC/QA qualified and will be responsible for all mix designs. All Technicians obtaining samples and performing gradations shall have successfully completed the IDOT Mixture Aggregate Technician Course and Technicians performing mix design testing and plant sampling/testing shall have successfully completed the IDOT Bituminous Concrete Level 1 Technician Course under the Illinois Department of Transportation, Bureau of Materials & Physical Research QC/QA Training Program.

A. Preliminary Mix Design Submittal

Top half of the IDOT Mix Design Software Cover Sheet (QC/QA Package) should be completed for the aggregate mix design parameters and should include the following:

1. Producer name, Producer # and Producer location of each aggregate (Producers are assigned Producer numbers by IDOT Central Bureau of Materials)
2. Material code for each aggregate

3. Aggregate Gradations per ASTM C-136 (The Contractor shall obtain representative samples of each aggregate)
4. Material code for each aggregate (i.e. 022CM11, etc.)
5. Proposed Aggregate Blend (% for each aggregate) Note: Based on the gradation results, the Contractor shall select the blend percentages that comply with the Standard Specifications, Section 401/403 – 3.2 JOB MIX FORMULA, Table 2. (Appendix A)
6. Producer name, Producer #, and specific gravity of the proposed asphalt cement
7. IDOT approved PG Binder 64-22 shall be used unless otherwise specified by the IDA Engineer of Construction & Materials.

B. Mixture Design & Testing

Design Parameters

Gyrations (N_{des}) – per Standard Specifications, Section 401/403 – 3.2 (JMF), Table 1

Asphalt Content – AC% per Standard Specifications, Section 401/403 – 3.2 (JMF), Table 2

Maximum Specific Gravity – G_{mm} (ASTM D 2041)

Bulk Specific Gravity – G_{mb} (ASTM D 2726)

% air voids – V_a (ASTM D3203) per Standard Specifications, Section 401/403 – 3.2 (JMF), Table 2

VFA % – per Standard Specifications, Section 401/403 – 3.2 (JMF), Table 1

Mixture Tests

After verification and approval by IDA of the proposed design information from step A., the Contractor shall perform mixture tests on 4 gyratory brix (4 point mix design) to determine the optimum AC content for the target Air Voids.

C. Mix Design Submittal

The Preliminary JMF including all test results shall be reported to IDA, Construction/Material Section, Attn: Certification and Mixtures with the following data:

- a) Aggregate & asphalt cement material codes
- b) Aggregate & asphalt cement producer numbers, names, and locations
- c) Percentage of each individual aggregate
- d) Aggregate blend % for each sieve
- e) AC Specific Gravity
- f) Bulk Specific Gravity and Absorption for each aggregate
- g) Summary of Superpave Design Data: AC % Mix, G_{mb} , G_{mm} , VMA, Voids (Total Mix), Voids Filled, V_{be} , P_{be} , P_{ba} , G_{se}
- h) Optimum design data listing: AC % Mix, G_{mb} , G_{mm} , VMA, Voids (Total Mix), Voids Filled, G_{se} , G_{sb}

- i) Percent of asphalt that any RAP will add to the mix
- j) Graphs for the following: gradation on 0.45 Power Curve, AC vs. Voids (Total Mix), AC vs. Specific Gravities, AC vs. Voids Filled, AC vs. VMA

D. Mix Approval

Once the proposed JMF is reviewed and approved by IDA, a JMF approval letter will be issued to the contractor. Production of HMA is not authorized until a JMF letter has been issued. When a Test Section is specified as part of the contract, the proposed JMF shall be considered preliminary until it passes all Test Section requirements.

E. Change in Material Sources

The above procedure, III. MIX DESIGN SUBMITTAL shall be repeated for each change in source or gradation of materials.

IV. MIX PRODUCTION TESTING

The Quality Control of the manufacture and placement of HMA mixtures is the responsibility of the Contractor. The Contractor shall perform or have performed the inspection and tests required to assure conformance to contract requirements. Quality Control includes the recognition of defects and their immediate correction. This may require increased testing, communication of test results to the plant or the job site, modification of operations, suspension of HMA production, rejection of material, or other actions as appropriate. The Resident Engineer shall be immediately notified of any failing tests and subsequent remedial action. Form AER M-14 shall be reported to IDA, Construction/Material Section, Attn: Certification and Mixtures Engineer and the Resident Engineer no later than the start of the next work day. The Contractor shall provide a Quality Control (QC) Manager who will have overall responsibility and authority for Quality Control. This individual shall have successfully completed the IDOT Division of Highways HMA Concrete Level II Technician Course "HMA Proportioning and Mixture Evaluation." In addition to the QC Manager, the Contractor shall provide sufficient and qualified personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner.

- A. Gradations for Mixture Proportioning: Aggregate gradations for proportioning (ASTM C-136) are required at a minimum of one per week when mix is produced. Aggregate gradations can be either hot bin gradations for batch plants or stockpile gradations for drier drum plants. Hot bin gradations may be reported on either form AER 9 or on the Division of Highways QC/QA package "Grad 1" Tab in the Daily HMA Plant Reporting Module. Stockpile gradations shall be shown on form MI504QC from the "Print Out" Tab in the Aggregate Stockpile Module of The Division of Highways QC/QA Package.
- B. Production Mixture Testing: 1 per 1000 tons of the following (if total daily quantity is \leq 200 tons (small quantity) then a mix sample is not required and this quantity may be added on to next day's total for testing. Two consecutive days without testing is not allowed.): Reflux extraction (ASTM D2172) or Ignition oven test showing gradation and AC Content, Maximum Specific Gravity (ASTM D 2041), Bulk Specific Gravity (ASTM D 2726) and % Air Voids (ASTM D 3203). Calculations of the results (including weight data) shall be shown on the "Voids 1" and "IGN & NUC AC 1" tab printouts from the Division of Highways QC/QA Package Daily HMA Plant Reporting module.

- C. A certification from the quarry for the total quantity of aggregate listing the source, gradation type, and quality designation of aggregate shipped. The Aggregate Certification of Compliance (AER18) may be used by the contractor for this purpose.
- D. Original asphalt shipping tickets listing the source and type of asphalt shipped.
- E. Check sample tests at a rate of 1/5000 tons randomly selected by the R.E. shall be sent with an identification sheet to an independent laboratory designated by the Division of Aeronautics. If the project is < 5000 tons, 1 sample selected randomly shall be sent.
- F. Bituminous Test Summary (AER 14) Note: The R.E. should make certain that the Contractor fills this form out daily (for mix production days) and distributes it daily to the Division of Aeronautics and R.E. The Contractor (QC Manager) is required to note any adjustments to the mix or to the plant (proportioning) in the "Remarks/Corrective Measures" section of the AER 14.

V. QUALITY CONTROL

- A. Control Limits (Control Charts used for projects > 4000 tons per bituminous concrete pay item)

Target values shall be determined from the approved JMF. The target values shall be plotted on the control charts within the following control limits:

Control Limits

<u>Parameter</u>	<u>Individual Test</u>	<u>Moving Avg. of 4</u>
% Passing		
1/2 in.	± 7 %	±4 %
No. 4	±7 %	±4 %
No. 8	±5 %	±3 %
No. 30	±4 %	±2.5 %
No. 200 *	±2.0 % *	±1.0 % *
Asphalt Content	±0.45 %	±0.2 %

* No. 200 material percent's shall be based on washed samples. Dry sieve gradations (-200) shall be adjusted based on anticipated degradation in the mixing process.

- B. Control Charts (Control Charts used for projects > 4000 tons per bituminous concrete pay item)

Standardized control charts shall be maintained by the Contractor at the field laboratory. The control charts shall be displayed and be accessible at the field laboratory at all times for review by the Engineer. The individual required test results obtained by the Contractor shall be recorded on the control chart immediately upon completion of a test, but no later than 24 hours after sampling. Only the required plant tests and resamples shall be recorded on the control chart. Any additional testing of check samples may be used for controlling the Contractor's processes, but shall be documented in the plant diary.

The results of assurance tests performed by the Resident Engineer will be posted as soon as available.

The following parameters shall be recorded on control charts:

1. Combined Gradation of Hot-Bin (Batch Plant) or Combined Belt Aggregate Samples (Drier Drum Plant) (% Passing 1/2 in., No. 4., No. 8, No. 30, and No. 200 Sieves)
2. Asphalt Content
3. Bulk Specific Gravity (G_{mb})
4. Maximum Specific Gravity of Mixture (G_{mm}) C.

Corrective Action for Required Plant Tests

Control Limits for each required parameter, both individual tests and the average of four tests, shall be exhibited on control charts. Test results shall be posted within the time limits previously outlined.

1. Individual Test Result. When an individual test result exceeds its control limit, the Contractor shall immediately resample and retest. If at the end of the day no material remains from which to resample, the first sample taken the following day shall serve as the resample as well as the first sample of the day. This result shall be recorded as a retest. If the retest passes, the Contractor may continue the required plant test frequency. Additional check samples should be taken to verify mix compliance.
2. Asphalt Content. If the retest for asphalt content exceeds control limits, mix production shall cease and immediate corrective action shall be instituted by the Contractor. After corrective action, mix production shall be restarted, the mix production shall be stabilized, and the Contractor shall immediately resample and retest. Mix production may continue when approved by the Engineer. The corrective action shall be documented.

Inability to control mix production is cause for the Engineer to stop the operation until the Contractor completes the investigation identifying the problems causing failing test results.

3. Combined Aggregate/Hot-Bin. For combined aggregate/hot-bin retest failures, immediate corrective action shall be instituted by the Contractor. After corrective action, the Contractor shall immediately resample and retest. The corrective action shall be documented.
 - a. Moving Average. When the moving average values trend toward the moving average control limits, the Contractor shall take corrective action and increase the sampling and testing frequency. The corrective action shall be documented.

The Contractor shall notify the Engineer whenever the moving average values exceed the moving average control limits. If two consecutive moving average values fall outside the moving average control limits, the

Contractor shall cease operations. Corrective action shall be immediately instituted by the Contractor. Operations shall not be reinstated without the approval of the Engineer. Failure to cease operations shall subject all subsequently produced material to be considered unacceptable.

- b. Mix Production Control. If the Contractor is not controlling the production process and is making no effort to take corrective action, the operation shall stop.

VI. TEST SECTION AND DENSITY ACCEPTANCE (**Note: Applies only when specified.**)

- A. The purpose of the test section is to determine if the mix is acceptable and can be compacted to a consistent passing density.

A quick way to determine the compaction of the mix is by the use of a nuclear density gauge in the construction of a growth curve. An easy way to construct a growth curve is to use a good vibratory roller. To construct the curve, an area the width of the roller in the middle of the mat is chosen and the roller is allowed to make one compaction pass. With the roller stopped some 30 feet away, a nuclear reading is taken and the outline of the gauge is marked on the pavement. The roller then makes a compaction pass in the opposite direction and another reading is taken. This scenario is continued until at least two (2) passes are made past the maximum peak density obtained.

The maximum laboratory density potential of a given mix is a direct function of the mix design air voids. Whereas, the actual maximum field density is a function of the type of coarse aggregates, natural or manufactured sands, lift thickness, roller type (static or vibratory), roller and paver speed, base condition, mix variation, etc. All of these items are taken into consideration with the growth curve.

1. High Density in the Growth Curve. If the growth curve indicates a maximum achievable field density of between 95 to 98 percent of the Theoretical Maximum Density (D), you can proceed with the Rolling Pattern. On the other hand, if the maximum achievable density is greater than 98 percent, a quick evaluation (by use of an extractor, hot bin gradations, nuclear asphalt determination, etc.) must be made of the mix. When adjustments are made in the mix, a new growth curve shall be constructed.
2. Low Density in the Growth Curve. If the growth curve indicates the maximum achievable density is below 94 percent, a thorough evaluation of the mix, rollers, and laydown operations should be made. After a thorough evaluation of all factors (mix, rollers, etc.), asphalt or gradation changes may be in order as directed by the Engineer. Again, any changes in the mix will require a new growth curve. Note that the nuclear density test is a quality control tool and not an acceptance test. All acceptance testing is to be conducted by the use of cores, unless otherwise specified.

3. Acceptance of Test Section. The Contractor may proceed with paving the day after the test section provided the following criteria have been met:
 - a. Four random locations (2 cores per location cut longitudinally and cored by the Contractor) will be selected by the Engineer within the test strip. All the cores must show a minimum of 94% density.
 - b. All Superpave and extraction test results from mix produced for the test section must be within the tolerances required by specification.
 - c. The Contractor shall correlate his nuclear gauge to the cores taken in the test section. Additional cores may be taken at the Contractor's expense for this purpose within the test section area, when approved by the Engineer.

4. Density Acceptance under Production Paving. The responsibility for obtaining the specified density lies with the Contractor. Therefore, it is important that the nuclear density gauge operator communicate with the roller operators to maintain the specified density requirements. The Contractor shall provide a qualified HMA Density Tester who has successfully completed the Department's "HMA Nuclear Density Testing Course" to run all required density tests on the job site. Density acceptance testing, unless otherwise specified, is described as follows:
 - a. The Contractor shall cut cores at random locations within 500 ton sublots as directed by the Resident Engineer.
 - b. The cores should be extracted so as not to damage them, since they are used to calculate the Contractor's pay.
 - c. The Engineer will run preliminary G_{mb} tests on the cores to give the Contractor an indication of how compaction is running for the next day's paving.
 - d. A running average of four (4) Maximum Theoretical Gravities (G_{mm}) will be used for calculating percent compaction.
 - e. Final core density tests and pay calculations will be performed by the Resident Engineer and delivered to the Contractor.
 - f. Should the contractor wish to resample the pavement as a result of pay calculations resulting in less than 100% payment the request must be made within 48 hours of receipt of the original payment calculation.

Steven J. Long, P.E. Acting Chief Engineer

Supersedes Policy Memorandum 2003-1 dated May 1, 2014

APPENDIX A

AGGREGATE BITUMINOUS BASE COURSE

Percentage by Weight Passing Sieves
Job Mix Formula (JMF)

Sieve Size	Gradation B Range 1" Maximum	Ideal Target
1-1/4 in.	---	---
1 in.	100	100
3/4 in.	93 – 97	95
1/2 in.	75 – 79	77
3/8 in.	64 – 68	66
No. 4	45 – 51	48
No. 8	34 – 40	37
No. 16	27 – 33	30
No. 30	19 – 23	21
No. 100	6 – 10	8
No. 200	4 – 6	5
Bitumen %:		
Stone	4.5 – 7.0	5.5

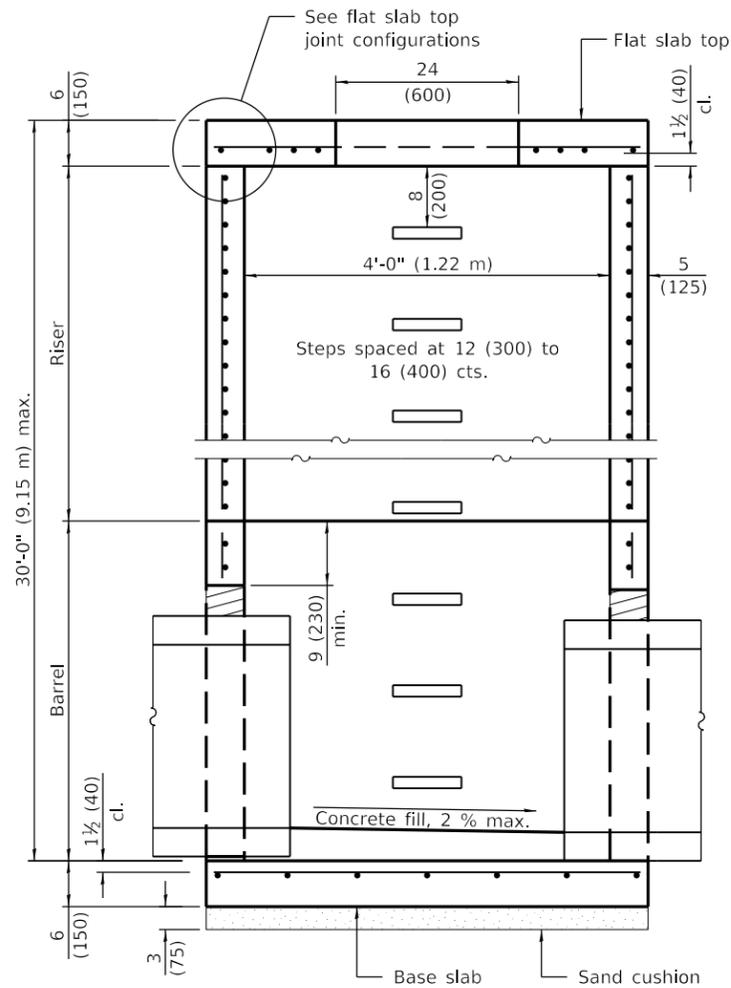
AGGREGATE BITUMINOUS SURFACE COURSE

Percentage by Weight Passing Sieves
Job Mix Formula (JMF)

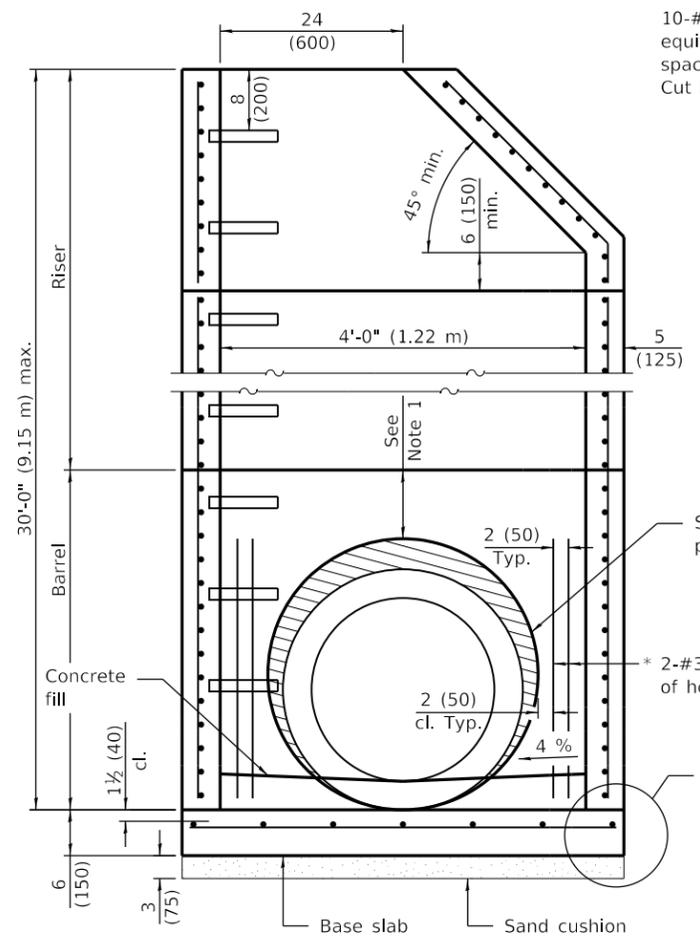
Sieve Size	Gradation B Range ¾" Maximum	Ideal Target
1 in.	100	---
¾ in.	100	100
½ in.	99 - 100	100
⅜ in.	91 - 97	94
No. 4	56 – 62	59
No. 8	36 - 42	39
No. 16	27 - 32	30
No. 30	19 - 25	22
No. 100	7 – 9	8
No. 200	5 – 7	6

Bitumen %:		
Stone	5.0 – 7.0	6.0

APPENDIX B - IDOT STANDARD DRAWINGS



SECTION PARALLEL TO PIPE
(Without conical top riser)

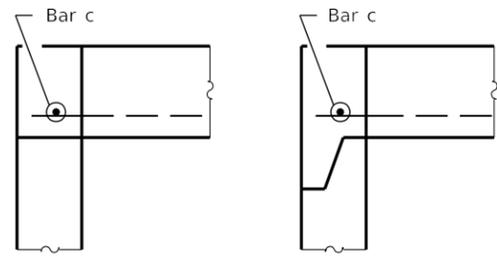


SECTION PERPENDICULAR TO PIPE
(With conical top riser)

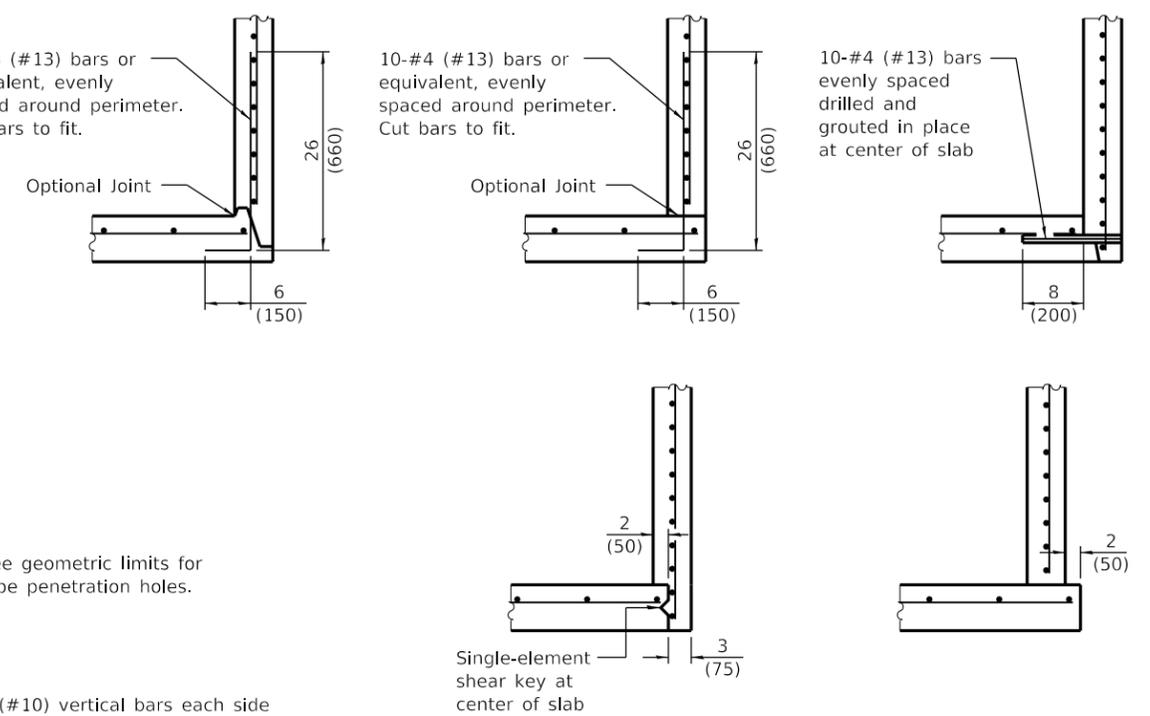
* As an alternate, the barrel wall reinforcement may be reduced to riser wall reinforcement with #3 (#10) bars placed around the pipe penetration holes as shown. This option may be utilized when the pipe penetration holes are formed as opposed to cored.

GEOMETRIC LIMITS FOR PIPE PENETRATION HOLES

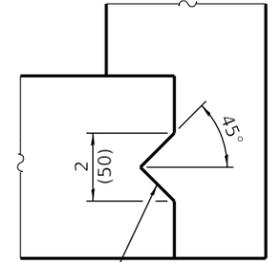
- Note 1: A minimum of 9 (230) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 24 (600).
- Note 2: A minimum 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).
- Note 3: A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.
- Note 4: Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint splice for every location around the perimeter of the joint where the inside arc length between pipe penetration holes is < 24 (600). See joint splice detail.
- Note 5: The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).
- Note 6: Only pipe penetration holes ≤ 15 (380) are allowed in riser sections.



FLAT SLAB TOP JOINT CONFIGURATIONS
(Shown at access hole)



BASE SLAB JOINT CONFIGURATIONS



SHEAR KEY GEOMETRY
(Reinforcement not shown for clarity)

GENERAL NOTES

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

Lifting holes shall be located in the sections as per the manufacturer's recommendations.

See Standard 602701 for details of manhole steps.

All dimensions are in inches (millimeters) unless otherwise noted.

DATE	REVISIONS
1-1-21	Revised Note 1 and lifting hole general note.
3-1-19	Moved wall reinforcement from inside face to middle.

PRECAST MANHOLE TYPE A
4' (1.22 m) DIAMETER
(Sheet 1 of 2)

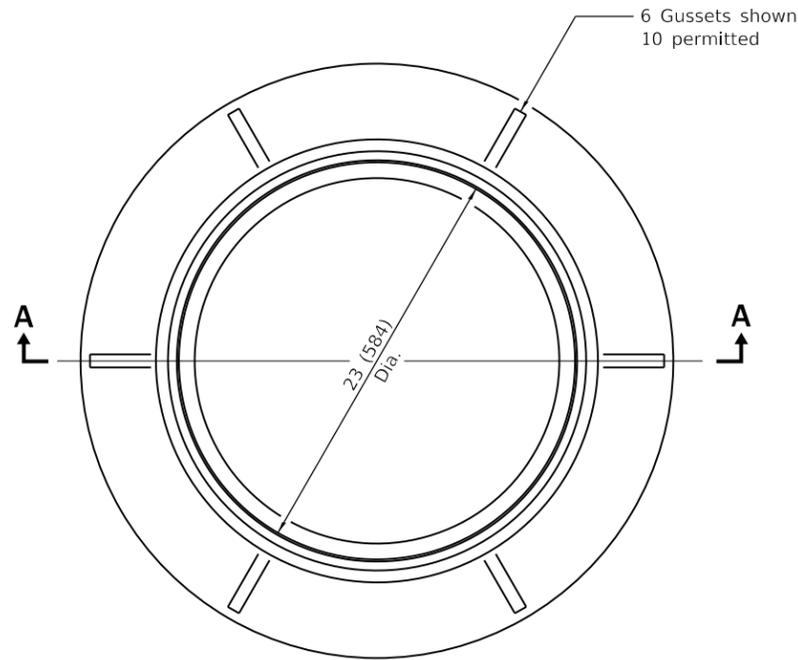
STANDARD 602401-07

Illinois Department of Transportation

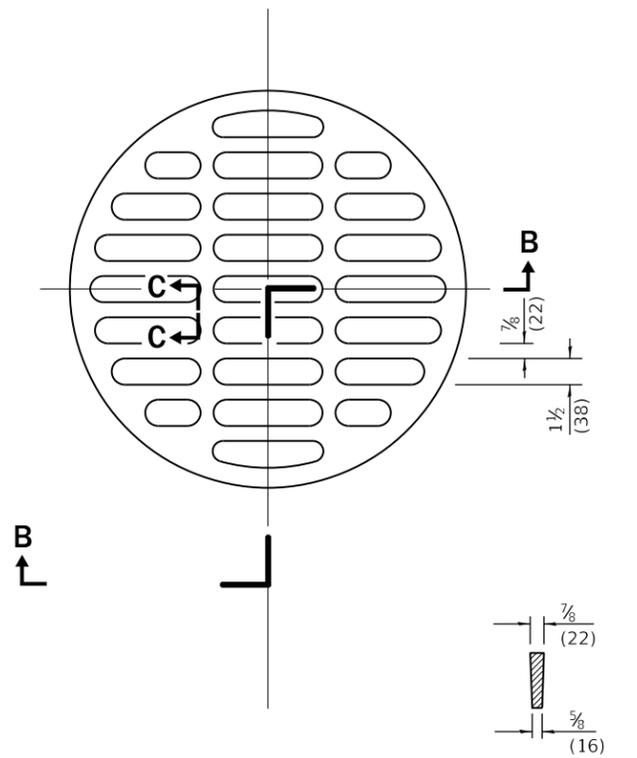
PASSED January 1, 2021
Michael Bond
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2021
John E. G...
ENGINEER OF DESIGN AND ENVIRONMENT

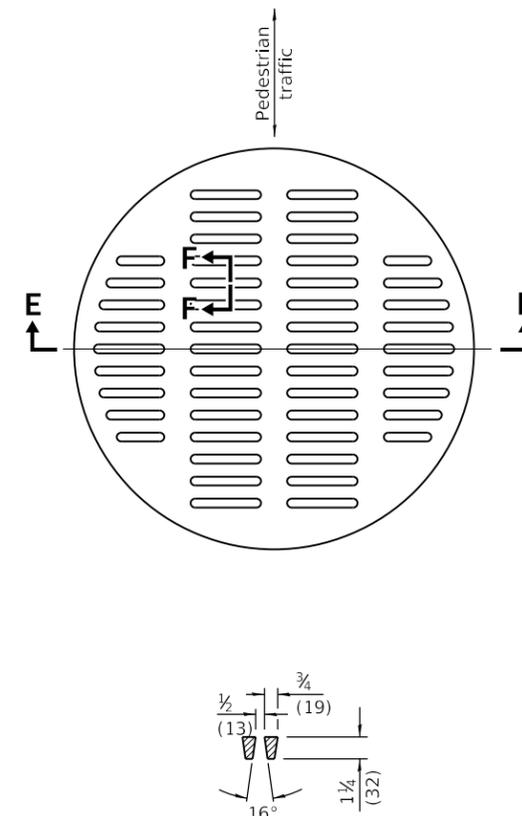
ISSUED 1-1-97



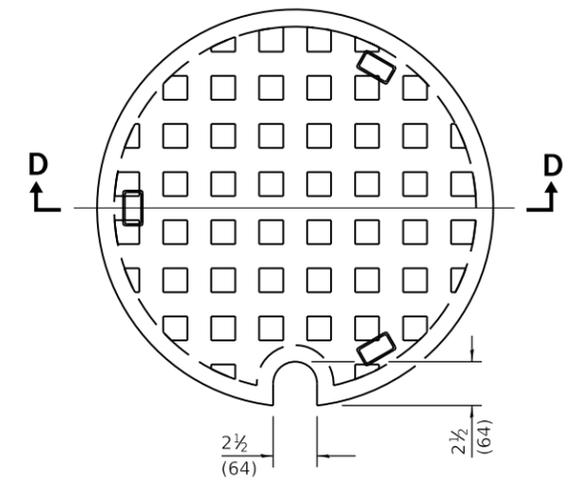
CAST FRAME



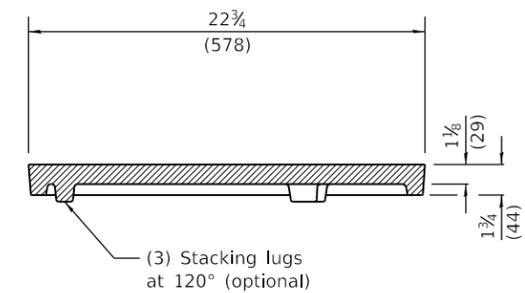
SECTION C-C



SECTION F-F

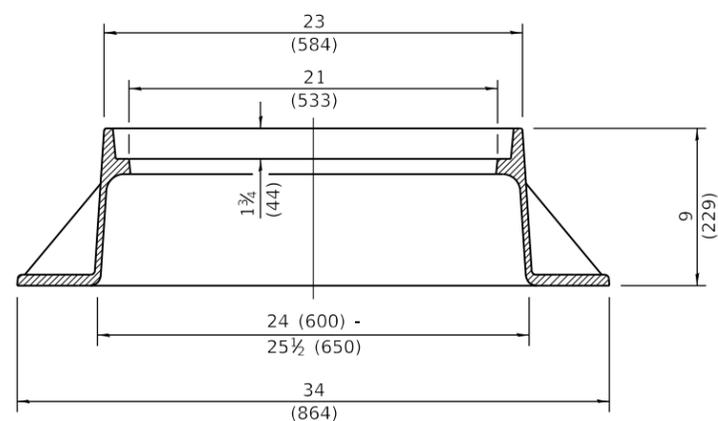


SECTION D-D



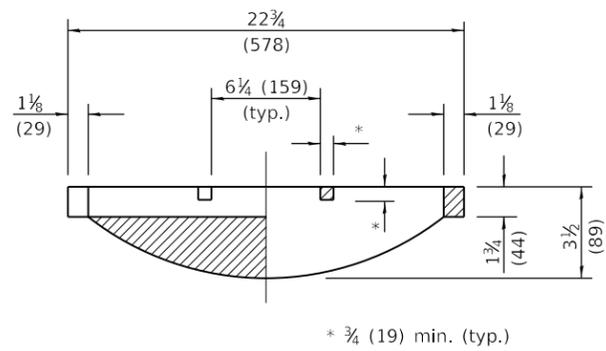
CAST CLOSED LID

Gray Iron Lid



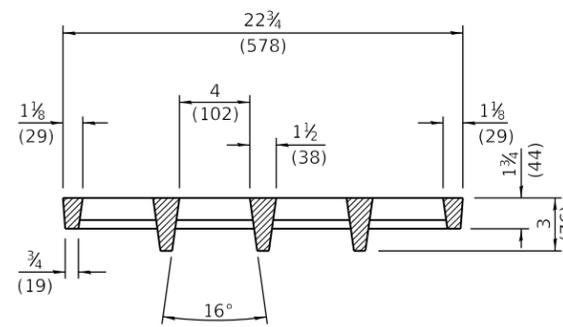
SECTION A-A

Gray Iron



SECTION B-B

CAST OPEN LID



SECTION E-E

**ADA COMPLIANT
CAST OPEN LID**

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2020
Michael Bond
 ENGINEER OF POLICY AND PROCEDURES

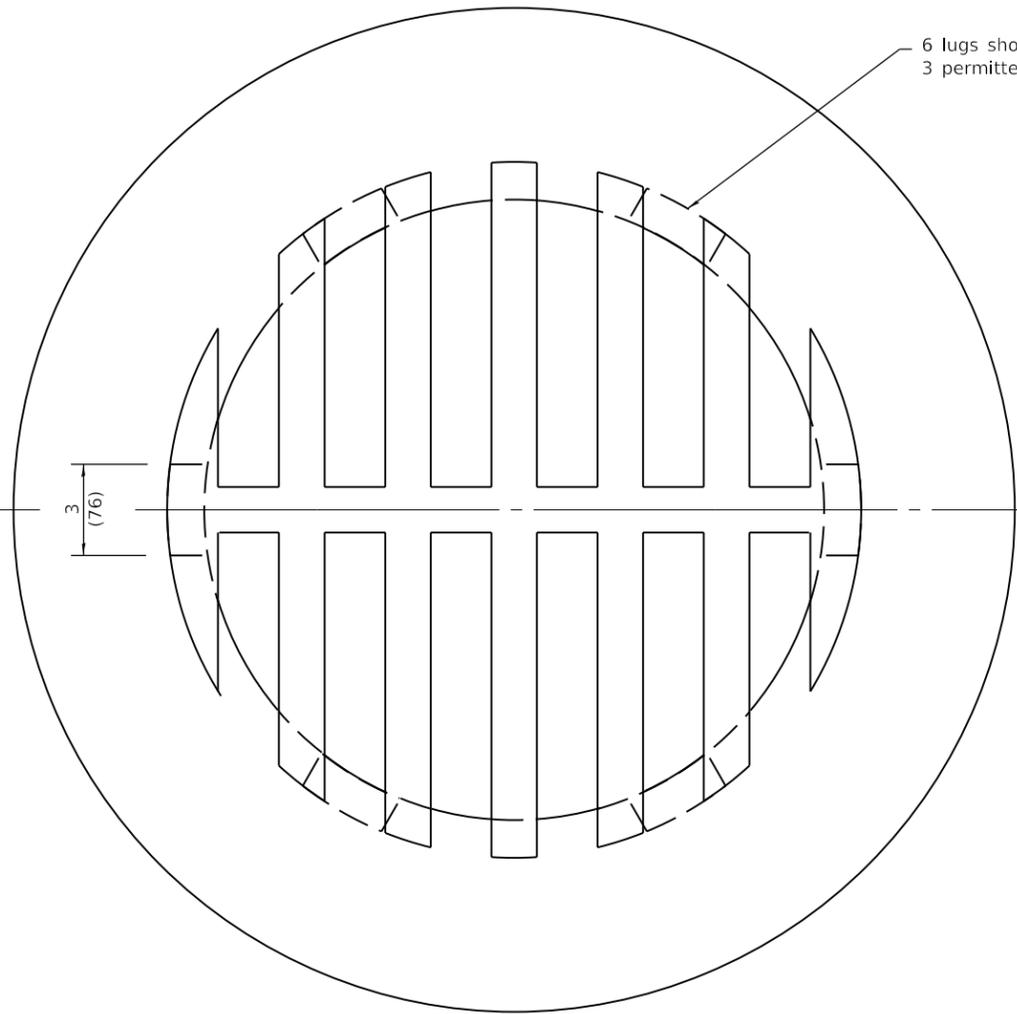
APPROVED January 1, 2020
J. S. E. E.
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

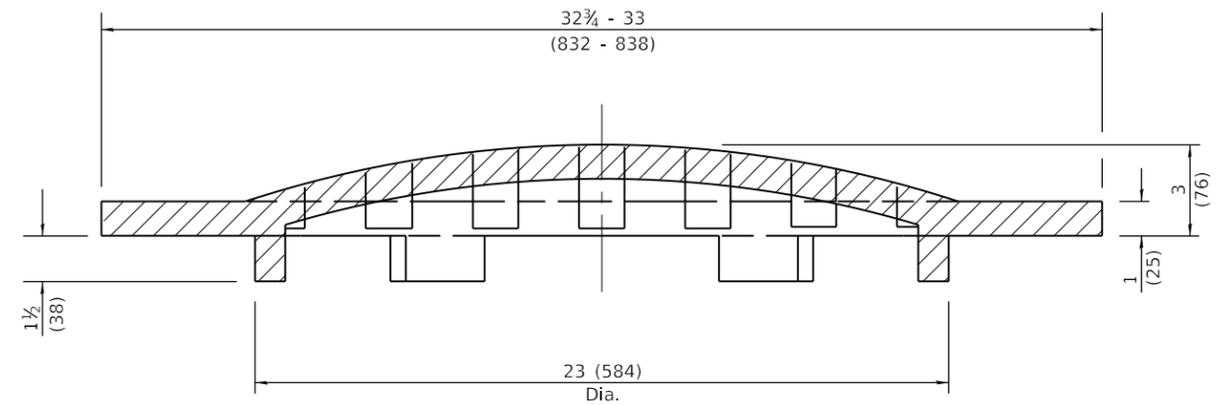
DATE	REVISIONS
1-1-20	Revised dimension in Section B-B of cast open lid.
1-1-15	Revised dimensioning of frame. Added ADA compliant open lid.
1-1-09	Switched units to English (metric).

**FRAME AND LIDS
TYPE 1**

STANDARD 604001-05



CAST GRATE



SECTION A-A

All dimensions are in inches (millimeters)
unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2015
Michael Beard
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2015
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

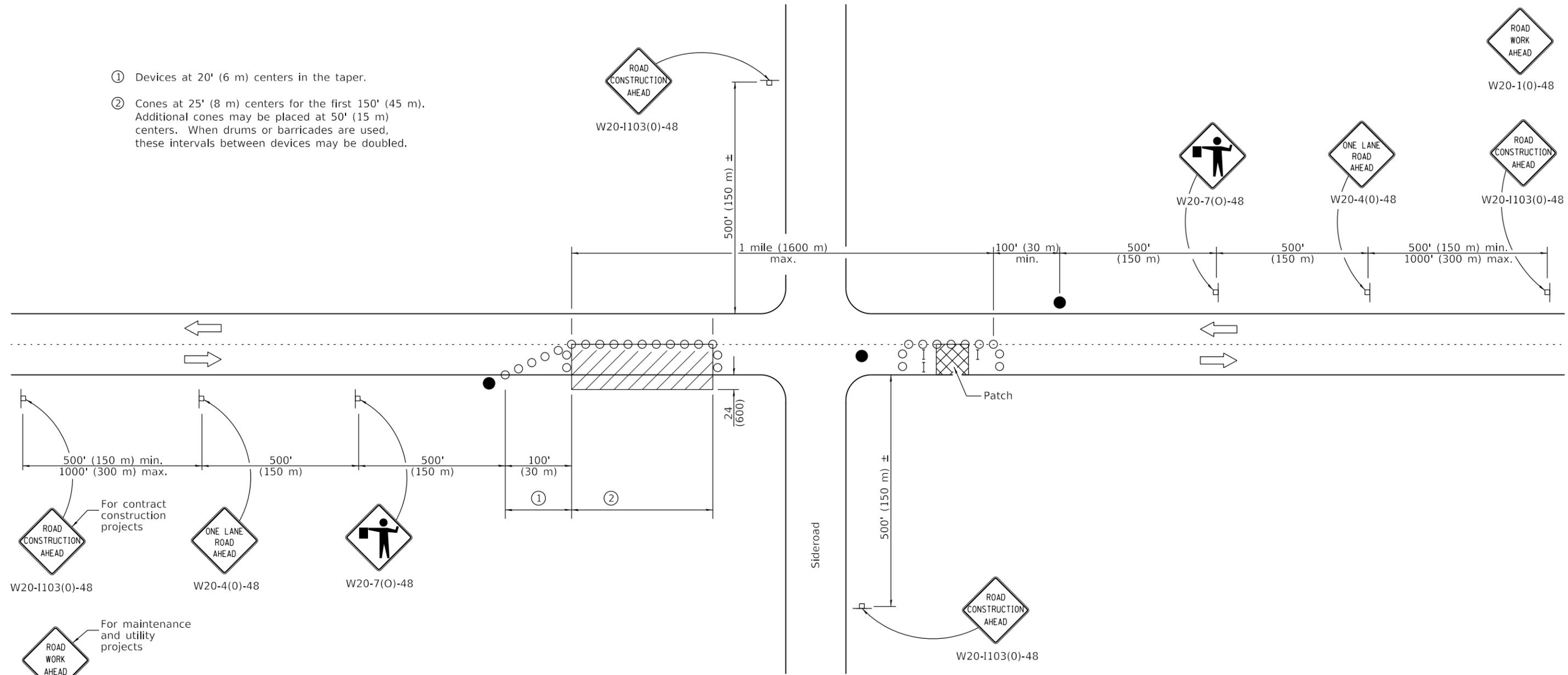
ISSUED 1-1-97

DATE	REVISIONS
1-1-15	Revised dimensions.
1-1-09	Switched units to English (metric).

GRATE TYPE 8

STANDARD 604036-03

- ① Devices at 20' (6 m) centers in the taper.
- ② Cones at 25' (8 m) centers for the first 150' (45 m). Additional cones may be placed at 50' (15 m) centers. When drums or barricades are used, these intervals between devices may be doubled.



TYPICAL APPLICATIONS

Isolated patching
 Utility operations
 Storm sewer
 Culverts
 Cable placement

SYMBOLS

- Work area
- Sign
- Barricade or drum
- Cone, drum or barricade
- Flagger with traffic control sign

GENERAL NOTES

This Standard is used where at any time, any vehicles, equipment, workers or their activities will encroach in the area between the center line and a line 24 (600) outside the edge of pavement for daylight operation.

When the distance between successive work areas exceeds 2000' (600 m), additional warning signs, flaggers, and taper shall be placed as shown.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2019
Cynthia Watt
 ENGINEER OF SAFETY PROG. AND ENGINEERING

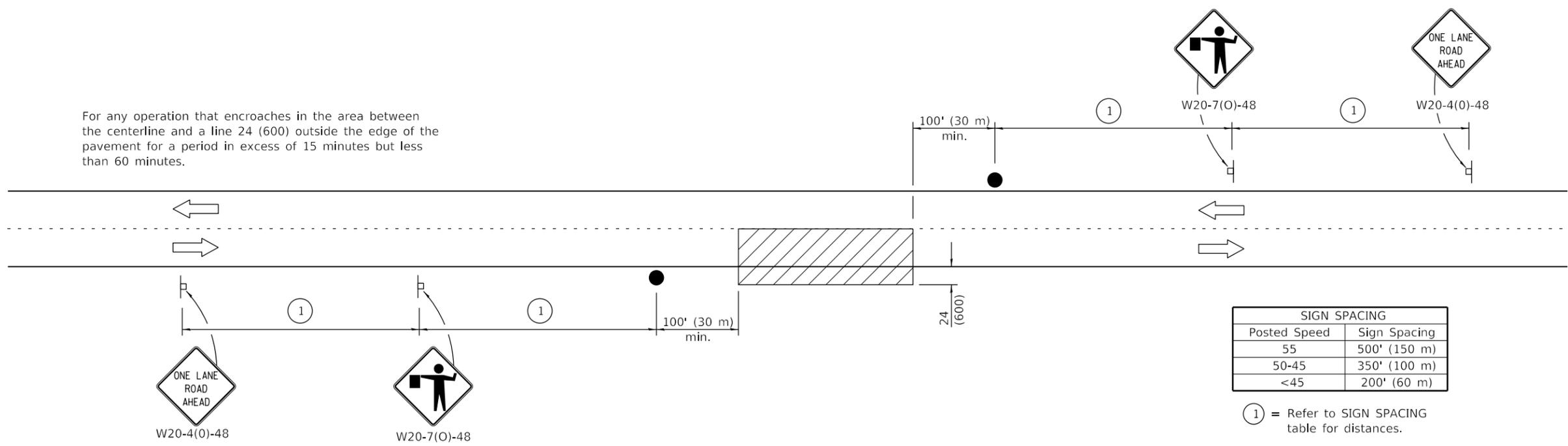
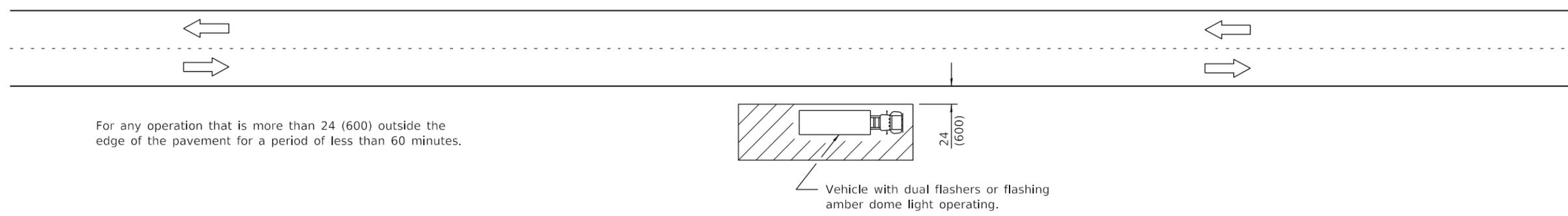
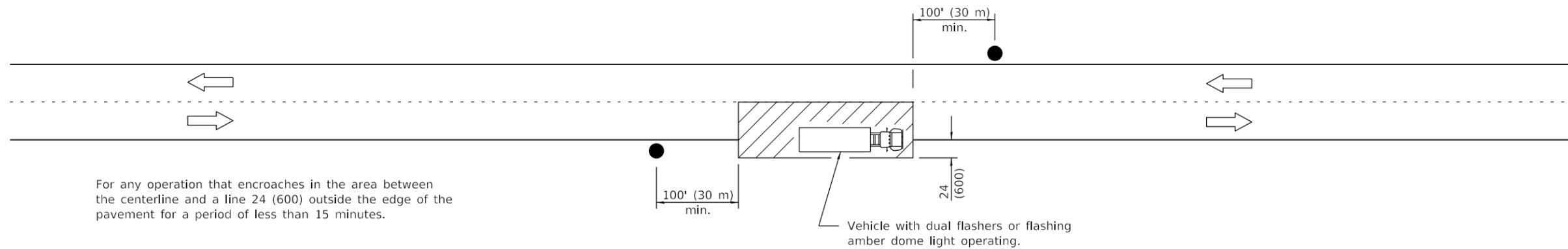
APPROVED January 1, 2019
Joe E. ...
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-19	Revised device spacing in taper.
1-1-11	Revised flagger sign.

**LANE CLOSURE, 2L, 2W,
 DAY ONLY,
 FOR SPEEDS ≥ 45 MPH**

STANDARD 701201-05



TYPICAL APPLICATIONS

- Marking patches
- Field survey
- String line
- Utility operations
- Cleaning up debris on pavement

SYMBOLS

- Work area
- Sign on portable or permanent support
- Flagger with traffic control sign

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2011
Amelia Adams
 ENGINEER OF SAFETY ENGINEERING

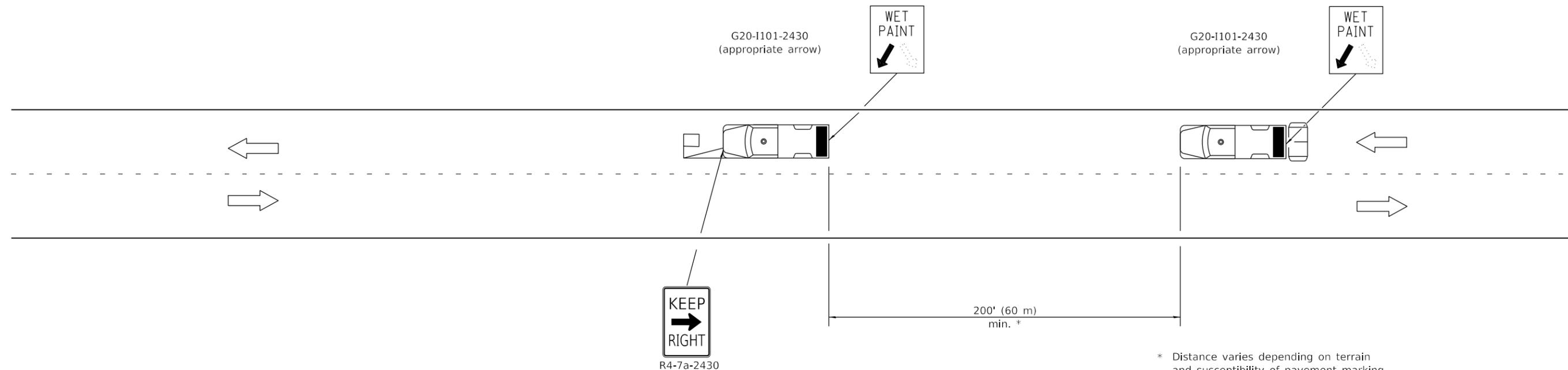
APPROVED January 1, 2011
Scott Schick
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).

LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS

STANDARD 701301-04



* Distance varies depending on terrain and susceptibility of pavement marking or crack sealant to wheel tracking.

TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Pavement marking
- Weed spraying
- Roadometer measurements
- Debris cleanup
- Crack pouring

SYMBOLS

-  Arrow board (Hazard Mode only)
-  Truck with headlights, emergency flashers and flashing amber light. (visible from all directions)
-  18x18 (450x450) min. orange flag (use when guide wheel is used)
-  Truck mounted attenuator

GENERAL NOTES

This Standard is used where any vehicle, equipment, workers or their activities will require a continuous moving operation where the average speed is greater than 3 mph (5 km/h).

For shoulder operations not encroaching on the pavement, use DETAIL A, Standard 701426.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric). Omitted Pass With Care sign.
1-1-00	Elim. speed restrictions in Standard title.

**LANE CLOSURE 2L, 2W
MOVING OPERATIONS-
DAY ONLY**

STANDARD 701311-03

Illinois Department of Transportation

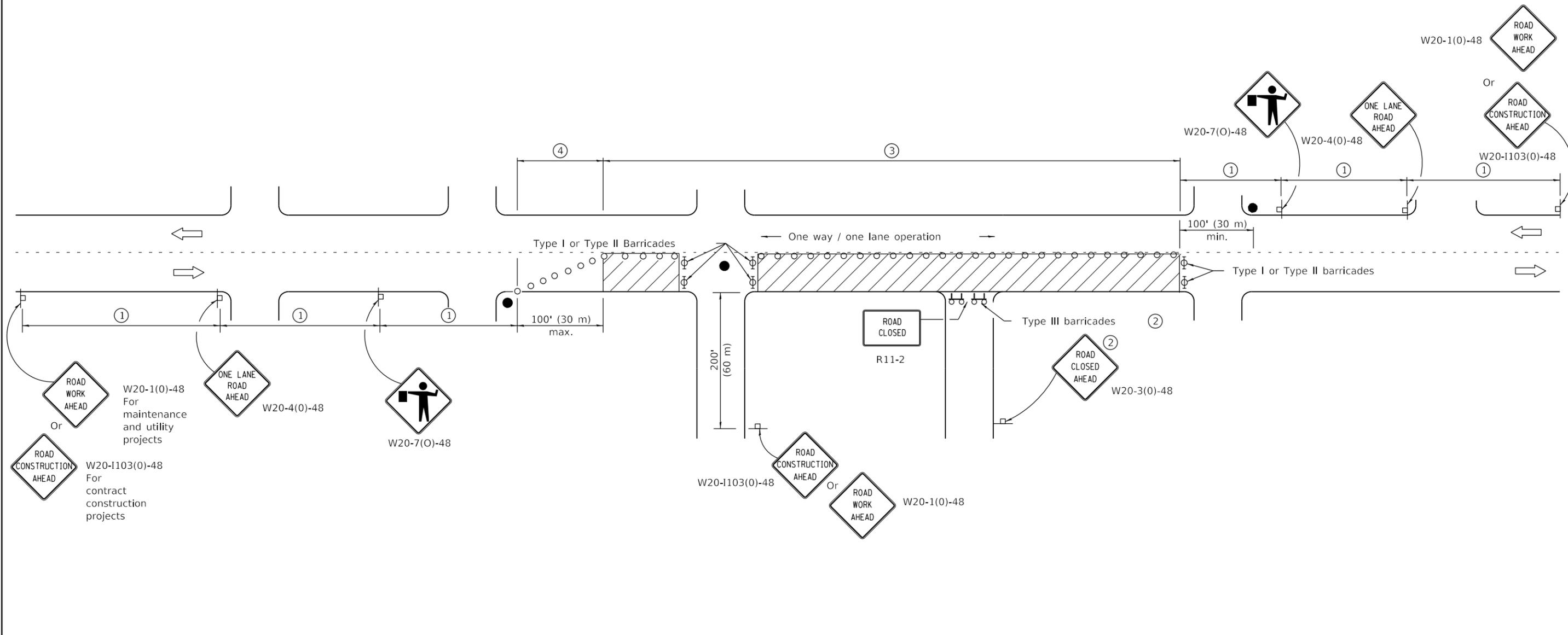
PASSED January 1, 2009

ENGINEER OF OPERATIONS

APPROVED January 1, 2009

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- Work area
- Cone, drum or barricade (not required for moving operations)
- Sign on portable or permanent support
- Flagger with traffic control sign
- Barricade or drum with flashing light
- Type III barricade with flashing lights

- ① Refer to SIGN SPACING TABLE for distances.
- ② For approved sideroad closures.
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Cones, drums or barricades at 20' (6 m) centers.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2011
[Signature]
 ENGINEER OF SAFETY ENGINEERING

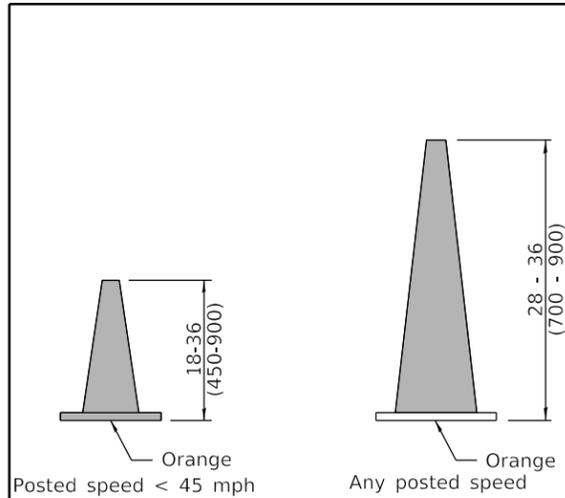
APPROVED January 1, 2011
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

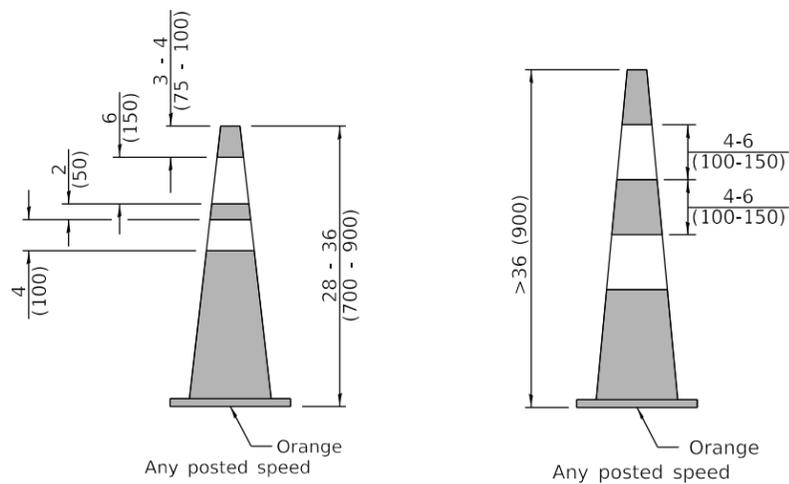
**URBAN LANE CLOSURE,
2L, 2W, UNDIVIDED**

STANDARD 701501-06

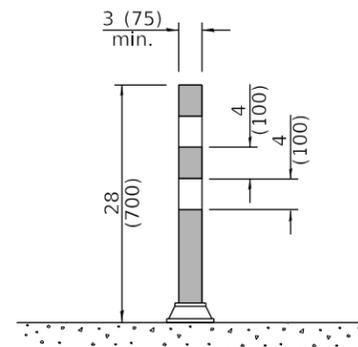


DAYTIME USE

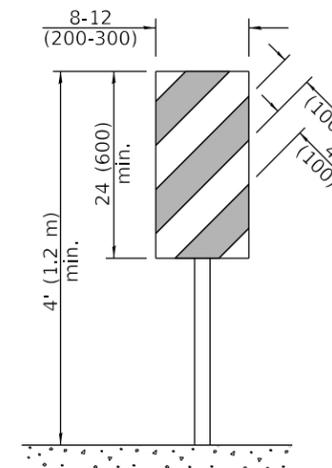
CONES



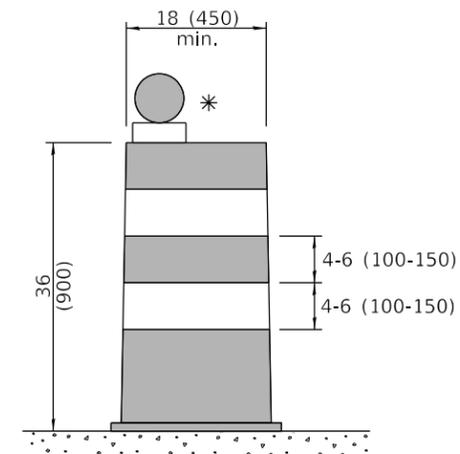
DAY OR NIGHTTIME USE



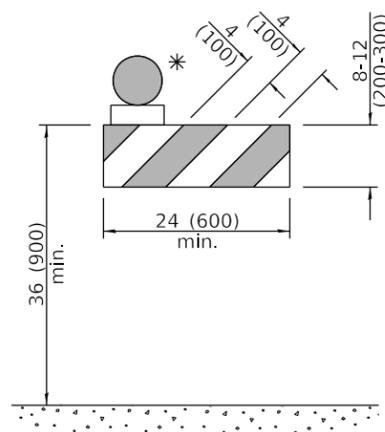
TUBULAR MARKER



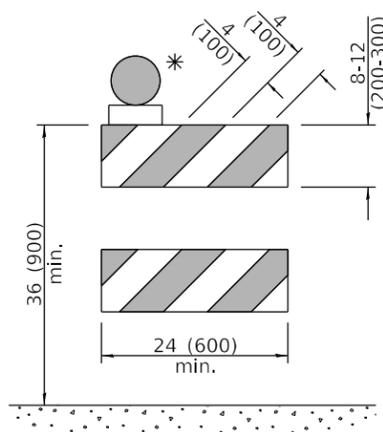
**VERTICAL PANEL
POST MOUNTED**



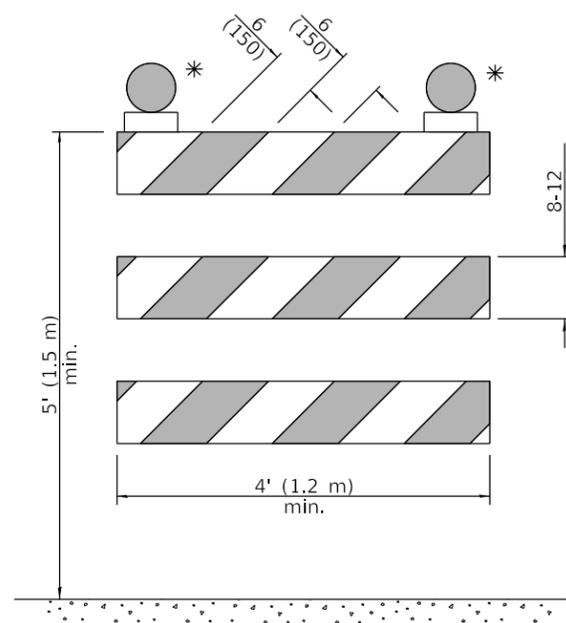
DRUM



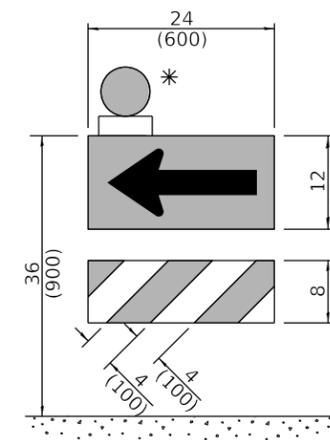
TYPE I BARRICADE



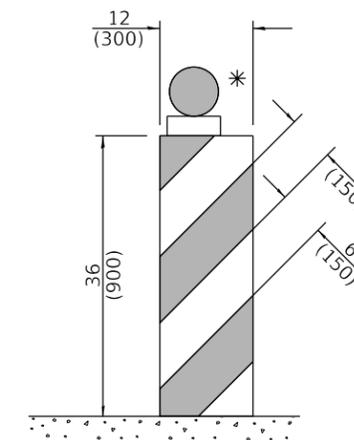
TYPE II BARRICADE



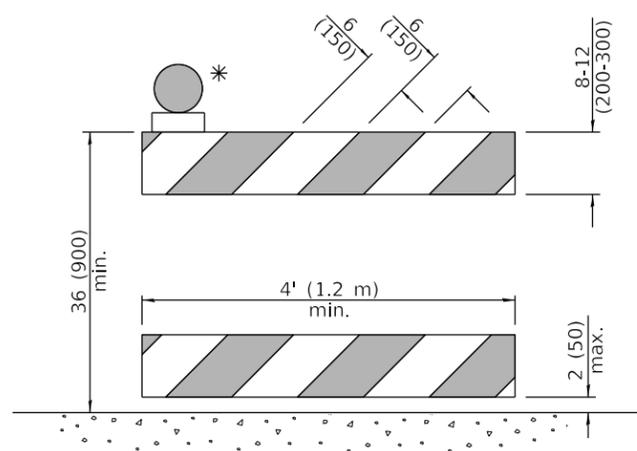
TYPE III BARRICADE



**DIRECTION INDICATOR
BARRICADE**



VERTICAL BARRICADE



**DETECTABLE PEDESTRIAN
CHANNELIZING BARRICADE**

* Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-19	Revised cone usage and added cones >36" (900 mm) height.
1-1-18	Revised END WORK ZONE SPEED LIMIT sign from orange to white background.

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

STANDARD 701901-08

Illinois Department of Transportation

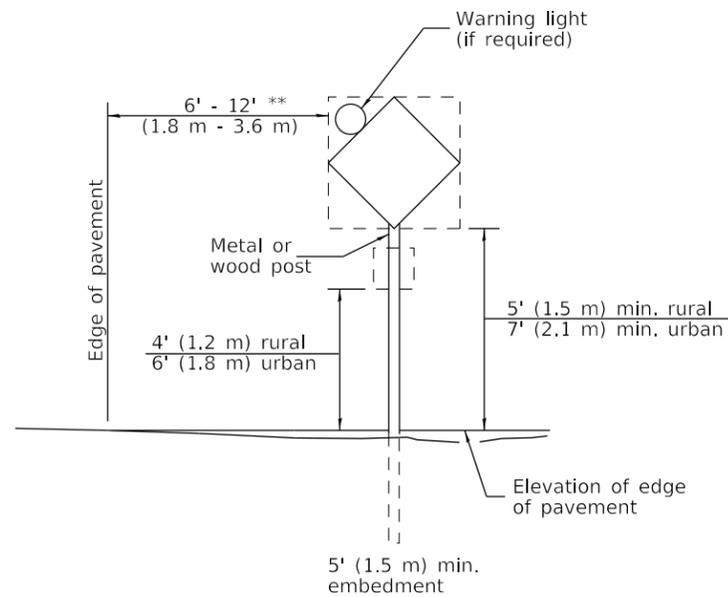
APPROVED January 1, 2019

 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019

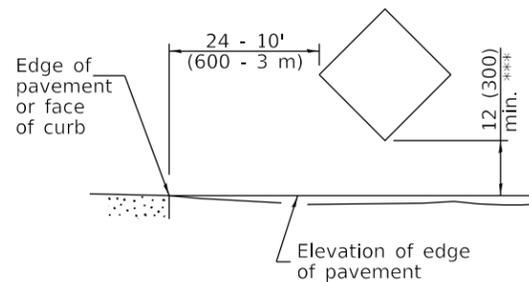
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED
 ET-1-1



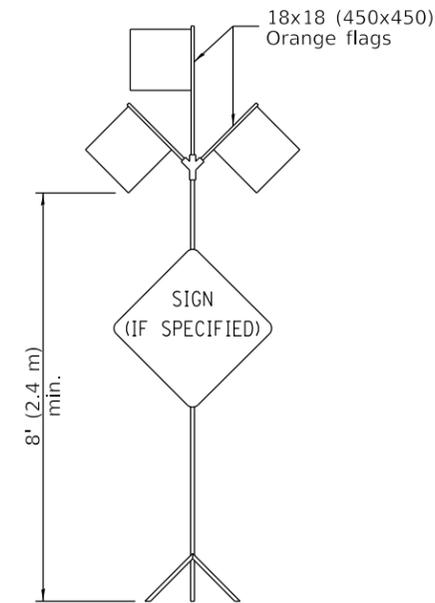
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.

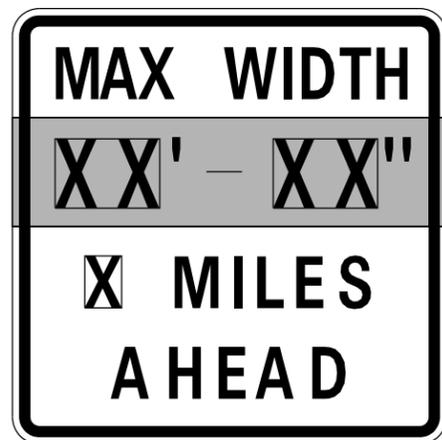


HIGH LEVEL WARNING DEVICE

ROAD CONSTRUCTION NEXT X MILES	END CONSTRUCTION
G20-I104(0)-6036	G20-I105(0)-6024

This signing is required for all projects 2 miles (3200 m) or more in length.
 ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.
 END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).
 Dual sign displays shall be utilized on multi-lane highways.

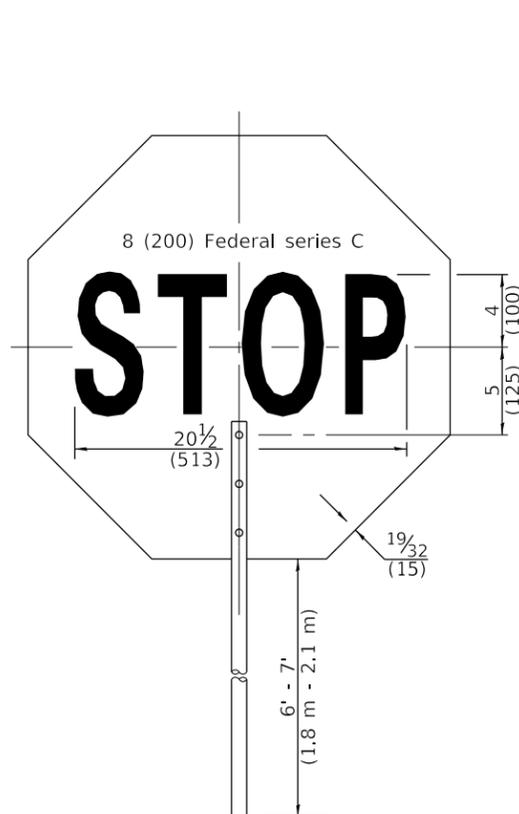
WORK LIMIT SIGNING



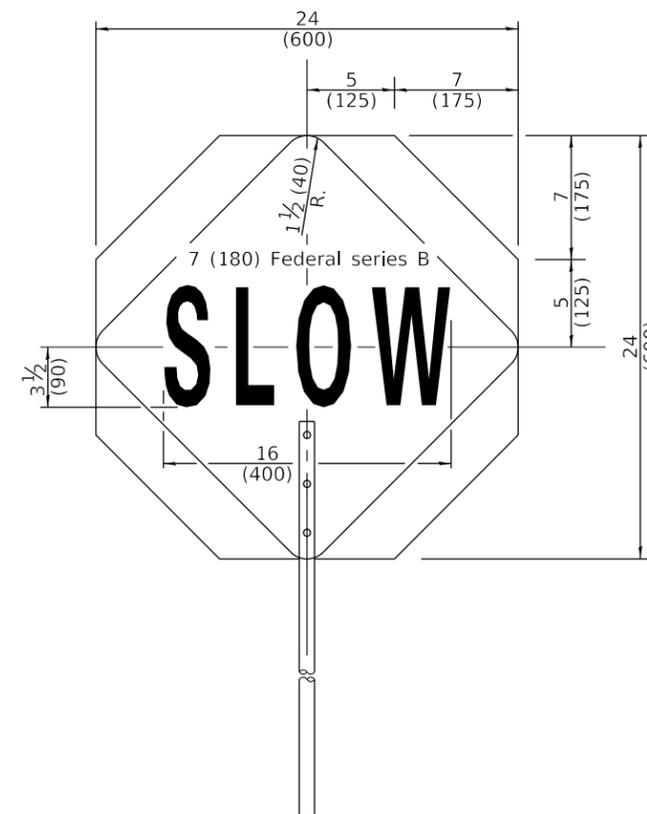
W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.



FRONT SIDE



REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

WORK ZONE	W21-III5(0)-3618
SPEED LIMIT XX	R2-1-3648
PHOTO ENFORCED	R10-I108p-3618 ****
\$XXX FINE MINIMUM	R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.

END WORK ZONE SPEED LIMIT	G20-I103-6036
---------------------------	---------------

This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

**** R10-I108p shall only be used along roadways under the jurisdiction of the State.

TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

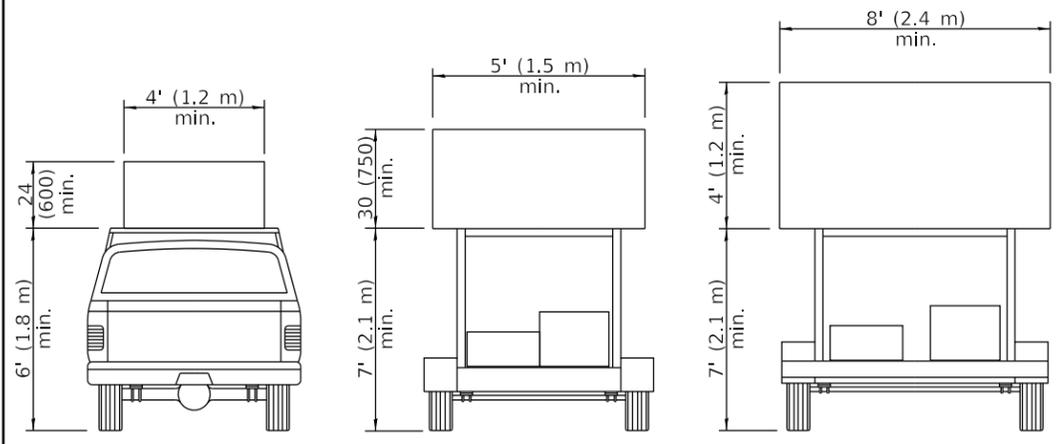
STANDARD 701901-08

Illinois Department of Transportation

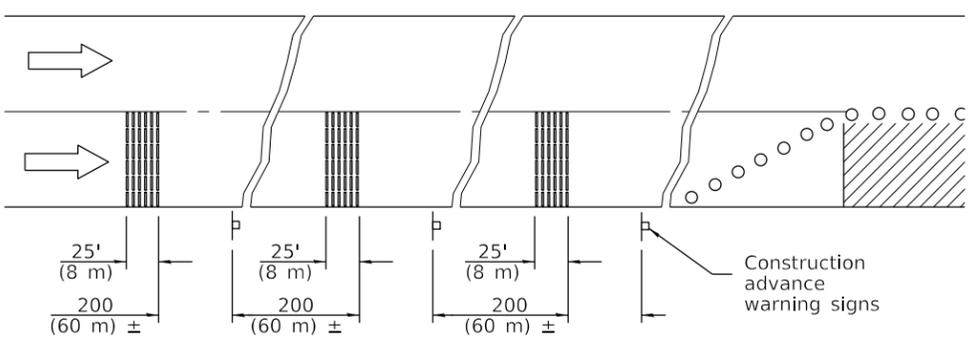
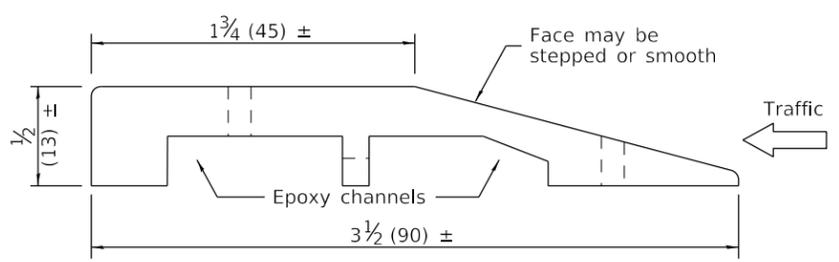
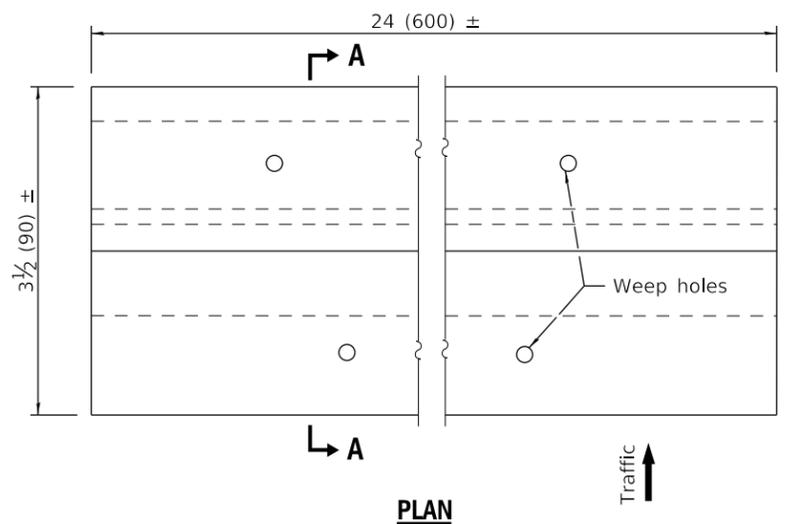
APPROVED January 1, 2019
[Signature]
 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

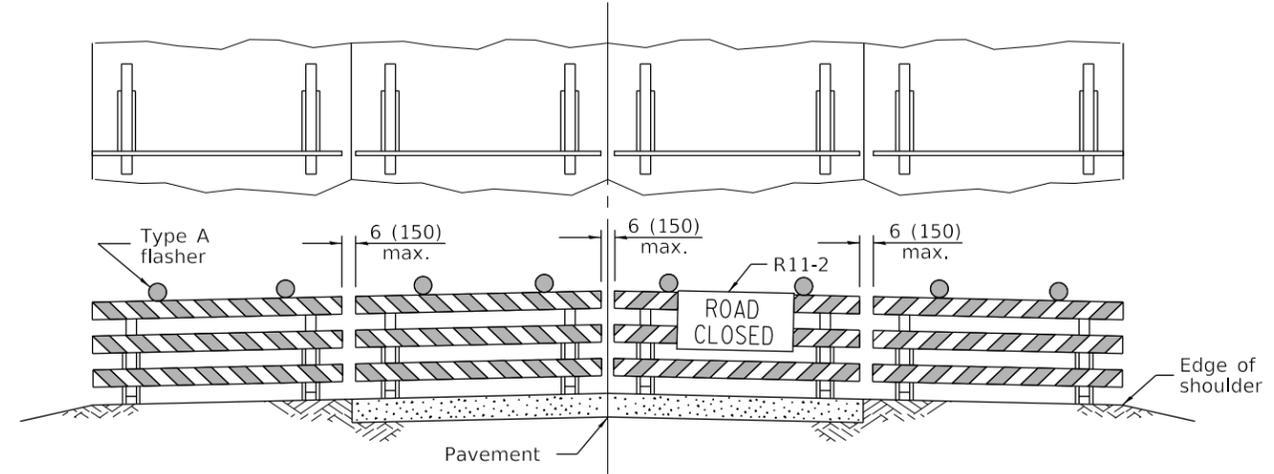
ISSUED 1-1-13



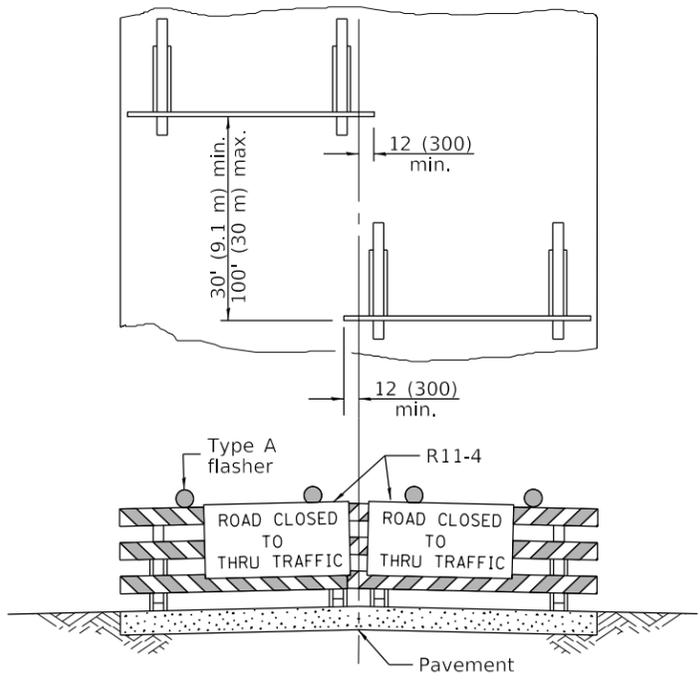
ARROW BOARDS



TEMPORARY RUMBLE STRIPS



Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

**TYPICAL APPLICATIONS OF
TYPE III BARRICADES CLOSING A ROAD**

**TRAFFIC CONTROL
DEVICES**

(Sheet 3 of 3)

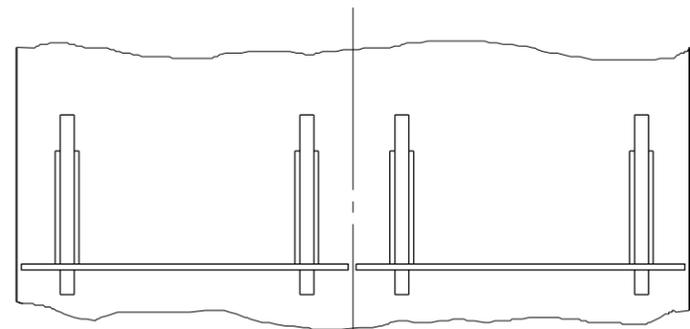
STANDARD 701901-08

Illinois Department of Transportation

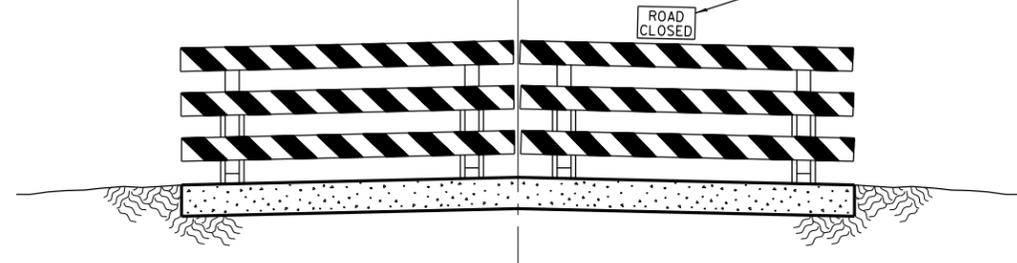
APPROVED January 1, 2019
Cynthia Watt
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
Joe E. ...
ENGINEER OF DESIGN AND ENVIRONMENT

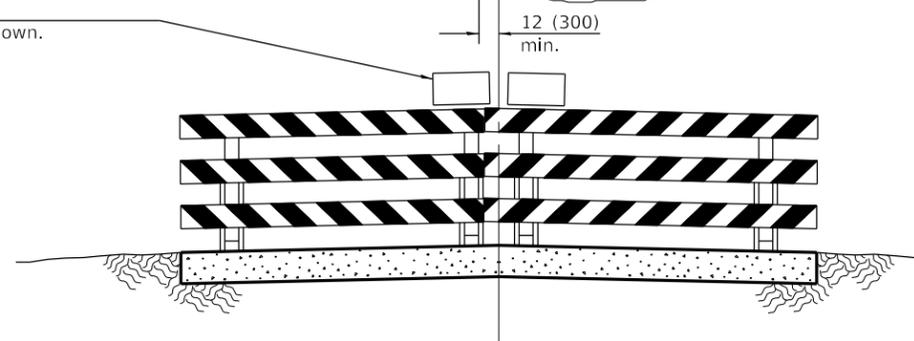
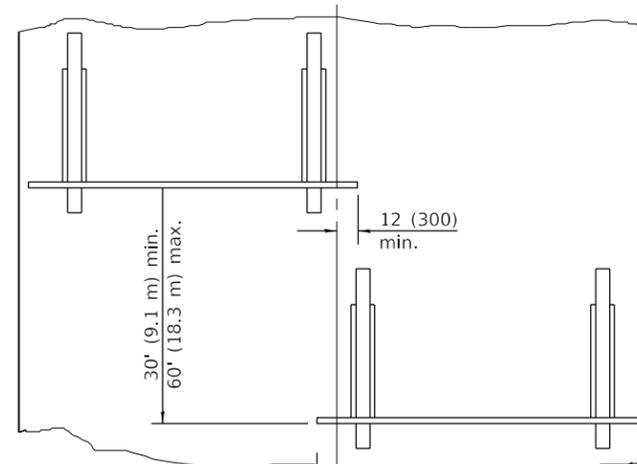
ISSUES
E1-1-1 Q3581



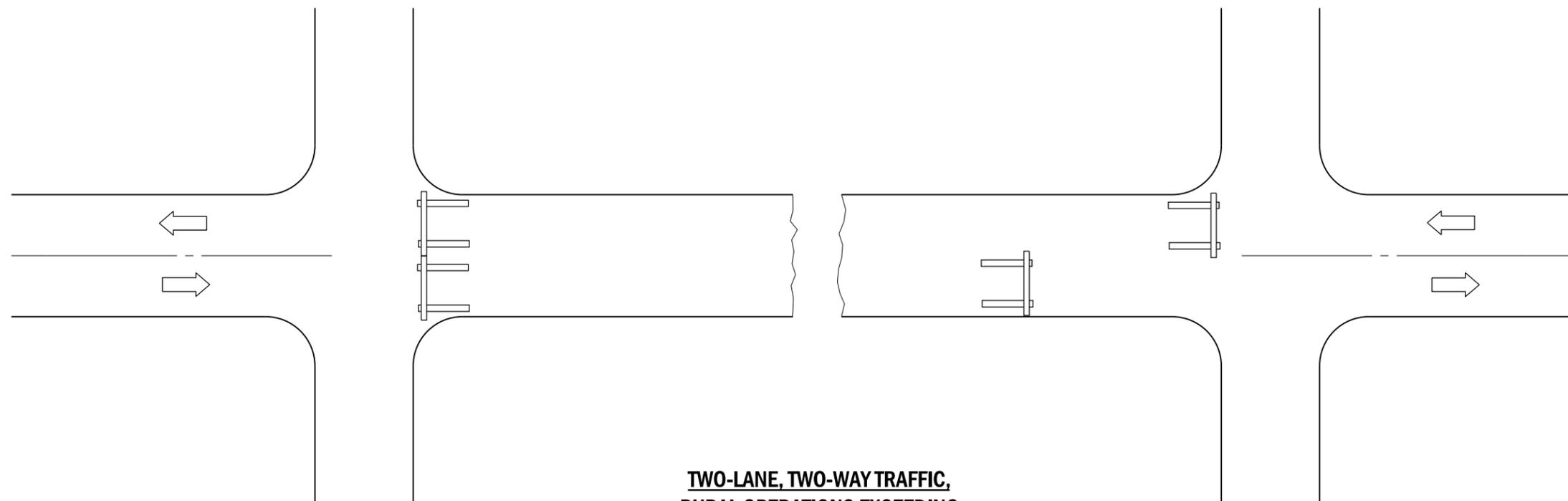
Type III Barricades with Standard Sign R11-2 or R11-4 mounted as shown.



Resident traffic and day labor force's equipment to use road shoulder for passing barricade.



Use when shoulders are too narrow for passage of traffic.



**TWO-LANE, TWO-WAY TRAFFIC,
RURAL OPERATIONS EXCEEDING
ONE DAYLIGHT PERIOD**

GENERAL NOTES

Type III barricades to be width of pavement only.

Reflectorized striping shall appear on both sides of barricades. Barricades shall be positioned so that stripes slope downward toward the side on which traffic is to pass.

Although not shown, advance warning signs with minimum dimensions of 36x36 (900x900) and black legends on orange reflectorized backgrounds shall be utilized where needed.

This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-98	Rev. "R11-1" to "R11-4".
	Rev. 4th General Note.

**TRAFFIC CONTROL DEVICES -
DAY LABOR CONSTRUCTION**

STANDARD B.L.R. 17-4

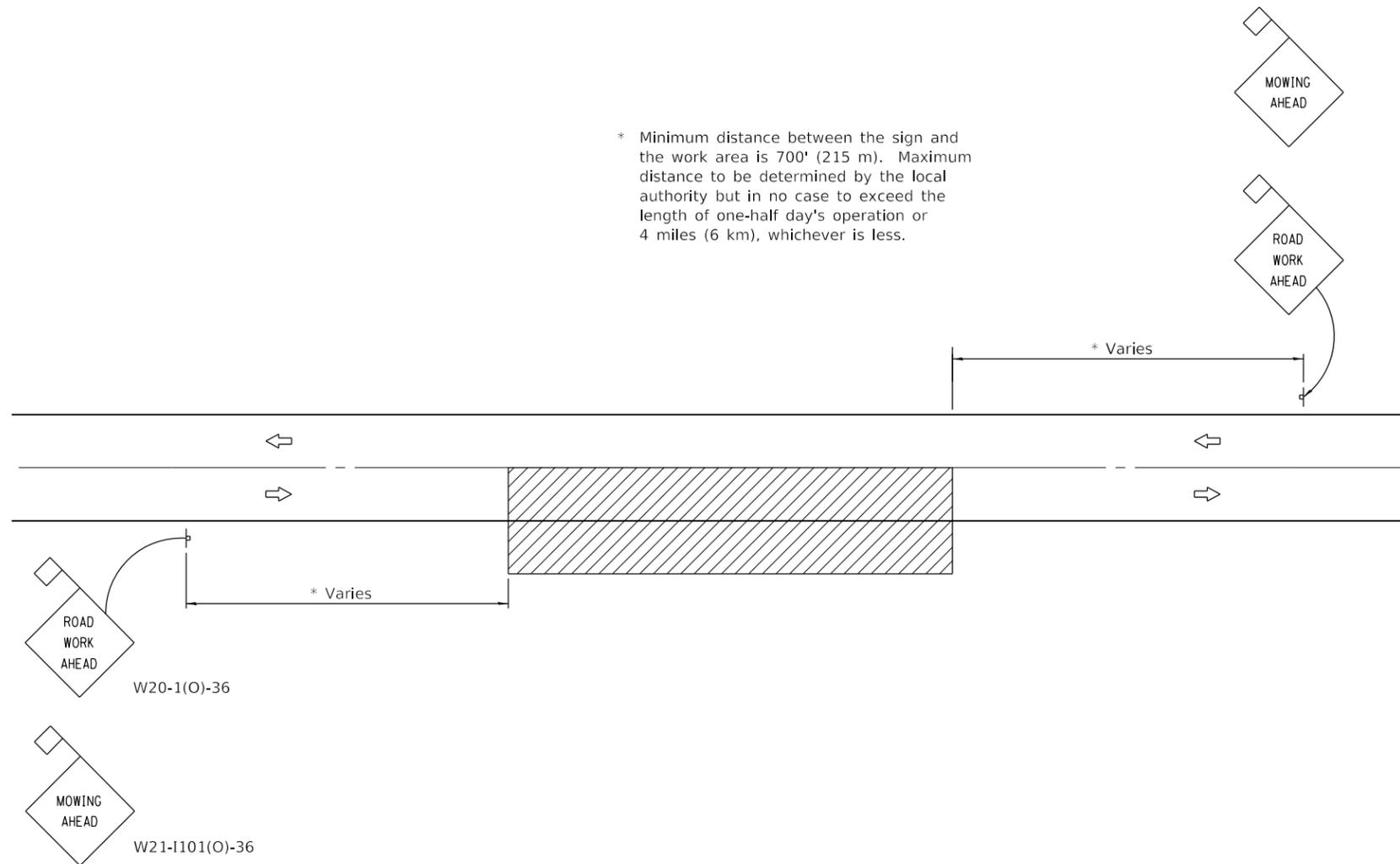
Illinois Department of Transportation

PASSED January 1, 2009
Charles J. Longwell
 ENGINEER OF LOCAL ROADS AND STREETS

APPROVED January 1, 2009
Ken E. Han
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

* Minimum distance between the sign and the work area is 700' (215 m). Maximum distance to be determined by the local authority but in no case to exceed the length of one-half day's operation or 4 miles (6 km), whichever is less.



TWO-LANE, TWO-WAY TRAFFIC
RURAL OPERATIONS
DAY OPERATIONS ONLY

SYMBOLS



Work area



Sign with 18x18 (450x450) min. orange flag attached.

TYPICAL APPLICATIONS

- MOWING
- SPREADING AGGREGATE
- WEED SPRAYING
- SURFACE MAINTENANCE
- BITUMINOUS RESURFACING
- CRACK POURING
- SHOULDER REPAIR
- CLEANING DITCHES

GENERAL NOTES

Maintenance operations shall be confined to one traffic lane, leaving the opposite lane open to traffic. At least 500' (150 m) of both traffic lanes shall be available for traffic movement between work areas at intervals not greater than 1000' (300 m).

When operations are on the pavement and stationary or moving at a speed less than 4 mph (6 kph), a ONE LANE AHEAD, or other appropriate sign, shall be installed in each direction between the ROAD WORK AHEAD sign and the work area. The distance between this sign and the work area shall be a minimum of 400' (120 m) but in no case to exceed the length of one-half day's operation or 4 miles (6 km), whichever is less. The distance between the two signs shall be approximately 400' (120 m).

All signs are to be removed at completion of the day's operation.

Any unattended obstacle, excavation, or pavement drop off greater than 3 (75) in the work area shall be protected by Type I or Type II barricades with flashing lights.

Longitudinal dimensions may be adjusted slightly to fit field conditions.

All vehicles, equipment, men, and their activities are restricted at all times to one side of the pavement.

Flashing lights or rotating beacons are required for all maintenance vehicles while in operation.

Applicable operations illustrated in Standard 701301 may be used when operations do not exceed 15 minutes on the pavement or 60 minutes on the shoulder respectively.

All warning signs shall have minimum dimensions of 36x36 (900x900) and have black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2015
Jamie K. Klein
 ENGINEER OF LOCAL ROADS AND STREETS

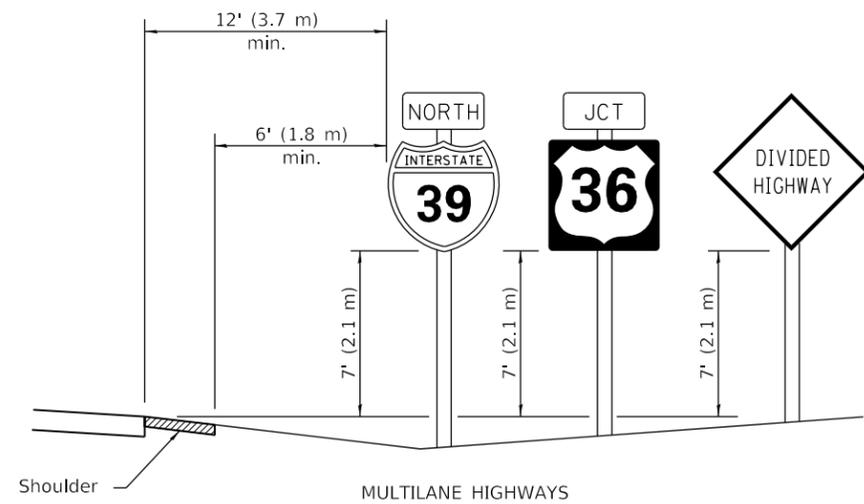
APPROVED January 1, 2015
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

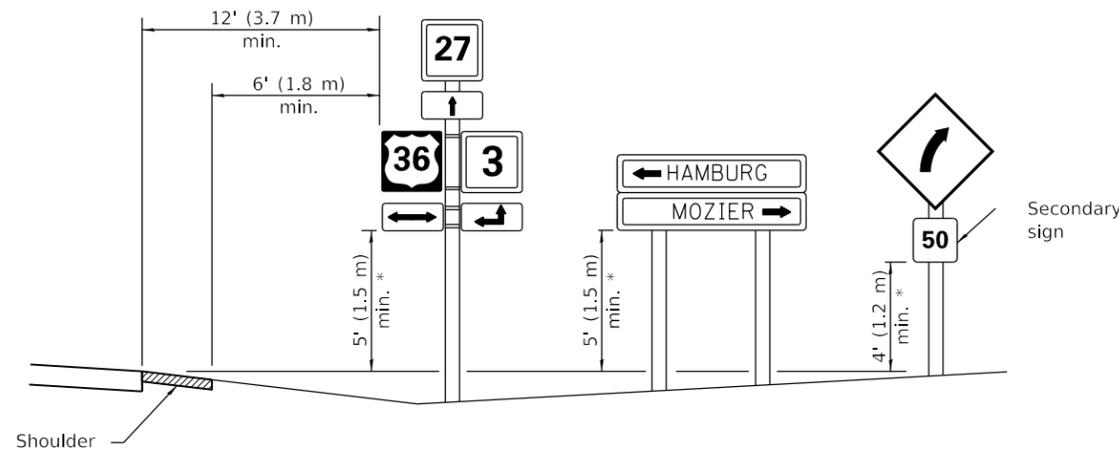
DATE	REVISIONS
1-1-15	Corrected RWA sign number.
1-1-09	Switched units to English (metric). Moved one General Note.

**TRAFFIC CONTROL DEVICES-
 DAY LABOR MAINTENANCE**

STANDARD B.L.R. 18-6

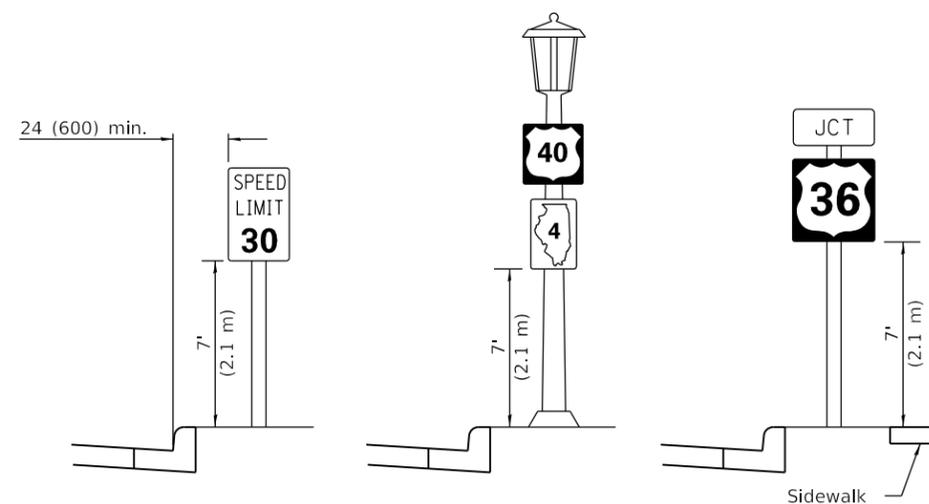


MULTILANE HIGHWAYS



* In any area where parking is likely to occur or where there are obstructions to view or where signs are located over sidewalks, the height shall be at least 7' (2.1 m).

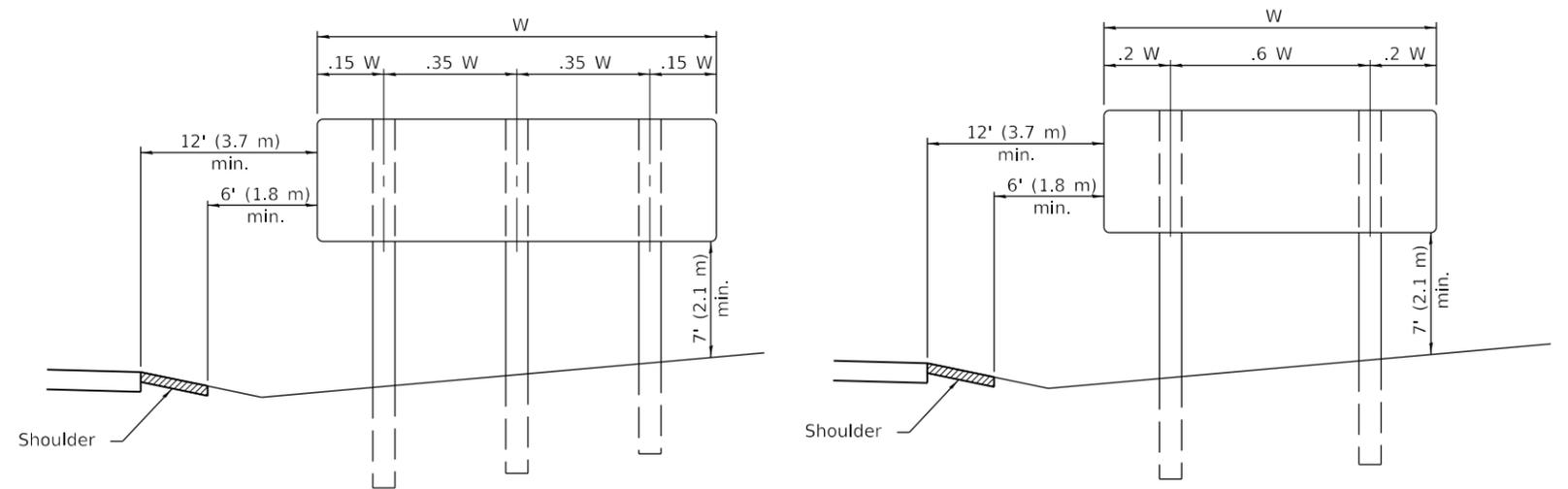
TWO LANE RURAL HIGHWAYS



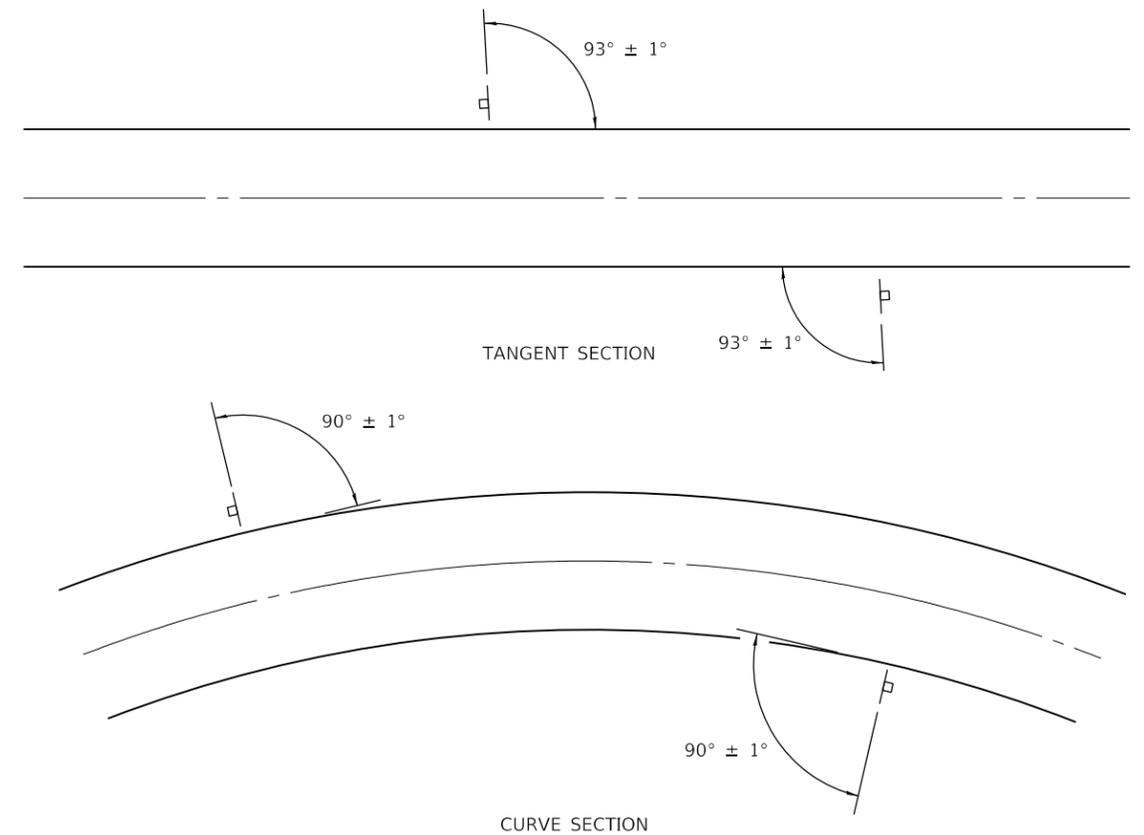
URBAN LOCATIONS

TYPICAL INSTALLATIONS

Signs in any area shall be erected to a uniform height above the edge of the pavement.



POST SPACING FOR NON-FREEWAY SIGN PANELS



GROUND MOUNT SIGN POSITIONING

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2014
Justin Mann
 ENGINEER OF OPERATIONS

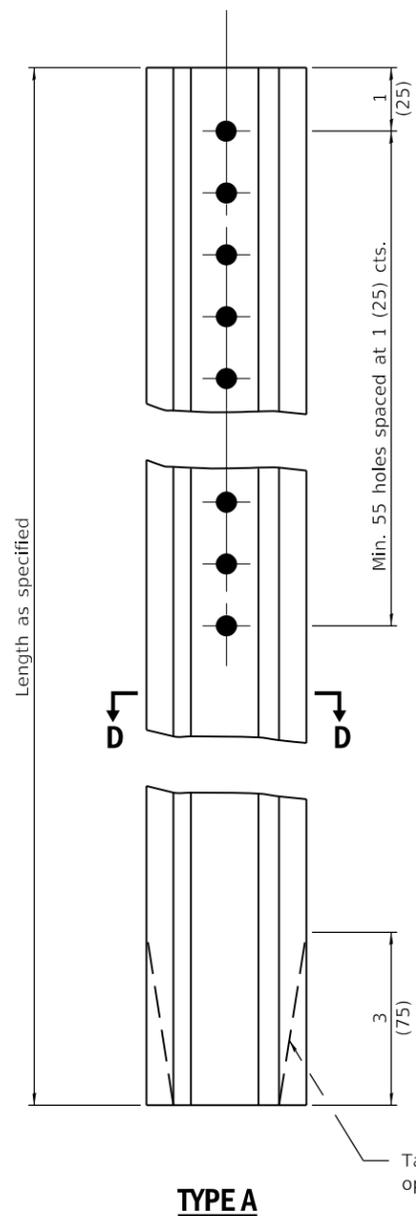
APPROVED January 1, 2014
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-14	Added shoulders and slopes.
	Changed sign distances from roadway and shoulder.
1-1-12	Rev. sign elev. for multilane hwy's. Revised sign elev. and dist. to curb for rural loc.

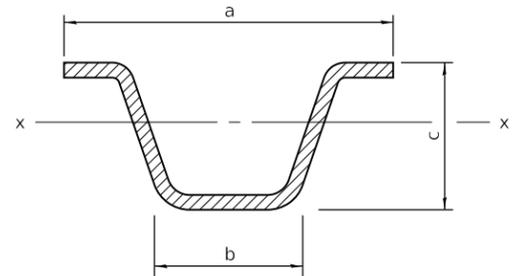
SIGN PANEL ERECTION DETAILS

STANDARD 720006-04

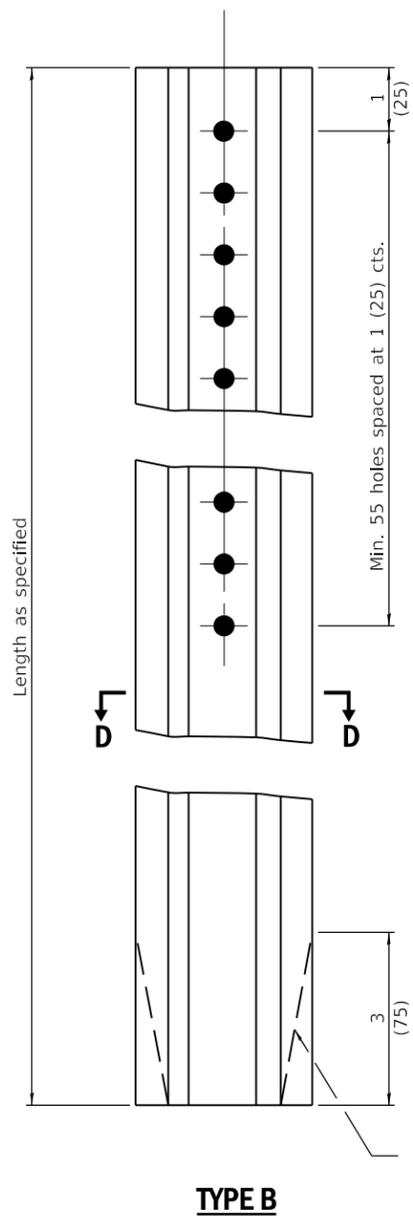


TYPE A

Taper optional

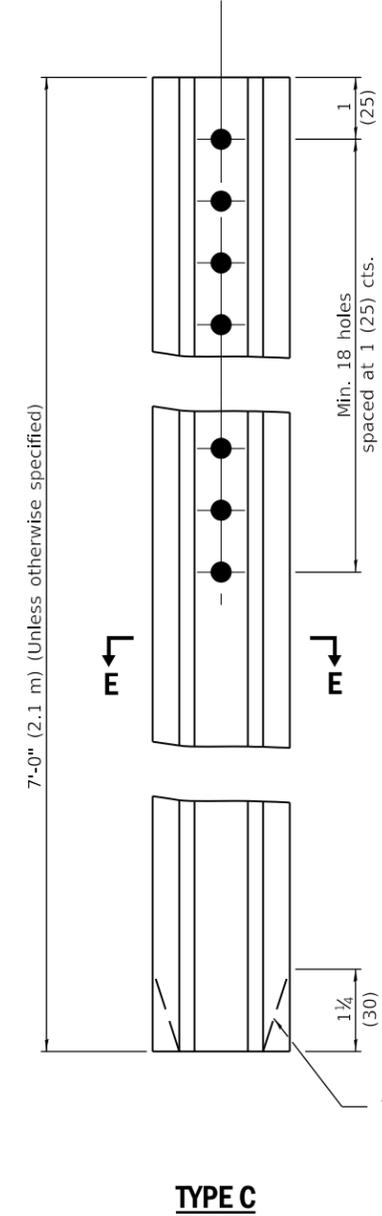


SECTION D-D



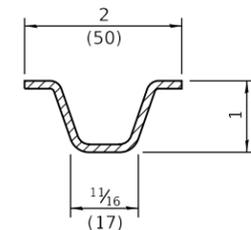
TYPE B

Taper optional



TYPE C

Taper optional



SECTION E-E

Steel - 1.12 lbs./ft. (1.67 kg/m)

		a	b	c	Sx-x in. ³ (mm ³)	lbs./ft. (kg/m)
TYPE A	Steel	3 1/16 (78)	1 1/2 (32)	1 1/16 (37)	0.223 (3,654)	2.00 (2.98)
	Aluminum	3 1/2 (89)	1 1/2 (41)	1 1/2 (48)	0.435 (7,128)	0.90 (1.34)
TYPE B	Steel	3 3/16 (81)	1 1/2 (32)	1 1/2 (38)	0.341 (5,588)	3.00 (4.46)
	Aluminum	4 1/8 (118)	2 1/2 (57)	2 1/2 (60)	0.888 (14,552)	1.30 (1.93)

GENERAL NOTES

Dimensions shown for cross sections are minimum.

All holes are 3/8 (10).

Sx-x is the minimum section modulus about the x-x axis of the post as shown. For posts in which holes are punched or drilled for more than half their length, Sx-x shall be computed for the net section.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-97	Renum. Standard 2350-4.

**METAL POSTS FOR SIGNS,
MARKERS & DELINEATORS**

STANDARD 720011-01

Illinois Department of Transportation

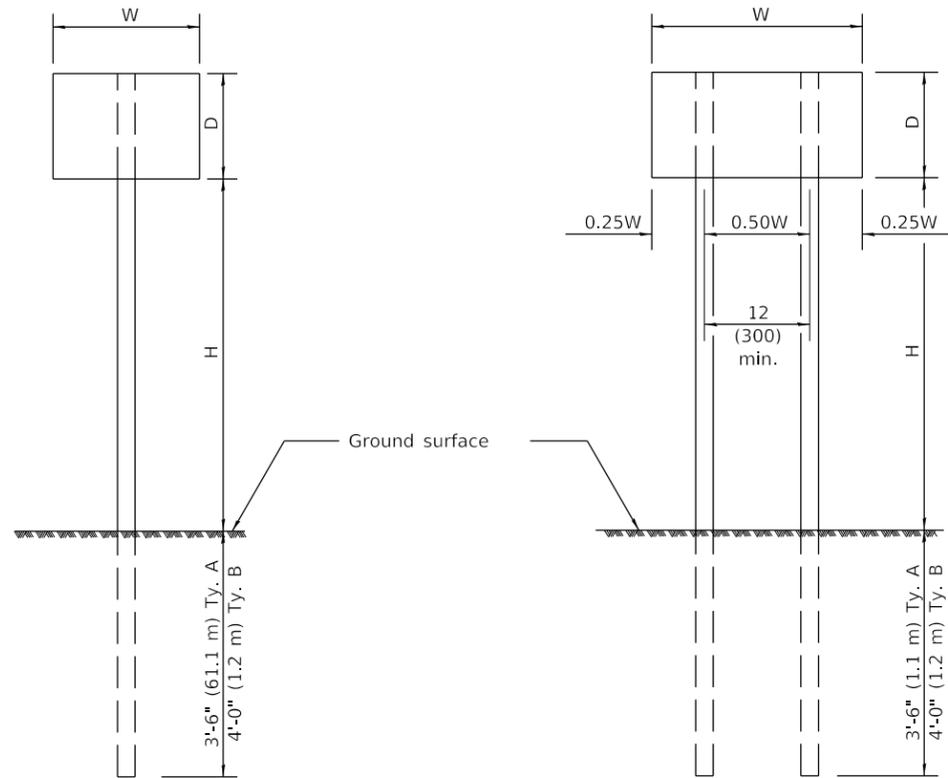
PASSED January 1, 2009

ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009

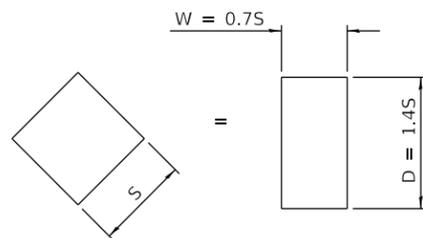
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



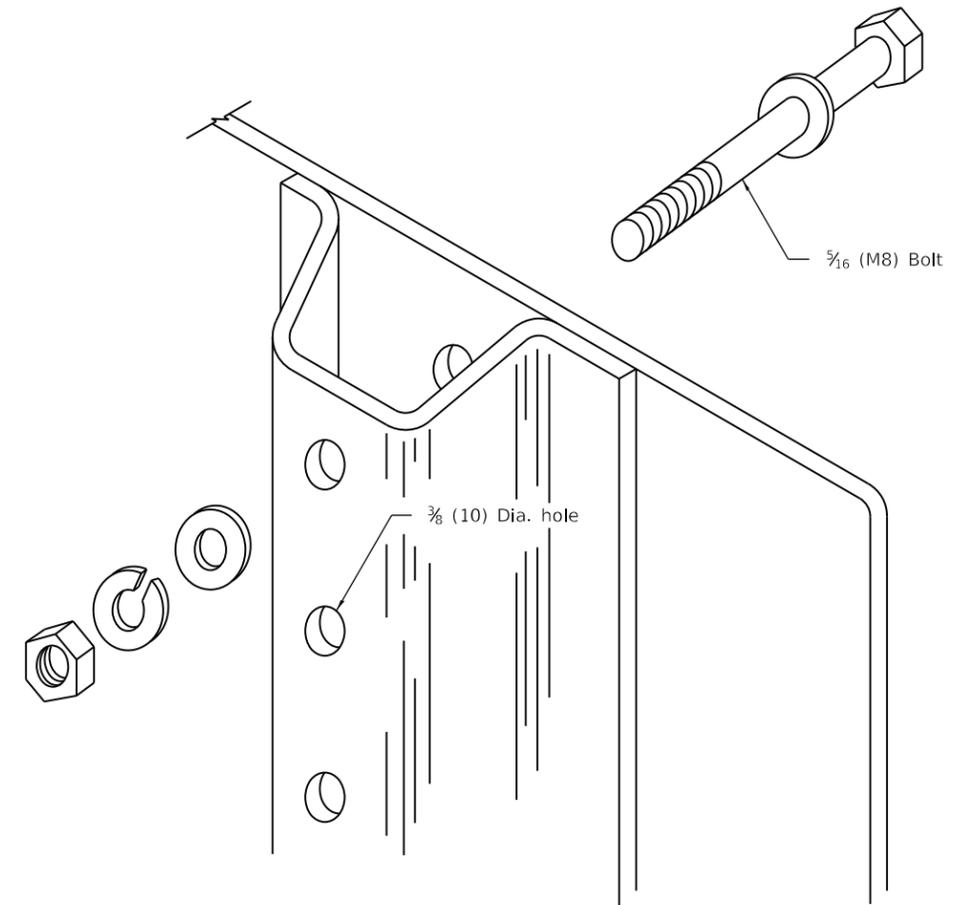
ONE POST INSTALLATION

TWO POST INSTALLATION



For diamond shaped sign with side S as shown, use required post size for a sign with $W = 0.7S$ and $D = 1.4S$.

SIGN DEPTH (D)	H	NO. AND TYPE OF POST FOR SIGN WIDTH (W)				
		12 (300)	18 (450)	24 (600)	30 (750)	36 (900)
18 (450)	5'-0" (1.5 m)	A	A	A	A	A
	5'-6" (1.7 m)	A	A	A	A	A
	6'-0" (1.8 m)	A	A	A	A	B
	6'-6" (2.0 m)	A	A	A	A	B
	7'-0" (2.1 m)	A	A	A	A	B
	7'-6" (2.3 m)	A	A	A	A	B
	8'-0" (2.4 m)	A	A	A	A	B
	9'-0" (2.7 m)	A	A	A	B	B
24 (600)	5'-0" (1.5 m)	A	A	A	A	B
	5'-6" (1.7 m)	A	A	A	A	B
	6'-0" (1.8 m)	A	A	A	B	B
	6'-6" (2.0 m)	A	A	A	B	B
	7'-0" (2.1 m)	A	A	A	B	B
	7'-6" (2.3 m)	A	A	A	B	B
	8'-0" (2.4 m)	A	A	A	B	2A
	9'-0" (2.7 m)	A	A	B	B	2A
30 (750)	5'-0" (1.5 m)	A	A	A	B	B
	5'-6" (1.7 m)	A	A	A	B	2A
	6'-0" (1.8 m)	A	A	A	B	2A
	6'-6" (2.0 m)	A	A	A	B	2A
	7'-0" (2.1 m)	A	A	B	B	2A
	7'-6" (2.3 m)	A	A	B	B	2A
	8'-0" (2.4 m)	A	A	B	B	2A
	9'-0" (2.7 m)	A	A	B	2A	2A
36 (900)	5'-0" (1.5 m)	A	A	B	B	2A
	5'-6" (1.7 m)	A	A	B	B	2A
	6'-0" (1.8 m)	A	A	B	B	2A
	6'-6" (2.0 m)	A	A	B	2A	2A
	7'-0" (2.1 m)	A	A	B	2A	2A
	7'-6" (2.3 m)	A	A	B	2A	2A
	8'-0" (2.4 m)	A	B	B	2A	2A
	9'-0" (2.7 m)	A	B	B	2A	2B
4'-0" (1.2 m)	5'-0" (1.5 m)	A	A	B	2A	2A
	5'-6" (1.7 m)	A	B	B	2A	2A
	6'-0" (1.8 m)	A	B	B	2A	2A
	6'-6" (2.0 m)	A	B	2A	2A	2B
	7'-0" (2.1 m)	A	B	2A	2A	2B
	7'-6" (2.3 m)	A	B	2A	2B	2B
	8'-0" (2.4 m)	A	B	2A	2B	2B
	9'-0" (2.7 m)	B	2A	2B	2B	2B



DETAIL OF MOUNTING SIGN TO POST

NOTE: Minimum of 2 bolts per post required.

GENERAL NOTES

DESIGN: Current AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

LOADING: for 60 mph (95 km/h) wind velocity with 30% gust factor, normal to sign.

SOIL PRESSURE: Minimum allowable soil pressure 1.25 tsf (120 kPa).

See Standard 720011 for details of Types A and B posts.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-97	Renum. Standard 2363-2.

APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)

STANDARD 729001-01

Illinois Department of Transportation

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