

PROCEDURES MANUAL

NOVEMBER, 2002

***OCMAPS
AND
OKLAHOMA CITY PUBLIC SCHOOLS***

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I. EXECUTIVE SUMMARY

A. Background

On Tuesday, November 13, 2001, voters approved two separate initiatives to fund school construction projects for Oklahoma City Public Schools and the suburban school districts, which include students from within the Oklahoma City limits.

The voters of the City of Oklahoma City passed the OCMAPS sales tax. This tax projected to generate approximately \$512,000,000 to be used for school facility improvement projects. Of the funds generated, 70% will be used for the Oklahoma City Public Schools and the remaining 30% will be allocated to the suburban school districts.

A Bond Proposition in the amount of \$180,000,000 was also passed by the voters of the Oklahoma City Public School District. The bonds will be utilized to fund facility improvements (approximately \$163,300,000) and new technology in the local schools (approximately \$16,700,000).

In August 2001, The City of Oklahoma City formed the Oklahoma City Metropolitan Area Public Schools Trust (OCMAPS Trust) to manage both the sales tax and bond issue projects. The OCMAPS Trust is a seven-member body, appointed by the City Council. A Management Agreement was entered into between the OCMAPS Trust and the I-89 School District defining the OCMAPS Trust's responsibility to manage the finances, design and construction of school projects in Oklahoma City. In addition, the OCMAPS Trust will monitor the expenditure of funds for sales tax funded technology improvements and transportation projects.

The City Manager of Oklahoma City serves as the General Manager of the Trust and appointed a Program Manager to manage day-to-day activities of the OCMAPS Program.

The OCMAPS Trust has retained a Program Consultant to assist the Program Manager with the implementation of the program. The Program Consultant will provide program management services for the duration of the sales tax and bond projects.

B. Purpose

The purpose of the Procedures Manual is to list the various entities that may be involved in the I-89 School District OCMAPS Program and to establish the procedures whereby they will communicate and interact. The participants will generally fall into one of the following categories:

- OCMAPS Office
- OCMAPS Trust
- I-89 School District (Oklahoma City Public Schools)
- City of Oklahoma City
- Oklahoma City Public Works Department
- Program Consultant
- Individual Schools within the I-89 School District
- The Cities of Midwest City, Del City, Spencer and The Village
- Architect
- Contractor
- Subcontractors
- Specialty Consultants
- Local Business Utilization Program Facilitators
- Citizens of Oklahoma City

The City of Oklahoma City and the I-89 School District have formalized their relationship in a series of documents creating the OCMAPS Trust and authorizing its operations on behalf of the City and I-89 School District. The implementation of the OCMAPS Program will entail the selection of architects, engineers, specialty consultants and testing agencies, the bidding of numerous projects

by the construction community and the procurement of technology and transportation related products and services.

C. Process

The OCMAPS Program is organized around a series of documents prepared by the Program Consultant in association with the OCMAPS Trust, the I-89 School District, and various organizations and individuals across the community. These documents describe the work to be done as part of the program, the funding source, the timing and the standards that will apply to the work as it is accomplished.

1. Program Implementation Plan

- a. The Program Implementation Plan is the master development guide for the OCMAPS Program. This document provides the following information:
 - Introduction and history of the OCMAPS Program
 - Transition Plan
 - Detailed descriptions and scope of work for each school project
 - Budget for each project
 - A prioritization schedule for all the projects
 - Technology Plan
 - Transportation Plan
 - Regional Stadium Plan
 - Suburban School District Program
- b. The Program Implementation Plan has been approved by the OCMAPS Trust, and City Council of The City of Oklahoma City, and the I-89 District School Board.

2. Educational Specifications

- a. The Educational Specifications describe, in detail, the generic components of a typical high school and typical elementary school for the I-89 School District. The document was prepared from a series of community meetings at various locations across the district, with input from the school board and administration. The Educational Specifications, for both a 900-student elementary school and a 1,000-student high school, list the number and type of educational spaces, the size of these spaces, the student/teacher ratios, and other salient information.
- b. The Educational Specifications have been approved by the OCMAPS Trust, and the I-89 School Board.

3. Design Standards

- a. The Design Standards outline the type and quality of materials and products that will be used to construct the projects delineated in the Program Implementation Plan. The intent of the Design Standards is to establish consistency in design and construction across the district, to standardize components, where possible, and utilize appropriate materials, based on management and maintenance procedures.
- b. An integral part of the Design Standards will be the Student Safety Program. This program will define responsibilities for all those working in and around the I-89 School District's facilities and the City's school children to ensure the safety of the students and staff during design and construction activities.
- c. The Design Standards will be approved by the OCMAPS Trust and the I-89 District School Board.

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4. Status Reports

- a. Each month, the Program Consultant will prepare a status report of the I-89 School District portion of OCMAPS Program for submission to the Program Manager and the OCMAPS Trust. This monthly report will contain the following information.
 - Overall status of the OCMAPS Program
 - Progress on each project, including programming, design and construction activities
- b. The Program Consultant and the Architect for each project will generate input for these reports. Each Architect will be required to submit monthly reports for their project to be reviewed and summarized by the Program Manager and the Program Consultant.

5. Contact Information

Any questions regarding the OCMAPS Program should be directed to the following office:

Program Manager
OCMAPS Office
420 W. Main Street, 4th Floor
Oklahoma City, OK 73102
Phone: (405) 297-3461

In addition, much of the detailed information regarding the OCMAPS Program is available online at: www.okc-cityhall.org.

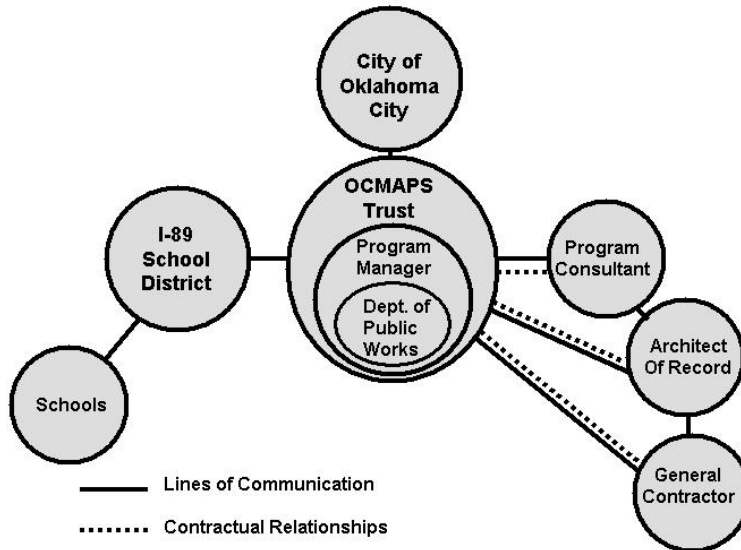
II. GENERAL

These are the processes and relationships that will exist throughout the OCMAPS Program.

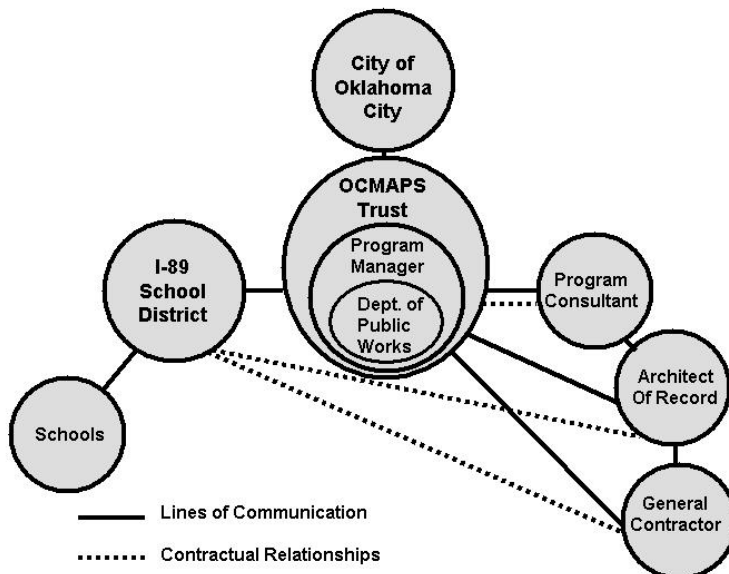
A. Statement of Relationship

1. Functional Diagrams

OCMAPS Function Relationships – Sales Tax Revenue Projects



OCMAPS Function Relationships – Bond Revenue Projects



2. Administrative Services

- a. All communication shall be accomplished in the following manner, regardless of project funding source:
 - 1) The Sub-contractors will communicate through the Contractor.
 - 2) The Contractor will communicate through the Architect.

- 3) The Architect will communicate through the Program Manager and the Program Consultant.
- 4) The Program Consultant will communicate through the Program Manager.
- 5) The Program Manager will communicate with the I-89 School District.
- b. Contracts for Sales Tax financed projects will be between Architects and the OCMAPS Trust. Contracts for Contractors will also be with the OCMAPS Trust on these projects.
- c. Contracts for the Bond Revenue financed projects will be between the I-89 School District and the Architects. Contracts for Contractors will also be with the I-89 School District on these projects.

B. Monthly Status Report and Program Schedule

1. Each entity involved will provide a monthly Status Report of project progress submitted with their requests for payment.
 - a. The Program Consultant will submit copies of the Monthly Status Report to the Program Manager, reporting on all activities and events regarding the progress of the OCMAPS Program during the past month.
 - b. The Architect will submit copies of their Monthly Status Report to the Program Manager and the Program Consultant with their Request for Payment.
 - c. The Contractor will submit copies of their Monthly Status Report to the Program Manager, the Architect and the Program Consultant.
 - d. Other specialty consultants, (i.e., environmental, geotechnical) will submit copies of their Monthly Status Report to the Program Manager, the Architect and the Program Consultant.

C. Student Safety Program

1. Safety for Oklahoma City's school children, I-89 School District staff and the public is paramount.
 - a. The Student Safety Program will outline construction safety issues
 - b. The Student Safety Program will also outline safety procedures for dealing with "unauthorized" persons on project sites.
 - c. At all times, it must be understood the paramount issue is the construction sites are schools and all school regulations regarding visitor check-in, safety, and security shall be maintained.
 - d. The Program Consultant, Architect, and Contractor will follow policies and regulations established by the OCMAPS Program and the I-89 School District for conduct of visitors and workers in existing school facilities.
2. Each entity involved will conform to a Safety Program developed for the type of work in which they are involved.

III. PROGRAMMING/PRE-DESIGN PHASE

The Program Consultant will develop data for each school project that defines the parameters of the project. This information, referred to as the Project Requirements, will be given to the Architect for use in the design of each project.

A. Project Requirements

1. Project Scope and Budget

- a. The budgets and scopes for all projects are developed by the Program Consultant and approved by the OCMAPS Trust and the I-89 School Board.
- b. A written program of space requirements will be developed by the Program Consultant, utilizing the Educational Specifications as a guide.

2. Functional Layout

- a. The purpose of the functional layout is to communicate site and building floor plan relationships to the Architect and other related parties. The functional layout is only intended to be a guide for the Architect.
- b. The Program Manager and the I-89 School District will provide the Program Consultant with drawings of the existing school facilities, if available.
- c. The Program Consultant will combine the information about the existing school facilities and the program information to develop the functional layouts of each project.

3. Tentative Schedule

- a. A schedule will be provided to the Architect containing design-related critical dates for accomplishing specific tasks.
- b. After entering into the contract, the Architect will prepare a detailed schedule, per its contract with the OCMAPS Trust or I-89 School District, for presentation to and review by the Program Manager and the Program Consultant based on the schedule issued with the Project Requirements.
 - 1) The schedule will be updated monthly and submitted with the Architect's pay request.
 - 2) The schedule will also contain construction-related deadlines determined by the nature of school operations.
- c. The Contractor will prepare a Construction Schedule that corresponds with the schedule developed by the Architect.

B. Architectural Selection

1. The Architect will be selected in the following manner:

- a. The Oklahoma City Public Works Department will issue a Notice to Architects, Engineers and Planners for an Architect for a specific project or group of projects.
- b. Respondents to the Notice will submit their statement of qualifications to the Oklahoma City Public Works Department within the timeframe identified in the Notice.
- c. A Consultant Review Committee, consisting of Oklahoma City staff, an OCMAPS Trust representative and I-89 School District representative, will review the responses to the Notice and develop a list of candidates for further consideration.
- d. The Consultant Review Committee will interview the potential candidates and recommend an order of preference to the OCMAPS Trust and I-89 School Board. The OCMAPS Trust and I-89 School District will then select a candidate and authorize the Program Manager to negotiate a contract.

IV. DESIGN PHASE

The Architect will confirm the project scope, budget and schedule, and submit design documents to the Program Manager and the Program Consultant.

A. Project Orientation Meeting

1. The Architect will attend the Project Orientation Meeting conducted by the Program Manager with the assistance of the Program Consultant to review the following:
 - a. Parameters
 - 1) Written program of space requirements
 - 2) Potential alternates
 - 3) Budget Requirements
 - 4) Schedule for Design and Construction
 - b. Student Safety Program
 - c. Existing conditions walk through at facility
2. The Architect will record the minutes of the meeting and distribute one copy to each of the participants.

B. Project Conferences/Meetings

1. The Architect, in conjunction with the Project Manager and the Program Consultant will conduct Project Conferences:
 - a. The Architect will schedule all meetings through the office of the Program Manager and the Program Consultant.
 - b. The Architect will record the minutes of the meeting and distribute one copy to each of the participants.
 - c. Each of the recipients of the meeting minute distribution will be given five (5) working days to review the minutes and make comments to the Architect.
2. Other entities may have an issue that requires a meeting.
 - a. The entity that requests the meeting will arrange for the time and place scheduling the meetings through the Program Manager and the Program Consultant.
 - b. If the Architect is involved in the meeting, they will be responsible for meeting minutes and distribution. If the Architect is not a participant, the entity that called the meeting will be responsible for the minutes and distribution.
 - c. Each of the recipients of the meeting minute distribution will be given five (5) working days to review the minutes and make comments to the Architect.

C. Flow of Project Data

1. The Architect will receive OCMAPS Program information from the Program Manager and the Program Consultant.
2. The Architect will receive information from the I-89 School District through the Program Manager and the Program Consultant.
3. The Architect will work with Code Officials and other authorities with jurisdiction directly.
4. Surveys, environmental studies, geo-technical reports will be issued to the Architect through the Program Manager and the Program Consultant.

5. The Architect will primarily direct communications through the Program Manager and the Program Consultant. The Architect will document and distribute these communications to all parties including the I-89 School District and the Oklahoma City Public Works Department.

D. Design Reviews

1. Formal Submittals

Formal Submittals by the Architect shall be required during the Design Phase

a. Schematic Design Submittal

- 1) The Architect shall submit hard copies and a digital file (preferably on CD ROM) of the following Schematic Design documents.
 - a) Site Plan: Site description and relationship to off-site features such as roadways, other pertinent buildings and land uses, topography, and area.
 - b) Architectural: Description of buildings, occupancies, functions and operation; descriptions of primary building materials.
 - c) Structural: Description of structural systems, foundations, excavation and economic considerations used to justify selection.
 - d) Mechanical: Description of HVAC, plumbing, fire protection, life safety and special mechanical systems, indicating system types, equipment types, control systems, including economic, operating and maintenance considerations used to justify selection.
 - e) Electrical: Description of electrical service, switchgear types, general lighting, power and auxiliary systems arrangements, economic operating and maintenance considerations used to justify selection.
 - f) Vertical Transportation: Description and arrangement of elevators, escalators, etc., indicating quantities, floors served, speeds, capacities, average round trip times, average intervals, and equipment types.
 - g) Preliminary code review: An analysis of occupancy type and required construction components and features.
 - h) Area Summary: Indication of gross areas, net areas, and efficiencies.
 - i) Other Systems: Description, arrangement and purpose for any other major systems or features of the project.
 - j) Construction Cost Estimate: An estimate of the various systems and components to a sufficient level of detail to analyze major components and overall cost impacts.
 - k) Project Schedule: Refer to paragraph 4 of this section.

b. Preliminary Report Submittal

- 1) The Architect shall submit hard copies and a digital file (preferably on CD ROM) of the following Preliminary Report documents:
 - a) Architectural Drawings
 - i. Double line drawings showing dimensions, code requirements, doors, door swings, accurate layouts for toilet rooms, mechanical rooms and electrical rooms.
 - ii. Large scale design details for all major architectural components.
 - iii. Reflected ceiling plans and related details.
 - iv. Stairway plans, detailing new and existing.
 - v. Other significant features showing development of plan and details.
 - b) Structural Drawings
 - i. Foundation layouts and major details.
 - ii. Framing plans and elevations showing preliminary sizing of all major members.
 - iii. Preliminary major connection details, plates, etc.
 - iv. Typical floor primary construction details.
 - v. Typical wall primary construction details.
 - c) Heating, Ventilating, and Air Conditioning (HVAC) Drawings
 - i. Schematic piping diagrams.

- ii. Typical floor plans, showing major trunk duct with preliminary sizing.
- iii. Mechanical equipment room layouts
- iv. Main room pump layouts.
- v. Section through floor at typical mechanical rooms.
- vi. Riser diagram for HVAC systems.
- vii. Connection to heating and cooling medium.
- d) Plumbing Drawings
 - i. Preliminary riser diagrams.
 - ii. Equipment room layouts.
 - iii. Connection to all City utility services.
- e) Fire Protection Systems Drawings
 - i. Fire hose cabinets locations on floor plans.
 - ii. Riser and flow diagrams.
 - iii. Equipment layouts (fire pumps and storage tanks).
 - iv. Fire Department connections.
 - v. Identification of areas to be sprinkled.
- f) Electrical Drawings
 - i. Riser diagrams, single line, showing electrical systems.
 - ii. Floor plans (min. 1/8" scale) showing preliminary lighting.
 - iii. Floor plans (min. 1/8" scale) showing preliminary power.
 - iv. Floor plans (min. 1/8" scale) showing other preliminary systems.
 - v. Main electrical room layout.
- g) Auxiliary systems riser diagrams, i.e., fire alarm, telephone/data, closed circuit television (CCTV), security, card access design.
 - i. Site: Include roads, drives, parking areas, and sidewalks
 - a. Description of asphalt or concrete paving construction.
 - b. Width of roadways and drives and minimum parking dimensions and angles.
 - c. Thickness of sidewalks and spacing of expansion or construction joints.
 - d. Calculated rainfall and runoff quantities.
 - ii. Utilities (Provide separate list of information for each utility involved):
 - a. Utility company and servicing area.
 - b. Capacity at point of service.
 - c. Service characteristics such as voltage, pressure, size, etc.
 - iii. Architectural
 - a. Description of exterior wall construction.
 - b. Description of interior wall construction.
 - c. Type of roofing.
 - d. Type of windows, doors and doorframe materials.
 - e. Description of interior room finishes.
 - f. Description of specialty items such as toilet partitions, shelving and similar items.
 - iv. Code Review
 - a. Building classification, occupancies, type of construction, and concurrence by building code departments.
 - b. Fire rating of principal elements of the structure(s).
 - v. Structural
 - a. Description of foundation exploration and soil bearing capacities.
 - b. Type and size of foundation, retaining walls and shoring and economic considerations involved.
 - c. Statements of the type of structure adopted and live loading used with reasons therefore and economic considerations.
 - d. Description of structural floor systems proposed and spacing of principal members, with reasons and economic analysis for their adoption.
 - vi. Heating, Ventilation and Air Condition
 - a. List of design criteria including and outdoor temperatures, U-values,

- shading factors, loads from lighting, population and special equipment, percentage of outside air to be introduced and manner of introduction, air supply and ventilation rates (CFM/SF) for all zones, equipment selections and capacities, materials to be used for ductwork and piping, isolation equipment, control equipment and all other information required to explain the basic HVAC systems, including energy analysis, loss/gain calculations, life safety systems, operations, etc.
- b. Description of measures taken for sound control.
- vii. Plumbing
 - a. Equipment selections and capacities, materials proposed, control systems, and fixture selections and quantities.
- viii. Fire Protection Systems
 - a. Description of fire protection systems, including selection and capacity of fire pumps, storage tanks and any other special equipment required.
 - b. Occupancy hazards and references.
 - c. Statement of sprinkler requirements, types of automatic sprinkler systems, type of heads, requirements for special systems such as carbon dioxide, etc.
 - d. Statement of requirements for fire hose cabinets, standpipes, and fire extinguishers, including types, sizes and locations.
- ix. Electrical Systems
 - a. Estimated total connected load with calculations, demand factor used and resulting kilowatt demand.
 - b. Breakdown offload between lighting, power, special dedicated power, isolated computer power, and convenience outlet loads on a total and square foot basis.
 - c. Type of materials proposed for switchgear, conductors, and conduit.
 - d. Description and location of electrical service and switchgear.
 - e. Description of electrical distribution.
 - f. Description of lighting system.
 - g. Description of emergency power systems.
 - h. Description of auxiliary systems, i.e., fire alarm, CCTV, security, card access, lighting protection.
- x. Vertical Transportation
 - a. Description of elevator controls and machine, signals, entrance doors and frames, cab design and finishes, and emergency power operations.
 - b. General arrangement plans and sections.
 - c. Speed and capacities.
 - d. Average waiting time interval.
- xi. Building Management and Control Systems
 - a. Detailed criteria and calculations for design of capacity, size and types of special systems or equipment.
- h) Outline Specifications: These specifications shall be entitled "Outline Specifications, (Project Name)", and shall include the following:
 - i. List of specification sections, using Construction Specifications Institute format, and a brief description of the materials or systems included on each section.
 - i) Construction Estimate: The estimate shall consist of the following:
 - i. Estimate of construction costs for materials and systems for the project including demolition, site work, excavation, structure, building construction, mechanical, plumbing, and electrical work and Contractor mark-up.
- c. Final Plans and Specifications Submittal
 - 1) The Architect shall submit 100% Construction Documents that will bear the Architect's seal, be signed and dated, and will be ready to issue for construction.
 - 2) The Final Plans and Specifications Submittal distribution shall be as follow:
 - Program Manager: one (1) copy
 - Program Consultant: two (2) copies

- I-89 School District: two (2) copies
 - Oklahoma City Public Works Department: one (1) copy
 - City Plan Review Department: (see Regulatory Reviews and Approvals Phase section)
- 3) The Final Plans and Specifications submitted shall contain the following:
- a) Drawings
 - i. The construction drawings will include all information necessary to bid and construct the project, clear and complete.
 - ii. Refer to subsequent sections for drawing format and Computer Aided Drafting requirements.
 - b) Specifications
 - i. The specifications are to be clear, concise, and complete to permit correct interpretation and to avoid conflicts.
 - ii. The approved outline specifications from the Preliminary Design will be developed into the Final Plans and Specifications.
 - iii. The specifications are to be carefully coordinated with the drawings.
 - iv. The specifications may not be restrictive, except in special cases approved or requested by the Program Manager. The manufacturer's names may be used for descriptive purposes only. Where manufacturer's names are used, multiple manufacturers must be listed and/or the phrase "or equal" must be included. The Program Manager, Program Consultant, I-89 School District and the Architect will determine whether products or systems submitted as "equal" are acceptable.
 - v. The specifications may not include, or be based on any tests or qualifying items which cannot be readily verified.
 - c) Calculations
 - i. The calculations used to determine sizes and capacities of equipment and systems will be provided.
 - d) Construction Estimate
 - i. The construction estimate will be updated using the Preliminary Report estimate as a basis.

2. Design Reviews

- a. The Architect in conjunction with the Program Manager and the Program Consultant shall conduct design review meetings. The purpose will be:
 - 1) To review design comments and final approved scope, including alternates.
 - 2) To determine whether or not the Architect can be authorized to proceed.
- b. If this is a re-submittal, the Architect will include the redline set of submittal documents with checklist.

3. Project Budgets/Estimating

- a. The project budget will be included in the Project Requirements document distributed to the Architect at the beginning of the project.
 - 1) The fixed limit of construction, as defined in the Architect's contract, is based on the overall budget for the OCMAPS Program. The Architect will design each phase of his work to comply with this cost.
- b. When there becomes a discrepancy in the project cost, the Architect will recommend changes to bring the project cost within the fixed limit of construction.
- c. Final construction documents may contain alternates to control the budget. However, these alternates must be approved in advance to ensure the base project meets the requirements of the OCMAPS Program.

4. Project Schedule

- a. A preliminary project schedule will be included in Project Requirements data distributed to the Architect at the beginning of the project.
- b. The Architect will prepare a project schedule to be approved prior to their first application for payment.
- c. The Architect will keep the Program Manager and Program Consultant informed on schedule deviations.
- d. The Architect will distribute an updated schedule with each request for payment.
- e. In the event that the Architect cannot accomplish the milestones in their schedule, the Architect will propose a recovery plan to bring the project back on schedule.

E. Drawings

1. Sheet Layout

- a. Sheet Size
 - 1) Standard Sheets: Standard drawing sheet size will be 30" X 42".
 - 2) Addendum Sheets: Addendum sheets will be 8-1/2" x 11", or capable of being folded to that size, and in colors as follows:
 - Addendum No. 1 – Blue
 - Addendum No. 2 – Canary
 - Addendum No. 3 – Green
 - Addendum No. 4 – Pink
 - Addendum No. 5 – Goldenrod
 - Addendum No. 6 – Lilac
 - Addendum No. 7 – Tan
 - 3) Special Sheets: Special sizes for unique projects will be used only with the written approval of the Program Manager.

2. Drawing Criteria

- a. Scale
 - 1) Minimum Standard: Scales will not be less than the following minimum standards, unless otherwise approved by the Program Manager:

Site Plans	1"	=	20'-0"
Floor Plans	1/8"	=	1"-0"
Detail Plans	1/4"	=	1"-0"
Elevations	1/8"	=	1"-0"
Building Selections	1/8"	=	1"-0"
Wall Selections	3/8"	=	1"-0"
Structural Steel Details	1"	=	1"-0"
Structural Concrete Details	1/2"	=	1"-0"
Architectural Details	1-1/2"	=	1"-0"
 - 2) Indications: Scale indications of each drawing or element will be neatly lettered following or below the title of the drawing or element.
- b. Nomenclature
 - 1) Abbreviations: Abbreviations will be explained in an abbreviation key contained on a drawing in the document set.
 - 2) Generic Terms: Names of manufacturers, trade names, and model numbers will be listed and explained in the project manual specification only.
- c. Layout Control
 - 1) Elevations for profile, contour, benchmark and other vertical control points will be based on USGS Datum.
 - 2) Building elevators such as finish floor, top of steel, bottom of foundation, depressions, etc., of major structures may be a reference datum plane. The reference datum plane will be equated to the USGS Datum.
 - 3) Civil elevations will refer directly to USGS Datum and not use a reference datum plane.

- d. Revisions of Drawings
 - 1) Revised areas on the body of the drawing will be circled and indicated numerically.
 - 2) A revision block will be provided to document details of each revision. Each revision will be dated with day, month and year.

3. Project Organization

- a. The Final Plans and Specifications package will contain the following standard sheets or drawings:
- b. The title sheet including the following:
 - Name of Project
 - Project Number
 - Title of Contract Package
 - Title and signature block
- c. Index of Drawings: All drawings will be listed by page/drawing number and title.
- d. General Notes and Symbols: The general notes drawing will include all notes, symbols, abbreviations, etc., that are of general information to the project.
- e. Key Plan: Overall plan oriented in same direction as the large drawing that indicates how project is organized and how drawings are organized.

4. Sequence

- a. Drawing sets will be arranged in the following sequence:
 - Phasing/Staging drawings
 - Civil drawings
 - Landscape drawings
 - Architectural drawings
 - Structural drawings
 - Mechanical drawings
 - Plumbing drawings
 - Fire Protection drawings
 - Electrical drawings
 - Food Service drawings
 - Other Special disciplines, i.e., Signage and Graphics, etc.

For larger projects, which require the contract document drawings sets to be bound in several sets, the drawings will not break apart any of the drawing groups listed above.
- b. Alternates: Alternate drawings will be prepared separately to clearly define the extent of work to be bid as an alternate or separate price basis.

5. Project Numbers

- a. All documents will include a project number, which will be provided by the Oklahoma City Public Works Department for each Project. All documents will be included in this requirement, including correspondence, drawings, sketches, specifications, calculations, code reviews, etc. All contract documents used on the project will be electronically tracked.

F. Computer Aided Drafting Requirements (CAD)

1. Scope

- a. All contract drawings for all projects will be produced electronically, and in accordance with these standards.
- b. Each project will be consistently produced in accordance with the documented CAD standard for that project. The file naming convention, layer naming convention, pen mapping, and text fonts will be consistent within each project.

2. Electronic File Format

- a. All electronic CAD data will be delivered to the Program Manager in the latest version of AutoCad® or the format as defined in the Contract for the Architectural Services.

3. Data Organization

- a. For civil work (including but not limited to site grading, building footprints, infrastructure, utilities and parking), the origin point for CAD data will be coordinated with the Global Positioning System (GPS) permanent benchmark.
- b. CAD entities illustrating infrastructure services, (such as water, sewer, etc.), will be organized by layer. A separate layer or group of layers will be used for each system.

4. General CAD Entity Usage

- a. In general, the color of all entities will be "BYLAYER" (CAD term for the color of entities being defined by the property associated with the layer). Color may be applied by entity on a limited basis where necessary to minimize changes to the Architect's existing CAD system by allowing the use of block libraries.
- b. In general, the Linetype of all entities will be "BYLAYER". Linetype may be applied by entity on a limited basis where necessary to minimize changes to the Architect's existing CAD system by allowing the use of block libraries.
- c. Polyline entities may be used for all entities except for major building components such as walls.
- d. All drawing files will be kept purged of unused block definitions, layers, linetypes, dimension styles, and text styles.
- e. The use of Paper Space is not required, but is recommended for plan drawing sheets.
- f. Each drawing file will have proper Limits set in model space and paper source.
- g. The use of Hatch will be kept to a minimum to avoid unnecessarily large drawing files.

5. Graphic Standards

- a. With the exception of the cover sheet, graphics standards are left largely to the discretion of the Architect. The Program Manager will provide an electronic file with a "DWG" electronic file extension of the required cover sheet.

6. Documentation Requirements for CAD Data Format

- a. Each Architect will provide documentation of the CAD standards used to produce all contract documents CAD data. Documentation will be supplied to the Program Manager in both hard copy and electronic formats. At a minimum, this documentation will include details as described in the following sections.
 - 1) Format: CAD standard documentation will be produced in an 8-1/2" x 11" format and bound in a three ring binder.
- b. Content: At a minimum, the documentation will include sections covering file and layer naming conventions, a CAD file list, a layering list, plotter pen mapping, and text fonts.
 - 1) Layer Naming Convention: The AIA CAD Layer Guideline Standard is recommended, if the Architect does not have a comprehensive, organized layer system in place.
 - 2) File List and Contents: The Architect will provide the Program Manager with a comprehensive list of all CAD files necessary to produce the construction documents, including any files that are externally referenced.
 - 3) Layer List: The Architect will document all layers used in the construction document CAD files grouped by discipline and sub-grouped by component. Common discipline groups include General, Civil, Architectural, Landscape, Structural, Mechanical, Plumbing, Fire Protection, Electrical, and Interiors. Additional discipline group may be

necessary for special building systems on a particular project.

- 4) Pen Mapping: The CAD program will associate each layer color with a plotter pen setting, which controls the line width on the plotted drawing. The Architect will provide a Plotter Pen Table indicating the pen width configured for each CAD layer color. Only color numbers 1 through 15 will be used. A Pen Width Summary table and a plotted example of each pen width will also be included.
- 5) Text Styles and Fonts: The CAD program will use a system of Text Styles and Text Fonts to create and control text in drawing files. Most CAD programs supply a number of standard font files as part of the program. If third party fonts are used, a copy of the font must be licensed and supplied to the Program Manager and the Oklahoma City Public Works Department at no additional cost. Note that only legally purchased third party fonts will be submitted – “Pirated” fonts are not acceptable.

G. Specifications

1. Format

- a. The standard specification format for format, sentence structure, organization, and general approach will be the Construction Specifications Institute’s Masterformat.
- b. All project specifications will be prepared on a word processor using the latest version of Microsoft Word© software.

2. Standard Text Elements

- a. Footer
 - 1) First line will contain the title “OCMAPS Project”.
 - 2) Second line will contain the project name at the left margin, the page number centered, and the date at the right margin, right justified.
 - 3) When the Plans and Specifications are revised, the date will be prefixed by revision, abbreviated in upper case, revision number (1,2,3), and a colon.

3. Coordination with Bidding Requirements, Contract Forms, and Conditions of the Contract

- a. These documents include Notice to Bidders, Resolutions, Instruction to Bidders, Proposals, Affidavits, Certifications, Construction Contract (Agreement), Bond Forms, Special Provisions, and any other required OCMAPS documents. All of these documents will be prepared by the Program Manager and the Oklahoma City Public Works Department staff and provided to the Architect.

4. Coordination with Division 1 – General Requirements

- a. Division includes construction administrative requirements applicable to a specific project. The Architect will prepare Division 1 – General Requirements under the direction of the Program Manager and the Oklahoma City Public Works Department.

5. General

- a. The detail specifications will include the following items, when applicable:
 - 1) Names of manufacturers - minimum of three (3)
 - 2) Trade names and model numbers of products
 - 3) Type, grade and quality of materials.
 - 4) Alloy of metals
 - 5) Type and grade of finishes
 - 6) Physical properties
 - 7) Required performance, tests and submittal
 - 8) Methods of fabrications

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- 9) Methods of installation
- 10) Description of warranty requirements, including warranty period for materials and products including installations. Comprehensive description of total systems warranty incorporating work of several sections
- 11) Tolerances
- 12) Submittals; the required submittals appropriate to the item specified
- b. Components itemized as products, systems, equipment and styles in specification text or in schedules that require maintenance, text, cleaning, replacement, operation adjustments, etc., will be tagged for inclusion in Operations and Maintenance Manuals.
- c. Industry codes and standards will be referenced in the specifications in order to require compliance with these codes and standards.

H. Design Presentations

- 1. The Architect, with the assistance of the Program Manager and the Program Consultant, will make a presentation of their design to the OCMAPS Trust and the I-89 School Board as a part of the Schematic Design, Preliminary Report, and Final Plans and Specification Phases of the project.
- 2. The Architect, with the assistance of the Program Consultant, will make community and school staff design presentations, as requested by the Program Manager for each of the design phases.

V. REGULATORY REVIEWS AND APPROVALS

A. General

1. The Architect will be responsible for obtaining all required regulatory reviews and identify the responsibilities of the Contractor and sub-contractors for regulatory reviews and approvals in the Contract Documents. The review and approval processes outlined herein are meant to serve as guides and examples of processes necessary during the design and construction phases of a project. The Architect shall confirm the approvals and processes required as part of their work.
2. The school projects encompassed in the OCMAPS Program are located in five separate municipalities. The four other municipalities in addition to Oklahoma City, and the schools within their corporate boundaries are as follows:
 - a. The Village – Western Village, Ridgeview and Johnson Elementary Schools.
 - b. Spencer – Star Spencer High School and Rogers Elementary.
 - c. Midwest City – Willow Brook and Telstar Elementary Schools.
 - d. Del City – Oakridge Elementary School.

B. State Department of Education

1. All school projects will require a review by the State Department of Education. The review must occur prior to bidding the project. A preliminary review of the proposed construction can occur. The Architect should submit two sets of plans and specifications for the formal review. The submittal is made to the Capital Improvement/Transportation Section of the State Department of Education. The contact for this process is the Staff Architect at (405) 521-3301.

C. Review Processes (Cities other than Oklahoma City)

1. The Village
 - a. No zoning reviews are required for the school projects in The Village.
 - b. The Village utilizes the 1996 Edition of the BOCA Building Code at present. The 2000 Edition of the International Building Code may be adopted by The Village, and it is anticipated to be adopted in late 2002.
 - c. A preliminary review of the design, prior to building permit submittal, is possible in The Village.
 - d. The building permit process requires approximately two weeks in The Village. The Architect will submit three (3) sets of plans. The plan sets are not required to be stamped and sealed. A building permit application will be required to be submitted. Building Permit applications are presented to The Village Planning Commission for review and approval on the first Tuesday of the month and then The Village City Council for final approval the same evening.
 - e. No building permit fee is required on school projects. The Contractor and sub-contractors will be required to pay any applicable inspection fees.
 - f. There are no other reviews are required by The Village, other than through the Building Permit review.
 - g. The water system is part of the City of Oklahoma City system. A water meter impact fee may be required by the City of Oklahoma City. The Contractor shall be responsible for payment of this fee.
 - h. Contractors and sub-contractors are required to be licensed in The Village.
 - i. The contact for the building permit process for The Village is the Building and Code Supervisor at (405) 751-8861.
2. Spencer

- a. No zoning reviews are required for school projects in Spencer.
- b. The City of Spencer utilizes the 2000 Edition International Building Mechanical and Plumbing Codes and the latest edition of the National Electric Code.
- c. A preliminary review of design prior to building permit submittal is possible in the City of Spencer.
- d. The building permit process requires approximately two weeks in Spencer. The Architect will submit three (3) sets of stamped and sealed project documents with the building permit application.
- e. Building permit and inspection fees are required. The Contractor will responsible for obtaining the final building permit and payment of all fees.
- f. The drainage review process is currently part of the building permit process. This review may change and become a separate review in the future.
- g. Contractors and sub-contractors are required to have state and the City of Spencer licenses.
- h. The Contact for the building permit process for Spencer is the Code Enforcement Supervisor at (405) 771-3226.

3. Midwest City

- a. No zoning reviews are required for the existing school properties. If additional land is required, zoning reviews would be required.
- b. The City of Midwest City has adopted the 2000 Edition of International Building Mechanical and Plumbing Codes and the 1996 National Electrical Code. The 2002 Edition of the National Electric Code is anticipated to be adopted by the end of 2002.
- c. A preliminary review of the design prior to building permit submittal is recommended in Midwest City.
- d. The building permit process required approximately two weeks in Midwest City. The Architect will submit three (3) sets of stamped, signed and sealed project documents with the building permit application.
- e. The building permit fee is waived for schools. Inspection fees are required to be paid by the Contractor and sub-contractors.
- f. No other reviews are required by Midwest City, other than through the building permit review.
- g. Contractors and sub-contractors are required to have state and Midwest City licenses.
- h. The Contact for the building permit process for Midwest City is the Development Services Supervisor at (405) 739-1223.

4. Del City

- a. No zoning reviews are required for school projects in Del City.
- b. The City of Del City has adopted the 2000 International Building Mechanical and Plumbing Codes and the latest edition of the National Electric Code.
- c. A preliminary review of the design, prior to the building permit submittal, is possible in Del City.
- d. The building permit process requires approximately two weeks in Del City. The Architect will submit three (3) sets of stamped and sealed plans with the building permit application.
- e. No building permit fee is required on school projects. The Contractor and sub-contractor will be required to pay any applicable inspection fees.
- f. No other reviews are required by Del City, other than through the Building Permit review.
- g. The drainage in the area of the school may require special attention. A review of the drainage solution for the project with Del City staff prior to the building permit application is recommended.
- h. Contractors and sub-contractors are required to have both state and Del City licenses.
- i. The contract for the building permit process for Del City is the Planning Director at (404) 671-2814.

D. Oklahoma City Review Processes and Requirements

1. The City of Oklahoma City Public Works Department Contract Administration

- a. The City of Oklahoma City Public Works Department Contract Administration will assign a project number to a project at the time of Architect selections. The project number shall be required to be included in the title block of all sheets.
- b. A Public Works Department representative will be assigned to administer each project.
- c. All bonds and insurance information will be sent to the Public Works Department.
- d. The City does not accept AIA documents.

2. The City of Oklahoma City Zoning Department

- a. The school projects within the City of Oklahoma City that involve additions or major site revisions are not exempt from zoning regulation.
- b. Elementary schools are classified as Low Impact Institutional use. These schools will require a Special Use Permit granted by the City Council if they involve additions or major site revisions.
- c. High Schools are classified as Moderate Impact Institutional use. These schools are allowed on commercial and agricultural zoned properties but are a conditional use on residential-zoned properties, requiring review and approval as a Special Exemption by the Oklahoma City Board of Adjustment. The Special Exemption requires a list of property owners within a specified distance, a Board of Adjustment application, a site plan and an application fee. Any revisions to the site plan layout will require additional approval by the Board of Adjustment.
- d. Sports Stadiums are classified as a High Impact Spectator Sports and Entertainment use. This use is allowed on C-4, C-CBD, and I-1, I-2 and I-3 zoned properties by right. This use is allowed on C-2 zoned properties as a Conditional Use and C-3 zoned properties with a Special Exemption by the Board of Adjustment.
- e. Several special overlay and zoning districts require special reviews within the City of Oklahoma City: The Urban Design District, the Historic Preservation District and The Neighborhood Conservation District. Each District has a special review process. The Urban Design District is an overlay district and requires compliance with the under laying zoning, unless specifically modified by the Urban Design District Guidelines.
- f. Schools within The Urban Design Districts, with additions or remodel of the exterior, will require a Certificate of Approval from the Oklahoma City Urban Design Commission prior to application for a building permit. The building permit application for the project shall include an additional set of plans and four (4) sets of drawings of the proposed exterior treatments of the building and exterior site improvements, in addition to the normal Building Permit Submittal requirements.
 - 1) Emerson High School is within an Urban Design District.
- g. School projects within a Historical Preservation and Landmark District require a review by the Oklahoma City Historical Preservation and Landmark Commission to obtain a Certificate of Appropriateness. The submission requires an application, the site plan, with the proposed changes and relevant drawings, the application fee, a list of the property owners adjacent to the school, and any manufacturer's brochures and materials list for items to be utilized on the project.
 - 1) Only one school is on the National Register of Historic Places – Harding Middle School. This school is not one of the OCMAPS projects.
 - 2) Edgemere and Wilson Elementary Schools are in Historical Preservation Zoning Districts.
 - 3) Edwards Elementary is located in an area designated as a Historic District on the National Register for Historic Places, but is not part of an Oklahoma City Historical Preservation Zoning District.

3. The City of Oklahoma City Permit Reviews

- a. Storm Water Quality Management
 - 1) A permit must be obtained for the stormwater management during construction. The permit fee is \$55.00. If the site is over five acres, a permit from the Oklahoma Department of Environmental Quality is also required.
 - 2) The two required plans for the permit are the pollution prevention plan and the erosion control site plan. A review of the drawings at the 95% complete stage is recommended. Three (3) sets of plans are required for 95% review and six (6) sets for the permit application.
 - 3) The Architect may make application, prior to the contractor being under contract, and leave it unsigned. The contractor would then sign and obtain the permit at the appropriate time.
 - 4) The City of Oklahoma City does not allow hay bales for erosion control.
 - 5) For Final Acceptance of the project, the Contractor must have all bare site areas covered with established vegetative cover by the time of final inspection.
- b. Plan Review
 - 1) Prior to applying for the building permit, the plans must be submitted for Plan Review. The Architect shall submit four (4) sets of drawings and one (1) set of specifications at the 95% complete stage for this review. The plans shall be submitted by Wednesday at 12:00 p.m. the day prior to the Plan Review Session. Plan Reviews are on Thursdays at 2:00 p.m. in the 10th Floor Conference Room of the City of Oklahoma City offices, located at 420 W. Main Street.
 - 2) Deficiencies identified in the Plan Review session shall be incorporated in the plans and specifications for the Building Permit application set.
- c. Building Permit Review
 - 1) The reviews for utilities, paving, traffic, drainage and the Fire Department are part of the Building Permit Review process.
 - 2) The Fire Department review consists of a review of hose length coverage requirements, fire lane requirements and fire hydrant placement. A review prior to Building Permit submittal is recommended. An early review would allow review of fire alarm and fire sprinkler concepts, in addition to building permit review items. A separate fire alarm permit fee is required.
 - 3) The Oklahoma City Water Utilities Trust
 - a) Projects installing exterior water lines and fire lines will include special sheets in the drawings. These sheets will have their own project number assigned by the Oklahoma City Water Utilities Trust. The WF Sheet will detail water lines in easements and the WD Sheet will contain the double check valve details.
 - b) The Water Utilities Trust has standard water details and sanitary sewer details that are required to be incorporated into the project documents. The Architect shall contact the Oklahoma City Water Utilities Trust to obtain these details.
 - 4) Stormwater Drainage
 - a) A review of the stormwater drainage at an early stage of site design is advised.
 - b) In areas of existing drainage problems, check sets of site development and a drainage study will be required.
 - c) Storm sewer plans with calculations will need to be submitted for plan review.
 - d) The Architect will obtain drainage intensity and frequency information from the City of Oklahoma City to use in preparing drainage calculations.
 - 5) Traffic
 - a) A traffic engineering consultant will be provided by the OCMAPS Trust, as needed, to evaluate traffic impacts caused by the school projects. The traffic engineer may recommend off-site traffic improvements. Any off-site traffic improvements recommended by the traffic engineering consultant, directed by the Program Manager for the inclusion in the project, shall be designed and incorporated into the project documents by the Architect.
 - b) Any traffic signalization required for incorporation in the school projects will be

submitted by the Architect to the Oklahoma City Traffic Commission for review and approval prior to submission of the program documents for building permit.

- 6) Paving
 - a) The Architect may review parking layouts with the Oklahoma City Public Works Department during the design phases.
 - b) The Architect shall obtain and incorporate the applicable Oklahoma City standard paving details in the project documents.
- 7) Oklahoma City Development Center (Building Permit)
 - a) A preliminary plan review can be obtained at a cost of \$55.00 by the Architect. This review is not the same as the formal Plan Review noted above as the Plan Review required prior to building permit submittal.
 - b) The Architect will apply for the building permit. The Contractor will be required to sign and obtain the building permit. Three (3) sets of the project documents are required to be submitted with the building permit application.
 - c) The Architect will initially submit three (3) sets of 95% complete sets for building permit review. The preliminary review comments will be returned to the Architect for incorporation in the final project documents. At the time the project is issued for bid, the Architect will submit three (3) sets of signed and sealed project documents, incorporating the comments, to the Oklahoma City Development Center for final review for the building permit.
 - d) A building permit and inspection fee and some impact fees will be assessed on the school projects. The Contractor will be responsible for payment of all of these fees.
 - e) The complete building permit review can take 3-4 weeks for new construction and 1-2 weeks for remodel projects.
 - f) The City of Oklahoma City has adopted the 2000 edition of the International Building and Plumbing Codes, the 1996 edition of the International Mechanical Code and the 1999 edition of the National Electrical Code. The City of Oklahoma City anticipates adoption of the International Existing Building Code upon its completion. The Architect shall obtain from the City of Oklahoma City all adopted associated supplements and modifications to each of those codes.
- 8) Contractor Prequalification
 - a) Contractors and major subcontractors must be pre-qualified with the City of Oklahoma City prior to bidding the project. The pre-qualification process can take up to six weeks. The contact for pre-qualification procedures and application information is the City of Oklahoma City Pre-qualification Administrator at (405) 297-2494.

VI. Pre-Construction Phase

The Pre-Construction Phase is the period of time between the completion of the construction documents and the award of a contract for construction. This is generally referred to as the "Bid Phase".

A. Advertisement for Bid

1. The advertisement for bids will be issued by the City Clerk for the City of Oklahoma City.
2. The Architect will provide the City Clerk with twenty (20) sets of plans for distribution to potential bidders.

B. Plan Distribution

1. Plans and Specifications will be available through the City Clerk's office.

C. Pre-Bid Conference

1. A mandatory Pre-bid Conference will be conducted by the Architect, the Program Manager, the Program Consultant and the Oklahoma City Public Works Department.
 - a. All interested Contractors are required to have a representative present at the Pre-Bid Conference.

D. Communication

1. Communication with Prospective Bidders
 - a. All questions or comments from the bidders shall be directed to the Architect.
 - b. When substitutions are requested, the bidders must submit their request to the Architect no less than seven (7) calendar days prior to bid date.
 - c. When clarifications are required:
 - 1) The Architect will process the issue and distribute the response to all registered plan holders, Program Manager, the Program Consultant and the Oklahoma City Public Works Department.
 - d. Substitutions:
 - 1) If accepted, the Architect shall issue the substitution acceptance in addendum form no less than two (2) working days prior to bid date.
 - 2) After receipt of a request for substitution, the Architect will copy the request to the Program Manager and Program Consultant, who will review the request.
 - e. Addenda:
 - 1) All addenda are expected to be issued no less than two (2) working days prior to bid date to the registered plan holders, Program Manager and Program Consultant.

E. Bid Opening

1. The bid opening shall be conducted by the City Clerk's office.
2. The Architect will submit a sealed construction cost estimate at the time of the bid.

F. Bid Review and Analysis

1. The bids will be reviewed and analyzed by the Architect who will make a recommendation to the Program Manager and the Program Consultant for award of contract.

G. Award of Contract

1. The award of the construction contract is based upon whether the project is a Sales Tax or Bond Issue project:
 - a. If the project is funded by Sales Tax, the I-89 School Board recommends Award of Contract to the OCMAPS Trust.
 - 1) The contract will be between the OCMAPS Trust and the Contractor.
 - b. If the project is funded by Bond Issue, the OCMAPS Trust recommends award of contract to the I-89 School Board.
 - 1) The contract will be between the I-89 School Board and the Contractor.
 - c. The Program Manager will coordinate the contract requirements, regardless of funding source.
 - d. After the contract has been executed, the Program Manager and City Engineer will issue the Notice to Proceed.

VII. CONSTRUCTION PHASE

The Contractor will construct the project within a set budget and schedule. The Architect will review the construction progress and schedule weekly meetings with all the entities involved to review the project status.

A. Pre-Construction Meeting

1. The Architect will schedule and conduct the Pre-Construction Meeting with the assistance of the Program Manager and the Program Consultant, the Oklahoma City Public Works Department and the I-89 School District.
2. The Architect will record the minutes of the meeting and distribute one (1) copy to each of the participants.
 - a. Each of the recipients of the meeting minute distribution will be given five (5) working days to review the minutes and make comments to the Architect.

B. Construction Meetings

1. The Contractor will host weekly meetings to discuss construction progress.
 - a. All involved entities will have representatives in attendance.
 - b. The Contractor will record the minutes of the meeting and distribute one copy to each of the participants.
 - 1) Each of the recipients of the meeting minute distribution will be given five (5) working days to review the minutes and make comments to the Contractor.

C. Construction Schedule

1. The Contractor will generate a project schedule at the beginning of the construction project.
 - a. This schedule is to be reviewed by the Architect, the Program Manager, the Program Consultant, the Oklahoma City Public Works Department and the I-89 School District.
 - b. It is to be updated and submitted with monthly pay applications to the Architect for review and approval.

D. Architect's Quality Assurance Observations

1. The minimum requirements of the Architect's quality assurance observations are as follows:

- a. Division 1 – General Requirements

Summarize in periodic reports progress and quality of work being performed by the Contractor. Compile Declaration of Discrepancy or Nonconformance Reports (DDN) and maintain DDN Log. As corrective work is completed, execute DDN Final Disposition Report. Review and modify the Contractor's punch list as required. Verify that the Contractor has completed corrective work described on the punch list.

- b. Division 2 – Excavation and Backfill

Coordinate field activities of the Testing Laboratory, inspection, testing and certification of all foundation bearing strata. All foundations will be observed and probed as specified in the contract documents. The foundation and excavation field report, along with the Testing Laboratory's field reports and all other testing results, will be filed each day in the Architect's field office and with the Program Manager and the Program Consultant. Periodically, the Testing Laboratory will issue a typed summary of the daily field reports and testing reports

and transmit copies to the Program Manager, the Contractor, Architect, and Program Consultant for review and record. Substandard testing results will be transmitted to, the Architect, the Program Manager, the Program Consultant and the Oklahoma City Public Works Department immediately following the test.

c. Division 3 – Concrete

Observe the pre-placement of concrete. Compare in-place reinforcing with the construction documents requirements for size, location, configuration and clearances. Review location of chairs and supports, cleanliness of reinforcing, accuracy of bar positioning, security of ties, lap configuration, and location and construction of joints.

Observe formwork for conformance with the physical shapes and configurations shown on the contract documents. Observe forms for shoring and bracing, butt joints, stripability, alignment, grades, levelness and plumbness, and miscellaneous forming accessories and embeds. Observe condition of soil or sub base conditions for suitability of placement of concrete. Observe securing of concrete material for testing and concrete placement techniques. Note mechanical vibration techniques and placement of cold joints caused by an inadequate supply of concrete or placement equipment breakdown.

Monitor weather and weather related impact to concrete work. Note temperatures sensitive requirements, wet, frozen or muddy conditions, precipitation (rain/snow) during placement.

d. Division 3 – Precast Concrete (if required)

Observe erection of pre-cast concrete panels. Note panel embeds and attachment devices, dowels and grout beds at base of panels, plumbness of erection, and clearances between panels.

e. Division 4 – Masonry

Observe laying of masonry units. Observe and review all material testing data. Note hot and cold weather installation techniques. Note accessories, mortar and grout mixtures, reinforcing, embeds, bond beams, pointing and cleaning. Note weather and weather related impact on masonry work. Note temperature sensitive requirements, wet frozen stock, precipitation (rain/snow) during laying operations.

f. Division 5 – Structural Steel

Observe fabrication and erection of structural steel. Review all test and inspection reports generated by testing laboratories. Coordinate activities of testing laboratories. Note standard and special coatings, delivery, storage, handling, distorted members, slip-critical connections, method of nut tightening for shear connectors, temporary bracing, levelness and plumbness, field testing of shear studs, welding conditions, quality of welds, and weld testing.

g. Division 5 – Light Gauge Metal

Observe light gauge metal framing system to ensure conformance with contract documents for correct size, spacing and fastening of framing system. Observe reinforcement of framing openings and installation of integrated blocking and backing.

h. Division 6 – Carpentry

Observe installation of rough carpentry. Observe rough framing for conformance to requirements for preservation or fire-retardant treatment. Observe lumber identification marks, size and spacing. Observe type and finish of all fastening devices. Observe job site

storage of rough and finish carpentry systems. Observe detail connections of finish carpentry for conformance with approved shop drawings. Observe environmental requirements for installation of finish carpentry for proper temperature and humidity.

i. Division 7 – Waterproofing and Dampproofing

Observing installation of all waterproofing and dampproofing systems. Observe for proper sub-base preparation to ensure proper bonding. Monitor weather and weather related impact to waterproofing and dampproofing work. Note temperature sensitive requirements, wet, frozen or muddy conditions, precipitation (rain/snow) during installation. Observe the protective covering of systems for proper procedures that will prevent damage to the system.

j. Division 7 – Insulation

Observe installation of building thermal insulation system. Observe for specified type, thickness and R-values. Observe the covering of the insulation system to ensure system is not damaged. Coordinate field-testing and inspection services of roofing consultant (if applicable) or testing laboratory. Distribute and file all daily reports and testing results. Observe the installation of firestopping insulation. Perform walk through observation before ceiling installation.

k. Division 7 – Steel Panels (if required)

Observe the installation of the exterior steel wall panel and exterior wall systems. Observe sealants, flashings and fastener spacings for conformance with the contract documents and the approved shop drawings.

l. Division 7 – Roofing

Coordinate activities of roofing consultants' (if applicable) or testing laboratory's inspection and testing activities. Review for proper submittal of required warranties, approvals and assurances before proceeding with installation. Attend pre-construction coordination meeting and review all procedures of installation for compliance with requirements of documents and review roofing consultants' (if applicable) or testing laboratory's testing and observation procedures. Monitor weather and weather related impact to roofing work. Note temperature sensitive requirements, wet or frozen conditions, precipitation (rain/snow) during installation. Review and distribute field generated test and observation reports generated by roofing consultant (if applicable) or testing laboratory. Observe installation of the roof accessories including penetrations of roofing system by mechanical, electrical and plumbing contractors.

m. Division 8 – Glass and Glazing

Observe installation of glass and glazing systems for proper setting sealants. Observe internal weeping system for functionality. Monitor weather and weather related impact to sealant work. Note temperature sensitive requirements, wet, or frozen conditions, precipitation (rain/snow) during installation. Observe installation of standard and special door frames and doors. Observe doors and frames for proper function and fire-labeling requirements. Review access door locations for coordination with access requirements to mechanical and electrical devices. Observe fire-labeling requirements for finish hardware.

n. Division 9 – Finishes

Observe installation of interior finishes. Observe for proper framing of interior partitions including size and gauge of framing system. Observe for proper spacing of fasteners. Observe reinforcement of openings and internal blocking. Observe construction of walls

requiring a fire rating. Observe systems and construction above ceilings before the ceilings are installed. Observe for proper protection of finished surfaces. Observe subsurface preparation and placement of primers and finish coats of standard and special coatings.

o. Division 10 – Specialties

Observe installation of specialty items and miscellaneous accessories.

p. Division 14 – Elevators/Escalators

Observe installation of elevator and escalator systems. Observe that underslab-piping systems are correct and protected. Observe installation of electrical power and electronic control equipment and the construction of the elevator platform. Observe testing of equipment.

q. Division 15 – Mechanical, Plumbing

Observe the installation of the heating, air conditioning, ventilation, plumbing and fire protection systems. Observe installation of piping systems including backfilling operations, connections, hangers, valves, isolators, and related piping devices. Observe the installation of pipe insulation for thickness, type, and R-value. Observe setting of all equipment testing and system start-up. Observe and coordinate system testing for acceptance.

r. Division 16 – Electrical

Observe the installation of all electrical equipment and systems. Observe the installation of conduit underground and backfilling operations. Observe installation of suspended raceways, hangers, pull boxes, and accessories. Observe setting of major electrical devices. Observe all Contractor and supplier required equipment testing and system start-up. Observe and coordinate system testing for acceptance and final project closeout.

s. Other

Observe other construction activities as appropriate, such as sanitary sewer mains, water mains, storm sewer or street construction.

E. Testing and Inspection Reports

1. The following reports will be part of the Quality Assurance Program.

a. Foundation, Excavation and Fill Report

Content: The report will identify the project name, contract number and include a description of the exact location of the inspection work. The field technician will describe in detail the soils and the subsurface probes. The report will identify the extent of any over excavation required to achieve the required bearing capacities. The geotechnical engineer will attach field sketches and a bearing capacity report to this form.

Frequency: This report will be completed for every foundation excavation on the project.

b. Concrete Placement Inspection Data Report (Prepared by the Material Testing Laboratory)

Content: The report will identify the project name, contract number and Contractor's name. The report will specifically identify the exact location of the placement of the concrete. The placing method, times of start and completion of the placement will be recorded. The report will note any placement delays and the reason for and duration of the delay. All technical information about the load, mix design, identification of all test cylinders or beams taken.

Frequency: This report will be completed each time a concrete placement is made.

c. Concrete Pre-placement Observation Report (Prepared by the Architect)

Content: The report will identify the project name, contract number and Contractor's name. The report will specifically identify the exact location of the concrete placement. The report will note any discrepancy that exists in the construction before the concrete is placed in the forms. The observation will specifically note reinforcing, form surfaces and miscellaneous embedded items.

Frequency: This report will be completed each time an observation is made before a scheduled placement. The observation and report will be performed for each placement.

d. Concrete Paving Placement Observation Report (Prepared by the Architect)

Content: The report will identify the project name, contract number and Contractor's name. The report will specifically identify the physical location of the subsurface drains, subbase conditions and the concrete placement. The report will note any discrepancy that exists in the construction before the concrete is placed. The observation will specifically note reinforcing, form surfaces and miscellaneous embedded items.

Frequency: A separate report will be completed at the end of each days work for each area placed. The observation will be detailed and follow a predetermined schedule and description of work items recorded.

e. Pre-construction Built-up Roofing Check List (Prepared by the Architect)

Content: The document will identify the project name, contract number and Contractor's name. The document will contain a general recap of the submittals, certificates, quality assurance, and manufacturer's approval of adjoining materials. The summary of items will verify the planning required ensuring satisfactory installation of the roofing system has been conducted.

Frequency: This report will be discussed in the discussed before the start of each built-up roofing project. The report will be discussed in the pre-roofing conference held by the Architect.

f. First Day Form (Prepared by the Architect)

Content: The document will identify the project name, contract number and Contractor's name. This document contains a checklist of the technical characteristics of the materials to be incorporated into the roofing project. The roofing materials should be compared against the requirements of the contract specifications and the approved for construction submittals and shop drawings.

Frequency: This report will be completed at the start of each built-up roofing project.

g. Daily Kettle Log (Prepared by the Architect)

Content: The document will identify the project name, contract number and Contractor's name. This document contains start-up times and temperature readings for asphalt and coal tar in tankers and kettles. Minimum/maximum application temperatures will be compared to the requirements of the contract documents.

Frequency: This report will be completed each day the built-up Roofing Contractor works. The frequency of the temperature readings will be within limits required by the contract

documents.

h. Field Report (Prepared by the Architect)

Content: The report will identify the project name, contract number and Contractor's name. The report will locate work completed and locations of samples removed for testing.

Frequency: This report will be completed each day built-up roofing work is performed.

i. Roof Audit Form (Prepared by the Architect)

Content: The document will identify the project name, contract number and Contractor's name. This document contains a checklist of items, which will be verified to assure quality installation of the built-up roofing system. The roof audit form checklists addresses the roof insulation, built-up roofing, surface material, and the flashing. The document will record the Contractor's performance and observed ability to install the roofing system correctly.

Frequency: This report will be completed each time the Architect performs a site inspection. The audit and report will be performed on a random basis. Contractors that exhibit difficulty in performing at the quality standards required by the documents will be audited more often than Contractors that regularly perform as required by the contract.

j. Softening Points for Coal Tar and Asphalt Bitumen Specimen (Prepared by the Testing Laboratory)

Content: The document will identify the project name, contract number and Contractor's name. This document records the process of testing coal tar and asphalt softening points.

Frequency: This test will be conducted by the testing lab as required by the roofing specifications or at the direction of the Architect when the material is suspected to have been over-heated

k. Felt Strength Test (Prepared by the Testing Laboratory)

Content: The document will identify the project name, contract number and Contractor's name. This document records the process of testing to the failure point felt materials.

Frequency: This test will be conducted as required by the specifications or at the direction of the Architect.

l. Pipe Exfiltration Test Data Report (Prepared by the Architect)

Content: The report identifies the project name, contract number, and the Contractor's name. Testing information will be recorded and will include a notation of the work passing or failing the test.

Frequency: The report will be completed for each system or part of system as necessary to verify compliance. The testing data will be completed before Final Acceptance of the project.

m. Manhole Leakage Test Data (Prepared by the Architect)

Content: The report identifies the project name, contract number, and the Contractor's name. Testing information will be recorded and will include a notation of the work passing or failing the test.

Frequency: The report will be completed for each system or part of system as necessary to verify compliance. The testing data will be completed before Final Acceptance of the

project.

- n. Pipe Pressure Test Report (Prepared by the Architect)

Content: The report identifies the project name, contract number, and the Contractor's name. Testing information will be recorded and will include a notation of the work passing or failing the test.

Frequency: The report will be completed for each system or part of system as necessary to verify compliance. The testing data will be completed before Final Acceptance of the project.

- o. Mandrel Pull Test Report (Prepared by the Architect)

Content: The report identifies the project name, contract number, and the Contractor's name. Testing information will be recorded and will include a notation of the work passing or failing the test.

Frequency: The report will be completed for each system or part of system as necessary to verify compliance. The testing data will be completed before Final Acceptance of the project.

- p. Air Test Data Report (Prepared by the Architect)

Content: The report identifies the project name, contract number, and the Contractor's name. Testing information will be recorded and will include a notation of the work passing or failing the test.

Frequency: The report will be completed for each system or part of system as necessary to verify compliance. The testing data will be completed before Final Acceptance of the project.

- q. Flow Test Report (Prepared by the Architect)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the flow testing of a portion of a system or the complete system.

Frequency: This test will be conducted as required by the specifications.

- r. Radiographic Examination (Prepared by the Testing Laboratory)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the x-ray testing of welds. The Testing Laboratory will attach their field report to this record document.

Frequency: This test will be conducted as required by the specifications.

- s. Mechanical Systems Checkout List (Prepared by the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a list of items requiring verification before start-up.

Frequency: This verification will be conducted as required by the specifications.

Distribution: This report will be transmitted to the Architect, the Program Manager and the Program Consultant.

- t. Megger Test (600V Rated Wire and Cable) (Prepared by the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the insulation resistance of conductors. The document will record the test equipment used and the calibration date.

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review. The Contractor will develop his own test procedure and select his own testing equipment.

u. Megger Test Distribution Transformer (600V Primary) (Prepared by the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the primary and secondary grounding at the transformer. The document will record the test equipment used and calibration date.

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review. The Contractor will develop his own test procedure and select his own testing equipment.

v. Megger Test Equipment Rate Up to 600V (Prepared the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the insulation resistance for the phase bus of equipment (switchboards, panel, starters, motor control centers).

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review. The Contractor will develop his own test procedure and select his own testing equipment.

w. Megger Test (Motors Rated Up to 600V) (Prepared by the Contractor)

Content: This report identifies the project name, contract number, and the Contractor's name. This document contains a record of the insulation resistance test for motor windings.

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review. The Contractor will develop his own test procedure and select his own testing equipment.

x. Motor Starter Checkout (Prepared by the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the checklist for motors.

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review. The Contractor will develop his own test procedure and select his own testing equipment.

y. Ground Electrode Earth Resistance Test (Prepared by the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the test to determine the quality of a grounding electrode.

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review. The Contractor will develop his own test procedure and select his own testing equipment.

z. Ground Mat Inspection Report (Prepared by the Contractor)

Content: The report identifies the project name, contract number, and the Contractor's name. This document contains a record of the inspections of connections of grounding conductors.

Frequency: This test and recording will be conducted as required by the specifications.

Distribution: The report will be transmitted by the Contractor to the Architect, the Program Manager and the Program Consultant for review.

F. On-Site Observations

1. Field reports are to be written upon each on-site observation and distributed within 24 hours of the visit.

G. Special Inspections

1. Special Inspections may be required by code and by the Oklahoma City Public Works Department.
 - a. The Architect or a Testing Laboratory designated by the Program Manager and the Oklahoma City Public Works Director shall provide on-site inspections of items, such as piers, steel erection, and masonry installation. A schedule of special inspections will be developed by the Architect outlining the inspections required and the responsible party of performing the inspection (the Architect or the independent testing agency). Copies of this schedule will be submitted to the Program Consultant and the Program Manager for review and comment. A copy, with comments, will be returned to the Architect for inclusion as part of their scope of services.
2. The Program Consultant and the Program Manager will receive copies of the revised special inspection reports.

H. Communication

1. Product Submittals
 - a. Product Submittals will be the responsibility of the Contractor.
 - b. The Contractor will review and approve the submittals prior to delivering the specified number of copies to the Architect. The Architect will review and comment, approve and distribute submittals to all parties for products conforming to the specifications. A copy of any submittals containing substitutions or not in conformance with the Contract Documents (including any addenda or change orders, shall be forwarded to the Program Consultant for review and comment. The copy from the Program Consultant will be returned to the Architect for incorporation of comments. The final approved submittal will be returned to the

Contractor, with copies forwarded to the Program Manager, the Program Consultant and the I-89 School District and the Oklahoma City Public Works Department.

- c. The Contractor will maintain a master submittal log and be prepared to distribute this log at construction meetings as required

2. Requests for Information (RFI)

- a. Requests for Information (RFI) are documents issued by the Contractor to the Architect
- b. The Architect will respond as quickly as possible to all RFI's, but will take no more than 14 calendar days to provide a written response back to the Contractor.
- c. The Contractor and Architect will maintain an RFI log and review its status at each construction meeting.
- d. Copies of all final responses will be transmitted to the Program Consultant, the Program Manager, the I-89 School District and the Oklahoma City Public Works Department.

3. Architects Supplemental Information (ASI)

- a. Architects Supplemental Information (ASI) are documents issued by the Architect as needed to further describe or clarify the Contract Documents. The Contractor and Architect will each keep a log of the ASI's and review their status at each construction meeting.
- b. Copies of all final responses will be transmitted to the Program Consultant, the Program Manager, the I-89 School District and the Oklahoma City Public Works Department.

4. Request for Proposals (RFP)

- a. Request for Proposals (RFP) are documents generated by the Architect requesting a cost estimate from the Contractor on a specific item not included in the construction documents.
- b. The Contractor will return the RFP to the Architect with a detailed cost breakdown of the construction item.
- c. The Architect shall then present the information to the Program Consultant for review. The Program Consultant will then present the RFP to the Program Manager and the I-89 School District.
- d. The approved RFP will then be prepared as a Change Order or Amendment by the Architect.

5. Declaration of Discrepancy for Non-Conformance (DDN)

- a. Declaration of Discrepancy for Non-Conformance (DDN) is a document issued only by the Architect informing the Contractor that the work is not in keeping with the Contract Documents.
- b. The Contractor and Architect will maintain a log of Declaration of Discrepancy for Non-Conformances and review its status at each construction meeting.
- c. Copies of all final responses will be transmitted to the Program Consultant, the Program Manager, the I-89 School District and the Oklahoma City Public Works Department.

I. Change Orders and Amendments

1. A Change Order is a document that modifies the scope of work or time in a construction contract. Change Orders are issued by the Architect and signed by the Contractor, the Architect, and the contracting entity. The Program Manager and the City Engineer will also sign the documents recommending them for approval.
 - a. The contracting entity for Bond Projects is the I-89 School Board.
 - b. The contracting entity for Sales Tax Projects is the OCMAPS Trust.
 - c. Each of the entities signing the Change Order shall have an original. In addition, one (1) copy shall be distributed to the Program Consultant.
2. An Amendment is a document that modifies the quantity of a unit price bid item. Amendments

are issued by the Architect and signed by the Contractor, the Architect, and the contracting entity. The Program Manager and the Oklahoma City Public Works Director will also sign the documents recommending them for approval.

- a. The contracting entity for Bond Projects is the I-89 School Board.
- b. The contracting entity for Sales Tax Projects is the OCMAPS Trust.
- c. Each of the entities signing the Change Order shall have an original. In addition, one (1) copy shall be distributed to the Program Consultant.

J. Contractor's Application for Payment

1. The Contractor shall submit his Application for Payment to the Architect on a monthly basis as outlined in the Contract Documents.
 - a. The construction schedule update will be included with the Application for Payment.
2. The Architect will forward the Contractor's Application for payment, Status Report, and Construction Schedule, along with the Architect's Request for Payment, to the Program Consultant for review.
3. The Program Consultant will review the information and forward to the Program Manager for processing and payment.

K. Substantial Completion

1. A list of deficiencies (Final Punch List) will be prepared by the Contractor and forwarded to the Architect, the Program Consultant, the Program Manager, the I-89 School District and the Oklahoma City Public Works Department. The Contractor will schedule an on-site review of the Final Punch List with the Architect, the Program Consultant, the Program Manager, the I-89 School District and the Oklahoma City Public Works Department. The major sub-contractors shall have representatives present with the Contractor. Additional items identified at this review will be incorporated into the Final Punch List for remediation by the Contractor.
2. The Contractor will arrange for and obtain final City inspections and approvals.
 - a. Copies of final inspections should be included in the Operating and Maintenance Manuals.
3. The Contractor will arrange to obtain the occupancy permit. A copy of this document will be included in the Operating and Maintenance Manuals.

L. Project Close-out

1. The close-out documents, including the Operating and Maintenance Manuals, Record Drawings (As-Built Drawings), Start-up Information, Warranties, and any Lien Waivers are to be delivered to the Architect for review prior to delivery to the Program Manager and the I-89 School District.
 - a. The Architect will review the documents and will then, in conjunction with the Contractor, arrange for an initial meeting to review the documents with the Program Consultant. Any items identified as missing or required will be added to the closeout documents.
 - b. The Architect will then, in conjunction with the Contractor, arrange for a meeting to review the documents with the Program Consultant, the Program Manager, the Oklahoma City Public Works Department and I-89 School District. Any further items identified as missing or required, will be added to the closeout documents.
2. After the final project closeout, the appropriate contracting entity, either the OCMAPS Trust or the I-89 School Board will consider final acceptance of the project.

VIII. POST CONSTRUCTION PHASE

Post-Construction consists of two phases. 1) after construction and prior to final acceptance by the OCMAPS Trust or the I-89 School District and 2) after transfer of assets from the OCMAPS Trust to the I-89 School District.

A. Start-up Occupancy

1. The Architect will arrange for project close out.
 - a. Participants will be:
 - 1) Program Manager
 - 2) Program Consultant
 - 3) Contractor
 - 4) I-89 School District
 - 5) Oklahoma City Public Works Department
2. Equipment Demonstration and In-Service Training
 - a. The Contractor will demonstrate the correct equipment usage to the maintenance representatives of the I-89 School District in the presence of the Architect and Program Consultant.
3. Operations and Maintenance Manuals
 - a. The Contractor will provide operations and maintenance manuals as required in the Contract Documents.
4. The Contractor will provide the "as-built" documents as required by the Contract Documents.
 - a. The Architect and the Program Consultant will assist in coordinating the correct format for documents.
 - b. As-built documents will be transmitted to the Program Manager in a timely manner.
5. By action of the OCMAPS Trust and I-89 School Board, the completed project will be transferred to the I-89 School District.
 - a. Prior to the transfer of assets is made to the I-89 School District, the Program Manager will recommend final approval of the project to the appropriate contracting entity, either the OCMAPS Trust or the I-89 School Board, for acceptance. Upon final acceptance by the contracting entity, all final payments to the Architect and Contractor will be made. This will signify the completion of the construction phase and the beginning of the Maintenance Bond period.

B. Maintenance Bond Period

1. The General Contractor will provide warranties and guaranties as required in the Contract Documents. The warranties, where the OCMAPS Trust is the contracting entity, shall be assignable and assigned by the OCMAPS Trust to the I-89 School District. Warranties, where the I-89 School District is the contracting entity, shall be with the I-89 School District.
2. The Maintenance Bond Period shall be a two-year period for all work. The I-89 School District will coordinate directly with the Contractor regarding warranty issues after final acceptance of the project.

