

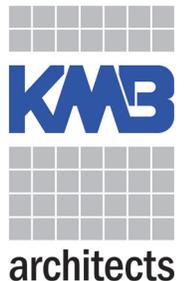
August 18, 2016

STATE OF WASHINGTON

Department of Social and Health Services
Architecture/Engineering Services

Video Security Study Green Hill School

Security Design Agreement 2015-812B



906 Columbia Street SW, Suite 400, Olympia, WA 98501

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STATE OF WASHINGTON

**Department of Social and Health Services
Architectural/Engineering Services**

Video Security Study Green Hill School

Security Design Agreement 2015-812B

Prepared By
KMB architects

August 25, 2016





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August 25th, 2016

Ms. Penny Koal – Project Manager
DSHS/OSSD, Office of Capital Programs
1115 Washington Street SE
PO Box 45848
Olympia, WA 98504-5848

Re: Video Security Improvements at Green Hill School

Dear Ms. Koal;

KMB is pleased to provide this study for “Video Security Improvements at Green Hill School (GHS)”, located in Chehalis, Washington. We enjoyed working with DSHS and GHS stakeholders to prepare this evaluation of options to best address the issues associated with contraband and assaultive behavior.

Upon your review and establishment of a budget, KMB looks forward to providing final design and construction documents for implementation of the selected security improvements.

If you have any questions, please contact our office.

Sincerely,
KMB architects

A handwritten signature in black ink, appearing to read "M. Kaphan", is written over a light gray grid background.

Matthew Kaphan, Project Manager

Attachment: Video Security Study



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Title Page

Cover Letter

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STUDY PURPOSE AND SCOPE

The Washington State Department of Social and Health Services engaged security consultant, KMB architects, to assess existing video security vulnerabilities and make recommendations for improvements at Green Hill School located in Chehalis, Washington. The primary objective of this study is to evaluate video security improvements and other improvements to reduce contraband and assaultive behavior.



SUMMARY OF FINDINGS

Most of the existing video system is antiquated and using cameras and video recording devices that have passed their useful life. Those cameras and video recorders that are still in use suffer frequent malfunctions. In addition to end-of-life equipment, there are many areas of the facility that do not currently have any video coverage in place. The recording devices are from different manufacturers and do not lead to an easily networked solution. The current network infrastructure may support a fully networked solution and the facility should work towards solutions with the goal of a fully networked campus in mind.

Security video is not actively monitored except for the entry and vehicle sallyport at Building A – Admin/Reception. Video is only used for forensics to investigate incidents after they have occurred. The recommended upgrades included in this report will not alter

GHS's current policies or procedures in regards to video monitoring or usage.

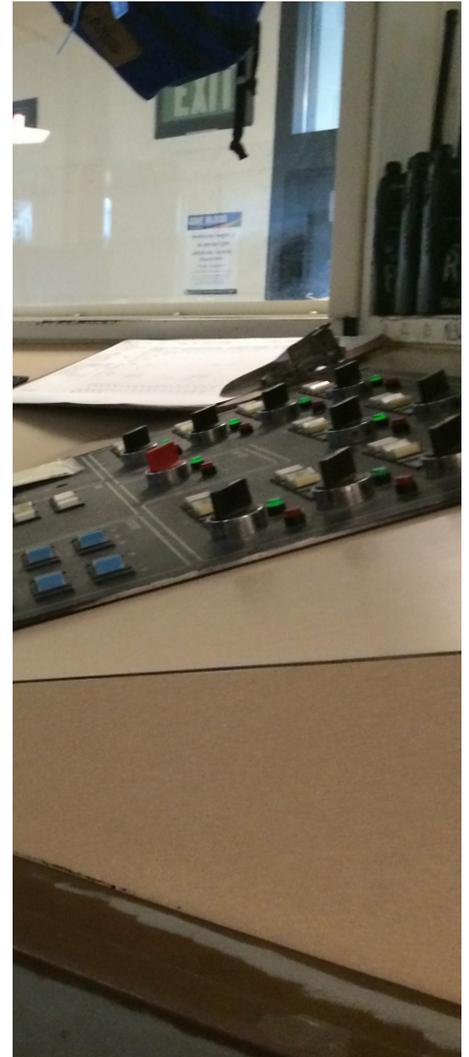
Many of the interior areas of the facility have drop ceilings, allowing residents to remove ceiling tiles and stash contraband in the ceiling. In addition to video coverage, KMB explored options to secure ceiling tiles in order to keep residents from removing them and cutting a window in the "dish pit" to allow direct supervision of the area.

OPTIONS

Though increasing staff would be an effective method to lower the cases of contraband and assaults it comes with a large and ongoing cost. The option that will limit the areas of highest risk with the lowest cost, and the one KMB recommends, is to increase the numbers, locations, and quality of cameras and use network video recorders in order to easily retrieve video from the system when required. KMB has provided pre-schematic level diagrams as part of this report to show some possible camera layouts that will cover most areas of the facility. Additionally, ceiling security clip systems should be added to high priority areas with drop ceilings to deter the stashing of contraband, and adding cameras and cutting a window in the dish pit will lower risk in that area.

COST PLANNING

Green Hill School's ability to implement the upgrades to the security video system is contingent upon the funding allocated. KMB included cost estimate summaries in this report, broken down by building or area so that the facility doesn't have to take an all-or-nothing approach. Buildings can be upgraded as funds become available, and ultimately the building's network video recorders can be tied together. The total construction cost for upgrading the entire facility according to KMB's recommendations is \$1,664,000, and can be completed in a biennium.





1. Executive Summary

ACKNOWLEDGEMENTS

KMB would like to thank everyone who participated and assisted in this study by providing time, energy, feedback and input.

DEPARTMENT OF SOCIAL AND HEALTH SERVICES

GREEN HILL SCHOOL TEAM

Penny Koal	Capital Projects Manager
Marybeth Queral	GHS Superintendent
Lori Nesmith	Associate Superintendent
Michael Smalley	GHS Plant Manager
Duane Bailey	GHS Security
Jeffrey Lee	GHS Maintenance

CONSULTANT TEAM

Jason Ramay, AIA	Principal-in-Charge
Matthew Kaphan	Project Manager
Jack Shetter	Security Designer





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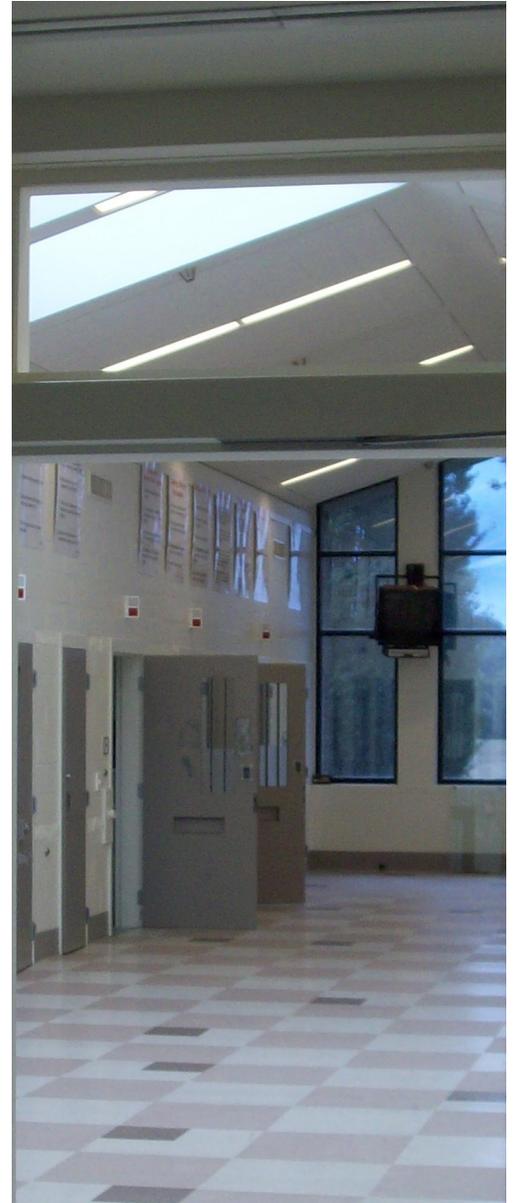
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The facility has limited security video coverage and the systems that do exist are antiquated and are unable to provide the level of coverage required for the perimeter and interior of buildings. Additionally, when there is coverage of an incident the existing systems are difficult to retrieve video from or it is discovered that a camera was malfunctioning at the time of the incident. Residents appear to know the areas with lack of coverage or blind spots and have been utilizing those areas to bring in contraband and commit assaultive behavior.

The lack of video coverage in the visiting area allows contraband to be brought in to the facility and has led to a cash-based black market. Because of a lack of video coverage in other areas around the facility, residents have been able to stash contraband and distribute it to other residents. The facility has stated that the dish pit, recreation building, laundry, central kitchen back room and the JVIP (Junior Vocation Industries Program), especially the auto shop, are major distribution points for the contraband. Contraband is also being stashed above ceiling tiles in rooms and areas with a drop ceiling. The facility is not yet experiencing contraband coming over the perimeter fence but with the increase use of drones and the easily accessible public road near the facility it is possible that this will become an issue in the future.

There are a few areas of the facility that have an existing video security system. The existing systems and hardware are from a disparate mix of manufacturers that cannot be easily integrated together. There may be existing network capacity to network buildings together, and any recommendations should work towards the plan that at some point buildings will be able to be connected and video reviewing and retrieval can take place at multiple locations throughout the campus.

The options reviewed in this report allow buildings and units to be upgraded individually with the option of connecting the buildings together in the future and supporting them from a centralized location. It is worth noting that no security video system is maintenance-free. New systems, as well as existing systems, will require some level of support from facilities and IT to maintain proper working order.





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1. Security Concerns

- a. Most of the cameras are old and using aged technology. Resolution and picture quality suffer,
- b. There are many areas inside buildings that do not have video coverage,
- c. There are too few cameras along the perimeter leaving many areas without video coverage,
- d. The video systems are not compatible with each other and therefore would not work together in a fully networked system,
- e. It is difficult to retrieve video from the systems,
- f. Cameras malfunction and the existing systems do not have a reporting function,
- g. Acoustical drop ceiling tiles allow residents to stash contraband easily.

2. Maintenance and Network concerns

- a. Cameras and network video recorders need to be maintained and updated. Cameras will fail over time and will need to be replaced,
- b. GHS's existing network may be able to support a campus-wide, fully connected security video system. An upgrade to the network infrastructure may be required.
An upgrade to the network infrastructure will be required,
- c. Depending on how the security video network is designed, there may need to be coordination with Washington State WaTech and the Office of the Chief Information Officer.







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4. Prioritizations of Buildings and Areas

1. PERIMETER

- a) There is an inadequate number of cameras for full coverage of the perimeter
- b) The existing cameras are aged, analog, and do not provide very good images
- c) There have been escapes or attempted escapes in the past
- d) Approximate Construction Cost: \$367,000

2. BUILDING A - VISITING AND ENTRY

- a) This is the most likely avenue for contraband to be brought in the facility
- b) There is currently no video coverage of the visitation area
- c) Approximate Construction Cost: \$105,000

3. BUILDING D AND V - DINING, KITCHEN, WAREHOUSE AND VOCATIONAL BUILDING

- a) The facility has reported that the areas within these building are major distribution points for contraband
- b) There is currently no video coverage in either of the buildings
- c) The vocational building has acoustical drop ceilings in some areas
- d) Approximate Construction Cost: \$482,000

4. BUILDING L - LAUNDRY / MAINTENANCE

- a) The facility has reported that the areas within these building are major distribution points for contraband
- b) There is currently no video coverage in either of the buildings
- c) Approximate Construction Cost: \$160,000

5. BUILDING B - BIRCH (ITU)

- a) There is an existing analog and IP based video system
- b) The existing analog cameras should be replaced with IP cameras
- c) The NVR may need to be upgraded or replaced
- d) Approximate Construction Cost: \$73,000



4. Prioritizations of Buildings and Areas

6. BUILDING C - CEDAR (MENTAL HEALTH UNIT)

- a) There is an existing IP based video system
- b) The existing DVR should be replaced with an NVR to connect to the network
- c) Approximate Construction Cost: \$73,000

7. BUILDING W - WILLOW (IMU)

- a) There is an existing analog video system
- b) The existing system is past it's useful life
- c) Approximate Construction Cost: \$128,000

8. BUILDING H, M, S - LIVING UNITS HAWTHORN, MAPLE, SPRUCE

- a) There is no existing video system or coverage
- b) Approximate Construction Cost (each building): \$81,000

9. BUILDING Y - EDUCATION

- a) There is no existing video system or coverage
- b) There is an acoustical drop ceiling
- c) Approximate Construction Cost: \$86,000



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Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

SUMMARY: SD CONSTRUCTION COST

Description		Quantity	Unit	Unit Price	% of Raw \$	TOTAL
Perimeter		1	LS	\$367,000	22%	\$367,000
Building A	Administration and Visiting	1	LS	\$105,000	6%	\$105,000
Building D and V	Dining, Kitchen, Warehouse, Voc	1	LS	\$482,000	29%	\$482,000
Building L	Laundry / Maintenance	1	LS	\$160,000	10%	\$160,000
Building B	Birch - Intake	1	LS	\$73,000	4%	\$73,000
Building C	Cedar - Mental Health Unit	1	LS	\$20,000	1%	\$20,000
Building W	Willow - IMU	1	LS	\$128,000	8%	\$128,000
Building H	Hawthorn - Housing	1	LS	\$81,000	5%	\$81,000
Building M	Maple - Housing	1	LS	\$81,000	5%	\$81,000
Building S	Spruce - Housing	1	LS	\$81,000	5%	\$81,000
Building Y	Education	1	LS	\$86,000	5%	\$86,000
SD CONSTRUCTION COST ESTIMATE					100%	\$1,664,000
SOFT COSTS ¹					45%	\$748,800
TOTAL CONSTRUCTION COST ESTIMATE						\$2,412,800

¹ Soft Costs include architectural and engineering design fees, owner administration costs, fees and permits, owner project management and administration costs, and insura

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

Perimeter

NARRATIVE

The perimeter has 6 existing IP cameras mounted to light poles and monitored and recorded in Building A. The existing system does not provide the level of coverage required to investigate escapes.

Option 1 - Do Nothing: The lack of coverage of certain areas of the perimeter can allow for future escapes

Option 2 - Replace existing cameras and add new cameras to light poles and exterior of Building A for a total of 32 cameras . Replace existing fiber and pull new fiber to poles without fiber. Cameras will home run to building A to be viewed and recorded.

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
New Exterior Camera mounted on existing pole	22	EA	9,000.00	82%	\$198,000
New Exterior Camera mounted on Building A	2	EA	4,000.00	3%	\$8,000
Replacement Exterior camera on existing pole	8	EA	4,500.00	15%	\$36,000
TOTAL RAW COST				100%	\$242,000
General Conditions (incl. Site Security Req'm'ts)		20%			\$48,400
Overhead & profit		10%			\$29,040
Contingency		15%			\$47,920
TOTAL PERIMETER					\$367,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary**Building A - Administraton and Visiting****NARRATIVE**

Building A houses the control center and actively monitors the perimeter, sallyport and facility entrance cameras. The cameras are end of lie analog cameras on standalone DVR.

Option 1 - Do Nothing: The perimeter will continue to lack video coverage. The interior of the building, specifically Visiting, has no video coverage and contraband will continue to come in.

Option 2 - Replace existng analog cameras at sallyport and entrance and add IP cameras to visiting. Add network video recorder and matrix controller for monitoring perimeter and entrance cameras. Add video system control server for centralized management.

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Interior Cameras	6	EA	4,000.00	35%	\$24,000
Exterior Cameras	4	EA	3,000.00	17%	\$12,000
Network Video Recorder (13 TB)	1	EA	14,000.00	20%	\$14,000
Network Switch	1	EA	4,000.00	6%	\$4,000
Virtual Matrix Display Controller (6 outputs)	1	EA	7,500.00	11%	\$7,500
Workstation to retrieve video	1	EA	3,000.00	4%	\$3,000
Video system control server	1	EA	3,400.00	5%	\$3,400
Battery Backup UPS	1	EA	1,000.00	1%	\$1,000
TOTAL RAW COST				100%	\$68,900
General Conditions (incl. Site Security Req'm'ts)		20%			\$13,780
Overhead & profit		10%			\$8,270
Contingency		15%			\$13,640
TOTAL BUILDING A					\$105,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Building D - Dining, Kitchen, Warehouse and

Cost Estimate Summary

Building V - Vocational

NARRATIVE

Option 1 - Do Nothing: With no existing video coverage contraband and assaults are likely to continue.

Option 2 - Add video cameras and NVR. Cut windows in to dishwashing area to provide direct supervision. Replace drop ceiling in dishwashing area and sewing room with security ceiling tile system.

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Interior Camera	64	EA	4,000.00	81%	\$256,000
Network Video Recorder (17 TB)	1	EA	18,000.00	6%	\$18,000
Network Switch	2	EA	4,000.00	3%	\$8,000
Battery Backup UPS	1	EA	1,500.00	0%	\$1,500
Ceiling security clips	1,400	SF	18.00	8%	\$25,200
Dish Pit Window	1	EA	9,000.00	3%	\$9,000
TOTAL RAW COST				100%	\$317,700
General Conditions (incl. Site Security Reqmts)		20%			\$63,540
Overhead & profit		10%			\$38,120
Contingency		15%			\$62,900
TOTAL BUILDING D AND V					\$482,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

Building L - Laundry/Maintenance

NARRATIVE

Option 1 - Do Nothing: With no existing video coverage contraband and assaults are likely to continue.

Option 2 - Add video camera coverage

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Interior Camera	22	EA	4,000.00	83%	\$88,000
Network Video Recorder (6.5 TB)	1	EA	13,000.00	12%	\$13,000
Network Switch	1	SF	4,000.00	4%	\$4,000
Battery Backup UPS	1	EA	500.00	0%	\$500
TOTAL RAW COST				100%	\$105,500
General Conditions (incl. Site Security Reqmts)		20%			\$21,100
Overhead & profit		10%			\$12,660
Contingency		15%			\$20,890
TOTAL BUILDING L					\$160,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

Building B - Birch Intake

NARRATIVE

Birch has an existing security video system consisting of 8 IP cameras on a small NVR, 8 analog cameras on a standalone DVR, and 8 analog cameras that are currently unused

Option 1 - Do Nothing: With the mixed manufacturer installation, the system is hard to maintain. The analog cameras are end of life and likely to fail.

Option 2 - Replace existing (16) analog cameras and replace the existing NVR and DVR with a new NVR.

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Interior Camera	16	EA	2,000.00	67%	\$32,000
Network Video Recorder (6.5 TB)	1	EA	13,000.00	27%	\$13,000
Network Switch	1	EA	3,000.00	6%	\$3,000
TOTAL RAW COST				100%	\$48,000
General Conditions (incl. Site Security Reqmts)		20%			\$9,600
Overhead & profit		10%			\$5,760
Contingency		15%			\$9,500
TOTAL BUILDING T					\$73,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

Building C - Cedar Mental Health Unit

NARRATIVE

Cedar has an existing 20 camera IP based security video system with a standalone DVR. The IP cameras are fairly current and should not need replacement.

Option 1 - Do Nothing: The existing system is adequate and only lacks the ability to be placed on a network.

Option 2 - Replace current DVR with new NVR

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Network Video Recorder (6.5 TB)	1	EA	13,000.00	96%	\$13,000
Battery Backup UPS	1	EA	500.00	4%	\$500
TOTAL RAW COST				100%	\$13,500
General Conditions (incl. Site Security Reqmts)				20%	\$2,700
Overhead & profit				10%	\$1,620
Contingency				15%	\$2,670
TOTAL BUILDING T					\$20,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

Building W - Willow IMU

NARRATIVE

Willow has security video system consisting of 31 analog cameras and 2 DVRs.

Option 1 - Do Nothing: The existing system has failures and is unreliable. Recorded video is difficult to retrieve.

Option 2 - Replace existing analog cameras with IP cameras and replace the existing DVRs with a single NVR.

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Replace existing analog cameras	31	EA	2,000.00	74%	\$62,000
Add one IP camera	1	EA	4,000.00	5%	\$4,000
Network Video Recorder (13 TB)	1	EA	14,000.00	17%	\$14,000
Network Switch	1	EA	4,000.00	5%	\$4,000
TOTAL RAW COST				100%	\$84,000
General Conditions (incl. Site Security Reqmts)				20%	\$16,800
Overhead & profit				10%	\$10,080
Contingency				15%	\$16,630
TOTAL BUILDING T					\$128,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Typical Residential Unit - Hawthorn, Maple, Spruce

Cost Estimate Summary

NARRATIVE

Option 1 - Do Nothing: With no existing video coverage contraband and assaults are likely to continue.

Option 2 - Add video camera coverage

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Interior Camera	8	EA	4,000.00	60%	\$32,000
Exterior Camera	1	EA	5,000.00	9%	\$5,000
Network Video Recorder (13 TB each)	1	EA	13,000.00	24%	\$13,000
Network Switch	1	EA	3,000.00	6%	\$3,000
Battery Backup UPS	1	EA	500.00	1%	\$500
TOTAL RAW COST				100%	\$53,500
General Conditions (incl. Site Security Req'm'ts)		20%			\$10,700
Overhead & profit		10%			\$6,420
Contingency		15%			\$10,590
TOTAL TYPICAL HOUSING					\$81,000

Green Hill School - Upgrade Campus Security

Project #2016-449 A (1)

Cost Estimate Summary

Building Y - Education

NARRATIVE

Option 1 - Do Nothing: With no existing video coverage contraband and assaults are likely to continue.

Option 2 - Add video camera coverage

SECURITY ELECTRONICS

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>% of Raw \$</u>	<u>TOTAL</u>
Interior Camera	10	EA	4,000.00	71%	\$40,000
Network Video Recorder (6.5 TB)	1	EA	13,000.00	23%	\$13,000
Network Switch	1	EA	3,000.00	5%	\$3,000
Battery Backup UPS	1	EA	500.00	1%	\$500
TOTAL RAW COST				100%	\$56,500
General Conditions (incl. Site Security Reqmts)		20%			\$11,300
Overhead & profit		10%			\$6,780
Contingency		15%			\$11,190
TOTAL BUILDING Y					\$86,000



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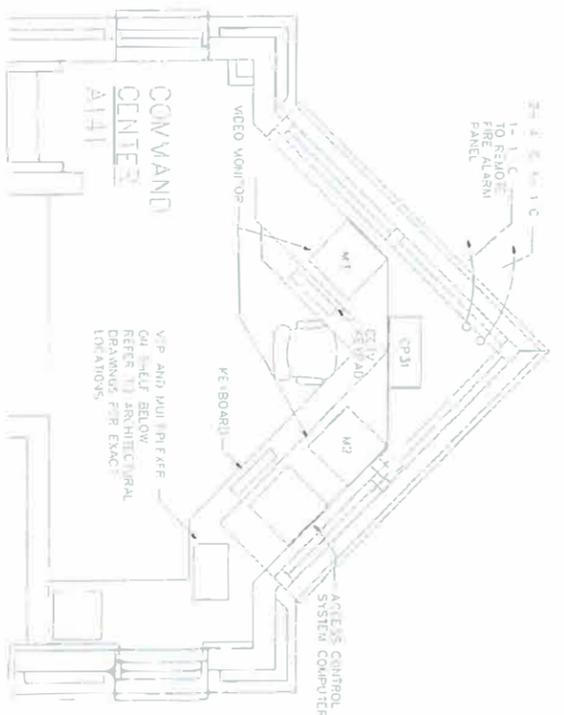
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KEYED NOTES

- 1 TO SITE CAMERAS SEE ESI. 01
- 2 TERMINATE ALL HOME RUN CONDUIT IN GUTTER
- 3 PUSHBUTTON FOR DIRECT CONTROL OF ELECTRIC STRIKE
- 4 SURFACE MOUNT ON CEILING RUN CONDUIT AT RIGHT ANGLES TO CEILING STRUCTURE PAINT BLACK
- 5 FLUSH WALL MOUNT
- 6 ZONE TOGETHER WITH ALL OTHER CEILING SPEAKERS IN ROOM # A111
- 7 ZONE TOGETHER WITH ALL OTHER CEILING SPEAKERS IN ROOM # A115
- 8 REMOTE INTERCOM STATIONS - POINT ON VEHICLE STAIR
- 9 PELCO AIF FASTING OUTDOOR CAMERA HERE PROVIDE NEW LENS
- 10 COVERILLY LOCATE IN CABINETS - COORDINATE EXACT LOCATION WITH ARCHITECT
- 11 TV OUTLET SEE DETAIL 1/ETS 11 AND ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS
- 12 LOCATE LOW VOLTAGE TRANSFORMER (BY DIV. B) IN SECURITY ELECTRONICS RACK
- 13 JUDO MURKIN/ELCER - CCTV ACQUISITION AND CONTROL PANEL THIS IS A TELEOPERARY SYSTEM TO BE DISASSEMBLED AND REINSTALLED IN BUILDINGS A AND B UPON COMPLETION OF BUILDING A REFER TO 14 2/ETS 01 AND 6/ESA 01
- 14 CONNECT ALARM UNIT THAT PARALLEL WITH INTERCOM REQUEST STATIONS SWITCH

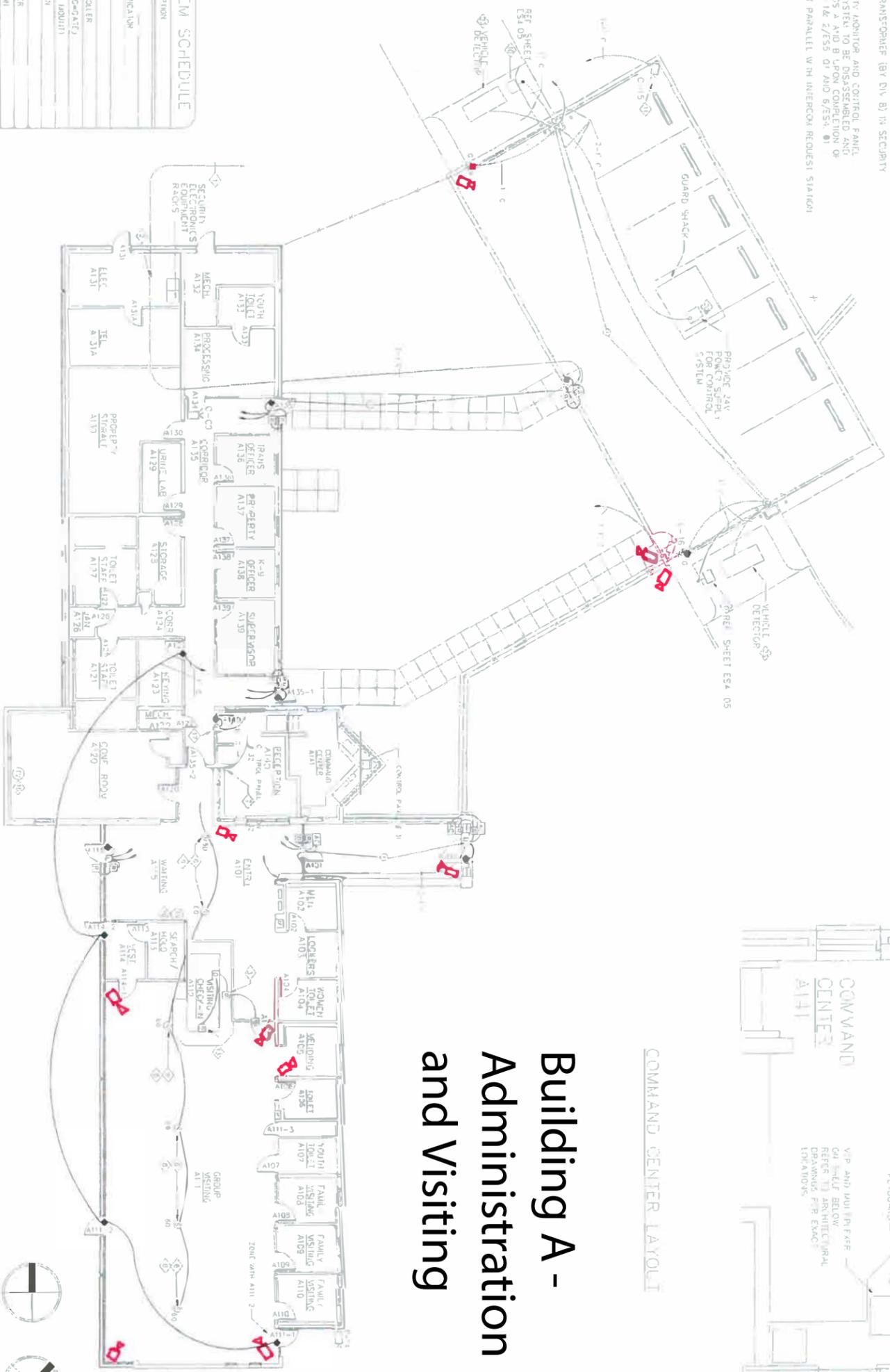
SHEET NOTES

- 1 ALL HOME RUNS ARE TO ELECTRICAL ROOM A131 USE
- 2 CONDUIT TO BE SIZED ACCORDING TO WIRE SIZES OR SPECIFICATIONS



COMMAND CENTER LAYOUT

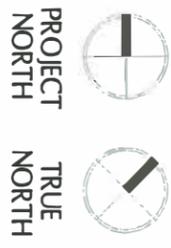
Building A - Administration and Visiting



SECURITY SYSTEM SCHEDULE

SYMBOL	DESCRIPTION
1	MURKIN USE ONLY
2	ABOVE DOOR VISUAL MURKIN
3	ELECTRIC LOCK
4	INTER-CODED ROOMS
5	INTER-CODED YARD CONTROLLER
6	DOOR POSITION SWITCH-GATE/2
7	DIRTYS SWITCH-WALL MOUNT
8	LOCAL INTERCOM STATION
9	POINT OF MONITORING
10	ACCESS CONTROL READER
11	DOOR BELL PUSH BUTTON
12	CEILING SPEAKER
13	OUTDOOR RAINING SPEAKER
14	CCV CAMERA
15	BROAD BAND TELEVISION OUTLET

SECURITY FLOOR PLAN - BUILDING "A" AS-BUILT



APPROVALS	DATE
DRAWN: EVELAND	25MAY98
REVIEW: HILL/PL	16AUG00
APPROVED:	

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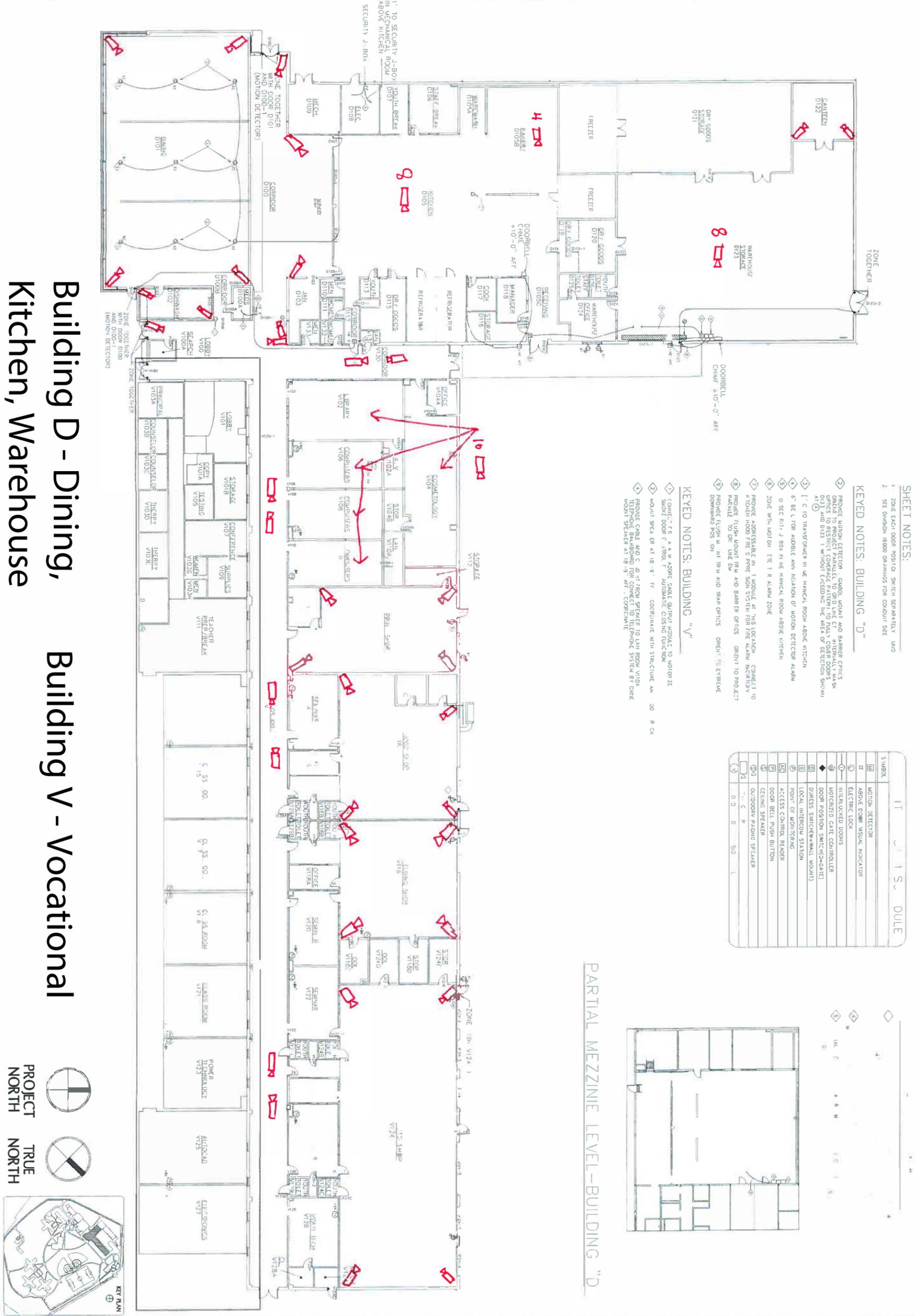


PROJECT TITLE: GREEN HILL SCHOOL RENOVATION AND EXPANSION CHEHALIS, WASHINGTON

DRAWING TITLE: SECURITY SYSTEM-BUILDING "A" AS-BUILT

REV:	DATE: 16AUGUST00
SCALE: N.T.S.	FILE # 02072-3
JOB # 001	
TITLE: AS-BUILT	

ESLFP
2-3



- SHEET NOTES:**
- 1. ZONE EACH DOOR POSITIVE SWITCH SEPARATELY UNID
 - 2. SET DIVISION 16000 DRAWINGS FOR CONDUIT SIZE

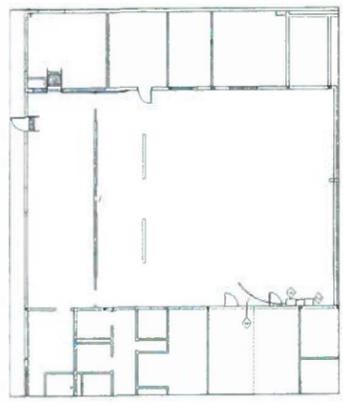
KEYED NOTES: BUILDING "D"

- 1. PROVIDE UL300A SMOKE, COULD, HEAT AND BARRIER OPTICS TO PROTECT EXISTING UL300A SMOKE, COULD, HEAT AND BARRIER OPTICS TO RESTRICT COVERAGE PATTERN TO FULLY COVER DOORS D122 AND D123 WITHOUT EXCEEDING THE AREA OF DETECTION SHOWN IN (D)
- 2. 1" C TO TRANSFORMER IN MECHANICAL ROOM ABOVE KITCHEN
- 3. 6" BELT FOR ABOVE ANN UNCLATION OF MOTION DETECTOR ALARM
- 4. 0 SEC RIT J BOX IN MECHANICAL ROOM ABOVE KITCHEN
- 5. ZONE WITH MOTION ETC 1 R ALARM ZONE
- 6. PROVIDE ADDRESSABLE IN 1 UNCLUE AT THIS LOCATION. CONNECT TO KITCHEN HOOD FIRE S PINE SON SYSTEM FOR FIRE ALARM INDICATION
- 7. PROVIDE FLUSH MOUNT TRM AND BARRIER OPTICS. ORIENT TO PROTECT PARALLEL TO OR LINE DW
- 8. PROVIDE FLUSH MOUNT TRM AND BARRIER OPTICS. ORIENT TO PROTECT DOWNWARD POS ON

KEYED NOTES: BUILDING "V"

- 1. CONDUIT FOR A A M ASBIC CABLE OUTPUT MOUNT TO MOTOR ZONE
- 2. SMOKE DOOR C J BOX AUTOMATIC CLOSING FUNCTION
- 3. MOUNT SPEC ER AT 10 9' FT. COORDINATE WITH STRUCTURE AN 30 R CK
- 4. PROVIDE CABLE AND C 40 FT FROM SPEAKER TO LAM ROOM V10A. MOUNT SPEAKER AT 10 9' FT. COORDINATE WITH STRUCTURE AN 30 R CK

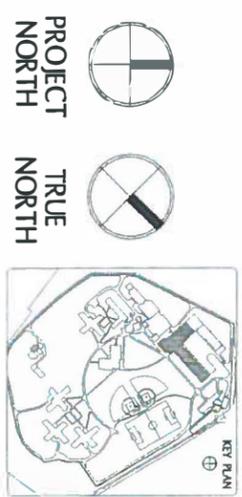
SYMBOL	DESCRIPTION
(D)	MOTION DETECTOR
(H)	ABOVE DOOR VISUAL INDICATOR
(E)	ELECTRIC LOCK
(U)	UNLOCKED DOORS
(C)	MOTORIZED GATE CONTROLLER
(G)	DOOR POSITION SWITCH(G-GATE)
(S)	DURRES SWITCH(WALL MOUNT)
(L)	LOCAL INTERCOM STATION
(P)	POINT OF MONITORING
(R)	ACCESS CONTROL READER
(B)	DOOR BELL PUSH BUTTON
(S)	CEILING SPEAKER
(O)	OUTDOOR PAGING SPEAKER
(C)	CONFERENCE ROOM
(D)	DOOR
(O)	OPEN
(S)	SHUT



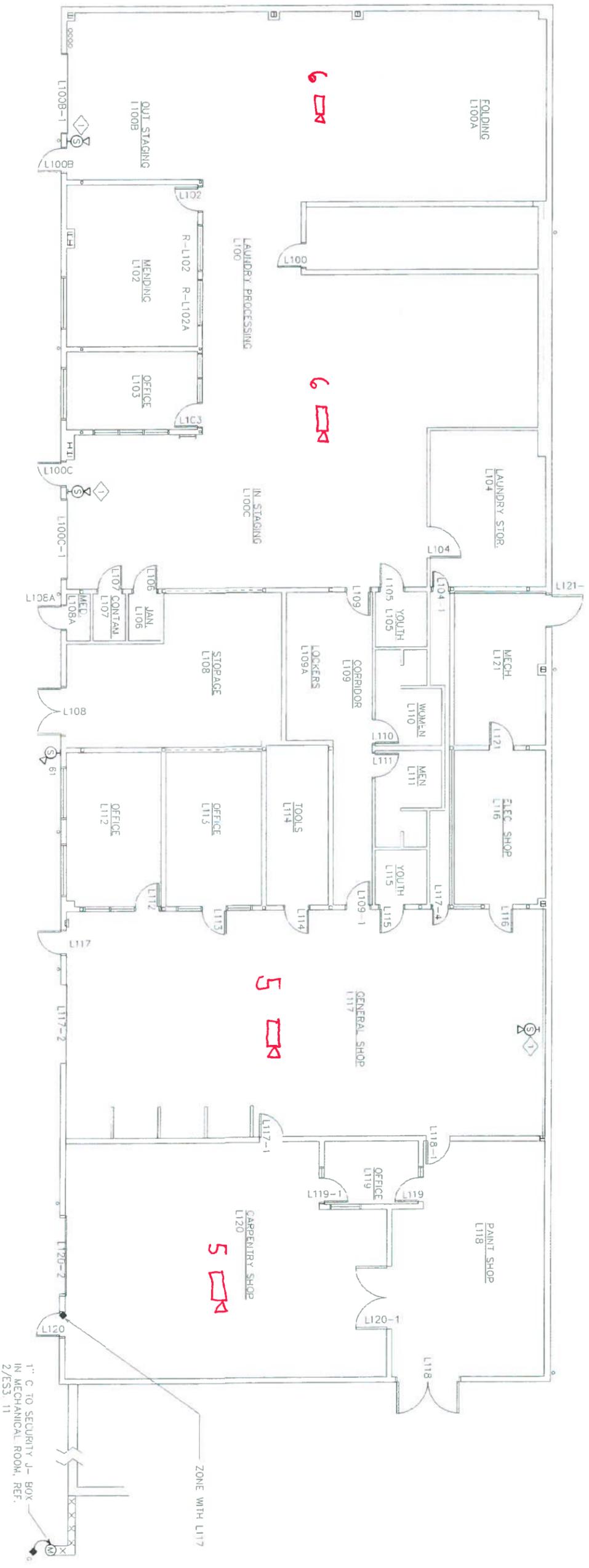
PARTIAL MEZZINE LEVEL-BUILDING "D"

Building D - Dining, Kitchen, Warehouse

Building V - Vocational

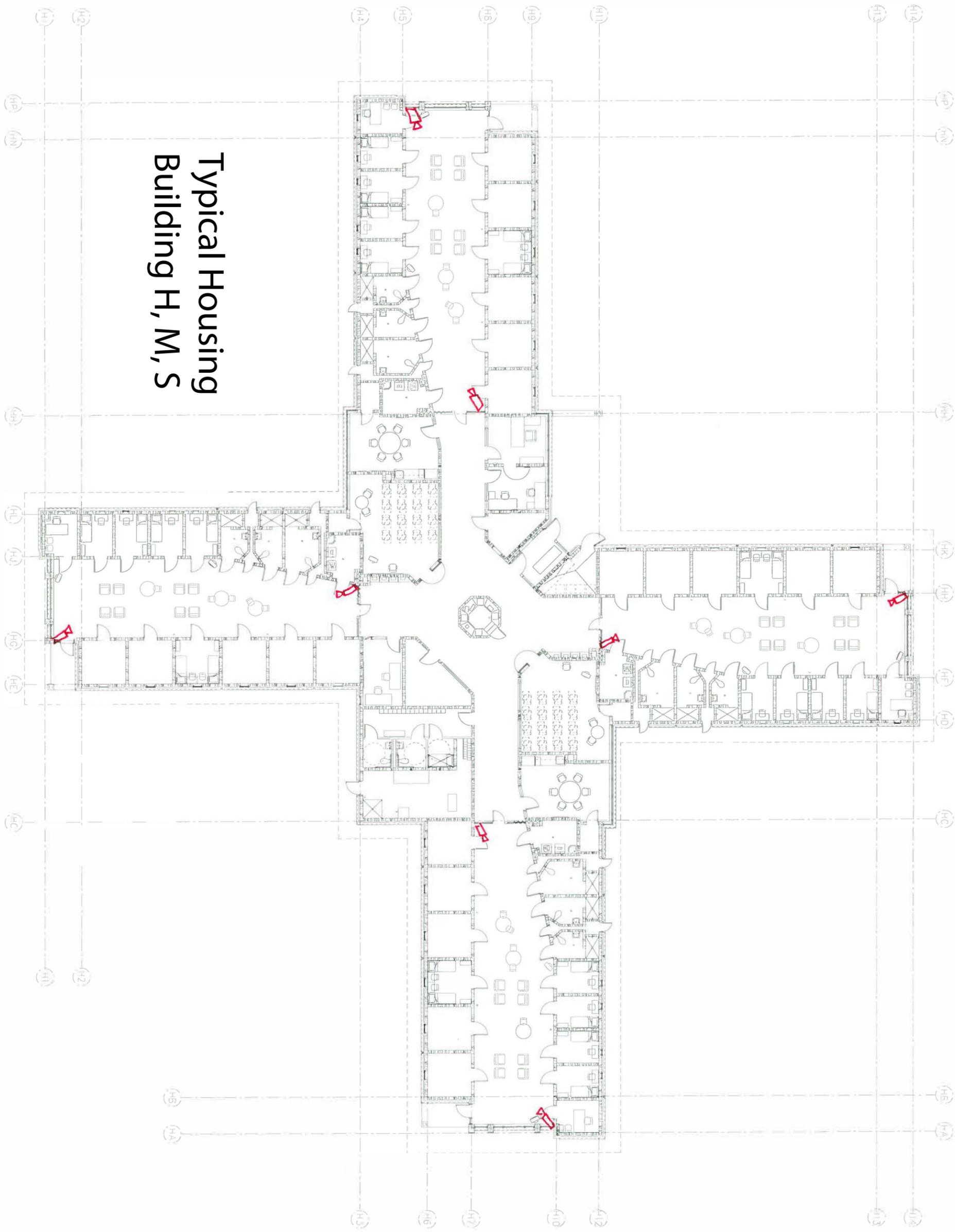


ESFLP 2-5	REV A-2 REV DATE 16AUGUST00 SCALE HTS FILE # C2072-5 JOB # 207 TYPE AS-BUILT	PROJECT TITLE: GREEN HILL SCHOOL RENOVATION AND EXPANSION CHEHALIS, WASHINGTON	<p>Calvert Technologies Inc. Automation & Integration Group Calvert Technologies W. 11427 21st ST. Spokane, Wa. 99224 1-509-244-3601</p>	APPROVALS DRAWN L KALB REWSED BY PHILLIPS APPROVED	DATE 16JUN98 16AUG00
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Building L - Laundry/Maintenance

Typical Housing Building H, M, S



Building Y - Education

