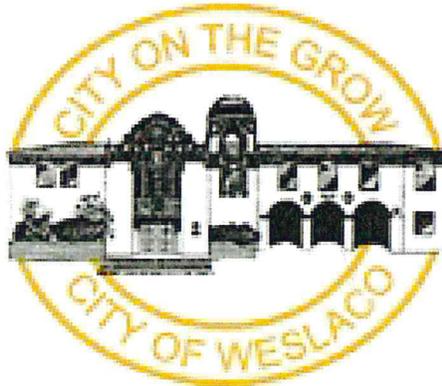


BOYS AND GIRLS CLUB
CITY OF WESLACO – PLANNING AND CODE ENFORCEMENT

ALT NO. 1

CIVIL MANUAL
FOR
Boys and Girls Club
FOR THE
CITY OF WESLACO



2013

City of Weslaco.
255 S. Kansas Ave.
Weslaco, Texas 78596
(956) 447-3401



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BOYS AND GIRLS CLUB
CITY OF WESLACO – PLANNING AND CODE ENFORCEMENT

TITLE SHEET

Document 00001

TITLE SHEET
BOYS AND GIRLS CLUB
FOR
CITY OF WESLACO

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CIVIL PLANS





Signature

4-5-13

Date

**SHEET C-01 AND RELATED
SPECIFICATIONS**

Note: Civil Plans and specifications are an alternate bid and supplement plans, specifications and general conditions prepared by Alcocer Garcia Associates, Inc.

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Document 00003

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Boys and Girls Club

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CITY OF WESLACO
BOYS AND GIRLS CLUB

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Section 01110

SUMMARY OF WORK

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Summary of the Work including work by Owner, Owner furnished products, Work sequence, future Work, Contractor use of Premises, and Owner occupancy.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work of the contract is for the construction of City of Weslaco's Boys and Girls Club.

1.03 CASH ALLOWANCES

- A. Include the Cash Allowances shown in the General Conditions prepared by Alcocer Garcia Associates.

1.04 ALTERNATES

- A. Include this Alternate and as shown in the Proposal.

1.05 OWNER FURNISHED PRODUCTS

- A. The Owner will furnish no products.

1.06 OWNER FURNISHED UTILITIES

- A. The Owner will furnish no utilities.

1.07 WORK SEQUENCE

- A. Work sequence will be the responsibility of the Contractor using good construction practices.
- B. Coordination of the Work: Refer to Section 01312 – Coordination and Meetings.

1.08 CONTRACTOR USE OF PREMISES

- A. Comply with procedures for access to the site and Contractor's use of rights-of-way as specified in Section 01145 - Use of Premises.
- B. Construction Operations: Limited to Owner's rights-of-way provided by Owner.
- C. Utility Outages and Shutdown: Provide notification to the Owner and private utility companies (when applicable) a minimum of 48 hours, excluding weekends and holidays, in advance of required utility shutdown. Coordinate all work as required.

1.09 WARRANTY

- A. Comply with warranty requirements in accordance with Document 00700 - General Conditions.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

01110-1
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Section 01145

USE OF PREMISES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Section includes general use of the site including properties inside and outside of rights-of-way, work affecting road, ramps, streets and driveways and notification to adjacent occupants.

1.02 RIGHTS-OF-WAY

- A. Confine access and operations and storage areas to rights-of-way provided by Owner; trespassing on abutting lands or other lands in the area is not allowed.
- B. Contractor may make arrangements, at Contractor's cost, for temporary use of private properties, in which case Contractor and Contractor's surety shall indemnify and hold harmless the Owner against claims or demands arising from such use of properties outside of rights-of-way.
- C. Restrict total length which materials may be distributed along the route of the construction at any one time to 1,000 linear feet unless otherwise approved in writing by Resident Project Representative.

1.03 PROPERTIES OUTSIDE OF RIGHTS-OF-WAY

- A. Altering the condition of properties adjacent to and along rights-of-way will not be permitted.
- B. Means, methods, techniques, sequences, or procedures which will result in damage to properties or improvements in the vicinity outside of rights-of-way will not be permitted.
- C. Any damage to properties outside of rights-of-ways shall be repaired or replaced to the satisfaction of the Resident Project Representative and at no cost to the Owner.

1.04 USE OF SITE

- A. Obtain approvals of governing authorities prior to impeding or closing public roads or streets. Do not close more than two consecutive intersections at one time.
- B. Notify Resident Project Representative at least 48 hours prior to closing a street for a street crossing. Permission for street closures is required in advance and is the responsibility of the Contractor.
- C. Maintain access for emergency vehicles including access to fire hydrants.
- D. Avoid obstructing drainage ditches or inlets; when obstruction is unavoidable due to requirements of the Work, provide grading and temporary drainage structures to maintain unimpeded flow.
- E. Locate and protect private lawn sprinkler systems which may exist on rights-of-ways within the site. Repair or replace damaged systems to condition equal to or better than that existing at start of Work at no separate payment.

- F. Perform daily clean-up of dirt outside the construction zone, and debris, scrap materials, and other disposable items. Keep streets, driveways, and sidewalks clean of dirt, debris and scrap materials. Do not leave building, roads, streets or other construction areas unclean overnight.

1.05 NOTIFICATION TO ADJACENT OCCUPANTS

- A. Notify individual occupants in areas to be effected by the Work of the proposed construction and time schedule. Notification shall be not less than 72 hours or more than 2 weeks prior to work being performed within 200 feet of the homes or businesses.
- B. Include in notification names and telephone numbers of two company representatives for resident contact, who will be available on 24-hour call. Include precautions which will be taken to protect private property and identify potential access or utility inconvenience or disruption.
- C. Consideration shall be given to the ethnicity of the neighborhood where English is not the dominant language. Notice shall be in an understandable language.

1.06 PUBLIC, TEMPORARY, AND CONSTRUCTION ROADS AND RAMPS

- A. Construct and maintain temporary detours, ramps, and roads to provide for normal public traffic flow when use of public roads or streets is closed by necessities of the Work.
- B. Provide mats or other means to prevent overloading or damage to existing roadways from tracked equipment or large or heavy trucks or equipment.

1.07 EXCAVATION IN STREETS AND DRIVEWAYS

- A. Avoid needless hindering or inconveniencing public travel on a street or any intersecting alley or street for more than two blocks at any one time.
- B. Remove surplus materials and debris and open each block for public use as work in that block is complete.
- C. Acceptance of any portion of the Work will not be based on return of street to public use.
- D. Avoid obstructing driveways or entrances to private property.
- E. Provide temporary crossing or complete the excavation and backfill in one continuous operation to minimize the duration of obstruction when excavation is required across drives or entrances.

1.08 TRAFFIC CONTROL

- A. Provide traffic control plan, traffic control, flagmen, signals, control devices, lights, traffic signals, barricades and signs in accordance with the State of Texas Manual on Uniform Traffic Control Devices.

1.09 SURFACE RESTORATION

- A. Restore site to condition existing before construction to satisfaction of Resident Project Representative.
- B. Repair paved area per the requirements of Section 02951 - Pavement Repair and Resurfacing.
- C. Repair turf areas which become damaged, level with bank run sand conforming to Section 02317 - Excavation and Backfill for Utilities, or topsoil conforming to Section 02911 - Topsoil, as approved by the Resident Project Representative and re-sod in accordance with Section 02922

- Sodding. Water and level newly sodded areas with adjoining turf using steel wheel rollers appropriate for sodding. Do not use spot sodding or sprigging.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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SECTION 01150

PROJECT PROCEDURAL DEFINITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section defines and explains certain terms in order to minimize potential misunderstandings between the Owner, the Owner's Resident Project Representative, Contractor, and Engineer.

1.02 TERMS, DEFINITIONS, AND EXPLANATIONS

- A. Drawing/Plan Clarification: An answer from the Resident Project Representative or Architect/Engineer, in response to an inquiry from the Contractor, intended to make some requirement(s) of the Drawings or Plans clearly understood. Drawing/Plan clarifications may be sketches, drawings, or in narrative form and will not change any requirements of the Drawings or Plans. Responses to Contractor inquiries shall be outlined in Section 01151.

- B. Notice of Defects: A notice issued by the Architect/Engineer documenting that the work or some portion thereof has not been performed in accordance with the requirements of the Contract Documents. Payment shall not be made on any portion of the work for which a Notice of Defect has been issued and the work not corrected to the satisfaction of the Engineer. Upon receipt of a Notice of Defect, the Contractor shall provide a written Response to Notice of Defect within ten (10) working days after receipt of the Notice. The Contractor's response shall be in accordance with Article 13 of the General Conditions.

If the Contractor disputes issuance of the Notice of Defect, the Resident Project Representative has ten (10) working days in which to respond by either:

1. withdrawing the Notice of Defect, or
2. directing the Contractor to correct the work. Such determination by the Resident Project Representative shall be final and conclusive of the matter.

If directed to correct the work, the Contractor shall do so within ten (10) working days after receipt of such direction from the Resident Project Representative, or such other time as may be agreed to with the Resident Project Representative.

- C. Project Communications: Routine written communications between the Owner, Architect/Engineer, and the Contractor shall be in letter or field memo format. Such communications shall not be identified as Requests for Information or Request for Technical Instructions nor shall they substitute for any other written requirement pursuant to the provisions of these Contract Documents.
- D. Request for Information/Request for Technical Instructions: A request from the Contractor, to the Resident Project Representative or Architect/Engineer, seeking an interpretation or a clarification of some requirement of the Contract Documents. The Contractor shall clearly and concisely set forth the issue for which it seeks clarification or interpretation and why a response is needed from the Resident Project Representative or Architect/Engineer. The Contractor shall, in the written request, set forth its interpretation or understanding of the Contract's requirements along with reasons why it has reached such an understanding. Responses from the Resident Project Representative or Architect/Engineer will not change any requirements of the Contract Documents.

Responses to Contractor inquiries shall be as outlined in Section 01151.

- E. Substitution/Or-Equal Submittals: A written request from the Contractor to substitute a material, article, device, product, fixture, form, type of construction, or process called for in the Contract Documents with another item that shall be substantially equal in all respects to that so indicated or supplied.
- F. Schedule Submittals: When required, the Contractor shall submit schedules, schedule updates, schedule revisions, time impact analysis, etc., for review and acceptance.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01151

REQUESTS FOR INFORMATION / REQUESTS FOR
TECHNICAL INSTRUCTIONS (RFI'S/RFTI'S)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Section includes mandatory procedures and sets forth policies to be followed in requesting technical information or clarification.

1.02 PROCEDURES AND POLICIES

- A. In the event that the Contractor or Subcontractor, at any tier, determines that some portions of the Drawings, Specifications, or other Contract Documents require clarification or interpretation by the Owner or Architect/Engineer, the Contractor shall submit a Request for Information or a Request for Technical Instructions in writing to the Resident Project Representative. RFI's/RFTI's may only be submitted by the Contractor. The Contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed. In the RFI/RFTI, the Contractor shall set forth an interpretation or understanding of the requirement along with reasons why such an understanding was reached.
- B. The Owner acknowledges that this is a complex project and its successful completion will be a cooperative effort between all parties. The Owner does not intend to limit or restrict communications between any of the parties.
- C. The Resident Project Representative will review all RFI's/RFTI's to determine whether they are Requests for Information or Request for Technical Instructions within the meaning of this term. If the Resident Project Representative determines that the document is not an RFI/RFTI, it will be returned to the Contractor, unreviewed as to content, for resubmittal in the proper manner.
- D. Responses to Requests for Information/Request for Technical Instructions shall be issued within ten (10) working days of receipt of the request from the Contractor unless the Resident Project Representative or Architect/Engineer determines that a longer time is necessary to provide an adequate response. If a longer time is determined necessary by the Resident Project Representative or Architect/Engineer, they will, within ten (10) working days of the receipt of the request, notify the Contractor of the anticipated response time. If the Contractor submits a Request for Information /Request for Technical Instructions on an activity within ten (10) working days or less of float on the current project schedule, the Contractor shall not be entitled to any time extension due to the time it takes the Resident Project Representative or Architect/Engineer to respond to the request provided that the Resident Project Representative or Architect/Engineer responds within ten (10) working days set forth above.
- E. Responses from the Resident Project Representative or Architect/Engineer will not change any requirement of the Contract Documents. In the event the Contractor believes that a response to a

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

Section 01292

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preparation and submittal of a Schedule of Values for stipulated price contracts or for major lump sum items on unit price contracts for which the Contractor requests progress payments.

1.02 DEFINITION

- A. The Schedule of Values is an itemized list that establishes the value of each part of the Work for a stipulated price contract and for major lump sum items in a unit price contract. The Schedule of Values is used as the basis for preparing applications for payments. Quantities and unit prices may be included in the schedule when designated by the Engineer.
- B. A major lump sum item is a lump sum item in the Schedule of Unit Price Work which qualifies as Major Unit Price Work.

1.03 PREPARATION

- A. For stipulated price contracts, subdivide the Schedule of Values into logical portions of the Work, such as major work items or work in contiguous geographic areas. Use Section 01325 - Construction Schedule to guide the subdivision of work items. The items in the Schedule of Values will correlate directly with the tasks enumerated in the Construction Schedule. Then organize each portion using the Table of Contents of this Project Manual as an outline for listing the value of work by Sections. A pro rata share of mobilization, bonds, and insurance may be listed as separate items for each portion of the work.
- B. For unit price contracts, items should include a proportional share of Contractor's overhead and profit so that the total of all items will equal the Contract Price.
- C. For lump sum equipment items where submittal of operation/maintenance data and testing are required, include a separate item for equipment operation and maintenance data submittal valued at 5 percent of the lump sum amount for each equipment item and a separate item for testing and adjusting valued at 5 percent of the lump sum amount for each equipment item.
- D. Round off figures for each listed item to the nearest \$100.00 except for the value of one item, if necessary, to make the total of all items in the Schedule of Values equal the Contract Price for stipulated price contracts or the lump sum amount in the Schedule of Unit Price Work.
- E. Type the schedule of values on 8-1/2-inch by 11-inch white bond paper.

1.04 SUBMITTAL

- A. Submit within 30 days of Notice to Proceed, or at the pre-construction meeting, whichever occurs sooner.
- B. Revise the Schedule of Values and resubmit for items affected by contract modifications, change orders, and work change directives. After the changes are reviewed without exception by the Engineer, make the submittal at least 10 days prior to submitting the next application for progress payment.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01312

COORDINATION AND MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Section includes general coordination including preconstruction conference, site mobilization conference, and progress meetings.

1.02 RELATED DOCUMENTS

- A. Coordination is required throughout the documents. Refer to all of the Contract Documents and coordinate as necessary.

1.03 ENGINEER AND REPRESENTATIVES

- A. The Engineer may act directly or through designated representatives as defined in the General Conditions and as identified by name at the preconstruction conference.

1.04 CONTRACTOR COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various Specifications sections to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify that utility requirement characteristics of operating equipment are compatible with existing or planned utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. Conceal pipes, ducts, and wiring within the construction in finished areas, except as otherwise indicated. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean up of Work for Substantial Completion and for portions of Work designated for Owner's partial occupancy.
- F. Coordinate access to site for correction of nonconforming Work to minimize disruption of Owner's activities where Owner is in partial occupancy.

1.05 PRECONSTRUCTION CONFERENCE

- A. Engineer will schedule a preconstruction conference.
- B. Attendance Required: Owner's Representatives, Engineer's Representatives, Resident Project Representative, Contractor, and major Subcontractors.
- C. Agenda:
 - 1. Distribution of Contract Documents.

2. Designation of personnel representing the parties in Contract, and the Engineer.
3. Review of insurance.
4. Discussion formats proposed by the Contractor for schedule of values (if any), and construction schedule.
5. Procedures and processing of shop drawings and other submittals, substitutions, pay estimates or applications for payment, Requests for Information, Request for Proposal, Change Orders, and Contract closeout.
6. Scheduling of the Work and coordination with other contractors and utility service providers.
7. Review of Subcontractors.
8. Appropriate agenda items listed for Site Mobilization Conference, paragraph 1.06C, when preconstruction conference and site mobilization conference are combined.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Other items as may be deemed appropriate.

1.06 SITE MOBILIZATION CONFERENCE

- A. When required by the Contract Documents, Engineer will schedule a conference at the Project site prior to Contractor occupancy.
- B. Attendance Required: Engineer representatives, Resident Project Representative, Special Consultants, Contractor's Superintendent, and major Subcontractors.
- C. Agenda:
 1. Use of premises by Owner and Contractor.
 2. Safety and first aid procedures.
 3. Construction controls provided by Owner.
 4. Temporary utilities.
 5. Survey and layout.
 6. Security and housekeeping procedures.
 7. Field office requirements.

1.07 PROGRESS MEETINGS

- A. Project meetings shall generally be held at City of Weslaco Planning Department or other location as designated by the Architect/Engineer. Meeting shall generally be held at monthly intervals, or more frequent intervals if directed by Owner.

- B. Attendance Required: Job superintendent, major Subcontractors and Suppliers, Owner's Representatives, Engineer's Representatives, Funding Agency Representatives (if any), and Resident Project Representative as appropriate to agenda topics for each meeting.
- C. Engineer or his representative will make arrangements for meetings, and recording minutes.
- D. Engineer or his representative will prepare the agenda and preside at meetings.
- E. Contractor shall provide required information and be prepared to discuss each agenda item.
- F. Agenda:

- 1. Review minutes of previous meetings.
- 2. Review of Record Documents.
- 3. Review of Work progress schedule submittal, and pay estimates, payroll and compliance submittals.
- 4. Field observations, problems, and decisions.
- 5. Identification of problems which may impede planned progress.
- 6. Review of submittals schedule and status of submittals.
- 7. Review of RFI and RFP status.
- 8. Change order status.
- 9. Review of off-site fabrication and delivery schedules.
- 10. Maintenance of progress schedule.
- 11. Corrective measures to regain projected schedules.
- 12. Planned progress during succeeding work period.
- 13. Coordination of projected progress.
- 14. Maintenance of quality and work standards.
- 15. Effect of proposed changes on progress schedule and coordination.
- 16. Other items relating to Work.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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Section 01321

CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Photographic requirements for construction photographs and submittals.

1.02 SUBMITTALS

- A. Prints: Furnish 2 sets of 4-inch by 6-inch prints of each view and submit 1 print directly to the Architect/Engineer within 7 days of taking photographs. One print shall be retained by the Contractor in the field office at the Project site and available at all times for reference.
- B. Extra Prints: When requested by the Architect/Engineer, the Contractor shall submit extra prints of photographs, with distribution directly to designated parties who will pay the costs for the extra prints directly to the photographer.
- C. When required by individual sections, submit photographs taken prior to start of construction to show original site conditions.
- D. When required by Contract Documents, submit photographs with monthly Pay Estimate.
- E. Negatives: With each submittal, include photographic negatives, in protective envelopes, identified by Project name, Contractor, and date photographs were taken.
- F. In lieu of negatives, Contractor may submit electronic files of digital photographs if using a digital camera, but must comply with Parts 1 and 2 of this section.

1.03 QUALITY ASSURANCE

- A. Contractor shall be responsible for the timely execution of the photographs, their vantage point, and quality.
- B. Photographs: Two prints; color, matte finish; 4 x 6 -inch size, mounted on 8-1/2 x 11- inch soft card stock, with left edge binding margin for three hole punch. Digital photos shall not be distorted to fit card stock.

PART 2 PRODUCTS

2.01 PRECONSTRUCTION PHOTOGRAPHS

- A. Prior to the commencement of any construction, take 35 mm or digital color photographs of the site of the project and present two sets of prints to the Architect/Engineer for their use in contract administration and inspection. Subject matter of the photographs to be determined by the Engineer.
- B. The photographs shall show on a non-reflective chalkboard readable in the photograph:
 - 1. Job number.
 - 2. Date and time photographs were taken.

3. Location and compass direction of the photograph, along with the project number.
 4. Date shall be on negative (35mm) or on digital image.
 5. Provide notation of vantage point marked for location and direction of shot, on a key plan of the site.
- C. Sufficient number of photographs shall be taken to show the existence or non-existence of cracked paved surfaces and the condition of trees, shrubs, and grass.
- D. Identify each photograph with an applied label or rubber stamp on the back with the following information:
1. Name of the Project.
 2. Name and address of the photographer (if a professional photographer is used).
 3. Name of the Contractor.
 4. Date the photograph was taken.
 5. Photographs shall be in plastic pockets and bound in three-ring notebook for easy access and viewing.

2.02 PROGRESS PHOTOGRAPHS

- A. Take photographs of subject matter selected by Resident Project Representative at intervals, coinciding with the cutoff date associated with each application for payment. Select the vantage points for each shot each month to best show the status of construction and progress since the last photographs were taken.
1. Vantage Points: Follow direction by the Resident Project Representative to select vantage points. During each of the following construction phases take not less than 2 of the required shots from the same vantage point each time to create a time-lapse sequence.
 2. Photos shall be submitted according to Paragraphs 1.03 B. and 2.01 B and D.

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01326

CONSTRUCTION SCHEDULE (BAR CHART)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prepare and submit to the Engineer an initial Construction Schedule as required by this section for the Work. Do not start construction until the schedule is approved by the Architect/Engineer.

1.02 FORM AND CONTENT OF INITIAL CONSTRUCTION SCHEDULE

A. Bar Chart:

1. Show major construction activities such as pipe laying (by traffic control phases or other approved key areas), tunnel construction, pavement removal, pavement replacement, pressure testing, disinfection, clean up and punch out as separate activities on the schedule.
2. Show all work items where new utilities connect to Owner's property. Activities shall have no more than two-week duration.
3. Show separate activities for each shop drawing and product data submittal that are critical to timely completion. Show submission dates and dates approved submittals will be needed from the Engineer.
4. Provide separate horizontal bar for each activity. List start and finish date for each activity at left side of diagram.
5. Horizontal Time Scale: Identify first work day of each week.
6. Scale and Spacing: Notes must be legible and Contractor must allow space for notations and future revisions.
7. Order of Listings: Order bar chart listings by phases or other approved groups of activities that are contiguous. Activities shall be in chronological order within each phase or group. For example, for each segment of new open cut sewer connection placement, the schedule shall have an activity for layout, traffic control, pavement removal, sewer line placement, abandoning existing system and backfill, pavement restoration, traffic control removal, pavement markings restoration and clean up. For each tunnel or auger activity, the schedule shall have an activity for layout, traffic control, shaft construction, tunnel construction or auger activity, pipe placement in tunnel or auger, routing (if required), shaft removal, pavement replacement, pavement marking replacement, traffic control removal, pavement marking restoration and clean up.

B. Narrative Description:

1. Submit narrative description of anticipated work sequence as indicated by sequence of activities presented in the schedule.
2. Narrative shall be of sufficient detail to discuss any activity that affects the public (such as phases of traffic control), interaction with specific Owner forces (such as valve operation, and testing) or other associated prime Contractors.

1.03 PROGRESS REVISIONS

- A. Submit progress revisions monthly as part of Application for Payment or information necessary for Application for Payment. Application for Payment shall not be considered complete or processed for payment until progress revision is submitted. When required, re-submittal for rejected revision must be made, reviewed and approved prior to the following month's pay application being processed. Pay Application for the following month will not be processed until re-submittal is approved and Progress Revision required that month is received.
- B. Provide Narrative Report to describe:
 - 1. Major changes in scope.
 - 2. Revised projections in progress, and completion, or changes in activity durations.
 - 3. Other identifiable changes.
 - 4. Problem areas, anticipated delays, and the impact on schedule.
 - 5. Corrective action recommended and its effect.
 - 6. Effect of changes on schedules or other prime contractors.
 - 7. Material delivery delays.
- C. Additional data to be included with Bar Chart described in Paragraph 1.01 of this section:
 - 1. Original dates shown for each activity in the approved initial progress schedule shall be shown by a narrow bar next to wider bar for current schedule.
 - 2. Date that each activity actually started or finished if that event has occurred. Actual dates must be clearly identified in two right-most columns in the left portion of 11- inch by 17-inch chart.
 - 3. Indicate percentage progress of each activity to the date of submission.

1.04 SUBMISSIONS

- A. Submit initial progress schedule within 15 days after award of contract. The Engineer will review the schedule and return the review copy.
- B. Cut-off date for progress revision may be as early as the twentieth of the month so that submittal can be made without delay to processing of Application for Payment. Use same cut-off date for all revisions as used in first approved revision.
- C. When required, resubmit within 7 days after return of review copy.
- D. Schedule shall include connecting lines between bars to indicate sequence that activities will be accomplished such that if activity's start or finish is modified, then impact will be known by the corresponding changes to preceding or succeeding activities identified by the connecting lines.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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Section 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures for:

1. Schedule of Values.
2. Construction Schedules.
3. Shop Drawings, Product Data, and Samples
4. Operations and Maintenance Data.
5. Manufacturer's Certificates.
6. Construction Photographs.
7. Project Record Documents.
8. Video Tapes.
9. Design Mixes.

1.02 SUBMITTAL PROCEDURES

A. Scheduling and Handling:

1. Schedule submittals well in advance of the need for the material or equipment for construction. Allow time to make delivery of material or equipment after submittal has been approved.
2. Develop a submittal schedule that allows sufficient time for initial review, correction, resubmission and final review of all submittals. The Engineer will review and return submittals to the Contractor as expeditiously as possible but the amount of time required for review will vary depending on the complexity and quantity of data submitted. In no case will a submittal schedule be acceptable which allows less than 30 days for initial review by the Engineer. This time for review shall in no way be justification for delays or additional compensation to the Contractor. Recognizing that time is of the essence, the Contractor is to stamp the top of each submittal with the words ROUTINE or CRITICAL. Routine submittals shall be processed in accordance with the timeframe set forth previously. Critical submittals are those that: were overlooked by the Contractor, involve complex coordination, or are crucial to the successful completion of a specific portion of the project. For critical submittals:
 - i. Contractor shall indicate on the submittal his realistically estimated date of when a review must be returned;
 - ii. Upon return of critical submittals, Contractor shall date-stamp the transmittal page with date and time received;
 - iii. Contractor is cautioned that the use of critical submittals is not a substitute for proper due diligence on his part. Review of critical submittals found to be

routine shall be accompanied by an invoice for excess time and material expenditures that were required in order to complete the critical review as compared to a routine review. The Resident Project Representative shall make the determination as to whether a critical submittal was in fact routine.

3. The Architect/Engineer's review of submittals covers only general conformity to the Drawings, Specifications and dimensions which affect the layout. The Contractor is responsible for quantity determination. Quantities may be verified by the Architect/Engineer. The Contractor is responsible for any errors, omissions or deviations from the Contract requirements; review of submittals in no way relieves the Contractor from his obligation to furnish required items according to the Drawings and Specifications.
 4. Submit sufficient copies of documents. Unless otherwise specified in the following paragraphs or in the Specifications, provide 6 copies in addition to the number the Contractor requires returned. For portions of the project involving electrical or signal components, provide one additional copy (7 copies in addition to the number the Contractor requires returned).
 5. Revise and resubmit submittals as required. Identify all changes made since previous submittal.
 6. A maximum of three (3) reviews will be conducted on any one submittal. Submittals requiring more than three (3) reviews will be considered inadequate and result in a recovery of review expenses from the Contractor.
 7. The Contractor shall assume the risk for material or equipment which is fabricated or delivered prior to approval. No material or equipment shall be incorporated into the Work or included in periodic progress payments until approval has been obtained in the specified manner.
- B. Transmittal Form and Numbering:
1. Transmit each submittal to the Architect/Engineer with a Transmittal Cover.
 2. Sequentially number each transmittal form beginning with the number 1. Re-submittals shall use the original number with an alphabetic suffix (i.e., 2A for first re-submittal of Submittal 2 or 15C for third re-submittal of Submittal 15). Each submittal shall only contain one type of work, material, or equipment. Mixed submittals will not be accepted.
 3. Identify time nature of submittal, either ROUTINE or CRITICAL.
 4. Identify variations from requirements of Contract Documents and identify product or system limitations.
 5. For submittal numbering of video tapes, see paragraph 1.10 Video.
- C. Transmittal Cover:
1. Transmittal Cover, certifying that the items have been reviewed in detail and are correct and in accordance with Contract Documents, except as noted by any requested variance. A stamp may be used to print the information on the Transmittal Cover except for the Contractor's signature. Regardless of whether the transmittal cover is typed or stamped, the transmittal cover text shall be a minimum of fourteen (14) point.
 2. As a minimum, Transmittal Cover information shall include:
 - a. Contractor's name.

- b. Job number.
- c. Submittal number.
- d. Certification statement that the Contractor has reviewed the submittal and it is in compliance with the Contract Documents.
- e. Signature line for Contractor.
- f. Submittal type – routine or critical

3. The bottom half of the Transmittal Cover shall be kept blank.

1.03 SCHEDULE OF VALUES

- A. Submit a Schedule of Values in accordance with Section 01292 - Schedule of Values.

1.04 CONSTRUCTION SCHEDULES

- A. Submit Construction Schedules as provided in Project Manual.

1.05 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. Submit shop drawings in accordance with Section 01340 - Shop Drawings, Product Data, and Samples.

1.06 OPERATIONS AND MAINTENANCE DATA

- A. Submit Operations and Maintenance data in accordance with Section 01782 - Operations and Maintenance Data.

1.07 MANUFACTURER'S CERTIFICATES

- A. When required in Specification sections, submit manufacturers' certificate of compliance for review by Engineer.
- B. Transmittal Cover, as described in paragraph 1.02C, shall be placed on front page of the certification.
- C. Submit supporting reference data, affidavits, and certifications as appropriate.
- D. Certificates may be recent or previous test results on material or product, but must be acceptable to Engineer.

1.08 CONSTRUCTION PHOTOGRAPHS

- A. Submit Construction Photographs in accordance with Section 01321 - Construction Photographs.

1.09 PROJECT RECORD DOCUMENTS

- A. Submit Project Record Documents in accordance with Section 01785 - Project Record Documents.

1.10 VIDEO

- A. Submit television video tapes as required in Section 02533 - Acceptance Testing for Sanitary Sewers.
- B. Transmittal forms for video tapes shall be numbered sequentially beginning with T01, T02, T03, etc.

1.11 DESIGN MIXES

- A. When specified in Specifications, submit design mixes for review.
- B. Transmittal Cover, as described in paragraph 1.02C, shall be placed on front page of each

design mix.

- C. Mark each design mix to identify proportions, gradations, and additives for each class and type of design mix submitted. Include applicable test results on samples for each mix.
- D. Maintain a copy of approved design mixes at mixing plant.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

- A. Submittals made as part of this project will become a vital portion of the project record and will be referenced by the Owner for the useful life of the project. All submittals shall be of high quality. To this end, the following requirements are made:
 - i. As much as possible, all catalog cuts and manufacturer's information shall be original.
 - ii. Copies, when required, shall be clean and entirely legible.
 - iii. Neither facsimiles nor copies of facsimiles are to be included as part of any submittal.
 - iv. Binders, if used, shall be rugged, lock-ring type. Spine of binders shall be clearly labeled with the information outlined in items 1.02 C.2.a. through c.
- B. Reviewed submittals shall be returned to Contractor for distribution to subcontractors and other trades as required. As a minimum, submittals returned to the Contractor will be marked with review comments indicating findings of the review and giving instruction as to necessity of a re-submittal. The Engineer may, at his option, use a stamp for this purpose. Detailed correspondence covering the review may also accompany returned submittals.

END OF SECTION

Section 01340

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Methods, schedule, and process to be followed for shop drawings, product data, and sample submittals.

1.02 REQUIREMENT

- A. Submit shop drawings, product data and samples as required by the General Conditions and as designated in the Specifications using the procedures specified in Section 01330 – Submittal Procedures and the requirements of this Section.
- B. Shop drawings, product data and samples are not considered Contract Documents.

1.03 SHOP DRAWING/SUBMITTAL SCHEDULE

- A. Submit a separate Shop Drawing/Submittal schedule at the same time the construction schedule is submitted. List products, materials and equipment for which Shop Drawings and other submittals are required in the order in which they appear in the Specifications. Including product data and sample submittals in schedule.

1.04 SHOP DRAWINGS

- A. Submit shop drawings for review as required by the Specifications.
- B. Place Contractor's Transmittal Cover on each drawing as described in Section 01330 – Submittal Procedures.
- C. On the drawings, show accurately and distinctly, the following:
 - 1. Field and erection dimensions clearly identified as such;
 - 2. Arrangement and section views;
 - 3. Relation to adjacent materials or structure, including complete information for making connections between work under this Contract and work under other contracts;
 - 4. Kinds of materials and finishes;
 - 5. Parts list and descriptions;
 - 6. Assembly drawings of equipment components and accessories showing their respective positions and relationships to the complete equipment package;
 - 7. Where necessary for clarity, identify details by reference to the Contract Drawings.
- D. Make drawings to scale providing a true representation of the specific equipment or item to be furnished.

1.05 PRODUCT DATA

- A. Submit product data for review as required in Specification sections.
- B. Place Contractor's Transmittal Cover on each data item submitted, as described in Section 01330 – Submittal Procedures.
- C. Mark each copy to identify applicable products, models, and options to be used in this Project. Supplement manufacturers' standard data to provide information unique to this Project, where required by the Specifications.
- D. For products specified only by reference standard, give manufacturers, trade name, model or catalog designation and applicable reference standard.

1.06 SAMPLES

- A. Submit samples for review as required by the Specifications.
- B. Place Contractor's Transmittal Cover on each sample as described in Section 01330 – Submittal Procedures.
- C. Submit the number of samples specified in Specifications.
- D. Reviewed samples which may be used in the Work are identified in Specifications.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

Section 01422

REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Section includes general quality assurance as related to Reference Standards and a list of references.

1.02 QUALITY ASSURANCE

- A. For Products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on the date of the Contract.
- C. Request clarification from Engineer before proceeding should specified reference standards conflict with Contract Documents.

1.03 SCHEDULE OF REFERENCES

AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094
AGC	Associated General Contractors of America 1957 E Street, N.W. Washington, DC 20006
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AITC	American Institute of Timber Construction 333 W. Hampden Avenue Englewood, CO 80110
AISC	American Institute of Steel Construction 400 North Michigan Avenue Eighth Floor Chicago, IL 60611
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
ASME	American Society of Mechanical Engineers 345 East 47th Street

	New York, NY 10017
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
APA	American Plywood Association Box 11700 Tacoma, WA 98411
API	American Petroleum Institute 1220 L Street, N.W. Washington, DC 20005
AREA	American Railway Engineering Association 50 F Street, N.W. Washington, DC 20001
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society P.O. Box 35104 Miami, FL 33135
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
CFR	Code of Federal Regulations
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue, N.W. Washington, DC 20036
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60173-4758
DIPRA	Ductile Iron Pipe Research Association
EJMA	Expansion Joint Manufacturers Association 707 Westchester Avenue White Plains, NY 10604
FS	Federal Standardization Documents General Services Administration Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406

ICC	International Code Council (ICC) 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001
ICEA	Insulated Cable Engineer Association P.O. Box 440 S. Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers 445 Hoes Lane P.O. Box 1331 Piscataway, NJ 0855-1331
ISA	International Society of Arboriculture 303 West University P.O. Box GG Savoy, IL 61874
MIL	Military Specifications General Services Administration Specifications Unit (WFSIS) 7th and D Streets, S.W. Washington, DC 20406
NACE	National Association of Corrosion Engineers 1440 South Creek Drive Houston, TX 71084
NEMA	National Electrical Manufacturers' Association 2101 L Street, N.W., Suite 300 Washington, DC 20037
NFPA	National Fire Protection Association Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101
NRMCA	National Ready Mix Concrete Association
NSF	National Sanitary Foundation
OSHA	Occupational Safety Health Administration U.S. Department of Labor Government Printing Office Washington, DC 20402
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077-1083
PCI	Prestressed Concrete Institute 201 North Wacker Drive Chicago, IL 60606
SDI	Steel Deck Institute Box 9506 Canton, OH 44711

SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15213
TAC	Texas Administrative Code
TxDOT	Texas Department of Transportation 11th and Brazos Austin, TX 78701 2483
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
UNI-BELL	UNI-BELL Pipe Association 2655 Villa Creek Drive, Suite 155 Dallas, TX 75234

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01450

CONTRACTOR'S QUALITY CONTROL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Quality assurance and control of installation and manufacturer's field services and reports.

1.02 MEASUREMENT AND PAYMENT

- A. No payment will made for this item. Include the cost of Contractor's quality control in overhead cost for this project.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' installation instructions, including each step in sequence.
- C. Request clarification from Engineer before proceeding should manufacturers' instructions conflict with Contract Documents.
- D. Comply with specified standards as minimum requirements for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce the specified level of workmanship.

1.04 REFERENCES

- A. Obtain copies of standards and maintain at job site when required by individual Specification sections.

1.05 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual Specification sections, provide material or product suppliers' or manufacturers' technical representative to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, operator training, test, adjust, and balance of equipment as applicable, and to initiate operation, as required. Conform to minimum time requirements for start-up operations and operator training if defined in Specification sections.
- B. Manufacturer's representative shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions. Submit report within 14 days of observation to Resident Project Representative for review.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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Section 01452

INSPECTION SERVICES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Inspection services and references

1.02 INSPECTION

- A. Engineer and/or Owner will appoint Resident Project Representative as a representative of the Owner to perform inspections, tests, and other services specified in individual specification Sections.
- B. Alternately, Engineer and/or Owner may appoint, employ, and pay an independent firm to provide additional inspection, tests or construction management services as indicated in Section 01454 - Testing Laboratory Services.
- C. Reports will be submitted by the independent firm to Engineer, and Owner, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- D. Assist and cooperate with the Resident Project Representative; furnish samples of materials, design mix, equipment, tools, and storage.
- E. Notify Resident Project Representative 24 hours prior to expected time for operations requiring services.
- F. Sign and acknowledge observation or testing reports when requested by Resident Project Representative or independent firm.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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Section 01454

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Testing laboratory services and Contractor responsibilities related to those services.

1.02 REFERENCES

- A. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
- B. ASTM D 3666 - Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials.
- C. ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- D. ASTM E 329 - Specification for Minimum Requirements for Agencies Engaged the Testing and/or Inspection of Materials Used in Construction.

1.03 SELECTION AND PAYMENT

- A. The Contractor shall employ and pay for the services of an independent testing laboratory, or laboratories, to perform product and material quality control , perform in-place quality control and verification identified in individual Specification sections.
- B. The Contractor shall include in his/her bid the amount stipulated in the Cash Allowance section of Document 00405 - Schedule of Unit Price Work, as an allowance to pay for the Geotechnical Engineer of Record to conduct all field and laboratory testing. The Owner, with the assistance of the Engineer, shall have control of testing, sampling, and expenditures, but the Contractor shall pay all field and laboratory testing costs from the stated allowance, which will be equitably adjusted according to the expenditures made. Contractor's incidental labor and material expense and overhead and profit associated with the testing are not included in this allowance and shall be included in the various other price bid.. At the closeout of Contract, any unused monies remaining in the allowance for construction materials testing will be credited to the Owner by the Contractor.
- C. All tests required by the project plans and specifications shall be included in a schedule of fees providing a breakdown of the allowance for construction materials testing services. The schedule of fees in the construction materials testing allowance will not be a part of the bid process, but it shall be agreed upon jointly by the Engineer and the Contractor prior to issuance of the Notice to Proceed.
- D. The Contractor shall coordinate the services of the project's Geotechnical Engineer of Record to conduct observation and testing of the subgrade preparation, and the selection, placement and compaction of select fill material. The foundation excavations for structures shall be observed by the Geotechnical Engineer of Record prior to steel and/or concrete placement to assess that the foundation materials are capable of supporting the design loads and are consistent with the subsurface materials described in the project's Geotechnical Engineering Study.
- E. Employment of a testing laboratory by the Contractor shall not relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

- F. Remedial work and re-testing costs, resulting from deficiencies in materials and/or workmanship, shall be borne by the Contractor. Re-testing costs shall not be paid for from the allowance for field and laboratory testing.
- 1.04 QUALIFICATION OF LABORATORY
- A. Meet laboratory requirements of ASTM E 329 and applicable requirements of ASTM C 1077, ASTM D 3666, and ASTM D 3740.
 - B. Where a laboratory subcontracts any part of the testing services, such work shall be placed with a laboratory complying with the requirements of this Section.
- 1.05 LABORATORY REPORTS
- A. The testing laboratory shall provide and distribute copies of laboratory reports to the distribution list provided by the Engineer.
 - B. One copy of each laboratory report distributed or faxed to the Contractor shall be kept at the site field office for the duration of the project.
 - C. Before close of business on the working day following test completion and review, reports which indicate failing test results shall be transmitted immediately via fax from the testing laboratory to the material supplier, Contractor, Engineer and Resident Project Representative.
- 1.06 LIMITS ON TESTING LABORATORY AUTHORITY
- A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - B. Laboratory may not approve or accept any portion of the Work.
 - C. Laboratory may not assume any duties of the Contractor.
 - D. Laboratory has no authority to stop the Work.
- 1.07 CONTRACTOR RESPONSIBILITIES
- A. Provide safe access to the Work and to manufacturer's facilities for the Engineer, Resident Project Representative and for testing laboratory personnel.
 - B. Provide to the testing laboratory a copy of the construction schedule and a copy of each update to the construction schedule.
 - C. Notify the Resident Project Representative and the testing laboratory during normal working hours of the day previous to the expected time for operations requiring inspection and testing services. If the Contractor fails to make timely prior notification, then the Contractor shall not proceed with the operations requiring inspection and testing services.
 - D. Notify the Resident Project Representative 24 hours in advance if the Specification requires the presence of the Resident Project Representative or testing laboratory for sampling or testing.
 - E. Request and monitor testing as required to provide timely results and to avoid delay to the Work. Provide samples to the laboratory in sufficient time to allow the required test to be performed in accordance with specified test methods before the intended use of the material.
 - F. Cooperate with laboratory personnel in collecting samples on site. Provide incidental labor and facilities for safe access to the Work to be tested; to obtain and handle samples at the site or at source of products to be tested; and to facilitate tests and inspections including storage and curing of test samples.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 CONDUCTING TESTING

- A. Laboratory sampling and testing specified in individual Specification sections shall conform to the latest issues of ASTM standards, TxDOT methods, or other recognized test standards as approved by the Engineer.
- B. The requirements of this section shall also apply to those tests for approval of materials, for mix designs, and for quality control of materials as performed by the testing laboratories employed by the Contractor.

END OF SECTION

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Section 01542

OPERATIONS WITHIN SEWAGE DISPOSAL SYSTEMS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Construction operations within, through, and adjacent to existing sewage disposal systems. Sewage disposal systems include, but are not limited to, septic tanks, absorption fields, disposal trenches, cesspools, leach beds, leach fields, privies, and spray mounds.

1.02 UNIT PRICES

- A. No separate payment will be made for Operations Within Sewage Disposal Systems. Include costs associated with Operations Within Sewage Disposal Systems in work requiring such operation.
- B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 SUBMITTALS

- A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.

1.04 DESCRIPTION

- A. Operations Within Sewage Disposal Systems provides for the removal, disposal, and temporary replacement of existing sewage disposal systems that may be encountered during the execution of the project.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 ENCOUNTER

- A. Prior to initiating an excavation or other construction operation, Contractor shall first make a reconnaissance of the immediate and adjacent work area to ascertain the existence of sewage disposal systems. Existing and suspected disposal systems within the work area shall be flagged and their location(s) marked on the Drawings. Findings shall be reported to the Resident Project Representative.
- B. Sewage disposal systems encountered after excavation has begun shall be flagged and documented on the Drawings. Findings shall be reported to the Resident Project Representative.

3.02 EXCAVATION WITHIN DISPOSAL AREAS

- A. Contractor shall segregate spoil removed from sewage disposal areas. Spoil removed from these areas shall be considered to pose a human health risk. Segregation measures shall be as necessary to: limit public contact with spoil, limit worker contact with spoil, limit spreading of waste materials, prevent nuisance conditions, and prevent runoff from escaping the temporary

storage site. Spoil shall be removed and disposed of at the end of each working day. Spoil removed from sewage disposal areas shall not be stockpiled overnight or longer.

- B. At Contractor's option, spoil may be removed immediately. However, Contractor shall take measures as necessary to minimize dispersal of liquid wastes from spoil material.
- C. Seepage fluid entering excavations shall be removed by vacuum truck. Ground and surface water entering excavations in sewage disposal areas shall be removed by vacuum trucks.
- D. Contractor shall adjust his work procedures as necessary to limit worker and public exposure to sewage disposal area materials.

3.03 HANLDING EXCAVATED MATERIALS

- A. Materials excavated from sewage disposal areas shall not be incorporated in the work.
- B. Solids removed from excavations in sewage disposal areas shall be properly disposed of in accordance with Section 01576 – Waste Material Disposal. Contractor shall provide Owner receipts and manifests as required to verify proper disposal.
- C. Liquids removed from excavations in sewage disposal areas shall be properly disposed of in accordance with Section 01576 – Waste Material Disposal. Contractor shall provide Owner receipts and manifests as required to verify proper disposal.

3.04 RECONDITIONING OF EXCAVATED SEWAGE DISPOSAL AREAS

- A. Contractor shall recondition sewage disposal areas as necessary to return functional use to the sewage disposal areas excavated during construction.
- B. As soon as practical, Contractor shall cover excavated sewage disposal areas, temporary excavated material stockpile areas, and other areas coming in contact with excavated sewage disposal area materials with a minimum of two (2) inches of clean soil.

END OF SECTION

Section 01555

TRAFFIC CONTROL AND REGULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Traffic Control and Regulation

1.02 METHODS OF PAYMENT

- A. No separate payment will be made for traffic control and regulation. Include the cost of traffic control and regulation in unit price for work requiring such control.
- B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this section is included in the total Stipulated Price.

1.03 REFERENCES

- A. Texas Manual of Uniform Traffic Control Devices (TMUTCD)
- B. Texas Department of Transportation (TxDOT) permit (if applicable)
- C. Railroad company permit(s) (if applicable)

1.04 PERFORMANCE REQUIREMENTS

- A. Provide all necessary signs, barricades, marking, lighting, and other equipment and supplies required to comply with the TMUTCD (and TxDOT permit, and/or Railroad Company permit, if applicable)
- B. Provide all necessary certified flagmen required to comply with the TMUTCD (and TxDOT permit, if applicable)

PART 2 PRODUCTS

- A. Equipment and materials must be furnished, installed and operated by an experienced contractor regularly engaged in traffic control system design, installation and operation.
- B. All equipment must be in good repair and operating order.
- C. Sufficient standby equipment and materials shall be kept available to ensure continuous operation, where required.

PART 3 EXECUTION

- A. Provide labor, material, equipment, techniques and methods required to provide safe traffic control and regulation. Monitor effectiveness of the installed system and its effect on adjacent property.
- B. Notify, TxDOT and/or Railroad Company as required by the permit(s) (if applicable).

- C. Provide continuous system operation, including nights, weekends and holidays. Arrange for appropriate backup if electrical power is primary energy source for traffic control system.
- D. Remove system(s) upon completion of construction or when traffic control is no longer required.

END OF SECTION

Section 01561

TRENCH SAFETY SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Trench safety system for the construction of trench excavations.
- B. Trench safety system for structural excavations which fall under provisions of State and Federal trench safety laws.

1.02 UNIT PRICES

- A. Measurement and payment for trench safety systems used on trench excavations is subsidiary to water, sanitary sewer and drainage connections as part of the Construction Management at Risk contract.
- B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this section is included in the total Stipulated Price.

1.03 DEFINITIONS

- A. A trench shall be defined as a narrow excavation (in relation to its depth) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet.
- B. The trench safety system requirements will apply to larger open excavations if the erection of structures or other installations limits the space between the excavation slope and the installation to dimensions equivalent of a trench as defined.
- C. Trench Safety Systems include but are not limited to sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.

1.04 SUBMITTALS

- A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit a safety program specifically for the construction of trench excavation. Design the trench safety program to be in accordance with OSHA 29CFR standards governing the presence and activities of individuals working in and around trench excavations.
- C. Construction and shop drawings containing deviations from OSHA standards or special designs shall be sealed by a licensed Engineer retained and paid by Contractor.
- D. Review of the safety program by the Engineer will only be in regard to compliance with this specification and will not constitute approval by the Engineer nor relieve Contractor of obligations under State and Federal trench safety regulations.

1.05 REGULATORY REQUIREMENTS

- A. Install and maintain trench safety systems in accordance with the detail specifications set out in the provision of Excavations, Trenching, and Shoring, Federal Occupation Safety and Health Administration (OSHA) Standards, 29CFR, Part 1926, as amended. The sections that are

incorporated into these specifications by reference include Sections 1926-650 through 1926-652.

- B. The Contractor is responsible for obtaining a copy of the OSHA standards.
- C. Legislation that has been enacted by the Texas Legislature with regard to Trench Safety Systems, is hereby incorporated, by reference, into these specifications. Refer to Texas Health and Safety Code Chapter 756.

1.06 INDEMNIFICATION

- A. Contractor shall indemnify and hold harmless the Owner and Engineer, their employees and agents, from any and all damages, costs (including, without limitation, legal fees, court costs, and the cost of investigation), judgements or claims by anyone for injury or death of persons resulting from the collapse or failure of trenches constructed under this Contract.
- B. Contractor acknowledges and agrees that this indemnity provision provides indemnity for the Owner and Engineer in case the Owner and Engineer is/are negligent either by act or omission in providing for trench safety, including, but not limited to safety program and design reviews, inspections, failures to issue stop work orders, and the hiring of the Contractor.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install and maintain trench safety systems in accordance with provisions of OSHA 29CFR.
- B. Install specially designed trench safety systems in accordance with the Contractor's Trench Excavation Safety Program for the locations and conditions identified in the program.
- C. A competent person, as identified in the Contractor's Trench Excavation Safety Program, shall verify that trench boxes and other premanufactured systems are certified for the actual installation conditions.

3.02 INSPECTION

- A. Contractor, or Contractor's independently retained consultant, shall make daily inspections of the trench safety systems to ensure that the installed systems and operations meet OSHA 29CFR and other personnel protection regulations requirements.
- B. If evidence of possible cave-ins or slides is apparent, Contractor shall immediately stop work in the trench and move personnel to safe locations until the necessary precautions have been taken by Contractor to safeguard personnel entering the trench.
- C. Maintain a permanent record of daily inspections.

3.03 FIELD QUALITY CONTROL

- A. Contractor shall verify specific applicability of the selected or specially designed trench safety systems to each field condition encountered on the project. Trenches must not be left open overnight.

END OF SECTION

Section 01570

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Section describes the requirements for the documents to be prepared by the Contractor for the Texas Pollutant Discharge Elimination System program for construction storm water. These documents are to be prepared, reviewed, and submitted to the Texas Commission on Environmental Quality (TCEQ) prior to commencing construction operations.

1.02 UNIT PRICES

- A. No separate payment will be made for work performed under this Section. Include the cost of work performed under this Section in pay items of which this work is a component.

1.03 REFERENCES

- A. Texas Commission on Environmental Quality – TPDES General Permit Number TXR150000
- B. Texas Department of Transportation – Storm Water Management Guidelines for Construction Activities

PART 2 P R O D U C T S – Not Used

PART 3 E X E C U T I O N

3.01 TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

- A. The Contractor shall prepare the necessary forms, Storm Water Pollution Prevention Plan (SWPPP), and comply with the TPDES General Permit Number TXR150000 referenced in item 1.03 A of this specification.
- B. Copies of the Notice of Intent (NOI) with instructions, Notice of Termination (NOT) with instructions, and TPDES General Permit TXR150000 can be obtained from TPDES for the Contractor's use.
- C. The Contractor must pay any required application fees and water quality fees as outlined in the TPDES General Permit TXR150000.

3.02 PRECONSTRUCTION REVIEW AND SUBMITTALS

- A. The Contractor shall submit to the Resident Project Representative a copy of the NOI prior to commencing construction.

3.03 CONSTRUCTION REQUIREMENTS

- A. The Contractor shall be responsible for preparation of applicable forms, payment of fees, and retaining records as outlined in the TPDES General Permit TXR150000.

END OF SECTION

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Section 01571

STORM WATER POLLUTION PREVENTION PLAN

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Section describes the requirements for the documents to be prepared by the Contractor for the Storm Water Pollution Prevention Plan (SWPPP). These documents are to be prepared and reviewed prior to commencing construction operations.

1.02 UNIT PRICES

- A. No separate payment will be made for work performed under this Section. Include the cost of work performed under this Section in pay items of which this work is a component.

1.03 REFERENCES

- A. Texas Commission on Environmental Quality – TPDES General Permit Number TXR150000
- B. Texas Department of Transportation – Storm Water Management Guidelines for Construction Activities

PART 2 P R O D U C T S – Not Used

PART 3 E X E C U T I O N

3.01 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

- A. The Contractor shall prepare the SWPPP in accordance with the TPDES General Permit Number TXR15000 referenced in item 1.03 A of this specification.
- B. The Contractor shall prepare the SWPPP using structural and nonstructural control measures included in the Plans and Specifications throughout the construction and post construction periods. These control measures shall not be used as a substitute for the permanent pollution control measures unless otherwise directed by the Resident Project Representative in writing. The control measures may include silt fences, straw bales, stabilized construction exits, or other structural or nonstructural storm water pollution controls. Additional information regarding these controls can be found in the Texas Department of Transportation Manual referenced in item 1.03 B of this specification.
- B. The SWPPP shall include at a minimum:
 - 1. A site map showing the areas of soil disturbance, areas not to be disturbed, drainage patterns, approximate slopes anticipated after major grading activities, locations where storm water discharges to surface waters (including wetlands) and/or leaves the project site, locations of structural and nonstructural controls for regulating the discharge of storm water pollutants, locations of waste, borrow, and equipment storage areas, and location where stabilization practices are expected to occur.

2. A description including the nature of the construction activity, a description of the intended sequence of major activities which disturb soils for major portions of the site (grubbing, excavation, grading, utilities and infrastructure installation), estimates of the total area of the site, and the total area of the site that is to be disturbed
3. A description of the control measures that will be implemented as part of the construction activity to control pollutants in storm water discharges, and the general timing during the construction process that these measures will be implemented.
4. A description of construction and waste materials expected to be stored on site with updates as appropriate. The SWPPP shall also include a description of controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.
5. A description of pollutant sources from areas other than the construction site over which the Contractor has control for the project (including but not limited to dedicated asphalt plants, dedicated concrete plants, haul roads, and field offices), and the control measures implemented to reduce pollutants.

3.02 PRECONSTRUCTION REVIEW AND SUBMITTALS

- A. The Contractor shall review implementation of the SWPPP in a meeting with the Engineer and the Resident Project Representative prior to the start of construction.
- B. The Contractor shall submit to the Resident Project Representative for acceptance schedules for accomplishment of the storm water pollution control measures in accordance with the SWPPP. Work on the project shall not begin until the schedules for implementation of the controls and methods of operation have been reviewed and accepted in writing by the Resident Project Representative.

3.03 CONSTRUCTION REQUIREMENTS

- A. The Contractor shall be responsible for implementation, maintenance, and inspection of storm water pollution prevention control measures and other practices shown on the SWPPP, the Plan Drawings, or specified elsewhere in this or other Specifications.
- B. The contractor shall effectively prevent and control erosion and sedimentation on the site at the earliest practicable time as outlined in the approved schedule and SWPPP. Control measures, where applicable, will be implemented prior to the commencement of each construction operation or immediately after the area has been disturbed.

END OF SECTION

Section 01572

SOURCE CONTROLS FOR EROSION AND SEDIMENTATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of erosion and sediment control and other control-related practices which shall be utilized during construction activities.

1.02 UNIT PRICES

- A. No separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items of which this work is a component.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

- A. No clearing and grubbing or rough cutting shall be permitted until erosion and sediment control systems are in place, other than site work specifically directed by the Resident Project Representative to allow soil testing and surveying.
- B. Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damage caused by construction traffic to erosion and sediment control systems shall be repaired immediately by the Contractor.
- C. The Contractor shall be responsible for collecting, storing, hauling, and disposing of spoil, silt, and waste materials as specified in this or other Specifications and in compliance with applicable federal, state, and local rules and regulations.
- D. Contractor shall conduct all construction operations under this Contract in conformance with the erosion control practices described in the SWPPP, Drawings, and this Specification.
- E. The Contractor shall install, maintain, and inspect erosion and sediment control measures and practices as specified in the SWPPP, Drawings, and in this or other Specifications.

3.02 TOPSOIL PLACEMENT FOR EROSION AND SEDIMENT CONTROL SYSTEMS

- A. When topsoil is specified as a component of another Specification, the Contractor shall conduct erosion control practices described in this Specification during topsoil placement operations.
 - 1. When placing topsoil, maintain erosion and sediment control systems, such as swales, grade stabilization structures, berms, dikes, waterways, and sediment basins.
 - 2. Maintain grades which have been previously established on areas to receive topsoil.
 - 3. After the areas to receive topsoil have been brought to grade, and immediately prior to dumping and spreading the topsoil, loosen the subgrade by dicing or by scarifying to a depth of at least 2 inches to permit bonding of the topsoil to the subsoil.

3.10 DEMOLITION AREAS

- A. Demolition activities which create large amounts of dust with significant concentrations of heavy metals or other toxic pollutants shall use dust control techniques to limit transport of airborne pollutants. However, water or slurry used to control dust contaminated with heavy metals or toxic pollutants shall be retained on the site and shall not be allowed to run directly into watercourses or storm water conveyance systems. Methods of ultimate disposal of these materials shall be carried out in accordance with applicable local, state, and federal health and safety regulations.

3.11 SANITARY FACILITIES

- A. Provide and maintain sanitary facilities for persons on the job site; comply with the regulations of State and local departments of health.
- B. Enforce the use of sanitary facilities by construction personnel at the job site. Such facilities shall be enclosed. Pit-type toilets will not be permitted. No discharge will be allowed from these facilities. Collect and store sewage and waste so as not to cause a nuisance or health problem; have sewer and waste hauled off-site and properly disposed in accordance with City regulations.
- C. Located toilets near the Work site and secluded from view insofar as possible. Keep toilets clean and supplied throughout the course of the Work.

3.12 PESTICIDES

- A. Use and store pesticides during construction in accordance with manufacturers' guidelines and with local, state, and federal regulations. Avoid overuse of pesticides which could produce contaminated runoff. Take great care to prevent accidental spillage. Never wash pesticide containers in or near flowing streams or storm water conveyance systems.

END OF SECTION

Section 01573

FILTER FABRIC FENCE

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Installation of erosion and sediment control filter fabric fences used during construction and until final development of the site. The purpose of filter fabric fences is to contain pollutants from overland flow. Filter fabric fences are not for use in channelized flow areas.

1.02 UNIT PRICES

- A. No separate payment will be made for Filter Fabric Fence under this section. Include payment in unit price for related sections.

1.03 SUBMITTALS

- A. Manufacturer's catalog sheets and other product data on geotextile fabric.

1.04 REFERENCES

- A. ASTM D3786 - Standard Test Method for Hydraulic Bursting Strength for Knitted Goods and Nonwoven Fabrics
- B. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles

PART 2 P R O D U C T S

2.01 FILTER FABRIC

- A. Provide woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material.
- B. Geotextile fabric shall have a grab strength of 100 psi in any principal direction (ASTM D-4632), Mullen burst strength exceeding 200 psi (ASTM D-3786), and the equivalent opening size between 50 and 140.
- C. Filter fabric material shall contain ultraviolet inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 degrees F to 120 degrees F.
- D. Representative Manufacturers: Mirafi, Inc., or equal.

PART 3 E X E C U T I O N

3.01 PREPARATION AND INSTALLATION

- A. Provide erosion and sediment control systems at the locations shown on the SWPPP. Such systems shall be of the type indicated and shall be constructed in accordance with the requirements shown on the Drawings and specified in this Section.
- B. No clearing and grubbing or rough cutting shall be permitted until erosion and sediment control systems are in place, other than site work specifically directed by the Resident Project Representative to allow soil testing and surveying.

- C. Maintain existing erosion and sediment control systems located within the project site until acceptance of the project or until directed by the Resident Project Representative to remove and discard the existing system.
- D. Regularly inspect and repair or replace damaged components of filter fabric fences as specified in this Section. Unless otherwise directed, maintain the erosion and sediment control systems until the project area stabilization is accepted by the City. Remove erosion and sediment control systems promptly when directed by the Resident Project Representative. Discard removed materials off site.
- E. Remove sediment deposits and dispose of them at the designated spoil site for the project. If a project spoil site is not designated on the Drawings, dispose of sediment off site at a location not in or adjacent to a stream or floodplain. Off-site disposal is the responsibility of the Contractor. Sediment to be placed at the project site should be spread evenly throughout the site, compacted and stabilized. Sediment shall not be allowed to flush into a stream or drainage way. If sediment has been contaminated, it shall be disposed of in accordance with existing federal, state, and local rules and regulations.
- F. Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damage caused by construction traffic to erosion and sediment control systems shall be repaired immediately.
- G. Conduct all construction operations under this Contract in conformance with the erosion control practices described in Section 01572- Source Controls for Erosion and Sedimentation.

3.02 CONSTRUCTION METHODS

- A. Provide filter fabric fence systems in accordance with the Drawing detail for Filter Fabric Fences. Filter fabric fences shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.
- B. Attach the filter fabric to steel posts spaced 6 to 8 feet and embedded a minimum of 18 inches. Steel posts shall have a minimum length of 4 feet. If filter fabric is factory preassembled with support netting, then maximum spacing allowable is 8 feet. Install stakes at a slight angle toward the source of anticipated runoff.
- C. Trench in the toe of the filter fabric fence with a spade or mechanical trencher so that the downward face of the trench is flat and perpendicular to the direction of flow. The v-trench configuration as shown on the Drawings may also be used. Lay filter fabric along the edges of the trench. Backfill and compact trench.
- D. Filter fabric fence shall have a minimum height of 18 inches and a maximum height of 36 inches above natural ground.
- E. Provide the filter fabric in continuous rolls and cut to the length of the fence to minimize the use of joints. When joints are necessary, splice the fabric together only at a support post with a minimum 6-inch overlap and seal securely.
- F. Inspect sediment filter barrier systems after each rainfall, daily during periods of prolonged rainfall, and at a minimum once each week. Repair or replace damaged sections immediately. Remove sediment deposits when silt reaches a depth one-third the height of the fence or 6 inches, whichever is less.

END OF SECTION

Section 01575

STABILIZED CONSTRUCTION EXIT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of erosion and sediment control for stabilized construction exits used during construction and until final development of the site.

1.02 SUBMITTALS

- A. Manufacturer's catalog sheets and other product data on geotextile fabric.
- B. Sieve analysis of aggregates conforming to requirements of this Specification.

1.03 UNIT PRICES

- A. No separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items for which this work is a component.

1.04 REFERENCES

- A. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

PART 2 PRODUCTS

2.01 GEOTEXTILE FABRIC

- A. Provide woven or nonwoven geotextile fabric made of either polypropylene, polyethylene, ethylene, or polyamide material.
- B. Geotextile fabric shall have a minimum grab strength of 270 psi in any principal direction (ASTM D-4632), and the equivalent opening size between 50 and 140.
- C. Both the geotextile and threads shall be resistant to chemical attack, mildew, and rot and shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable life at a temperature range of 0°F to 120°F.
- D. Representative Manufacturers: Mirafi, Inc., or equal.

2.02 COARSE AGGREGATES

- A. Coarse aggregate shall consist of crushed stone, gravel, crushed blast furnace slag, or a combination of these materials. Aggregate shall be composed of clean, hard, durable materials free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.
- B. Coarse aggregates shall conform to the following gradation requirements.

<u>Sieve Size</u> <u>(Square Mesh)</u>	<u>Percent Retained</u> <u>(By Weight)</u>
2-1/2"	0
2"	0 - 20
1-1/2"	15 - 50

3/4"
No. 4

60 - 80
95 - 100

PART 3 EXECUTION

3.01 PREPARATION AND INSTALLATION

- A. If necessary to keep the street clean of mud carried by construction vehicles and equipment, Contractor shall provide stabilized construction roads and exits at the construction, staging, parking, storage, and disposal areas. Such erosion and sediment controls shall be constructed in accordance with the details shown on the Drawings and specified in this Section.
- B. No clearing and grubbing or rough cutting shall be permitted until erosion and sediment control systems are in place, other than as specifically directed by the Resident Project Representative to allow soil testing and surveying.
- C. Maintain existing erosion and sediment control systems located within the project site until acceptance of the project or until directed by the Resident Project Representative to remove and discard the existing system.
- D. Regularly inspect and repair or replace components of stabilized construction exits. Unless otherwise directed, maintain the stabilized construction roads and exits until the project is accepted by the City. Remove stabilized construction roads and exits promptly when directed by the Resident Project Representative. Discard removed materials off site.
- E. Equipment and vehicles shall be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damage caused by construction traffic to erosion and sediment control systems shall be repaired immediately.
- F. Conduct all construction operation under this Contract in conformance with the erosion control practices described in the Specification 01572 - Source Controls for Erosion and Sedimentation.

3.02 CONSTRUCTION METHODS

- A. Provide stabilized construction exits, and truck washing areas when approved by Resident Project Representative, of the sizes and locations where shown on SWPPP or as specified in this Section.
- B. Vehicles leaving construction areas shall have their tires cleaned to remove sediment prior to entrance onto public right-of-way. When washing is needed to remove sediment, Contractor shall construct a truck washing area. Truck washing shall be done on stabilized areas which drain into a drainage system protected by erosion and sediment control measures.
- C. Details for stabilized construction exit shall be shown on the SWPPP. Construction of all other stabilized areas shall be to the same requirements. Roadway width shall be at least 14 feet for one-way traffic and 20 feet for two-way traffic and shall be sufficient for all ingress and egress. Furnish and place geotextile fabric as a permeable separator to prevent mixing of coarse aggregate with underlying soil. Exposure of geotextile fabric to the elements between laydown and cover shall be a maximum of 14 days to minimize damage potential.
- D. Roads and parking areas shall be graded to provide sufficient drainage away from stabilized areas. Use sandbags, gravel, boards, or similar methods to prevent sediment from entering public right-of-way, receiving stream or storm water conveyance system.
- E. The stabilized areas shall be inspected and maintained daily. Provide periodic top dressing with additional coarse aggregates to maintain the required depth. Repair and clean out damaged control

measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto public right-of-way shall be removed immediately.

- F. The length of the stabilized area shall be as shown on the SWPPP, but not less than 50 feet. The thickness shall not be less than 8 inches. The width shall not be less than the full width of all points of ingress or egress.
- G. Stabilization for other areas shall have the same coarse aggregate, thickness, and width requirements as the stabilized construction exit, except where shown otherwise on the SWPPP.
- H. Stabilized area may be widened or lengthened to accommodate truck washing area when authorized by Resident Project Representative.
- I. Alternative methods of construction may be utilized when shown on SWPPP, or when approved by the Resident Project Representative. These methods include the following:
 - 1. Cement-Stabilized Soil - Compacted cement-stabilized soil or other fill material in an application thickness of at least 8 inches.
 - 2. Wood Mats/Mud Mats - Oak or other hardwood timbers placed edge-to-edge and across support wooden beams which are placed on top of existing soil in an application thickness of at least 6 inches.
 - 3. Steel Mats - Perforated mats placed across perpendicular support members.

END OF SECTION

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Section 01576

WASTE MATERIAL DISPOSAL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Disposal of waste material and salvageable material.

1.02 UNIT PRICES

- A. No separate payment will be made for waste material disposal under this Section. Include payment in unit price for related sections.

1.03 SUBMITTALS

- A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.
- B. Obtain and submit disposal permits for proposed disposal sites if required by local ordinances.
- C. Submit a copy of written permission from property owner, along with description of property, prior to disposal of excess material adjacent to the Project. Submit a written and signed release from property owner upon completion of disposal work.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 SALVAGEABLE MATERIAL

- A. Excavated Material: When indicated on Drawings, load, haul, and deposit excavated material at a location or locations shown on Drawings outside the limits of Project.
- B. Other Salvageable Materials: Conform to requirements of individual Specification Sections.

3.02 EXCESS MATERIAL

- A. Vegetation, rubble, broken concrete, debris, asphaltic concrete pavement, excess soil, and other materials not designated for salvage, shall become the property of Contractor and shall be removed from the job site and legally disposed of.
- B. Excess soil may be deposited on private property adjacent to the Project when written permission is obtained from property owner. See Paragraph 1.03 C above.
- C. Waste materials shall be removed from the site on a daily basis, such that the site is maintained in a neat and orderly condition.

END OF SECTION

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SECTION 01577

STRAW BALE FENCE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section includes the furnishing, installation and maintenance of straw bale fences for erosion and sedimentation control utilized during construction and prior to the final development of the site.

1.02 UNIT PRICES

- A. No separate payment for work performed under this Section. Include cost of work performed under this Section in Contract prices bid for items of which this work is a component.

1.03 REFERENCES – Not Used

PART 2 PRODUCTS – Not Use

PART 3 EXECUTION

3.01 GENERAL

- A. Provide erosion and sedimentation control systems at the location(s) shown on SWPPP. Such systems to be of the type indicated and to be constructed in accordance with the requirements shown in the Plans and specified within this Section.
- B. No clearing and grubbing or rough cutting, other than as specifically directed by the Resident Project Representative to allow soil testing and surveying, to be permitted until erosion and sedimentation control systems are in place.
- C. Maintain existing erosion and sedimentation control systems located within the project site installed by others prior to start of construction under this contract until acceptance of the project or until directed by the Resident Project Representative to remove and discard the existing systems.
- D. Inspect and repair or replace components of all erosion and sedimentation control systems as specified within this Section. Unless otherwise directed, maintain the erosion and sedimentation control systems promptly when directed by the Resident Project Representative. Discard removed materials offsite.
- E. Remove and dispose sediment deposits at the project spoil site. If a project spoil site is not designated on Plans, dispose of sediment offsite at location not in or adjacent to stream or floodplain. Off site disposal will be the responsibility of the Contractor. Sediment to be placed at the project site should be spread, compacted and stabilized as directed by the Resident Project Representative. Sediment shall not be allowed to flush into stream or drainage way. If sediment has been contaminated, it must be disposed of in accordance with existing federal, state and local regulations.
- F. Equipment and vehicles be prohibited by the Contractor from maneuvering on areas outside of dedicated rights-of-way and easements for construction. Damages caused by construction traffic to erosion and sedimentation control system to be repaired immediately.

3.02 (NOT USED)

3.03 CONSTRUCTION REQUIREMENTS

- A. Provide straw bale fences at locations shown on the SWPPP. Straw bale fences shall be installed in such a manner that surface runoff will percolate through the system in sheet flow fashion and allow sediment to be retained and accumulated.
- B. Bind bales with either wire, nylon, or polypropylene rope tied across the straw bales. Jute or cotton binding is not allowed.
- C. Place bales in a row with ends tightly abutting the adjacent bales. Place bales with bindings parallel to ground surface.
- D. Embed each bale in the soil a minimum of 4-inches, where possible.
- E. Anchor bales securely in place with 2-3/8-inch rebar stakes driven through the bales. The first stake in each bale to be angled toward previously laid bale to force bales together.
- F. Fill the gaps between bales with straw to prevent sediment from escaping between bales. Wedge carefully in order not to separate bales.
- G. Inspect straw bale fences after each rainfall, daily during periods of prolonged rainfall, or at a minimum of once a week. Repair or replace damaged sections immediately. Remove sediment deposits when silt reaches one-third of the height of the fence.

END OF SECTION

Section 01578

CONTROL OF GROUND WATER AND SURFACE WATER

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Dewatering, depressurizing, draining, and maintaining trenches, shaft excavations, structural excavations, and foundation beds in a stable condition, and controlling ground water conditions for tunnel excavations.
- B. Protecting work against surface runoff and rising flood waters.
- C. Disposing of removed water.

1.02 METHOD OF PAYMENT

- A. No separate payment will be made for control of ground water and surface water. Include the cost to control ground water and surface water in unit price for work in related sections.

1.03 REFERENCES

- A. ASTM D 698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb (2.49 kg) Rammer and 12-inch (304.8 mm) Drop.
- B. Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA).
- C. Federal Register 40 CFR (Vol. 55, No. 222) Part 122, EPA Administered Permit Programs (NPDES), Para.122.26(b)(14) Storm Water Discharge.
- D. Texas Commission of Environmental Quality, TCEQ General Permit Number TX150000 Relating to Discharges from Construction Activities.

1.04 DEFINITIONS

- A. Ground water control includes both dewatering and depressurization of water-bearing soil layers.
 - 1. Dewatering includes lowering the water table and intercepting seepage which would otherwise emerge from slopes or bottoms of excavations, or into tunnels and shafts, and disposing of removed water. The intent of dewatering is to increase stability of tunnel excavations and excavated slopes; prevent dislocation of material from slopes or bottoms of excavations; reduce lateral loads on sheeting and bracing; improve excavating and hauling characteristics of excavated material; prevent failure or heaving of the bottom of excavations; and to provide suitable conditions for placement of backfill materials and construction of structures and other installations.
 - 2. Depressurization includes reduction in piezometric pressure within strata not controlled by dewatering alone, as required to prevent failure or heaving of excavation bottom or instability of tunnel excavations.
- B. Excavation drainage includes keeping excavations free of surface and seepage water.

- C. Surface drainage includes use of temporary drainage ditches and dikes and installation of temporary culverts and sump pumps with discharge lines as required to protect the Work from any source of surface water.
- D. Equipment and instrumentation for monitoring and control of the ground water control system includes piezometers and monitoring wells, and devices, such as flow meters, for observing and recording flow rates.

1.05 PERFORMANCE REQUIREMENTS

- A. Conduct surface and subsurface investigations to identify ground water and surface water conditions and to provide parameters for design, installation, and operation of control systems.
- B. Design a ground water control system, compatible with requirements of Federal Regulations 29 CFR Part 1926 and Section 01561 - Trench Safety Systems, to produce the following results:
 - 1. Effectively reduce the hydrostatic pressure affecting:
 - a. Excavations.
 - b. Tunnel excavation, face stability or seepage into tunnels.
 - 2. Develop a substantially dry and stable subgrade for subsequent construction operations.
 - 3. Preclude damage to adjacent properties, buildings, structures, utilities, installed facilities, and other work.
 - 4. Prevent the loss of fines, seepage, boils, quick condition, or softening of the foundation strata.
 - 5. Maintain stability of sides and bottom of excavations.
- C. Provide ground water control systems that may include single-stage or multiple-stage well point systems, eductor and ejector-type systems, deep wells, or combinations of these equipment types.
- D. Provide drainage of seepage water and surface water, as well as water from any other source entering the excavation. Excavation drainage may include placement of drainage materials, such as crushed stone and filter fabric, together with sump pumping.
- E. Provide ditches, berms, pumps and other methods necessary to divert and drain surface water from excavation and other work areas.
- F. Locate ground water control and drainage systems so as not to interfere with utilities, construction operations, adjacent properties, or adjacent water wells.
- G. Assume sole responsibility for ground water and surface water control systems and for any loss or damage resulting from partial or complete failure of protective measures and any settlement or resultant damage caused by the control operations. Modify control systems or operations if they cause or threaten to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells, or affect potentially contaminated areas. Repair damage caused by control systems or resulting from failure of the system to protect property as required.

1.06 SUBMITTALS

- A. Submittals shall conform to requirements of Section 01330 - Submittals.

- B. Submit a Ground Water and Surface Water Control Plan for review by the Engineer prior to start of any field work. Submit a plan to include the following:
 - 1. Results of subsurface investigation and description of the extent and characteristics of water bearing layers subject to ground water control.
 - 2. Excavation drainage methods including typical drainage layers, sump pump application and other necessary means.
 - 3. Surface water control and drainage installations.
 - 4. Proposed methods and locations for disposing of removed water.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Comply with requirements of agencies having jurisdiction.
- B. Obtain permit from TCEQ under the Texas Pollutant Discharge Elimination System (TPDES), for storm water discharge from construction sites. Refer to Section 01570 – Texas Pollutant Discharge Elimination System. (If Applicable)
- C. Monitor ground water discharge for contamination while performing pumping in the vicinity of potentially contaminated sites.

PART 2 P R O D U C T S

2.01 EQUIPMENT AND MATERIALS

- A. Equipment and materials are at the option of Contractor as necessary to achieve desired results for control of ground and surface water.
- B. Eductors, well points, or deep wells, where used, must be furnished, installed and operated by an experienced contractor regularly engaged in ground water control system design, installation, and operation.
- C. All equipment must be in good repair and operating order.
- D. Sufficient standby equipment and materials shall be kept available to ensure continuous operation, where required.

PART 3 E X E C U T I O N

3.01 GROUND WATER CONTROL

- A. Provide labor, material, equipment, techniques and methods to lower, control and manage ground water in a manner compatible with construction methods and site conditions. Monitor effectiveness of the installed system and its effect on adjacent property.
- B. Install, operate, and maintain ground water control systems in accordance with the Ground Water and Surface Water Control Plan. Notify Engineer in writing of any changes made to accommodate field conditions and changes to the Work. Provide revised drawings and calculations with such notification.
- C. Provide for continuous system operation, including nights, weekends, and holidays. Arrange for appropriate backup if electrical power is primary energy source for dewatering system.

- D. Remove system upon completion of construction or when dewatering and control of surface or ground water is no longer required.
- E. Compact backfill to not less than 95 percent of the maximum dry density in accordance with ASTM D 698.

3.02 EXCAVATION DRAINAGE

- A. Contractor may use excavation drainage methods if necessary to achieve well drained conditions. The excavation drainage may consist of a layer of crushed stone and filter fabric, and sump pumping in combination with sufficient wells for ground water control to maintain stable excavation and backfill conditions.

3.03 SURFACE WATER CONTROL

- A. Intercept surface water and divert it away from excavations through use of dikes, ditches, curb walls, pipes, sumps or other approved means. The requirement includes temporary works required to protect adjoining properties from surface drainage caused by construction operations.
- B. Divert surface water and seepage water into sumps and pump it into drainage channels or storm drains, when approved by agencies having jurisdiction. Provide settling basins when required by such agencies.

END OF SECTION

Section 01610

BASIC PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for transportation, delivery, handling, and storage of materials and equipment.

1.02 PRODUCTS

- A. Products: Means material, equipment, or systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components designated for reuse.
- B. Do not reuse materials and equipment, designated to be removed, except as specified by the Contract Documents.
- C. Provide equipment and components from the fewest number of manufacturers as is practical, in order to simplify spare parts inventory and to allow for maximum interchangeability of components. For multiple components of the same size, type or application, use the same make and model of component throughout the project.

1.03 TRANSPORTATION

- A. Make arrangements for transportation, delivery, and handling of equipment and materials required for timely completion of the Work.
- B. Transport and handle products in accordance with instructions.
- C. Consign and address shipping documents to the proper party giving name of Project and street address. Shipments shall be delivered to the Contractor.

1.04 DELIVERY

- A. Arrange deliveries of products to accommodate the short term site completion schedules and in ample time to facilitate inspection prior to installation. Avoid deliveries that cause unnecessarily lengthy use of limited storage space.
- B. Coordinate deliveries to avoid conflict with Work and conditions at the site and to accommodate the following:
 - 1. Work of other contractors or the Owner.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.
 - 4. Owner's use of premises.
- C. Have products delivered to the site in manufacturer's original, unopened, labeled containers.
- D. Immediately upon delivery, inspect shipment to assure:

1. Product complies with requirements of Contract Documents.
2. Quantities are correct.
3. Containers and packages are intact; labels are legible.
4. Products are properly protected and undamaged.

1.05 PRODUCT HANDLING

- A. Coordinate the off-loading of materials and equipment delivered to the job site. If necessary to move stored materials and equipment during construction, Contractor shall relocate materials and equipment at no additional cost to the Owner.
- B. Provide equipment and personnel necessary to handle products, including those provided by the Owner, by methods to prevent damage to products or packaging.
- C. Provide additional protection during handling as necessary to prevent breaking, scraping, marring, or otherwise damaging products or surrounding areas.
- D. Handle products by methods to prevent over bending or overstressing.
- E. Lift heavy components only at designated lifting points.
- F. Handle materials and equipment in accordance with Manufacturer's recommendations.
- G. Do not drop, roll, or skid products off delivery vehicles. Hand carry or use suitable materials handling equipment.

1.06 STORAGE OF MATERIAL

- A. Store and protect materials in accordance with manufacturer's recommendations and requirements of these Specifications.
- B. Make necessary provisions for safe storage of materials and equipment. Place loose soil materials, and materials to be incorporated into the Work to prevent damage to any part of the Work or existing facilities and to maintain free access at all times to all parts of the Work and to utility service company installations in the vicinity of the Work. Keep materials and equipment neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining owners, tenants, and occupants. Arrange storage in a manner to provide easy access for inspection.
- C. Restrict storage to areas available on the construction site for storage of material and equipment as shown on Drawings or approved by the Resident Project Representative.
- D. Provide off-site storage and protection when on-site storage is not adequate.
- E. Do not use lawns, grass plots, or other private property for storage purposes without written permission of the owner and other person in possession or control of such premises.
- F. Protect stored materials and equipment against loss or damage.
- G. Store in manufacturers' unopened containers.
- H. Materials delivered and stored along the line of the Work shall be neatly, safely, and compactly stacked along the work site in such manner as to cause the least inconvenience and damage to

property owners and the general public, and shall be not closer than 3 feet to any fire hydrant. Public and private drives and street crossings shall be kept open.

- I. Damage to lawns, sidewalks, streets or other improvements shall be repaired or replaced to the satisfaction of the Resident Project Representative. The total length which materials may be distributed along the route of construction at any one time is 1000 lineal feet, unless otherwise approved in writing by the Resident Project Representative.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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Section 01630

PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Options for making product or process selections.
- B. Procedures for proposing equivalent construction products or processes.

1.02 DEFINITIONS

- A. Product: Means materials, equipment, or systems incorporated into the Project. Product does not include machinery and equipment used for production, fabrication, conveying, and erection of the Work. Products may also include existing materials or components designated for reuse.
- B. Process: Any proprietary system or method for installing system components resulting in an integral, functioning part of the Work. For this Section, the word Product includes Processes.

1.03 SELECTION OPTIONS

- A. Approved Products: Construction products or processes of certain manufacturers or suppliers designated in the Specifications followed by the words "or approved equal." Approval of alternate products or processes not listed in the Specifications may be obtained through provisions for product options and substitutions in General Conditions, and by following the submittal procedures specified in 01330- Submittal Procedures.
- B. Product Compatibility: To the maximum extent possible, provide products that are of the same type or function from a single manufacturer, make, or source. Where more than one choice is available as a Contractor's option, select a product which is compatible with other products already selected, specified, or in use by the Owner.

1.04 CONTRACTOR'S RESPONSIBILITY

- A. The Contractor's responsibility related to product options and substitutions is defined in General Conditions.
- B. Furnish information the Architect/Engineer deems necessary to judge equivalency of the alternate product.
- C. Pay for laboratory testing, as well as any other review or examination costs, needed to establish the equivalency between products in order to obtain information upon which the Engineer can base a decision.
- D. If the Engineer determines that an alternate product is not equal to that named in the Specifications, the Contractor shall furnish the specified products.

1.05 ENGINEER'S REVIEW

- A. Alternate products or processes may be used only if approved in writing by the Engineer. The Engineer's determination regarding acceptance of a proposed alternate product is final.
- B. Alternate products will be accepted if the product is judged by the Engineer to be equivalent to the specified product or to offer substantial benefit to the Owner.

- C. The Owner retains the right to accept any product or process deemed advantageous to the Owner, and similarly, to reject any product or process deemed not beneficial to the Owner.

1.06 SUBSTITUTION PROCEDURE

- A. Collect and assemble technical information applicable to the proposed product to aid in determining equivalency as related to the approved product specified.
- B. Submit a written request for a construction product to be considered as an alternate product.
- C. Submit the product information after the effective date of the Agreement.
- D. Submit 5 copies of each request for alternate product approval. Include the following information:
 - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - 2. For products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature with product description, performance and test data, and reference standards.
 - c. Samples, as applicable.
 - d. Name and address of similar projects on which product was used and date of installation. Include the name of the Owner, Architect/Engineer, and installing contractor.
 - 3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 - 4. Itemized comparison of proposed substitution with product or method specified.
 - 5. Data relating to changes in construction schedule.
 - 6. Relation to separate contracts, if any.
 - 7. Accurate cost data on proposed substitution in comparison with product or method specified.
 - 8. Other information requested by the Engineer.
- E. Approved alternate products will be subject to the same review process as the specified product would have been for shop drawings, product data, and samples.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01725

FIELD SURVEYING

PART 1 G E N E R A L

1.01 QUALITY CONTROL

- A. Conform to State of Texas laws for surveys requiring licensed surveyors.

1.02 UNIT PRICES

- A. No separate payment will be made for Field Surveying. Include the cost of Field Surveying in other related bid items.

1.03 SUBMITTALS

- A. Submit to Engineer the name, address, and telephone number of Surveyor before starting survey work.
- B. Submit documentation verifying accuracy of survey work on request.
- C. Submit certificate signed by surveyor, that the elevations and locations of the Work are in conformance with Contract Documents.
- D. Submit information under provisions of Section 01330 - Submittal Procedures.

1.04 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. Prepare a certified survey setting forth dimensions, locations, angles, and elevations of construction and site Work upon completion of foundation walls and major site improvements.
- C. Submit Record Documents under provisions of Section 01785 - Project Record Documents.

1.05 EXAMINATION

- A. Verify locations of survey control points prior to starting Work.
- B. Notify Engineer immediately of any discrepancies discovered.

1.06 SURVEY REFERENCE POINTS

- A. Control datum for survey is that established by Owner-provided survey as indicated on Drawings.
- B. Locate and protect survey control points prior to starting site work; preserve permanent reference points during construction.
- C. Notify Engineer 48 hours in advance of need for relocation of reference points due to changes in grades or other reasons.
- D. Report promptly to Engineer the loss or destruction of any reference point.

- E. Contractor shall reimburse Owner for cost of reestablishment of permanent reference points disturbed by Contractor's operations.

1.07 SURVEY REQUIREMENTS

- A. Utilize recognized engineering survey practices.
- B. Establish elevations, lines and levels to provide appropriate controls for the Work. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading; fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- D. Verify periodically layouts by same means.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01732

PROCEDURE FOR WATER VALVE ASSISTANCE

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Operation of existing valves is by the owner's employees. No valve will be operated without prior approval by the Resident Project Representative.

1.02 MEASUREMENT AND PAYMENT

- A. No separate payment will be made for this item, when required.

1.03 PROCEDURE

- A. The Contractor will notify the Resident Project Representative to coordinate valve operation.

1.04 CANCELLATION

- A. Scheduled valve closures may be terminated in the event of a water system emergency at no cost to the Owner.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N - Not Used

END OF SECTION

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Section 01740

RESTORATION OF SITE IMPROVEMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Restoration of the Work site in public rights-of-way or easements and adjacent public or private property affected by construction operations, including pavement, esplanades, sidewalks, driveways, fences, lawns and landscaping.

1.02 UNIT PRICES

Surface Restoration.

No separate payment will be made for Restoration of Site Improvements in unpaved and paved areas. Cost should be associated with contract.

Replacement Outside of Minimum Dimensions. Pavements, driveways and sidewalks damaged outside of the minimum dimensions for payment shall be replaced by the Contractor at no additional cost to the City of Weslaco.

1.03 REFERENCES

- A. ANSI Z60.1. American Standard for Nursery Stock.

1.04 DEFINITIONS

- A. Site Restoration. Replacement or reconstruction of site improvements to rights-of-way, easements, public property, and private property that are affected or altered by construction operations, with the improvements restored to a condition which is equal to, or better than, that which existed prior to construction operations.
- B. Site Improvements. Includes but is not limited to pavement, curb and gutter, esplanades, sidewalks, driveways, fences, lawns, irrigation systems, and landscaping.

1.05 SUBMITTALS

- A. Make submittals in conformance with Section 01330 - Submittal Procedures.

1.06 QUALITY ASSURANCE

- A. Have landscape plantings planted by qualified personnel.

1.07 SCHEDULING

- A. Site restoration shall be performed no later than 60 days following installation of the Work.

1.08 WARRANTY

- A. Replaced plants and grasses are covered by the Contractor's general warranty and guarantee.

- B. Replace plants that fail during the warranty period.
- C. Contractor to provide a written notification to homeowner stating that homeowner is responsible for watering replaced plants and grasses.
- D. Damage caused by natural hazards such as hail, high winds or storm is not covered by the warranty.
- E. Existing plant material required to be moved on the site are covered under the warranty.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Pavement, Sidewalks and Driveways. Use materials as specified in Section 02951 - Pavement Replacement for Utility Construction.
- B. Seeding and Sodding. Provide sod as specified in Section 02922 - Sodding. For areas to be seeded, conform to Section 02921 - Hydromulch Seeding.
- C. Landscape Plantings, Trees and Shrubs. Provide trees, shrubs and plants of quantity, size, genus, species and variety of those being replaced and complying with recommendations and requirements of ANSI Z60.1.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Construction Site Photographs. Document conditions on and adjacent to the construction site with construction photographs.

3.02 PREPARATION

- A. Removing Pavements and Structures.
 - 1. Remove the minimum pavement, curb and gutter, and other structures as required to perform the Work.
 - 2. Remove concrete and asphaltic concrete material using sawed joints in accordance with Section 02752 - Concrete Pavement Joints.
- B. Remove or relocate existing fencing, if required, for construction operations. Maintain the integrity of the private property owner's fencing if needed for protection of children, pets, livestock or property. Notify the property owner 72 hours in advance before removing fencing and coordinate security needs.

3.03 INSTALLATION

- A. Pavement, Sidewalk, and Driveway Restoration.
 - 1. Replace pavement, curb and gutter, sidewalks, and driveways removed or damaged as the result of construction operations. Reconstruct in accordance with Section 02951 - Pavement Replacement for Utility Construction.
- B. Seeding and Sodding.

1. Clean up construction debris and level the area with bank sand so that the resulting surface of the new grass matches the level of the existing grass and maintains pre-construction drainage patterns. Level minor ruts or depressions caused by construction operations where grass is still viable by filling with bank sand.
2. Restore grass areas disturbed or damaged by construction with grass comparable with that previously existing.
3. Restore established lawn areas, including easements and esplanades disturbed or damaged by construction, by sodding and fertilizing in accordance with Section 02922 - Sodding, except that measurement and payment shall be as specified in this Section.
4. Restore grass areas not requiring sodding using hydromulch methods in accordance with Section 02921 - Hydromulch Seeding, except that measurement and payment shall be as specified in this Section.

C. Trees, Shrubbery and Plants.

1. Extra care shall be taken in removing and replanting trees, shrubbery and plants. Trees, shrubbery and plants shall be removed in a way that leaves soil around the roots. Trees, shrubbery and plants shall be placed outside of excavation area.
2. Replace in kind any trees, shrubbery, and plants removed or damaged by construction operations.
3. Have a nursery or landscape firm make tree replacements using balled-and- burlapped nursery stock. Within the availability of standard nursery stock, replace each removed tree with one of an equivalent species and size, but with not less than a 2-1/2-inch-diameter trunk, as measured 1-1/2 feet above natural ground.

D. Fence Removal and Replacement.

1. Replace fencing removed or damaged, including, but not limited to, posts, caps, concrete footings, concrete curb under fence, wire, wire mesh, wood panels, top and bottom railing.
2. Reconstruct any portion of the fence disturbed by construction which is not equal to or better than that which existed prior to construction operations as evidenced by preconstruction photographs or videos.
3. Remove and dispose of damaged or substandard material.

3.04 CLEANING

- A. Remove debris and trash which is the result of the Contractor's operation to maintain a clean and orderly site.

3.05 MAINTENANCE

- A. Maintain plantings, sodded areas and seeded areas through warranty period.
- B. Replace plantings and seeded or sodded areas that fail to become established through the warranty period.
- C. Maintain plantings as follows:

1. Initial watering shall be by Contractor. Continued maintenance shall be by homeowner.
 2. Repair or replace bracing as necessary.
 3. Prune as necessary.
- D. If it is necessary to remove tree branches, have removal and other necessary pruning performed by an qualified nursery or landscape firm utilizing best standard practices.

END OF SECTION

Section 01755

STARTING SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Starting systems.
- B. Demonstration and instructions.
- C. Testing, adjusting, and balancing.

1.02 UNIT PRICES

- A. No separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay item of which this work is a component.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer 7 days prior to startup of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under Contractor's supervision in accordance with manufacturer's instructions.
- G. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.02 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Engineer two weeks prior to date of Substantial Completion.

- B. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Resident Project Representative in detail to explain all aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at equipment location.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

END OF SECTION

Section 01770

CLOSE-OUT PROCEDURES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

- A. Closeout procedures including final submittals such as operation and maintenance data, warranties, and spare parts and maintenance materials.

1.02 CLOSEOUT PROCEDURES

- A. Comply with General Conditions regarding Final Completion and Final Payment when Work is complete and ready for Architect/Engineer's final inspection.
- B. Provide Project Record Documents in accordance with Section 01785.
- C. Complete or correct items on punch list, with no new items added. Any new items will be addressed during warranty period.
- D. The Owner will occupy portions of the Work as specified in other Sections.

1.03 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. For facilities, clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean or replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and temporary construction facilities from the site following the final test of utilities and completion of the work.

1.04 ADJUSTING

- A. Adjust operating equipment to ensure smooth and unhindered operation.

1.05 OPERATION AND MAINTENANCE DATA

- A. Submit operations and maintenance data as noted in 01330 - Submittal Procedures.

1.06 WARRANTIES

- A. Provide one original of each warranty from Subcontractors, suppliers, and manufacturers.
- B. Provide Table of Contents and assemble warranties in 3-ring/D binder with durable plastic cover.
- C. Submit warranties prior to final Application for Payment.
- D. Warranties shall commence in accordance with the requirements in Document 00700 - General Conditions.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification sections.
- B. Deliver to location within the Owner's jurisdiction as directed by Resident Project Representative; obtain receipt prior to final Application for Payment.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Section 01785

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Maintenance and Submittal of Project Record Documents and samples.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain one record copy of documents at the site in accordance with General Conditions.
- B. Store Record Documents and samples in Contractor's field office if a field office is required by Contract Documents, or in a secure location. Provide files, racks, and secure storage for Record Documents and samples.
- C. Label each document "PROJECT RECORD" in neat, large, printed letters.
- D. Maintain Record Documents in a clean, dry, and legible condition. Do not use Record Documents for construction purposes.
- E. Keep Record Documents and Samples available for inspection by Resident Project Representative.

1.03 RECORDING

- A. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- B. Contract Drawings and Shop Drawings: Legibly mark each item to record all actual construction, or "as built" conditions, including:
 - 1. Measured depths of elements of foundation in relation to finish first floor datum.
 - 2. Measured horizontal locations and elevations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Elevations of underground utilities referenced to bench mark utilized for project.
 - 4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.
 - 5. Field changes of dimension and detail.
 - 6. Changes made by modifications.
 - 7. Details not on original contract drawings.
 - 8. References to related shop drawings and modifications.
- C. Record information with a red felt-tip marking pen on a set of blue or black line opaque drawings, provided by Engineer.

1.04 SUBMITTALS

- A. At contract closeout, deliver Project Record Documents to Engineer.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION