

GUIDE FOR SPECIFIERS



NATIONAL PARK SERVICE (NPS) - DENVER SERVICE CENTER (DSC)

3-2-17

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CHAPTER 1 - CONSTRUCTION DOCUMENTS

Construction documents are the written and graphic documents for administering and communicating the design elements for a construction contract. Government construction documents include the following:

A. PROJECT MANUAL

1. Pre-Bid Information

Used to attract Bidders and explain procedures for submitting bids. The forms typically include:

Pre-Solicitation Notice (Standard Form 1417): In addition to being included in the project manual; this form is sent to prospective Bidders and plan rooms. It helps Bidders decide whether to obtain the bidding documents. It also states time, date, and place of pre-bid site meetings, when applicable.

Note: We cannot require Bidders to visit the sites.

Instructions to Bidders: This form spells out requirements before and during the submission of bids. It also describes conditions affecting the award of the contract.

Bidding Document Submittal Instructions: An extension of the Instructions to Bidders, this document gives detailed instructions for submitting bids on DSC construction projects.

Various Notices: The notices explain limitations on who may bid on the project. Bidding may be open to or limited to one or more of the following:

- open to both big business and small business
- a 100 percent set-aside for small business concerns
- a 100 percent set-aside for small business and labor surplus area concerns
- a 100 percent set-aside for labor surplus area concerns
- a 100 percent set-aside for emerging small business concerns
- a 100 percent set-aside for eligible 8(a) concerns

Also included is a notice to the prospective Bidder of the affirmative action goals.

2. Forms for Bidding

Used by Bidders to submit bids, the forms include:

Solicitation, Offer, and Award (Standard Form 1442): The solicitation portion of the form tells Bidders where to send the bid and the date, time, and place of bid opening. The offer portion requires the Bidder to acknowledge receipt of all amendments and agree to all provisions of the contract.

Contract Price Schedule: The Bidder proposes prices for performing the work of the contract on this schedule. A detailed explanation of the contract price schedule is included in Chapter 2.

Buy American Act: Informs the Bidder what materials are exempt from the Buy American Act and includes a schedule to be filled out if Bidder proposes using nonexempt foreign materials. The schedule is used to compare the costs of foreign materials to domestic materials. If the foreign material's cost plus 6 percent is lower than the cost of domestic material, it may be used without further waiver.

Note: Foreign materials may not be specified, **except for projects with an estimated value of \$6.5 million or more**. Materials are considered foreign made if more than 51 percent of the end component is manufactured in a foreign country. Exceptions to the Act may be obtained by submitting a justification stating why no domestic materials are sufficient for the job to the Contracting Officer (CO), who will request authorization from Washington. The time frame is generally 30 to 60 days.

On May 12, 1992, an interim Rule was included in the [Federal Acquisition Regulation \(FAR\)](#) that allows the following exception:

Emergency life safety systems, such as emergency lighting, fire alarm and audio evacuation systems, produced as a complete system, shall be evaluated as a single and distinct construction material, regardless of when or how the individual component parts of components of such systems are delivered to the construction site.

In other words, if we specify a certain fire alarm system and the alarm bell is clearly made in a foreign country, it is acceptable because at least 51 percent of the system was manufactured in the United States.

Representations and Certifications: Used by the Bidder to represent and certify to various statements required by law and used by the Government to gather information.

Certificate of Procurement Integrity: Required from the Bidder to certify that no violations of the Office of Federal Procurement Policy Act have been committed by any party involved in the preparation or submission of the bid. The violations concern bribes, gratuities, unlawful solicitation or disclosure of information resulting in unfair advantage in the bidding process, etc.

Bid Bond (Standard Form 24): Guarantees that if the Contractor whose bid is accepted does not enter into a formal contract, he will pay the Government liquidated damages, either the amount of the bond, or more commonly, the difference between his bid and the next lower bid.

3. Contract Forms

Solicitation, Offer, and Award (Standard Form 1442): The solicitation and offer portions are used for bidding as explained above, and the award portion is the contract binding the Contractor and the Government to the work.

Performance Bond (Standard Form 25): Guarantees that if the Contractor defaults or fails to perform the work, the surety will complete the work or provide funding (up to the performance bond amount) for completion.

Payment Bond (Standard Form 25A): Guarantees that if the Contractor fails to pay Subcontractors, suppliers, and others providing labor, materials, goods, and services, they will be paid by the surety.

4. Conditions of the Contract

General Provisions: Standard clauses used on all projects establishing how the project will be administered.

Supplementary Provisions: Job-specific clauses that supplement the General Provisions.

Labor Standards Provisions: Department of Labor regulations establishing minimum requirements for Contractors working on Government projects.

Definition of Wage Rates: Description of the four work classifications as defined by the Department of Labor.

Wage Rates Determination: Minimum wages a Contractor must pay to his employees. These are established by the Department of Labor under the authority of the Davis-Bacon and Related Acts.

Note: All of the above, from Pre-Bid Information through Conditions of the contract, are requirements of the [Federal Acquisition Regulation \(FAR\)](#), Title 48; Chapters 1 through 53 of the Code of Federal Regulations. Except for minor modifications for individual projects, wording is standard and cannot be changed. The DSC Contracting Division is responsible for most of this portion of the project manual. However, specifiers need to be thoroughly familiar with it in order to prepare compatible specifications.

5. Specifications:

This portion of the contract documents defines administrative requirements and quality requirements for products, materials, and workmanship. Specifications should follow the Construction Specifications Institute (CSI) format, a common format used throughout the construction industry. This format is covered in detail in the CSI Manual of Practice, available for purchase through CSI <http://www.csinet.org/>.

The specifications shall describe all product requirements, conditions, and qualifications to be used in the project. If brand name products are listed, model number(s), if applicable, and the phrase “or approved equal” must follow the brand name listing unless the CO has approved a sole source justification for the product prior to the generation of the specification. For those products not covered by a sole source justification, specifications shall include a general description of all salient physical, functional, and performance characteristics (see FAR 11.104) as determined by the designer.

The areas of work described by specifications are classified into 49 divisions. The titles are used only in the table of contents and do not appear in section headings or text. The division numbers and titles are:

| | |
|------------------------|--|
| Division 1 | General Requirements |
| Division 2 | Existing Conditions |
| Division 3 | Concrete |
| Division 4 | Masonry |
| Division 5 | Metals |
| Division 6 | Wood, Plastics, and Composites |
| Division 7 | Thermal and Moisture Protection |
| Division 8 | Openings |
| Division 9 | Finishes |
| Division 10 | Specialties |
| Division 11 | Equipment |
| Division 12 | Furnishings |
| Division 13 | Special Construction |
| Division 14 | Conveying Systems |
| Division 15 through 20 | Reserved |
| Division 21 | Fire Suppression |
| Division 22 | Plumbing |
| Division 23 | Heating, Ventilating, and Air Conditioning |
| Division 24 | Reserved |
| Division 25 | Integrated Automation |
| Division 26 | Electrical |
| Division 27 | Communications |
| Division 28 | Electronic safety and Security |
| Division 29, 30 | Reserved |
| Division 31 | Earthwork |
| Division 32 | Exterior Improvements |
| Division 33 | Utilities |
| Division 34 | Transportation |
| Division 35 | Waterway and Marine Construction |
| Division 36 through 39 | Reserved |
| Division 40 | Process Integration |
| Division 41 | Material Processing and Handling Equipment |
| Division 42 | Process Heating, Cooling, and Drying Equipment |
| Division 43 | Process Gas and Liquid Handling, Purification, and Storage Equipment |
| Division 44 | Pollution Control Equipment |
| Division 45 | Industry-Specific Manufacturing Equipment |
| Division 46 | Water and Wastewater Equipment |
| Division 47 | Reserved |
| Division 48 | Electrical Power Generation |
| Division 49 | Reserved |

B. DRAWINGS

Drawings show size and configuration and state what materials are used and where they are used. The cover sheet includes signed approval and revision boxes, drawing number, index of sheets and their contents, and the solicitation and project numbers.

The DSC requires the use of [Reference Manual 10A \(RM 10A\): Guideline for Preparation of Design and Construction Drawings](#) as a guide for drawings. This is a mandatory requirement.

C. AMENDMENTS (FORMERLY CALLED ADDENDA)

Amendments are used to revise, delete, or add to any of the bidding requirements during the bidding period. See Chapter 6.

D. MODIFICATIONS (FORMERLY CALLED CHANGE ORDERS)

Same as an amendment, except used during the contract period.

END

CHAPTER 2 - CONTRACT PRICE SCHEDULE (CPS)

The (CPS) for Negotiated Procurements (Contract Bid Schedule for Sealed - Bid Procurement) is prepared by the designer (A/E). The A/E (Architect/Engineer) firm prepares a Government estimate, based on the CPS. The estimate is organized with the CSI breakdown for each Contract Line Item (CLI) listed on the CPS. The "Cost Estimating Requirements Handbook" identifies the classes of construction cost estimates. The estimate is not part of the project manual, but is distributed to authorized Government personnel by the Contracting Services Branch.

PREPARATION OF THE CONTRACT PRICE SCHEDULE

1. Use of Lump-Sum and Unit Price

The simplest way of preparing a CPS (see sample) is lumping everything together in one price (lump-sum). This is fine if the drawings show the exact extent of work to be performed.

Consider the risk of change orders due to variable quantity or delay needs.

However, there are many times when the extent of work cannot be adequately shown. In such cases it is not fair to expect the Bidders to prepare accurate bids. If they do bid on the job, they will undoubtedly bid it high to cover anticipated variations in quantities and then probably request (and receive) extra compensation when the work is performed. So, if the item of work is measurable, and if it is expected to vary, then unit price is preferred. The Contractor can bid a fair price and will be paid for the actual amount of work performed. If the work is part of a defined system or structure, then lump sum is preferred.

The NPS Project Team may also have the need to make sure that different funding sources are considered when preparing the CPS.

2. Contract Line Items (CLI)

Each CLI has an item number listed in sequential order. All measurement and payment information for these items is included in specification Section 01 27 00, Definition of Contract Line Items (see sample). The item number, title, and unit of measure shown on the CPS must coincide with the description, measurement and payment language in specification Section 01 27 00.

List CLIs within the base bid, and within each option/additive. Number all CLIs (including option/additive items) in sequence from beginning to end. Under "Item" on the CPS, title option/additive items with letters to avoid confusion with numbers.

Determine quantities of unit price items carefully. Under the [Federal Acquisition Regulation \(FAR\)](#), when field-measured quantities vary more than 15 percent from those on the CPS, the contract price is subject to a negotiated adjustment.

3. Developing Contract Price Schedule Base with Options or Additives

When the procurement method is a negotiated procurement, options should be used. If the procurement method is sealed-bid, additives should be used.

The project's CPS must reflect a base contract comprised of CLIs that encompass the "core" of the approved project scope. The project team should target a base contract configuration reflecting an estimated cost of no more than 95% of the net construction funds available.

Options/Additives must be within the approved project scope as revised through succeeding "linear" approvals – PMIS (Project Management Information System), Scope and Cost Validation (S&CV) Report, Development Advisory Board (DAB) submission and Director's Approval Form (DAF).

Options/Additives within scope must be suitably justified. Suitable justification for options/additives can be found in the NPS Management Policies, Chapter 9. These would include: better life cycle costs, improved functionality, better constructability, enhanced sustainability features, enhanced resource protection. Other conditions potentially causing a need for options/additives include higher material costs or new policies/regulations issued after project initiation. The Project Manager must document what caused the need for each option/additive and document when need was identified.

The project package, including the CPS undergoes legal review just prior to solicitation.

The cumulative estimated dollar value for the base package plus options/additives may exceed the net available to a degree. However an option/additive package with a dollar value reflecting high percentage relative to the net available construction funding needs justification to pass legal review.

The legal concern stems from the concepts of bona fide need, incremental funding, and funding availability. The rationale for the number and dollar amount of the CPS options/additives will vary by project and economic climate. There is no threshold percentage. Each project must be independently evaluated by the team based on the best business case for that solicitation.

Review and revision of the CPS just before solicitation may impact the solicitation schedule because the legal review occurs so late in the process.

The DSC Workflows require a draft CPS as an A/E deliverable with the Design Development (DD) submission with versions, corrected as needed, with all subsequent Construction Document (CD) review submissions.

The Project Manager (PM) should work closely with the A/E to develop a suitable CPS for the DD submission and for the subsequent 100% Draft CD. Potentially, as the design evolves, the option/additive structure may change between these two submissions-significantly in some cases.

The PM and CO should resolve CPS concerns at the earliest point possible in the process.

- The CO & project team should review proposed CPS and options/additives upon receipt of the DD submission.

- If the CO & project team are comfortable with the CPS and options/additives, the team proceeds without further discussions.
- If the team identifies concerns but still believes there is justification to retain the CPS as is, then the Branch Chiefs in Design and Construction and Contracting Services will review.
- If the Branch Chiefs concur with the CPS and options/additives, then the CO immediately requests a preliminary Solicitor review of the CPS.

Following Solicitor review, the project team either revises the CPS per Solicitor's advice or proceeds toward solicitation without further changes.

When additives are used, determination of the low Bidder will be made by taking each Bidder's base bid and adding as many of the additives (taken in the sequence listed) as available funds will permit. Only entire additives will be awarded; partial additives will not be considered.

When options are used, the Government reserves the right to award any or no options at or after the time of award. The period of exercise of options is usually 180 days (time frame may vary) from the Notice to Proceed (NTP). Pricing is evaluated on the best value and available funding. Options may be awarded in any combination, order, or grouping. For more information, refer to FAR clause 52.217-5, Evaluation of Options, as prescribed in FAR Part 17.

The following sample CPS with options includes standard text. Delete inappropriate statements; otherwise do not modify the standard text.

END

SAMPLE CONTRACT PRICE SCHEDULE

SAMPLE CONTRACT PRICE SCHEDULE

CONTRACT PRICE SCHEDULE

PARK: Fire Island National Seashore
 DEVELOPED AREA: Sailors Haven Marina
 PARK - PMIS: FIIS - 058982
 PROJECT TITLE: Visitor Center and Support Services

Notice: Refer to FAR Clause 52.217-5, Evaluation of Options, as prescribed in FAR 17. Submit pricing for base price and all options. Failure to do so may render the proposal unacceptable. On lump sum items, provide total price only; on unit price items, provide the unit price and the extended amount. If no item exists for a portion of the work, include the costs in a related item. In case of error in extension prices, unit governs. In case of errors in summations, the total of the corrected amounts govern. Limit amounts to whole dollars. The Government reserves the right to award any or no options at or after the time of award. At the option of the Government, the period for exercise of options at the proposed prices shall extend 180 calendar days from the Notice to Proceed. Pricing will be evaluated based on best value to the Government. Options may be exercised in any combination, order, or grouping deemed in the judgement of the Contracting Officer to offer the best advantage (value) in goods and services for the dollar. Award will be made to one offeror in accordance with the Evaluation Factors for Award, Section M.

In addition to the offer that conforms to the solicitation documents, offerors are encouraged to submit alternate proposals that will result in cost savings to the Government. Such proposals shall clearly identify why the acceptance of the alternate proposal would be advantageous to the Government, see FAR Clause 52.215-1, Instructions to Offerors - Competitive Acquisition-Alternate II and DSC-36 Clause (Instructions for Submission of Offers and Other Information) in Section L of the Solicitation.

| CONTRACT LINE ITEM NO | BID ITEM CONTRACT LINE ITEM TITLE | QUANTITY | UNIT OF MEASURE | UNIT PRICE | = | TOTAL PRICE |
|--|--|----------|--------------------|------------|---|-------------|
| 1 | Sanitary Sewer | 400 | L.F. | \$0.00 | = | \$0.00 |
| 2 | Geothermal Wells | 3600 | L.F. | \$0.00 | = | \$0.00 |
| 3 | Site Work | 1 | Lump Sum | N/A | = | \$0.00 |
| 4 | Restroom Building | 1 | Lump Sum | N/A | = | \$0.00 |
| 5 | Visitor Center and Service Building | 1 | Lump Sum | N/A | = | \$0.00 |
| 6 | Trellis Structure | 1 | Lump Sum | N/A | = | \$0.00 |
| TOTAL BASE PRICE (Contract Line Items 1 through 6) ----- | | | | | | = \$0.00 |
| 7 | OPTION A - Existing Well with Hillside Tank | 1 | Lump Sum | N/A | = | \$0.00 |
| 8 | OPTION B - Relocate and Underground Electrical Transmission Line | 1 | Lump Sum | N/A | = | \$0.00 |
| 9 | OPTION C - Photovoltaic System | 1 | Lump Sum | N/A | = | \$0.00 |
| 10 | OPTION D - Building Commissioning | 1 | Lump Sum | N/A | = | \$0.00 |
| TOTAL OPTIONS (Items 7 through 10) ----- | | | | | | = \$0.00 |
| TOTAL PROPOSED PRICE (Items 1 through 10) ----- | | | | | | = \$0.00 |

All measurement and payment information (for the bid items listed above) is included in the project specifications Section 012700.)

END

SAMPLE SECTION 01 27 00 - DEFINITION OF CONTRACT LINE ITEMS

PART 1 GENERAL

1.1 DESCRIPTION

- A. The intent of this section is to explain, in general, what is and what is not included in a contract line item, and the limits or cut-off points where one item ends and another begins.
- B. If no contract line item exists for a portion of the work, include the costs in a related item.

1.2 CONTRACT LINE ITEM NO. 1: SANITARY SEWER

- A. This item consists of the installation of the sanitary sewer line including all related excavation, bedding, piping, fittings and backfill
- B. The septic tank, and all piping and fittings related to the constructed wetland are included in Contract Line Item No.3.
- C. Measurement shall be made by the linear foot from five feet outside of the building exterior wall to the connection with the existing manhole adjacent to State Route 7. Payment shall be made at the contract unit price per linear foot.

1.3 CONTRACT LINE ITEM NO. 2: GEOTHERMAL WELLS

- A. The work of this item consists of drilling and installing vertical grouted piping for the installation of a new geothermal well field.
- B. All horizontal piping connecting wells and routing to the Visitor Center is included in Contract Line Item No. 3.
- C. Measurement shall be the quantity of linear feet of well system installed with each linear foot defined as 1 linear foot of drilled well with 2 linear feet of grouted pipe installed. Payment shall be made at the contract unit price per linear square foot.

1.4 CONTRACT LINE ITEM NO. 3: SITE WORK

- A. The work of this item consists of all site work except as identified in other items. It includes all grading, paving, curbing, utilities to within five feet of the building footprint, planting, site amenities and entrance sign.
- B. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.5 CONTRACT LINE ITEM NO. 4: RESTROOM BUILDING

- A. The work of this item consists of the construction of the Restroom Building, including all related utility connections and building interior fire suppression system.
- B. Associated site paving and freestanding masonry wall are included in Contract Line Item No. 3.
- C. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.6 CONTRACT LINE ITEM NO. 5: VISITOR CENTER AND SERVICE BUILDING

- A. The work of this item consists of the construction of the Visitor Center and Service Building, including all related connections and building interior fire suppression system.
- B. Associated site paving, including the south exterior terrace, is included in Contract Line Item No. 3.
- C. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.7 CONTRACT LINE ITEM NO. 6: TRELIS STRUCTURE

- A. The work of this item consists of the construction of the trellis structure connecting the Restroom Building to the Visitor Center, including all related utility connections.
- B. Associated site paving and freestanding masonry wall are included in Contract Line Item No. 3.
- C. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.8 CONTRACT LINE ITEM NO. 7: OPTION A – EXISTING WELL WITH HILLSIDE TANK

- A. The work of this item consists of installing a new pump in the existing well, and the construction of a new elevated hillside tank including all related excavation, bedding, piping, fittings, backfill, tank support structure, yard hydrants and related road repairs along its pipe routing for connection to the Visitor Center.
- B. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.9 CONTRACT LINE ITEM NO. 8: OPTION B – RELOCATE EXISTING ELECTRICAL

- A. The work of this item consists of moving the overhead electrical transmission lines across the north end of the site including excavation, bedding, conduit, fittings and backfill.
- B. The work of this item includes all costs for Contractor's subcontracting with Allegheny Power Company for their removal of abandoned poles, and their installation of routed transmission lines in Contractor-installed conduit and the installation of a new transformer for building power.
- C. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.10 CONTRACT LINE ITEM NO. 9: OPTION C – PHOTOVOLTAIC SYSTEM

- A. The work of this item consists of the installation of the photovoltaic system on the Restroom Building including all related appurtenances and connections.
- B. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

1.11 CONTRACT LINE ITEM NO. 10: OPTION D – BUILDING COMMISSIONING

- A. The work of this item consists of furnishing building commissioning as specified in Division 01 Specifications, Total Building Commissioning.
- B. No separate measurement of quantities shall be made. Payment shall be made at the contract lump sum price.

PART 2 PRODUCTS NOT USED.

PART 3 EXECUTION NOT USED.

END OF SECTION

CHAPTER 5 - LANGUAGE AND STYLE

GOVERNMENT CONTRACT TERMINOLOGY

In a Government contract, the parties to the contract are the Contracting Officer and the Contractor. The Government representative is always called the Contracting Officer. No reference is made to the Contracting Officer's Representative, Project Supervisor, Architect, Engineer, or Owner. The Government makes payments and establishes rules; the Contracting Officer acts in behalf of the Government and approves actions taken by the Contractor.

Do not direct specifications to Subcontractors; address all statements to the Contractor.

Conditions of a Government contract are General Provisions and Supplementary Provisions and are not called anything else, such as General Conditions. or Special Conditions. It is usually not necessary to refer to the General Provisions, since they apply equally to all work performed under the contract.

1. INSTRUCTIONS TO CONTRACTOR

If possible, tell the Contractor what to do directly, using the imperative mood. Imperative language always indicates that the Contractor is responsible for the action specified.

Examples:

Lay pipe on 3 inches of bedding.
Paint metal with red enamel.
Protect materials from damage.

If necessary, use "shall" to indicate that the Contractor is responsible.

All joints shall be filled with sealant.
Contractor shall coordinate electrical work with power company.

Use "will" to tell the Contractor that someone else is responsible for an action.

Power company will install primary cable
Government will supply stone for retaining wall
Contracting Officer will lay out work.
Payment will be made at the contract unit price.

"Should" means the Contractor is advised to take an action, but may choose not to. Use "should" only when the action is not mandatory.

Bidders should visit the site to determine the extent of the work.

Do not use words such as “must” and “are to” that do not indicate who takes action. In the following sentences, no legal responsibility is assigned.

***Soil must be compacted before foundations are placed
All surfaces are to be clean at time of final inspection.***

2. WRITING STYLE

Specifications should be as concise as possible, without repeating information given on the drawings, in the General Provisions, or in other specifications sections. Make sure the sections are logically arranged, using CSI standard outline form and chronological sequence. Use short paragraphs and simple sentences, eliminating redundant words. Streamline lists of materials and reference standards to increase readability. The finished project manual should be as uniform as possible in appearance, language, and format.

Wording should be consistent on the drawings and in the specifications. A “path” on the drawings should not become a “trail” in one specification section and a “walk” in another.

Use words that are as specific as possible and that have a common standard meaning. Avoid the following phrases.

As indicated on drawings.

As shown on drawing.

As specified in the specification.

Simply say “as shown” for the drawings or “as specified” for the specifications.

In accordance with the drawings and specifications.

Unnecessary phrase that applies to all work.

Except as otherwise specified.

This forces the Contractor to search for the “otherwise” and implies that the designer does not know what is in the specifications. Try to determine what the exceptions are, and tell the Contractor by cross reference where they occur.

The Contractor shall furnish all labor, materials, and equipment to complete...

The General Provisions and Division 1 are part of the work of this section.

Some specification writers use these phrases to begin every section, but that practice is considered redundant at DSC because the General Provisions define “work”. Phrases such as these should never be used in some sections but not others, because that implies that the sections not using them are not subject to the same requirements.

Indefinite words and phrases such as the following have no legal meaning. Try to define exactly what satisfactory or workmanlike work is. Avoid “and/or” and “etc.”

reasonably

satisfactory

generally

workmanlike

properly

standard practice

Be very careful using the following phrases:

As approved by the Contracting Officer.

As directed by the Contracting Officer.

All work is subject to the approval or direction of the Contracting Officer unless clearly stated otherwise. Limit these phrases to situations requiring the Contracting Officer's special attention.

In writing.

Limit this phrase to situations where verbal authority is insufficient.

At the Contractor's expense.

This implies that other work is not at his expense. Use this phrase, or “at no additional expense. to the Government,” only to clarify work such as testing that could be the responsibility of either the Contractor or Government.

3. GENERAL VOCABULARY REMINDERS

Any – The word “any” means a limited number selected at the discretion of the reader. “Repair any cracks” can mean the cracks selected by the Contractor, while “repair cracks” definitely means every crack.

As Needed – Stated “as needed to...” is superior to “as required by...” in cases where a statement of desired performance follows.

Example: “...as required to make watertight” implies that there exists somewhere else in the documents a prescriptive statement of what is needed to cause watertightness. “...as needed to make watertight” states that the Contractor is to take whatever measures are needed (at his initiative and expense) to make it watertight.

As Per – Mock Latin for “according to” or “as stated in”. Avoid the use of this phrase.

As Required – Phrase implies that the requirement follows. It must always be written “**as required by...**”, “**as required in...**”, “**as required to...**”, or similarly followed by a preposition and the statement of the requirement. Notes on the drawings frequently violate this principle.

Example: “Remove window and close up opening as required” is not only meaningless, but may even cause a Contractor to take the position that he does not have to close up the opening because no requirement follows. (He is reading “as required” as “if required” in this case.)

Clean – How clean? Broom clean? Vacuumed? Wiped? Polished?

Either and Both – Use of the word “either” implies a choice between two options. Avoid the use of “either” such as in “glass sidelights on either side of the door,” when the intent is to have “glass sidelights on both sides of the door.”

Hereinbefore – A needless word. “As stated before” or similar phrases can eliminate it in most cases. **Hereinafter, Hereinunder, and Heretofore** are also to be avoided.

Insure, Assure, and Ensure – To “insure” is to issue or procure an insurance policy. “Assure” is to give confidence to or convince a person of something. “Ensure” is to make certain in a way that eliminates the possibility of error.

Level – Parallel to the horizon. If you mean flatness, use the word “**plane**”.

Proof – A dangerous suffix in today’s climate of consumer protection. The designer, by stating and supposedly enforcing the requirement, warrants protection. It is better to say “**fire resistant**” or “**Tire resisting**” than “**fireproof**”.

Replace and Furnish New – “Replace” can mean reinstallation of removed material as well as furnishing and installing new materials.

4. ADDITIONAL INFORMATION

Abbreviations: On contract bid schedules, common abbreviations such as S.F., C.Y., and L.F. are used. Elsewhere in the specifications, limit abbreviations to those with clearly only one meaning, such as Hz, rpm, or psi.

Symbols: Symbols are subject to misinterpretation and may be inadvertently eradicated in typing or reproduction. Write out feet, inches, percent, and pounds. Number may be written No., but not #.

Spelling: Spelling used by the DSC is based upon Webster's New Collegiate Dictionary.

Capitalization: Capitalize Contractor, Bidder, Government, and Contracting Officer.

General: Do not underline or capitalize for the purpose of emphasis. Terminate each section in the specifications portion of the project manual with “END,” centered on the page two lines below the last line of text.

Cross Referencing: Reference other sections as needed but not articles, paragraphs, or page numbers that may change with subsequent revisions of the specifications.

REMEMBER: CONSISTENCY IS THE KEY

CHAPTER 6 – AMENDMENTS

Amendments are issued during the bidding period to clarify, revise, add to, or delete written or graphic information in the original bidding documents or in previous amendments.

Changes may be prepared in a rough draft form by teams (final form by A/E's) following the sample amendment format at the end of this chapter. Use action words such as **“Delete,” “Substitute,” “Change,” and “Add”** List Project Manual items first, in the order shown in the Table of Contents, then list drawing items in sheet number order.

If a pre-bid site meeting is held, minutes must be issued to all plan holders as an attachment to an amendment. Since oral interpretations are not binding, and all Bidders must have access to the same information, the minutes must be an accurate written record of the meeting for all potential Bidders (attendees and nonattendees). Minutes are for information only and do not in themselves change the terms of the solicitation or the contract documents: A change to the contract documents resulting from the meeting must also be specifically addressed by an amendment item. Pre-bid site meeting minutes should be prepared by the teams in final form.

Changes may be initiated by the COR (Contracting Officer's Representative), A/E firm, park; or others, but are always submitted to the DSC Contracting Services Division through the COR responsible for the project.

The DSC Contracting Services Division prints and distributes amendments as needed and posts on the FedBizOpps (Federal Business Opportunities) internet site, <https://www.fbo.gov/>.

SAMPLE 1

| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | | 1. CONTRACT ID CODE N/A | PAGE OF PAGES 1 1 |
|--|---|--|---|---|-------------------------------|
| 2. AMENDMENT/MODIFICATION NO. 1 | 3. EFFECTIVE DATE Jun 1, 1991 | 4. REQUISITION/PURCHASE REQ. NO. N/A | 5. PROJECT NO. <i>(if applicable)</i> ANPA-111 | | |
| 6. ISSUED BY National Park Service Denver Service Center | | 7. ADMINISTERED BY <i>(if other than item 6)</i> | | | |
| 8. NAME AND ADDRESS OF CONTRACTOR <i>(No. street, county, State and ZIP Code)</i> | | | | <input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. 1443IB200093901 <input checked="" type="checkbox"/> 9B. DATED <i>(SEE ITEM 7)</i> May 15, 1991 <input type="checkbox"/> 10A. MODIFICATION OF CONTRACT/ORDER NO. <input type="checkbox"/> 10B. DATED <i>(SEE ITEM 13)</i> | |
| CODE | | FACILITY CODE | | | |
| 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS | | | | | |
| <input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. | | | | | |
| 12. ACCOUNTING AND APPROPRIATION DATA <i>(if required)</i> N/A | | | | | |
| 13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14. | | | | | |
| CHECK ONE | <input type="checkbox"/> A. THIS CHANGE ORDER IS ISSUED PURSUANT TO _____ <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> D. OTHER <i>(Specify type of modification and authority)</i> | | | | |
| E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office. | | | | | |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION <i>(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)</i> | | | | | |
| SEE ATTACHMENTS: Schedule of Changes (3 pages) Pre-Bid Site Meeting Notes (7 pages) Revised Section 012700 (2 pages) Section 081316 (4 pages) Sketch SK-1 (1 sheet) | | | | | |
| END | | | | | |
| Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect. | | | | | |
| 15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i> | | | 16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i> | | |
| 15B. CONTRACTOR/OFFEROR | | | 15C. DATE SIGNED | | 16B. UNITED STATES OF AMERICA |
| <i>(Signature of person authorized to sign)</i> | | | <i>(Signature of Contracting Officer)</i> | | 16C. DATE SIGNED |

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Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA FAR (48 CFR) 53.243

SAMPLE 2

ANY PARK NATIONAL MONUMENT
PARK GENERAL

14431B200093901
MAINTENANCE BUILDING
ANPA-111

SCHEDULE OF CHANGES
FOR AMENDMENT NO. 1

TABLE OF CONTENTS

Division 8 - Openings

- 1. ADD "08 13 16 Sectional Overhead Doors. 4".

PRE-BID INFORMATION

Pre-bid Conference Minutes

- 2. ADD the attached minutes of the pre-bid conference. This record is for information only. Terms of the Solicitation and Specifications remain unchanged as result of the pre-bid meeting.

CONDITIONS OF THE CONTRACT

Supplementary Provisions

- 3. Clause 17
CHANGE the time for completion of work from "225 calendar days" to "315 calendar days."

- 4. Articles 1.3, 1.4, and 1.5 DELETE in entirety.

Section 01 27 00

- 5. DELETE in entirety, and SUBSTITUTE attached Revised Section 01 27 00.

Section 01 50 00

- 6. Article 3.2
DELETE in entirety, and SUBSTITUTE

3.2 HEATING AND VENTILATING: Provide and maintain adequate approved facilities, as required for safety and construction requirements, during the progress of the work. Provide ample clearance around stoves and heaters and all chimney and vent connections to prevent ignition of combustible material.

- 7. Article.3.4 DELETE in entirety.

Section 08 13 16

- 8. ADD attached new section 08 13 16

Section 08 36 00

9. CHANGE "R=6 minimum" to "R=12 minimum".

CONSTRUCTION DRAWINGS

Sheet 2

10. DELETE.all notes and symbols concerning flagstone entry wall.

Sheet 5

11. DELETE in entirety.

Sheet 7

12. Detail B

DELETE entire detail.

Sheet 16

13. Room Finish Schedule, Floor Finish, Rooms 01, 02, 03, and 06. CHANGE floor finish to "TROWELED".

Sheet 19

14. Detail H

DELETE Detail, and SUBSTITUTE new detail as shown on attached Sketch SK-1.

END

SAMPLE 3

Vecellio and Grogan, Inc.
P.O. Box V
Beckley, WV 25802

Government Representatives:

National Park Service - Denver Service Center

Rod Keiscome, Contract Administrator
Nellie Lance, Team Captain
Pete Tomka, Section Chief, Construction Branch
Greg Kazel, Project Supervisor
Lisa Turecek, Project Inspector

The purpose of the pre-bid meeting was to familiarize prospective Bidders with the site and locations of various elements of work included in the, project. The contract documents consist of 92 sheets of drawings and one volume of specifications. The project consists of one lump sum bid plus three prioritized additives. The estimated cost range is between 1.0 and 2.5 million dollars. The bid opening will occur on May 15, 1991 with the award of the contract occurring shortly thereafter.

Rod Keiscome, National Park Service, Denver Service Center - Contract Administrator, convened the pre-bid site meeting promptly at 2:00 p.m. in the Park Headquarters conference room, Denver, Colorado. A brief question and answer period was followed by a visit to the project site. Prior to the start of the meeting, all parties in attendance signed the sign-in sheet as a record of attendance.

Mr. Keiscome read the description of work listed on the pre-solicitation notice which described the physical characteristics of the work involved on the Maintenance Building project (IFB ANPA-111).

The three reports (Historic Flow Data, Geotechnical Report and NPS Explosives Use Policy) shown under Section 01 11 00 will be issued to all parties listed on the Bidders mailing list.

Mr. Keiscome advised that any remarks or explanations given at the pre-bid site meeting by Government personnel shall not qualify the terms of the solicitation. In addition, the terms of the solicitation and specifications remain unchanged unless specifically changed by subsequent amendment.

Mr. Keiscome then advised all parties that he represented the Contracting Officer in Denver and then asked each of the Government representatives to introduce themselves to the group. Following these introductions, Mr. Keiscome advised that Ms. Nellie Lance would be the spokesperson for the Government. All technical questions should be directed to her and no one else. Ms. Lance will repeat the question, so that it can be heard by everyone. She will either answer the question directly or refer to the section of the contract documents that answers the questions.

If the question needs to be answered by another member of the Government team, Ms. Lance will defer the question to that individual for direct response. If any question cannot be answered at the pre-bid meeting, an answer will be given in a subsequent amendment which will also include the minutes of this meeting.

During the on-site walk through Mr. Keiscome requested that all parties stay together so that everyone will receive the same information. Three (3) areas were identified as stopping points due to limited parking on the access road. These three specific points are: 1. near the entrance of the Access Road adjacent to "Red Dog" Road; 2. Trailhead Parking Area; and 3. the commercial Parking Area adjacent to the river.

Finally, Mr. Keiscome reemphasized that Ms. Lance would be the Government's spokesperson and again underscored that any answers given by the Government orally today shall not qualify the terms of the solicitation unless addressed specifically in a subsequent amendment. Administrative questions were addressed to Mr. Keiscome prior to him turning the meeting over to Ms. Lance for the technical questions and discussions.

The following questions were raised:

1. Under which labor classification do the various aspects of this project fall – Building, Heavy or Highway?

Answer: Refer to the Definition of Wage Rates following the labor standards provisions. Definitions are given for all four major construction types However, only heavy and highway are required on this project.

2. What is to be turned in with the bid?

Answer: Refer to bidding document submittal instructions in the specifications.

3. Has an amendment been issued yet?

Answer: No.

4. How stringently will the NPS enforce the requirements for protecting the public that enters the site from the river from construction hazards?

Answer: The access road from the town of Cunard will be closed to the public during construction. However, the access road must be passable by government or emergency vehicles as stated in the specification section 01 11 00 paragraph 1.3.C. The project site will also be accessible to the public from the river and appropriate precautions will be required. See amendment 2 for clarification.

5. On sheet four (4) of the drawings, a reference is made to the removal of wet or unsuitable material. Will this be compensated for on a unit price basis?

Answer: It was noted that there may be no bid item for over-excavation. If the Contracting Officer approves excavation below the design elevation because of unsuitable foundation material, an equitable adjustment will be made. See amendment 2 for clarification.

6. Will there be construction later at or on the on-site spoil area?

Answer: Highly unlikely.

7. Does the Contractor have 180 working days or until April 1, 1992 as stated in specification section 01 11 00?

Answer: See amendment 2.

8. Will the Contractor be allowed a winter shutdown?

Answer: Yes. This is included in the construction completion period. See clause 60 in the general provisions section of the specification for clarification.

9. What are the requirements for off-site and on-site disposal?

Answer: Trash, refuse and debris of this nature will be required to be disposed of at the landfill off-site which is approximately 1.5 miles from the town of Cunard. Unsuitable earthen backfill material, unusable rocks and boulders and material of this nature may be disposed of on-site at the designated spoil site. See section 01 50 00 in the specifications for clarification.

10. What is the time frame for award of the contract after the bid opening?

Answer: Generally 30 days.

11. What happens to the culvert pipe designated on the drawings "pipe to be salvaged"?

Answer: The salvaged material will be removed from the project site by the park. The Contracting Officer will indicate an appropriate location such as the Contractor's materials storage area for stockpiling of the salvaged culverts. See Section 32 42 13 Article 3.4 for clarification.

12. Are there only ten (10) survey monuments as discussed in section 017340?

Answer: No, the wording reads there will be at least ten (10) monuments and as shown on sheet R-3 there are more than ten (10).

13. While the riprap specifications imply that native materials can be used, the hardness and durability criteria will probably prevent most of the native materials from qualifying. Will the native sandstone be allowed for use as riprap?

Answer: The Contracting Officer will determine the suitability of onsite materials to be used as riprap as described in Section 31 37 00 article 1.3 in the specifications. Some material

may not be suitable due to local weathering variations. Refer to Article 2.1 for imported rock.

14. Will the Government require an independent testing laboratory (quality control) or will a Contractor employed, state certified technician be adequate?

Answer: An independent testing laboratory will be required. Laboratory shall have technician certified to state standards. See amendment 2.

15. What is the weight and dimensions of the Government furnished sign that the documents require the Contractor to install? Is the hardware for this sign furnished by the Government?

Answer: The weight of the sign is unknown, however, the dimensions of the sign can be found on the drawings. The Contractor is required to supply the anchor bolts with nuts and washers. The sign will require six (6) or seven (7) laborers to unload from the delivery truck. If equipment is used for unloading, special care must be taken to prevent damage to the sign. See amendment: 2.

16. Regarding temporary services, will overhead installation of electrical power be allowed to the Government field offices?

Answer: Yes. However, the Contractor must comply with the power company regulations.

17. Will overhead installation of telephone lines be allowed? Will stringing the lines from tree to tree be allowed or will temporary poles be required?

Answer: Overhead installation on trees will be allowed. The Government does not require temporary poles but requires that the Contractor prevent damage to trees in overhead power installation. Also, the Contractor is required to comply with the phone company regulations.

18. Will burning of construction debris be allowed? What is the concern with burning even if a permit is required?

Answer: The answer was no at the pre-bid site meeting. However, this has changed. See amendment 2.

19. Can tree stumps or other such debris be taken to the local landfill?

Answer: It is up to the Contractor to coordinate this with the landfill as stated in Section 015000.

20. It is difficult to take off cut and fill quantities from the half-size drawings issued. Is it possible to obtain a full-size set of cross sections?

Answer: Full-size prints of the cross sections will be sent to everyone on the Bidders mailing list as a part of amendment 2.

21. A request was made for additional sets of drawings and specifications.

Answer: All requests for drawings and specifications must be made through Denver Service Center. (Not to exceed three (3) sets. See pre-solicitation notice.)

22. What is the fax number for bid modifications?

Answer: The fax number is (303) 987-6645. However, item 13 in the pre-solicitation notice is unchanged.

At this point, the meeting adjourned to the project site. The first stop was at approximate station 4+35. The town of Cunard, the direction to the landfill and the state highway were pointed out.

23. Is station 4+35 the closure point for the access road?

Answer: Yes, if Additive C is awarded. If Additive C is not awarded, Station 25+00 is the closure point.

The meeting continued to the trailhead parking area which is also used as a bus turnaround for the river outfitters. It was pointed out that the car-bodies indicated on the drawings had been relocated since the drawings had been issued. Amendment 2 will clarify these relocations and requirements.

24. Is only the concrete used in erosion control structures required to be colored or is all the concrete used in the project to be colored?

Answer: Only the erosion control material is to be colored. Amendment 2 will delete the reference to submittal of a sample for color in section 31 05 19.

25. Are car bodies, rubbish, trash and debris over the slope from the parking area, down in the drainage required to be removed?

Answer: As shown on the drawings, only those items within the limits of construction require removal.

The meeting continued to the river access and parking area. The commercial and private boaters launch and parking areas, the fishing access road, the on-site spoil area, the vault toilet locations, retaining wall locations, property line and private property locations, launching structures, and location of new road between station 100+00 and the fishing access road were all pointed out. Historic foundations indicated on the drawings were also pointed out and it was noted that these were not to be disturbed by construction.

26. Please explain the award process and the determination of the low Bidder.

Answer: The lowest bid on the base bid will determine the low Bidder provided that the prospective Bidder is responsive to the terms of the solicitation and is determined to be a responsible Contractor. Determination of the low Bidder will be made by taking each Bidder's base bid and adding as many of the additives (taken in the sequence listed) as

available funds will permit. Only entire additives will be awarded; partial additives will not be considered.

27. Regarding the selective thinning of trees, can the trees be cut off at ground level or do all the roots have to come out?

Answer: See Amendment 2.

28. An inquiry was made regarding the significance of the flagging around various trees.

Answer: For bidding purposes, disregard all flagging seen on trees.

29. If all suitable fill material on site is used and fill is still needed, will the Government pay for import?

Answer: This is a lump sum contract and the Contractor is required to determine cut and fill quantities from the drawings and bid accordingly.

30. What happens if there is a slide during excavation due to Government designed grades and slopes?

Answer: If slide is due to unstable soil, this may be considered a differing site condition. Contractor must conduct and protect the work area according to the specifications to minimize the Contractor's risk.

31. Is the on-site spoil area available for use even if Additive B is not awarded?

Answer: Yes.

Concerns were reiterated regarding the possibility of obtaining full-size cross sections. Questions were asked regarding the anticipated date of issuance of the amendment containing the meeting minutes. This was not determined at the pre-bid meeting but is generally two (2) or three (3) weeks. Ms. Lance and Mr. Keiscome thanked the participants for their time and the prebid meeting was concluded at 4:45 p.m.

SAMPLE 4

SECTION 08 13 16

SECTIONAL OVERHEAD DOORS

PART I: GENERAL

1.1 DESCRIPTION: The work of this section consists of furnishing and installing sectional overhead doors.

1.2 QUALITY ASSURANCE: Provide each sectional overhead door as a complete unit produced by the same manufacturer, including frames, sections, brackets, guides, tracks, counterbalance mechanisms, hardware, operators and installation accessories, to suit openings and head room allowable.

1.3 SUBMITTALS: As specified in Section 01 33 23.

A. Shop Drawings: Show elevation and dimensions of each door type, including rough in dimensions. Furnish complete data on overhead door operator.

B. Manufacturer's catalog cuts and installation recommendations.

1.4 PRODUCT HANDLING:

A. Delivery: Ship doors and frames in cartons or crates.

B. Storage: Store doors and frames, where directed, on raised supports to prevent rust and damage.

PART 2: PRODUCTS

2.1 GENERAL: Specified doors are manufactured by Thermacore Industrial/ Commerical Door, 3200 Reach Road, Williamsport, Pennsylvania 17701, (800) 233-8992, or approved equal.

A. Overhead door operators to be "job related" to match door size, weight and standard operating frequency. The doors shall also be provided with chain hoist assembly as a means of manual operation.

B. Steel Section: Construct door sections from galvanized corrosion resistant embossed sheet steel no less than 0.016 inch thickness. Door sections to be manufactured by a continuous foamed-in-place polyurethane lamination process resulting in a homogenous sandwich of even-textured polyurethane insulation (density 3.24 lbs/cu ft) of metal/foam/metal construction to form a section 1-5/8 inches thick. Sections are to be roll formed incorporating a thermal break preventing heat or cold conductivity. Joints between sections are to be designed with round horizontal links to eliminate accumulated water from flowing down the inside of the door when opened. Sections to be quipped with 16-gauge steel end caps for bracket and hinge attachment.

1. Finish: Embossed steel panels shall have a baked-on polyester, brown in color.

C. Weather Seals: Thermoplastic rubber tube seals are to be pitted inside every joint between the sections to prevent air infiltration. Provide EPDM rubber sealing strip at the top section of the door to provide a firm seal against the header when the door is in the closed position. Provide a high-density polyethylene jamb seal and a standard double blade bottom weather seal.

D. Glazing: Glazing material shall be 1/8-inch double thermal acrylic, standard size glazing (25 inches by 12 inches), two windows per door. Windows to be spaced horizontally as per manufacturer's recommendations. Mounting height to be approximately 5 feet at center of door coordinating with door sections. Seal panes to door section by an EPDM rubber gasket attached with hot glue to provide weather tight sealing.

E. Counterbalancing System: Shall consist of the following:

1. Cable Drums: Shall be made of aluminum and have dual locking screws. Dimensions and types as per manufacturer's recommendations.

2. Springs: T-type, inner diameter of 3-3/4 inches, M-type, inner diameter of 6 inches. Both types shall be heat treated, oil tempered and made from 0fMB wire with diameter between 1/4 and 1/2 inch. Provide standard 25,000 cycle springs. Spring retainers shall be made of aluminum and shall be adjustable.

3. Wind Sleeve: Shall be made of aluminum and shall be adjustable.

4. Center Bearing: Shall be an adjustable component.

5. Shafts: Shall be solid shafts with a continuous 1/4-inch keyway. Size of shaft diameter as required.

6. Cable: Size as required. Safety factor shall be 8/1.

F. Track System: Vertical 2 inch tracks shall be 0.079 inch thick (14-gauge) ; horizontal 2 inch tracks shall be 0.098 inch thick (13-gauge). Track channel shall be faced with pvc. Size tracks and install as per manufacturer's recommendations.

G. Track Channel: As per manufacturer's recommendation. Optional equivalent spacing shall be 2 x 6 wood.

H. Hardware: All hardware shall be rust-resistant with zincplated fasteners. Fully adjustable roller brackets are to be attached to each end cap to provide an easy adjustment of the door to the jamb for proper seal. The 2-inch rollers shall contain ten steel ball bearings in case-hardened steel races. The standard lift handle for outside/inside of door shall be constructed of pvc. Cable drums shall be of cast aluminum and grooved to receive the proper diameter of cable for the weight of the door.

I. Accessories:

1. Locks: Exterior cylindrical lock, Schlage brand to match type in use at park.
2. Step Handles: Provide a recessed step plate on the outside of the door with attaching lift handle on the inside.
3. Weatherstripping: Perimeter weatherstripping shall be commercial perimeter weather seal, No. WD-210, as manufactured by National Door Supply Co., Inc., 1700 Hickory Dr., Ft. Worth, Texas 76117, (817) 831-0701, or approved equal.

J. Electric Operators: Shall be Model SFL, 1/2 hp, 230/460 V, 3 phase, a heavy-duty operator designed to operate standard torsion spring vehicular doors up to 1,000 lbs with a 1/2 hp motor, as manufactured by Overhead Door Corp., 6750 LHJ Freeway, Dallas, Texas 75380-9046, or approved equal.

1. Controls: Shall be standard control, a 24V circuit three button "open-close-stop" wall mounted push-button station.
2. The door operator shall be center-mounted, totally enclosed and_ instant reversing with automatic reset thermal overload. The reversing contactor shall be heavy duty electrically and mechanically interlocked. Limit switches shall be adjustable rotary type synchronized with door when operator is disconnected. The clutch shall be adjustable disc friction type and the brake shall be solenoid actuated drum type.
3. Wiring for electric door operators provided in accordance with Division 26.

PART 3: EXECUTION

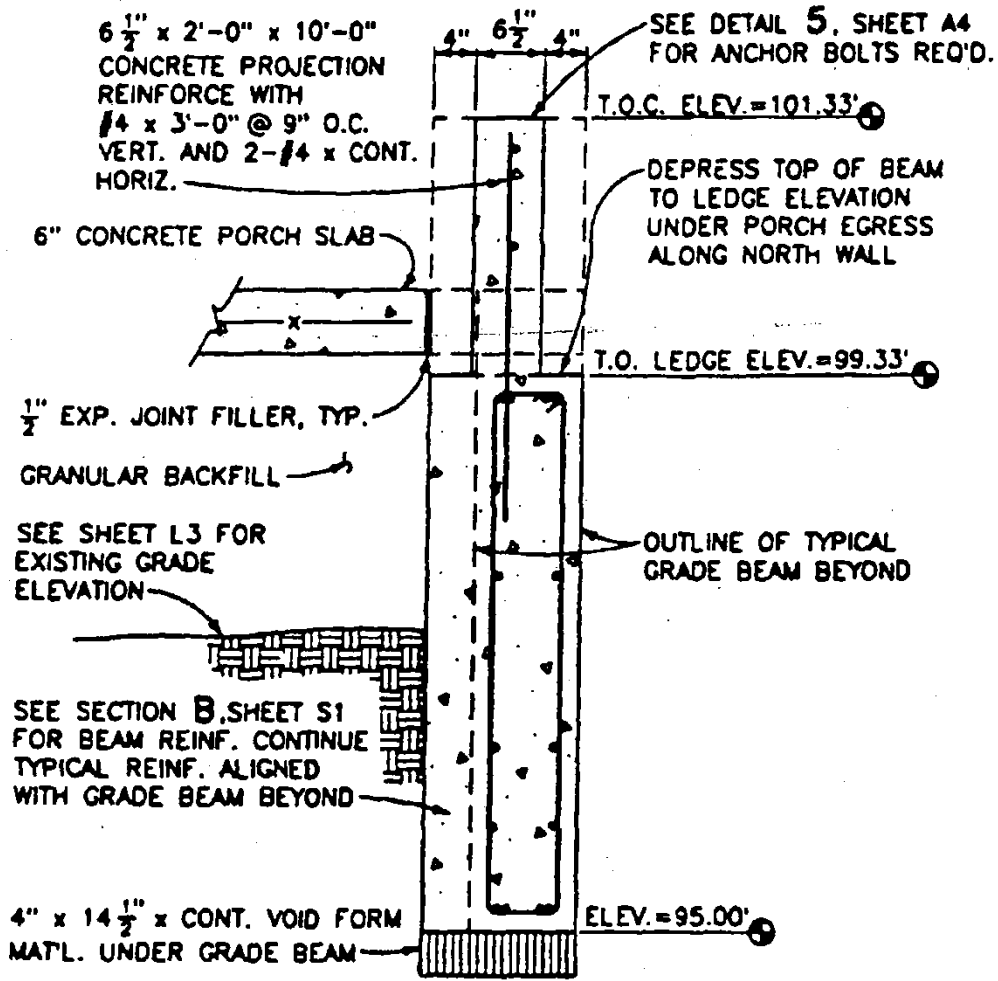
3.1 INSTALLATION:

A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, inserts, hangers, and equipment supports in accordance with final shop drawings, manufacturer's instructions and as herein specified. Fasten vertical track assembly to framing at not less than 24 inches on center. Hang horizontal track from structural overhead framing with angle or channel hangars, welded and bolt fastened' in place. Provide sway bracing, diagonal bracing, and. reinforcing as required for rigid installation of track and dooroperating equipment.

H. Upon completion of installation, including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

END

SAMPLE 5



GRADE BEAM AT PORCH SUPPORT (H) S1S2

SK - 1