MATERIAL SPECIFICATIONS FOR CAMERA

SECTION 1 - GENERAL

1-1 GENERAL

Ensure that the camera:

- Is a dome or positional type as specified in the contract.
- Is compatible with encoder.
- Has Electronic Image Stabilization
- Has Compass Direction

1-2 STANDARDS

- NEMA Type 4X
- As a minimum, IP 66 Environmental Rating
- EIA RS-232, RS-422/485
- UL Listed for outdoor use
- NEC

1-3 POWER SUPPLY

Power**:**	24 VAC
Input voltage:	120 or 240 volt user selectable.

UL listed and meeting NEMA 4X and IP66 standards.

1-4 POWER AND COMMUNICATIONS CABLES

Ensure that the unit is provided with all power, control, and communications cables. Ensure they are suitable for burial underground in a duct and able to withstand wet environments.

Ensure power cables provide power to Camera & PTZ equipment, including ancillary equipment to provide proper functionality and for testing purposes. Ensure cables are of proper length as shown in the contract plans.

1-5 HEAD END COMPATIBILITY

Ensure the provided equipment is compatible from the camera to the head end Genetec controller software and meets applicable NTCIP requirements. Code translators may be required to be installed for communicating the PTZ data from the NJDOT video operating system to the camera. This requirement is solely determined by the Contractor' System Integrator based on the proposed system submitted for approval. Provide the necessary power supplies for code translation equipment that are suitable for installation in an outdoor cabinet enclosure. Input voltage for the power supplies are to be 120 Volt, 60 Hz and output voltage meeting code translation requirements. Ensure that the units are UL listed and meet NEMA 1 standards.

1-6 REMOTE MONITORING SYSTEM

Ensure that the remote monitoring system includes the necessary kits, ports and cables designed to provide ground level, local interface to the field installed system. Ensure conformity to NEMA 4X, UL, and FCC Class B Ratings where they apply,

Ensure that the unit meets the following general requirements:

a. The outdoor CCTV remote data port allows for the control and setup of camera when used with compatible remote monitor kit or remote monitor cable.
b. The remote data port allows for new operating code and language files to be uploaded to camera system.
c. The remote data port is able to receive commands from standard personal computers and PDA devices utilizing serial communications between the remote data port and camera system.
d. The enclosure and data port meets or exceeds the following design and performance specifications:

Port Enclosure:

1.	Size:	large enough to accommodate multiple ports, wiring, and terminal blocks and adapters.
2.	Door latch:	Stainless steel; means for locking with a padlock
3.	Input Voltage:	24 VAC
4.	Power Consumption:	1 VA
5.	Operating Range:	-50° to 122°F
6.	Weight:	6.5 lbs max.

Data port:

1. At least one RJ-45 and other ports that may be necessary for control, programming, and viewing
2. Video transmission from camera system to control equipment over coaxial cable or unshielded twisted pair (UTP)
3. Lock out control from head end when cable is plugged into RJ-45 jack
4. An audible alarm sounds when the door is open until cable is plugged into RJ-45 jack and the audible alarm sounds again when cable is removed to remind operator to latch the door closed
5. Each remote data port controls only one camera system

SECTION 2 - DOME CAMERA

Ensure that the Dome Camera is an outdoor environmental CCTV camera dome system with a discreet, miniature camera dome system consisting of a dome drive with a variable speed/high speed pan and tilt drive unit with continuous 360° rotation, 1/4-inch high resolution EXview HAD™ camera, motorized zoom lens with optical and digital zoom and auto focus; and an enclosure consisting of a back box, lower dome, and a quick-install pole adapted mounting. Ensure that the unit meets NEMA Type 4X and IP66 environmental standards and is suitable for outdoor installation atop poles up to 75′ high. Ensure that the unit operates at 24 VAC nominal with maximum 110 Watt power consumption.

Ensure that the unit meets or exceeds the following design and performance specifications:

2-1 DOME DRIVE

1.	Pan Speed:	250° per second
2.	Vertical Tilt:	Unobstructed tilt of +2° to -92°
3.	Manual Control Speed:	Pan speed of 0.1° to 80° per second, Tilt operation range from 0.1° to 40° per second
4.	PTZ Protocol:	Mandatory NTCIP 1205 Camera Control, Genetec PTZ protocol supported
5.	Automatic Preset Speed:	Pan speed of 250° and a tilt speed of 100° per second

6. Presets:	Sixty-four preset positions with a 20-character label available for each position; programmable camera settings, including selectable auto focus modes, iris level, and backlight compensation, for each preset; command to copy camera settings from one preset to another; preset programming through control keyboard or through dome system on-screen menu
7. Preset Accuracy:	0.1°
8. Proportional Pan/Tilt Speed:	Speed decreases in proportion to the increasing depth of zoom
9. Automatic Power-Up:	User-selectable to the mode of operation the dome will assume when power is cycled, including automatically returning to position or function occurring before power outage
10. Zones:	Eight zones with up to 20-character labeling for each, with ability to blank the video in the zone
11. Motor Operating Mode:	Microstep to 0.015° steps
12. Motor:	Continuous duty, variable speed, operating at 18 to 30 VAC, 24 VAC nominal
13. Limit Stops:	Programmable for manual panning, auto/random scanning, and frame scanning
14. Alarm Inputs:	N.O./N.C. dry contacts
15. Alarm Outputs:	One auxiliary Form C relay output and one open collector auxiliary output
16. Alarm Output Programming:	Auxiliary outputs can be alternately programmed to operate on alarm
17. Alarm Action:	Individually programmed for three priority levels, initiating a stored pattern or going to a pre-assigned preset position
18. Resume after Alarm:	After completion of alarm, dome returns to previous programmed state or its previous position
19. Window Blanking:	Eight four-sided, user-defined shapes, with each side being of different lengths; window blanking setting to turn off at user-defined zoom ratio; window blanking set to opaque gray or translucent smear; blank all video above user-defined tilt angle; blank all video below user-defined tilt angle
20. Patterns:	Four user-defined programmable patterns including pan, tilt, zoom, and preset functions; pattern programming through control keyboard or through dome system on-screen menu
21. Pattern Length:	Four patterns of user-defined length, based on dome memory
22. Auto Sensing:	Automatically sense and respond to protocol utilized for controlling unit; including NTCIP compliant control protocols and translators
23. Menu System:	Built-in for setup of programmable functions in English

24. Auto Flip:	Rotates dome 180° at bottom of tilt travel
25. Password Protection:	Programmable settings with optional password protection
26. Clear:	Clear individual, grouped, or all programmed settings
27. Diagnostics:	On-screen diagnostic system information
28. Freeze Frame:	Freeze current scene of video during preset movement
29. Display Setup:	User-definable locations of all labels and displays; user-selectable time duration of each display
30. Azimuth/Elevation/Zoom:	On-screen display of pan and tilt locations and zoom ratio
31. Compass Display:	On-screen display of compass heading; user- definable compass setup
32. Video Output Level:	User-selectable: normal or high to compensate for long video wire runs
33. Dome Drive Compatibility:	All dome drives are compatible with all back box configurations
34. RJ-45 Jack:	Plug-in jack on dome drive for control and setup of unit and for uploading new operating code and language file updates. Compatible with personal computers.
35. Remote Data Port Compatibility:	Ability to control and setup unit and to upload new operating code and language file updates through optional remote data port that is located in area with easy access. Compatible with personal computers.
36. UTP Compatibility:	Ability to plug into back box an optional board that converts video output to passive, unshielded twisted pair transmission
37. Fiber Optic Compatibility:	Ability to plug into back box an optional third-party board that converts video output and control input to fiber optic transmission
38. Third-Party Control Systems:	Ability to plug in optional board that converts control signals from selected third-party controllers
39. Power Consumption:	Maximum 110 W

2-2 COLOR/BLACK-WHITE OPTIC SYSTEM (35X)

1. Image Sensor:	1/4-inch high resolution EXview HAD™
2. Scanning System:	2:1 interlaced output
3. Effective Pixels:	NTSC 768 x 494
4. Horizontal Resolution:	NTSC 540 TVL
5. Lens:	f/1.4 (focal length, 3.4~119 mm; 35X optical zoom with Electronic Image Stabilization, 12X digital zoom)
6. Zoom Speeds:	Minimum two settings; Fast Setting response 3.2 seconds; Slow Setting 6.6 seconds
7. Horizontal Angle of View: zoom	55.8° at 3.4 mm wide zoom, 1.7° at 119 mm telephoto

8.	Focus:	Automatic with manual override
9.	NTSC Sensitivity :	0.00018 lux at 1/2 sec shutter speed (BW) @ 35 IRE 0.55 lux at 1/60 sec shutter speed (color) @ 35 IRE 0.018 lux at 1/2 sec shutter speed (color) @ 35 IRE 1.0 lux at 1/60 sec shutter speed (color) @ 50 IRE 0.05 lux at 1/2 sec shutter speed (color) @ 50 IRE 0.01 lux at 1/4 sec shutter speed (BW) @ 50 IRE
10.	Synchronization System:	Internal/AC line lock phase adjustable through remote control, V-sync OR Crystal
11.	White Balance:	Automatic with manual override
12.	NTSC Shutter Speed:	up to 1/30,000
13.	Iris Control:	Automatic with manual override
14.	Gain Control:	Automatic/ off
15.	Video Output:	1 Vp-p, 75 ohms
16.	Video Signal-to-Noise:	>50 dB
17.	Wide Dynamic Range:	minimum 80X
18.	Motion Detection:	User-definable motion detection settings for each preset scene, can activate auxiliary outputs, and contains 3 sensitivity levels per zone

2-3 BACK BOX AND LOWER DOME

Heavy Duty Pendant Environmental

1.	Connection to Dome Drive:	Quick, positive mechanical and electrical disconnect without the use of any tools
2.	Trap Door:	Easy-access trap door that allows complete access to the installation wiring and, when closed, provides compete separation of the wiring from the dome drive mechanics
3.	Terminal strips:	Removable with screw-type terminals for use with a wide range of wire gauge sizes
4.	Auxiliary Connections:	One Form-C relay output at <40 V, 2 A maximum, and a second open collector output at 32 VDC maximum at 30 mA
5.	Alarm inputs:	Seven
6.	Installation:	Quick-mount wall, corner, pole, parapet, or ceiling adapter
7.	Cable Entry:	Through a 1.5-inch NPT fitting
8.	Environmental Features:	Factory-installed heaters, blowers, and sun shroud
9.	Operating Temperatures:	Continuous operating range of -29.2° to 122°F

10. Memory:	Built-in memory storage of camera and location- specific dome settings such as presets and patterns. If new dome drive is installed in back box, all settings to download automatically into new dome drive
11. Color:	Gray, baked-on enamel powder coat
12. Construction:	Anti-impact, vandal resistant, dual wall aluminum enclosure with a min, 0.090-inch thick, clear polycarbonate lower dome and aluminum trim ring
13. Disconnect:	Quick to dome drive
14. Dimensions:	Pendant 10.6-13.74-inch overall length (including dome) by 8.6-11.05-inch diameter
15. Weight:	14.0 lbs max

SECTION 3 - POSITIONAL CAMERA

3-1 CAMERA WITH PTZ UNIT

Ensure that the Positional Camera conforms to the aforementioned requirements in Section 2-2 with an integrated environmental PTZ control unit with receiver/driver. The Positional Camera is to be mounted on the pole top plate.

Ensure that the unit meets NEMA 4X and IP 66 environmental standards and that the unit includes, meets, or exceeds the following design and performance specifications:

1. Mounting:	Internal cabling and easy attachments for quick mounting.
2. Camera/lens package:	Pre-installed and manufactured tested camera/lens
3. Heater/defroster:	Suitable for outside environment with heater/defroster package.
4. Pan/tilt drive unit:	High speed, utilizing high speed stepper motors, capable of pre-set pan speeds of up to 100° per second and tilt speeds of 30° per second in wind speeds of up to 50 mph, and pre-set speeds of 50° per second in wind speeds up to 90 mph.
5. Pan speeds:	Variable standard up to 40° per second while sustaining wind speeds of up to 90 mph.

6. Tilt speeds:	20° per second while sustaining wind speeds of up to 90 mph.
7. Weight:	Up to 25 lbs.
8. Pre-wired:	Power input, camera, lens, heater, and window defroster functions.
9. Operating voltage:	24VAC from a 120VAC 60Hz source.
10. Power consumption:	Maximum of 160W
11. Operating temperature:	-29°F to 122°F and capable of de-icing and operating at an ambient temperature of -13°F within two hours of power on.
12. Pan rotation:	360° continuous and a tilt range of +40° to -90° from horizontal.
13. Pre-sets:	64 positions with a preset accuracy of 1/2° utilizing electronic limit stops.
14. PTZ Protocol:	Mandatory NTCIP 1205 Camera Control, Genetec PTZ protocol supported
15. Construction/Finish:	extruded and sheet aluminum; stainless steel hardware; powdered coated aluminum finish
16. Viewing window:	0.23” min. thick, optically clear impact and scratch resistant coating