

**GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES**

**RENOVATION OF
2850 NEW YORK AVENUE, NE**

Solicitation No.: DCAM-12-CS-0127

**Addendum No. 7
Issued: May 8, 2013**

This Addendum No. 7 is issued and hereby published on the DGS website on May 8, 2013. Except as modified hereby, the Request for Proposals ("RFP") remains unmodified.

Item #1 Drawings

The revised Drawings can be accessed by using the free internet download link below, along with the following in log in information:

<https://projectpoint.buzzsaw.com/client/stvgroup/?sentinel=5501-5WHvKwqZyi>

**Username: 2850_Addendum
Password: 2850Addendum**

Note: If clicking the link above doesn't work, you can copy and paste it into your browser's address window.

Additionally, the Drawings are available for purchase at Blue BoyImaging, 214 L Street, NE, Washington, DC 20002-Phone: (202) 265-0272 and Fax (202) 986-0172. The cost of the Drawings are as follows:

Full Size Dwg's ... \$110.00
Half Size Dwg's ...\$50.00
Specifications ... \$15.00
Project CD-Rom... \$50.00

Item #2 Attachment C-Form of Offer Letter

Delete

Revised Attachment C - Form of Offer Letter dated April 23, 2013 in its entirety.

Insert

Revised Attachment C - Form of Offer Letter dated May 8, 2013.

Item #3 Specifications

See the attached revised Specifications.

By: _____


JW Lanum
Associate Director/Contracting Officer

Date: _____

5/8/13

Attachment C

Attachment C
(Revised May 8, 2013)

[Contractor's Letterhead]

[Insert Date]

District of Columbia Department of General Services
2000 14th Street, NW, 8th Floor
Washington, DC 20009

Attn: Mr. Brian J. Hanlon
Director/Chief Contracting Officer

Reference: Request for Proposals – Renovation of 2850 New York Avenue, NE

Dear Mr. Hanlon:

On behalf of [INSERT NAME OF BIDDER] (the "Offeror"), I am pleased to submit this proposal in response to the Department of General Services' (the "Department" or "DGS") Request for Proposals (the "RFP") for **Renovation of 2850 New York Avenue, NE**. The Offeror has reviewed the RFP and the attachments thereto, any addenda thereto, and the proposed Form of Contract (collectively, the "Bid Documents") and has conducted such due diligence and analysis as the Offeror, in its sole judgment, has deemed necessary in order to submit its Proposal in response to the RFP. The Offeror's proposal and the Lump Sum Price (as defined in paragraph A) are based on the Bid Documents as issued and assume no material alteration of the terms of the Bid Documents. (Collectively, the proposal and the Lump Sum Price are referred to as the "Offeror's Bid".)

The Offeror's Bid is as follows:

BASE BID

<u>CLIN</u>	<u>DESCRIPTION</u>	<u>LUMP SUM PRICE</u>
0001	Renovation of 2850 New York Avenue, NE in accordance with Section B of this solicitation package and the DGS Drawings (Attachment A) and Specifications (Attachment B).	\$ _____

SCHEDULE OF DEDUCT ALTERNATES

Offerors shall deduct from CLIN 0001 the following items:

DEDUCT ALT	DESCRIPTION	PRICE
1	Provide new furniture as indicated in the construction documents, on drawings A-411 through A-418 inclusive and A-406 and as specified in Section 125100, Office Furniture.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
2	Provide Paint for item PT-2 on Room Finish and Furniture Schedule and Legend drawing A-601.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
3	No Exterior Paint	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
4	Provide ACT ceilings under mezzanine level on west side of building between Column lines 1-4 and D7.6- G as shown on drawing A-111.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
5	Remove and Replace all existing loading dock levelers in Room 1600 Loading; and Room 1710 Loading.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
6	Remove existing concrete stairs connecting walkway to Parking Lot B on south west side of property, as shown on drawing C-200, Keynote 15.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
7	Provide exterior metal stairs with vertical pickets as indicated on details A-502.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
8	Custom casework and cabinets in pantries 1300, 1818, 1824, 2807, and 2812.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
9	Projection Screen paint at rooms 1303 and 1317.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
10	Existing 24 foot wide x 18 foot tall exterior overhead doors on south side of the building. No. 1 being located between column lines 11 & 12 and No 2 being located between column lines 14 & 15, to remain.	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
11	10'0" wide x 9'4" tall overhead doors on east side of building. No. 1 being an interior door located along column line 26 and between column lines B&C, and No 2 being an exterior door located west of column line 27 and between column lines B&C, to remain..	\$ _____

DEDUCT ALT	DESCRIPTION	PRICE
12	Lighting fixtures Typer A,J, and I by Zumbtobel as indicated on Lighting Fixture Schedule on E-601.	\$ _____

SCHEDULE OF ADD ALTERNATES

Offerors shall provide pricing for the following items:

ADD ALT	DESCRIPTION	PRICE
13	In lieu of the new furniture indicated on drawings A-411 through A-418 inclusive and A-406, the Room Finish and Furniture Schedule and Legend, the Contractor shall provide an alternate price to provide the equal furniture manufacturer's and model number utilizing refurbished or used furniture. The Bid Alternate must conform to the furniture layouts shown in the base bid on the drawings listed above and contain all the same components as those listed in the base bid for new furniture. The Bid Alternate for refurbished or used furniture must conform to the color palette specified.	\$ _____

ADD ALT	DESCRIPTION	PRICE
14	In lieu of Paint, provide Korogard Protective Wall covering , Finish: P1 Hair cell; .028" thickness; Color: Charcoal; with color match caulk.	\$ _____

ADD ALT	DESCRIPTION	PRICE
15	Paint exterior concrete masonry wall under canopy, on east side of building, as shown on drawing 2/A-203.	\$ _____

ADD ALT	DESCRIPTION	PRICE
16	Paint metal deck, ceiling joists, pipes and mechanical equipment in ceiling area PT-7 per Room Finish and Furniture Schedule and Legend drawing A-601 (Eggshell finish acrylic paint; Color: Black). Include one coat of tinted primer in price.	\$ _____

ADD ALT	DESCRIPTION	PRICE
17	Repair existing loading dock levelers in Room 1600 Loading; and Room 1710 Loading in lieu of replacement.	\$ _____

ADD ALT	DESCRIPTION	PRICE
18	Leave walk in place in lieu of demolition.	\$ _____

ADD ALT	DESCRIPTION	PRICE
19	Provide horizontal railings, two vertically, in lieu of vertical pickets. Alternate design must meet all building and accessibility codes.	\$ _____

ADD ALT	DESCRIPTION	PRICE
20	Provide standard manufactured cabinets in stock sizes for rooms 1300, 1818, 1824, 2807, and 2812.	\$ _____

ADD ALT	DESCRIPTION	PRICE
21	Provide Projector Screens in rooms 1303 and 1317: a. Room 1303-Provide (1) electrically operated, front projector screen per Specification Section 115213 2.3, Size: 72"x96". b. Room 1317-Provide (2) electrically operated, front projector screen per Specification Section 115213 2.3, Size: 72"x96".	\$ _____

ADD ALT	DESCRIPTION	PRICE
22	Remove both doors and install new motorized, insulated, exterior overhead coiling doors per Specification Section 083323 and all required electrical feeds and home runs.	\$ _____

ADD ALT	DESCRIPTION	PRICE
23	Remove both doors and install new motorized, insulated, exterior overhead coiling doors per Specification Section 083323 and all required electrical feeds and home runs.	\$ _____

ADD ALT	DESCRIPTION	PRICE
24	Lighting Fixture Type A- Columbia Ltg SER24-228*-RP-EPU Lighting Fixture Type J- Columbia Ltg SER22-155*-RP-EPU (Columbia can manufacture with lamping noted on fixture schedule). Lighting Fixture Type I- Prescolite Ltg CFR618EB55 ST372A55	\$ _____

SCHEDULE OF UNIT PRICING

Offerors shall submit unit pricing for the following items:

Item No.	Description	Qty	Price Per Sq. Ft.
A	Demolition of 6" Non-Load Bearing Concrete Masonry Walls	1	\$ _____
B	New Work of 6" Non-Load Bearing Concrete Masonry Walls	1	\$ _____
C	Miscellaneous Patching and Repair of Existing Concrete Floor Slabs – Thickness 5"	1	\$ _____

The Offeror, for CLIN 0001, must submit for each of the components of work (Divisions) listed on the Price Breakdown Form (Exhibit 1), the price of each Division Component. The sum of all the prices for each Division Component must equal the Lump Sum Price for each CLIN. In the event of discrepancies between or among the Lump Sum Price and the Price Breakdown of each Division Component, the Lump Sum Price shall control.

The Offeror acknowledges and understands that the Lump Sum Price is a firm, fixed price and intended to be Offeror's sole compensation for the services required under the contract and should include sufficient funding for all of the Offeror's costs associated with the work, including, but not limited to, labor, tools and equipment, materials and supplies, and overhead, insurance and profit. Failure to submit complete the Price Breakdown for CLIN 0001 shall not to any extent qualify the Offeror's commitment to complete the entire project at the above stated Lump Sum Price. The District may use the Price Breakdown as a guide during contract administration.

The Offeror's Bid is based on and subject to the following conditions:

1. The Offeror agrees to hold its proposal open for a period of at least one hundred twenty (120) days after the RFP closing date.
2. Assuming the Offeror is selected by the Department and subject only to the changes requested in paragraph 5, the Offeror agrees to enter into a contract with the Department on the terms and conditions described in the Bid Documents within ten (10) days of the notice of the award.
3. Both the Offeror and the undersigned represent and warrant that the undersigned has the full legal authority to submit this bid form and bind the Offeror to the terms of the Offeror's proposal. The Offeror further represents and warrants that no further action or approval must be obtained by the Offeror in order to authorize the terms of the Offeror's proposal.
4. The Offeror and its principal team members hereby represent and warrant that they have not: (i) colluded with any other group or person that is submitting a proposal in response to the RFP in order to fix or set prices; (ii) acted in such a manner so as to discourage any other group or person from submitting a proposal in response to the RFP; or (iii) otherwise engaged in conduct that would violate applicable anti-trust law.

5. The Offeror's proposal is subject to the following requested changes to the Form of Contract: [INSERT REQUESTED CHANGES. OFFERORS ARE ADVISED THAT THE CHANGES SO IDENTIFIED SHOULD BE SPECIFIC SO AS TO PERMIT THE DEPARTMENT TO EVALUATE THE IMPACT OF THE REQUESTED CHANGES IN ITS REVIEW PROCESS. GENERIC STATEMENTS, SUCH AS "A MUTUALLY ACCEPTABLE CONTRACT" ARE NOT ACCEPTABLE. OFFERORS ARE FURTHER ADVISED THAT THE DEPARTMENT WILL CONSIDER THE REQUESTED CHANGES AS PART OF THE EVALUATION PROCESS.]

6. The Offeror hereby certifies that neither it nor any of its team members have entered into any agreement (written or oral) that would prohibit any contractor, subcontractor or subconsultant that is certified by the District of Columbia Office of Department of Small and Local Business Enterprises as a Local, Small, Resident Owned or Disadvantaged Business Enterprise (collectively, "LSDBE Certified Companies") from participating in the work if another company is awarded the contract.

7. This Offer Letter Form and the Offeror's Bid are being submitted on behalf of [INSERT FULL LEGAL NAME, TYPE OF ORGANIZATION, AND STATE OF FORMATION FOR THE OFFEROR].

Sincerely,

By: _____
Name: _____
Its: _____
Date: _____

Exhibit 1 (Revised April 23, 2013)

Breakdown into Divisions of Lump Sum Price Proposal.

CSI DIVISION NO.	DESCRIPTION	PRICE OF EACH DIVISION COMPONENT
Div. 01	General Requirements	
Div. 02	Existing Conditions (inc abatement/demo. of exist. structure)	
Div. 03	Concrete	
Div. 04	Masonry	
Div. 05	Metals	
Div. 06	Woods and Plastics	
Div. 07	Thermal and Moisture Protection	
Div. 08	Openings	
Div. 09	Finishes	
Div. 10	Specialties	
Div. 11	Equipment	
Div. 12	Furnishings	
Div. 13	Special Construction	
Div. 14	Conveying Systems	
Div. 21	Fire Suppressions	
Div. 22	Plumbing	
Div. 23	Heating, Ventilation and Air Conditioning	
Div. 26	Electrical	
Div. 27	Communications	
Div. 28	Electronic Safety and Security	
Div. 32	Exterior Improvements	
Div. 33	Utilities	
	LUMP SUM PRICE	\$ _____
	Building Permit Allowance	\$140,000.00
	Gym Equipment	\$55,000.00
	Miscellaneous Furniture, Fixtures, and Equipment	\$25,000.00
	*Miscellaneous Patching and Repair of Existing Concrete Floor Slabs Thickness 5"	\$30,000.00
	*Miscellaneous Demolition and/or Repair of Existing Non-Load Bearing Concrete Masonry Walls (6" Thick)	\$30,000.00
	Double Reach Forklift (actual model and manufacturer to be selected by DGS)	\$45,000.00
	Artwork	\$10,000.00
	ALLOWANCES TOTAL	\$ 335,000.00
	TOTAL PRICE	\$ _____

**Provide Unit Price Per Sq. Ft. on Page 4*

DCAM-13-CS-0127
 RENOVATION OF 2850 NEW YORK AVENUE, NE
 MAY 1, 2013 --ADDENDUM
 REVISIONS TO SPECIFICATIONS

015000	Delete/Replace Section	<p>Delete Section 3.9 in its entirety and replace with the following: 3.9 TEMPORARY FACILITIES A. A Field office will be required to be provided by the Contractor. B. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access. C. Maintain support facilities until near Completion. Remove prior to Completion. D. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading. E. Contractor's Field Offices: Provide and maintain temporary field office for Contractor's personnel and representatives. Field offices shall be provided through project completion. F. District's Field Offices: Provide and maintain temporary field office to accommodate needs of District Personnel, Architect, and Construction Manager office activities and to accommodate Project meetings. Furnish and equip offices as follows: 1. Office: Provide insulated, weather-tight office trailer, with lighting, electrical outlets, heating, cooling, and ventilating equipment, with controls, of sufficient size to accommodate required office personnel at Project Site. 2. Size of office shall be the equivalent of (1) double wide (approximately 24-feet by 60-feet) portable trailer. 3. The layout shall include: minimum of (3) standard sized lockable offices, (1) bathroom, security screens on windows, bar on doors. 4. Offices shall be equipped with wired and wireless internet access, shall include all temporary utilities to trailer and shall include 4 telephone/data lines. 5. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, bookcases, and desks with task chairs. 6. Equipment required for office activities shall be capable of printing scanning and faxing of documents a minimum size of Architectural C (18x24) size.</p>	
015000 Cont.	Cont.	<p>7. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot square tack and marker boards. 8. Computing equipment required shall meet or exceed the performance of the Dell XPS 8500 and the i-Pad 4g/Lite with Wifi. Final equipment shall be approved by the COTR and shall remain the property of the District Government. 9. Office shall be provided no later than (1) month after NTP until Final Acceptance of the project. Keep office clean and orderly. Contractor may also provide Class B or better office space of equivalent size and scope in a local building within 3 blocks of the project site. Final layout and location of office trailers / office space shall be approved by the COTR. G. Storage and Fabrication Sheds: install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations, including temporary utility service. 1. Store combustible materials apart from building. 7. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot square tack and marker boards. 8. Computing equipment required shall meet or exceed the performance of the Dell XPS 8500 and the i-Pad 4g/Lite with Wifi. Final equipment shall be approved by the COTR and shall remain the property of the District Government. 9. Office shall be provided no later than (1) month after NTP until Final Acceptance of the project. Keep office clean and orderly. Contractor may also provide Class B or better office space of equivalent size and scope in a local building within 3 blocks of the project site. Final layout and location of office trailers / office space shall be approved by the COTR. G. Storage and Fabrication Sheds: install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations, including temporary utility service. 1. Store combustible materials apart from building.</p>	
078100	Delete Section	<p>Section 078100 Applied Fireproofing to be deleted in its entirety.</p>	
079200	Add section	<p>Add new section 2.7 ELASTOMERIC SEALANTS A. General: Provide sealants, primers, backer rods, and other sealant accessories that comply with the following requirements and with the applicable requirements in Section 079200 "Joint Sealants." 1. Sealants shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24). 2. Use primers, backer rods, and sealant accessories recommended by sealant manufacturer. B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated. C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920, Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures. 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following: a. DAP Inc.; Titanium Enriched Kitchen and Bath Sealant. b. Dow Corning Corporation; Dow Corning 786. c. GE Silicones; a division of GE Specialty Materials; Sanitary 1700. d. Laticrete International, Inc.; Latasil Tile & Stone Sealant. e. Pecos Corporation; Pecos 898 Sanitary Silicone Sealant. f. Tremco Incorporated; Tremst 600 White.</p>	Mildew Resistant Sealant to be used in all Pantries, Shower and Toilet rooms.

DCAM-13-CS-0127
RENOVATION OF 2850 NEW YORK AVENUE, NE
MAY 1, 2013 -ADDENDUM
REVISIONS TO SPECIFICATIONS

083113	Delete text.	2.2. C.1 - Delete last sentence that reads: "Provide frame with gypsum board beads for concealed flange installation."	See RFI Responses
083113	Delete text.	2.2. D.1 - Delete last sentence that reads: "Provide frame with gypsum board beads for concealed flange installation."	
083323	Add section	Specification is to include Insulated Exterior Doors. Add 1.2.A. 2- Insulated exterior service doors.	
083323			
087111	Advice	Contractor to coordinate location of Knox Box with MPD Facility Manager Sean MacCarthy during construction	
087111	Add	Add Item 1.3 Key Box: Contractor to provide Key Box to Owner containing all keys and Keying Schedule.	
087111	Revision	Delete item 2.4 B 6 in its entirety and replace with: 6. Manufacturers: Basis of Design Product: Subject to compliance with requirements, provide ND Series with Sparta lever design as manufactured by Schiage or comparable product by one of the following: a. Best Lock: 95X Series with .14L lever design; b. Sargent: 10 Line Series with LP Lever design	
096723	Add	Include BASF SRS DEGLACIAD CF in Part 2 for floor and up to 48" above finish floor at walls at Dog Holding Room 1412 and all walls at Car Wash Room 1723.	
102213	Add verbiage	Section 2.3.K. 2 is revised to add: "Locks to be coordinated with Owners Master Key system."	
102800	Add product	Add Product 2.6.G. Coat Hook: 1. Basis-of-Design Product B-6827; 2. Hat and Coat Hook: 3. Surface Mounted; 4. Stainless Steel No. 4 Finish to Sections	
102800	Revision	Revise 2.5.B.1. Basis of Design Product to be B-239	
105113	Delete item	Delete 2.3.I (Locks: Built-in combination locks) in its entirety.	
105113	Delete item	Delete Section 2.3.K (Hooks) in its entirety	
105613	Add item	Add section 2.7 PALLETTE-BACKS	See RFI Responses
115213	Clarification	2.2.G - Size of Viewing Surface: to be 72 x 96 inches.	
125100	Revision	Furniture Schedule has been revised - All revisions are clouded and noted in Red text	Attached
131200	New Section	Add new Section 131200 MODULAR IN-PLANT OFFICE SYSTEM	Attached
142400	Revised Basis of Design Product and comparables	Delete Section 2.1.A in its entirety and replace with: Basis of Design Product: Subject to compliance with requirements, provide Model Hydroift 3500 by Otis Elevator Company, or comparable products by one of the following: ThyssenKrupp Elevator; 2. KONE Inc; 3. Schindler Elevator Corporation; 4. Schumacher Elevator Co.	
142400	Delete Section	Delete Section 2.3.B.7.k. in its entirety	
DIVISION 27	New Specification Section	Add new specification section 270001 - Structured Cabling Specifications for 2850 New York Avenue, NE	Attached
280100	Revised Sections	All changes from the previous are highlighted in yellow. * Page 1 - Added SEE PART 12 language * Page 2 - Added language regarding Part 12 (specs for CSVS platform) * Page 11 - Deleted the sentence "The desk(s) shall be provided by others." * Page 54 - Changed the recording parameters for the new 2850 cameras * Page 67 and 68 - These are two new pages that comprise Part 12 - the CSVS platform	Attached

FURNITURE SCHEDULE

MARK	PRODUCT	USE	MODEL	DESCRIPTIONS/OPTIONS	FINISHES
A	HON 10500 Series	Commander's Office	See Type A Spec Sheet	See Type A Spec Sheet	See Type A Spec Sheet
B	HON 10500 Series	Captain's Office	See Type B Spec Sheet	See Type B Spec Sheet	See Type B Spec Sheet
C	HON 10500 Series	Lieutenant/Supervisor Office	See Type C Spec Sheet	See Type C Spec Sheet	See Type C Spec Sheet
D	HON VO1 Series	Offices	See Type D Spec Sheet	See Type D Spec Sheet	See Type D Spec Sheet
E	HON VO1 Series	Offices	See Type E Spec Sheet	See Type E Spec Sheet	See Type E Spec Sheet
F	HON VO1 Series	Offices	See Type F Spec Sheet	See Type F Spec Sheet	See Type F Spec Sheet
CC-1	Knoll Currents	Report Writing Desk	See Spec Sheet	See Spec Sheet	See Spec Sheet
			875L-Q - 30" W, 5 High		
LF-1	HON 800 Series	5 Drw Lateral File	Drawer with Posting Shelf	Specify Core Lock Separately	Finish: Q Light Grey
LF-2	HON 800 Series	5 Drw Lateral File	885L-Q - 36" W, 5 High Drawer with Posting Shelf	Specify Core Lock Separately	Finish: Q Light Grey
LF-3	HON 800 Series	3 Drw Lateral File	H 873	30"W x 19 3/4" D x 40 7/8"H	Finish: Q Light Grey
VF-1	HON 310 Series	2 Drw Vertical File	312CPQ -29" H x 18-1/4" W x 26-1/2" D	Specify Core Lock Separately	Finish: Q Light Grey
FF-1	Mayline	Flat Files	7769D	5 Drw Flat File Unit -15.27" H x 46.75" W x 35.27" D	Finish: Gray
SC-1	HON Steel	Storage Cabinet	7768W	Base	Finish: Gray
SC-2	HON Steel	Storage Cabinet	C187836	2 Door -78"H x 36"W x 18"D	Finish: Q Light Grey
SC-3	HON Steel	Storage Cabinet	SC1842Q	2 Door- 36" H x 36W x 18.25 D	Finish: Q Light Grey
			SC1842Q	2 Door - 41-3/4"H x 36" W x 18-1/4"D	Finish: Q Light Grey
SH-1	Penco	Open Shelving (General)	RivetRite - 12" Depth - 84" High - 36" compartments	Double Rivet, Bulky Storage Units	Finish: Gray

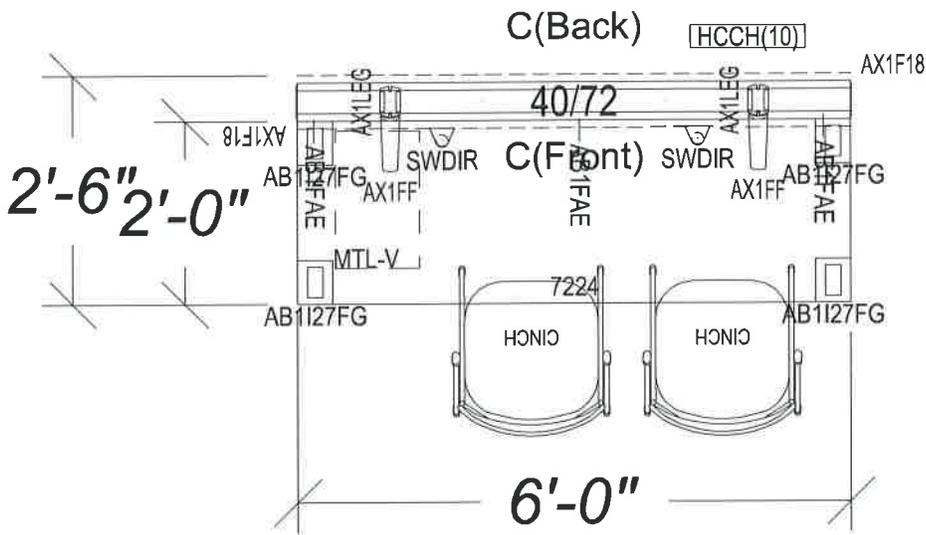
FURNITURE SCHEDULE

MARK	PRODUCT	USE	MODEL	DESCRIPTIONS/OPTIONS	FINISHES
SH-2	Penco	Open Shelving (ESB)	RivetRite - 24" Depth - 84" High - L: Varies	Double Rivet, Bulky Storage Units	Finish: Gray
SH-3	Penco	Open Shelving (ESB)	RivetRite - 24" Depth - 120" High, L: Varies	Double Rivet, Bulky Storage Units	Finish: Gray
SH-4	Penco	Open Shelving (CDU)	RivetRite - 15" Depth - 84" High - 36" compartments	Double Rivet, Bulky Storage Units	Finish: Gray
SH-5	HON Flagship	4 Shelf Book Case	HFSC183664W30"	36"W x 18"D x 64 1/4"H	Finish: To Match HON Laminate Shaker Cherry
CH-1	Knoll	Task Chair	RPM		Fabric: To be Selected from MFGs Standard Options Frame: Black
CH-2	Kimball Wish	Task Stool	K20ET	Synchro Tilt, Lumbar Seat Slide Optional	Fabric: To be Selected from MFGs Standard Options Frame: 462 Cinder
CH-3	Kimball Approach	Conference Chair	K24SS LB	Mesh Back, Synchro Tilt Adjustable Lumbar	Fabric: Gr 2 Metallix Black Sand Frame: Black
CH-4	Kimball Stature	Guest Chair	K30EE	Four Legs, Open Arm	Fabric: Shadow Frame: Black
Ch-5	Kimball Arpeggio	Exec Ofc Guest Chair	ARP-GC4A	Rolled Back	Fabric: Crimson Finish: To Match HON Laminate Shaker Cherry
CH-6	National	Pantry/Side/Guest Chair	CINCH	To Match HON Laminate in Shaker Cherry	Fabric: To be Selected from MFGs Standard Options Finish: Shaker Cherry
CH-7	Kimball Arpeggio	Exec Ofc Guest Chair	ARP-GC4A	No Arms	Fabric: Crimson Finish: To Match HON Laminate Shaker Cherry
CH-8	LazyBoy	Wellness Room Recliner	TBD	To Be Selected By ATEU Inspector	Fabric/Finish: To be Selected from MFGs Standard Options
Tandem	Davis Zeno	Reception Tandem Seating	Varies	2 Seat, 3 Seat, 4 Seat w/ Beam Tables	Metal - Matt Black Tables - Pionte AG 361 Graphite Talk, Suede Finish

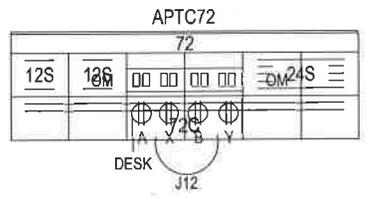
FURNITURE SCHEDULE

MARK	PRODUCT	USE	MODEL	DESCRIPTIONS/OPTIONS	FINISHES
T-1	Izzy Ry/ee	Pantry/Breakroom/ Occasional Tables	RYL-SQ043030-XB	30" Square, Edgeband X Base	Laminate / Edge: Smokey White/E08 Charcoal Finish: 015 Izzy Silver
T-2			RYL-RD043636-XB	36" Dia	
T-4			RYL-RD044848-XB	48" Dia	
T-5			RYL-SQ043636-XB	36" Square	
G-1	Kimball	Conference Table	CCS36RD	36" Dia Conf Table	Honey Maple Lam. / Wood Trim
G-2	Kimball		CCS48RD	Stationary X-Leg Base	Aluminum
G-3	Kimball		CCS54RD	48" Dia Conf Table	
G-4	Kimball		CCS60RD	54" Dia Conf Table	
G-5	Kimball		CCS3672RTVLW2	60" Dia Conf Table	
G-6	Kimball		CCS4276RTVLW2	72 x 36 Conf Table	
G-7	Kimball		CCS48144RTVLW2	72 x 42 Conf Table	
G-8	Kimball		CCS48144RTVLW2	96 x 42 Conf Table	Honey Maple Lam. / Wood Trim
G-9	Kimball		CCS4896BTLW2	48 x 144 Conference Table	
				48 x 96 Boat Shaped	
				Double T-Leg	
			KAC1313ELRINT	Rectangle Power Data	
			KAC48WMH	Cable Manager	
TT-1	Knoll	Training Rooms	See Spec Sheet	72 x 24 Table	See Spec Sheet
TT-2	Knoll	Training Rooms	See Spec Sheet	48 x 24 Table	See Spec Sheet
TT-3	Knoll	Training Rooms	See Spec Sheet	60 x 24 Table	See Spec Sheet
EWS-1	EDSAL	Premier Electronic Workstation	TW85	with ESD Laminate tops	Frame: Putty / Tops: Almond
EWS-2	EDSAL	Electronic Work Center	Model 4TW68	with ESD Laminate tops	Frame: Putty / Tops: Almond
EWS-3	EDSAL	Tech Bench	7D171	w/ ESD Laminate tops; ESD Laminate Riser 4TW97; Workbench Electric Kit 4TW73	Frame: Putty / Tops: Almond
CR-1	Kimball	Credenza	CR 2472 CBLW	24D x 72W x 36H Buffet Credenza	Honey Maple Lam. w/ Wood Trim
CR-2	Hon-V01	Credenza	HLSL 2072LD4	Low Credenza, 2 File/2Box 72"W x 20"D x 21 1/2" H	To Match Tupe F Spec Sheet

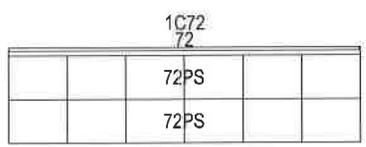
NOTE: PRELIMINARY DRAWING. USED TO EXPRESS DESIGN INTENT. NOT TO BE USED TO GENERATE FINAL BOM.



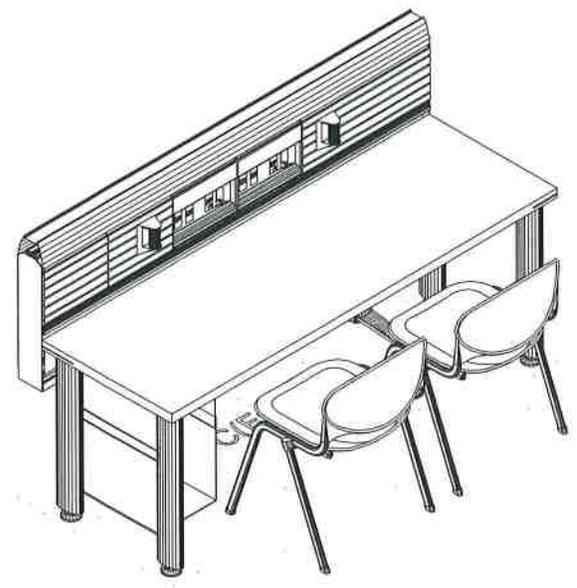
3D REPORT WTG ROOM METRO POLICE DEPT.
SCALE: 1/4" = 1'-0"



18/72
C(Front)



18/72
C(Back)



3D REPORT WTG ROOM METRO POLICE DEPT.
SCALE: NTS

CC - 1

APPROVAL: X

DATE: _____

SHEET TITLE: 3D REPORT WRITING PROJECT INFORMATION: METRO POLICE DEPT Roll Call & Report Writer Rooms 17 DC Village Lane Washington, DC 20032 Sean MacCarthy 202-727-4369	FLOOR/AREA/IDEN: DRAWING PHASE: SPACE PLAN A & D Firm/BASE PLAN PROVIDED BY: MOI GENERATED DRAWING FILE NAME: MPD305-104-WEI-R03.dwg	SUBMITTALS: NO.-DATE-DESCRIPTION-BY R00-122911-SPACE PLAN-FAU R01 1/09/2012 PRELIM WEI R02 1/17/2012 MOCK-UP SVE	PROJECT NUMBER: MPD305 SUB-PROJECT NUMBER: SALESPERSON: Paula Kling DESIGNER: WEI CREATED: 2/6/12	SCALE: VARIES SHEET NUMBER: F-2
		Feb 27, 2012 10:17am Q:\-DESIGN PROJECTS\Metropolitan Police Department\17 DC Village Lane, SW DC\MPD305-104-WEI\DWG\MPD305-104-WEI-R03.dwg		

Specification Sheet



Vendor: Knoll

Product Style: Reff

Product Description:

- Roll call table
- Rectangular top
- T-leg
- Impact resistant core laminate
- Jet black finish on legs
- Ganging bracket

Product Dimension: 60"W X 20"D X 28 3/4"H

Picture is for representational purposes only. Specified features may differ.

TT - 1 - 72 x 24

TT - 2 - 48 x 24

TT - 3 - 60 x 24

SECTION 131200 MODULAR IN-PLANT OFFICE SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. This Section specifies all requirements necessary to furnish and install a complete modular wall system in-plant office including, but not limited to the following:
 - 1. 3.25" thick modular wall system, completely demountable, non-progressive, as indicated on the Drawings, including all installation attachments.
 - 2. Modular wall panel material including paint, coating, or finish.
 - 3. Extrusions, fasteners, trim finishing strips and structural steel necessary to maintain wall system structural integrity.
 - 4. Prefabricated door modules and hardware.
 - 5. Window panels with glazing.
 - 6. Product design.
- B. All building areas must be inspected by modular wall installer prior to installation for any job condition that will alter the layout or the details of the installation. Coordinate installation with other trades to avoid conflicts.

1.2 RELATED SECTIONS

1.3 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This Section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for the referenced modular wall system.
 - 1. Specification Section 087111 - Door Hardware
 - 2. Section 2.4, C. - Doors
 - 5. Section 2.4, D. - Glazing
- C. In the event of conflict regarding requirements for modular wall systems between this Section and any other sections, the provisions of this Section shall govern.

1.4 REFERENCES

- A. Refer to Manufacturer's literature for technical data, design requirements and additional information.

1.5 SUBMITTALS

- A. Submit the following in addition to the standard requirements.
 - 1. Manufacturer's literature, specifications, details, and installation instructions for each modular wall component proposed for use, including technical data as may be required to show compliance with the specifications.
 - 2. One sample of wall system components with specified finish, and connectors. Include any other components as necessary to illustrate a completed wall assembly.
 - 3. One set of samples of each finish and color required. Submit sample finishes on steel having the specified finish-coating treatment, and thickness of metal required for the work. Provide 6-inch square samples. Samples will be reviewed for color and finish only. Compliance with all other requirements is the exclusive responsibility of the Subcontractor.

1.6 QUALITY ASSURANCE

- A. Manufacturer:
 - 1. Like items of materials provided hereunder shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.
 - 2. Award the work to a firm who is experienced in the manufacturing of modular wall system components.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in their original, unopened packages.
- B. Exercise extreme care in handling all modular wall system components to prevent damage.
- C. Store materials within the building in the space designated for modular wall component storage. Store materials in such manner as to prevent damage or intrusion of foreign matter. Conspicuously mark "Rejected" on materials, which have been damaged, and remove from the job-site.

1.8 WARRANTY

- A. Provide Warranty against defects and workmanship for a period of one (1) year from date of original shipment.

1.9 MAINTENANCE

- A. Additional Materials
 - 1. Wall Panels, Extrusions, and Hardware: Provide material as specified by Customer.

PART 2 PRODUCTS

2.1 PRODUCT NAME

- A. Basis of Design Product: PortaFab Corporation Modular Wall System — OmniFlex 300 or comparable product by one of the following:
1. Unarco
 2. Panel-Built
 3. United Partitions
- 2.2 PRODUCT DESCRIPTION
- 2.1 Provide materials for modular in-plant two-story office identified on the drawings as Rooms 1641, 1642 and 2602. The proposed design and materials incorporates the use of modular components to be assembled on site and provides the ability to disassemble this system at a later date and expand, or relocate to a new location.
- 2.2 Modular in-plant offices covered by this section shall be of the flush panel type; no framing shall protrude more than 1/8" from the finished panel surface except base and top trim, which shall not protrude more than 1/4". Finished wall shall not exceed 3" thickness, except at base where thickness shall not exceed 3 1/2". All exposed metal parts will be finished with polyester baked enamel.
- 2.3 The modular wall system must be designed to withstand 5 PSF lateral loadings as dictated by the National Building Codes for interior partition walls with a maximum deflection of L/180. The manufacturer of this wall system shall provide detailed submittal drawings for approval. Drawings shall be available for electronic transmission from the manufacturer.
- 2.4 Manufacturer must have a minimum of 25 years experience designing in-plant buildings and modular wall systems. Installation shall be performed according to standard details as described by the manufacturer.
- A. Modular Wall Support System:
1. Framing Components - General:
 - a. All studs shall be ASTM A573 G60 rolled formed steel with a minimum .75 mil baked polyester enamel finish. The stud shall fasten together tightly creating a sealed joint connection and secure alignment of panels. Wiring studs shall permit the removal and installation of an individual wall panel without disturbing adjacent wall panels. Wiring studs shall permit the installation of electrical service vertically and accept standard electrical boxes on both sides. A removable snap-in cover plate shall allow access to the electrical raceway on both sides of the stud without disturbing the structural integrity of the stud. Stud edges to be rounded for ease of installation and provide finished appearance. Wherever possible, wiring studs shall act as columns on load-bearing roofs and two-story units. All vertical framing, except corners, shall have the capability of being placed anywhere along the wall plane without loss of strength.
 - b. The framing system shall be coordinated with building structure to perform under vertical and lateral design loads and seismic

- requirements. Each wiring stud shall be capable of supporting 6,000 pounds (based on an 8' height) in addition to the required lateral load without the use of additional structural support.
- c. Materials and connections shall be manufacturer's standard, capable of supporting design forces. Provision shall be made for movement of surrounding structure in design of separations and joints.
2. Materials:
 - a. Metal Framing: ASTM A573 G60 20-gauge rolled formed steel stud sections, finished with a minimum .75 mil baked polyester enamel finish.
 - b. Aluminum Framing: 6063-T5 aluminum, finished with a baked polyester enamel
 - i. Head track to be a one-piece component providing the ability to conceal the dust cover with a 1 3/4" leg. Top cap shall be constructed of 6063-T5 aluminum painted with polyester backed enamel.
 - c. Floor track will be constructed of 24 gauge galvanized steel. Floor track to allow easy access to the removal of walls panel.
 - d. Vinyl base sections shall be screw on type, easily removable, with no exposed screws or fasteners. Vinyl base shall be applied in 12' lengths where possible and shall cover the floor track.
- B. Modular Wall Panel - General:
1. Panel Constructions - Panel Construction to conform to the 2009 International Building Code, section 2603.4, as it relates to "Thermal Barrier." Panel width will be 44-7/8" wide with a center to center of the stud post at 48".
 - a. *Fire & Sound Panel* - Panels shall be 1/2" vinyl-covered gypsum laminated to both sides of a polystyrene core. Panels tested in accordance with ASTM E-84 to meet a minimum flame spread of 5 and smoke density of 20.
 2. Panel Thickness: Panel thickness as specified.
 - a. 3.00"
 3. Colors: To be selected from the manufacturer's standard range.
- C. Doors:
1. Doors shall be 20 gauge, 3070 x 1 3/4" and painted Champagne, White or Gray. Door frames shall be 18-gauge. Doors shall be half glazed with 1/4" clear tempered safety glass. Frames shall have 1 1/2 pair of 4 1/2" x 4 1/2" mortised ball bearing hinges and strike plate. Commercial quality lever lockset shall be included, with 2 3/4" backset and mortised face plate. Man doors to be pre-installed into a panel for ease of installation.
 2. Hardware Options:
 - a. Coordinate door hardware with building door hardware and sets as indicated in the specifications
 - b. Coordinate Card Readers with building standard and locations as indicated on the drawings and specifications, including electrical and security wiring requirements.
- D. Windows:

1. 1/4" tempered safety glass as specified. All windows to be mounted in 6063-T5 aluminum frame. Window panels to be designed with removable gasket allowing easy replacement of glass. Frame to be finished with a baked enamel finish.
 2. Colors: To be selected from the manufacturer's standard range.
- E. Ceiling:
1. Ceiling consists of pre-painted grid and 5/8" white lay in tiles with class "A" rating.
- F. Roof Deck:
1. Dust Cover:
 - a. The roof deck will be 22-gauge, 1-1/2" deep, prime painted, commercial quality, ribbed steel deck with minimum yield strength of 33,000 PSI.
 2. Roof Design:
 - a. Live load deflection for roofs supporting a ceiling will be a minimum of L/240.
 - b. Roof design shall be designed for maintenance load of 25 PSF. Design will utilize structural steel "I" beams located on 8' centers for support.
- G. Electrical:
1. Electrical components to include 2' x 4' , T8 four-tube recessed fixtures with acrylic lens, 110-volt duplex outlets, 240-volt outlets, switches, 100 amp circuit breaker box with 70 amp main and breakers, handy boxes and conduit. Tubes and wiring not included, or as specified. All electrical components shall bear the UL label.
 - a. Coordinate power/voice and data connections and receptacles with building system.
 - e. Include modular wiring package

2.5 FABRICATION

- A. Metal Framing Requirements:
 1. Thickness: 3.25" maximum for complete component system.
- B. Metal framing shall conform accurately to the shape and dimensions as shown on the Drawings.
- C. Cut edges shall be true to line and free from projections.
- D. Clear away chips and filings from cut extrusion prior to handling to reduce damage to the raw surfaces.

PART 3 EXECUTION

3.1 INSTALLATION

Final installation of partition components shall assemble into a rigid structure with tight straight- line joints.

3.2 CONDITIONS OF SURFACES

Examine substrates and adjoining construction and conditions under which work is to be installed. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.3 INVENTORY

- A. Inspect all materials upon arrival to job-site to ensure correct quantity, finishes, and quality of product. Report, in writing, any conditions to the materials that appear to have failed in general durability or any other form of apparent deterioration.

3.4 ERECTION

- A. Verify dimensions of supporting structure by field measurements so that the modular wall will be accurately designed, fabricated, and fitted to the structure.
- B. Coordinate modular wall work with the work of related sections and provide items to be placed during installation of other work at the proper time to avoid delays in the work.
- C. Erect all component parts of the modular wall in accordance with the manufacturer's written instructions and recommendations.
- D. Erection Tolerances:
 - 1. Erect all component parts within the following tolerances - variations from plumb of angle shown: 1/8" maximum variation in height or 10' length, noncumulative.
 - 2. Offsets in end-to-end or edge-to-edge alignment of consecutive members: 1/8" maximum offset in any alignment, noncumulative.
- E. Cutting and Trimming of Components Parts:
 - 1. Cut and trim component parts of the modular wall during erection only with the approval of the manufacturer or fabricator and in accordance with their recommendations. Restore finish completely to protect material and remove all evidence of cutting and trimming.
- F. Do not erect members which are observed to be warped, bowed, deformed or otherwise damaged or defaced to such as to impair strength or appearance. Remove and replace members damaged in the process of erection.
- G. Set units level, plumb and true to line with uniform joints. Support and secure in place by connecting stud "hat" sections using recommended factory fasteners.

3.5 CLEANING

- A. Provide cleaning methods required for each component part as recommended by the respective manufacturers.
- B. Cleaning methods shall be carefully selected, applied and maintained so that finishes will not become uneven or otherwise impaired.

3.6 PROTECTION

- A. Protect the modular wall system throughout the construction period in a clean and properly protected condition so that it will be without any indication of use or damage at the time of substantial completion.
- B. All work must be protected during shipment, storage, erection and construction so as to avoid development of nonconformity of appearance or other deleterious effects in the work.
- C. Protection should be removed when requested by the construction manager for inspection of finishes.

- D. Remove protection when no longer required. Any materials found to be defective or improperly installed shall be replaced.

END OF SECTION 131200



Section 27001

Structured Cabling Specifications

2850 New York Avenue, NE

Background Information - About the MPDC

One of the ten largest local police agencies in the United States, the MPDC is the primary law enforcement agency for the District of Columbia. Founded in 1861, the MPDC of today is on the forefront of technological crime fighting advances, from highly developed advances in evidence analysis to state-of-the-art-information technology. These modern techniques are combined with a contemporary community policing philosophy, referred to as Customized Community Policing, to improve the quality of life for all who live, work, and visit the Nation's Capital.

Mission of the Metropolitan Police Department

It is the mission of the Metropolitan Police Department to safeguard the District of Columbia and protect its residents and visitors by providing the highest quality of police service with integrity, compassion, and a commitment to innovation that integrates people, technology and progressive business systems.

In order to achieve its mission the MPDC realizes the importance of establishing a secure and technologically advanced environment for its more than 4,400 members – including approximately 3,800 sworn police officers and more than 600 civilian employees.

A critical element in the success of the construction of 2850 NY Ave is the proper design, coordination, deployment, programming, management, monitoring, and maintenance of the structured cabling management system for this facility. The Structured Cabling Infrastructure (SCI) system will be used to provision voice, data, and video applications through this MPD facility.

The following sections of this document provide detailed specifications regarding the essential features and capabilities of the SCI system for this project:



Structured Cabling Infrastructure (SCI) Initiative – A Summary of System Requirements

OBJECTIVE: A fundamental role in achieving the objectives of this facility is the design and deployment of a properly implemented SCI system to address the MPDC's immediate needs and provide for expansion capability as required.

This specification establishes the minimum requirements for the telecommunications wiring system used to provision voice, data, and video applications in MPD-owned and leased buildings.

The use of standardized design and installation methodologies, together with standard products, will reduce government costs throughout the life-cycle of the telecommunications wiring infrastructure, and facilitate management, administration, maintenance, training, and future expansion. This specification describes the selection of specific design, installation, and management criteria.

The standards referenced by this document outline an infrastructure that is designed to permit flexible re-arrangements of people and equipment within the building. In a building housing multiple organizations, this infrastructure is also constructed to facilitate changes in space allocated to the various organizations within it.

The infrastructure consists of telecommunications spaces (such as telecommunications closets and equipment rooms) and pathways (such as conduit) along with the cable and associated hardware within these spaces and pathways.

Properly-designed telecommunications spaces and pathways are essential to provide the capability for a building to accommodate new demands imposed by changing technologies. These requirements, when properly implemented, permit new cabling and telecommunications equipment to be installed at lower cost and with less disruption to the occupants.

This SCI specification embraces contemporary technical standards as well as operational experience in the MPD environment, thus providing for a reduction in costs and improved design, installation and management over the life-cycle of the system.

SCOPE – The SCI system will consist of the following scope of work:

- System design, including utilization of MPDC security best practices based on past SCI system integration experience at MPDC facilities with DC-NET
- Presentation of initial system layout/scope to MPDC officials and members of the project management team (architect, general contractor, MEP engineer, etc.)
- Modifications to initial system layout/scope as appropriate based on feedback from project management team
- Supply and installation of Plenum UTP Cat6 structured cabling system from a centralized head-end voice, video, data, and CATV locations



- The cabling infrastructure for this facility will be an end-to-end Category 6 shielded cabling system and must adhere to TIA/EIA 561B standards. The system must also adhere to building safety regulations (NFPA 70, NFPA 75, etc.)
- In general, each work area shall be fitted with a minimum of two telecommunications outlets, each consisting of a modular jack and with each terminating a run of four-pair Category 6 UTP cable no longer than 90 meters.
- Supply and installation of terminal blocks consisting of hardware designed to use punched-down jumper wires (IDC method) to make the required cross-connection.
- Supply and installation of patch panels that are designed to use compatible plug-ended patch cords to make the required cross-connection.
- Supply and installation of Cat6 termination hardware at the source of each cable (connection to Cat6 patch panels)
- Supply and configuration of network closet components including aluminum racks, patch panels, ladder racks, vertical cable organizer, horizontal cable organizer, battery back-up units, etc.
- Supply and installation of Cat6 termination hardware at each cable drop (base plate, dual port face plates, Cat6 wall jacks, Cat6 inserts, RJ45 connectors and termination hardware)
- Supply and installation of cable trays and conduit as required. A horizontal pathway, either EMT conduit or cable tray, must be provided. Zoned EMT conduit is the preferred horizontal pathway infrastructure, and should take precedence over all other types of pathway design
- Provision of misc. material (plenum cable ties, cable support hardware/J-Hooks, tape, wire mold, etc.) and labor associated with the cable installation from ceiling or overhead cable distribution system to wall jack location
- Low voltage system deployment is inclusive of supply, installation, permitting, fire stopping, testing, certification to MPDC specs, coordination with DC-NET team, acceptance testing, project management, and warranty support
- Deployment firm provides a single point-of-contact for all project management aspects related to these technology initiatives
- SCI system must be labeled at both ends of the cable per DC-NET standards
- SCI system installation firm must include fire stopping for cable runs at all penetrations where required
- SCI system installation firm must provide all low voltage permits and coordination of the inspection process
- SCO system installation firm must coordinate all efforts with general contractor, electrical contractor, DCNet, furniture supplier, etc.



- SCI system must be housed in a dedicated room for low-voltage/telecommunications equipment
- The vendor must provide an electronic 'As Built' drawing at the completion of the project as per the 606 TIA/EIA standards
- All cables shall be tested for wire map and length compliance. A random sample of 5 - 10% of Category 6 cables, chosen by MPD, not the installation company, shall also be tested with a Level II tester for conformance with channel performance (attenuation, NeXT). The sample selection should include the longest and shortest runs. NeXT shall be tested from both ends.
- Provision of one-year warranty on all new components and services.



SECTION 28 01 00 - ISS SPECIFICATIONS AND SCOPE OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY OF INTEGRATED SECURITY SYSTEM (ISS)

- A. The contract documents for the ISS include the following systems:

1. Access Control and Alarm Monitoring System
2. Electronic Door Hardware
3. Request-to-Exit Devices and Field Devices
4. Intrusion Detection System
5. IP Video Management System
6. Video Surveillance Field Hardware
7. ISS Integrated Operations
8. Centralized Storage for Video Surveillance (CSVs) **SEE PART 12**
9. Security Network Infrastructure and PC Hardware
10. Video Intercommunication System
11. Structured Cabling System
12. Power Supplies and Enclosures
13. Head-End Infrastructure and Controllers
14. Integrated Security Software and Software Support
15. Design, Deployment, Maintenance, and Sustainment of ISS Platform

PART 2 - SCOPE OF SERVICES

2.1 SUMMARY SCOPE

- A. Scope includes the design, provision, deployment, maintenance, and sustainment of the Integrated Security System (ISS) in a turnkey manner as described in this specification. The ISS shall comprise the following systems:
1. IP video surveillance system including megapixel cameras, pan/tilt/zoom cameras, IP cameras, fixed cameras, lenses, housings, enclosures, mounts, poles, pedestals, power supplies, video management software, equipment racks, monitoring and control equipment, patch panels, CAT6 cabling, POE switch components, network infrastructure, video servers, video workstations, video recording equipment, and all materials and services necessary for the turnkey deployment of a comprehensive IP security surveillance system.
 2. A PC-based Access Control and Monitoring System (ACAMS) including monitoring and control head-end, annunciation devices, intelligent system controllers, network interface cards, power supplies, operator workstations, software licensing, software integration, MPD specified card readers, electronic locking hardware, request-to-exit motion detectors, request-to-exit pushbuttons, door contacts, low-voltage plenum data and power cabling,

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- detection sensors, and other capabilities, materials, and services required to provide the turnkey deployment of a comprehensive ACAMS system.
3. A video intercommunication system consisting of master stations, remote stations, power supplies, release buttons, plenum low-voltage cabling, and all materials and service required to provide the turnkey deployment of the video intercommunication system.
 4. The design, deployment, and sustainment of a Storage Area Network (SAN) for MPD s video surveillance system. The SAN will be a high-performance, scalable storage architecture to support MPD s video surveillance program that is increasing in both size and performance requirements for retention periods, frame rates, and resolution. This initiative has been designated the CSVS program - Centralized Storage for Video Surveillance. ***Refer to Part 12 for the specifications for the CSVS platform. All respondents must be a Dedicated Micros Network Video Certified Partner for Closed IPTV and provide evidence of this certification with bid response.***
 5. Integration of all systems as detailed in this documentation and provision and/or connection to security network. Provide all components and services necessary for turkey deployment of ISS platform and communication to Owner s LAN and security servers.
- B. Scope includes the provision of each of the following in support of the ISS system:
1. Permits and inspections.
 2. Submittals, samples and record documentation.
 3. Comprehensive commissioning and testing.
 4. Training services for the Owner and Operators.
 5. Coordination with other site contractors.
 6. Reporting to project team and timely execution of the Work.
 7. Network analysis and deployment strategy
 8. All components, materials and services required for a completed and fully operational turnkey ISS installation meeting these specifications. Pricing must include all taxes, materials, labor, profits, overhead, insurance, parking, equipment rental, bonds, shipping and project delivery, warranty, permits, professional services, integration services, and all costs attributable to providing a turnkey solution as specified.
 9. Two (2) year warranty with preventative maintenance during warranty period.
 10. Testing and acceptance.
 11. As-Built documentation.

2.2 WARRANTY AND SERVICES DURING THE WARRANTY PERIOD

- A. The Warranty Period for all components of the new ISS and their installation shall be a two (2) years from the date of acceptance by Owner. The date of acceptance shall be the date when all components have been certified by the project team and accepted by the Owner to be complete in accordance with the specifications.
- B. All components and their installations shall be free from defects. Any defective material or workmanship and any resulting damage to work of other trades shall be replaced or repaired as directed during the Warranty Period.
- C. Schedule repair work with the Owner's representative to prevent interference with MPD activities.
- D. Base contract price shall include the cost of all replacement parts during the warranty period and all of the associated installation costs and all of the costs associated with the repair of components during the warranty period.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- E. Respond and be on site within four hours of the Owner placing a system trouble call for items of an immediate nature affecting operations.
- F. Any software modifications or upgrades that become standard product offerings from the ISS contractor and/or ISS equipment vendors during the warranty period shall be brought to the attention of the Owner and, if the Owner wishes, shall be provided at no additional cost to the Owner.
- G. The ISS contractor shall maintain an inventory of common components in the local office for the replacement of failed components. Provide list of recommended spare parts inventory with bid response.
- H. Maintenance services shall cover routine preventative maintenance. Submit preventative maintenance plan with bid response.
- I. Provide, at minimum, four preventative service inspections during the Warranty Period. Perform, at minimum, a comprehensive inspection, remediation, and sustainment of all installed systems. Provide a comprehensive written report to the Owner indicating the results of each inspection and all repairs and adjustments made.
- J. Update all record drawings as necessary and provide the Owner with a copy.

2.3 CODES, PERMITS AND APPROVALS

- A. Obtain all required permits and inspection certificates. All permits and certificates shall be made available to the Owner.
- B. The latest requirements of all national, state, county, municipal and other authorities having jurisdiction shall be met.
- C. Work that is not clearly defined by local ordinance or amendment shall be governed by the National Electrical Code and the District of Columbia.
- D. All requirements of The Federal Occupational Safety and Health Act (OSHA) and Environmental Protection Agency (EPA) shall be followed for all job-site procedures and installation methods.
- E. Work shall be performed in compliance with Owner's insurance underwriters' requirements.
- F. All equipment and materials furnished under this subcontract shall be new, and shall meet all applicable UL standards and all requirements of these specifications.

2.4 SCHEDULE

- A. Complete all requirements of the ISS subcontract prior to the scheduled substantial completion date for each portion of the work.
- B. Provide to the General Contractor a schedule indicating the sequence of work, durations of individual tasks, delivery dates for all material, devices and equipment and detail any interface that must be coordinated with any other contractors.

- C. Attend all project meetings as requested by the Owner and the General Contractor.
- D. Provide written status reports at required intervals and in a format acceptable to the Owner. An updated schedule of work shall be included in each status report.
- E. Comply with the Project Construction Schedule. Provide additional staff and work overtime as required to comply with the Project Schedule and so as not to interfere with other on-site contractors in their effort to comply with the Project Schedule.
- F. Provide written Request For Information notices to the Owner when specific information or clarification of the specifications is required. Request For Information notices shall be provided at least two weeks prior to the need for the information.
- G. The following is the scheduling required by these specifications.
 - 1. Immediately after Notice to Commence, the General Contractor, together with the major Contractors, shall have a preconstruction meeting with the Architect, Engineer and Owner.
 - 2. It is expected that an expedited submittal review process will be utilized on this Project. The Contractor shall start on or schedule the following upon receiving Notice to Commence.
 - 3. Shop Drawings, Product Data and Coordination Drawings not included in the expedited submittal review process will follow a normal sequential review by the Architect.
 - 4. Respond in writing to Approved As Noted comments on submittals within two days after receipt of the comments indicating acceptance of the comments. If the response is not received, the status of the submittal shall be revised to Revise and Resubmit.
 - 5. On or before one week after Notice to Commence, the Contractors shall prepare an index of all ISS Shop Drawings and Product Data for the Project.
 - 6. Submit proposed test procedures, recording forms and test equipment for review six months prior to execution of testing.
 - 7. Submit completed test sheets indicating the test results for each ISS component within the system with a detailed schedule for acceptance testing at least one week prior to the proposed acceptance testing.

2.5 CONTRACTOR QUALIFICATIONS

- A. All responding firms must evidence they are authorized, factory trained, and certified by all relevant manufacturers, industries, and with documented experience in the deployment of the ISS management systems specified herein. **All bids must provide evidence of the qualifications detailed below. Any bids received that do not provide evidence of each of the following qualifications will be deemed non-compliant.**
 - 1. Proof of Integrator Certification from Manufacturer: Firm must provide a letter of support from each major system manufacturer that evidences the firm's certifications, qualifications, ability to obtain specified material within the project timeline, and successful past performance with the approved products detailed in these specifications. Copies of these letters must be provided with the bid response. Letters will be required from each of the following manufacturers:
 - A. RS2 Technologies

- B. Dedicated Micros
- C. Arecont

Contractor must also provide evidence that they are a Dedicated Micros Network Video Certified Partner for Closed IPTV at the time of bid and must provide evidence they have achieved RS2 Level 3 Enterprise dealer status.

2. Factory Training: Installation and service technicians must be factory trained and all personnel responsible for system deployment must be certified by applicable manufacturer. A current copy for each of these certifications must be provided with the bid response. Contractor must provide a minimum of two (2) training certifications from each of the following manufacturers:
 - A. RS2 Technologies
 - B. Dedicated Micros
 - C. Arecont
3. To ensure quality assurance and best of practice installation methods, vendor must utilize Bicsi certified personnel. The following Bicsi certifications must be provided with contractors bid response:
 - A. RCCD Certification
 - B. ITS Design Project Management
 - C. ITS Design Fundamentals
4. Past Performance with Law Enforcement Projects of a Similar Nature: Bid response must document at least (3) and no more than (6) projects of equal size and complexity for law enforcement facilities. Contractor references must detail the contract value, scope of services, manufacturers utilized, quantities of card readers and cameras, and contact information for the Owner and General Contractor.
5. UL 2050 Certification: Contractor must be UL-2050 Certified with the ability to issue certifications. Bid response must provide evidence of UL-2050 certification.
6. Engineering: Firm must evidence ability to provide shop drawings, riser drawings, point-to-point drawings, and as-built documentation. Firm must utilize in-house engineering resources consisting of drafting engineer and CAD operator.
7. Service Center: Firm must have a service center capable of providing training, in-stock parts and materials, and emergency maintenance and repairs at the Project site with a 24/7 response capability. Provide resumes and copies of certifications for all trained personnel that will provide routine preventative maintenance and emergency service.
8. Project Management: The principal members and key personnel to be assigned to the project by the integrator and their contractors shall each have a minimum of five projects, of similar size and scope, installed and operational for a minimum of one year. Project Managers will be certified ASIS PSP standards. Provide resumes with bid response.

2.6 COMPLIANCE WITH SPECIFICATIONS

- A. The ISS contractor shall thoroughly review all aspects of the ISS and certify they are in compliance with the Contract Documents. The Contractor shall provide a compliance review (Compliance Review) of all Specifications and Addenda as part of the Contractor s bid. The Compliance Review will be a paragraph-by- paragraph review of the Specifications with the following information marked for each Specification section paragraph or in the margin of the original Specification and any subsequent Addenda.
1. FC : Full Compliance.
 2. PC : Compliance with minor exceptions. For each and every exception, provide a numbered footnote with reasons for the proposed exception and how the intent of the Specification can be satisfied.
 3. N/A : The specification paragraph does not apply to the proposed equipment, material or product.
- b. Unless an exception is specifically noted in the Compliance Review, it is assumed that the Contractor is in complete compliance with the Contract Documents. Exceptions taken in cover letters, subsidiary documents, by omission or by contradiction do not release the Contractor from being in complete compliance unless the exception has been specifically noted (explicitly, not by implication) in the Compliance Review.

2.7 TRAINING

- A. Submit an outline of the training courses to be given. This outline shall include a schedule of the training sessions, divided into one-half day increments, indication of the topics to be covered in each session and any prerequisite requirements that should be met prior to attendance. The training outline shall be submitted with the initial shop drawing and submittals package. Training shall not commence unless a training outline and schedule has been approved by the Owner and Architect.
- B. Training sessions shall include classroom type instruction and "hands on" instruction and shall be given by the Contractor on site using the completed installations. Arrange for additional meeting room space with the Owner. Training shall consist of, at minimum, four sessions. Each session shall be four (4) hours long and shall be presented within the final month prior to the anticipated date of Certification of Substantial Completion. Follow up training shall consist of, at minimum, two sessions, which shall be given during the Warranty Period to be scheduled with the Owner.
- C. Provide all training materials (hand-outs, textbooks, workbooks etc.) and any audiovisual equipment required to execute the training.
- D. Training sessions shall be formatted to maximize the usage of time of the attendees and prevent redundant coverage of materials for advanced students. Training sessions shall be designed toward the specific requirements of each session based on the attendees scheduled to participate. The training shall be specific to this project and shall cover, at minimum, the following:
1. Set up and implementation of all security monitoring and control software.
 2. Demonstration of each systems capabilities.

3. Operating sequence programming.
4. Operator interface features.
5. Other subjects necessary to ensure that the operators and managers will be able to operate the ISS without any on-going assistance from any outside party.

PART 3 - PRODUCTS

3.1 EQUIPMENT AND MATERIALS - GENERAL

- A. When a specific reference to a manufacturer of a product is made, and the terms "or approved equal" are used, substitutions of a product by another manufacturer will be allowed, but the substituted product must conform to all specified requirements. The Owner's determination on the acceptability of substitutes shall be final. Approved substitution equipment shall conform to available space and power requirements. Substituted equipment that does not conform to the available space requirements shall be replaced or required modifications made at no additional cost to the Owner.
- B. All equipment and materials shall be new and without any defect.
- C. Equipment and materials shall be provided with an Underwriters Laboratories, Inc. (U.L.) label listed where required by local ordinance or code.
- D. Hazardous Materials Notification: In the event no product or material is available that does not contain asbestos, PCB, or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for the proposed product or material prior to installation.
- E. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, the ISS contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated biphenyls (PCB), using format in Article 3 of General Conditions.
- F. Provide heat output and space conditioning requirements to the Owner and Architect for all ISS components.

3.2 EQUIPMENT - MOUNTING AND FINISHES

- A. Fire rated or U.L. listed doors and frames shall not be drilled, cut or modified in any way without prior approval from the Architect. Doors or frames that require modification to meet the Contract Document requirements shall be brought to the attention of the Architect. Replace any door or frame that has been modified without the approval from the Architect.
- B. Visible panel and instruction labels shall be in compliance with the American's With Disabilities Act as approved by the Architect. Graphics for all equipment in areas accessible by the public shall be approved by the Architect.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- C. Visible identification logos, trademarks, or evidence of their removal are not permitted on any equipment, devices, etc. that are located in areas accessible to the public. Equipment, devices or enclosures accessible to the public shall utilize tamper proof fasteners.
- D. Mounting locations shall be verified with the Architect prior to installation. Notify the Architect if a particular location is not acceptable for the application.

3.3 GROUNDING

- A. Provide grounding and surge protection for all exterior security equipment. Identify proposed grounding and surge protection components in bid response.

3.4 UN-INTERRUPTIBLE POWER SUPPLY (UPS)

- A. Provide UPS units at Security Equipment Room rack locations. The UPS units shall meet, at minimum, the following requirements:
 - 1. Audible alarm when main power is not available to the equipment.
 - 2. RF noise filtering.
 - 3. Over voltage protection.
 - 4. Six outlet receptacles.
 - 5. Visual alert status light.
 - 6. Sealed maintenance free batteries.
 - 7. Mount style specific to location. Rack for equipment rack locations and floor style for other locations.
 - 8. Load sized appropriately to provide a minimum of 5 minutes for all equipment to be connected to the unit.
 - 9. APC Smart Slot communication interface connected to the Owner s network for remote monitoring and management of the UPS unit operation.
 - 10. Quantities for all equipment in racks as required to serve all equipment loads.
 - 11. UPS shall be APC Smart-UPS.

3.5 CONDUIT - GENERAL

- A. Provide all conduit, raceways, cores, and fittings for turnkey deployment of the ISS.
- B. Conduit sizes are to be considered the minimum size to be installed. Provide larger or additional conduit if required. ISS cabling shall not share conduit with any other cabling. Color-code all conduit and fittings with a unique color at every junction box and at least every 10 feet along the conduit.
- C. All ISS cabling required to be within conduit, shall be run in its own conduit and shall not share conduit with any other trade. ISS cabling of same type may be combined provided NEC maximum fill requirements are maintained. Cable carrying voltage in excess of 48 volts shall not share conduit with cable carrying voltages of 48 volts or lower.
- D. If lubricant is required for pulling of cables through conduits, only wipe on or spray on type shall be utilized. The wipe on or spray on type must be expressly designed for mitigation of wet link insertion loss. Cable damage from pulling of cables is the security

contractor's responsibility and new cable shall be provided at no additional cost to the Owner.

- E. Coordinate installation of conduit with Integrated structure and other trades. Conduit installation above accessible ceilings shall be such that there will be no interference with the installation of lighting fixtures, fire protection, air outlets or other devices.
- F. Junction and pull boxes shall be installed where required by the National Electrical Code and at locations to facilitate the pulling of cable.

3.6 STRUCTURED CABLE SYSTEM

- A. Provide all signal, video, data and control cables for the ISS. Provide wire and cable for each component as required by the manufacturer of that component. Installation of wire and cable shall meet, at minimum, the following requirements:
 - 1. Continuous runs without splices.
 - 2. Identification of each end of the cable at the termination points. Identification should be indicated on and correspond to the record drawings.
 - 3. Unique color schemes for easy identification and prevention of inadvertent splicing. Coordinate unique color schemes with all other trades.
 - 4. All networking cable shall be terminated into a patch panel. Provide patch panel to network switch jumper cables as required.
 - 5. Networking cable shall be minimum Category 6 with factory molded end connectors and shall be tested and certified for 100 Mbps data transfer rate and shall meet IEEE 802.3ab 1000Base-T. Ethernet cabling shall meet ANSI/TIA/EIA-568-B.1 and ANSI/TIA/EIA-568.B-2. Provide patch panels between field cabling and network switches. Patch panels shall be certified as a TIA-568-C.2 Category 6 Component.
- B. Terminations shall be mechanically and electrically secure. Twist type wire nuts shall not be acceptable. Terminations or connections not made within junction boxes shall be soldered and shrink cover insulated.
- C. Cable within panel or enclosures shall be installed in cabling guides.
- D. All cabling installations shall comply with the latest version of the TIA/EIA standards.

3.7 CABLE - FIBER OPTIC

- A. Fiber optic cable will be used for CCTV video signaling, SIS remote communication and ACAMS data communication. Fiber optic cable shall meet, at minimum, the following requirements:
 - 1. 50 micron core (graded index Corning multi-mode fiber).
 - 2. 850 nm or 1300 nm LED compatible operation, as required.
 - 3. 125 micron cladding plus or minus 1 micron.
 - 4. Maximum attenuation of 4.5 db/km (850 nm).
 - 5. Outdoor and below grade fibers shall be run in gel filled tube to protect against moisture and micro-bending. Tube and fiber shall have a kevlar braid surrounding, with suitable outside protective jacketing.

6. Cable shall contain 100% more fibers than required for a single point-to-point communications connection.
 7. Outdoor fiber shall be equipped with a central non-conducting member for long pull applications.
 8. OM3 grade between cameras and network switches.
 9. OM4 grade between network switches.
 10. Fiber optic cabling shall be Future Flex.
 11. All fiber cabling shall terminate via OM4 grade fiber interface units.
- B. Provide fiber patch panels between switches and field cabling. Patch panels shall meet, at minimum, TIA/EIA requirements for TIA-492AAAD (OM4) fiber.
- C. All cabling installations shall comply with the latest version of the TIA/EIA standards.

3.8 PANELS

- A. Provide panels and enclosures for all components of the ISS. or devices Interior panels must be NEMA 1 rated painted steel panels with locking door and ventilated to prevent excessive heat build-up. Cabling shall be neatly installed within wire guides with removable covers for easy access.
- B. Provide all necessary Exterior panels and enclosures that shall meet, at minimum, the following requirements:
1. NEMA 4 painted steel panels with locking door.
 2. Field cabling shall be terminated on a terminal strip. Provide strain relief as necessary.
 3. Internal components shall be installed to allow easy access for diagnostics, maintenance, removal or replacement of any component within the enclosure.
 4. Cabling shall be within wire guides with removable covers for easy access.
- C. All panels shall be lockable with the same key. Provide Owner with ten keys.
- D. Provide cabling diagrams laminated in clear plastic at each field panel enclosure showing all cable terminations, relays, interlocks, power supplies, etc.

3.9 LABELING

- A. Provide labeling for all ICs, RMs, other panels and enclosures. Labeling shall meet, at minimum, the following requirements:
1. Plastic laminated label, which shall be affixed to the panel or enclosure with rivets or permanent adhesive.
 2. Lettering .25 inch high, which sharply contrasts the background.
 3. Coordinated with the approved project labeling scheme and consistent throughout the project.
 4. Indicated on the record documentation.

3.10 SECURITY EQUIPMENT RACKS

- A. Provide freestanding floor mounted pre-manufactured modular racks at head-end locations.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- B. Install all required security system equipment as required within the racks. If additional equipment is required for a complete and functional ISS installation, that is not shown on the detail drawings, the contractor shall locate and install the additional equipment and provide additional racks if necessary.
- C. Provide all mounting hardware and supports as necessary to mount the equipment within the racks. Racks shall meet the following minimum requirements:
 - 1. 72 inch high vertical racking system.
 - 2. Open base for cabling.
 - 3. Top and sides shall be enameled metal panels. Provide ventilation openings.
 - 4. Front and back shall be enameled metal lockable doors.
 - 5. Provide ventilation fans, which shall be mounted on rubber bushings and configured to prevent excessive noise.
 - 6. Racks shall have adequate space for cabling behind the mounted equipment.
 - 7. Ganged for multiple rack installations.
 - 8. Provide cable harnesses and connectors to allow for both the ease of maintenance and the replacement of individual equipment components. All cabling shall be concealed at the rear of the rack mounts.
 - 9. Provide power strips that mount within each rack at the rear of the rack. Strip shall cover the entire length of the rack and shall provide power outlets for each piece of equipment. Power strip shall connect into the power outlets provided by others as identified in the electrical section of these specifications.
- C. Racks shall be Winsted or approved equal.

3.11 SECURITY DESK

- A. Install all required security system equipment as required at the security desk locations. **DELETED** If equipment is required to be within the desk that is not detailed within these documents, the contractor shall locate and install the additional equipment. Coordinate the design and layout of each desk with the Architect. Provide equipment specification sheets for all security equipment to be located within the desks to the Architect.
- B. Provide mounting racks and supports as necessary to mount the equipment within the desks. Provide trim and blank-off panels around equipment in free spaces so that none of the interior space of the desk is visible.
- C. Provide ventilation fans within the desk to provide ventilation for the equipment installed. Include all installation details, including ventilation fan locations, within the shop drawing submittals.

PART 4 - ACAMS SYSTEM

4.1 WORK OF THIS SECTION

- A. This section of the specifications details the components to be provided by the ISS contractor relating to the following:

1. ACAMS Manufacturer s
2. ACAMS Expansion Capability.
3. Alarm Response Activation Button.
4. Antivirus Software.
5. Computer Image Restore Software.
6. Software Upgrades.
7. ODBC Compliance.
8. Access Control and Monitoring Software.
9. Password Protection.
10. Management Reporting.
11. Cardholder Data and Reports.
12. Segregated Database.
13. Operator Interface.
14. Annunciation of Security Alarms.
15. Dynamic Graphical Maps
16. Access Card Control Features
17. Video Image Storage and Recall
18. Sequences of Operation
19. ACAMS Hardware and Edge Devices

4.2 ACAMS MANUFACTURERS

- A. **The ACAMS software, hardware, models, and all related components shall be RS2 Technologies. NO EXCEPTIONS.**

4.3 ACAMS EXPANSION CAPABILITY

- A. ACAMS software as provided under this contract, shall be able to incorporate the following minimum number of devices, including those furnished under this contract, without the requirement to change the software or server configuration.

1. One hundred and twenty eight (128) cardreaders.
2. Five (5) operators terminals.
3. Five (5) printers.
4. One thousand (1,000) monitored inputs.
5. Five hundred (500) controlled outputs.
6. Storage of one million (1,000,000) ACAMS transactions.
7. One thousand (1,000) cardholders.

4.4 ANTI VIRUS SOFTWARE

- A. Provide anti virus software for each ACAMS computer. Anti virus software shall be provided with free virus definition updates for the duration of the warranty period. Include step-by-step directions for updating the anti virus software during the warranty period. Anti virus software shall automatically scan the computer bios and all files opened, created, copied, or received for viruses.
- B. Directions for obtaining and updating virus definition files shall be provided to the Owner within the record documentation.

4.5 COMPUTER IMAGE RESTORE SOFTWARE

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- A. Provide a software package with 10-client access license that will create recoverable images of a selected hard drive or a selected partition of any hard drive. The software package shall have, at minimum, the following features:
 - 1. Boot disk creation capability.
 - 2. Create and store data as image files.
 - 3. Create and store exact mirrors of data from one location to another.
 - 4. Restore selected image or mirror to selected location.
 - 5. Able to utilize local drives, network drives, cd-burners, and tape drives for storage of data.
- B. The computer image restore software shall be Norton Ghost or approved equal.
- C. Create a recoverable image on CD for each computer provided within these specifications. The recoverable image for each computer shall include the corresponding computers fully installed and configured operating system only. The floppy and CD shall be utilized to restore the configured operating system should a hard drive failure occur. The operator shall then manually reload all software packages.
- D. Include within the documentation, step-by-step directions on how to restore the image utilizing the above software and hardware. Include step-by-step directions specific to each computer as to which software packages to be reloaded upon restoration of the operating system

4.6 SOFTWARE UPGRADES

- A. Advise the Owner of any software revisions to the installed system that become available as a standard product offering during the warranty period. Should the Owner wish to incorporate any or all of the new software products into the system, this shall be undertaken at no additional cost to the Owner.

4.7 ODBC COMPLIANCE

- A. ACAMS software database shall be ODBC compliant or approved equal.

4.8 SOFTWARE LICENSING

- A. Unless specifically noted elsewhere in these specifications, any software being provided that requires licensing shall be provided with a minimum of 10 licenses.

4.9 ACAMS SYSTEM ARCHITECTURE

- D. General: The ACAMS is a modular and networked based system providing physical access control security to a Wide Area enterprise. The system to be capable of controlling and integrating multiple security functions including the configuration, management and monitoring of cardholder access, locking hardware units, events, alarms, visitors, and real-time tracking and reporting. The ACAMS is to be alterable at any time depending on the facility requirements and will allow for easy upgradeability or modification of network processors, controller, interface modules, card data, inputs, outputs, and remote work stations. The ACAMS to include, but is not be limited to, the following features and functions:

DGS MPD
Collocation of Six MPD Units
New Construction Phase

1. An "Enterprise" class access control software application.
2. Client/Server model operating central server host software modules and client workstation software applications in a multi-user and a multi-tasking environment.
 - a. The ACAMS to permit multiple instances of client software applications to run simultaneously on the network. The base system to include [] software application licenses with an unlimited number of licenses available subject to connection fees.
3. Partitioning: The system to support security partitioning enabling system administrator to segment the configuration database and group multiple entities within the security partition.
 - a. Security partitions limit what users can view in the configuration database. Administrators, who have all rights and privileges, can segment a database into multiple security partitions. A user who is given access to a specific partition will only be able to view entities (components) within the partition they have been assigned.
4. Encryption: The system to support encrypted communication between the central server software and client software applications (server-to-server and client-to-server) using a 128-bit AES encryption algorithm (at a minimum).
 - a. Communication between the central server host software module and system controllers to be encrypted if supported by the controllers.
 - b. The ACAMS client software applications to be password protected with passwords stored in the central server database in an encrypted manner.
5. Distributed Processing: The system is a fully distributed processing application allowing information, including time, date, zones, valid codes, tasks, access levels, and similar data, to be downloaded from the central host station to controller interface devices allowing access-control deACAMS Workstations with or without central host station communication. If communications to a central host station are lost, the controllers will automatically buffer event transactions until communications are restored and events are automatically uploaded to the central host station.
 - a. Provide for a higher level of distributed database management at defined perimeter access points such that no single point of failure will allow more than two access points to fail, or affect more than two access points at perimeter points system wide.
6. Single Data Base: The system to support a single database for access control site setup, credential and identity file creation, alarm and control setup, and system user operation and command functions.
7. System Access Management: The system to allow operators through password authentication the ability to make access granted or denied ACAMS Workstations, define access levels, time zones, holidays, assign cardholders, access groups, develop tasks, and generally manage access control, alarm monitoring and response activities system wide from a single login. Operator and user privileges are managed by a system administrator allowing for different levels of system access and system control. Authorization management is fully Owner definable.
8. Cardholder Management: The system to include a cardholder management system integrated within the access control system. This cardholder management functionality allows the enrollment of cardholders into the database, and import/export of employee data.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

9. Access Groups and Access Levels: The system to provide adequate access groups and access level assignment capability to meet Owner requirements for the specified project. If required, software application can be expandable to support unlimited access groups and access levels.
10. Alarm Monitoring: The system is able to monitor, report, and provide information about the time and location of alarms, along with their priority.
11. Event Monitoring: The system is able to monitor, report, and archive network access control activity.
12. Transaction Logs: The system to support an unlimited number of logs and historical transactions (events and alarms) with the maximum allowed being limited by the amount of hard disk space available.
13. System Monitoring: The system to have ability to report on the integrity of all network assigned devices, circuits and communications and provide a diagnostics screen showing field level communications system wide
14. Lock/Unlock Commands: The system to allow an operator to manually lock and unlock doors overriding scheduled access control restrictions and configurations if necessary.
15. Hardware Interface: The system to integrate with and control specified electrified hardware, signaling and monitoring devices.
16. Report Generator: The system to have the ability to generate and output reports with any and all combinations of system fields and data including, but not limited to: by cardholder, by door, by site, by time, by groups of doors and by cardholder field. Any and all combinations of fields must be available for reporting. The report feature to allow exporting of generated reports over a network connection or by remote printing.
17. Multi-User/Web Based Network Capabilities: The system to support multiple operator workstations via local area network/wide area network (LAN/WAN), the Internet, or VPN. The system to be capable of supporting minimum of [10] concurrent users/clients with software expansions to an unlimited number of workstations based on the Owners network requirements.
18. Systems Integration: The system to have the ability to be fully and seamlessly integrated with existing or specified intrusion detection alarm and video surveillance (CCTV) systems.

DYNAMIC GRAPHICAL MAPS

- A. Display, control and monitoring of ACAMS alarms shall be provided through dynamic graphical maps. ACAMS graphical maps shall meet, at minimum, the following requirements:
 1. Graphical displays shall be color based on AutoCAD base plans provided by the Owner. If system requires conversion to another format, provide software to do this conversion.
 2. Display of the graphic, once requested by the operator, shall take less than five seconds.
 3. Display shall continuously and dynamically update the status of ACAMS field devices.
 4. Status changes to the ACAMS shall be displayed within two (2) seconds of the occurrence.
 5. Graphical displays shall be definable and changeable by ACAMS operators having an appropriate access level.
 6. Graphical displays shall include the following:
 - a. Status of monitored and controlled field devices (cardreaders, door

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- status, etc.) in each area.
 - b. Change of status shall display a change of color of the field device.
 - c. Ability to control field devices by selecting the associated icon.
 - d. Clearly show the outlines of walls and doors.
 - e. Identification of each area.
- B. Provide, at minimum, graphical displays of the following areas:
 - 1. Plan view of the site.
 - 2. Plan view of each level. Provide multiple graphics for areas with a large floor plate to facilitate viewing of alarms and their associated areas by the operators.
- C. Graphical displays shall be single dynamic maps or individual maps which may be linked as necessary to clearly display an area of the site/Integrated/complex, as applicable for the application. It shall be possible for the operator to zoom in and out of the map by utilizing the scroll wheel on the mouse or by selecting a zoom in/zoom out button on the map. The operator shall also be able to scroll across the map in any direction at any zoom level also by utilizing the mouse.
- D. Provide to the Owner an example of a typical graphic that shall include icons and the level of detail proposed by the ISS contractor. In conjunction with this example, provide a set of hard copy drawings, which are representative of the graphical maps proposed for the Owner's premises. The Owner and Architect will review this information and advise the ISS contractor of any changes that are necessary.
- E. Open Architecture: The access control system infrastructure will be based on an open architecture design capable of supporting multiple access control hardware manufacturers and integrate with multiple non-proprietary network processors, controllers, interface modules, integrated locking hardware, remote card readers, keypads and display terminals, and other third party applications.
- F. Open Protocol: The ACAMS manufacturer to provide non-proprietary, open protocol hardware for the system control processors and associated device sub-controllers. Systems utilizing a single manufacturer solution that encompasses combined proprietary software and integrated electronic hardware combinations are not acceptable. In addition, integrated electronic locking hardware requiring a processor or sub-controller module upgrade, or extensive access control firmware upgrades to accommodate integrating with an alternate software package, will not be considered.]
- G. Network Support: Communication network connecting the central server host software modules, client workstation software applications, and hardware controllers to be designed to support all of the following:
 - 1. LAN/Ethernet enterprise ring topology and localized star topology based on TCP/IP.
 - 2. Direct-connected RS-232 and RS-485 communication cabling.
 - 3. Dial-up modem connection using a standard dial-up telephone line.
- H. Provide electrified door hardware and access control system equipment and accessories for each designated opening to comply with requirements in this Section and with the Security drawings.
 - 1. Access Control Hardware Sets: Requirements for quantity, item, model, design, grade, finish, size, and other distinctive qualities of each type of electrified door and access control location will be determined by coordination between Architect, contractor, and Div. 08 door hardware supplier. Contractor to provide, install, warranty, and commission all electronic

door hardware and request-to-exit devices. Power supplies and cabling to be provided and installed by this contractor.

System Design: The equipment and materials provided are standardized components regularly manufactured and utilized within the manufacturer's access control systems.

2. System components to be non-proprietary in design and implementations, providing for an open protocol platform with multiple manufacturers having functional software capable of integrating with the hardware specified. The installed integrated product is to be part of a single, cohesive management and access control system.
- I. Substitutions: Requests for substitution and product approval for inclusive electronic door hardware and access control systems hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated Architects.
1. The access control hardware contained in this specification represents the components for a complete engineered system. If alternate products are submitted, it is the responsibility of the contractor to provide an acceptable complete and working system layout, including reengineering of elevation and wiring diagrams. Complete systems to include at a minimum required power supplies, power transfers, locking hardware and accessories, REX hardware, cabling, and associated services and integration.
- G. Approved Access Control and Site Management System Manufacturers
- RS2 Technologies (Access Control System Control Processors, Reader Controllers, I/O Monitor/Control Modules, Entry/Display Terminals, Multiplexers, Channel Input/Output Modules, Application Software).
 - HESS (Locking Devices and Accessories)
 - Securitron (Locking Devices and Accessories)
 - Sentrol (Door Contacts)
 - Detection Systems (REX motions)
 - GE/UTC (Card Readers)
 - Altronix (Power Supplies)
 - Belden (Cabling)
 - ACAMS Workstations (Switches/Network Components)

ACCESS CONTROL AND SITE MANAGEMENT SYSTEM HARDWARE

- H. General: Provide all necessary access control field hardware devices required to receive alarms and administer all access granted/denied deACAMS Workstations. Field hardware devices must be designed to meet UL 1076 and UL 294 standards and installed in accordance with applicable electrical codes.
- I. Central Computer Host Server: The central host server is interconnected to all system components, including client workstations and field installed controllers, providing operator interface, interaction, display, control, and real-time monitoring.
- J. System Control Processor (SCP): The SCP is a 32-bit micro-controller utilized as the enhanced management processor between down line access readers, input monitors and relay output

DGS MPD
Collocation of Six MPD Units
New Construction Phase

modules, and the host system and software. SCP to meet the following minimum, design and performance specifications.

Internal memory a minimum of 32 Mbytes with a minimum of 12 Mbytes of memory set aside for user configuration.

Support for up to (32) I/O module addresses.

Capacity for up to, and in any combination, of (64) readers, (512) input monitoring points, and (512) relay output points.

User selection of serial, dial-up and/or Ethernet (TCP/IP) communications to the host computer with the specified system software. No external network card or attachment device is required for the SCP to connect with a conventional Ethernet. User shall have the ability to connect with the SCP using static IP or DHCP conventions.

On-board Network Interface Circuit (NIC) supporting 10/100-BaseT automation.

Support a minimum of (8) active card formats per processor.

Report on the entire card number on invalid reads

Support 19 digit (64-bit) UserID and up to 15 digit PIN numbers per card record.

Support anti-passback functions including free pass, exempt flags, last area accessed, last reader accessed and time and date of last access.

Support area management functions including two man rules, two card rules, multiple occupancy, maximum occupancy, and nested areas. Area management functions are defined in minimum of up to (32) Access Area assignments per SCP. Access Areas are treated within the system as a single logical point and any controls applied manually or by automation will apply to all of the access points assigned within the Access Area.

Support alarm management functions incorporating inputs and reader events into Alarm Zones allowing the zones to be armed and disarmed creating various user definable events that are supported in SCP tasks and host macro processing. Support a minimum of (64) fully user configurable Alarm Zones per processor.

Alarm management to provide task as well as arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection. Support down loads to the display of the keypad for date and time, zone status, error messages and special text messaging defined by the user.

Direct reporting of all events and status to the host system and specified software and support third party remote event and status reporting products for unattended hours if elected by the user. The SCP remote event and status reporting to use standard POTS telephone lines to communicate with an independent central station monitoring provider using security industry standard ContactID protocol to communicate user pre-defined site alarm and access events. The user shall have full management and control of all access/PIN functionality as well as full management and control of all transmitted event and status information passed to the central station.

Support up to (256) user definable tasks configured to execute pre-defined process operations in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.

Support up to (256) user definable user commands configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.

Support a serial data output function that allows the user to link to any event or status change received by the SCP with an ACSII data file communicated through an assigned serial data port to other control equipment. The data port provided on the SCP to be IEEE standard RS-485 connectivity.

Allow stored transaction storage 50,000 events per SCP.

Allow local card database storage of up to 395,000 records per SCP.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.

Provide on-board memory battery backup to retain all database information during a complete power loss for up to sixty (60) days, per manufacturer s specifications.

Provide (2) two-wire RS-485 down line communication ports. The minimum data rate shall be 38,400KBps at IEEE standards for up to 4000 feet for interconnection to up to (32) access reader, monitor input and relay output modules.

Manufacturer: RS2 Technologies

System Control Processor Dual Reader/2 Door Interface: The System Control Processor (SCP) Dual Reader Interface is a 32-bit micro-controller utilized as the enhanced management processor between down line access readers, input monitors and relay output modules, and the host system and software.

The SCP Dual Reader Interface supports up to (2) security industry standard reader communication and control ports. Each port terminates with industry standard access control readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units for authorized access and egress management. Each SCP access port to have supervised portal monitoring (door status), request to exit monitoring (manual or automated inputs) and electrified lock output control.

The SCP to meet the following, minimum, design and performance specifications.

Internal memory minimum of 16 Mbytes with a minimum of 6 Mbytes of memory set aside for user configuration.

Support for up to (32) I/O module addresses.

Capacity for up to, and in any combination, 64 reader locations including status/ position monitoring, egress request automation and electric lock control, (512) input monitoring points, and (510) relay output points.

User selection of serial, dial-up and/or Ethernet (TCP/IP) communications to the host computer with the specified system software. No external network card or attachment is required for the SCP to connect to the host system on a conventional Ethernet. Users have the ability to connect with the SCP using static IP or DHCP conventions.

On-board Network Interface Circuit (NIC) supporting 10/100-BaseT automation.

Support a minimum of (8) active card formats per processor.

Support anti-passback functions including free pass, exempt flags, last area accessed, last reader accessed and time and date of last access.

Support area management functions including two man rules, two card rules, multiple occupancy, maximum occupancy, and nested areas. Area management functions defined in minimum of (32) Access Area assignments per SCP. Access Areas shall be treated within the system as a single logical point and any controls applied manually or by automation will apply to all of the access points assigned within the Access Area.

Support alarm management functions incorporating inputs and reader events into Alarm Zones allowing the zones to be armed and disarmed creating various user definable events that are supported in SCP tasks and host macro processing. Support a minimum of 64 fully user configurable Alarm Zones per processor.

Alarm management to provide task as well as arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection. Support down loads to the display of the keypad for date and time, zone status, error messages and special text messaging defined by the user.

Collocation of Six MPD Units

New Construction Phase

- Support up to (256) user definable tasks configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.
- Support up to (256) user definable user commands configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.
- Allow stored transaction storage of 50,000 events per SCP.
- Allow local card database storage of up to 197,000 records per SCP.
- Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.
- Provide on board memory battery backup to retain all database information during a complete power loss for up to sixty (60) days, per manufacturer s specifications.
- Utilize two-wire RS-485 communications. The minimum data rate is 38,400KBps at IEEE standards for up to 4000 feet for interconnection to up to (31) access reader, monitor input and relay output modules.

The SCP Dual Reader to support the following:

- Support up to (2) security industry standard readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units for access or egress authorizations.
- Reader ports to provide up to 150 mA of unregulated 12 VDC power for each reader. At a minimum card/data input support to be Wiegand, TTL or RS-485 format. Single and dual wire LED output provided supporting bicolor display and reader buzzer support.
- Provide (8) on-board fully supervised monitoring points (inputs). Monitoring points configured as follows: (2) monitoring points dedicated for access portal status (door contact inputs) one per reader port. (2) monitoring points dedicated for exit request inputs (manual or automated egress) one per reader port. (4) monitoring points as auxiliary and fully user defined for monitoring other devices or points within the site.
- Input monitoring point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision to be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.
- Provide (4) on-board output relays for controlling electrified devices or switching inputs. Relays configured as follows: (2) relays dedicated for electric portal locking device control one per reader port. (2) relays as auxiliary and fully user defined for controlling or switching other devices or points within the site.
- Output relays are Form-C, 5A@30 VDC, resistive relays.
- Output relays allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.

Manufacturer: RS2 Technologies

System Control Processor Dual Reader/Single Door Interface: The System Control Processor (SCP) Dual Reader Interface is a 32-bit micro-controller utilized as the enhanced management processor between down line access readers, input monitors and relay output modules, and the host system and software.

The SCP Dual Reader/Single Door Interface supports up to (2) security industry standard reader communication ports and one control ports. Each port terminates with industry standard access control readers, data entry/display terminals (keypad with display), and/or integrated reader -in-trim locking units for authorized access and egress management. Each SCP to have supervised

portal monitoring (door status), request to exit monitoring (manual or automated inputs) and electrified lock output control.

The SCP to meet the following, minimum, design and performance specifications.

Internal memory minimum of 16 Mbytes with a minimum of 6 Mbytes of memory set aside for user configuration.

User selection of serial, dial-up and/or Ethernet (TCP/IP) communications to the host computer with the specified system software. No external network card or attachment is required for the SCP to connect to the host system on a conventional Ethernet. Users have the ability to connect with the SCP using static IP or DHCP conventions.

On-board Network Interface Circuit (NIC) supporting 10/100-BaseT automation.

Capable of being powered either POE or by 12 VDC.

Support a minimum of (8) active card formats per processor.

Support anti-passback functions including free pass, exempt flags, last area accessed, last reader accessed and time and date of last access.

Support area management functions including two man rules, two card rules, multiple occupancy, maximum occupancy, and nested areas. Area management functions defined in minimum of (32) Access Area assignments per SCP. Access Areas shall be treated within the system as a single logical point and any controls applied manually or by automation will apply to all of the access points assigned within the Access Area.

Support alarm management functions incorporating inputs and reader events into Alarm Zones allowing the zones to be armed and disarmed creating various user definable events that are supported in SCP tasks and host macro processing. Support a minimum of 64 fully user configurable Alarm Zones per processor.

Alarm management to provide task as well as arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection. Support down loads to the display of the keypad for date and time, zone status, error messages and special text messaging defined by the user.

Support up to (256) user definable tasks configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.

Support up to (256) user definable user commands configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.

Allow stored transaction storage of 50,000 events per SCP.

Allow local card database storage of up to 240,000 records per SCP.

Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.

Provide on board memory battery backup to retain all database information during a complete power loss for up to sixty (60) days, per manufacturer s specifications.

The SCP Dual Reader/Single Door Interface to support the following:

Support up to (2) security industry standard readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units for access or egress authorizations.

Reader ports to provide up to 150 mA of unregulated 12 VDC power for each reader. At a minimum card/data input support to be Wiegand, TTL or RS-485 format. Single and dual wire LED output provided supporting bicolor display and reader buzzer support.

Provide (2) on-board fully supervised monitoring points (inputs). Monitoring points configured as follows: (1) monitoring point dedicated for access portal status (door contact input) one per

reader port. (1) monitoring point dedicated for exit request input (manual or automated egress) one per reader port.

Input monitoring point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision to be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.

Provide (2) on-board output relays for controlling electrified devices or switching inputs. Relays configured as follows: (1) relay dedicated for electric portal locking device control one per reader port. (1) relay as auxiliary and fully user defined for controlling or switching other devices or points within the site.

Output relays are Form-C, 5A@30 VDC, resistive relays.

Output relays allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.

Manufacturer: RS2 Technologies

System Control Processor Single Reader/Single Door Interface: The System Control Processor (SCP) Dual Reader Interface is a 32-bit micro-controller utilized as the enhanced management processor between down line access readers, input monitors and relay output modules, and the host system and software.

The SCP Single Reader Interface supports one security industry standard reader communication ports and one control ports. Each port terminates with industry standard access control readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units for authorized access and egress management. Each SCP to have supervised portal monitoring (door status), request to exit monitoring (manual or automated inputs) and electrified lock output control.

The SCP to meet the following, minimum, design and performance specifications.

Internal memory minimum of 16 Mbytes with a minimum of 6 Mbytes of memory set aside for user configuration.

Support for up to (8) I/O module addresses.

Capacity for up to, and in any combination, 9 reader locations including status/ position monitoring, egress request automation and electric lock control, (36) input monitoring points, and (34) relay output points.

User selection of serial, dial-up and/or Ethernet (TCP/IP) communications to the host computer with the specified system software. No external network card or attachment is required for the SCP to connect to the host system on a conventional Ethernet. Users have the ability to connect with the SCP using static IP or DHCP conventions.

On-board Network Interface Circuit (NIC) supporting 10/100-BaseT automation.

Capable of being powered either POE or by 12 VDC.

Support a minimum of (8) active card formats per processor.

Support anti-passback functions including free pass, exempt flags, last area accessed, last reader accessed and time and date of last access.

Support area management functions including two man rules, two card rules, multiple occupancy, maximum occupancy, and nested areas. Area management functions defined in minimum of (32) Access Area assignments per SCP. Access Areas shall be treated within the system as a single logical point and any controls applied manually or by automation will apply to all of the access points assigned within the Access Area.

Support alarm management functions incorporating inputs and reader events into Alarm Zones allowing the zones to be armed and disarmed creating various user definable events that are

supported in SCP tasks and host macro processing. Support a minimum of 64 fully user configurable Alarm Zones per processor.

Alarm management to provide task as well as arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection. Support down loads to the display of the keypad for date and time, zone status, error messages and special text messaging defined by the user.

Support up to (256) user definable tasks configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.

Support up to (256) user definable user commands configured to execute pre-defined process commands in response to manual user commands, input or event changes, time zone activations, automated commands or Macro operations.

Allow stored transaction storage of 50,000 events per SCP.

Allow local card database storage of up to 240,000 records per SCP.

Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.

Provide on board memory battery backup to retain all database information during a complete power loss for up to sixty (60) days, per manufacturer s specifications.

Utilize two-wire RS-485 communications. The minimum data rate is 38,400KBps at IEEE standards for up to 1000 feet for interconnection to up to (8) access reader, monitor input and relay output modules.

The SCP Single Reader Interface to support the following:

Support one security industry standard readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units for access or egress authorizations.

Reader port to provide up to 150 mA of unregulated 12 VDC power for each reader. At a minimum card/data input support to be Wiegand, TTL or RS-485 format. Single and dual wire LED output provided supporting bicolor display and reader buzzer support.

Provide (2) on-board fully supervised monitoring points (inputs). Monitoring points configured as follows: (1) monitoring point dedicated for access portal status (door contact input) one per reader port. (1) monitoring point dedicated for exit request input (manual or automated egress) one per reader port.

Input monitoring point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision to be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.

Provide (2) on-board output relays for controlling electrified devices or switching inputs. Relays configured as follows: (1) relay dedicated for electric portal locking device control one per reader port. (1) relay as auxiliary and fully user defined for controlling or switching other devices or points within the site.

Output relays are Form-C, 5A@30 VDC, resistive relays.

Output relays allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.

Manufacturer: RS2 Technologies

Access Control Dual Reader Input/Output Module: System Control Processor (SCP) to provide distributed processing and management for each Dual Reader I/O Module incorporated in the system Dual Reader I/O Module to meet the following, minimum, design and performance specifications:

- Support security industry standard magnetic, Wiegand, and proximity and specified biometrics readers.
- Support integrated reader-in-trim locking units, keypads and keypad readers.
- Support connectivity and interface with system arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection. Support down loads from the SCP to the display of the keypad for date and time, zone status, error messages and user defined special text messaging.
- Hardware interface and card format settings to be loaded through software commands from the specified system software to associated SCP modules to each Dual Reader I/O Module.
- Support up to (2) security industry standard readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units access or egress authorizations.
- Support different reader technologies on the same module, user defined.
- Reader ports to provide up to 150 mA of unregulated 12 VDC power for each reader. At a minimum card/data input supports Wiegand, TTL or RS-485 format. Single and dual wire LED output shall be provided supporting bicolor display and reader buzzer support.
- Provide (8) on-board fully supervised monitoring points (inputs). Monitoring points configured as follows: (2) monitoring points dedicated for access portal status (door contact inputs) one per reader port. (2) monitoring points dedicated for exit request inputs (manual or automated egress) one per reader port. (4) monitoring points as auxiliary and fully user defined for monitoring other devices or points within the site.
- Input monitoring point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision shall be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.
- Provide (6) on-board output relays for controlling electrified devices or switching inputs. Relays configured as follows: (2) relays dedicated for electric portal locking device control one per reader port. (4) relays as auxiliary and fully user defined for controlling or switching other devices or points within the site.
- Output relays are Form-C, 5A@30 VDC, resistive relays.
- Output relays to allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.
- In the event of a communication failure with a System Control Processor (SCP), the Dual Reader I/O Module capable of locally processing access requests based on facility code verification.
- Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.
- Utilize two-wire, RS-485 communications with data rates up to 38,400KBps up to an IEEE standard of 4000 feet.
- Up to (32) Dual Reader I/O Modules are allowed to connect with any SCP within the system.

Manufacturer: RS2 Technologies

- K. Access Control Dual Reader/Single Door Input/Output Module: System Control Processor (SCP) to provide distributed processing and management for each Dual Reader/Single Door I/O Module incorporated in the system Dual Reader/Single Door I/O Module to meet the following, minimum, design and performance specifications:

- Support security industry standard magnetic, Wiegand, and proximity and specified biometrics readers.
- Support integrated reader-in-trim locking units, keypads and keypad readers.
- Support connectivity and interface with system arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection.

Collocation of Six MPD Units

New Construction Phase

- Support down loads from the SCP to the display of the keypad for date and time, zone status, error messages and user defined special text messaging.
- Hardware interface and card format settings to be loaded through software commands from the specified system software to associated SCP modules to each Dual Reader I/O Module.
- Support up to (2) security industry standard readers, data entry/display terminals (keypad with display), and/or integrated reader-in-trim locking units access or egress authorizations.
- Support different reader technologies on the same module, user defined.
- Reader ports to provide up to 150 mA of unregulated 12 VDC power for each reader. At a minimum card/data input supports Wiegand, TTL or RS-485 format. Single and dual wire LED output shall be provided supporting bicolor display and reader buzzer support.
- Provide (4) on-board fully supervised monitoring points (inputs). Monitoring points configured as follows: (1) monitoring point dedicated for access portal status (door contact input) one per reader port. (1) monitoring point dedicated for exit request input (manual or automated egress) one per reader port. (2) monitoring points as auxiliary and fully user defined for monitoring other devices or points within the site.
- Input monitoring point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision shall be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.
- Provide (2) on-board output relays for controlling electrified devices or switching inputs. Relays configured as follows: (1) relay dedicated for electric portal locking device control one per reader port. (1) relay as auxiliary and fully user defined for controlling or switching other devices or points within the site.
- Output relays are Form-C, 5A@30 VDC, resistive relays.
- Output relays to allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.
- In the event of a communication failure with a System Control Processor (SCP), the Dual Reader I/O Module capable of locally processing access requests based on facility code verification.
- Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.
- On-board Network Interface Circuit (NIC) supporting 10/100-BaseT automation.
- Capable of being powered either POE or by 12 VDC.
- Up to (32) Dual Reader I/O Modules are allowed to connect with any SCP within the system.

Manufacturer: RS2 Technologies

- Access Control Single Reader Input/Output Module: System Control Processor (SCP) to provide distributed processing and management for each Single Reader I/O Module incorporated in the system Single Reader I/O Module to meet the following, minimum, design and performance specifications:
 - Support security industry standard magnetic, Wiegand, and proximity and specified biometrics readers.
 - Support integrated reader-in-trim locking units, keypads and keypad readers.
 - Support connectivity and interface with system arm/disarm functionality using a standard keypad/display terminal/card reader with features for user command and key selection.
 - Support down loads from the SCP to the display of the keypad for date and time, zone status, error messages and user defined special text messaging.
 - Hardware interface and card format settings to be loaded through software commands from the specified system software to associated SCP modules to each Single Reader I/O Module.

Provide (2) on-board fully supervised monitoring points (inputs). Monitoring points configured as follows: (1) monitoring point dedicated for access portal status (contact inputs) one per reader port. (1) monitoring point dedicated for exit request inputs (manual or automated egress).

Input monitoring point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision shall be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.

Provide (2) on-board output relays for controlling electrified devices or switching inputs. Relays configured as follows: (1) relays dedicated for electric portal locking device. (1) relays as auxiliary and fully user defined for controlling or switching other devices or points within the site.

Output relays to allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.

In the event of a communication failure with a System Control Processor (SCP), the Single Reader I/O Module capable of locally processing access requests based on facility code verification.

Operational programming is stored in non-volatile Flash Memory allowing for on-line program upgrades.

Utilize two-wire, RS-485 communications with data rates up to 38,400KBps up to an IEEE standard of 4000 feet.

Up to (32) Single Reader I/O Modules are allowed to connect with any SCP within the system.

Manufacturer/Model: RS2 Technologies

- L. Access Control Eight Channel Multiplexer: Eight Channel Multiplexer (ECM) to provide additional IEEE RS-485 communications channels for use between the system control processors (SCP) and the associated access, input and output control modules. ECM to meet the following, minimum, design and performance specifications:

1. Eight two-wire RS-485 communication channels from a single RS-232 or RS-485 data input channel.
2. Automatic fault port partitioning to protect the integrity of the communication bus.
3. Both star and home-run configurations with operating distances, on each channel, of up to the IEEE standard of 4000 feet.
4. **Manufacturer: RS2 Technologies**

Access Control Sixteen Channel Input Module: Sixteen Channel Input Module interfaces (16) auxiliary general purpose fully supervised input monitor points and (2) control relays for security monitoring and device control through system control processor (SCP) and specified software. Sixteen Channel Input Module to meet the following, minimum, design and performance specifications.

Input point settings are user defined as normally open, normally closed or supervised normally open or normally closed. At a minimum input supervision to be a series parallel 1/4W, 1%, 1K by 1K Ohm resistor circuit.

Provide (2) on board output relays for controlling electrified devices or switching inputs. These relays are auxiliary and fully user defined for controlling or switching other devices or points within the site.

Output relays are Form-C, 5A@30 VDC, resistive relays.

Output relays allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

Operational programming stored in non-volatile Flash Memory allowing for on-line program upgrades.

Utilize IEEE standard two-wire RS-485 communications with data rates up to 38,400KBps up to an IEEE standard of 4000 feet.

5. standard of 4000 feet.

Manufacturer: RS2 Technologies

Access Control Sixteen Channel Relay Module: Sixteen Channel Relay Module interfaces (16) auxiliary general purpose control relays for device control through system control processor (SCP) and specified software. Sixteen Channel Relay Module to meet the following, minimum, design and performance specifications.

Provide (16) on board output relays for controlling electrified devices or switching inputs. These relays are auxiliary and fully user defined for controlling or switching other devices or points within the site.

Output relays are Form-C, 5A@30 VDC, resistive relays.

Output relays allow configuration for fail safe or fail secure operation and support ON, OFF, and PULSE, command states.

Operational programming stored in non-volatile Flash Memory allowing for on-line program upgrades.

Utilize IEEE standard two-wire RS-485 communications with data rates up to 38,400KBps up to an IEEE standard of 4000 feet.
standard of 4000 feet.

Manufacturer: RS2 Technologies

Access Control Data Entry/Display Terminal: Access control data entry/display terminal to interface with a Single or Dual Reader I/O modules and the door control hardware as specified in the Access Control Hardware Sets under Part 3. The data entry/display to meet the following, minimum, design and performance specifications.

2-line backlit display supporting (16), 7.5mm high characters per line.

16-button backlit keypad supporting both standard numeric keys and (4) programmable function keys. Programmable function keys configurable for up to (8) separate command functions.

Display time in 12- or 24-hour format.

Terminal firmware to be FLASH memory.

Either surface mounted or mount over a 3-gang box.

Utilize two-wire RS-485 communications with speeds up to 38,400KBps up to 4000 feet.

Support (1) internal or external reader.

Reader port provides up to 150 mA of unregulated 12 VDC power for a card reader, a card/data input supporting Wiegand or RS-485 format, two-wire or one-wire LED output with bicolor support, and buzzer output.

Manufacturer: RS2 Technologies

M. Card Readers: Card readers must support legacy MPD cards, new MPD cards, and be FIPS-201 complaint. Provide and install GE multitechnology transition readers that are APL approved.

1. Reader type and model to meet the design and mounting applications needs of each entry point as indicated on the drawings.

2. **Manufacturer: GE Multitechnology Transition Readers APL Approved (no exceptions)**

- N. Access Cards and Credentials: Provided by Owner.
- O. Request-to-Exit Motion Sensor:
1. Request-to-Exit Sensors motion detectors specifically designed for detecting exiting through a door from the secure area to a non-secure area.
 2. Include built-in timers (up to 60 second adjustable timing), door monitor with sounder alert, internal vertical pointability coverage, 12VDC or 24VDC power and selectable relay trigger with fail safe/fail secure modes.
 3. **Manufacturer: Detection Systems DS-160 or approved equal**
- P. Push-Button Switches: Industrial grade momentary or alternate contact, back-lighted push buttons with stainless-steel switch enclosures. 12/24 VDC bi-color illumination suitable for either flush or surface mounting.
1. **Manufacturer: Securitron or approved equal**
- Q. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap - lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.
1. **Manufacturer: Sentrol or approved equal**
- R. Power Supplies: Provide Nationally Recognized Testing Laboratory Listed 12VDC or 24VDC (field selectable) filtered and regulated power supplies. Include battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
- Source Manufacturer: Altronix or approved equal**
- S. Electrified Locking Hardware: Provide electronic strikes, magnetic locks, electrified locksets, and all necessary components to provide turnkey access control for card access locations. Contractors scope to include provision, installation, and warranty for electronic door hardware. Contractors scope is inclusive of all cabling, integration, coordination, and power supplies for the electronic door hardware system.
- Source Manufacturers: HES, Securitron, Schlage, or approved equal**
- T. Duress Buttons: Provide and install duress buttons and integrate to ACAMS platform at locations identified on drawings.
- Source Manufacturer: Honeywell 269R or approved equal**

PART 5 - EXECUTION

5.1 INITIAL DATA BASE INFORMATION

- A. Implement all software and provide all applicable licenses in order to provide a fully

DGS MPD
Collocation of Six MPD Units
New Construction Phase

operational system. Where information is required from the Owner in order to implement the software, request such information in writing at least one month prior to the need of such information.

- B. The ISS contractor shall provide all work required for the full development of the ACAMS database in relation to field devices and programming. The ISS contractor shall include the entering of 50 individual cardholder records provided by the Owner into the database. The ISS contractor shall include configuring and entering 20 cardreader groups to be used for access assignment. The ISS contractor shall provide all programming as required for a fully functional and turnkey ACAMS installation.
- C. The ISS contractor shall provide the initial administration level training, as identified in the training section of these specifications, to familiarize the Owner's staff with the database structure, cardholder file information, access levels, time zones, capabilities etc. The ISS contractor shall develop the required time zones, access groups, access levels, the cardholder information, database definition, etc. The ISS contractor shall develop blank forms for all required database and cardholder information and submit them to the Owner. The Contractor shall then enter the information.
- D. An operator with appropriate privileges shall be able to override any controlled point within the system. The point shall remain in the override state until an operator commands it back to automatic state.

5.2 CONTROLLED DOOR OPERATION

- A. Provide controlled door-operating sequences. Provide, at minimum, the following operating features:
 - 1. If the door is equipped with an automatic door operator, provide and control a relay for each automatic door operator pushbutton to interrupt the signal between the pushbutton and the controller.
 - 2. Whenever the door is placed in a non-secure mode (i.e. time scheduled unlocked, operator override unlocked, valid entry/exit request) then the relay shall close which will connect and complete the pathway of the signal circuit. This shall not automatically activate the door operator - it will allow the signal from the pushbutton (if utilized) to reach the operator.
 - 3. In secure mode, the relay shall be open, which will not allow the signal from the pushbutton to reach the controller.
 - 4. The door position switch shall indicate door leaf position. Provide a door position switch on each door leaf.
 - 5. Valid exit/entry requests shall be defined as:
 - a. A valid card read (and PIN entry for keypads) to the cardreader (if applicable).
 - b. Exit device activation.
 - c. Operator pulse command override (pulse simulates valid card read action and allows a single entry/exit).
 - 2. Provide temporary release of the electrically locked door, temporary connection of automatic operator pushbutton signal circuit (if applicable), and the temporary shunt of the associated alarm as part of a valid entry/exit request. The temporary state shall remain until:
 - a. The door is opened and subsequently closed utilizing the status

Collocation of Six MPD Units

New Construction Phase

- monitoring of the door position switch (if the door opens but remains open for an operator definable time period initially set to 15 seconds, the door shall go into a door prop alarm).
- b. The leaf is sensed by the position switch not to have opened within a definable time period, initially set at 10 seconds.
 3. The shunt time for alarms during valid entry/exit requests shall be operator assignable for each controlled door. Shunt time shall be between 30 seconds to five minutes. Obtain individual shunt times from the Owner for each door.
 4. All functions shall operate in both ACAMS normal and de-graded operating modes. Degraded modes shall be considered when the ACAMS computer has failed or the IC has lost communication with the ISS communications loop.
 5. Door sequences shall be in accordance with local code requirements. Interface doors with the fire alarm system as required.

5.3 MONITORED DOOR OPERATION

- A. Provide monitored door-operating sequences. Provide, at minimum, the following operating features:
 1. An alarm is annunciated if a position switch is activated during operator defined periods.
 2. Alarm disable time periods shall be operator defined.

5.4 BORING AND PATCHING

- A. Provide boring and patching of work as required for a complete ISS. Boring and patching shall meet, at minimum, the following requirements:
 1. Before boring any structural components, obtain the Architects' approval.
 2. Make boring with clean, square and smooth edges. Patches shall be inconspicuous in the final installation.
 3. Restore fire ratings if boring has violated the fire rated assemblies.

5.5 SLEEVES, CUTTING, PATCHING AND FIRE STOPPING

- A. The General contractor shall be responsible for the timely placing of sleeves as detailed on the Drawings and the Coordination Drawings for all piping and conduit through walls and partitions, beams, floors and roofs as noted below, while the same are under construction:
 1. All concrete or masonry construction.
 2. Wall constructions where the penetration must be sealed air tight. Patches for penetrations through walls for Work installed prior to finish application shall be provided by others.
 3. Fire rated wall construction.
 4. Where indicated on the Drawings.
- B. Sleeves shall be at least one size larger than the size of conduit or pipe, including the insulation where applicable; it serves except where Link Seal casing seals are used in sleeves through walls below grade. Sleeves shall be sized such that the annular space between the sleeve and the conduit will not be less than 1/2". All conduit passing

Collocation of Six MPD Units

New Construction Phase

through concrete or masonry walls above grade shall be at least 18 gauge galvanized steel sleeves. Sleeves shall be set flush with finished wall. All sleeves in floors shall extend a minimum of 2" above the finished floor. Sleeves installed in fire rated construction shall be of suitable length and diameter to accommodate the firesafing system used. Sleeves set in concrete floor construction shall be at least 16 gauge, galvanized steel. Where the conduit passes through a sleeve, no point of the conduit shall touch the sleeve and the conduit shall be centered in the sleeve.

- C. Seal all penetrations in fire rated construction with factory built devices or with manufactured fill, void or cavity materials Classified by Underwriters Laboratories, Inc. for use as a Through Penetration Firestop. All firestop devices and systems shall be approved for such use by the authorities having jurisdiction. The firestop system used shall maintain the fire resistance rating of the Integrated component that is penetrated. Firestop systems and devices shall comply with ASTM E 814 (UL 1479) for all types of penetrations being sealed. Submittal data for firestop systems shall include the applicable UL System Numbers. Excessive shrinkage of the firestop materials, which would permit the transmission of smoke or water prior to exposure to a fire condition, is unacceptable. Where a mastic coating is used to seal the surface of the firestop, the mastic shall be non-hardening. The firestop manufacturer s representatives shall instruct the Contractor s representatives in the proper installation procedures so that the penetrations on the Project will be installed in accordance with the UL listing and the manufacturer's recommendations.
- D. Sleeves penetrating walls below grade shall be standard weight black steel pipe with 1/4" thick steel plate waterseal secured to the pipe with continuous fillet weld. The waterseal plate shall be located in the middle of the wall and shall be 2" wider all around than the sleeve it encircles. The entire assembly shall be hot dipped galvanized after fabrication. Seal off annular opening between pipe and sleeve with Link Seal type casing seal as manufactured by Thunderline Corporation or Innerlynx. The pipe sleeve shall be sized to accommodate the Thunderline casing seal. Casing seals shall be Series 300 for pipe size 3/4" through 4" and Series 400 for pipe sizes 5" and larger.
- E. If holes and/or sleeves are not properly installed and cutting and patching becomes necessary, it shall be done at no additional expense to the Owner. The Contractor shall undertake no cutting or patching without first securing the Architect's written approval.
- F. All unused sleeves shall be sealed with firestop devices and systems to maintain the fire rating of the construction penetrated.

5.6 HANGING AND SUPPORTING

- A. Install all equipment, devices, materials and components in compliance with the manufacturers recommendations. Supports shall be suitable for the environment within which the component is to be installed. Coordinate all hanging and supporting of components with all trades.
- B. Structural support members shall be galvanized.

5.7 EXCAVATION, BACKFILL, and POLES

- A. Make all necessary excavations, cutting of paving, concrete and etc., removal of unusable spoil material, do all backfilling with stabilized with stabilized fill and do temporary

DGS MPD
Collocation of Six MPD Units
New Construction Phase

patch type paving repairs necessary for the proper execution of the Work. Remove all dirt and debris out of and away from the Integrated as directed. Backfill shall be mechanically compacted to a density of ninety-five (95%) percent of the maximum dry density at optimum moisture content as determined by the Standard Proctor Compaction Test.

- B. Backfill shall be compacted and repairs to paving or concrete shall be accomplished to the satisfaction of the Architect and the local authorities having jurisdiction.
- C. Supply and install all poles and pedestals per manufacturer requirements and with approval from Architect.

5.8 CONDUIT INSTALLATION -Electrical Contractor, Connecting Conduit by Security Contractor

- A. Nonflexible Metal Conduit shall be installed in accordance with the following requirements:
 - 1. Nonflexible metal conduit shall be sized in accordance with the percent fill requirements of the National Electrical Code and as indicated on the Drawings and shall be of ample size to permit the ready insertion and withdrawal of conductors without abrasion. No nonflexible metal conduit shall be smaller than 1/2". Grouping of home runs is acceptable only where the number of conductors indicated on the Drawings is maintained and the proper National Electrical Code de-rating factors are applied.
 - 2. Nonflexible conduit, including both rigid conduit and nonmetallic (PVC) conduit, shall not be embedded in any structural slabs, unless specifically noted on the Drawings. The specifically noted nonflexible conduit to be embedded in any structural slab shall be installed strictly in accordance with the Project Structural Engineer's specific written instructions. Forward two (2) copies of the Project Structural Engineer's written approval and instructions for installation to the Engineer for his file prior to proceeding with the installation. Nonflexible conduits embedded in structural slabs shall have watertight joints.
 - 3. Conduit in finished portions of the Integrated, except in mechanical and electrical equipment rooms or where otherwise indicated on the Drawings, shall be concealed. Concealed nonflexible metal conduits shall be run in as direct a manner and with as long a bend as possible. Exposed nonflexible metal conduit shall be run parallel to or at right angles with the lines of the Integrated. All bends shall be made with screw jointed conduit fittings or with standard ells in which the conduit is bent to a radius not less than that shown in Table 346-10 of the National Electrical Code. All bends shall be free from dents or flattening. Not more than the equivalent of four-quarter bends shall be used in any run between terminals and cabinets or between outlets and junction or pull boxes.
 - 4. Nonflexible metal conduit shall be continuous from outlet to outlet and from outlet to cabinets, junction or pull boxes and shall enter and be secured at all boxes in such a manner that each system shall be electrically continuous throughout.
 - 5. Terminals of all nonflexible metal conduits shall be furnished with bushings, locknuts, connectors, etc., as specified herein. All joints shall be cut square, reamed smooth and drawn up tight.
 - 6. So far as is practicable, all exposed nonflexible metal conduit shall be run without traps. Where traps or dips are unavoidable, a junction or pull box shall

be placed at each low point.

7. Nonflexible metal conduit hangers and fasteners shall be of the type appropriate in design and in dimensions for the particular applications and shall be securely fastened in place as specified herein.
8. Each entire nonflexible metal conduit system shall be installed complete before any conductors are drawn in. To guard against obstructions and omissions, each run of conduit shall be finished before gypsum board is installed. All nonflexible metal conduit shall be swabbed after plaster is finished and dry.
9. As soon as nonflexible metal conduit has been permanently installed in place, conduit ends shall be capped or plugged with standard accessories.
10. Nonflexible metal conduit shall be provided with pull boxes of approved sizes after two right angle bends and at intervals not exceeding 125' in addition to those shown on the Drawings. Boxes shall be in accessible locations.
11. A 1/8" braided polypropylene rope or #14 galvanized iron fish wire shall be left in all empty nonflexible metal conduit systems. At least 12" of properly secured rope or wire shall be folded back into each end of the empty nonflexible metal conduits.
12. Furnish and install OZ/Gedney Company expansion fittings, Type DX for rigid metal conduit, Type EX for rigid metal conduit exposed to the weather and Type TX for electrical metallic tubing (EMT) or equivalent manufactured by Appleton, Crouse-Hinds or Spring City, where nonflexible metal conduits cross Integrated expansion joints. See Section 16170 titled Grounding .
13. Nonflexible metal conduit installed in the ground shall have watertight joints and shall be painted the entire length with two coats of protective finish. All coating shall be applied in accordance with the manufacturer s recommendations. The entire length of nonflexible metal conduit, including fittings, in contact with the ground, to a point 6" above the ground (or concrete slab) shall be completely coated subject to the Engineer s approval.
14. In areas designated as Class I, Division 2 hazardous areas, rigid metal conduit (or liquid tight flexible metal conduit for motor terminations) with approved terminations and fittings shall be used. The Class I, Division 2 hazardous areas shall be as defined by the authorities having jurisdiction for this Project.
15. Prior to the installation of any plastic coated nonflexible metal conduit, the Contractor shall submit a 12" Sample of the proposed conduit and miscellaneous materials for review by the Architect. Samples of standard galvanized conduits are not required.
16. Submit review a list of the proposed manufacturers of nonflexible metal conduit and fittings selected from the manufacturers listed herein. The Contractor may install nonflexible metal conduit and fittings furnished by any manufacturer listed on the submittal.

B. Flexible Metal Conduit shall be installed in accordance with the following requirements:

1. Continuity of the equipment ground across flexible metal conduit connections shall be maintained for all systems that are over 150 volts to ground. The continuity shall be maintained by installing a grounding conductor sized in accordance with the current National Electrical Code. The grounding conductor shall be inside the flexible conduit and shall be connected on one end of the flexible metal conduit by a suitable binding post and similarly connected on the opposite end with another suitable binding post. All grounding conductors shall be solid copper conductors.

Collocation of Six MPD Units

New Construction Phase

2. For flexible metal conduit sizes 1-1/4" and smaller and lengths of 6' or less, UL listed liquid tight flexible conduit with grounding provisions and watertight fittings may be used in lieu of a flexible metal conduit and separate grounding conductor described above in accordance with Article 351 of the National Electrical Code, Liquid Tight Flexible Conduit .
 3. Flexible metal conduit shall be secured with Midwest Catalog Nos. 1708-1715 or approved equal insulated throat clamps. Liquid tight flexible metal conduit shall be secured with Midwest Catalog Nos. LTB-38 through LTB-300 or approved equal insulated throat watertight fittings and shall be used where subject to weather or moisture conditions. Connectors shall be steel type. Die cast connectors will not be acceptable.
- C. PVC Conduit shall be installed in accordance with the following requirements:
1. All types of conduit joints shall be made up using plastic couplings in accordance with the manufacturer s recommendations. The tapered ends of joints shall be swabbed with bituminous or joint sealing compound to provide a watertight joint before the coupling is applied.
 2. A 1/8" braided polypropylene rope or #14 galvanized iron fish wire shall be left in all empty conduit systems. At least 12" of properly secured rope or wire shall be folded back into each end of the empty conduits.
 3. Where PVC conduit emerges from underground or concrete, a transition from PVC to nonflexible metal conduit must occur allowing no PVC conduit to be installed within any space inside the Project

5.9 CONDUIT HANGERS AND SUPPORTS

- A. All horizontal conduits throughout the Integrated shall be thoroughly and substantially supported with individually approved expansion ring hangers or supported in groups using Unistrut or Kindorf channels and suitable hangers. Hangers shall not be spaced more than 10' apart. Perforated extension bar hangers will not be accepted in any part of the Work. All vertical conduits shall be substantially supported at floor lines to carry the weight of the conduit and cable in a satisfactory manner with allowance for expansion and contraction. Special hangers and supports shall be provided where they may be required because of any peculiarities of construction. Where exposed to weather, conduit hangers and supports shall be Robroy Industries Plasti-Bond-Red or approved equal. Damaged hangers and supports shall be field coated with Robroy Industries Plasti- Bond-Red Touch Up or approved equal. Hanger rod sizes shall be as recommended by the hanger manufacturer for the service intended.
- B. At the Contractor s option, subject to the approval of the local authorities having jurisdiction, conduit systems up to a maximum conduit size of 3/4" may be substantially and individually supported in accordance with NEC spacing using #12 gauge galvanized tie wire and other supplementary braces as required by the National Electrical Code to provide rigid support. Multiple conduits fastened to individual tie wires are not acceptable. Suspending or supporting conduits from any ceiling support system shall not be acceptable.

PART 6 - DOCUMENTATION

6.1 WORK OF THIS SECTION

- A. This section of the specifications details the components to be provided by the ISS contractor relating to the following:
 - 1. Shop Drawings and Documentation
 - 2. Record Documentation

6.2 DOCUMENTATION - GENERAL

- A. The primary purpose of the shop drawing and equipment documentation submittals is to give instruction and information to those responsible for providing a turnkey ISS which is compliant with the ISS specifications in all respects. Architect shall review the shop drawings and equipment documentation submittals with the intent of identifying as many potential areas of non-compliance as possible, but the review of shop drawings and equipment documentation submittals by the Architect shall not relieve the Contractor of the responsibility for complete compliance with the specifications. Identification of some errors by the Architect but overlooking others does not relieve the contractor of his responsibilities nor does it allow him to proceed based on erroneous shop drawings and equipment documentation submittals.
- B. Approval of shop drawings or submittal data by the Architect shall not constitute an order to fabricate, purchase, ship to the site or undertake any other action. The sole responsibility for the timely purchase and/or fabrication of components, obtaining approval on shop drawings and equipment documentation submittals, and delivery of components to the project to comply with the requirements of the project schedule is that of the contractor.
- C. The intent of the record documentation is to provide the Owner with complete information on the ISS provided such that a person familiar with installations of this nature shall be able to perform any operating, maintenance or engineering functions with respect to this ISS without having to contact the ISS Contractor or obtain any additional documentation.

6.3 SHOP DRAWING AND EQUIPMENT DOCUMENTATION

- A. Prepare all shop drawings, diagrams, equipment and device schedules, equipment technical data sheets and software information necessary for the Architect to determine compliance with the specifications.
- B. The following information shall be included on the cover page for each shop drawing and equipment documentation sheets:
 - 1. Project name.
 - 2. Date.
 - 3. Submittal number and resubmittal number as appropriate.
 - 4. Name and address of Architect.
 - 5. Name and address of General Contractor.
 - 6. Name and address of ISS Contractor.
 - 7. Name and address of supplier or vendor if appropriate.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

8. Name of manufacturer.
 9. Reference to the applicable Specification Section by name and number.
 10. Stamped and signed coordination certification stamp.
 11. Compliance certification as required in the ISS General Requirements section of these specifications.
- C. Shop drawings shall be CAD generated and be clearly referenced to each other and shall include diagrams, mounting instructions, installation procedures, equipment details and software descriptions for all components of the system. AutoCAD floor plan drawings shall be provided to the Contractor. Shop drawings shall be in this order and at a minimum include:
1. Cover page with required information identified above.
 2. Floor plan drawings in same order and format as architectural drawings. Floor plans shall indicate each ISS field device location. Uniquely identify each cable type for each field device. Identify desired cable routing from each device to termination location. Update these drawings to reflect actual routing location on as-built submittals. Provide a chart based schedule on each floor plan drawing or on a separate drawing sheet prior to the floor plans with, at minimum, the following columns for:
 - a. ACAMS:
 - i. Point reference
 - ii. Device type (cardreader, door contact, local alarm, etc. with manufacturer/model number)
 - iii. Lock/control type (manufacturer/model number) if appropriate
 - iv. Request to exit device type (manufacturer/model number) if appropriate
 - v. Special accessories
 - vi. Cable type (manufacturer/model number)
 - vii. Cable color and labeling scheme.
 - b. CCTV system:
 - i. Point reference.
 - ii. Camera type (manufacturer/model number)
 - iii. Fixed or PTZ
 - iv. Lens size and type (manufacturer/model number)
 - v. Housing type (manufacturer/model number)
 - vi. Mount type (manufacturer/model number)
 - vii. Special accessories
 - viii. Cable type (manufacturer/model number)
 - ix. Cable color and labeling scheme.
 - c. SIS:
 - i. Point reference
 - ii. Remote type (Interior, Exterior, Call box, etc. with manufacturer/model number)
 - iii. Special accessories
 - iv. Cable type (manufacturer/model number)
 - v. Cable color and labeling scheme.
 4. Separate wiring schematic diagram for each system. Include all types of

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- controllers, panels, interfaces, and interconnection locations to head-end equipment.
5. Separate Riser diagrams for each system including general layout and configuration of each system indicating major component locations and relationships.
 6. Detail installation diagrams of all monitoring and control equipment for each monitoring and control equipment location. Include routing of wiring.
 7. Wiring diagrams and installation drawings for each component.
- D. Equipment documentation submittals shall include design, performance and installation details for all aspects of the system to be installed. At minimum, the submittals shall include:
1. Bill of Quantities with name and address of supplier or vendor for each device.
 2. Equipment technical data sheets.
 3. Central monitoring and control equipment.
 4. Operator workstation specifications and data sheets.
 5. Software specifications and descriptions.
 6. Training outline.
- E. Literature pertaining to a particular item, piece of equipment or installation shall be submitted at one time and shall be specifically prepared for this project. Each submittal shall be properly marked with service or function, any options available that are not to be provided shall be crossed out or options that will be provided shall be highlighted.
- F. Submittals shall be submitted individually on a section-by-section basis. All literature pertaining to a particular item, piece of equipment or installation shall be specifically prepared for this project. General sales information brochures shall not be acceptable. Each equipment documentation submittal shall be properly marked with service or function. Any options available that are not to be provided shall be crossed out and options that will be provided shall be highlighted.
- G. Inadequate or incomplete Shop Drawings, Product Data and/or Samples will not be reviewed by the Architect and/or the Architect and will be returned to the Contractor for re-submittal.
- H. Comply with the requirements of the Contract Documents. Any deviations from the Contract Documents will not be allowed. Submittals not in accordance with the Contract Document requirements shall be rejected. Before equipment, devices and materials are installed; they shall have submittals that are marked FINAL REVIEW. Submittals containing errors and/or omissions shall not relieve the Contractor from the requirements to comply with the complete requirements of the Contract Documents. Corrections or modifications to the work because of errors and/or omissions shall be at the contractors expense.
- I. Obtain peer review sign-off as applicable.
- J. Submit five copies of each submittal and each shop drawing. The Architect and Architect shall each retain one printed copy of the reviewed shop drawings and equipment documentation submittals.

- K. Submittal and shop drawing data will be reviewed and returned marked FINAL REVIEW , FINAL REVIEW - EXCEPTIONS NOTED or RESUBMIT .
1. If marked FINAL REVIEW no additional submittal shall be required.
 2. If marked FINAL REVIEW - EXCEPTIONS NOTED , the contractor shall forward a written response to the items noted within two weeks of the Architect s review date on the submittal. Upon receipt of a satisfactory response the status of the submittal will be revised to FINAL REVIEW by a written document to the contractor prepared by the Architect. If the response is not received by the Architect within two weeks of the Architect s review date on the submittal, the FINAL REVIEW status will be automatically rescinded and shall be required to be resubmitted for review.
 3. If marked RESUBMIT , the submittal shall be corrected in accordance with the Contract Documents and resubmitted in whole for review within four weeks of the original submission date. If the submittal is returned to the Contractor marked RESUBMIT only one additional submission will be permitted.
- L. If the submittal or shop drawing data marked FINAL REVIEW is altered for any reason after they have been marked, the FINAL REVIEW will automatically be voided.
- M. All Work shall be done in accordance with submittal and shop drawings stamped FINAL REVIEW insofar as these are in agreement with the Contract Documents. Where differences occur between the Product Data and Contract Documents, the Contract Documents shall govern the Work.
- N. If more than two reviews are required for any shop drawing or equipment documentation submittal, the contractor shall reimburse the Owner for any additional fees and expenses that the Architect, Engineer or Architect require to perform the additional reviews.

6.4 RECORD DOCUMENTATION

- A. At minimum, the record documentation shall include all submittals (shop drawings and equipment documentation) made at the shop drawing stage up-dated to reflect the actual installation and the manuals outlined below.
- B. A draft version of the record documentation shall be submitted to the Architect at the time of the request for acceptance testing. Following the acceptance testing and, if necessary, the subsequent rechecking of deficiencies, the ISS Contractor shall re- submit the record documentation incorporating all changes resulting from the acceptance testing and any other changes requested by the Architect as a result of the Architect's review of the draft version of the record documentation. The Certificate of Substantial Completion shall not be granted until the final approved record documentation has been received.
- C. Update all documentation to indicate any changes made during the Warranty Period.
- D. Provide record documentation in manuals. Manuals shall be placed in hard cover binders with index page and indexing tabs. Provide record document types and quantities as indicated below:
1. Operators' Manuals (four copies).

2. Managers' Manuals (which includes the Operators' Manuals - two copies).
 3. Hardware Manuals (four copies).
 4. Shop drawings (full size printed out - four copies)
 5. Electronic copy of all manuals and drawings noted above. Manuals shall be in PDF format and drawings shall be in the current AutoCAD format.
- E. Provide Operators' and Managers' Manuals with, at minimum, the following information:
1. Details of all features and functions available to the Operators and Managers.
 2. Details of all alarm, diagnostic, error and other messages. Detail the Operator action to be taken for each instance.
 3. Detail special programs provided and provide a complete programming instruction manual. Detail operations of all software applications.
 4. Details of all data base management functions and features.
 5. All details and descriptions shall be in a step-by-step format such that an Operator or Manager shall be able to respond to and undertake the respective actions on the basis of information provided in the manuals and drawings.
- F. Provide hardware manuals that shall include, at minimum, the following:
1. Details of all specifications including maintenance and installation requirements for all computers, field panels, equipment, devices, interfaces and facilities provided.
 2. Record drawings and schedules of the completed installation including location of devices, mounting details, and wiring details.
 3. Operating sequences and interlocks.
 4. Names and addresses of spare parts suppliers.
- G. Record drawings shall be CAD generated on the latest version of AutoCAD and shall include, at minimum, the following:
1. Details required by the shop drawings.
 2. Final locations and point ID for each monitored and controlled device.

PART 7 - TESTING

7.1 WORK OF THIS SECTION

- A. This section of the specifications details the components to be provided by the ISS contractor relating to the following:
1. Testing and Inspections.
 2. Scheduling.
 3. Factory Tests.
 4. Inspection During Installation.
 5. Acceptance Testing.
 6. Test Sheet Format.

7.2 SCHEDULING

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- A. Acceptance testing shall comply with the Construction Contract schedule. Corrections or alterations, which have been noted during the acceptance tests, shall be completed prior to the end date called for in the Construction Contract. Retests of deficient items shall be taken into consideration in the scheduling.

7.3 TESTING AND INSPECTIONS - GENERAL

- A. All components shall be tested by the ISS Contractor to ensure compliance with the specifications before they leave the ISS Contractor's premises and shall be tested again on-site by the ISS Contractor before the commencement of acceptance testing. The ISS Contractor shall not ship components to the project site until they have been found to be fully compliant with the specifications and the ISS Contractor shall not request the commencement of acceptance testing until such time as the ISS Contractor has made a complete and thorough checkout of all equipment.
- B. Any piece of equipment, device, or material shall be made available for inspections or tests, as deemed necessary by the Owner and Architect. Use of the equipment, devices or material shall not imply acceptance of the system or acceptability of any component. Availability and demonstration of the systems shall not be withheld and the use of components shall not imply the start of the Warranty Period.
- C. Costs associated with the required inspections and testing shall be included in this scope of work. Additional charges shall not be accepted.

7.4 FACTORY TEST

- A. Components shall be factory tested prior to their delivery to the project. Document test results and submit copies of the testing within the Final Documentation.
- B. Deficiencies shall be remedied and testing shall be repeated at no additional cost to the Owner prior to the shipping of the components to the project site.

7.5 INSPECTION DURING INSTALLATION

- A. Prior to acceptance testing, the ISS shall be available for the use by the Owner. Use by the Owner shall not imply acceptance of the ISS or any components or the commencement of the Warranty Period.
- B. Provide staff to assist the project team in the inspections made during the installation period to review the progress and quality of the ongoing work. The team will generate Field Observation Reports in the findings of the inspection. The Architect shall advise the ISS Contractor during the inspection of any concerns noted with respect to the installation and shall repeat the concerns in writing as soon as possible after the inspection is completed. The ISS Contractor shall take corrective action to meet the requirement of the specifications.
- C. Failure to identify any error or omission during inspections made in the installation phase shall not relieve the Contractor of any of the specification requirements.

7.6 ACCEPTANCE TESTING

Collocation of Six MPD Units

New Construction Phase

- A. Prior to the scheduling of the acceptance testing with the project team, perform a complete and detailed operational check of each ISS component. Test results shall be documented using test sheets. The test sheets shall be prepared in an appropriate format for the various categories of component to be tested and shall be submitted for approval during the shop drawing phase of the project.
- B. Completed test sheets indicating the test results for each ISS component within the system shall be submitted to the project team, together with a proposed schedule for acceptance testing, at least two weeks prior to the proposed acceptance testing. The Owner and Architect shall determine on the basis of the ISS Contractor's testing, whether or not it is appropriate to commence acceptance testing. It shall be their deACAMS Workstationion as to whether the acceptance testing can proceed as proposed by the ISS Contractor or whether deficiencies have to be remedied before the acceptance testing can proceed.
- C. The entire installation shall be available for final acceptance testing at the completion of the project. Installation, engineering, software and system personnel shall be available on-site during the acceptance test. These personnel shall be familiar with the installation and shall undertake all tests as requested by the Owner and Architect in order to verify that the ISS components individually and in total meet the specifications. The ISS contractor shall provide wireless radios to allow communication among the testers in the field.
- D. Deficiencies shall be indicated on a "punch-list". The deficiencies shall be corrected and a time of follow-up testing shall be scheduled. If there are deficiencies remaining after the follow-up testing that required further testing by the Architect, then the expenses of the Owner and Architect incurred in providing the additional follow-up tests to verify

compliance with the specifications, including travel, subsistence, accommodation and normal consulting fees, shall be paid by this Contractor at no additional cost to the Owner.

7.7 TEST SHEET FORMAT

- A. Provide ACAMS test sheets for each ACAMS monitored and controlled device. Include, at minimum, the following categories on the test sheet.
 - 1. Point number - as identified on the security drawings.
 - 2. Cardreader - test using valid and invalid card.
 - 3. Electric Lock - test release upon valid card and ACAMS operator command, and non-release upon invalid card.
 - 4. Door Status - test each door leaf independently for held open door status.
 - 5. Forced door - test each door leaf independently by removing power to the electric lock (if applicable) and then opening the door.
 - 6. REX devices - test each device independently for activation status.

- B. Provide CCTV test sheets for each CCTV camera. Include, at minimum as applicable, the following categories on the test sheet.
 - 1. Point number - as identified on the security drawings.
 - 2. Image Quality - visually verify each cameras image quality.
 - 3. Motion - test each camera independently for motion detection alarm.

- C. Provide VMS test sheets for each VMS hardware unit. Include, at minimum as applicable, the following categories on the test sheet.
 - 1. VMS unit number - identify each VMS unit by a unique number.
 - 2. Time search - test the ability to view recorded video based on a time search for each input on each VMS.
 - 3. Alarm mark - test the ability of the VMS to mark an associated video recording with an associated alarm.
 - 4. Alarm video playbacks - test the ability to initiate playback alarm marked video from any ACAMS workstation.

- D. Provide SIS test sheets for each SIS remote and master station. Include, at minimum, the following categories on the test sheet.
 - 1. Point number - as identified on the security drawings.
 - 2. Audio Quality - verify audio volume and clarity at both remote and master.
 - 3. LED Activation - test activation of required LED upon remote activation.
 - 4. Alarm Light - test associated visual alarm activation and operation (if applicable) upon remote activation.

PART 8 - INTEGRATED OPERATIONS

8.1 WORK OF THIS SECTION

- A. This section of the specifications details the components to be provided by the ISS contractor relating to the following:
 - 1. Integrated Operations.
 - 2. Integrated Configurations.
 - 3. SIS Remote Initiated Call.
 - 4. ACAMS Alarms.
 - 5. Operator ISS Device Selection.
 - 6. CCTV Video Motion Detection.

8.2 INTEGRATED OPERATION

- A. Provide data communication transfer among the Integrated Security System components so that both the ISS automated system actions and ISS Operator requested actions identified below occur. Automated system actions shall occur immediately upon receipt of associated alarm without any operator interaction required. Operator requested actions shall only occur upon request from an operator. Provide any cabling, hardware, software, and programming necessary to allow the integrated operation among these systems.
- B. The integrated operation of the ISS shall meet, at minimum, the following requirements as detailed for each of the components systems listed in the following parts.

8.3 INTEGRATED CONFIGURATIONS

- A. Provide and assign a unique workstation number to each operator workstation location. This unique number shall be assigned to each of the operators monitoring and control equipment (ACAMS workstation, SIS master, etc.) that are located at the same operator workstation location. Anytime an ACAMS operator is logged into the ACAMS workstation and in the alarm-listing window, all ACAMS alarms shall be displayed in a queue style listing in order of priority and then occurrence. Upon operator selection (double mouse click or keyboard sequence) of an ACAMS alarm, the alarm information window shall open. At the same time this alarms status in the alarm listing window of all other active ACAMS workstations shall change to indicate it is being handled by another workstation. This indication can be through a color change or some other means. Provide a custom selectable link box labeled Integration in this alarm information window. Upon operator selection of this link the ACAMS shall send the required control codes to the required equipment for the operator integration below to occur. The ACAMS shall indicate the appropriate location in the control code string by using the unique workstation number so that the integration occurs only at the workstation location that has requested it.

8.4 SIS REMOTE INITIATED CALL

- A. SIS remote (intercom) initiated call shall be indicated as an alarm within the ACAMS alarm listing window. An SIS initiated call shall require the following integrated automated system actions:

DGS MPD
Collocation of Six MPD Units
New Construction Phase

1. Remote shall annunciate a tone at the SIS master at the Security Desk and the call shall be registered on all active ACAMS workstations in the alarm-listing window as an intercom alarm.
 2. If there is an associated PTZ camera for this SIS remote, the ACAMS shall automatically and immediately signal that camera to go to the pre-set position for that SIS remote. PTZ camera shall remain at that pre-set position until moved by an operator or until another alarm condition requiring this PTZ camera occurs.
- B. When the ISS operator answers the SIS initiated call the following operator requested actions shall be available and when selected shall automatically occur:
1. Whichever operator answers the call, the alarm information window specific to this alarm shall automatically be shown on the corresponding ACAMS monitor.
 2. A selectable link box for graphic map shall be provided within the ACAMS alarm information window allowing the operator to switch to the associated graphic display map. The graphic display map shall show the corresponding location of the alarm and the SIS remote shall be highlighted as red.
 3. A selectable link box labeled Integration shall be provided within the ACAMS the required codes to the required equipment to automatically:
 - a. If there is an associated PTZ camera for this SIS remote, the ACAMS shall automatically signal that camera to go to the pre-set position for that SIS remote.
 - b. Launch two separate video windows on the ACAMS secondary monitor. Video window 1 will show the current live camera image. Video window 2 shall start the playback of the recorded segment associated with the intercom call including pre-alarm time, duration, and post alarm time.
 4. The operator may grant access to corresponding door/gate if applicable by activating the "Door/Gate Grant Access" function either through the ACAMS alarm window or graphic display map via mouse button selection or function key selection.

8.5 ACAMS ALARMS

- A. ACAMS alarms shall be indicated as an alarm within the ACAMS alarm listing window. An ACAMS alarm shall require the following integrated automated system actions:
1. Upon receipt of an ACAMS alarm, all active ACAMS workstations shall visually and audibly annunciate the alarm in the alarm-listing window.
 2. If there is an associated PTZ camera for this alarm, the ACAMS shall automatically signal that camera to go to the pre-set position for that alarm. PTZ camera shall remain at that pre-set position until moved by an operator or until another alarm condition requiring this PTZ camera occurs.
- B. When the ISS operator handles an ACAMS alarm the following operator requested actions shall be available and when selected shall automatically occur:
1. Whichever operator selects the alarm shall be shown the alarm information window.

2. A selectable link box for graphic map shall be provided within the ACAMS alarm information window allowing the operator to switch to the associated graphic display map. The graphic display map shall show the corresponding location of the alarm and the associated field device shall be highlighted as red.
3. A selectable link box labeled Integration shall be provided within the ACAMS alarm information window. Upon selection of the integration box, the ACAMS shall send the required codes to the required equipment to automatically:
 - a. If there is an associated PTZ camera for this alarm, the ACAMS shall automatically signal that camera to go to the pre-set position for that alarm.
 - b. Launch two separate video windows on the ACAMS secondary monitor. Video window 1 will show the current live camera image. Video window 2 shall start the playback of the recorded segment associated with the alarm including pre-alarm time, duration, and post alarm time.
 - c. Connect the associated SIS remote (if applicable) to the corresponding workstations SIS master.

8.6 OPERATOR ISS DEVICE SELECTION

- A. ACAMS operators shall be able to select any ISS device (including cameras, intercoms, controlled doors, etc) for control or viewing by icon selection through the graphic maps or selection via the pull down menus. The ACAMS shall send the required codes to the required equipment based on what type of device is selected:
 1. When a camera is selected:
 - a. Launch two separate video windows on the ACAMS secondary monitor.
Video window 1 will show the current live camera images from the selected camera. Video window 2 shall allow the operator to playback recorded video from the selected camera. The operator will manually select start time within this window and be able to playback the video.
 2. When an intercom is selected:
 - a. Connect the selected intercom remote to the specific intercom master on this operator's desk.
 - b. If there is an associated camera viewing this intercom (fixed or PTZ), launch a separate video window on the ACAMS secondary monitor showing the current live camera image.
 3. When a controlled door is selected:
 - a. Provide menu of options to operator. Options to include, at minimum, unlock door (pulse), unlock door (remain), change cardreader mode, etc.

8.7 CCTV VIDEO MOTION DETECTION

- A. During active video motion detection sensing operator defined time schedules, the CCTV video motion detection alarm shall be indicated as an alarm within the ACAMS alarm listing window. This alarm shall require the following integrated automated system actions:
 - 1. All active ACAMS workstations shall visually and audibly annunciate the alarm in the alarm-listing window.

- B. When the ISS operator handles this alarm, the following operator requested actions shall be available and when selected shall automatically occur:
 - 1. Whichever operator selects the alarm shall be shown the alarm information window.
 - 2. A selectable link box for graphic map shall be provided within the ACAMS alarm information window allowing the operator to switch to the associated graphic display map. The graphic display map shall be show the corresponding location of the alarm and the associated field device shall be highlighted as red.
 - 3. A selectable link box labeled Integration shall be provided within the ACAMS alarm information window. Upon selection of the integration box, the ACAMS shall send the required codes to the required equipment to automatically:
 - a. Launch two separate video windows on the ACAMS secondary monitor. Video window 1 will show the current live camera image. Video window 2 shall start the playback of the recorded segment associated with the alarm call including pre-alarm time, duration, and post alarm time.
 - b. Connect the associated SIS remote (if applicable) to the corresponding workstations SIS master.

PART 9 - SECURITY NETWORK AND COMPUTERS

9.1 WORK OF THIS SECTION

A. This section of the specifications details the components to be provided by the ISS contractor relating to the following:

1. Network Data Server.
2. Security Network.
3. Security Hardware Locations.
4. Computer Interface Station
5. Computer Interface Workstation
6. Computer Graphics Monitor
7. Network Printer.
8. Internet Firewall Appliance

9.2 CONNECTIVITY TO OWNER S LAN

A. Provide a fiber cabling network connectivity to the Owner s LAN at up to two demarcation locations. Coordinate with the Owner on configuration of the network connection and IP addressing.

9.3 SECURITY LOCAL AREA NETWORK (LAN)

A. Provide a security network for IP communications among all equipment. Security Network shall meet, at minimum, the following requirements:

1. Non peer-to-peer.
2. Ethernet TCP/IP network.
3. Local connections shall be 100 Base T.
4. Fiber uplink connections.
5. Cabling shall be as specified in General Requirements.
6. Cabling distances shall not exceed 322 feet. Provide network switches as required to prevent any distances over 322 feet regardless of routing requirements.

B. Provide security master network switches within the security equipment rack for connectivity of rack mounted equipment and remote switches. Provide quantity of switches as required and needed at all locations for a complete and turnkey security network. Switches shall meet, at minimum, the following requirements:

1. Minimum 24 ports.
2. 10/100/1000 Base T connections.
3. Independently manageable ports.
4. Integral power supplies
5. Cabling and necessary connection plates to complete connection to all equipment.
6. Dedicated direct port to port connectivity.
7. Auto sensing 10/100/1000.
8. Full duplex.
9. Expandable by connection to additional switches.

10. Watchdog failure recovery capabilities.
 11. Rack mounted.
 12. Lifetime Warranty
 13. Master network switches shall be ACAMS Workstationco Systems Catalyst 2960S series.
- C. Provide Security Remote Network Switches for connectivity of IP field devices and master switches. As a minimum, at least one remote network switch must be provided at each location identified on the ISS riser diagram (in the telecom room). Provide additional remote network switches as required and needed for a complete and turnkey Security Network. Provide patch panels at each remote network switch for all Category6 network cabling coming from field devices. Locate patch panels and remote network switches in the wall mounted equipment rack provided by the telecom contractor in the telecom rooms. Each switch shall meet, at minimum, the following requirements:
1. Minimum 8 ports.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

2. 10/100/1000 Base T connections.
 3. Independently manageable ports.
 4. Integral power supplies
 5. Cabling and necessary connection plates to complete connection to all equipment.
 6. Dedicated direct port to port connectivity.
 7. Auto sensing 10/100/1000.
 8. Full duplex.
 9. Expandable by connection to additional switches.
 10. Watchdog failure recovery capabilities.
 11. Wall mounted within panel enclosure.
 12. Lifetime warranty.
 13. Switches shall be ACAMS Workstationco Systems Catalyst 2960-C.
- D. Provide Security Remote Hardened Network Switches for connectivity of IP field devices and remote master switches. As a minimum, provide at least one remote hardened network switch at each location identified on the ISS floor plan security drawings. Provide quantity of switches as required and needed at all locations for a complete and turnkey Security Network. Switch shall be ACAMS Workstationco WS-C3560CG-8PC-S.
- E. Obtain TCP/IP addressing scheme for all computer related equipment from the Owner. Configure the security network such that TCP/IP addressing conflicts do not occur with the Owners LAN/WAN.

9.4 ACAMS NETWORK DATA SERVER

- A. Provide an ACAMS NDS. The ACAMS NDS shall provide the following services:
1. The storage, analysis and retrieval of data and information.
 2. The storage and copies of all software, including schedules and databases. The computer shall maintain copies of all IC and RM software. The computer shall download copies to the CIW, IC and RM upon failure and loss of data.
 3. The supervision of connected operator terminals and other peripheral devices.
- B. The NDS shall utilize the latest Microsoft Windows server version that has been tested and approved by the ACAMS Software manufacturer as being compatible with their ACAMS software. The Microsoft Windows Server software shall be the computer and network operating system. Provide the server software with all publicly released service packs and service releases that have been tested and approved by the ACAMS software manufacturer. The server software shall be provided with a minimum 10 client access license.
- C. The bid amount identified within the bid breakdown form for the NDS shall be the minimum amount used to purchase the NDS components. The Owner shall select the final configuration of the NDS prior to installation on site.
- D. Provide a single hardware fault tolerant NDS at each identified location. The NDS computer shall be single hardware fault tolerant and shall have redundancy for each hardware component. Provide complete assembly, testing and 72-hour burn in, with complete diagnostic report detailing burn in procedures and results. All hardware modules should be hot-swappable. The modules include hard disk drives, and CPU/IO CRU. There shall be no

application interruption during the physical replacement of any of the listed hardware modules. The NDS shall meet, at minimum, the following requirements:

1. Dual Processor Intel Xeon Dual-Core compatible Motherboard with a minimum of 2 PCI-x slots Flash BIOS support.
2. Dual Intel Xeon Dual-Core Processors minimum speed of 2.0 GHz. with cooling fans.
3. Rack case with minimum of 3 hot-swappable 3.5 drive bays, 500 watt or greater capacity UL rated redundant hot swap power supplies and 2 Internal cooling fans.
4. 2 Gigabytes of installed DDR2 667 MHZ memory with four spare slots.
5. Internal hardware based Raid controllers capable of Raid 1 with the ability to set the raid configuration individually for the operating system drives and data storage drives.
6. 3 x 146.5GB SAS Hard drives. Configure two drives in a Raid 1 configuration for the operating system and the application software. Configure the remaining drive in a Raid 1 configuration for the application data.
7. 2 Serial (16550 UART) and 3 USB ports.
8. 24x Slimline CD-RW/DVD Combo Drive
9. Auto sensing full duplex PCI 10/100/1000 Ethernet adapter with bus mastering capabilities.
10. Mouse and keyboard utilizing the USB style connectors.
11. 32 Megabyte Integrated video adapter..
12. All necessary mounting hardware and cables for all components.
13. Linear Tape-Open (LTO) standard Tape Backup with software. Each tape shall have capacity for a minimum of 200 Gigabytes worth of data. Configure the software to perform full daily unattended backup of entire data to one tape. Provide 10 tapes.
14. NDS shall be NEC Fault Tolerant Server or approved equal.

9.5 ACAMS WORKSTATION

- A. Provide a Computer Interface Station at locations identified within these specifications, and provide one within the equipment rack in the Security Equipment Room. ACAMS WORKSTATION shall meet, at minimum, the following requirements:

1. Self contained pull out unit with built in 17 LCD, keyboard, touchpad, and 16 port KVM switch.
2. Rack mounted utilizing one U of rack space when folded and pushed into rack.
3. Pull out unit with handle.
4. When pulled out, LCD monitor opens up providing access to keyboard, touchpad, and KVM.

9.6 COMPUTER INTERFACE WORKSTATION (CIW)

- A. Provide a CIW at locations identified in these specifications and on the Security Drawings. The CIWs shall meet, at minimum, the following requirements:

1. Single processor Intel Xeon Quad Core compatible AGP/PCI Motherboard with a minimum of 4 PCI slots. Flash BIOS support.
2. Single Intel Xeon Quad Core processor minimum speed of 2.93 GHZ with ball bearing type CPU fan/heat sinks.
3. Tower style case with minimum of 3 Internal 5-1/4 drive bays, 450 watt or greater capacity UL rated power supply with internal cooling fan.
4. 12 Gigabytes of installed DDR3 RAM spare slots capable of 24 Gigabytes total RAM.
5. Two - 500 Gigabyte SATA hard disks. Install operating system and application software on the primary hard disk. Locate any data files and the image created for restoring of the primary drive on the secondary hard disk.
6. Utilize the latest Microsoft Windows version that has been tested and approved by the ACAMS Software manufacturer as being compatible with their ACAMS software.
7. 2 Serial (16550 UART) and 1 Parallel ports.
8. 8 USB ports (2 front)
9. Internal 16X Dual Layer DVD+/-RW double layer drive.
10. Auto sensing full duplex PCI 10/100/1000 Ethernet adapter.
11. Microsoft Intellimouse and keyboard utilizing USB style connectors.
12. SVGA 1024 Megabyte DDR3 PCI Express dual monitor video adapter with video in capability.
12. All necessary mounting hardware and cables for all components.
13. Integral power supplies which shall be suitably rated for the service.
14. Real time software or hardware clock.

9.7 COMPUTER GRAPHICS MONITOR (CGM)

- A. Provide a CGM at each identified location. The CGM shall meet, at minimum, the following requirements:
 1. Flat screen LCD display with viewable area of 19 inches.
 2. Resolution of 1280 by 1024 pixels.
 3. Capable of displaying both schematic and alphanumeric data at the same time.
 4. Capable of displaying 16.7 million colors.
 5. Integral audio speakers.

PART 10 - IP VIDEO SURVEILLANCE SYSTEM

10.1 WORK OF THIS SECTION

- A. This section of the specifications details the components to be provided by the ISS contractor relating to the Closed Circuit Television System.
- B. All remote components such as cameras, receiver/drivers, pan-tilt units shall be 24 Volts based. The Electrical contractor shall provide 120 VAC source power to locations indicated in the ISS General Requirements section of these specifications. Provide cable, transformers, connection of power supplies to 120 VAC sources and power all CCTV equipment.
- C. This Section establishes the minimum performance requirements for the CCTV security

DGS MPD
Collocation of Six MPD Units
New Construction Phase

surveillance system. The ISS contractor shall ensure proper equipment selection for each application. Camera locations shown on the Security Drawings are recommended locations to achieve desired field of view. Refer to architectural reflected ceiling plan drawings for exact locations. If not shown on reflected ceiling plans, Security Contractor shall locate camera in the field close to the general location shown but as needed to obtain required field of view. Consideration shall be given to such criteria as area of coverage, light conditions, etc., consistent with the generally accepted practices for CCTV surveillance and to the approval of the Owner and Architect.

10.2 CCTV SYSTEM REQUIREMENTS

- A. Provide a complete color CCTV system comprised of IP cameras, megapixel cameras, and PTZ cameras. All IP cameras shall be POE with the exception of exterior PTZ units. The video transmission cabling from each camera shall consist of category 6a network cable from each IP camera to the security network switches. Include all required materials, services, and programming time to configure each IP based device.
- B. Provide a Video Management System (VMS) comprised of software and video storage hardware. The VMS shall be integrated with the ACAMS as required to provide the integrated operations as required in these specifications.
- C. Each IP based CCTV camera and IP encoder shall communicate directly with a VMS controlled Video Storage Unit (VSU). The VSU shall be the only device that communicates with the IP CCTV camera and encoder directly. All other connections such as remote station viewing of live video or recorded video shall be done through network connections to the VSU. This ensures that the bandwidth between the IP camera (and encoder) and the VSU does not become saturated by too many connections which could result in loss of video quality or complete video loss. Provide all channel and input licenses as required for a complete turnkey CCTV system. Each VSU shall only communicate with the appropriate number of IP CCTV cameras and encoders based on the VSU manufacturer's recommendations.

10.3 SIGNAL QUALITY

- A. Video monitor units, power supplies and wiring shall be installed and mounted such that video cross-talk or interference does not occur between units. Provide phase lock or equivalent loop synchronization facilities to eliminate picture roll as a result of switching. Provide video distribution and line equalization amplifiers, to attain video splitting functions, as required to maintain picture quality.
- B. Video and control signal cables for CCTV applications shall, at minimum, meet the following requirements:
 - 1. CCTV video and control cables shall not share conduits with any other system.
 - 2. Video cables shall have no more than one splice between camera and controller bay or video amplifier.
 - 3. Provide surge filters on exterior run cables and on 120 VAC power sources.
 - 4. All cabling shall be routed in a clean and efficient manner. There shall be no exposed cable outside of the camera or mount.

10.4 CCTV HARDWARE AND SOFTWARE LOCATIONS

- A. Provide the following CCTV hardware with the identified quantities within the equipment racks:
 - 1. Security LAN switches (quantities as required)
 - 2. SAN Storage
- B. Provide VMS software on the ACAMS workstations at security desk(s).

10.5 SECURITY LOCAL AREA NETWORK (LAN)

- A. Utilize the Security Network identified in the Security Network and Computers section of these specifications for all IP communications. Provide additional networking hardware and cabling as required and needed for a complete turnkey CCTV system.

10.6 VIDEO MANAGEMENT SYSTEM

- A. The video management system (VMS) shall utilize digital video recorders as the VSU. Provide digital video recorders meeting at minimum the requirements below. Provide digital recorders as needed and if required elsewhere in the Security Documents. The digital recorders shall meet, at minimum, the following requirements:
 - 1. Dual Intel Xeon processor at 3.20 Ghz each with dual core.
 - 2. Four Gigabytes of 533 MHZ memory with two spare slots.
 - 3. 512 MB video card with dual DVI or dual VGA monitor capability.
 - 4. Internal RAID controllers.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

5. Two separate dedicated hard drives in a mirror raid utilized for the operating system and application software. Configure so if primary drive fails, secondary drive automatically takes over and continues operating.
 6. Quantity and size of data drives as required to meet video storage requirements identified below. These drives shall be designated as video storage drives. Video storage drives shall be hot swappable and shall be setup in a Raid 5 configuration.
 7. Internal redundant power supplies.
 8. 2 Serial (16550 UART) and 1 Parallel ports.
 9. One 1.44 floppy disk drive.
 10. 16X DVD and 16XDVD+/-RW drive.
 11. Sound card.
 12. Auto sensing full duplex 100/1000 Ethernet adapter with bus mastering capabilities.
 13. Keyboard and mouse connectors.
 14. All necessary mounting hardware and cables for all components.
 15. Multiple video input storage capability including and IP video inputs.
 16. Multi screen display output capability of selected quantities of inputs (4, 9, 16, 32, etc) with each individual display being real time.
 17. Individual settings for each video input including at minimum:
 - a. Images-per-second (IPS) user selectable recording rate per video input with a maximum capability of 30 ips per input for all inputs at the same time with the resolution identified below.
 - b. Brightness control.
 - c. Contrast control.
 - d. Color control.
 - e. Hue control.
 18. User selectable recording resolution per input.
 19. Internal real time hardware clock and self-diagnostics with reporting capabilities.
 20. Provide pre-alarm, alarm, and post alarm recorded video for ACAMS alarms that have an associated camera. Pre-alarm and post-alarm recording times shall be operator assignable. Video recorded during the pre and post alarm times shall be marked and stored as part of the alarm video.
- B. Provide quantity and size of internal video storage drives as required for recording and storage of video based on the following requirements. SEE PART 12.
1. Storage for 180 days.
 2. Day Normal Recording MPEG at 3 PPS
 3. Day Event Recording at JPEG Real Time Maximum Quality
- The digital recorder operator interface shall occur through software. Provide the digital recorder client software with a 10-client access license and initially load the client software on the NDS and the CIW s. Provide the software to the Owner for installation on other computer workstations.
- C.
- The digital recording hardware shall be able to display multi-screen views (2x2, 3x3, 4x4, Etc.) in real-time on an analog video output. The multi-screen view shall be operator
- D.

changeable. This analog video output from the digital recording hardware shall be wired as an input into the CCTV controller.

E. **Source Manufacturer: Digital Video System shall be Dedicated Micros Closed IP NVR with Layer 3 Switch - NO EXCEPTIONS.** Security Contractor must be a Dedicated Micros Network Video Certified Partner for Closed IPTV and provide evidence of certification with bid.

10.7 CCTV VIDEO MOTION DETECTION (VMD)

- A. Provide all equipment, mountings, brackets, connections, power supplies, controls and services as required to ensure a complete, centrally controlled, CCTV video motion detection system. Provide multiple video motion detection units that meet, at minimum, the following requirements:
1. Video motion dedicated to each camera.
 2. Operator definable detection zones for each camera.
 3. Alarm activation programmable based on movement.
 4. Individual zone sensitivity to minimize false alarms.
 5. Perform automatic alarm call-up and viewing.
 6. Operator programmable functions using menu entries.
 7. 1.0 V peak-to-peak, composite video, 75 ohm.
 8. Standard 19-inch rack mountable.
- B. All cameras shall be configured to utilize VMD. The ACAMS shall have an input for each VMD alarm. Each VMD input shall have an operator changeable time schedule for masking of the alarm.
- C. Upon approval of final camera positions and field-of-views coordinate video motion detection alarm zones and schedule requirements with Owner and program system.
- D. Other video components, such as the multiplexers or digital recording hardware, can be utilized for VMD if they fully comply with these requirements. Otherwise, provide dedicated video motion detection equipment.

10.8 IP CCTV CAMERA POWER SUPPLY

- A. Provide power for each IP based camera. IP cameras shall be POE and shall require a separate mid-span injector. Provide wall mounted or rack mounted suitable to the location. These injectors shall provide power to individually power each IP camera.
- B. Mid-span injectors shall be PowerDsine 9500G.

10.9 CCTV CAMERAS

- A. Provide CCTV security surveillance cameras at the locations as indicated on the Security drawings. Provide each camera with a lens, housing, and appropriate mounting hardware. Cameras may be provided as integral units within housings or may be provided as a separate unit mounted into the housing.
- B. Provide camera titling on each camera. The CCTV camera titling shall be as follows:
 - 1. Define date, time, camera type (F for fixed, P for PTZ), camera number, and location identification for each CCTV camera display.
 - 2. The titling information shall be recorded and displayed on the monitors. Ensure duplicate titling is not displayed and titling does not appear on top of other titling.
 - 3. A specific title shall be assigned to each camera preset for pan-tilt cameras or to a viewing sector (minimum 8 sectors) in which a preset resides.
 - 4. Ability to locate the titling information anywhere on the display.
 - 5. Ability to turn off the titling information individually for each camera.

10.10 CCTV LENSES

- A. Provide CCTV camera lens facilities for each CCTV camera. Lenses to be used on megapixel cameras must have a resolution that is greater than the camera resolution. The lens resolution should exceed the camera resolution across the entire lens. CCTV lens shall meet, at minimum, the following requirements:

1. Utilize spot filters only for extreme light conditions.
2. Auto Iris.
3. Exterior PTZ cameras shall have zoom lenses which shall be auto focusing.
4. Fixed cameras shall have manual vari-focal lenses, which shall be auto focusing. The lens size is identified within the camera housing types identified below.

10.11 CCTV MOUNTS

- A. All mounts, metal tubes, brackets and accessories shall be of sufficient strength and diameter to defeat any detectable camera shake in up to 40 MPH winds. All components and mounting bolts shall not rust or deteriorate and shall be designed for the surface to which the camera is mounted. All mounts shall allow for complete pan and tilt positioning in order to achieve the required field of view with positive locking position bolts. Cameras mounted over heights greater than 20 feet shall be completely swiveled to a safe location for servicing.
- B. CCTV cameras shall be mounted on non-structural walls or ceilings equipped with suitable mounting back-plates on the reverse side of the wall or ceiling to ensure camera mount stability. CCTV cameras shall be mounted at heights necessary to maximize the camera field of view. Housings and mounts shall be properly supported from Integrated structure as appropriate. Provide any required miscellaneous steel for bracing and mounting. Conduit shall extend to the housing, exposed cable shall not be allowed.
- C. Additional requirements by mount and camera type:
 1. Wall mounted Pan/Tilt dome units shall have pivoting brackets with square tube supports.
 2. Hard-ceiling mounted fixed units shall not be J hook mounted.
 3. Hard-ceiling mounted Pan/Tilt units not located in garages shall be recessed within metal back-box enamel painted.
 4. Garage located hard ceiling pan/tilt cameras shall be pendant mounted. Provide tapped tubes to provide an uninterrupted field of view while maintaining the specified garage clearance heights.
- D. Provide pole mounted cameras with:
 1. Pole mount adapter, pivot type bracket, square tubes supports.
 2. Coordinate access plates at base of pole and at base of camera to run cabling interior to pole.
 3. Where electronics do not fit in camera housing coordinate imbedding a NEMA 4 locking electronics box in base of pole or in nearest electrical ground vault. Surface boxes attached to pole are not acceptable.

10.12 CCTV HOUSINGS and MANUFACTURERS

- A. Provide CCTV cameras complete with protective housings. Protective housings shall meet the following minimum requirements:
 1. Complete with all mounting hardware and brackets. Provide appropriate mount based on ceiling or structure at installation location. Refer to architectural reflected ceiling plans.

2. Accessible, removable and lockable access doors to allow for maintenance.
3. Allow for the adjustment of the controls without removing the camera.
4. Power and signal cable harnesses and connectors to allow for the removal or replacement of a camera.
5. Tamper resistant.
6. Exterior locations shall also meet the following additional requirements:
 - a. Non-corroding with weatherproofing.
 - b. Integral fan and powered heating elements with controls to maintain the temperature within the manufacturers required temperatures.
 - c. Environmentally sealed and weatherized.
 - d. Unit shall be sized for the weight of the attached camera components and wind loads.

B. Cameras types have been identified on the Security Drawings.

Source Manufacturer PTZ Cameras: Pelco Spectra or approved equal

Source Manufacturer Megapixel: Arecont, no exceptions

Source Manufacturer Interior IP: Dedicated Micros or approved equal

10.13 INSTALLATION

- A. Provide programming and complete setup of all required camera selection, display, and automatic call up, integration with other ISS components as required in these specifications.

PART 11 - SECURITY INTERCOM SYSTEM

11.1 WORK OF THIS SECTION

- A. This section of the specifications details the components to be provided by the ISS contractor relating to the following:
1. SIS Requirements.
 2. SIS Hardware Locations.
 3. SIS Controller.
 4. SIS Voice Annunciator.
 5. SIS Master Stations.
 6. SIS Remote Stations.
 7. SIS Telephone Interface.
- B. Provide a SIS with Master Control Stations and remote stations at locations indicated on the Security System Drawings and as indicated in these documents. Refer to the Security System Drawings. Provide all software licenses as required.
- C. Provide all required installation and components including central exchange modules and all necessary boards, power supplies, master and sub-master control stations, receptacles, mounting boxes, terminal boards, cable, connectors, programming, accessories, signal conditioning equipment, amplifiers, connectors, wire and cable, installation work, mounting, etc. as required for a fully functional turn-key installation.
- D. Provide installation of the SIS only by manufacturer factory trained technicians. The ISS contractor shall have no less than two factory trained and certified staff personnel working on the installation of the SIS. Installation of the SIS by individuals not factory certified will not be acceptable.

11.2 SIS REQUIREMENTS

- A. Provide a two-way Security Intercom System (SIS) having a distributed microprocessor based modular switching exchange controller including all components necessary to provide faithful voice signal reproduction for two way voice communications with no detectable interference, buzz, hum, or regenerative feed back. Provide the required number of microprocessor based voice exchange modules and all required components, software and equipment to incorporate the SIS master stations, sub-master stations, and remote stations. Provide the SIS with ambient noise canceling features to allow accurate two-way voice communication in areas with high ambient noise. The SIS shall be controlled through a microprocessor-based controller capable of providing the required monitoring, switching and control of the specified equipment and future expansion requirements. Provide the required number of controller cabinets to incorporate all required inputs and outputs.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- B. The SIS provided shall incorporate modular central exchange cabinets for mounting of plug-in boards and modules. Central exchange cabinets shall be modular and shall allow expansion and networking.
- C. The SIS controller and all of its components shall be provided as standard 19-inch console mounted units along with racks, face plates, power supplies, mounting hardware and appurtenances. Provide shelves, extenders, brackets and accessories to securely mount all SIS components within the console and desks in a manner approved by the Owner.
- D. Provide all equipment, racks, faceplates, bezels, mounting brackets, interconnections, power supplies, mounting hardware, controls and services. Coordinate mounting, special cutouts and wire access ways with millwork contractors and furniture contractors.
- E. Provide connectivity to the Owner's existing LAN via the ACAMS integration and network connection specified in Security Network and Computers.

11.3 SIS HARDWARE LOCATIONS

- A. Provide the following SIS hardware with the identified quantities within the equipment rack at head-end:
 - 1. SIS controller (quantities as required).
 - 2. One rack mounted master station type M1.
- B. Provide the following SIS hardware with the identified quantities on the Security Desk(s):
 - 1. One desktop mounted master station type M3.
- C. Provide the following SIS hardware with the identified quantities on the truck dock office:
 - 1. One desktop mounted master station type M3.

11.4 SIS CONTROLLER

- A. Provide SIS control exchange facilities meeting, at minimum, the following requirements:
 - 1. Standard 19-inch rack mounted modular card slot style housing with multiple microprocessor controllers. General processor with minimum 200 Mhz frequency and media processor with minimum 200 Mhz frequency and above 1,000 MIPS. Housing shall contain dual network interface cards.
 - 2. Minimum of 1 MByte of non-volatile RAM, 32 MByte of FLASH memory, and 100Mbytes of regular RAM. Non-volatile RAM shall contain re-start

DGS MPD
Collocation of Six MPD Units
New Construction Phase

information such as time, station status, etc. for power outages. FLASH memory shall store log files, software, and configuration information.

3. Card slots shall accept hardwired intercom cards and phone cards. Each hardwired intercom card shall manage at least 6 intercom remote stations. Each phone card shall manage at least 6 phones per card.
4. Log in security built in utilizing passwords. Built in firewall to prevent external attacks.
5. Multiple speech paths to allow simultaneous conversations.
6. Two way full duplex voice communication capability.
7. Incoming and outgoing volume settings.
8. Suspend or hold feature to allow the operator to answer another single incoming call or initiate a single outgoing call.
9. Queuing capability for multiple incoming calls. Provide the capability to assign each remote station a call priority level. Higher call priority level remote stations shall be placed at the top of the queuing level.
10. Automatic master station call selection based on time schedules. Provide programming to define which remote stations call which master station based on time of day. Master call selection shall be capable of being overridden by the master station in the SCC.
11. Automatic roll-over to another master station until call is answered.
12. Remote station all call facilities and priority group call function.
13. Data input/output port facilities as required for integration via IP linking or serial linking.
14. Silent audio monitoring of operator selected remote station.
15. Master station to master station calling capability.
16. Parallel calls to multiple masters function. It shall be possible to program remote stations to annunciate calls on multiple defined substations simultaneously. When the call request is acknowledged by a master station the call request shall be discontinued from the other master stations.
17. Programmable remote station identification call numbers and alphanumeric description. All facilities required for the programming of systems features shall be provided under the work of this project.
18. Capabilities to interface multiple master control stations/digital exchanges via tie-line connections.
19. Provide unique audible and visual annunciation of designated alarm priority remote station calls.
20. Wire line supervision to all stations including voice line status monitoring and alarm annunciation of failure. Alarm annunciation of failure shall be within the SIS controller and identified in the ACAMS software as an Intercom System Alarm. Automatic periodic tone testing of loudspeaker and microphone of each connected remote station.
21. Ability to provide visual (LED) and audible annunciation at the remote stations to indicate that the call has been registered.

B. The SIS keyboards shall be able to perform, at minimum, the following functions from each keyboard:

1. Suspend or hold feature to allow the operator to answer another incoming call or initiate an outgoing call.
2. Remote station all call facilities.
3. Remote station group or individual call.

4. Master station to master station calling capability.
5. Transfer of call to another master or sub-master.
6. Unavailable switch to prevent incoming remote calls.

C. The SIS controller shall be Stento Alphacom XE20.

11.5 SIS VOICE ANNUNCIATOR

- A. Provide voice annunciator software to announce the placement of a remote station call at each remote station. Provide visual (LED) and audible annunciation at the remote stations to indicate that the call has been registered. Provide pre-recorded audible voice message annunciation. Coordinate wording with the Owner. Provide all licenses as required.

11.6 SIS MASTER STATIONS

- A. Provide SIS master station control facilities to allow two-way voice communication with the remote stations and other master stations through all of the following. Provide any and all required IP licenses. The operator shall be able to select voice communication method including:
1. The master stations integral speaker/microphone (operator pushes and holds an identified button to talk).
 2. The attached handset if applicable (voice activated).
- B. Provide SIS master stations at locations identified above and on the Security Drawings. Master stations shall be identified by type and shall meet, at minimum, the following requirements:
1. Type M1 - Rack mounted analog master
 - a. Twelve button call selection keypad and push to talk keys..
 - b. Visual annunciation indicating each remote station call via the LCD. LCD display shall be used to identify incoming calls and placing outgoing calls. Incoming calls shall display remote station call number, alphanumeric description of the remote station, feature in progress display, etc.
 - c. Audible annunciation indicating each remote station call via an internal speaker.
 - d. Incoming volume control.
 - e. Remote station all call facility.
 - f. Suspend or hold feature to allow the operator to allow the operator to answer another incoming call or initiate an outgoing call. Another incoming call shall be annunciated on the LCD and by an audible tone and placed in the queue. Remote stations with higher call priority shall be placed before calls with lower priority in the active call queue. It shall not be possible to remove remote station calls from the active call queue without being answered at a master control station.
 - g. Facilities to view the active call request queue at the master control station. It shall be possible to connect with any of the calls in the active call queue for two-way voice communication.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- h. Stentofon model 1000705300 with handset.
2. Type M2 - Wall mounted analog master
- a. Twelve button call selection keypad with push to talk and cancel keys.
 - b. Visual annunciation indicating each remote station call via the LCD. LCD display shall be 2 X16 character alphanumeric used to identify incoming calls and placing outgoing calls. Incoming calls shall display remote station call number and alphanumeric description of the remote station.
 - c. Audible annunciation indicating each remote station call via an internal speaker.
 - d. Microphone and speaker for open conversation mode.
 - e. Handset for private conversation mode.
 - f. Incoming volume control.
 - g. 10 programmable single touch pushbuttons. Program a pushbutton for each elevator cab remote that is serviced from this elevator machine room. Program one pushbutton to call master station at the main monitoring location.
 - h. Remote station all call facility.
 - i. Suspend or hold feature to allow the operator to allow the operator to answer another incoming call or initiate an outgoing call. Another incoming call shall be annunciated on the LCD and by an audible tone and placed in the queue. Remote stations with higher call priority shall be placed before calls with lower priority in the active call queue. It shall not be possible to remove remote station calls from the active call queue without being answered at a master control station.
 - j. Facilities to view the active call request queue at the master control station. It shall be possible to connect with any of the calls in the active call queue for two-way voice communication.
 - k. Stentofon model 1007072090 with wall bracket 1008091100.
3. Type M3 - Desktop mounted IP master
- a. Twelve button call selection keypad with push to talk and cancel keys.
 - b. Visual annunciation indicating each remote station call via a large high contrast display with backlighting. Display shall be used to identify incoming calls. Incoming calls shall display remote station call number and alphanumeric description of the remote station.
 - c. Audible annunciation indicating each remote station call via an internal speaker.
 - d. Microphone and speaker for open conversation mode.
 - e. Handset for private conversation mode.
 - f. Incoming volume control.
 - g. 10 programmable single touch pushbuttons.
 - h. Remote station all call facility.
 - i. Suspend or hold feature to allow the operator to allow the operator to answer another incoming call or initiate an outgoing call. Another incoming call shall be annunciated on the LCD and by an audible tone and placed in the queue. Remote stations with higher call priority shall be placed before calls with lower priority in the active call queue. It

shall not be possible to remove remote station calls from the active call queue without being answered at a master control station.

- j. Facilities to view the active call request queue at the master control station. It shall be possible to connect with any of the calls in the active call queue for two-way voice communication.
- k. Four dynamic navigation keys.
- l. Stentofon model 1008001000.

11.7 SIS REMOTE STATIONS

A. Provide SIS remote voice stations identified by type at locations indicated on the security drawings. SIS remote station types shall meet the following minimum requirements:

- 1. Type 1-Hardwired analog remote
 - a. Single pushbutton type call button with LED, MEMS microphone and loudspeaker.
 - b. Die cast aluminum frame.
 - c. Black thermoplastic front plate.
 - d. No Visible logo or company marking on faceplate.
 - e. Custom flush in wall backbox model TA-2
 - f. Stentofon model TCA-3-NL.
- 2. Type 2-IP remote
 - a. Single pushbutton type call button with LED, MEMS microphone and loudspeaker.
 - b. Die cast aluminum frame.
 - c. Black thermoplastic front plate.
 - d. No Visible logo or company marking on faceplate.
 - e. Custom flush in wall backbox model TA-2
 - f. Stentofon model TACAMS WORKSTATION-3-NL.
- 3. Type 3-Hardwired Analog Remote
 - a. Rugged vandal-proof style wall mounted single integrated housing.
 - b. Hands-free type remote station with single mushroom style pushbutton, LED, microphone and loudspeaker mounted behind faceplate.
 - c. Brushed aluminum gasketed faceplate.
 - d. Location and mount for internal CCTV camera. Provide tinted glass covering camera location (refer to security drawings to determine if camera is required).
 - e. Long-life constantly illuminated when not in use blue light.
 - f. Blue light shall strobe whenever SIS remote is activated.
 - g. ADA compliant Provide suitably worded labeling in raised alphanumeric lettering and in Braille. Provide required audible/visual call status indication.
 - h. No Visible company or manufacturer logos on exterior.
 - i. Suitable for installation/operation -40 Deg. Celsius to +50 Deg. Celsius.
 - j. Stentofon model 100629267NL mounted within Stentofon housing 1000160200.

- B. Coordinate all voice communication remote station installations with the Architect. Refer to equipment mounting detail drawings. Provide all wall mounted SIS remote stations flush mounted unless specifically identified to be provided as surface mounted.
- C. Provide SIS remote stations/installations that are compliant with all applicable Integrated codes, Barrier Free Design Guidelines, and the Americans with Disabilities Act (ADA). SIS remote stations installed in elevators, and areas of rescue assistance shall be provided in compliance with all governing codes and ordinances. Provide additional cabling to remote stations as required for ADA / Barrier Free operation.
- D. Voice communications at any of the remote stations shall not be push-to-talk. Voice communication shall be initiated at the remote station by pushing the remote station call button or lifting of the handset. Once a hands free remote station button is pushed, the button shall not be able to perform any action until the call is answered and disconnected from the master station.
- E. Provide SIS remote stations with no manufacturer names, logos or markings visible.
- F. Provide suitably worded lamacoid labels at each SIS remote station location with basic operating instructions (e.g. PUSH BUTTON TO TALK) and with the remote station number and brief location description. Coordinate lamacoid label size, colour, and wording details with the Owner/Architect. Submit Shop Drawings for proposed details.
- G. All components shall be UL listed and approved where applicable.

11.8 SIS REMOTE FAILURE ALARM

- A. Provide an interface to the ACAMS so that any master station or remote station failure detected by the SIS controller shall be indicated as an SIS Remote Failure Alarm on the ACAMS. Provide all required programming and all required hardware (such as but not limited to SIS relay board, ACAMS input modules, etc), for this integration.

11.9 SIS TELEPHONE INTERFACE

- A. Provide SIP trunking licenses and any hardware as required for forwarding SIS remote calls to an off-site monitoring location over analog dial-up telephone lines via SIP gateway. Analog telephone lines shall be provided by the Owner.

11.10 INSTALLATION

- A. Provide a complete Security Intercom System (SIS) as detailed within these documents and as indicated in the Security Drawings. Provide all installation and components including master station control modules and all necessary boards, power supplies, master and sub-master control stations, receptacles, mounting boxes, terminal boards, telephone system interconnection facilities, cable, conduit, connectors, tuning, etc. as required for a turn-key installation. Provide proof of certification from Stentofon with bid response.

DGS MPD
Collocation of Six MPD Units
New Construction Phase

- B. Provide all required SIS programming. Provide Owner Training on the basic features, operation and programming features of the SIS System. Provide preliminary SIS System training to designated management level personnel. Provide the preliminary training directed towards basic system overviews, functions, programming capabilities, optional programming capabilities, etc. This training is intended to assist the Owner in making informed deACAMS Workstationions and instructions as to the desired functions to be programmed by the ISS Contractor.
- C. The SIS shall be installed by qualified technicians who have been factory trained and certified for the SIS to be installed. The ISS Contractor shall develop blank SIS design charts identifying information required for SIS design/programming. The ISS Contractor shall submit the design charts to the Owner following the preliminary training sessions for the Owner to fill in. Provide charts for information required for programming such as call groups, remote stations associated with each sub-master stations, critical alarm calls, station numbering, etc. Submit all requests for information six (6) weeks in advance of when the information is required.
- D. Provide installation and mounting of all SIS components including the master control station and all remote stations. Provide all millwork, finishing, trim, faceplates, bezels, etc. as required.
- E. Provide wire and cable installation in compliance with the requirements identified in these Documents and in compliance with all governing codes and ordinances. Provide twisted pair, shielded type cable for interconnection of all remote stations. Provide, at minimum, 22 AWG wire or larger where required meeting cable distance and/or manufacturer requirements. Wiring shall not be spliced. All wire / cable connections shall be made in suitable junction boxes on terminal boards with punch-down blocks or on screw type terminal blocks. The use of wire nut or twisted type splice connections is not acceptable.
- F. Provide all SIS wire/cable installed in conduit where required. Refer to the Security Drawings for conduit requirements. Where conduit is required, SIS wire and cable shall not share conduit with wire and cable of any other system.
- G. Provide tamper-proof fasteners, to a detail as specified within these documents, for the installation of all remote station faceplates and accessible components.
- H. The SIS shall be programmed to function as specified in these documents and as coordinated with the Owner during installation. The Security Contractor shall make an electronic copy of the final accepted installation programming and provide it to the Owner as part of the As-Built Documentation. Provide the programming back-up copy in computer data file storage format compatible with the facilities provided under the work of this project. (e.g. floppy disk, tape back-up, etc.). Provide documentation of any custom and/or special programming and submit written copies of the programming in the As Built Documentation.
- I. Provide all poles and pedestals for the SIS. Provide adequate grounding of all components of the SIS.

PART 12 – CENTRALIZED STORAGE FOR VIDEO SURVEILLANCE (CSVS)

12.1 WORK OF THIS SECTION

- A. This section of the specifications details the system requirements for the establishment of the Metropolitan Police Department's (MPD) Centralized Storage for Video Surveillance (CSVS). The MPD has transitioned from a security management program limited by stand-alone systems utilizing an assortment of technology, software systems, and manufacturers to an Enterprise security platform utilizing standardized products and services across multiple facilities. This scope of work details MPD's requirement to deploy a high-performance, scalable storage architecture to support a video surveillance program that is increasing in both size and performance requirements for retention periods, frame rates, and resolution. This initiative has been designated the CSVS program – Centralized Storage for Video Surveillance. The following components will be designed, provided, installed, tested, programmed, and supported by the contractor:
1. CSVS for the new cameras at 2850 New York Avenue
 2. CSVS for approximately (483) existing cameras across approximately (35) head-end units
- B. The CSVS platform for both the new 2850 New York Avenue cameras and the approximately (483) legacy will be deployed by the contractor at the 2850 New York Avenue facility inside the IT Head-End Room 1318.
- C. The MPD has standardized on the deployment of a Dedicated Micros storage infrastructure and Dedicated Micros infrastructure is currently installed at nearly every MPD location. Please note the introduction of a different system into MPD's complex network would require the purchase, installation, and integration of many additional components and a training program to bring MPD's facility and IT departments up to speed. This would result in a significant increase in the overall cost of installation and maintenance of the legacy system. Therefore, the products represented in this specification represent the most cost-effective solution for the District and as a result **there will be NO EXCEPTIONS to the specified Dedicated Micros solution**. All respondents must be a Dedicated Micros Network Video Certified Partner for Closed IPTV and provide evidence of this certification with their bid response.

12.2 CSVS CONFIGURATION FOR 2850 NEW YORK AVENUE CAMERAS

- A. The new cameras for 2850 New York Avenue will be recorded to a contractor-provided Dedicated Micros storage platform. The system will be rack-mounted inside the IT Head-End Room 1318.
- B. The storage parameters for the new cameras at 2850 New York Avenue are as follows:
1. Provide storage for all cameras for 180 days
 2. Day normal recording MPEG at 3 PPS
 3. Day event recording at JPEG Real Time Maximum Quality

12.3 CSVS CONFIGURATION FOR EXISTING MPD CAMERAS

- A. MPD's approximately (483) existing cameras are currently recorded via approximately (35) head-end storage units. The contractor is required to deploy a CSVS system that will store and managed video in a centralized manner from a distributed implementation, configure a solution that is scalable to accommodate future growth and performance requirements of the video surveillance system, and implement a Storage Area Network (SAN) that is designed and optimized for video surveillance.
- B. This contractor is responsible for the design, provision, installation, testing, programming, and support of a Dedicated Micros CSVS solution to provide (180) days storage for MPD's existing cameras. The system will be rack-mounted inside the IT Head-End Room 1318.
- C. The storage parameters for the existing cameras that will be recorded to the 2850 New York Avenue location are as follows:
4. Provide storage for all cameras for 180 days
 5. Day normal recording MPEG at 3 PPS
 6. Day event recording at JPEG Real Time Maximum Quality
- D. The selected storage solution for the existing MPD cameras is the Dedicated Micros ATA over Ethernet (AoE) solution. Contractor to provide, install, test, program, and support all required Dedicated Micros AoE storage units as necessary to obtain the specified 180 days of storage. The MPD approved storage solution from Dedicated Micros is the DM/RAID6/R24/48T. Contractor will be responsible to engineer a solution utilizing the necessary quantity of DM/RAID6/R24/48T units to provide the specified storage capacity, taking into account the overhead necessary in each DM/RAID6/R24/48T unit.
- E. Contractor to deliver a redundant CSVS solution utilizing AoE RAID 2x Gb-NET and a CORAID solution for redundancy of the PSU's. The connection tool utilized is the Telnet/Direct Console CLI.
- F. Contractor to ensure proper supporting infrastructure for the CSVS solution. This includes - but is not limited to - racks for the CSVS servers, network infrastructure/switch components/connection from switches to CSVS storage units, HVAC, Power/Electrical provisions, Grounding/Bonding/Power Protection, Battery Back-up/Generator/UPS components, Room Protection, etc.
- G. Contractor to provide comprehensive (2) year warranty and software support for all components of the CSVS platform, including - but not limited to - processors, PSU's, RAIDs, drives, fans, software, professional services, etc.