

Attachment A – Specifications

ESB Roseburg DMV Security System Upgrade

These specifications identify certain responsibilities of the Project Manager that would otherwise be responsibilities of the Owner's Authorized Representative, in accordance with General Conditions Section A.1. ODOT, as Owner, hereby delegates those identified responsibilities to the Project Manager. All other responsibilities of Owner remain with the Owner's Authorized Representative identified in the Public Improvement Agreement Form.

1. PROJECT MANAGER:

Eric Spond
ODOT Facilities Service Branch
Suite B240, 200 Hawthorne Ave SE
Salem, OR 97301
Phone: 503-986-2810
Email: Eric.SPOND@odot.state.or.us

2. 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION:

Not applicable for this project.

3. SPECIFICATIONS FOR ODOT IP CAMERA SYSTEM

AA. GENERAL

1. SUMMARY

- a. Section includes Network Video Recorder (NVR); Video Cameras, Cabling, Labeling, Programming and Testing
- b. Products - IP video cameras, with multi-streaming (H.265, H.264 and MJPEG);
- c. 2 RU rack-mounted NVR, capable of processing video up to 64 IP video cameras. Supplied by ODOT/Installed and Programmed by Contractor.
- d. Contractor to furnish and install patch panel, patch cables, mounts, and cable management supplies as needed for complete system.
- e. Related Requirements; installation, testing, identification and Administration.
- f. Contractor must apply and pay for permit as required by local jurisdiction.

2. REFERENCES

- a. Abbreviations
 - (1) AGC - Automatic Gain Control
 - (2) ARP – Address Resolution Protocol
 - (3) AWB - Automatic White Balance
 - (4) BLC – Back light compression
 - (5) CBR – Constant Bit Rate
 - (6) CVBS – Color, Video, Blanking, Sync
 - (7) DHCP - Dynamic Host Configuration Protocol
 - (8) DMR - Digital Mobile Radio

- (16) HD – High Definition
- (17) HTTP - HyperText Transfer Protocol
- (18) ICMP – Internet Control Message Protocol
- (19) IGMP - Internet Group Management Protocol
- (20) IP - Internet Protocol
- (21) JPEG - Joint Photographic Experts Group
- (22) MJPEG - Motion JPEG
- (23) MP - MegaPixel
- (24) MPEG - Moving Pictures Experts Group
- (25) NAS – Network Attached Storage
- (26) NTP - Network Time Protocol
- (27) PIM-SM - Protocol Independent Multicast-Sparse Mode
- (28) PoE - Power over Ethernet
- (29) PPPoE – Point to Point Protocol over Ethernet
- (30) RTP - Real-time Transport Protocol
- (31) RTCP – Real-Time Control Protocol
- (32) RTSP - Real-Time Streaming Protocol
- (33) SDK – Software Development Kit
- (34) SMTP - Simple Mail Transfer Protocol
- (35) SNMP – Simple Network Management Protocol
- (36) SSL – Secure Sockets Layer
- (37) TCP - Transmission Control Protocol
- (38) UDP - User Datagram Protocol
- (39) UPnP – Universal Plug and Play
- (40) VBR – Variable Bit Rate
- (41) VMS - Video Management System
- (42) WDR – Wide Dynamic Range
- (43) LDC – Lens Distortion Correction

b. Reference Standards

- (1) Network - IEEE
 - (A) 802.3 Ethernet Standards
 - (B) 802.1x Port-based Network Access Control
- (2) Video
 - (A) ISO/IEC 23008-2:2013, MPEG-H Part2 (ITU H.265, HEVC)
 - (B) ISO / IEC 14496–10, MPEG-4 Part 10 (ITU H.264)
 - (C) ISO / IEC 10918 – JPEG
 - (D) ONVIF – Profiles S and G
- (3) Emissions
 - (A) FCC-47 CFR Part 15 Subpart B Class B
 - (B) CE EN 55022:2010
- (4) Immunity - CE

- (5) Safety
 - (A) UL listed
 - (B) CE EN 50581:2012 (hazardous substances)

- (6) Ingress Protection and Vandal Resistance
 - (A) ANSI / IEC60529 – Degrees of Protection Provided by Enclosures : IP67
 - (B) IEC EN 62262 - Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts : IK10
 - (C) IEC 60068-2-75 : IK10

- c. Definitions
 - (1) GOV (Group of Video object planes) - A set of video frames for H.264 and H.265 compression, indicating a collection of frames from the initial I-Frame (key frame) to the next I-Frame. GOV consists of 2 kinds of frames: I-Frame and P-Frame.
 - (2) Dynamic GOV – Dynamic assignment of GOV length based on the complexity of the scene to efficiently manage bitrate of the video stream and reduce the storage required.
 - (3) Multi-exposure wide dynamic range - Operation which automatically adjusts shutter speed to provide a wide range between dark and light areas visible at the same time, preventing backlighting issues. Long exposure is used for dark areas and a short exposure is used in light areas.
 - (4) Dynamic fps – Dynamic assignment of fps (frames per seconds) based on the movement of object(s) in the scene to efficiently manage bitrate of the video stream and reduce the storage required.
 - (5) Smart Codec – Smart Codec that controls quantization parameter and dynamic fps in H.265 and H.264 to efficiently manage bitrate of the video stream and reduce the storage required.

BB. Network Video Recorder (Video Storage Server)

- 1. ODOT will provide and install the Network Video Recorder.

CC. CAMERAS

1. GENERAL SPECIFICATIONS

- a. Ensure that the camera:
 - (1) Is a dome or positional type as specified in the pre-bid site walk.
 - (2) Is compatible with encoder integral to IP camera.
 - (3) Has Electronic Image Stabilization
 - (4) Has Compass Direction
 - (5) ONVIF Compatible
 - (6) NTCIP Complaint
 - (7) Built-in Analytics
 - (8) Compatible with Supplied NVR
 - (9) 1 year Manufacturer Warranty
 - (10) 1 year Installation Warranty on all workmanship
 - (11) Minimum 60 PPF Image (or as noted per Camera List/Drawing)

2. SUBMITTALS

4. DELIVERY, STORAGE AND HANDLING

- a. Deliver the camera in the manufacturer’s original, unopened, undamaged container with identification labels intact.
- b. Store the camera in a temperature environment specified in section 2.04 Detailed Specification, protected from mechanical and environmental conditions as designated by the manufacturer.

5. WARRANTY, LICENSING AND SUPPORT

- a. Manufacturer shall provide at least a limited 1 year warranty for the product to be free of defects in material and workmanship.
- b. Manufacturer shall provide embedded camera video analytics free of license charges.

DD. PRODUCTS

1. EQUIPMENT

- a. Manufacturer: Design based on Hanwha Techwin (Samsung)
- b. Models listed on drawings under Attachment B
 - (1) Camera Type 1: PNM-9030V
 - (2) Camera Type 2: PND-9080R
 - (3) Camera Type 3: PNF-9010R
 - (4) Camera Type 4: PNV-9030V
- c. Alternates: Sony, Flir or approved equal (compatible with NVR and PIKO software system, onvif is not compliant)
- d. All proposed equipment must meet the National Defense Authorization Act.

2. CAMERA TYPE 1: PNM-9030V

WISeNET P series

PNM-9030V

15MP Multi-sensor Panoramic Camera



Key Features

- Max. 15M (6096x2540@180°, 7744x1936@220°) resolution
- 180°/220° panoramic stitching image
- Panoramic stitching, original, crop view channel support
- Max. 30fps at all resolutions (H.265/H.264)
- H.265, H.264, MJPEG codec, WiseStream II supported
- Tampering, Loitering, Directional detection, Virtual line, Enter / Exit, (Dis)Appear, Audio detection, Motion detection, Handover, Sound classification, Heatmap
- micro SD/SDHC/SDXC 2 slots, PoE+, IP66, IK10

Dimensions

Unit : mm (inch)



Accessories (Optional)



PNM-9030V

VIDEO	
Imaging Device	1/2.8" 5M CMOS x 4CH
Total Pixels	2,704(H) x 2,104(V) 5.69M x 4CH
Effective Pixels	2,616(H) x 1,964(V) 5M x 4CH
Scanning System	Progressive scan
Min. Illumination	Color : 0.15lux (F2.0, 1/30sec, 30IRE) / B/W : 0.01lux (F2.0, 1/30sec, 30IRE)
Video Out	Micro USB Type B
LENS	
Focal Length (Zoom Ratio)	4mm
Max. Aperture Ratio	F2.0
Angular Field of View	[180° mode] H : 180°, V : 70° / [220° mode] H : 220°, V : 52°
Min. Object Distance	3m (9.84ft)
Focus Control	Fixed
Mount Type	Board-in type (M12)
PAN / TILT / ROTATE	
Pan / Tilt Range	355° / 60°
OPERATIONAL	
Camera Title	Off / On (Displayed up to 75 characters) - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Grey / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Day & Night	Auto (ICR) / Color / B/W / Schedule
Backlight Compensation	Off / BLC / WDR
Wide Dynamic Range	120dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR III (2D+3D noise filter) (Off / On)
LDC	Support
Motion Detection	Off / On (8ea, 8 point polygonal zones), Handover Off / On (16ea, rectangle zones)
Privacy Masking	- Color : Grey / Green / Red / Blue / Black / White - Mosaic
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
Contrast	Level adjustment
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1 / 12,000sec)
Defog	Off / Manual / Auto
Digital PTZ	Support
Flip / Mirror	Off / On
Intelligent Video Analytics	Tampering, Loitering, Directional detection, Virtual line, Enter/Exit, (Dis)Appear, Audio detection, Motion detection, Sound classification, Heatmap
Alarm I / O	Input 1ea / Output 1ea
Audio In	Line in Supply voltage : 2.5VDC (4mA), Input impedance : approx. 2K Ohm
Audio out	Line out (3.5mm stereo mini jack)
Alarm Triggers	Alarm input, Motion detection, Video&Audio analytics, Network disconnect
Alarm Events	File upload via FTP, E-Mail / Notification via E-Mail Local storage (SD / SDHC / SDXC) or NAS recording at event triggers External output

PNM-9030V

Video Compression Format	H.265 : Main, H.264 : Main/Baseline/High, MJPEG
Resolution	[180° mode] 6096x2540, 5760x2400, 5472x2280, 5184x2160, 4800x2000, 4560x1900, 4096x1704, 3840x1600, 2688x1120, 2560x1064, 2048x852, 1920x800, 1280x532, 640x264 [220° mode] 7744x1936, 6096x1524, 5760x1440, 5472x1368, 5184x1296, 4800x1200, 4560x1140, 4096x1024, 3840x960, 2688x672x 2560x640, 2048x512, 1920x480, 1280x320, 640x160
Max. Framerate	H.265/H.264 : Max. 30fps at all resolutions MJPEG : Max. 15fps at under 2MP
Smart Codec	Manual mode (Area-based : 5ea)
WiseStream II	Support
Video Quality Adjustment	H.264/H.265/MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR, Motion JPEG : VBR
Streaming Capability	Multiple Streaming (Up to 5 for panoramic and 3 profiles for original and crop CH)
Audio Compression Format	G.711 u-law / G.726 Selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 16KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP
Security	HTTPS(SSL) login authentication, Digest login authentication, IP address filtering, User access log, 802.1X authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	15 users at unicast mode
Edge Storage	Micro SD/SDHC/SDXC 2slot (up to 512GB) - Motion images recorded in the micro SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for instant recording
Application Programming Interface	ONVIF Profile S/G SUNAPI(HTTP API)
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungary, Greek
Web Viewer	Supported OS : Windows 8.1, 10, Mac OS X 10.10, 10.11, 10.12 Supported Browser : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Windows 64bit only), Apple Safari 11 (Mac OS X only)
Central Management Software	Smart viewer, SSM

ENVIRONMENTAL

Operating Temperature / Humidity	-40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -30°C
Storage Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66
Vandal Resistance	IK10

ELECTRICAL

Input Voltage / Current	PoE+(IEEE802.3at Class4), DC12V
Power Consumption	Max. 25.5W (PoE+), Max. 21.0W (DC12V)

3. CAMERA TYPE 2: PND-9080R

WISENET P

PND-9080R

4K Network IR Dome Camera

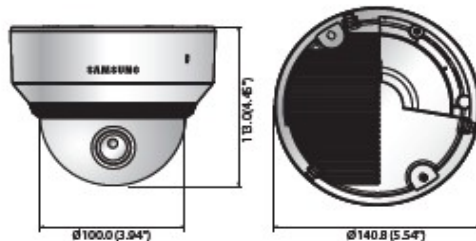


Key Features

- Max. 12 megapixel (4000 x 3000) resolution
- Max. 20fps@12M, Max.30fps@8M
- 0.3Lux@F1.6 (Color), 0Lux (B/W: IR LED on)
- 4.5 ~ 10mm (2.2x) motorized varifocal lens
- H.265, H.264, MJPEG support
- Day & Night (ICR), WDR (120dB), Simple focus, P-Iris
- Motion detection, Defocus detection, Tampering
- SD/SDHC/SDXC memory slot (Max. 128GB), NAS, Local PC support
- Hallway view (Rotate 90° / 270°)
- WiseStream support, Digital auto tracking
- IK08, Bi-directional audio support

Dimensions

Unit : mm (Inch)



Accessories (Optional)

PND-9080R	
VIDEO	
Imaging Device	1/1.7" 12.4M CMOS
Total Pixels / Effective Pixels	4,168(H) x 3,062(V) / 4,072(H) x 3,046(V)
Scanning System	Progressive
Min. Illumination	Color: 0.3Lux (1/30sec, F1.6, 30IRE), 0.01Lux (2sec, F1.6, 30IRE) B/W: 0Lux (IR LED on)
S/N Ratio	50dB
Video Output	CVBS : 1.0Vpp / 75Ω composite, 714 x 480(N), 702 x 576(P), for installation DIP connector type
LENS	
Focal Length (Zoom Ratio)	4.5 ~ 10mm (2.2x) motorized varifocal
Max. Aperture Ratio	F1.6
Angular Field of View	[4096 x 2160] H : 100.3°(Wide) ~ 45.6°(Tele) / V : 49.7°(Wide) ~ 24.0°(Tele) [3840 x 2160] H : 92.3°(Wide) ~ 42.6°(Tele) / V : 49.7°(Wide) ~ 24.0°(Tele)
Min. Object Distance	0.5m (1.64ft)
Focus Control	Simple focus (Motorized WF) / Manual, Remote control via network (Manual, Simple focus)
Lens Type / Mount Type	P-Iris mode / Board-In type
PAN / TILT / ROTATE	
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 352°
OPERATIONAL	
IR Viewable Length	30m (98.43ft)
Camera Title	Off / On (Displayed up to 60 characters) - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Grey / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	Off / BLC / WDR
Wide Dynamic Range	120dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	5SNR (2D+3D noise filter) (Off / On)
Defog	Off / Auto / Manual
Motion Detection	Off / On (8ea, Polygonal)
Privacy Masking	Off / On (16ea, Polygonal) - Color : Gray / Green / Red / Blue / Black / White
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWc / Manual / Indoor / Outdoor (Include mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/2,000sec)
Flip / Mirror	Off / On, Hallway : 90° / 270°
Intelligent Video Analytics	Tampering (Scene change), Virtual line, Enter / Exit, (Dis)Appear, Audio detection, Defocus detection, Digital auto tracking - with metadata
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Alarm input, Motion detection, Video analytics, Audio detection, Network disconnect
Alarm Events	File upload via FTP and E-mail, Notification via E-mail
Pixel Counter	Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output Support (Plug-in viewer only)
NETWORK	
Ethernet	RJ-45 (10/100/1000BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG [8M mode] 4096 x 2160, 3840 x 2160, 2592 x 1944, 2592 x 1464, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240 [12M mode] 4000 x 3000, 3840 x 2160, 2592 x 1944, 2592 x 1464, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240
Resolution	H.265 / H.264 : 20fps@4000 x 3000, 30fps@4096 x 2160 MJPEG : 2fps@4000 x 3000 ~ 2592 x 1464, 15fps@1920 x 1080 ~ 320 x 240
Max. Framerate	H.265 / H.264 : 20fps@4000 x 3000, 30fps@4096 x 2160 MJPEG : 2fps@4000 x 3000 ~ 2592 x 1464, 15fps@1920 x 1080 ~ 320 x 240
Smart Codec / WiseStream	Manual mode (Area-based : 5ea) / Support
Video Quality Adjustment	H.265 / H.264 : Target bitrate level control, MJPEG : Quality level control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 3 profiles)
Audio In	Selectable Mic in / Line in / Built-in mic, Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out (3.5mm mono jack), Max output level : 1Vrms
Audio Compression Format	G.711 u-law/G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 16KHz
Audio Communication	Bi-directional audio (2-way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP/UDP, RTP (TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMP v1/v2c/v3 (MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, URPF, Bonjour, HTTPS (SSL) login authentication, Digest login authentication
Security	IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	15 users at unicast mode SD/SDHC/SDXC (128GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded. Camera can detect automatically when the memory is connected. Memory status display (Normal / Error / Active / Formatting / Lock) NAS (Network Attached Storage), Local PC for instant recording (Plug-in viewer only)
Edge Storage	
Application Programming Interface	ONVIF profile S/G, SUNAPI (HTTP API), S/NP, WISENET Open Platform
Webpage Language	English, French, German, Spanish, Italian, Chinese, Russian, Japanese, Swedish, Portuguese, Turkish, Polish, Czech, Dutch, Hungarian, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.9, 10.10, 10.11 Plug-in free Webviewer - Supported Browser : Google Chrome 47, MS Edge 20 Plug-in Webviewer - Supported Browser : MS Explore 11, Mozilla Firefox 43, Apple Safari 9 * Mac OS X only
Central Management Software	SmartMewer
ENVIRONMENTAL	

4. CAMERA TYPE 3: PNF-9010R

WISENET P

PNF-9010R/9010RV/9010RVM

4K Fisheye Camera



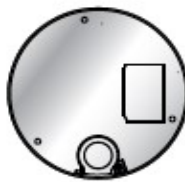
Key Features

- 12 Megapixel (4000 x 3000) Resolution
- H.265, H.264, MJPEG Codec
- Variable View Mode (Fishyeye, Single Panorama, Double Panorama, Quad View Etc)
- On Board Dewarping, Digital PTZ (16x) / Bi-Directional Audio
- True WDR (120dB), WiseStream
- People Counting, Heatmap, Defocus Detection
- Micro SD / SDHC / SDXC (Max. 128GB), PoE

	PNF-9010R	PNF-9010RV	PNF-9010RVM
M12 Connector			✓
IK10, IP66		✓	✓

Dimensions

Unit : mm (Inch)



	PNF-9010R	PNF-9010RV	PNF-9010RVM
VIDEO			
Imaging Device	1/1.7" 12-AMP CMOS		
Total Pixels / Effective Pixels	4,168 x 3,062 / 2,992 x 2,992		
Scanning System	Progressive		
Minimum Illumination	Color: 0.3Lux (F2.2, 30IRE), B/W: 0Lux (IR LED on)		
S/N Ratio	50dB		
Video Output	CVBS: 1.0Vpp / 75Ω Composite, 714x480 (for installation), DVP Connector Type		
LENS			
Focal Length / Max. Aperture Ratio	2.1mm Fixed / F2.2		
Angular Field of View	H: 180° / V: 180° / D: 180°		
Min. Object Distance	0.5m (1.64ft)		
Focus Control	Simple Focus / Manual - Remote Control Via Network		
Lens Type / Mount Type	Fixed Lens / Board Type		
OPERATIONAL			
IR Viewable Length	15m (49.21ft)		
Camera Title	Off / On (Displayed up to 60 characters) - English / Numeric / International characters / Special characters - Common: Multi-line (Max. 5), Color (Grey / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution		
Day & Night	Auto (ICR) / Color / B/W / External / Schedule		
Backlight Compensation	Off / BLC / WDR		
Wide Dynamic Range	120dB		
Contrast Enhancement	SSDR (Off / On)		
Digital Noise Reduction	SSNR (2D+3D noise filter) (Off / On)		
Defog	Off / Auto / Manual		
Motion Detection	Off / On (Bea Polygonal Zones)		
Privacy Masking	Off / On (Bea Polygonal) - Color: Gray / Green / Red / Blue / Black / White		
Gain Control	Off / Low / Middle / High		
White Balance	ATW / AWB / Manual / Indoor / Outdoor		
Electronic Shutter Speed	Minimum / Maximum / Anti Flicker		
Digital Zoom	16x, Digital PTZ (Preset, Group)		
Flip / Mirror	Off / On		
Intelligent Video Analytics	Tampering, Virtual Line, Enter/Exit, (DIS) Appear, Audio Detection, Defocus Detection		
Alarm I/O	Input 1ea / Output 1ea		
Alarm Triggers	Alarm Input, Motion Detection, Video Analytics, Audio Detection, Network Disconnect, SD Card Error, NAS Error		
Alarm Events	File upload via FTP and E-mail, Notification Via E-mail, Local Storage (SD / SDHC / SDXC) or NAS Recording at Event Triggers, External output		
Viewing Composition	Camera Side: Fisheye, Single Panorama, Double Panorama, Fisheye + 4 PTZ Quad View, Fisheye + 8 PTZ		
Pixel Counter	Support (Plug-in Viewer only)		
NETWORK			
Ethernet	RJ-45 (10 / 100 / 1000 BASE-T)		
Video Compression Format	H.265 / H.264 / MJPEG		
Resolution	Double Panorama: 2560 x 1280, 1920 x 960, 1280 x 640, 704 x 352, 640 x 320 Single Panorama: 2560 x 640, 1920 x 480, 1280 x 320, 704 x 176, 640 x 160 Quad View: 2944 x 2208, 2560 x 1920, 2048 x 1536, 1600 x 1200, 1280 x 960, 1024 x 768, 800 x 600, 704 x 576, 640 x 480		
Maximum Framerate	H.265 / H.264: 20fps@4000x3000, 25fps@under 2992x2992, MJPEG: Max. 15fps		
Smart Codec / WiseStream	Manual mode (Area-Based - Sea) / Support		
Video Quality Adjustment	H.265 / H.264: Target Bitrate level Control, MJPEG: Quality Level Control		
Bitrate Control Method	H.265 / H.264: CBR or VBR, MJPEG: VBR		
Streaming Capability	Multiple streaming (Up to 3 profiles)		
Audio In	Selectable (Mic In / Line In / Built-in Mic)		
Audio Out	Supply Voltage: +5VDC (5mA), Input Impedance: Approx. 2K Ohm Line Out (3.5mm Mono Jack), Max output level: 1Vrms		
Audio Compression Format	G.711 u-law/G.726 Selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726-16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC: 48Kbps at 16KHz		
Audio Communication	Bi-Directional		
IP	IPv4, IPv6		
Protocol	TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTCP, RTP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, SIP		
Security	HTTPS/SSL Login Authentication, Digest Login Authentication IP Address Filtering, User Access log, 802.1x Authentication (EAP-TLS, EAP-LEAP)		
Streaming Method	Unicast / Multicast		
Maximum User Access	15 users at Unicast Mode SD/SDHC/SDXC (up to 128GB) - Motion Images Recorded in the SD/SDHC/SDXC Memory Card can be Downloaded - Camera can Detect Automatically when the memory is Connected - Memory Status Display (Normal / Error / Active / Formatting / Lock) - NAS (Network Attached Storage), Local PC for Instant Recording (Plug-in Viewer Only)		
Application Programming Interface	ONVIE Profile S&G, SUNAPI (HTTP API) v2.0, Wisenet Open Platform		
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Portuguese, Turkish, Polish, Czech, Dutch, Hungary, Greek		
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.9, 10.10, 10.11 Plug-in Free Webviewer - Supported Browser: Google Chrome 47, MS Edge 20 Plug-in Webviewer - Supported Browser: MS Explorer 11, Mozilla Firefox 43, Apple Safari 9 *Mac OS X only		
Central Management Software	Wisenet WAVE SmartViewer		
ENVIRONMENTAL			
Operating Temperature / Humidity	-10°C ~ +55°C (-14°F ~ +131°F) / Less than 90% RH (PNF-9010R) -40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH (PNF-9010RV/9010RVM) * Start up should be done at above: -35°C (-31°F)		
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH		
Ingress Protection	N/A (PNF-9010R) IP66 (PNF-9010RV/9010RVM)		
Vibration Resistance	EN55011:2009+A1:2010, EN50581:2012, EN50121-3-2:2015, EN61000-4-2:2009, EN61000-4-3:2006+A2:2010, EN61000-4-4:2012, EN61000-4-5:2014, EN61000-4-6:2009		
Vertical Resistance			

4. CAMERA TYPE 4: PNV-9080R

WISENET P

PNV-9080R

4K Vandal-Resistant Network IR Dome Camera

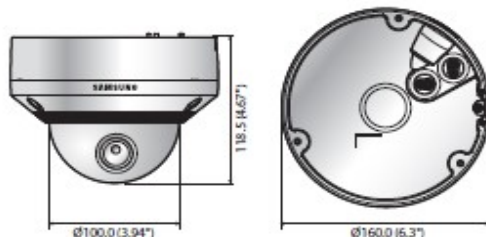


Key Features

- Max. 12 megapixel (4000 x 3000) resolution
- Max. 20fps@12M, Max. 30fps@8M
- 0.3Lux@F1.6 (Color), 0Lux (B/W : IR LED on)
- 4.5 ~ 10mm (2.2x) motorized varifocal lens
- H.265, H.264, MJPEG support
- Day & Night (ICR), WDR (120dB), Simple focus, P-Iris
- Motion detection, Defocus detection, Tampering
- SD/SDHC/SDXC memory slot (Max. 128GB), NAS, Local PC support
- Halfway view (Rotate 90° / 270°)
- WiseStream support, Digital auto tracking
- IP66, IP67, IK10, Bi-directional audio support

Dimensions

Unit : mm (Inch)



	PNV-9080R
VIDEO	
Imaging Device	1/1.7" 12.4M CMOS
Total Pixels / Effective Pixels	4,168,000 x 3,062 (V) / 4,072,000 x 3,046 (V)
Scanning System	Progressive
Min. Illumination	Color : 0.3Lux (1/30sec, F1.6, 30IRE), 0.01Lux (2sec, F1.6, 30IRE) B/W : 0Lux (IR LED on)
S / N Ratio	50dB
Video Output	CVBS : 1.0Vpp / 75Ω composite, 714 x 480(N), 702 x 576(P), for installation DIP connector type
LENS	
Focal Length (Zoom Ratio)	4.5 ~ 10mm (2.2x) motorized varifocal
Max. Aperture Ratio	F1.6
Angular Field of View	(4096 x 2160) H : 100.3°(Wide) ~ 45.6°(Tele) / V : 49.7°(Wide) ~ 24.0°(Tele) (3840 x 2160) H : 92.3°(Wide) ~ 42.6°(Tele) / V : 49.7°(Wide) ~ 24.0°(Tele)
Min. Object Distance	0.5m (1.64ft)
Focus Control	Simple focus (Motorized V/F) / Manual, Remote control via network (Manual, Simple focus)
Lens Type / Mount Type	P-Iris mode / Board-in type
PAN / TILT / ROTATE	
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°
OPERATIONAL	
IR Viewable Length	40m (131.23ft)
Camera Title	Off / On (Displayed up to 60 characters) - W/W : English / Numeric / Special characters - China : English / Numeric / Special / Chinese characters - Common : Multi-line (Max. 5), Color (Grey / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	Off / BLC / WDR
Wide Dynamic Range	120dB
Contrast Enhancement	SSDR (Off / On)
Digital Noise Reduction	SSNR (2D+3D noise filter) (Off / On)
Defog	Off / Auto / Manual
Motion Detection	Off / On (Bea, Polygonal)
Privacy Masking	Off / On (16ea, Polygonal) - Color : Gray / Green / Red / Blue / Black / White
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor (Include mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti Flicker (2 ~ 1/12,000sec)
Flip / Mirror	Off / On, Halfway : 90° / 270°
Intelligent Video Analytics	Tampering (Scene change), Virtual line, Enter / Exit, (Dis)Appear, Audio detection, Defocus detection, Digital auto tracking - with metadata
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Alarm input, Motion detection, Video analytics, Audio detection, Network disconnect
Alarm Events	File upload via FTP and E-mail, Notification via E-mail
Pixel Counter	Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output Support (Plug-in viewer only)
NETWORK	
Ethernet	RJ-45 (10/100/1000BASE-T)
Video Compression Format	H.265 / H.264 (MPEG-4 part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	[8M mode] 4096 x 2160, 3840 x 2160, 2592 x 1944, 2592 x 1464, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240 [12M mode] 4000 x 3000, 3840 x 2160, 2592 x 1944, 2592 x 1464, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240
Max. Framerate	H.265 / H.264 : 20fps@4000 x 3000, 30fps@4096 x 2160 MJPEG : 2fps@4000 x 3000 ~ 2592 x 1464, 15fps@1920 x 1080 ~ 320 x 240
Smart Codec / WiseStream	Manual mode (Area-based : 5ea) / Support
Video Quality Adjustment	H.265 / H.264 : target bitrate level control, MJPEG : Quality level control
Bitrate Control Method	H.265 / H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 3 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 25VDC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out (3.5mm mono jack), Max output level : 1Vrms
Audio Compression Format	G.711 u-law/G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps, AAC-LC : 48Kbps at 16KHz
Audio Communication	Bi-directional audio (2-way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP/UDP, RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3/MIB-2, ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
Security	HTTP(S) login authentication, Digest login authentication
Streaming Method	IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP)
Max. User Access	15 users at unicast mode
Edge Storage	SD/SDHC/SDXC (128GB) - Motion images recorded in the SD/SDHC/SDXC memory card can be downloaded, Camera can detect automatically when the memory is connected, Memory status display (Normal / Error / Active / Formatting / Lock), NAS (Network Attached Storage), Local PC for instant recording (Plug-in viewer only)
Application Programming Interface	ONVIF profile S/G/C, SUNAPI (HTTP API), SVP, Wisenet Open Platform
Webpage Language	English, French, German, Spanish, Italian, Chinese, Russian, Japanese, Swedish, Portuguese, Turkish, Polish, Czech, Dutch, Hungary, Greek
Web Viewer	Supported OS : Windows 7, 8.1, 10, Mac OS X 10.9, 10.10, 10.11 Plug-in free Webviewer - Supported Browser : Google Chrome 47, MS Edge 20 Plug-in Webviewer - Supported Browser : MS Explorer 11, Mozilla Firefox 43, Apple Safari 9 * Mac OS X only SmartViewer
Central Management Software	SmartViewer
ENVIRONMENTAL	

Accessories (Optional)

EE. EXECUTION

1. INSTALLERS

- a. Contractor personnel shall comply with all applicable state and local licensing requirements.

2. PREPARATION

- a. The network design and configuration shall be verified for compatibility and performance with the camera(s).
- b. Network configuration shall be tested and qualified by the Contractor prior to camera installation.
- c. All firmware found in products shall be the latest and most up-to-date provided by the manufacturer, or of a version as specified by the provider of the Video Management Application (VMA) or Network Video Recorder (NVR).
- d. All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.

3. INSTALLATION

- a. Contractor is responsible for full installation of each camera and full connection to the patch panel.
- b. ODOT will connect the patch panel to the NVR.
- c. The Contractor shall carefully follow instructions in documentation provided by the manufacturer to insure all steps have been taken to provide a reliable, easy-to-operate system.
- d. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.
- e. Before permanent installation of the system, the Contractor shall test the system in conditions simulating the final installed environment.
- f. Camera cables shall be Cat6 Orange jacket. Jacket type will be by ceiling space as required by code.
- g. Cables should be labeled at each end with camera ID, location.
- h. Cables must installed and be free of any kinks or splices.
- i. Each camera must have 15 feet of Cat6 cable slack.
- j. Coordinate camera ID nomenclature with ODOT PM
- k. Furnish Site Graphic with camera location and ID for easy user interface.
- l. Provide identification labels for all wiring devices, including switches and Patch Panels. Labels shall be pressure sensitive adhesive machine typewritten 1/8" black letters indicating switch, port and camera ID. Label the Switch and patch panel "Video Surveillance System"
- m. Label the ports
- n. Strap cables as necessary to organize and reduce clutter.

4. STORAGE

- a. The hardware shall be stored in an environment where temperature and humidity are in the range specified by the Manufacturer.

5. WARRANTY

- a. Contractor shall provide a 1 year Installation warranty on all workmanship.

TESTING, IDENTIFICATION, AND ADMINISTRATION

PART 1 – DESCRIPTION, QUALITY ASSURANCE, AND SUBMITTAL

1.1 DESCRIPTION

- A. All testing and identification is to be completed.
- B. Documentation is to cover all parts of the cabling system, equipment, and locations.

1.2 QUALITY ASSURANCE

- A. All labels are to match from cable to outlet to As-Built.
- B. All labels are to be made by means of a permanent printable label.
- C. See Section 17010 for additional requirements.
- D. Code Requirements:
 - 1. BISCI TDMM, Latest edition
 - 2. TINEIA-606 Administration Standard for Commercial Telecommunications Infrastructure
 - 3. TINEIA 5688.2-1 (all addendums)
 - 4. TSB-72
 - 5. ANIS/TINEIA-568-A (all addendums)

1.3 SUBMITTALS

- A. Submit product data for all equipment to be used for testing and labeling.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Any manufacturer of tester that meet the current Category 6 test parameters.
- B. Fiber optic testers
 - a. Power Meter

PART 3 - TESTING AND ADMINISTRATION

3.1 TESTING

- A. Testing will be completed per Industry Standard for cable type to be tested. TIA/EIA- 568-8.1 (category 5e) and TIA/EIA-568-8.2-1 (category 6) ISO/IEC 11801:2002 2nd Edition (classes D, E and F)
- B. Tie Cable Testing
 - a. Wire-map
 - b. Length
 - c. Cable faults
- C. Fiber Testing

- a. Give 1 week written notice, to the Owner Representative (Eric Spond, Eric.SPOND@odot.state.or.us) of test day and confirm the test schedule Owner Representative and ODOT staff may witness the tests.

3.3 ADMINISTRATION

A. Plans

- a. Indicate for all systems
 - i. Equipment list for all locations
 - ii. Camera number and type
- b. Furnish Camera As-Build plans on PDF format.

B. Labeling

- a. Labeling will be done by means of a mechanical device i.e. printer, P-Touch, or other printing device. Hand written labels are not acceptable.

Attachment B

Roseburg DMV

1331 NE Cedar St, Roseburg, OR

97470, USA

6 Camera's

Oregon Department of Transportation – Facilities Service Branch

Project Manager: Eric Spond

Suite B240, 200 Hawthorne Ave SE

Salem, OR 97301

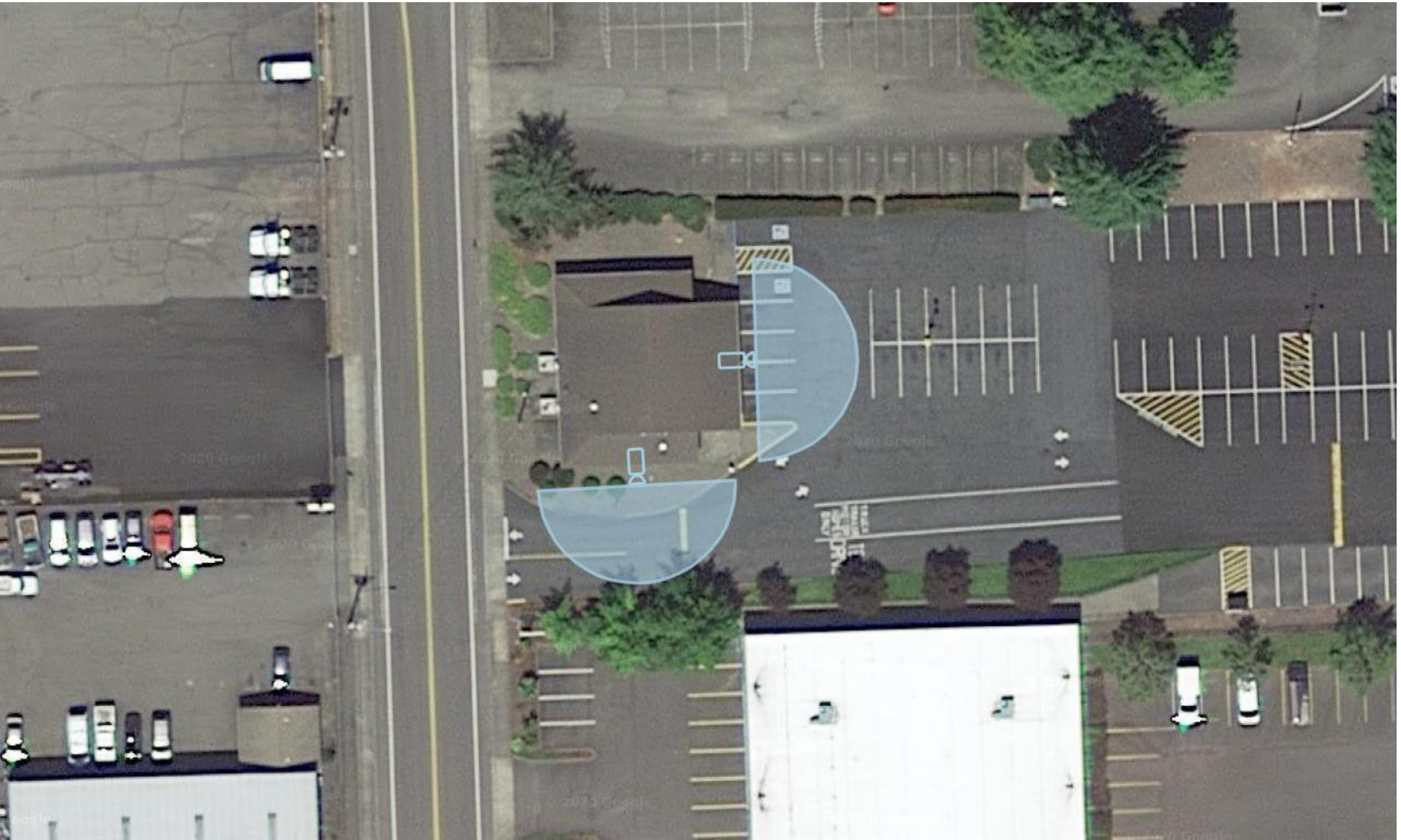
Phone: 503-986-2810



ESB - Roseburg DMV

BID Drawing Camera #	Camera Location	Camera Label	Camera Type	Accessories	Project Notes
1	Parking Lot	R3_L8100101_Parking	PNM-9030V	Ext.WallMount/VandalCover/Weather Cover	180 Degree
2	Side exit	R3_L8100101_SideExit	PNM-9030V	Ext.WallMount/VandalCover/Weather Cover	180 Degree
3	Customer Entrance	R3_L8100101_Cust.Ent.	PND-9080R	Ceiling Mount	12 MP
4	Service Counters	R3_L8100101_Serv.Count.	PNM-9030V	Ceiling Mount	Block Out Counter
5	Fish Eye Room	R3_L8100101_FishEye	PNF-9010R	Ceiling Mount	4K Fish Eye
6	Test Area	R3_L8100101_TestArea	PNF-9010R	Ceiling Mount	4K Fish Eye

Exterior Overview



Camera 1



Model: Hanwha PNM-9030V Resolution: 6096x2540
HFoV: 180° Distance: 33ft Width: 105.0ft PPF: 58.0
Imager: 1/2.8" Focal Length: 4mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft



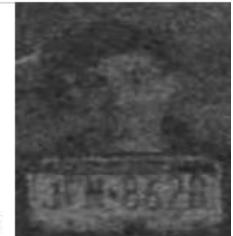
Day - Ideal

Dark No IR



58.0 ppf
33 ft
Away

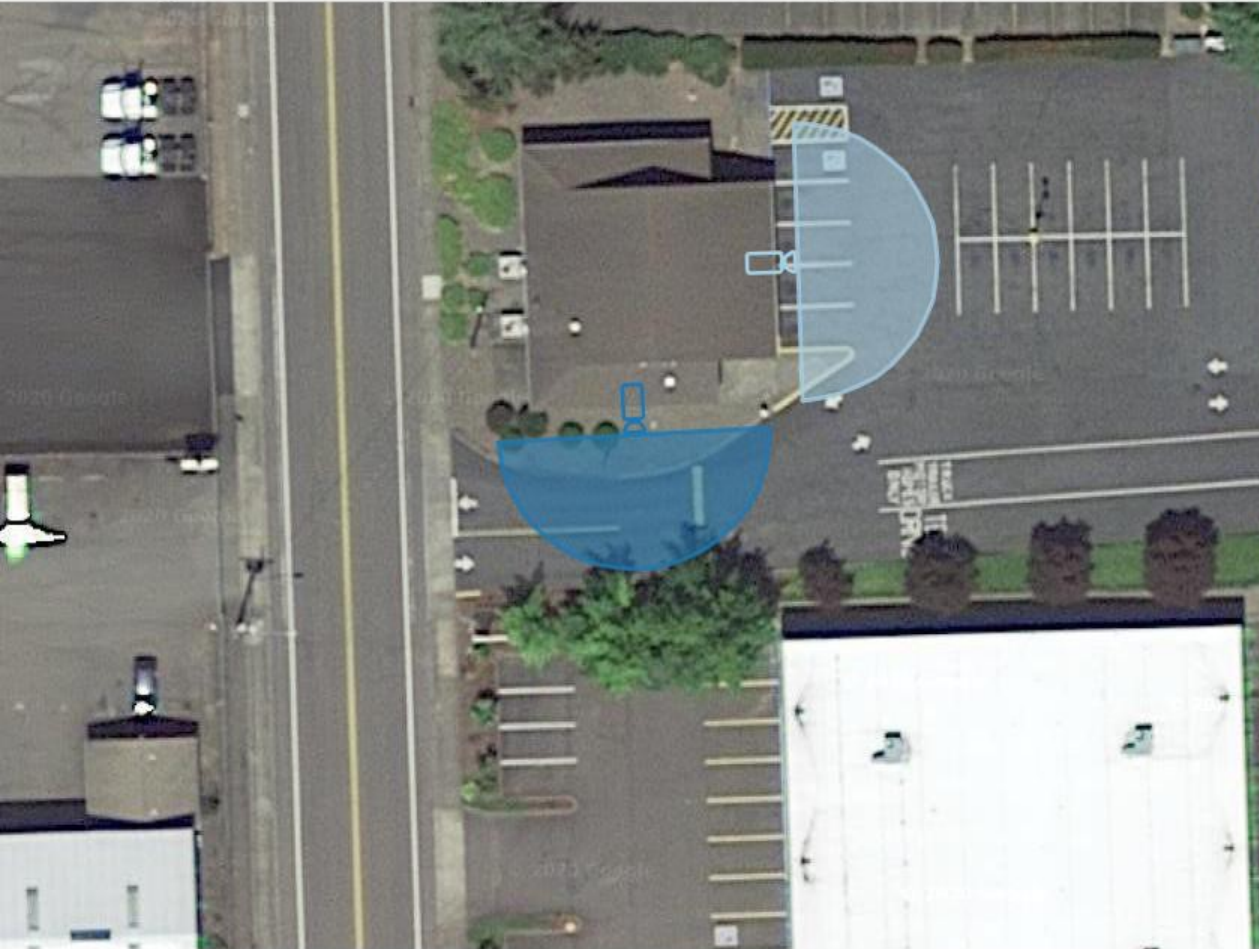
Warning results may vary depending on light and camera



Camera 2



Model: Hanwha PNM-9030V Resolution: 6096x2540
HFoV: 180° Distance: 32ft Width: 101.6ft PPF: 60.0
Imager: 1/2.8" Focal Length: 4mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft



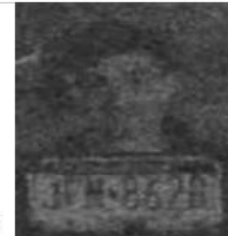
Day - Ideal

Dark No IR ▼

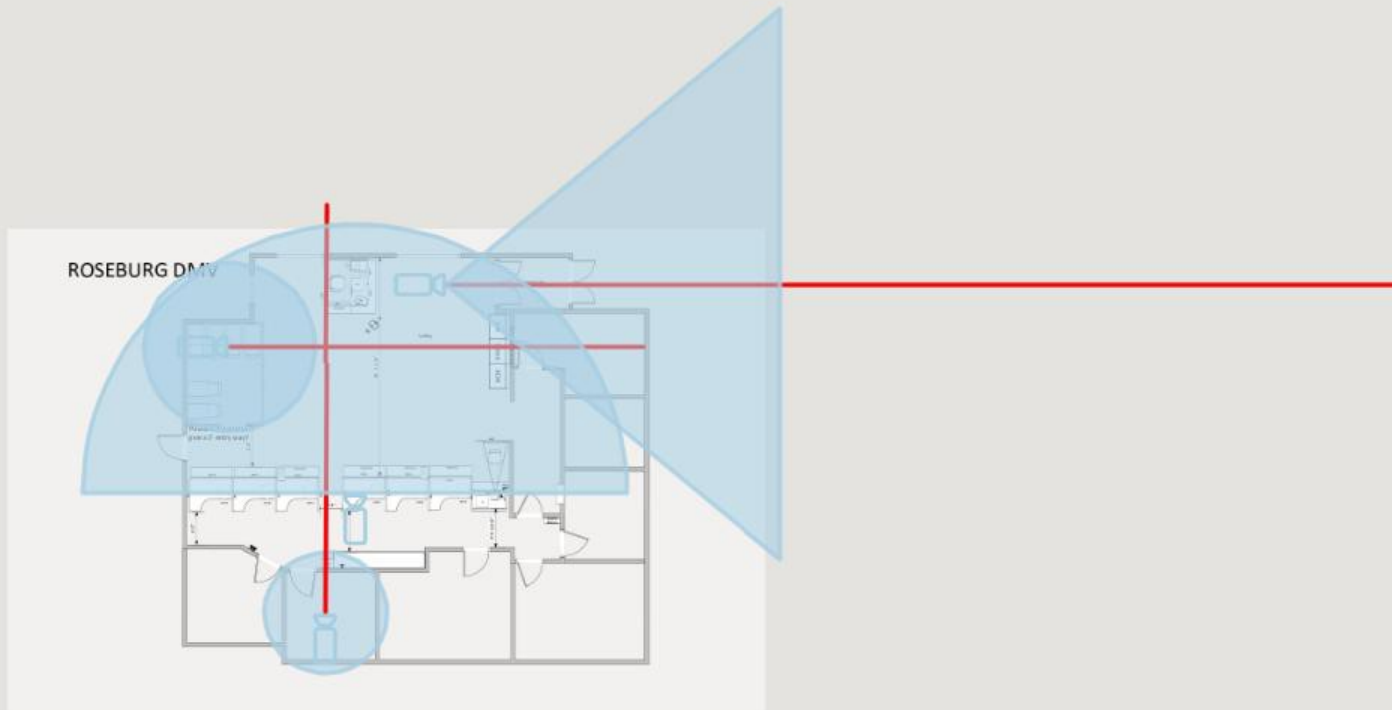


60.0 ppf
32 ft
Away

Warning results may vary depending on light and camera



Interior Overview



Camera 3



Model: Hanwha PND-9080R

Resolution: 12MP

HFoV: 80°

Distance: 40ft

Width: 66.7ft

PPF: 60.0

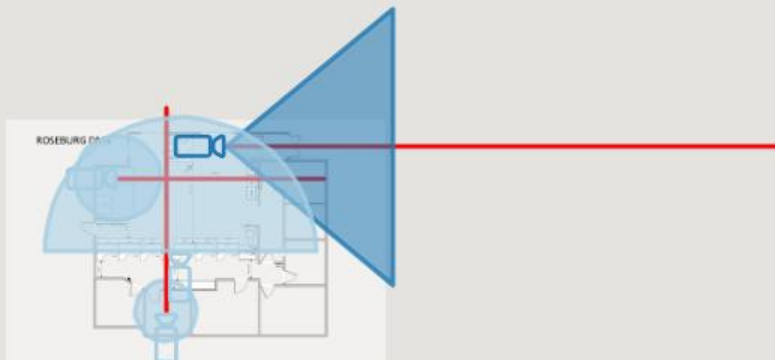
Imager: 1/1.7"

Focal Length: 4.5 - 10mm

Camera Height: 10.00ft

Tilt: 0.00°

Scene Height: 10.00ft



Day - Ideal

Dark With IR



60.0 ppf
40 ft
Away



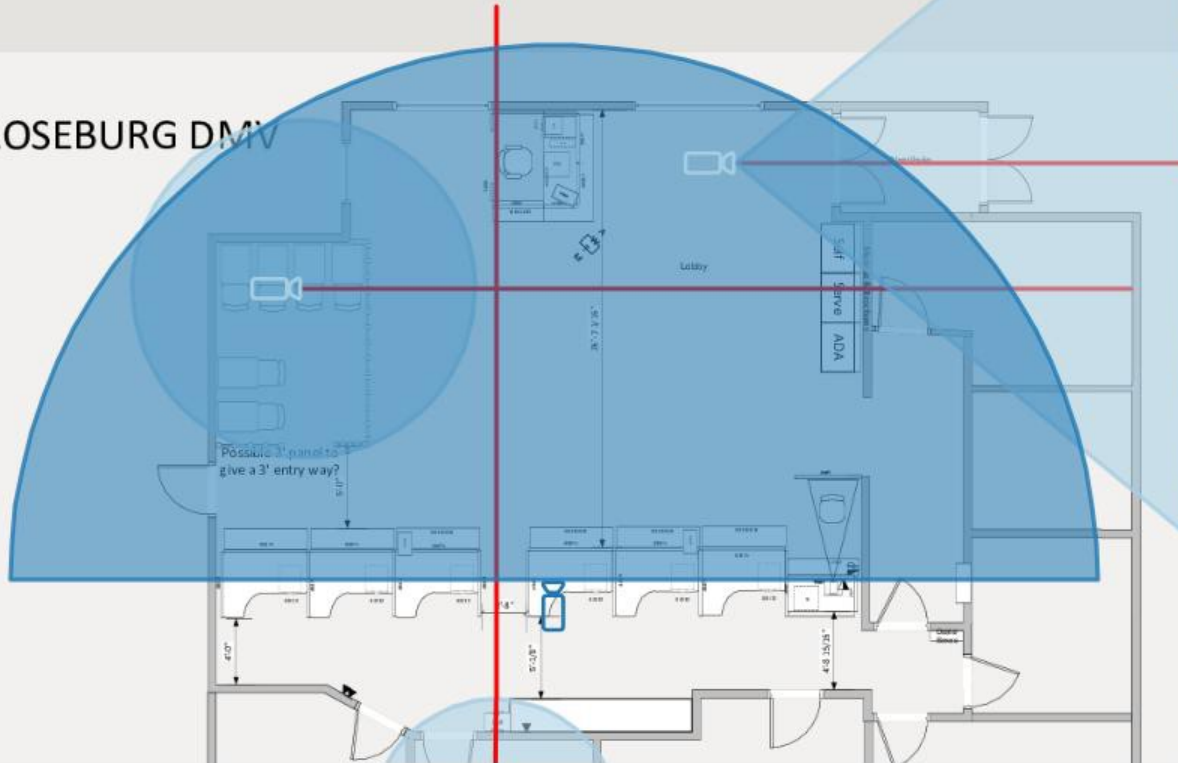
Warning results may vary depending on light and camera

Camera 4



Model: Hanwha PNM-9030V Resolution: 6096x2540
HFoV: 180° Distance: 32ft Width: 101.6ft PPF: 60.0
Imager: 1/2.8" Focal Length: 4mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft

ROSEBURG DMV



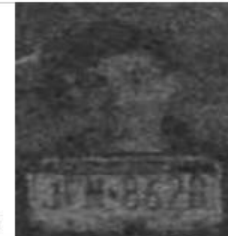
Day - Ideal

Dark No IR



60.0 ppf
32 ft
Away

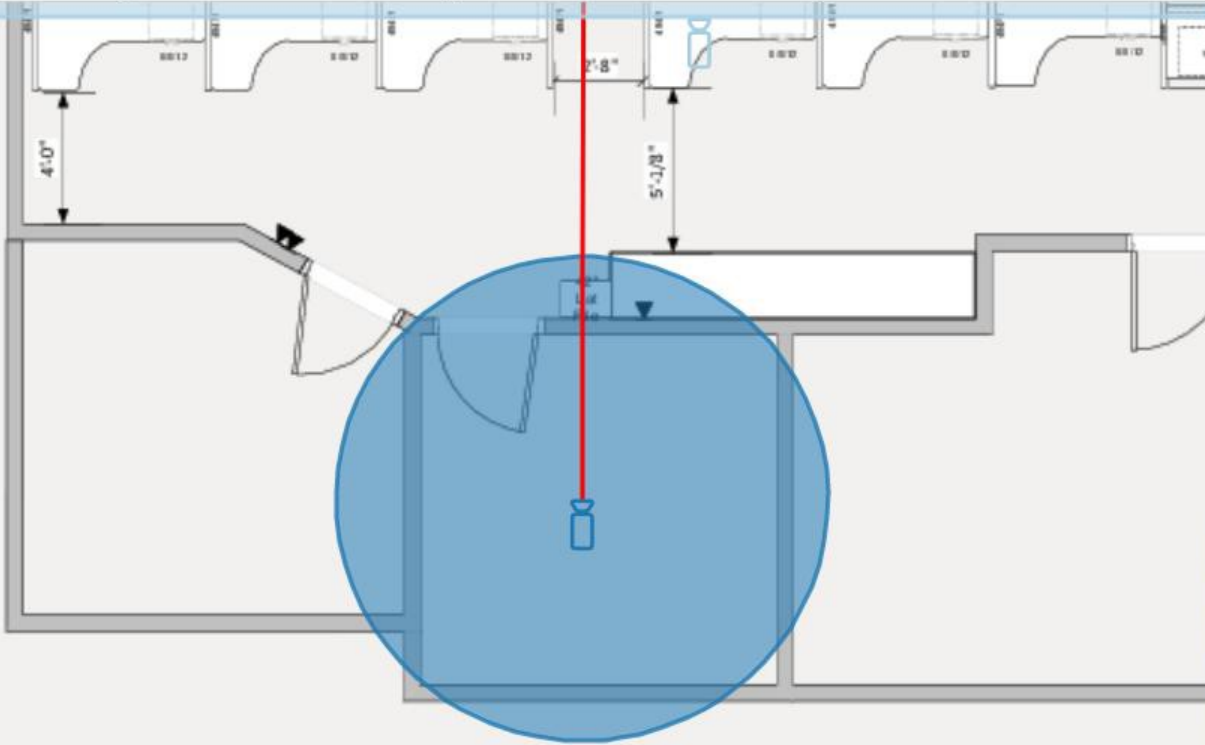
Warning results may vary depending on light and camera



Camera 5



Model: Hanwha PNF-9010R Resolution: 4K
HFoV: 360° Distance: 7ft Width: 46.0ft PPF: 83.5
Imager: 1/1.7" Focal Length: 2.1mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft



Day - Ideal

Dark With IR



83.5 ppf
7 ft
Away
Warning results may vary depending on light and camera

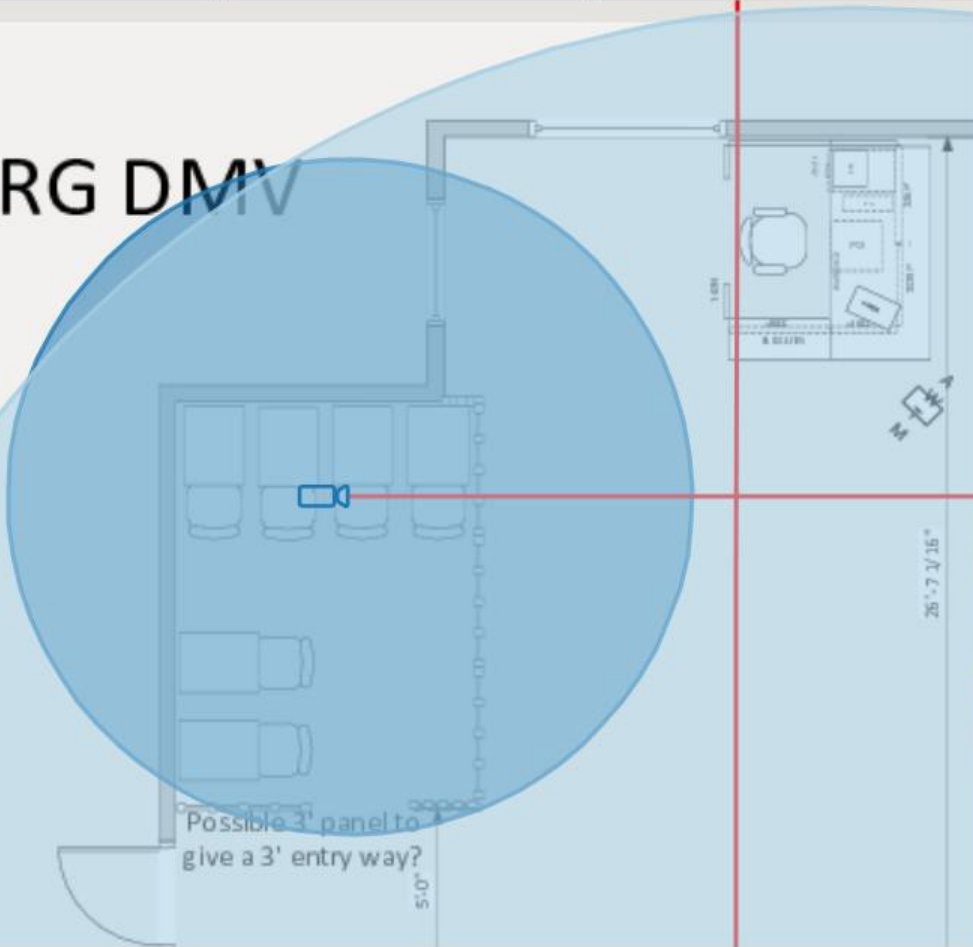


Camera 6



Model: Hanwha PNF-9010R Resolution: 4K
HFoV: 360° Distance: 10ft Width: 64.0ft PPF: 60.0
Imager: 1/1.7" Focal Length: 2.1mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft

ROSEBURG DMV



Day - Ideal

Dark With IR



60.0 ppf
10 ft
Away
Warning results may vary depending on light and camera

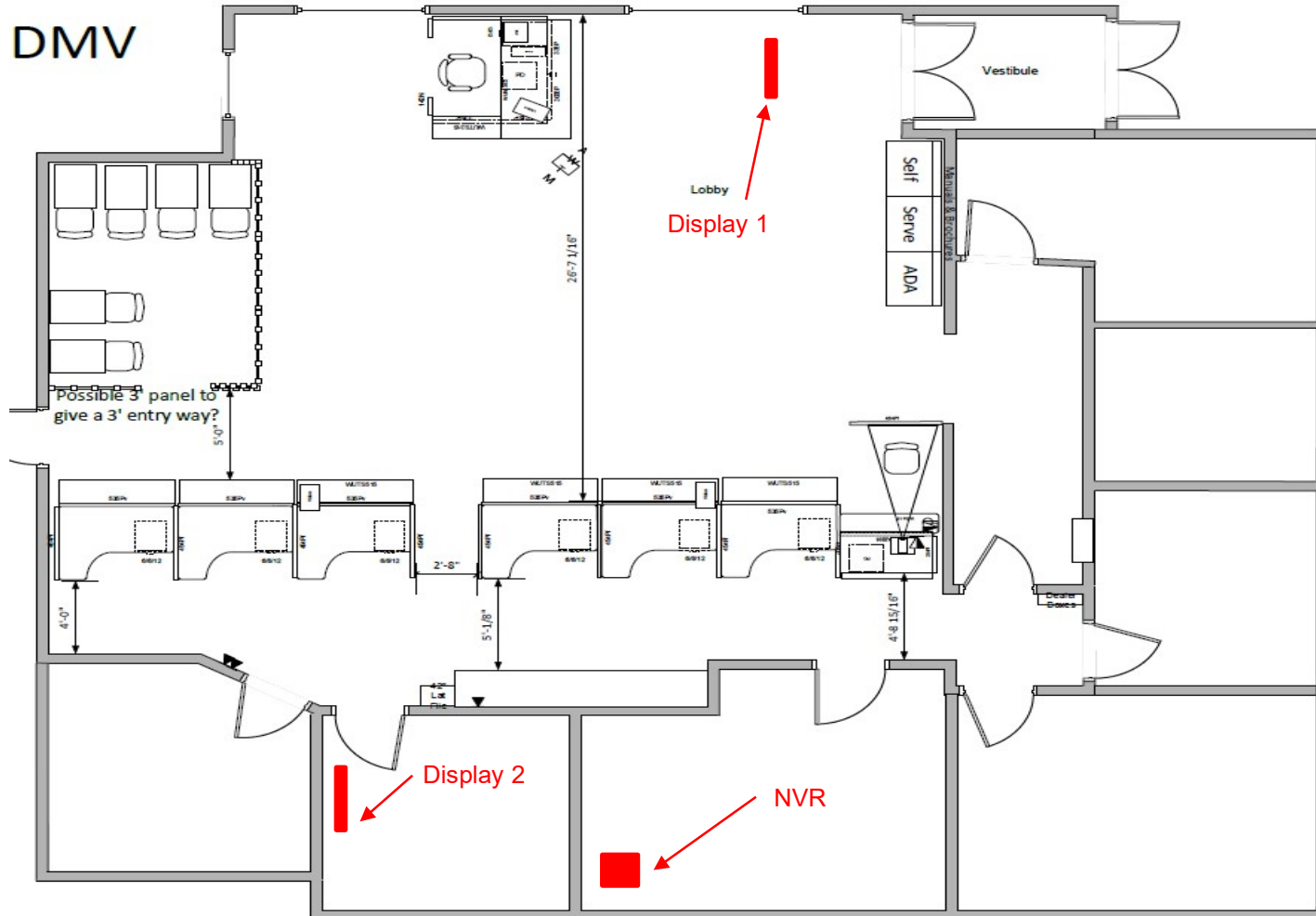


Monitor Display Locations

Display 1 :

Samsung N5300 LED TV (or approved equal), Supply Power, Mounting Bracket & SPD-150 49CH Network Video Decoder (or approved equal); TV will be located on ceiling facing customer entrance
Display 2: Samsung N5300 LED TV (or approved equal), Supply Power, Display on Desk; Wireless Mouse and Keyboard & 10th Gen Brix Mainstream Mini PC System BRi7H-10510 (or approved equal) to control and access NVR, and provide Vertiv Liebert GXT5 UPS 500 - 3000VA 120V for power backup.

Furnish Minimum 24 Port Patch Panel, Plenum CAT 6 – Orange Cable, 18Gbps Bandwidth; UltraHD, 4k@60Hz High Speed HDMI Cables as required for complete operating system as noted per specifications



SPD-150

49CH Network Video Decoder

or approved
equal



Key Features

- Video decoding up to 49 cameras (HDMI, VGA, BNC)
- Clone & Expand mode support (HDMI, VGA)
- Max. 4K resolution@HDMI, Max. 1080p@VGA
- Decode video stream@12MP, 8MP, 5MP, 3MP, 1080p, 720p, 4CIF
- H.265, H.264, MJPEG codec support
- Various view mode, Hallway View
 - (HDMI) 1 / 4 / 6 / 8 / 9 / 13 / 16 / 25 / 36 (32) / 2V / 3V
 - (VGA) 1 / 4 / 6 / 8 / 9 / 13 / 16 / 2V / 3V
- Up to 20 layouts and sequence
- Managemnt using local UI
- Configuration export / import
- Upgrade using USB
- 12V DC, PoE

SPD-150

NETWORK		
Operating System	Embedded Linux	
Output	HDMI	1ea (up to 4K)
	VGA	1ea (up to 1080p)
	CVBS	1ea (704 x 480 (30fps), 704 x 576 (25fps))
External	Ethernet	1ea (10/100/1000 BASE-T)
	USB	USB 2.0 2ea
	Audio Out	1 out
ENVIRONMENTAL		
Operating Temperature / Humidity	0°C ~ +40C (+32°F ~ +104°F) / 20% ~ 85% RH	
ELECTRICAL		
Input Voltage / Current	12V DC, PoE (IEEE802.3af)	
Power Consumption	Max. 8.4W (12V DC), Max. 8.4W (PoE)	
MECHANICAL		
Color / Material	Dark Gray / Metal	
Dimensions (WxHxD)	178.0 x 34.0 x 187.8mm (7.01" x 1.34" x 7.39")	
Weight	Approx. 0.68Kg (1.50 lb)	
SOFTWARE		
Video	Codec	H.265 / H.264 / MJPEG
	Network Performance	200Mbps
	Max. Channel	49CH (HDMI : 32CH, VGA : 16CH, CVBS : 1CH)
	Max. Decoding Performance	120fps@8MP, up to 12MP
	Division (/Monitor)	Clone mode : 1 / 4 / 6 / 8 / 9 / 13 / 16 / 25 / 36 (32) / 2V / 3V Expand mode : (HDMI) 1 / 4 / 6 / 8 / 9 / 13 / 16 / 25 / 36 (32) / 2V / 3V (VGA) 1 / 4 / 6 / 8 / 9 / 13 / 16 / 2V / 3V
	Layout	Up to 20
Audio	Codec	G.711 / G.726 / AAC
Management	Local UI	
Time Setting	NTP / Manual	

* The latest product information / specification can be found at hanwha-security.com
* Design and specifications are subject to change without notice.



Vertiv™ Liebert® GXT5 UPS

500 - 3000VA 120V

Intelligent and Efficient UPS
for Protection of Your
Mission-Critical Applications



Vertiv™ Liebert® GXT5 | 500 - 3000VA 120V UPS

Technical Specifications

	GXT5-500LVRT2UXL	GXT5-750LVRT2UXL	GXT5-1000LVRT2UXL	GXT5-1500LVRT2UXL	GXT5-2000LVRT2UXL	GXT5-3000LVRT2UXL
Ratings (VA/W)	500VA/500W	750VA/750W	1000VA/1000W	1500VA/1350W	2000VA/1800W	3000VA/2700W

Dimensions, inches (mm)

Unit W x D x H	16.9 x 15.7 x 3.4 (430 x 400 x 85)	16.9 x 15.7 x 3.4 (430 x 400 x 85)	16.9 x 15.7 x 3.4 (430 x 400 x 85)	16.9 x 18.5 x 3.4 (430 x 470 x 85)	16.9 x 18.5 x 3.4 (430 x 470 x 85)	16.9 x 21.3 x 3.4 (430 x 540 x 85)
----------------	---------------------------------------	---------------------------------------	---------------------------------------	---------------------------------------	---------------------------------------	---------------------------------------

Weight, pounds (kg)

Unit	37 (16.8)	37 (16.8)	37 (16.8)	46.2 (21)	47.5 (21.6)	66(30)
------	-----------	-----------	-----------	-----------	-------------	--------

Input AC Parameters

Range	Typical 120V Range: 60-150V	Typical 120V Range: 60-150V	Typical 120V Range: 60-150V	Typical 120V Range: 60-150V	Typical 120V Range: 60-150V	Typical 120V Range: 60-150V
Frequency	40-70Hz; Auto Sensing	40-70Hz; Auto Sensing	40-70Hz; Auto Sensing	40-70Hz; Auto Sensing	40-70Hz; Auto Sensing	40-70Hz; Auto Sensing
Input Power Cord	10 ft. attached w/ NEMA 5-15P plug	10 ft. attached w/ NEMA 5-15P plug	10 ft. attached w/ NEMA 5-15P plug	10 ft. attached w/ NEMA 5-15P A plug	10 ft. attached w/ NEMA L5-20P A plug	10 ft. attached w/ NEMA L5-30P plug

Output AC Parameters

Output Receptacles	5-15R x 6	5-15R x 6	5-15R x 6	5-15R x 6	L5-20R+5-20R x 6	L5-30R+5-20R x 6
Typical 120V User selectable output	110/115/120/125VAC (user-configurable); ±3%	110/115/120/125VAC (user-configurable); ±3%	110/115/120/125VAC (user-configurable); ±3%	110/115/120VAC (user-configurable); ±3%	110/115/120VAC (user-configurable); ±3%	110/115/120VAC (user-configurable); ±3%
Waveform	Sine wave	Sine wave	Sine wave	Sine wave	Sine wave	Sine wave
Utility (AC) Mode Overload	>200% for 250ms; 150- 200% for 50 seconds; 125- 150% for 60 seconds; 105-125% for 60 seconds	>200% for 250ms; 150- 200% for 50 seconds; 125- 150% for 60 seconds; 105-125% for 60 seconds	>200% for 250ms; 150- 200% for 50 seconds; 125- 150% for 60 seconds; 105-125% for 60 seconds	>200% for 250ms; 150- 200% for 2 seconds; 125- 150% for 50 seconds; 105-125% for 60 seconds	>200% for 250ms; 150- 200% for 2 seconds; 125- 150% for 50 seconds; 105-125% for 60 seconds	>200% for 250ms; 150- 200% for 2 seconds; 125- 150% for 10 seconds; 105-125% for 15 seconds

Battery

Type	Valve-regulated, non-spillable, lead acid	Valve-regulated, non-spillable, lead acid	Valve-regulated, non-spillable, lead acid	Valve-regulated, non-spillable, lead acid	Valve-regulated, non-spillable, lead acid	Valve-regulated, non-spillable, lead acid
Backup Time (100% Load)	15 Minutes	8.5 Minutes	6 Minutes	5 Minutes	3 Minutes	3 Minutes
Backup Time (50% Load)	36.5 Minutes	21.5 Minutes	15 Minutes	13 Minutes	9 Minutes	9 Minutes
+1 External Battery Cabinet (100% Load)	65 Minutes	41 Minutes	28.5 Minutes	25 Minutes	17 Minutes	17 Minutes
+1 External Battery Cabinet (50% Load)	132 Minutes	88 Minutes	65 Minutes	59 Minutes	42 Minutes	43.5 Minutes

Environmental Requirements

Operating Temperature, °F (°C)	+32 to +104 (0 to 40)	+32 to +104 (0 to 40)	+32 to +104 (0 to 40)	+32 to +104 (0 to 40)	+32 to +104 (0 to 40)	+32 to +104 (0 to 40)
Storage Temperature, °F (°C)	-4 to +140 (-20 to 60) contain batteries will be from -15 to 40°C.	-4 to +140 (-20 to 60) contain batteries will be from -15 to 40°C.	-4 to +140 (-20 to 60) contain batteries will be from -15 to 40°C.	-4 to +140 (-20 to 60) contain batteries will be from -15 to 40°C.	-4 to +140 (-20 to 60) contain batteries will be from -15 to 40°C.	-4 to +140 (-20 to 60) contain batteries will be from -15 to 40°C.
Relative Humidity	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing
Operating Elevation	10,000 ft. (3,000m)	10,000 ft. (3,000m)	10,000 ft. (3,000m)	10,000 ft. (3,000m)	10,000 ft. (3,000m)	10,000 ft. (3,000m)
Storage Elevation	50,000 ft. (15,000m)	50,000 ft. (15,000m)	50,000 ft. (15,000m)	50,000 ft. (15,000m)	50,000 ft. (15,000m)	50,000 ft. (15,000m)
Audible Noise	<46dBA max @ 3 ft. (1m) front and sides	<46dBA max @ 3 ft. (1m) front and sides	<46dBA max @ 3 ft. (1m) front and sides	< 46dBA at 3 ft. (1m) front and side	<48dBA max @ 3 ft. (1m) front and side	<48dBA max @ 3 ft. (1m) front and side

GIGABYTE™



GIGABYTE 10th Gen BRIX Mainstream Mini PC System

**BRI7H-10710 / BRI7H-10510 /
BRI5H-10210 / BRI3H-10110**



Perfect fit for any space, 24/7 operation in consumer/commercial usage with low power consumption.

Product Feature

- Features latest Intel® 10th gen. core processors
- All new modular chassis design
- Ultra compact PC design at only 0.6L (46.8 x 119.5 x 119.5mm)
- 1 x M.2 SSD (2280) slot
- 2 x SO-DIMM DDR4 slot (2666 MHz)
- Intel® IEEE 802.11 AC ,Dual Band Wi-Fi & Bluetooth 4.2
- Dual HDMI 2.0 outputs, support 2x 4K@60P
- 6 x USB 3.2 Gen2 ports (5 x Type-A + 1 x Type-C support)
- Intel Gigabit LAN
- Optional daughter board available (For 2nd COM port +2nd LAN port)
- Headphone/microphone jack
- Support up to 50 degree (i3 model)
- VESA mounting bracket (75 x 75mm + 100 x 100mm)

Order Information

BRI7H-10710	BRI7H-10510
BRI5H-10210	BRI3H-10110

SPEC

Dimension	46.8 x 119.5 x 119.5 mm (1.84" x 4.7" x 4.7")
Motherboard Size	105 x 112.4 mm
CPU	Intel® Core™ Six Core i7-10710U 4.7GHz / 1.1GHz
	Intel® Core™ Quad Core i7-10510U 4.9GHz / 1.8GHz
	Intel® Core™ Quad Core i5-10210U 4.2GHz / 1.6GHz
	Intel® Core™ Dual Core i3-10110U 4.1GHz / 2.1GHz
Memory	2 x SO-DIMM DDR4 slots
	2666MHz
	Max. 64GB
LAN	Gigabit LAN (Intel i219V)
Graphic	Intel® UHD Graphics 620
Audio	Realtek ALC255
HDMI Resolution MAX	HDMI2.0a ws HDCP 2.2
	4096 x 2304 @ 60Hz
	HDMI2.0a ws HDCP 2.2
	4096 x 2304 @ 60Hz
Expansion Slots	1 x M.2 slot (2280_storage) PCIe X4 /
	SATA Support Optane memory
	1 x PCIe M.2 NGFF 2230 A-E key slot occupied by the WiFi+BT card
Front I/O	1x Power Button
	1 x USB 3.2 Gen2 Type-C™ Support
	3 x USB 3.2 Gen2
	1 x head phone jack with MIC
Rear I/O	2 x HDMI(2.0a)
	2 x USB 3.2 Gen2
	1 x RJ45
	1 x DC-In
Side I/O	1 x Kensington lock slot
	RS 232 Port

or approved
equal

Ultra Slim

Certified Premium High Speed HDMI® Cables with Ethernet



PART NUMBER	LENGTH	AWG	O.D.
USCP1.5	1.5 ft	34	3.0 mm
USCP03	3 ft	34	3.0 mm
USCP06	6 ft	34	3.0 mm
USCP08	8 ft	34	3.0 mm

- Enables transmission of High Dynamic Range (HDR) video
- Full 18Gbps bandwidth
- UltraHD, 4K@60Hz, 4:4:4 chroma sampling
- EMI tested to ensure cables minimize interference with wireless signals
- Up to 32 audio channels with ARC for a multi-dimensional immersive audio experience
- HD Audio Formats such as DTS-HD Master Audio, Dolby TrueHD, Dolby Atmos, and more
- Support for the wide angle theatrical 21:9 video aspect ratio
- Certified Premium HDMI ensures installations are ready for today's 4K/UltraHD environment and are future-proofed
- Features SecureFit connectors which are pull tested up to 7 lbs providing 45% stronger connections than regular HDMI connectors
- UL Listed, CL3 Rated

or approved
equal



SMARTMOUNT.

Universal Ceiling Mounts

FOR 32" TO 90" DISPLAYS

The SmartMount® PLCM-UNL(-CP) Universal Ceiling Mounts utilize 1.5" NPT extension pipes for versatility, support, and connection. The 1.5" NPT threaded pipes make it simple to customize each mount to your specific application. The PLCM-UNL kit combines the PLP-UNL Universal I-Shaped Adaptor plate, the PLCM-2 tilt box, and the EXT103 fixed length 1.5" NPT column, to deliver a drop of 36" for display mounting patterns of up to 600 x 400mm. When combined with a Peerless-AV® ceiling plate, it provides the perfect combination for flat panel ceiling mounting in sports facilities, airports, lobbies, or retail environments.

PLCM-UNL's 360° of side-to-side swivel helps create the best viewing angle from anywhere in the room.



Additional Features

- ✓ -5° to 20° adjustable tilt and 360° swivel
- ✓ Peerless-AV EXT103 Aluminum Extension Column included, providing a 36" drop
- ✓ Simple hook-on display installation
- ✓ Universal I-Shaped Adaptor fits displays with mounting holes up to 600 x 400mm
- ✓ Landscape or portrait orientation
- ✓ Integrated cable management protects, contains and conceals cables for a clean, professional installation
- ✓ Agion® antimicrobial* finish assists in controlling the spread of infections with PLCM-UNL-CP-AB/AW models

*Antimicrobial protection is limited to the treated article and does not protect a user against disease causing bacteria. Always clean products thoroughly after each use. Visit agion-tech.com for more details.



or approved
equal

TVA765



Display size
42"-75"



Max load
105lb (48kg)

tru•vue™

Full-Motion Tilting Wall Mount

FOR 42" TO 75" DISPLAYS

The TruVue™ series wall mounts combine ease of installation with viewing flexibility. With TVA765, extend the TV up to 16.07" (408mm) or fully-retract it to just 2.61" (66mm) from the wall for the optimum viewing angle. The Hook-and-Hang™ system offers easy, one-person installation of the TV. A ratcheting handle provides locking tilt capability for quick adjustments to the amount of tilt, reducing glare and optimizing the viewing angle. With the cable management feature, cables can be routed and secured for a clean and clutter-free look.

Full-motion capabilities allow you to swivel, tilt, extend or retract your TV for the perfect viewing angle.



Additional Features

- ☑ Positions TV only 2.61" (66mm) from the wall or extends up to 16.07" (408mm)
- ☑ Includes necessary wall and TV attachment hardware
- ☑ Accommodates VESA® 100 x 100, 200 x 100, 200 x 200, 300 x 200, 300 x 300, 400 x 200, 400 x 300, 400 x 400 and 600 x 400mm mounting hole patterns
- ☑ Design is UL listed and tested to four times the stated load capacity
- ☑ Cable management provides a point to secure and route cables for safety and a clean look
- ☑ TV can be rotated left and right after installation for guaranteed leveling



Attachment C

(Sample) STATE OF OREGON PUBLIC IMPROVEMENT AGREEMENT FORM for the project

ESB Roseburg DMV Security System Upgrade

Contract Number [REDACTED]

Resulting from Request for Bid No. 34278

This Agreement (the "Agreement"), made by and between the State of Oregon, acting by and through the Department of Transportation, hereinafter called OWNER, and [REDACTED] hereinafter called CONTRACTOR, (collectively the "Parties") shall become effective on the date this Agreement has been signed by all the Parties and all required State of Oregon governmental approvals have been obtained, whichever is later. Unless otherwise defined in the in this Agreement or its attachments, the capitalized terms used herein are defined in Section A.1 of the State of Oregon General Conditions for Public Improvement Contracts.

WITNESSETH:

1. Contract Price, Contract Documents and Work.

CONTRACTOR, in consideration of the sum of \$ [REDACTED] (the "Contract Price"), to be paid to CONTRACTOR by OWNER in the manner and at the time hereinafter provided, and subject to the terms and conditions provided in the Contract Documents, all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents. CONTRACTOR understands and agrees that various Attachments to the Request for Bid and other Contract Documents were not physically attached but were and are incorporated by reference and have the same force and effect as if fully set forth therein.

CONTRACTOR shall perform the Work for the Contract Price pursuant to Request for Bids No. 33634 (including all Addenda thereto, if any), CONTRACTOR'S response to the Request for Bid, and the following attachments to the Request for Bid, which were attached electronically to the Request for Bid advertisement and are incorporated into the Contract by this reference:

RFB Part 2	Pricing Submittal (as submitted by Contractor with its Bid)
Attachment A	Specifications
Attachment B	ESB Roseburg DMV Security System Upgrade
Attachment C	Sample Public Improvement Agreement Form
Attachment D	Terms and Conditions
Attachment E	Contract Closeout Compliance Checklist

2. Representatives.

Unless otherwise specified in the Contract Documents, OWNER designates the person listed below as its Authorized Representative in the administration of the Contract. The Owner's Authorized Representative shall be the initial point of contact for matters related to performance, payment, authorization, and to carry out the responsibilities of OWNER. CONTRACTOR has named [REDACTED] its authorized representative to act on its behalf.

Owner's Authorized Representative:

3. Project Location:

Roseburg DMV
1329 NE Cedar St
Roseburg, Oregon 97470

4. Contract Dates (See the General Conditions for definitions of Substantial and Final Completion):

Start Date: Immediately after issuance of notice to proceed

Substantial Completion: 8 weeks from NTP

Final Completion: 9 weeks from NTP

5. Liquidated Damages.

Failure to achieve Substantial Completion by the time specified above for Substantial Completion will result in damage to OWNER. Since actual damage will be difficult to determine, it is agreed that CONTRACTOR shall pay to OWNER, not as a penalty but as liquidated damages, **\$100.00** per calendar day for each day elapsed in excess of the Substantial Completion date specified in Section 3 of this Agreement until Substantial Completion is achieved.

6. Installation.

Installation of camera equipment must be done outside of DMV business hours to not impact customer or employees conducting DMV business. Initial Installations schedule will need to be worked out with the ODOT Project Manager, DMV Operations Team, DMV field office and Vendor.

a. DMV Business Hours:

- i. *Majority of DMV Offices/Business Hours:* 8:00am- 5:00 PM on M, T, Th, F, except for Wednesday the office opens late for staff meetings 9:00AM – 5:00PM.
- ii. *Some DMV Offices/Business Hours:* Varies: For specific office hours visit:
<https://www.oregon.gov/ODOT/DMV/Pages/offices/index.aspx>

b. Recommended Camera Installation Times:

Prior to business hours vendor can work to install cameras in the lobby. Once office opens, additional work can be done in the back office areas if not negatively impacting the employees serving DMV customers.

7. Integration.

THE CONTRACT DOCUMENTS CONSTITUTE THE ENTIRE AGREEMENT BETWEEN THE PARTIES. NO WAIVER, CONSENT, MODIFICATION OR CHANGE OF TERMS OF THE CONTRACT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY BOTH PARTIES. SUCH WAIVER, CONSENT, MODIFICATION OR CHANGE, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO OTHER UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS CONTRACT. CONTRACTOR, BY THE SIGNATURE BELOW OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT IT HAS READ THE CONTRACT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

In witness whereof, OWNER executes this Agreement and CONTRACTOR does execute the same as of the day and year indicated below.

CONTRACTOR'S DATA:

NAME:

ADDRESS:

CONTRACTOR'S AUTHORIZED SIGNATURE:

Title

Date

OWNER'S AUTHORIZED SIGNATURE:

Title

Date

ATTACHMENT D – TERMS AND CONDITIONS

PREVAILING WAGE RATES (BOLI REQUIREMENTS)

The Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates (“PWR”) and the required public works bond as outlined in **Sections C.1, C.2 & G.2.3** of the General Conditions.

Before starting Work the Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by ORS 279C.836 and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting the Subcontractor to start Work.

This RFB and the resulting Contract are subject to the following Bureau of Labor and Industries (“BOLI”) wage rate requirements and the prevailing wage rates set forth in the following booklet, as amended, which while not physically attached, is incorporated herein by reference with the same force and effect as though fully set forth herein, and is available at the following web site:

The **“PREVAILING WAGE RATES for Public Works Contracts in Oregon”** dated **January 1, 2020, as amended February 1, 2020**

These BOLI wage rates are available on line at:

http://www.oregon.gov/boli/WHD/PWR/Pages/pwr_state.aspx

The Work will take place in Douglas County, BOLI Region 6.

The fee required by ORS 279C.825(1) will be paid by the Agency to the Commissioner of the Bureau of Labor and Industries under the administrative rules of the Commissioner.

CONFLICT OF INTEREST:

ODOT’s Conflict of Interest Guidelines are available on ODOT’s website (see Guidance, Policy & Resources) and are incorporated into this Contract: <http://www.oregon.gov/ODOT/Business/Procurement/Pages/PSK.aspx>
See Section C.1.4.

GENERAL CONDITIONS:

This Request For Bids and the resulting Contract are governed by the STATE OF OREGON GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS, January 1, 2012 Edition (“General Conditions”) which, although not physically attached, is incorporated herein by reference as an Attachment with the same force and effect as though fully set forth herein:

<http://www.oregon.gov/das/Procurement/Guiddoc/GenCon4PI.pdf>

A.3.5 The characterization of provisions of the Contract as material provisions or the failure to comply with certain provisions as a material breach of the Contract shall in no way be construed to mean that any other provisions of the Contract are not material or that failure to comply with any other provisions is not a material breach of the Contract.

2. Make the following revisions to Section B.5 COMPLIANCE WITH GOVERNMENT LAWS AND REGULATIONS:

- **Add the following to the end of Section B.5.1:**

All rights and remedies available to Owner under applicable federal, state and local laws are also incorporated by reference herein and are cumulative with all rights and remedies under the Contract.

- **Section B.5.2(a) is deleted and replaced with the following:**

(a) Pursuant to ORS 279A.110, Contractor shall not discriminate against a disadvantaged business enterprise, a minority-owned business, a woman-owned business, a business that a service-disabled veteran owns or an emerging small business, in the awarding of subcontracts.

- **The following Section B.5.2(c) is added:**

(c) Compliance with ORS 279C.520 includes not prohibiting employees from discussing wages, salaries, benefits and other compensation, and compliance with the wage related prohibitions in ORS 652.220, violation of which is a breach entitling Owner to terminate the Contract for cause.

- **The following Section B.5.2(d) is added:**

(d) Respecting certification as a disadvantaged business enterprise, minority-owned business, woman-owned business, business that a service-disabled veteran owns or an emerging small business under ORS 200.055, as and when applicable, the Contractor shall maintain the certifications, and require in its subcontracts that subcontractors maintain the certifications required by Section 2, Chapter 325, Oregon Laws 2015, as amended by Section 26, Chapter 565, Oregon Laws 2015.

3. Add the following after Section D.3 CLAIMS REVIEW PROCESS:

D.4 FALSE CLAIMS (OREGON FALSE CLAIMS ACT)

D.4.1 Contractor understands and acknowledges it is subject to the Oregon False Claims Act (ORS 180.750 to 180.785) and to any liabilities or penalties associated with the making of a false claim under that Act. By its execution of the Contract, Contractor certifies the truthfulness, completeness, and accuracy of any statement or claim it has made, it makes, it may make, or cause to be made that pertains to the Contract or the Project for which the services are being performed, including but not limited to Contractor's statement of proposal and any invoices, reports, or other deliverables.

D.4.2. Contractor shall immediately disclose (in writing) to Agency whenever, in connection with the award, performance or closeout of the Contract, or any subcontract thereunder, Contractor has credible evidence that a principal, employee, agent, or subcontractor of Contractor has committed—

- (i) A violation of the Oregon False Claims Act; or
- (ii) A violation of State or Federal criminal or civil law involving fraud, conflict of interest, bribery, gratuity or

delivery of the information required in K.7 of the Checklist will be deemed to be compliance with the requirements of Section K.7 below.

7. Delete Section G.3 INSURANCE in its entirety and replace with the following:

G.3 INSURANCE

G.3.1 Primary Coverage: Insurance carried by Contractor under this Contract shall be the primary coverage, and the Owner's insurance is excess and solely for damages or losses for which the Owner is responsible. The coverages indicated are minimums unless otherwise specified in the Contract Documents.

G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than \$100,000 for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.

G.3.3 Builder's Risk Insurance and Builder's Risk Installation Floater (RESERVED – NOT REQUIRED FOR THIS PROJECT)

G.3.4 Liability Insurance:

G.3.4.1 Commercial General Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Commercial General Liability Insurance covering bodily injury and property damage in a form and with coverages that are satisfactory to the State. This insurance shall include personal injury liability, products and completed operations, and contractual liability coverage for the indemnity provided under this Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace), and shall be issued on an occurrence basis. Combined single limit per occurrence shall not be less than \$1,000,000 for each job site or location. Each annual aggregate limit shall not be less than \$2,000,000.

G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Automobile Liability Insurance covering owned, non-owned and/or hired vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Combined single limit per occurrence shall not be less than \$1,000,000.00, or the equivalent.

G.3.4.3 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration of 24 months or the maximum time period available in the marketplace if less than 24 months. Contractor will be responsible for furnishing certification of "tail" coverage as described or continuous "claims made" liability coverage for 24 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Contract. This will be a condition of the final acceptance of Work or services and related warranty (if any).

G.3.5 Additional Insured: The liability insurance coverage, except Professional Liability if included,

G.3.6 Notice of Cancellation or Change: There shall be no cancellation, material change, potential exhaustion coverages without thirty (30) Days' written notice from the Contractor or its insurer(s) to the Owner. Any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverages provided to the State of Oregon, its Owner and their divisions, officers, and employees.

G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by this Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to its issuance of a Notice to Proceed. The certificate(s) will specify all of the parties who are Additional Insureds or Loss Payees. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner that are allowed to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to do an insurance business in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and are approved by the Owner. The certificates will also specify that there shall be no cancellation, material change, potential exhaustion of aggregate limits or intent not to renew insurance coverages without thirty (30) Days' written notice from the insurer(s) to the Owner. To the extent Certificates of Insurance contain words to the effect that Contractor shall "endeavor to send notice of cancellation" or similar language, Contractor shall require its insurer to send such notice by making sure that the words "endeavor to" or similar words are removed from the Certificate. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included hereunder. Any deductible, self-insured retention and/or self-insurance in excess of \$50,000 shall be approved by the Owner in writing prior to issuance of a Notice to Proceed and is subject to Owner's approval.

Attachment E

CONTRACT CLOSEOUT COMPLIANCE CHECKLIST

Contract Number	
Contract Name	
Contractor	
Owner Authorized Rep.	

This checklist is intended to assist Agency and Contractor in complying with the Contract Closeout and Final Payment requirements in the General Conditions for Public Improvement Contracts, Sections K and E.6:
<http://www.oregon.gov/das/Procurement/Guiddoc/GenCon4PI.pdf>

Owner will mark "NA" by any requirement that is not applicable to the Contract. Contractor's and Owner's Authorized Representatives shall place their initials by each requirement listed below that has not been marked "NA" by Owner, and provide a signature at the end of the Checklist.

ODOT: Keep a copy of the signed form in the Contract Administration file. Email a copy to the ODOT Procurement Office. For ESB contracts, also email a copy to your Office of Civil Rights Field Coordinator.

Requirements	Mark NA if not applicable	Date completed	Contractor initials	Owner initials
K.1 Record Documents submitted				
K.2 O & M Manuals submitted				
<p>K.3 Certification/Release of Claims</p> <p>By Contractor's signature below, Contractor certifies and agrees to the following:</p> <p>All Subcontractors and suppliers have been paid in full or will be paid in full out of the final payment, and in compliance with all prompt payment requirements. All disputes with property owners have been resolved, all obligations on the project have been satisfied, all monetary claims and indebtedness have been paid, and, to the best of the Contractor's knowledge, there are no claims of any kind outstanding against the project.</p>				
K.4 Completion notices submitted				

