

Attachment A – Specifications

ESB Sandy 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:

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2. 2021 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) DNR – Digital Noise Reduction
 - (9) DNS - Domain Name Server
 - (10) DDNS – Dynamic Domain Name Server
 - (11) DSCP – Differentiated Services Code Point
 - (12) fps - frames per second

- (13) FTP - File Transfer Protocol
- (14) GOV – Group of Video
- (15) GUI – Graphical User Interface
- (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
 - (A) EN 50130-4:2011
 - (B) EN 61000-3-3:2014
 - (C) EN 61000-4-2:2009
 - (D) EN 61000-4-3:2006+A2:2010
 - (E) EN 61000-4-4:2012
 - (F) EN 61000-4-5:2014

(G) EN 61000-4-6:2009

- (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 or pre-construction 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

- a. Product Data
 - (1) Manufacturer's printed or electronic data sheets
 - (2) Manufacturer's installation and operation manuals
 - (3) Warranty documentation

3. QUALIFICATIONS

- a. Manufacturer shall have a minimum of five years' experience in producing IP video equipment.

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
 - (5) Camera Type 5: XNV-9082R
- c. Alternates: Equal product approved by the Owners Authorized Representative per the Request For Bid documents. (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

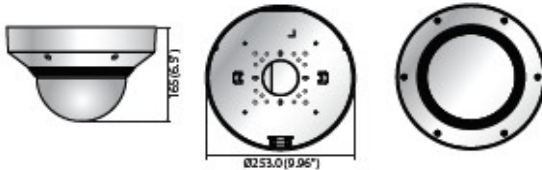


Key Features

- 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
Pixel Counter	Support
NETWORK	
Ethernet	RJ-45 (10/100/1000 BASE-T)

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)
MECHANICAL	
Color / Material	Ivory / Aluminum
Dimension (WxHxD)	Ø253 x H165mm (9.96" x 6.5")
Weight	3.2Kg (7.1lb)

* The latest product information / specification can be found at hanwha-security.com

* Design and specifications are subject to change without notice.

* Wisenet is the proprietary brand of **Hanwha Techwin**.

3. CAMERA TYPE 2: PND-9080R

WISENET P

PND-9080R

4K Network IR Dome Camera

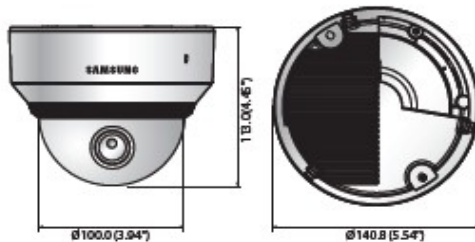


Key Features

- 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	55NR (2D+3D noise filter) (Off / On)
Defog	Off / Auto / Manual
Motion Detection	Off / On (Sea, 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, 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 - 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), 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, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, URNP, Bonjour, H.111 (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
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, 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	
Operating Temperature / Humidity	-30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH * Start up should be done at above -10°C (14°F)
Storage Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Vandal Resistance	IK08
ELECTRICAL	
Input Voltage / Current	12V DC, PoE (IEEE802.3af, Class3)
Power Consumption	12V DC : Max. 9.5W, PoE : Max. 10.5W
MECHANICAL	
Color / Material	Ivory / Polycarbonate (PC) + Aluminum
Dimensions (WxH) / Weight	Ø140.8 x 113.0mm (Ø5.54" x 4.45") / 610g (1.34lb)

* The latest product information / specification can be found at hanwha-security.com

4. CAMERA TYPE 3: PNF-9010R

WISENET P

PNF-9010R/9010RV/9010RVM

4K Fisheye Camera



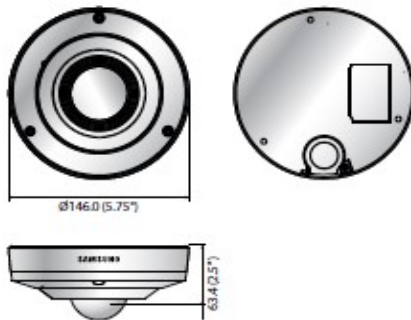
Key Features

- 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)



Accessories (Optional)



	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, 714x 480 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 (8ea Polygonal Zones)		
Privacy Masking	Off / On (8ea 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) Supply Voltage: 2.5VDC (5mA), Input Impedance: Approx. 2K Ohm		
Audio Out	Line Out (3.5mm Mono Jack), Max output level: 1 Vrms		
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(ICP), RTPC, RTPSP, 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, 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 Explorer 11, Mozilla Firefox 43, Apple Safari 9 * Max 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		
Vandal Resistance	IK10		
ELECTRICAL			
Input Voltage / Current	12V DC ±10%, PoE (IEEE802.3at, Class3)		
Power Consumption	12V DC: Max. 11W, PoE: 12W (PNF-9010R) 12V DC: Max. 12W, PoE: 12.95W (PNF-9010RV/9010RVM)		
MECHANICAL			
Color / Material	Ivory / Metal		
Dimensions (WxDH)	121.46.0 x 63.4mm (125.75" x 2.5")		
Weight	805g (1.77 lb) (PNF-9010R) 810g (1.79 lb) (PNF-9010RV) 815g (1.8 lb) (PNF-9010RVM)		

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

5. CAMERA TYPE 4: PNV-9080R

WISENET P

PNV-9080R

4KVandal-Resistant Network IR Dome Camera

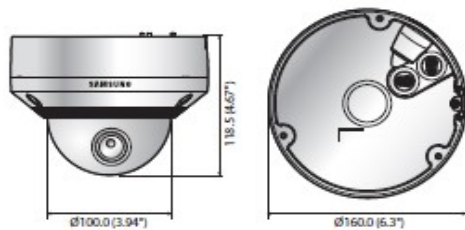


Key Features

- 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
- Hallway view (Rotate 90° / 270°)
- WiseStream support, Digital auto tracking
- IP66, IP67, IK10, Bi-directional audio support

Dimensions

Unit : mm (Inch)



Accessories (Optional)



	PNV-9080R
VIDEO	
Imaging Device	1/1.7" 12.4M CMOS
Total Pixels / Effective Pixels	8,160(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 : 1.0 Vpp / 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	F 1.6
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 W/F) / Manual, Remote control via network (Manual, Simple focus)
Lens Type / Mount Type	P-Iris mode / Bistrid-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 - C/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 (Area, Polygonal)
Privacy Masking	Off / On (16ea, Polygonal) - Color : Gray / Green / Red / Blue / Black / White
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWB / Manual / Indoor / Outdoor (include mercury & Sodium)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
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 Local storage (SD/SDHC/SDXC) or NAS recording at event triggers, External output
Pixel Counter	Support (Plug-in viewer only)
NETWORK	
Ethernet	RJ-45 (10/100/1000BASE-T)
Video Compression Format	H.265 / H.264 / MJPEG-4 part 10 / AVC : Main / Baseline / High, MJPEG
Resolution	[BM 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 [TW 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/ICP, RTCP, RTPS, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, ICMP, SNMPv1/v2/v3/MIR-2L, ARP, DNS, DDNS, CoS, PIM-SM, UPnP, Bonjour, HTTP(S), login authentication, Digest login authentication
Security	IP address filtering, User access log, 802.1x authentication (EAP-TLS, EAP-LEAP), Unicast / Multicast
Streaming Method	15 users at unicast mode
Max. User Access	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	ONVIF profile S/G/C, SUNAPI (HTTP API), S/NP, Wisenet Open Platform
Application Programming Interface	ONVIF profile S/G/C, SUNAPI (HTTP API), S/NP, 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 Explore 11, Mozilla Firefox 43, Apple Safari 9 * Max. OS X only
Central Management Software	SmartViewer
ENVIRONMENTAL	
Operating Temperature / Humidity	-40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH * Start up should be done at above -35°C (-31°F)
Storage Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 90% RH
Ingress Protection / Vandal Resistance	IP66, IP67 / IK10
ELECTRICAL	
Input Voltage / Current	24V AC, 12V DC, PoE (IEEE802.3at, Class3)
Power Consumption	12V DC : Max. 11.55W, PoE : Max. 12.95W, 24V AC (50/60Hz) : 14.08W - Heater on 12V DC : Max. 10.45W, PoE : Max. 11.77W, 24V AC (50/60Hz) : 12.43W - Heater off
MECHANICAL	
Color / Material	Ivory / Aluminum
Dimensions (WxH) / Weight	Ø160.0 x 118.5mm (Ø6.3" x 4.67") / 990g (2.18lb)

* The latest product information / specification can be found at hanwha-security.com

XNV-9082R

4K Network IR Vandal Dome Camera



Key Features

- 4K resolution (3840x2160)
- 2.8~8.4mm(3x) motorized varifocal
- 0.05Lux@F1.2 (Color), 0Lux (B/W, IR LED on)
- 30fps@4K (H.265/H.264)
- IR viewable length 40m
- Day & Night (ICR), extreme WDR (120dB)
- DIS with built-in Gyro sensor
- Video Analytics (Defocus detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Sound classification, Shock detection, Face/upper body detection, Fog detection, Motion detection, Digital auto tracking, PTZ handover)
- Dual SD slots (Maximum total capacity 512GB)
- Modular structure, PoE support
- IP66/IP67/IP6K9K, IK10+, NEMA4X
- Certified by UL CAP

Accessories (Optional)



Video	
Imaging Device	1/2.8"CMOS
Resolution	3840x2160, 3328x1872,3072x1728, 2592x1944, 2688x1520, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264: Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 15fps/12fps(60Hz/50Hz)
Min. Illumination	Color: 0.05Lux(F1.2, 1/30sec) B/W: 0Lux(IR LED On)
Video Out	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P) for installation USB: Micro USB Type B, 1280x720 for installation
Lens	
Focal Length (Zoom Ratio)	2.8~8.4mm(3x) motorized varifocal
Max. Aperture Ratio	F1.2(Wide)~F2.8(Tele)
Angular Field of View	H: 114°(Wide)~40.2°(Tele) / V: 62.0°(Wide)~22.5°(Tele) / D: 133.0°(Wide)~46.3°(Tele)
Min. Object Distance	0.7m (2.23ft)
Focus Control	Simple focus
Lens Type	DC Auto Iris, P iris
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	0°~360° / -45°~85° / 0°~355°
Operational	
Camera Title	Displayed up to 85 characters
Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR, SSSDR
Wide Dynamic Range	extremeWDR(120dB)
Digital Noise Reduction	SSNRV
Digital Image Stabilization	Support(built-in gyro sensor)
Defog	Support
Motion Detection	8ea, 8point Polygonal zones
Privacy Masking	32ea, polygonal zones - Color : Gray, Green, Red, Blue, Black, White - Mosaic
Gain Control	Support
White Balance	ATW / Narrow ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1/5~1/12,000sec)
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	Defocus detection, Directional detection, Motion detection, Digital auto tracking, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection, Sound classification, Shock detection, Face/upper body detection
Business Intelligence	People counting, Queue management, Heatmap
Alarm I/O	2 configurable I/O ports
Alarm Triggers	Analytics, Network disconnect, Alarm input

Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or NAS recording at event triggers Alarm output PTZ Preset Handover Audio playback
Audio In	Selectable(microphone in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
Audio Out	Line out, Maximum output level: 1Vrms
IR Viewable Length	40m(131.23ft)
Network	
Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression	H.265/H.264: Main/High, MJPEG
Audio Compression	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
Smart Codec	Manual(Sea area), WiseStreamII
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Protocol	IPv4, IPv6, 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, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP) Device Certificate(Hanwha Techwin Root CA) CyberSecurity assurance program UL CAP (UL 2900-1)
Application Programming Interface	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet open platform
General	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Edge Storage	Micro SD/SDHC/SDXC 2 slots (256GBx2)
Memory	4GB RAM, 512MB Flash
Environmental & Electrical	
Operating Temperature / Humidity	-50°C~+60°C(-58°F ~ +140°F) / Less than 95% RH(non condensing) * Start up should be done at above -30°C
Storage Temperature / Humidity	-50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH
Certification	IP66/IP67/IP6K9K, IK10+, NEMA4X
Input Voltage	PoE(IEEE802.3af), 12VDC, 24VAC(Accessory)
Power Consumption	PoE : Max 12.95W, typical 10.7W 12VDC : Max 11.5W, typical 9.0W 24VAC : Max 13.5W, typical 11.0W Power redundancy failover

Mechanical

Color / Material	White / Aluminum, Hard-coated dome bubble
RAL Code	RAL9003
Product dimensions / weight	Ø180x125mm(7.09x4.92"), 1.9kg(4.19 lb)
DORI (EN62676-4 standard)	
Detect (25PPM/ 8PPF)	Wide: 49.9m(163.71ft) / Tele: 209.9m(688.65ft)
Observe (63PPM/ 19PPF)	Wide: 19.9m(65.29ft) / Tele: 83.9m(275.26ft)
Recognize (125PPM/ 38PPF)	Wide: 10.0m(32.80ft) / Tele: 42.0m(137.80ft)
Identify (250PPM/ 76PPF)	Wide: 5.0m(16.40ft) / Tele: 21.0m(68.90ft)

- The latest product information / specification can be found at hanwha-security.com
- Design and specifications are subject to change without notice.
- Wisenet is the proprietary brand of Hanwha Techwin, formerly known as Samsung Techwin.

EE. EXECUTION

1. INSTALLERS

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

3. INSTALLATION

- a. Contractor is responsible for full installation of each camera, monitor, and decoder, UPS, 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 must 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 coiled neatly for future camera movement.
- 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.
- o. Install video surveillance signs per Attachment B.

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.

6. CAMERA SETUP

- a. Contractor shall focus each camera at the direction of the Owners Authorized Representatives.
- b. All camera Username and Password shall be set as follows:
 - (1) Username: Admin
 - (2) Password: ODOT.dmvcam

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. BISCITDMM, 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
 - 1. 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
 - 1. Wire-map
 - 2. Length
 - 3. Cable faults
- C. Fiber Testing
 - 1. Power Meter One way
 - 2. Test at 850 & 1300
 - 3. Must meet acceptance values as stated by ANSI/TIA/EIA-568-B.1
- D. All Testing
 - 1. All systems to be 100% tested

3.2 DOCUMENTATION

- A. Tests that do not generate a report.
 - 1. 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
 - 1. Indicate for all systems
 - a. Equipment list for all locations

b. Camera number and type

2. Furnish Camera As-built plans on PDF format.

B. Labeling

1. 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

Sandy DMV Camera Layout

ESB -Sandy DMV

BID Drawing Camera #	Camera Location	Camera Label	Camera Type	Accessories
1	S. Parking Lot	R1_L8030201_S.ParkingLot	PNM-9030V	Ext.WallMount/VandalCover/ Weather Cover
2	W.Parking Lot	R1_L8030201_W.ParkingLot	PNM-9030V	Ext.WallMount/VandalCover/ Weather Cover
3	Back Exit	R1_L8030201_BackExit	PNM-9030V	Ext.WallMount/VandalCover/ Weather Cover
4	Customer Entrance	R1_L8030201_CustEntran	PND-9080R	Ceiling Mount
5	Test Center	R1_L8030201_TestCent	PNF-9010R	Ceiling Mount
6	Report Room	R1_L8030201_ReportRM	PNF-9010R	Ceiling Mount
7	Service Counter	R1_L8030201_ServiceCount	PNM-9030V	Ceiling Mount/Mask Counters

Exterior Overview



Camera 1



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



60.0 pp
32 ft
Away

Warning results may vary depending on light and distance

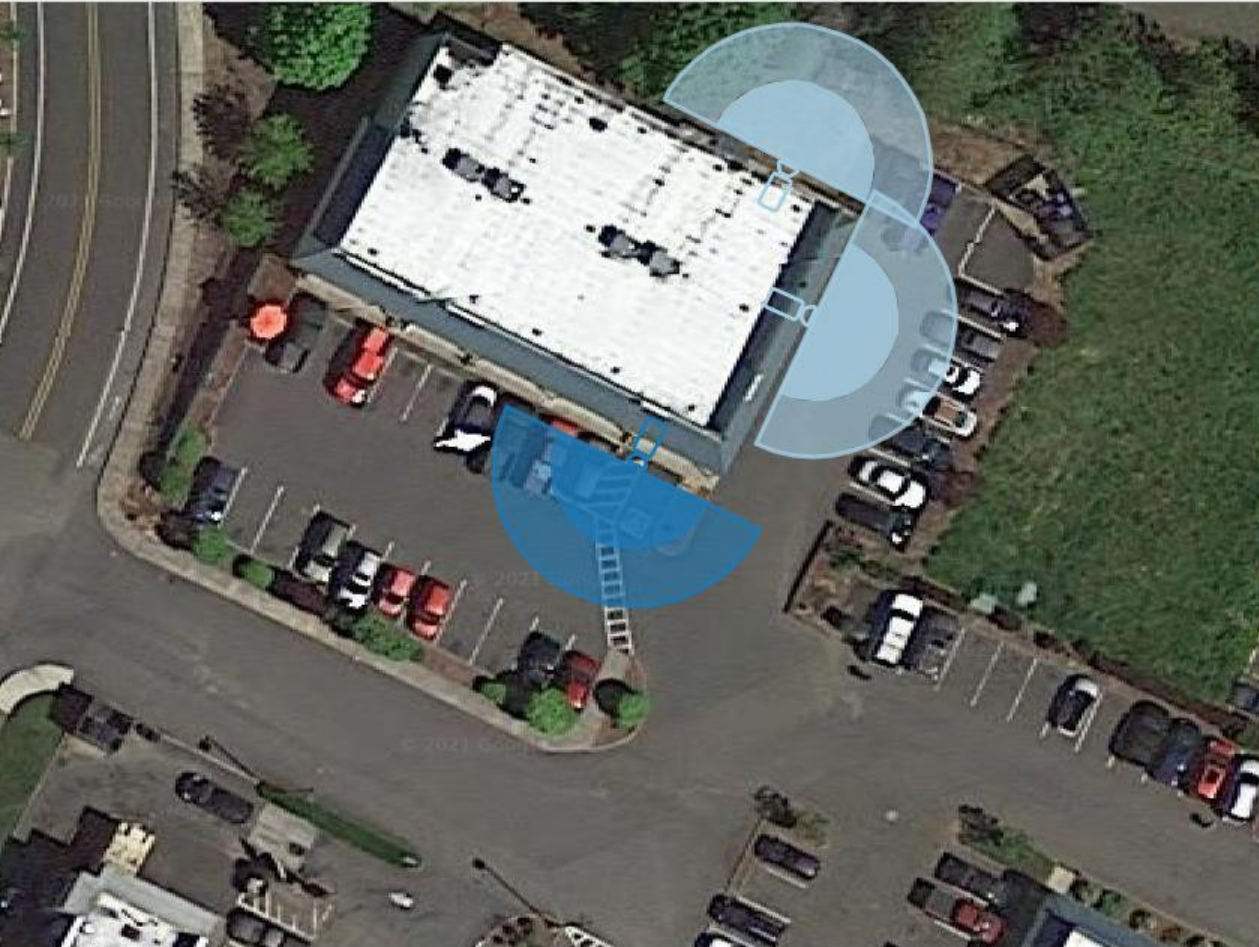
Camera 2



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



60.0 pp
32 ft
Away

Warning results may vary depending on light and distance

Camera 3



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



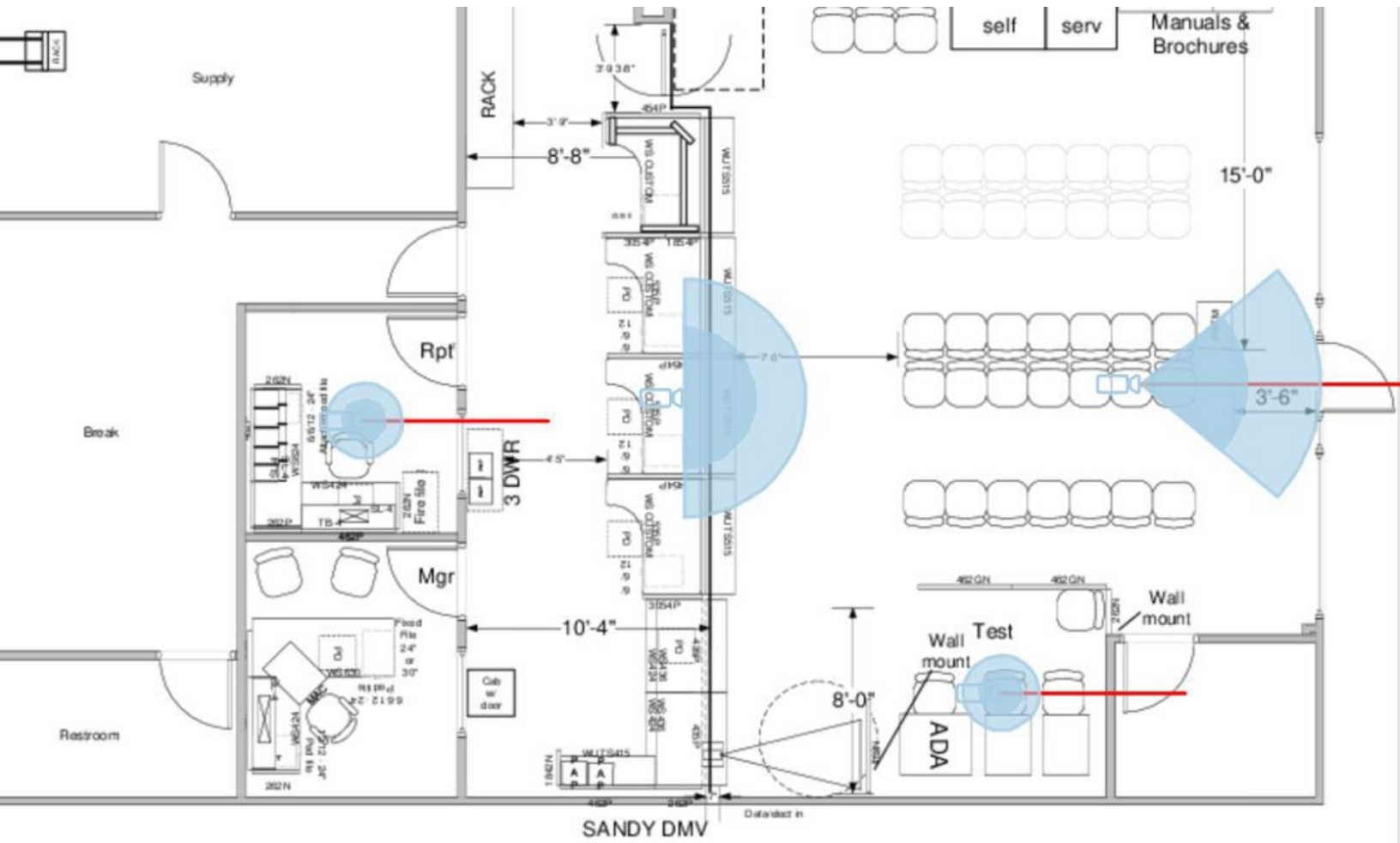
Day - Ideal



60.0 pp
32 ft
Away

Warning results may vary depending on light and distance

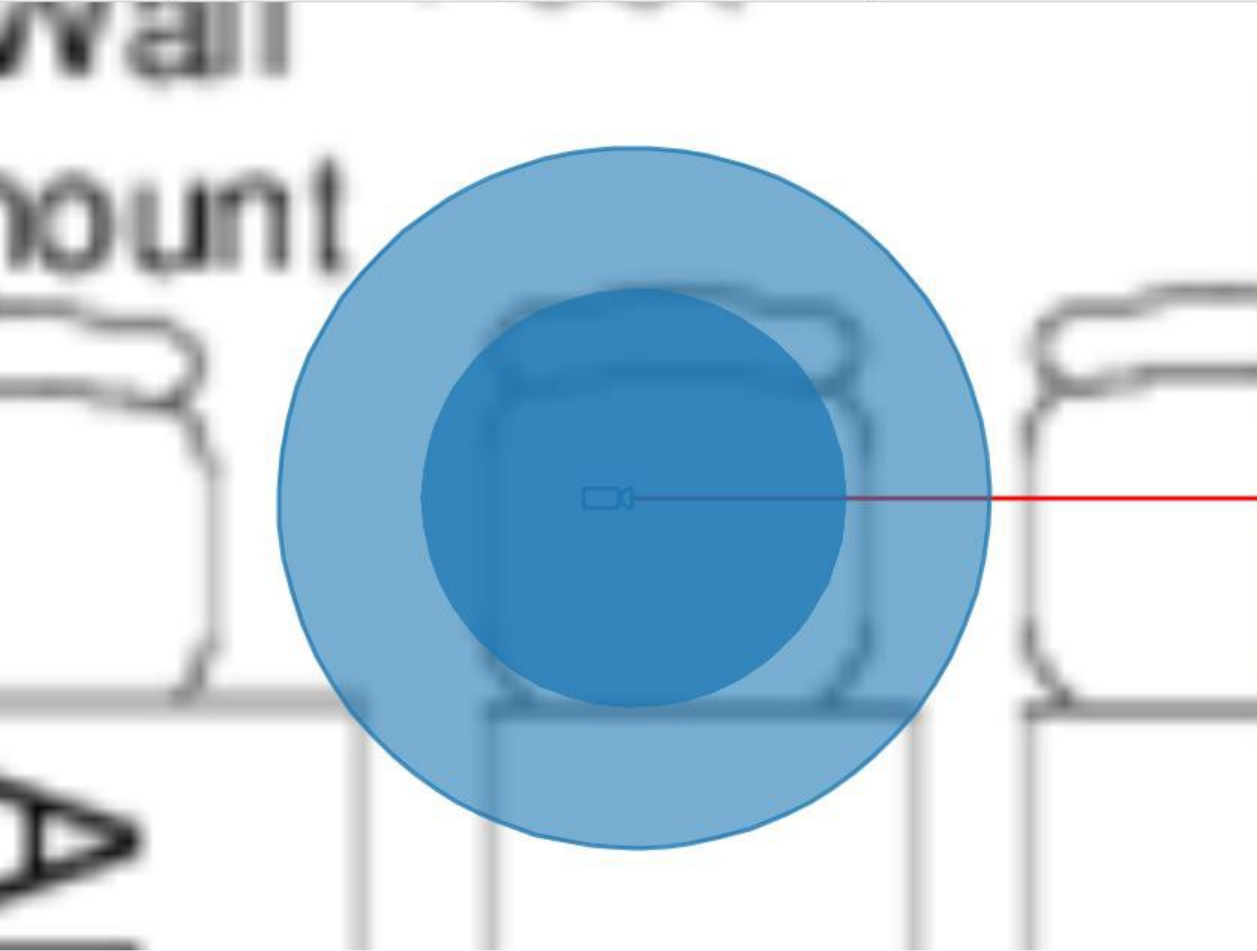
Interior Overview



Camera 3



Model: Hanwha PNF-9010R Resolution: 4K
HFoV: 360° Distance: 10ft Width: 64.0ft PPF: 120.0
Imager: 1/1.7" Focal Length: 2.1mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft



Day - Ideal



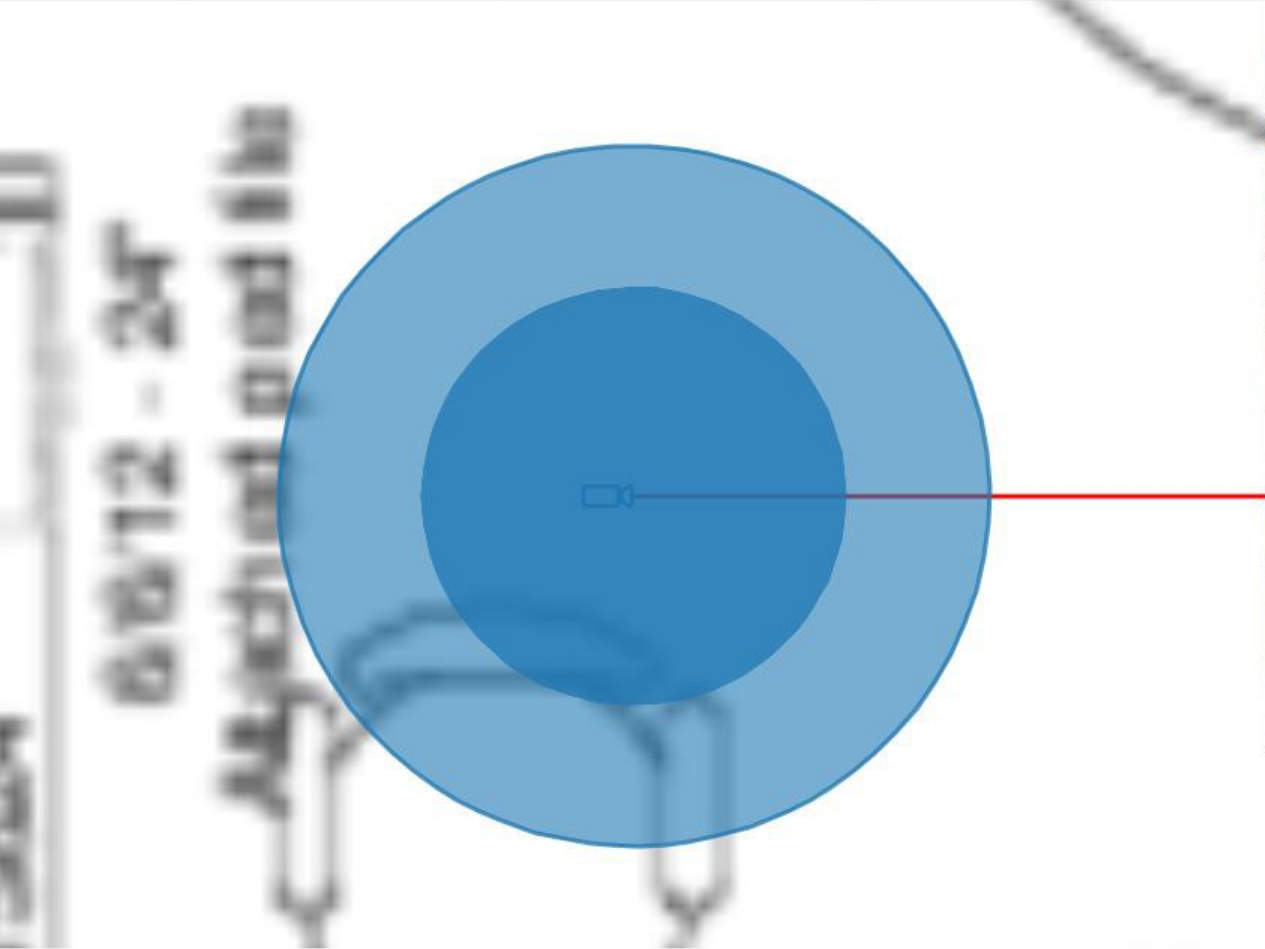
120.0 p
10 ft
Away

Warning results may vary depending on light and distance

Camera 4



Model: Hanwha PNF-9010R Resolution: 4K
HFoV: 360° Distance: 10ft Width: 64.0ft PPF: 120.0
Imager: 1/1.7" Focal Length: 2.1mm Camera Height: 10.00ft Tilt: 0.00° Scene Height: 10.00ft



Day - Ideal



120.0 p
10 ft
Away

Warning results may vary depending on light and distance

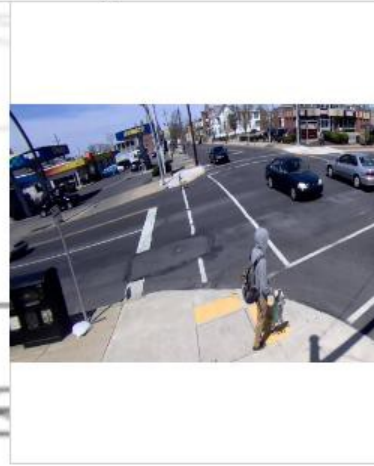
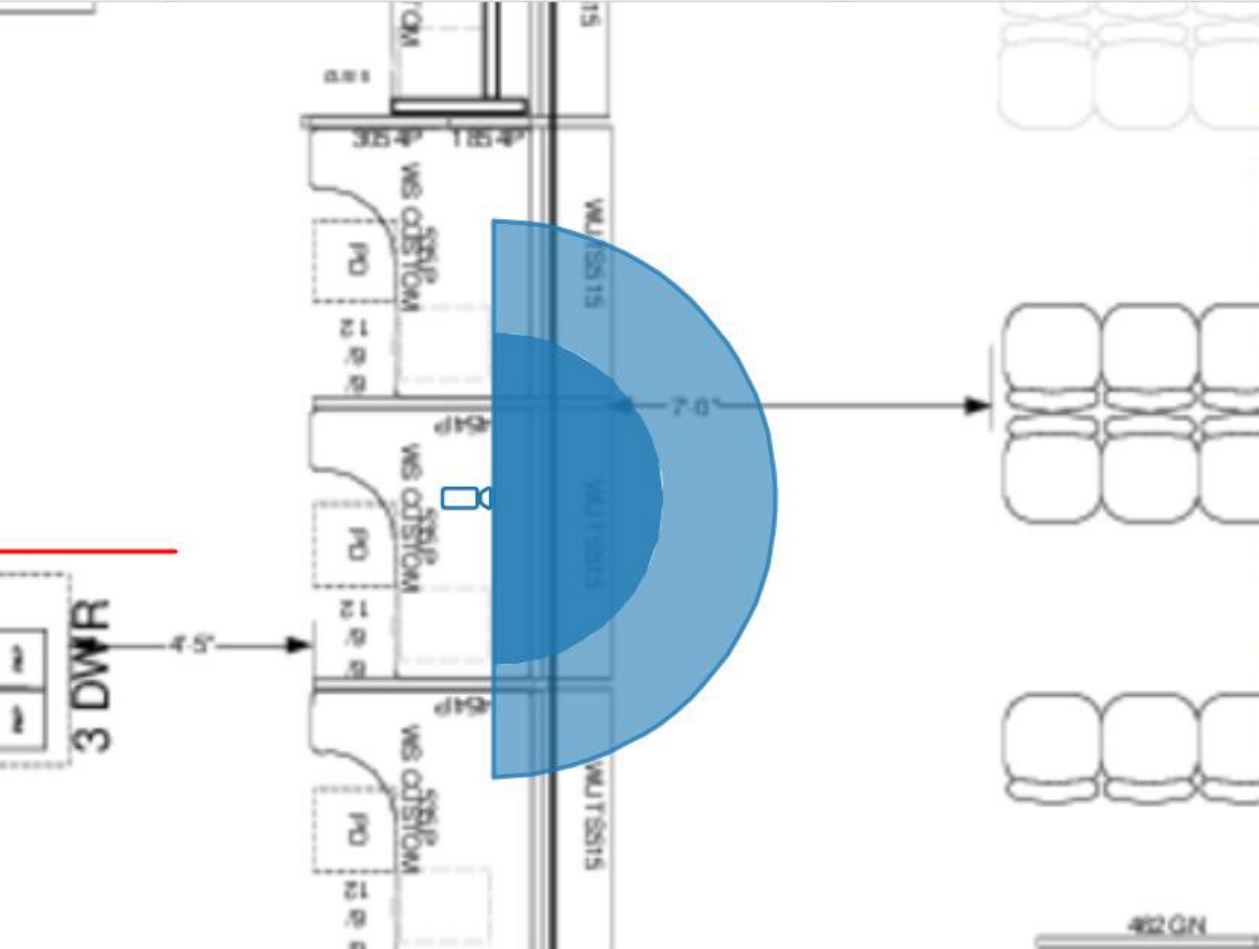
Camera 5



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



60.0 pp
32 ft
Away

Warning results may vary depending on light and distance

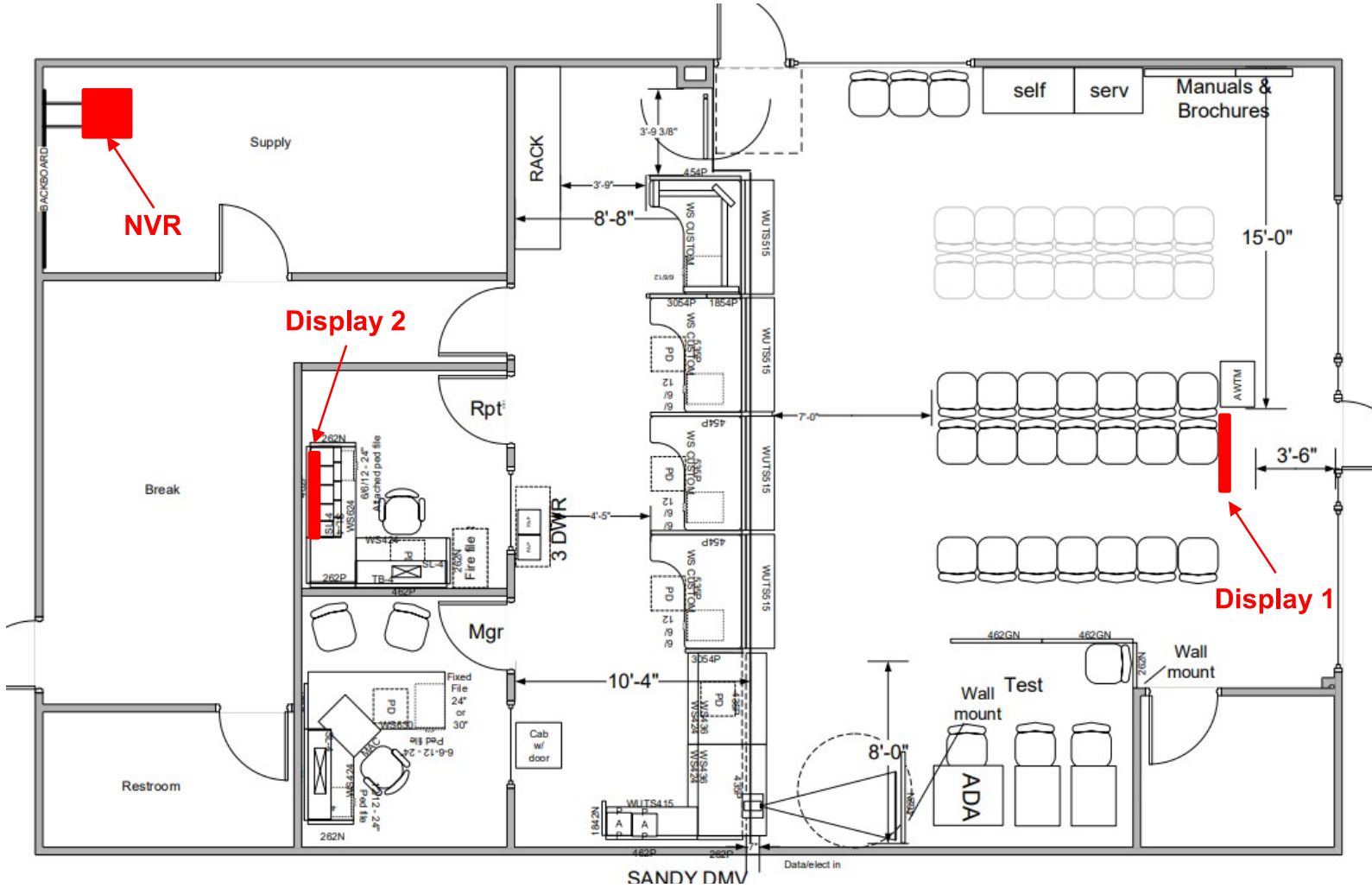
Monitor Display Locations

Decoder / Display 1 & 2: Furnish and install 2 Samsung 32" Class Q50R QLED Smart 4K UHD TV (or approved equal), M SPD-150 49CH Network Video Decoder (or approved equal); Display 1 will be located on ceiling w/ decoder; Display 2 will be mounted W/ Mini-PC. Add power for each monitor.

UPS: Provide and fully install Vertiv Liebert GXT5 UPS 1500VA/1350W 120V for power backup.

Patch Panel: Furnish Minimum 24 Port Patch Panel; 4k@60Hz High Speed HDMI Cables as required for complete operation. noted per specifications.

Signs: Provide and install 3 "Notice Video Surveillance In Use On These Premises" signs. Sign 1 on front door; Sign 2 in the back behind service counter.



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.

or approved
equal

Ultra Slim

Certified Premium High Speed HDMI® Cables with Ethernet



PART NUMBER	LENGTH
USCP1.5	1.5 ft
USCP03	3 ft
USCP06	6 ft
USCP08	8 ft

- 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
- 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

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PLCM-UNL
PLCM-UNL-CP(-AB/-AW)



 Display size 32"-90"	 Max load 150lb (68.2kg)
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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 easy to customize each mount to your specific application. The PLCM-UNL kit consists of the PLP-UNL Universal I-Shaped Adaptor plate, the PLCM-2 tilt box, and the fixed length 1.5" NPT column, to deliver a drop of 36" for display mounting panels up to 600 x 400mm. When combined with a Peerless-AV® ceiling plate, it provides a perfect combination for flat panel ceiling mounting in sports facilities, airports, 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.



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TVA765



Display size
42"-75"



Max load
105lb (48kg)

tru•vue™

Full-Motion Tilting Wall

FOR 42" TO 75" DISPLAYS

The TruVue™ series wall mounts combine ease of installation with view. With TVA765, extend the TV up to 16.07" (408mm) or fully-retract (66mm) from the wall for the optimum viewing angle. The Hook-and-hang offers easy, one-person installation of the TV. A ratcheting handle provides capability for quick adjustments to the amount of tilt, reducing glare and viewing angle. With the cable management feature, cables can be routed 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



GXT5-1500LVRT2UXL, Liebert® GXT5 UPS, 1500VA/1350W, 120V

PRODUCT OVERVIEW

Power Rating	1500VA /1350W
Input Voltage	Typical: 120V / Range: 60-150V
Output Voltage	110/115/120/125VAC; (user-configurable); ±3%

[SHOW MORE](#) 

INTERFACES/PORTS

Interface Options	Optional communications card (Vertiv™ RDU101), USB, RS485, RS232, terminal block, external battery connector
Protocols	SNMP and web management enabled with optional Vertiv RDU101 communications card; serial connection for out-of-band management
Control Panel	Colored graphic LCD with gravity sensing orientation, provides insight to UPS status for easy installation, configuration and operation

OPERATIONAL CONDITIONS

Operating Temperature	+32 to +104 °F (0 to 40 °C)
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MISCELLANEOUS

General	Output Receptacles: 5-15R × 6; 4x individually programmable receptacles and 2x non-programmable receptacles
Listings	ENERGY STAR® 2.0 certified, WEEE, RoHS2, REACH, UL 1778 4th edition and CSA 22.2 No. 1071
Topology	On-line double conversion UPS; compact and flexible rack/tower form factor

Mini PC

Contractor shall order a DELL OPTIPLEX 7080 MICRO XCTO, with a full sized keyboard and mouse. The PC shipped to ODOT Information Technology at “**Attention Larry Larios – Sandy DMV Camera** **1905 Lana Ave NE, Salem, OR 97301.**” Upon confirmation of receipt at ODOT, Contractor shall order the machine, manufacture and notify them of a tag change so ODOT can utilize the device warranty. Once ODOT receives the machine, ODOT will build and install the machine on site.

Mini PC Specifications

Module	Description	Product Code	Skus
OptiPlex 7080 Micro	OptiPlex 7080 Micro XCTO	G70JB1M	[210-AVLL]
Processor	Intel® Core™ i5-10500T (6 Cores/12MB/12T/2.3GHz to 3.8GHz/35W)	GWH0LQ7	[338-BVDE]
Operating System	Windows 10 Pro 64bit English, French, Spanish	GF48XA1	[619-AHKN]
Microsoft Office	No Productivity Software	GEKH8UQ	[630-AAPK]
Memory	8GB, 1x8GB, DDR4 non-ECC Memory	G6QKVOE	[370-AFJE]
Hard Drive	M.2 256GB PCIe NVMe Class 40 Solid State Drive	GXM9A2Q	[400-BEUS] [773-BBBC] [412-AALV]
Additional Hard Drive	No Additional Hard Drive	G780XKR	[401-AANH]
Video Card	Intel® Integrated Graphics	GZQDA24	[490-BBFG]
Chassis Options	OptiPlex 7080 Micro 35W	GRI5NYO	[329-BEUG]
Power Supply	90 Watt AC Adapter	G58P2RU	[450-AJNU]
Power Cord	Power Cord (US) for 180W Adapter	G156LHJ	[450-AAZN]
Wireless	No Wireless LAN Card	GE7Y41P	[555-BBFO]
Wireless Driver	No Wireless Driver	GQMKF4C	[340-AFMQ]
Stands and Mounts	No Stand Option	GJO5ZSE	[575-BBBI]
Adapter	No Additional Cable	GIX0L8M	[379-BBCY]
Serial Port Adapter	Optional HDMI 2.0b Video Port	G5NPRY4	[382-BBFI]
Keyboard	No Keyboard Selected	GXJ4HE7	[580-AABG]

Mouse	No Mouse Selected	GKJD14Q	[570-AAAF]
Back Cover	No Cable Cover	GDT2C7Z	[325-BCZQ]
Software Stack	Dell Applications Windows 10 with Dell Optimizer	GIG6KLR	[658-BBMR] [640-BBLW] [525-BBCL] [658-BBRB] [658-BEOK] [658-BEQP]
Operating System Recovery Options	OS-Windows Media Not Included	GLA9OQ1	[620-AALW]
ENERGY STAR	ENERGY STAR Qualified	G6J34SM	[387-BBLW]
EPEAT 2018	EPEAT 2018 Registered (Silver)	GTZOE2H	[379-BDTO]
Documentation	Safety/Environment and Regulatory Guide (English/French Multi-language)	G7RB0GY	[340-AGIK]
System Monitoring Options	System Monitoring not selected in this configuration	GITYA2H	[817-BBSI]
Placemat	Quick Start Guide for OptiPlex 7080 Micro	GVWAX00	[340-CQNH]
Order Information	US No Canada Ship Charge	G3IA0L8	[332-1286]
EAN/UPC Labels	No UPC Label	G8WGTYN	[389-BCGW]
TPM Security	Trusted Platform Module (Discrete TPM Enabled)	GJMDKT6	[329-BBJL]
Shipping Material	Shipping Material for MFF(DAO)	GQKNZ40	[340-CQYN] [389-BBIU]
Label	Regulatory Label, 7080 Micro, 90 W Adapter (DAO)	G6ESNQP	[389-DVNW]
Intel Responsiveness Technologies	NO INTEL RESPONSIVE	GH8D5LC	[551-BBBJ]
Processor Label	Intel Core i5 Label for vPro	GBSPNT0	[340-CPOY]
Transportation from ODM to region	Standard shipment	GQT8IGC	[800-BBIO]
Protect Your New PC	No Anti-Virus Software	GD4K19S	[650-AAAM]
External Speakers	No External Speaker	GTNM7E2	[817-BBBC]
Network Adapters (NIC)	No Additional Network Card Selected (Integrated NIC included)	G9WQCN3	[555-BBJO]
FGA Module	No FGA	NOFGA	[817-BBBB]
Windows AutoPilot	No Windows AutoPilot	GYE02AP	[340-CKSZ]
Add-in Cards	No Additional Add In Cards	GNV4J7Q	[382-BBHX]
Optane	No Optane	GGALRD0	[400-BFPO]
Systems Management	Intel® vPro Technology Enabled	GI4K18E	[631-ACNM]
Speakers	Speaker for OptiPlex MFF	GMU0D4Z	[520-AARC]
TAA	No TAA	GUSA19Y	[340-ACQO]
Additional System Options	CFI,5680,Consigned,Label, Mylar,Small,#1,Factory Install	7728537	[364-6863]
Additional System Options	CFI Routing SKU	7728538	[365-0257]
Additional System Options	CFI,Information Client,Only	7728539	[371-0941]
Additional System Options	CFI Titan Code for CFI FIDA or Bypass SI	7728540	[364-1846]
Additional System Options	Custom Asset Tag	7728541	[366-0133]
Additional System Options	Custom Asset Report	7728542	[366-0135]
Additional System Options	CFI,Information, Validation,Select Any Microsoft OS	7728543	[364-4107]
Additional System Options	CFI,Information,CSRouting,Elig ible,Factory Install	7728544	[375-3088]
Hardware Support Services	3 Years ProSupport with Next Business Day Onsite Service	PN3	[812-3886] [812-3908] [989-3449] [812-3894]

Attachment C – 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, 2021.

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 Clackamas County, BOLI Region 2.

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>

SUPPLEMENTAL GENERAL CONDITIONS:

The following supplements modify the General Conditions this project. Where a portion of the General Conditions is modified or deleted by these Supplemental General Conditions, the unaltered portions of the General Conditions shall remain in effect.

SGC-1. Add the following after A.3.4 under INTERPRETATION OF CONTRACT DOCUMENTS

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.

SGC-2. Add the following after Section A.7 GOVERNMENT EMPLOYMENT STATUS:

A.8 TITLE VI NON-DISCRIMINATION PROVISIONS

During the performance of the Contract, Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

- a. **Compliance with Regulations:** Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of the Contract.
- b. **Nondiscrimination:** Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the grounds or race, color, sex, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. Contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.
- c. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by Contractor of Contractor's obligations under the Contract and the Regulations relative to nondiscrimination on the grounds of race, color, sex, or national origin.
- d. **Information and Reports:** Contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by ODOT, FHWA or the Federal Transit Administration ("FTA") as appropriate, to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of Contractor is in the exclusive possession of another who fails or refuses to furnish this information, Contractor shall so certify to ODOT, FHWA or FTA as appropriate, and shall set forth what efforts it has made to obtain the information.
- e. **Sanctions for Noncompliance:** In the event of Contractor's noncompliance with the nondiscrimination provisions of the Contract, ODOT shall impose such Contract sanctions as ODOT, FHWA or FTA may determine to be appropriate, including, but not limited to:
 - (i) Withholding of payments to Contractor under the Contract until Contractor complies, and/or
 - (ii) Cancellation, termination or suspension of the Contract, in whole or in part.
- f. **Incorporation of Provisions:** Contractor shall include the provisions of paragraphs (a) through (e) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. Contractor shall take such action with respect to any subcontract or procurement as ODOT of the federal government may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, Contractor may request ODOT, and, in addition, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

SGC-3. 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 Contactor 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.

SGC-4. Delete Section B.15 GOVERNING LAW in its entirety and replace with the following:

B.15 GOVERNING LAW. This Contract shall be governed by and construed and enforced in accordance with the laws of the State of Oregon without regard to principles of conflicts of laws.

SGC-5. 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 similar misconduct.

D.4.3. Contractor must include subsections D.4.1 and D.4.2 of this section in each subcontract Contractor may award in connection with the performance of the Contract. In doing so, Contractor may not modify the terms of those subsections, except to identify the subcontractors or sub grantee that will be subject to those provisions.

SGC-6. Section E.5 RETAINAGE is deleted in its entirety and replaced with the following:

E.5 RETAINAGE

E.5.1 Retainage, if withheld, shall be withheld and released in accordance with ORS 279C.550 to 279C.580:

E.5.1.1 Owner reserves the right in its sole discretion to not withhold retainage from progress payments or to begin withholding retainage at any time. If Owner withholds retainage from progress payments the amount to be retained will not exceed five percent of the payment. As Work progresses, Owner may reduce the amount of the retainage and may

eliminate retainage on any remaining monthly Contract payments after 50 percent of the Work under the Contract is completed if, in the Owner's opinion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is 97-1/2 percent completed the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 If retainage is withheld, unless the Contractor requests and the Owner accepts a form of retainage described in options (a) or (b) below, the Owner (except as otherwise provided below for a contract of \$500,000 or less) will deposit the retainage in an interest-bearing escrow account as required by ORS 279C.570(2). The Contractor shall execute such documentation and instructions respecting the interest-bearing escrow account as the Owner may require to protect its interests, including but not limited to a provision that no funds may be paid from the account to anyone without the Owner's advance written authorization. In accordance with the provisions of ORS 279C.560 and any applicable administrative rules, unless the Owner finds in writing that accepting bonds, securities or other instruments described in option (a) below or a security bond described in option (b) below poses an extraordinary risk that is not typically associated with the bond, security or instrument, the Owner will approve the Contractor's written request:

(a) to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds, securities or other instruments of equal value with Owner or in a custodial account or other mutually-agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner. Interest or earnings on the bonds, securities or other instruments shall accrue to the Contractor. The Contractor shall execute and provide such documentation and instructions respecting the bonds, securities and other instruments as the Owner may require to protect its interests. To be permissible the bonds, securities and other instruments must be of a character approved by the Director of the Oregon Department of Administrative Services, including but not limited to:

- (i) Bills, certificates, notes or bonds of the United States.
- (ii) Other obligations of the United States or agencies of the United States.
- (iii) Obligations of a corporation wholly owned by the federal government.
- (iv) Indebtedness of the Federal National Mortgage Association.
- (v) General obligation bonds of the State of Oregon or a political subdivision of the State of Oregon.
- (vi) Irrevocable letters of credit issued by an insured institution, as defined in ORS 706.008; or

(b) that the Contractor be allowed, with the approval of the Owner, to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims and liens in the manner and priority as set forth for retainage under ORS 279C.550 to ORS 279C.625.

Where the Owner has accepted the Contractor's election of option (a) or (b) above, or an interest-bearing account under ORS 279C.560(5) for a contract of \$500,000 or less, Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request to deposit a surety bond under option (b), Contractor shall accept like bonds from Subcontractors and suppliers on the project from which Contractor has required retainage.

For a contract over \$500,000, if the Contractor requests that the Owner deposit the retainage in an interest-bearing account under ORS 279C.560(5), the Owner will use an interest-bearing escrow account as stated above. For a contract of \$500,000 or less, if the Contractor requests that the Agency deposit the retainage in an interest-bearing account under ORS 279C.560(5), the Owner will use an interest-bearing account (in a bank, savings bank, trust company or savings association) as provided under ORS 279C.560(5).

E.5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the final payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of one and one-half percent per month on the final payment due Contractor, interest to commence thirty (30) Days after the Work under the Contract has been completed and accepted and to run until the date Contractor shall notify Owner in writing when the Contractor considers the Work complete and Owner shall, within fifteen (15) Days after receiving the written notice, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the Contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run thirty (30) Days after the end of the 15-Day period.

E.5.1.4 In accordance with the provisions of ORS 279C.560, if the Owner accepts bonds, securities or other instruments deposited as provided in paragraph (a) of subsection E.5.1.2, the Owner shall reduce the moneys held as retainage in an amount equal to the value of the bonds, securities and other instruments and pay the amount of the reduction to the Contractor in accordance with ORS 279C.570.

E.5.1.5 Contractor agrees that if Contractor elects to reserve retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and such retainage withheld from Subcontractors and suppliers shall be subject to and the Contractor shall comply with all applicable legal requirements.

E.5.1.6 The Contractor shall comply with all applicable legal requirements for withholding and releasing retainage and for prompt payments, including but not limited to those in ORS Chapters 279C and 701, and 49 CFR 26.29.

E.5.2 As provided in subsections C.2.2 and C.2.3, additional withholding in the amount of 25% of amounts earned shall be withheld and released in accordance with ORS 279C.845(7) when the Contractor fails to file certified statements as required by section C.2.1.

SGC-7. Add the following at the end of SECTION E PAYMENTS:

E.7 REPORT OF SUBCONTRACTORS PAID: Following each payment to Contractor, including final payment and any progress payments, Contractor shall submit to the Owner ODOT Form 734-2882, Paid Summary Report. Contractor shall complete and submit the form as specified in the form instructions, which are available online, along with the form at: <http://www.oregon.gov/ODOT/Forms/20DOT/2882.pdf>

SGC-8. Amend the first sentence of Section G.2.1 as follows (deletions shown in strikethrough):

G.2.1 When the Contract Price is \$100,000 or more (~~or \$50,000 or more in the case of Contracts for highways, bridges and other transportation projects~~) the Contractor shall furnish and maintain in effect at all times during the Contract Period a performance bond in a sum equal to the Contract Price, and a separate payment bond also in a sum equal to the Contract Price.

SGC-9. Delete Section G.3 INSURANCE in its entirety and replace with the following:

G.3 INSURANCE

G.3.1 Contractor: The Contractor shall obtain the insurance specified below prior to the execution of the Contract. The Contractor shall maintain the insurance in full force at the Contractor's expense throughout the duration of the Contract and all warranty periods that apply.

G.3.1.2 Subcontracting: If the Contractor specifies prior to the execution of the Contract that a Subcontractor will satisfy an insurance requirement, that is permitted to be satisfied by a Subcontractor, the Contractor shall obtain Owner approval of Subcontractor and Subcontractor's insurance coverage(s), at least 35 Calendar Days prior to commencement of subcontracted work. After the Contractor receives Owner approval of the Subcontractor, the Contractor may contractually obligate the Subcontractor to obtain and maintain, at the Subcontractor's expense or at the Contractor's expense, the insurance permitted.

G.3.1.3 The Contractor shall require that all Subcontractors carry insurance coverage that the Contractor deems appropriate based on the risks of the subcontracted work. The Contractor shall obtain proof of the required insurance coverages, as applicable, from any Subcontractor providing services related to the Contract.

G.3.1.4 Neither the insurance provided by Subcontractor(s) nor any agreements Contractor or Subcontractor(s) may enter into shall place any limitation on the liability or indemnification obligations of the Contractor under applicable law or the Contract.

G.3.1.5 Insurance Provisions: The Contractor and Subcontractor(s), if any, shall obtain insurance from insurance companies or entities that are authorized to transact the business of insurance and issue coverage in the State and that are acceptable to Owner. Insurance coverage shall be primary and noncontributory with any other insurance and self-

insurance, with the exception of Workers' Compensation/Employer's Liability. The Contractor, or appropriate Subcontractor, but not Owner, shall pay for all deductibles, self-insurance retentions and self-insurance, if any.

G.3.2 Workers' Compensation and Employer's Liability:

G.3.2.1 All employers, including the Contractor and Subcontractor(s), if any, that employ subject workers, as defined in ORS 656.027, shall comply with ORS 656.017 and shall provide Workers' Compensation Insurance coverage, unless such employers meet the requirement for an exemption under ORS 656.126(2). The coverage shall include Employer's Liability Insurance with coverage limits of not less than \$500,000 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.3.2.2 All employers, including the Contractor and Subcontractor(s), if any, exempt under ORS 656.126(2) and subject to any other state's Workers' Compensation law, shall provide Workers' Compensation Insurance coverage as required by applicable Workers' Compensation laws. The coverage shall also include Employer's Liability Insurance with limits not less than \$500,000 each accident.

G.3.3 Liability Insurance:

G.3.3.1 Commercial General Liability: The Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Commercial General Liability Insurance written on an occurrence basis and covering bodily injury and property damage. This insurance shall include personal and advertising injury liability, products and completed operations, and contractual liability coverage. When Work to be performed includes operations or activity within 50 feet of any railroad property, bridge, trestle, track, roadbed, tunnel, underpass or crossing, the Contractor shall provide the Contractual Liability – Railroads CG 24 17 endorsement, or equivalent, on the Commercial General Liability policy. Combined single limit per occurrence shall not be less than the dollar amount specified in the Contract. . The annual aggregate limit shall not be less than the dollar amount specified in the Contract.

	Per Occurrence	Annual Aggregate
Commercial General Liability	\$1,000,000	\$2,000,000

G.3.3.2 Commercial Automobile Liability: The 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 hired vehicles for bodily injury and property damage. This coverage may be written in combination with the Commercial General Liability Insurance with separate limits for Commercial Automobile Liability and Commercial General Liability. Combined single limit per occurrence shall not be less than the dollar amount specified in the Contract..

	Combined Single Limit
	Per Occurrence
Commercial Automobile Liability	\$1,000,000

G.3.3.3 Extended Reporting: If any of the required liability insurance is permitted to be and is on a "claims made" basis, the Contractor or Subcontractor who provided the insurance coverage, shall obtain an extended reporting period on the claims made policy or maintain the claims made policy for a duration of at least 24 months from the date the applicable work has been completed and accepted by Owner or the date of Final Completion. This extended reporting requirement shall be satisfied with documentation of one of the following:

- Extended Reporting Endorsement;
- Tail Coverage; or
- Maintaining the applicable continuous claims made policy with liability coverage.

- G.3.3.4** Excess/Umbrella Liability: A combination of primary and Excess/Umbrella Insurance may be used to meet the required limits of insurance. Excess/Umbrella coverage must be at least as broad as that provided by the underlying primary insurance policies. In addition, the limits of the underlying primary insurance must be sufficient to prevent any gap between such minimum limits and the attachment point of the coverage provided by the Excess/Umbrella Liability policy.
- G.3.3.5** Additional Insured: The liability insurance coverages, except Professional Liability and Workers' Compensation/Employer's Liability, if included, shall include an Additional Insured Endorsement specifying the "State of Oregon, the Oregon Transportation Commission and the Department of Transportation, and their respective officers, members, agents, and employees" as Additional Insureds, but only with respect to the Contractor's activities to be performed under this Contract. Coverage shall be primary and non-contributory with any other insurance and self-insurance. The liability coverages that are permitted by Owner to be obtained by an appropriate Subcontractor shall include all of the foregoing as Additional Insureds and shall also include the Contractor and its officers and employees as Additional Insureds.
- G.3.3.6** Additional Insured – Commercial General Liability: Additional Insured Endorsements on the Commercial General Liability shall be written on ISO Form CG 20 10 07 04, or equivalent, with respect to liability arising out of ongoing operations and ISO Form CG 20 37 07 04, or equivalent, with respect to liability arising out of completed operations. Additional Insured Endorsements shall be submitted with the Certificate(s) of Insurance and must be acceptable to Owner.
- G.3.3.7** Notice of Cancellation or Change: The Contractor shall provide at least 30 Calendar Days written notice to Owner before cancellation of, material change to, potential exhaustion of aggregate limits, or non-renewal of the required insurance coverages. If a Subcontractor is providing insurance to meet the contract requirements, the Contractor shall provide at least 30 Calendar Days written notice to Owner before cancellation of, material change to, potential exhaustion of aggregate limits, or non-renewal of the required insurance coverage(s). Any failure to comply with the reporting provisions of this insurance shall not affect the coverage(s) provided to the State, Owner, County, City, or other applicable political jurisdiction or to Owner's governing body, board, or Commission and its members, and Owner's officers, agents, and employees.
- G.3.3.8** Certificate(s) of Insurance: As evidence of the insurance coverages required by this Contract, the Contractor shall furnish Certificate(s) of Insurance to Owner prior to execution of the Contract. As evidence of insurance coverages required by the Contract but permitted by Owner to be obtained by an appropriate Subcontractor, the Contractor shall furnish Certificate(s) of Insurance to Owner for approval on such coverages at least 35 Calendar Days prior to commencement of subcontracted work. The Certificate(s) shall:
- List the "State of Oregon, the Oregon Transportation Commission and the Department of Transportation, and their respective officers, members, agents and employees" as an endorsed Additional Insured;
 - Include all required endorsements or copies of the applicable policy language effecting coverage required by the Contract;
 - Specify that all liability insurance coverages shall be primary and non-contributory with any other insurance and self-insurance, with exception of Professional Liability and Workers' Compensation/Employer's Liability; and
 - Include a list of all policies that fall under the Excess/Umbrella Insurance if Excess or Umbrella Insurance is used to meet the minimum insurance requirement.
- G.3.3.9** Owner Acceptance: All insurance and insurance providers are subject to Owner acceptance. If requested by Owner, the Contractor shall provide complete copies of insurance policies, endorsements, self-insurance documents and related insurance documents to Owner's representatives responsible for verification of the insurance coverages required by the Contract.
- G.3.3.10** Insurance Requirement Review: The Contractor agrees to periodic review of insurance requirements by Owner under the Contract and to provide updated requirements as mutually agreed upon by the Contractor and Owner.

SGC-9. Add the following at the end of SECTION H.2 SCHEDULE:

H.2.2 The Project Work schedule is essential to the Owner. The Contractor's failure to provide the schedule, schedule information, progress reports, or schedule updates when required will be cause to suspend the Work, or to withhold Contract payments as necessary to protect the Owner, until the Contractor provides the required information to the Owner's Authorized Representative.

SGC-10. Add a new subsection to Section J.4.1 as subsection (f) and renumber existing subsection (f) as subsection (g) as follows:

(f) If Contractor has liquidated and delinquent debt owed to the State of Oregon or any department or agency of the State of Oregon;

(g) If Contractor is otherwise in material breach of any part of the Contract.

SGC-11. Delete Section J.4.2 in its entirety and replace it with the following:

J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, including, in the event of the conditions set forth in Section J.4.1 (f) regarding Contractor's liquidated and delinquent debt, by offset or garnishing all monies due for any and all Work performed by the Contractor when appropriate, and otherwise recovering any liquidated and delinquent debt owed to the State of Oregon or any department or agency of the State of Oregon. In addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, Contractor shall not be entitled to receive further payment until the Work is completed. If Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

SGC-12. Add the following at the beginning of SECTION K CONTRACT CLOSEOUT:

As a condition of final payment, Contractor shall complete and sign the Contract Closeout Checklist form provided by Owner. If accepted by Owner, Contractor's delivery of the certification as required in K.3 of the Checklist will be deemed to be compliance with the requirements of Section K.3 below and Contractor's 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.

SGC-13. Delete Section K.4.1 and replace with the following:

K.4.1 Contractor shall provide Owner notice of Substantial Completion. The notice of Substantial Completion shall state the date of Substantial Completion, and shall be submitted to the Owner's Authorized Representative. The notification may be communicated verbally to the Owner's Authorized Representative, sent electronically via email, or sent as a hard copy in the mail. Upon receipt of notification of Substantial Completion, the Owner's Authorized Representative will perform a final project inspection and provide the Contractor with the project Punchlist. Once all Punchlist items have been completed to the satisfaction of the Owner's Authorized Representative, the Owner's Authorized Representative will provide Contractor with a Contract Closeout Checklist form. Contractor shall complete and sign the form and submit it to the Owner's Authorized Representative. The Owner's Authorized Representative will provide the final signature on the form upon which date Final Completion shall take effect.

Attachment D

CONTRACT CLOSEOUT COMPLIANCE CHECKLIST

Contract Number	
Contract Name	ESB Sandy DMV Security System Upgrade
Contractor	
Owner Authorized Rep.	Eric Spond

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>				
<p>K.4 Completion notices submitted</p> <p>Substantial Completion notice Date of substantial completion:</p> <p>Final Completion notice Date of final completion:</p>				
K.5 Training sessions scheduled				

Attachment E

BIDDER INSTRUCTIONS: Do not submit this document with your bid. If you are the successful bidder, ODOT will fill in the blanks within this form and request your signature, which will represent your agreement to enter into a contract. PLEASE NOTE: There are some terms in this document that you will be agreeing to should you be awarded a contract; for instance, completion dates and liquidated damages. Please make sure you have read and understand this document before you submit a bid.

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

ESB Sandy DMV Security System Upgrade

Contract Number [REDACTED]

Resulting from Request for Bid No. 34678

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. 34678 (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 3	Pricing Submittal (as submitted by Contractor with its Bid)
Attachment A	Specifications
Attachment B	Sandy DMV Camera Layout
Attachment C	Terms and Conditions
Attachment D	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:

Eric Spond
ODOT Facilities Service Branch
855 Airport Rd SE, Bldg. X

Salem, OR. 97301
Phone: 503-302-3705
Email: eric.spond@oregon.state.or.us

3. Project Location:

37395 US 26
Sandy, OR 97055

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: 3 weeks from NTP
Final Completion: 4 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 4 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:

CONTACT INFORMATION:

CONTRACTOR'S CCB#:

EXPIRATION DATE:

EMERGING SMALL BUSINESS #:

CONTRACTOR'S AUTHORIZED SIGNATURE:

Title

Date

OWNER'S AUTHORIZED SIGNATURE:

Title

Date