



# City of Garden Grove Infrastructure Space Needs Assessment Appendix

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SUBMITTED TO:

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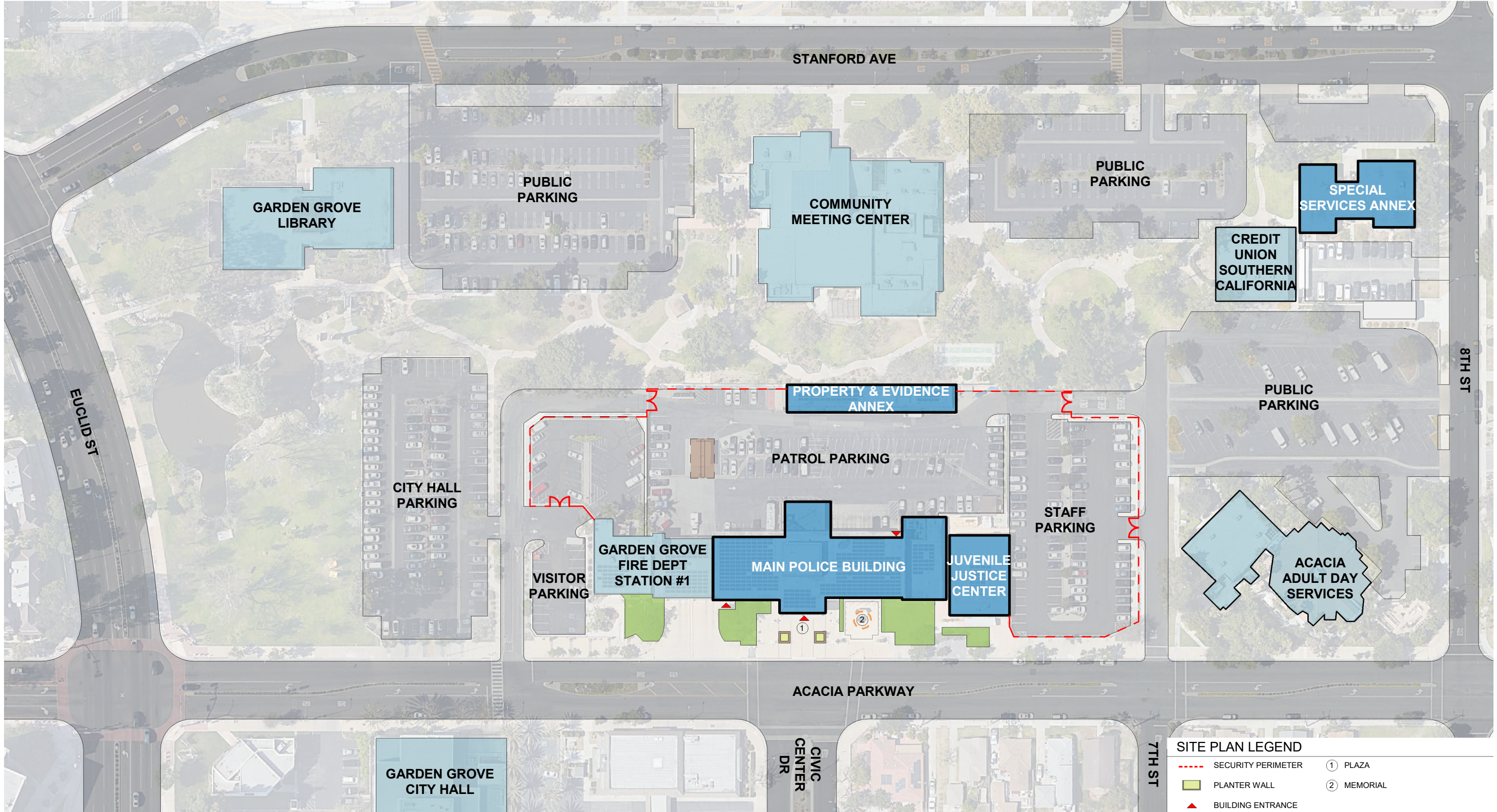
**Appendix H: Garden Grove General Plan 2030 - Safety Element - Liquefaction Zones Map**



# **APPENDIX A: EXISTING PLANS**



**EXISTING  
SITE PLAN**

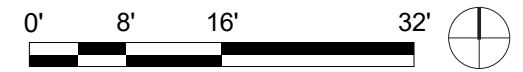
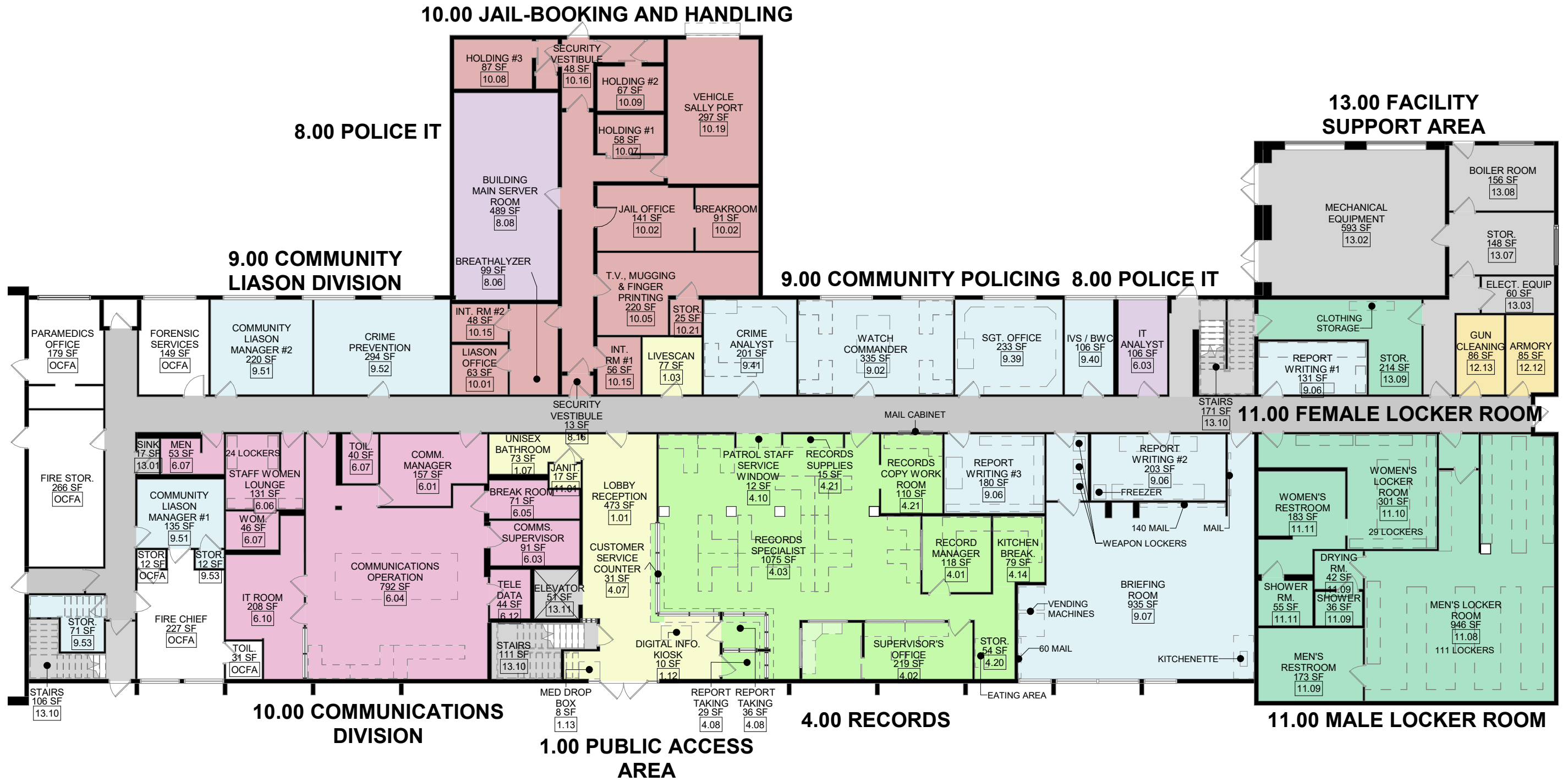


**SITE PLAN LEGEND**

- - - SECURITY PERIMETER
- PLANTER WALL
- ▲ BUILDING ENTRANCE
- ① PLAZA
- ② MEMORIAL

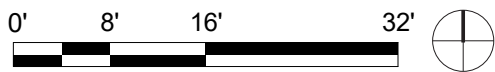
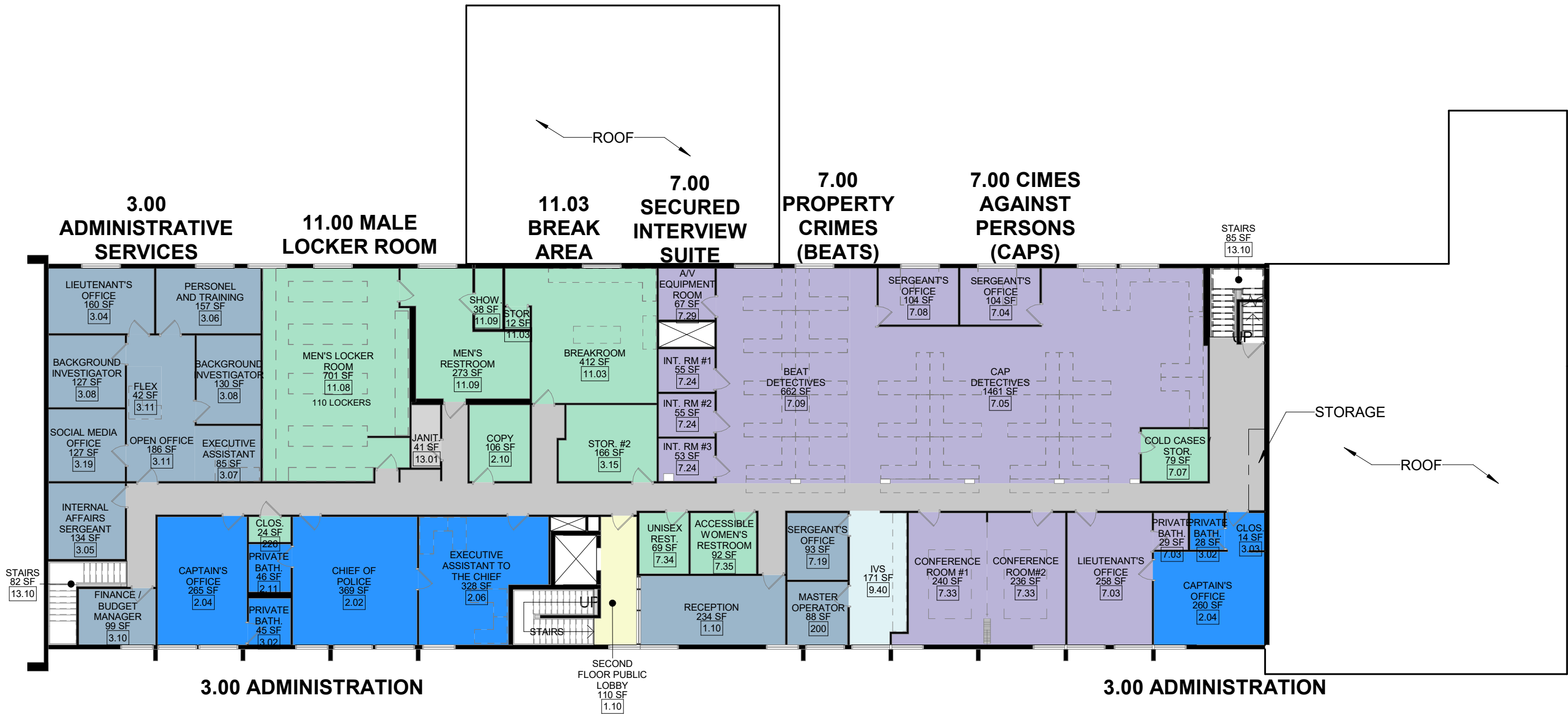
0' 50' 100' 200'

**EXISTING**  
**MAIN POLICE BUILDING - FIRST FLOOR PLAN**



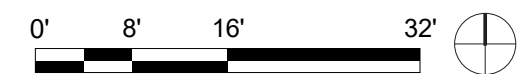
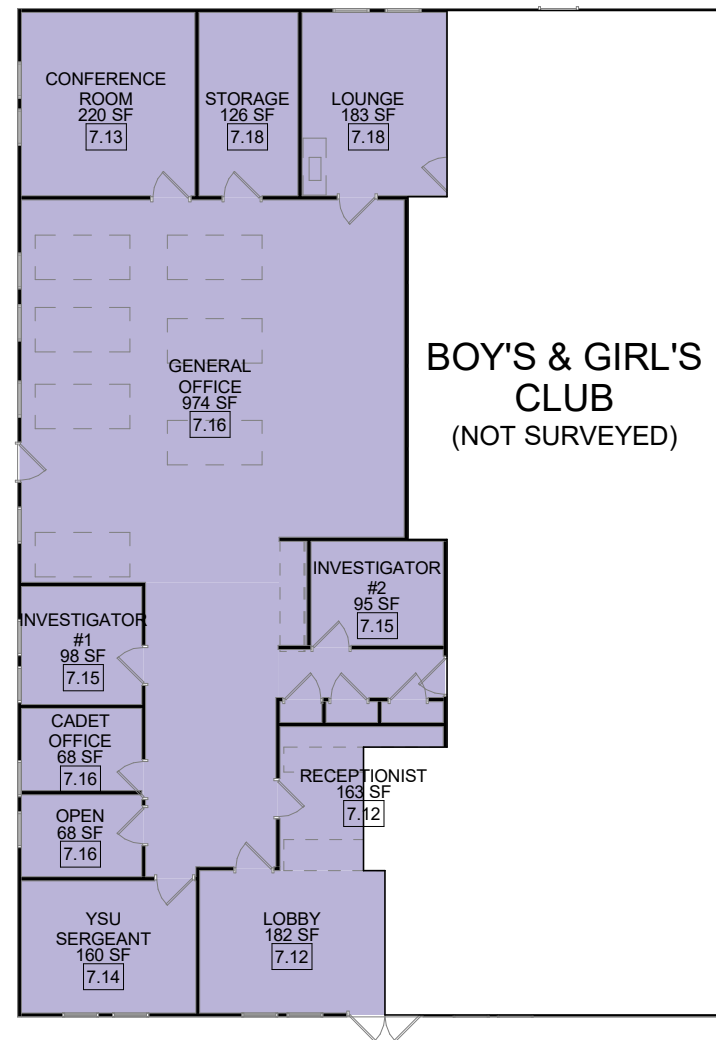


**EXISTING  
MAIN POLICE BUILDING - SECOND FLOOR PLAN**



**EXISTING**  
JUVENILE JUSTICE CENTER FLOOR PLAN

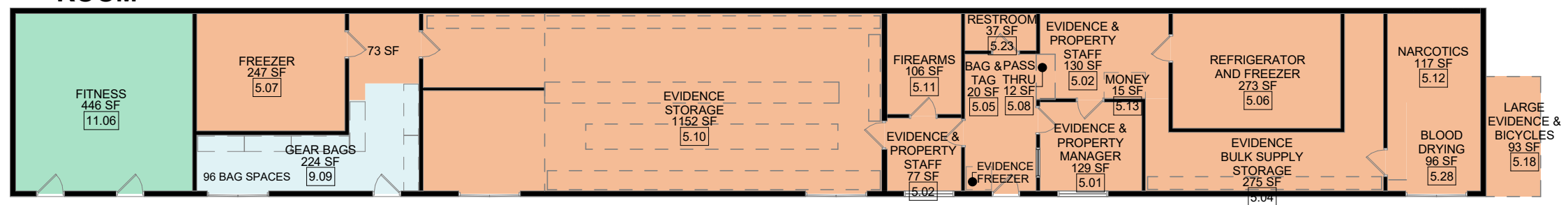
**7.00 YOUTH SERVICES UNIT**



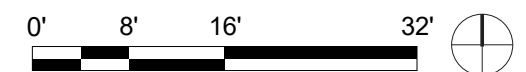
**EXISTING**  
**PROPERTY AND EVIDENCE ANNEX FLOOR PLAN**

**11.06 FITNESS ROOM**

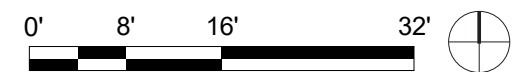
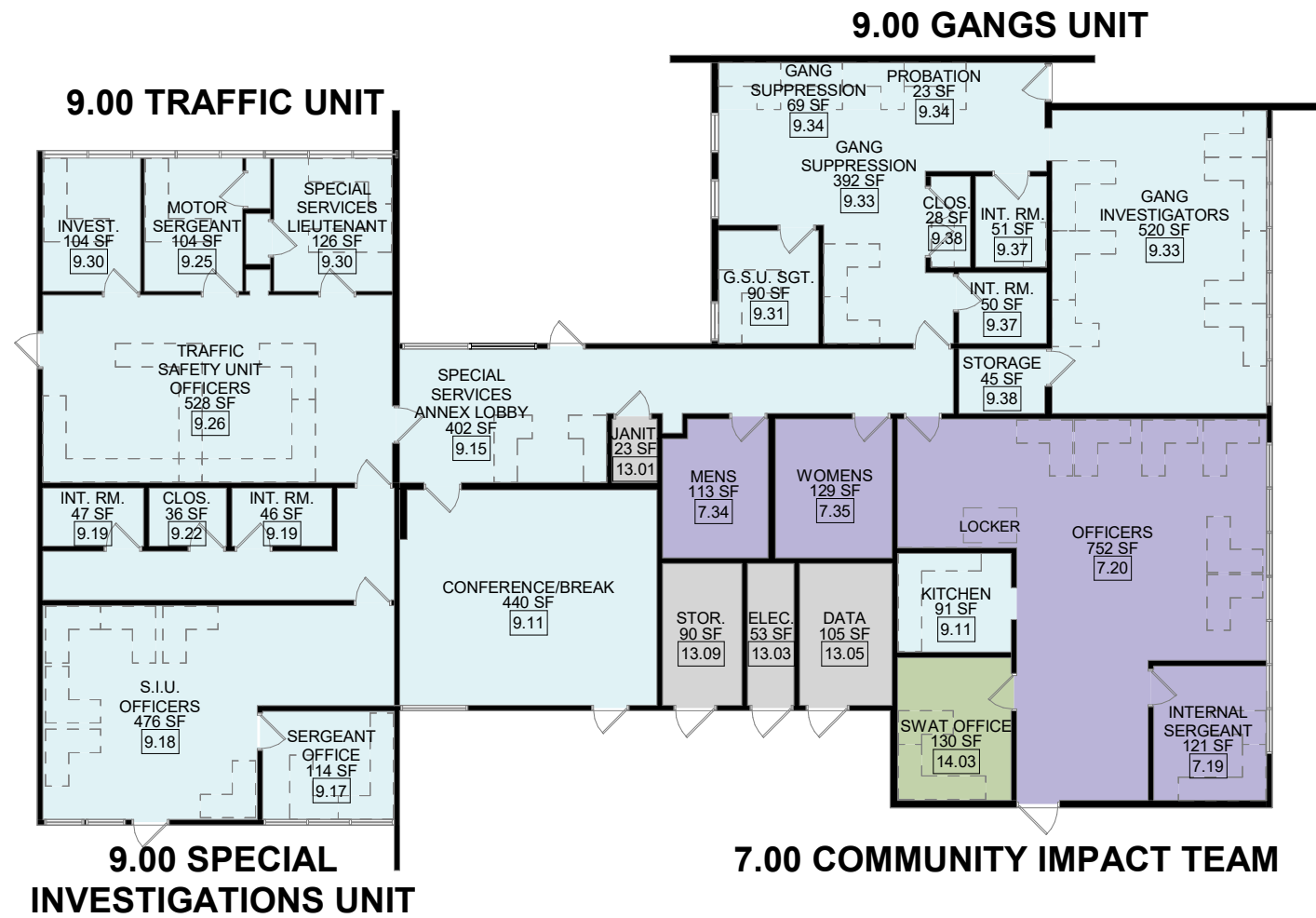
**5.00 PROPERTY EVIDENCE**



**9.09 PATROL STORAGE**



**EXISTING**  
**SPECIAL SERVICES ANNEX FLOOR PLAN**



# **APPENDIX B: PROGRAM**



# PROGRAM SUMMARY

GARDEN GROVE POLICE DEPARTMENT PROGRAM + PARKING NEEDS SUMMARY							
SPACE NO.	DEPARTMENT OR COMPONENT	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Staff / Patrol Parking Needs	Public Parking Needs	remarks / explanations
1.00	PUBLIC ACCESS AREAS	4,030	4,030	4,030	0	60	
2.00	ADMINISTRATION	3,676	3,962	3,962	7	0	
3.00	ADMINISTRATIVE SERVICES	4,355	5,395	5,717	30	0	
4.00	RECORDS	3,161	3,161	3,161	40	0	
5.00	EVIDENCE AND PROPERTY	13,344	13,344	13,594	7	0	
6.00	COMMUNICATIONS DIVISION	3,070	3,387	3,747	25	0	
7.00	INVESTIGATIONS DIVISION	11,968	12,225	13,864	58	0	
8.00	POLICE I.T.	1,336	1,336	1,336	1	0	
9.00	COMMUNITY POLICING	17,116	17,350	18,899	0	0	
10.00	JAIL - BOOKING AND HOLDING	3,630	3,630	3,745	11	0	
11.00	POLICE SHARED STAFF AREAS	12,185	12,185	12,373	0	0	
12.00	TRAINING - FIRING RANGE	0	0	11,170	1	0	
13.00	FACILITY SUPPORT AREAS (INTERIOR MEP & VERTICAL CIRC)	4,001	4,001	4,001	0	0	
14.00	SPECIAL WEAPONS AND TACTICS (SWAT)	1,877	5,252	6,062	1	0	
<b>Sub-total (DGSF)</b>		<b>83,748</b>	<b>89,257</b>	<b>105,660</b>			[only includes interior wall thickness & inner dept corridors]
<b>Dept Gross to Building Gross Factor</b>		<b>1.15</b>	<b>1.15</b>	<b>1.15</b>			
		<b>12,562.19</b>	<b>13,388.57</b>	<b>15,849</b>			[area for exterior wall thickness & common bldg corridors]
<b>Overall Building Gross SF (BGSF)</b>		<b>96,310</b>	<b>102,646</b>	<b>121,509</b>			
<b>total parking spaces needed between 8am-5pm</b>					<b>300 / 84</b>	<b>60</b>	

**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
<b>1.00 PUBLIC ACCESS AREAS</b>													
1.01	First Floor Public Lobby/Reception	1					1	1000	1000	1000	1000	473	
1.02	Public Entry Vestibule	0					1	70	70	70	70	0	not currently existing
1.03	Records Request / Fingerprinting Room	0					1	120	120	120	120	77	req. Live scan machine, space for officer and one other
1.04	Community Room	0					1	1300	1300	1300	1300	0	40-50 person room for community meetings, need input from admin, might be too small for officer swearing in, could use larger room that can be partitioned
1.05	Community Room - Storage	0					1	120	120	120	120	0	
1.06	Community Room - Kitchenette	0					1	100	100	100	100	0	
1.07	First Floor Public Restroom Men's	1					1	160	160	160	160	73	unisex RR existing
1.08	First Floor Public Restroom Women's	0					1	160	160	160	160	0	
1.09	First Floor Public Restroom All gender	0					1	70	70	70	70	0	required per CA code
1.10	Stair and elevator - Public Lobby	1					1	150	150	150	150	110	public space needed for public circulation
1.11	Upper Level Public Restrooms	0					1	70	70	70	70	0	unisex
1.12	Digital Information Kiosk	1					1	24	24	24	24	10	space allows for kiosk and assistant
1.13	Medication Drop Box	1					1	20	20	20	20	8	in lobby on left
1.14	Soft Interview Room	0					1	140	140	140	140	0	
<b>total:</b>													
<b>public parking spaces needed (8am-5pm):</b>							<b>60</b>						
									<b>NET SQUARE FEET</b>	<b>3,504</b>	<b>3,504</b>	<b>3,504</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.15</b>	<b>1.15</b>	<b>1.15</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>4,030</b>	<b>4,030</b>	<b>4,030</b>	

<b>2.00 ADMINISTRATION</b>													
2.01	Admin Lobby / waiting area	0					1	100	100	100	100	0	not currently existing
2.02	Chief of Police	1	1	1	1	1	1	400	400	400	400	369	
2.03	Deputy Chief of Police	0	1	1	1	1	1	300	240	300	300	369	reduce in Scheme 1 & 2
2.04	Captains	3	2	2	2	2	2	300	440	600	600	265	reduce in Scheme 1 & 2
2.05	Administrative Lieutenant	0	0	0	0	0	0	180	0	0	0	265	see Administrative Services
2.06	Executive Assistant to the Chief	1	1	1	1	1	1	120	120	120	120	328	
2.07	CALEA Sergeant	0	0	0	0	0	0	150	0	0	0	0	Lt. in Administrative Services covers CALEA
2.08	Flex / Future Offices	0	0	0	0	1	1	220	220	220	220	0	
2.09	Admin Conference Room	0					1	450	450	450	450	0	18 person conference room w/ credenza
2.10	Admin Copy / Work / Supply Area	1					1	150	150	150	150	106	
2.11	Closets in exec offices	1					4	12	48	48	48	14	Chief, DC, Captains
2.12	Police Chief Restroom	1					1	100	100	100	100	45	restroom w/ shower and changing area
2.13	Deputy Chief of Police Restroom	0					1	100	100	100	100	0	
2.14	Captains Restroom	1					2	100	200	200	200	45	
2.15	Admin Suite restrooms	0					2	65	130	130	130	0	
2.16	Admin kitchenette	0					1	50	50	50	50	0	
2.17	Admin Library	0					0	140	0	0	0	0	
2.18	Admin Locked Storage Room	0					1	80	80	80	80	0	
<b>total staff in this suite:</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>7</b>						
									<b>NET SQUARE FEET</b>	<b>2,828</b>	<b>3,048</b>	<b>3,048</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR</b>	<b>1.30</b>	<b>1.30</b>	<b>1.30</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>3,676</b>	<b>3,962</b>	<b>3,962</b>	

<b>3.00 ADMINISTRATIVE SERVICES</b>													
3.01	Captain Office	0	0	0	0	0	0	220	0	0	0	265	see Administration
3.02	Captain private Restroom	1					0	70	0	0	0	28 - 45	existing has a restroom; see Administration
3.03	Captain Closet	1					0	12	0	0	0	14	see Administration
3.04	Professional Standards Lt.	1	1	1	1	1	1	180	180	180	180	160	CALEA service
3.05	Internal Affairs Sergeant	1	1	1	1	1	1	150	150	150	150	134	room for 4 people, officers, and attorney
3.06	Recruitment and Training Sergeant	1	1	1	1	1	1	150	150	150	150	157	
3.07	Executive Assistant	1	1	1	1	1	1	100	100	100	100	85	10x10 workstation
3.08	Officer	1	1	1	1	1	1	64	64	64	64	50	8x8 workstation
3.09	CSO workstation	1	2	3	3	3	3	64	128	128	192	50	8x8 workstation, includes MRO; Scheme 1, 2, & 3 reduce [1] CSO workstation
3.10	Finance / Budget Manager	1	1	1	1	1	1	180	180	180	180	99	



**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
3.11	Flex Workstation	1	1	2	2	3	3	64	128	128	192	42	flex / cadets; Scheme 1, 2, & 3 reduce (1) workstation
3.12	Conference Room	0					1	240	240	240	240	0	8 person Conference room
3.13	Copy / Work / Supply Area	0					1	150	150	150	150	0	
3.14	Training Room	0					1	2000	1200	2000	2000	0	and chair storage required?; reduce in Scheme 1 & 2
3.15	File Storage room	0					1	120	120	120	120	0	
3.16	Equipment Storage Room	0					1	120	120	120	120	0	
3.17	New Hire Waiting Area	0					1	100	100	100	100	0	seating for 4
3.18	Interview Room	0					2	120	120	120	240	0	small sized conference room for 4 people; Scheme 1, 2, & 3 reduce(1) interview room
3.19	Social Media Office	1	1	1	1	1	1	120	120	120	120	127	
3.20	Social Media Storage	0					1	100	100	100	100	0	cameras, lighting, backdrops, general camera equipment
<b>total staff in this suite:</b>		<b>9</b>	<b>10</b>	<b>12</b>	<b>12</b>	<b>13</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>13</b>						
									<b>NET SQUARE FEET</b>	<b>3,350</b>	<b>4,150</b>	<b>4,398</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR</b>	<b>1.30</b>	<b>1.30</b>	<b>1.30</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>4,355</b>	<b>5,395</b>	<b>5,717</b>	

4.00 RECORDS													locate on 1st flr near lobby
4.01	Records Manager	1	1	1	1	1	1	150	150	150	150	118	
4.02	Police Record Supervisor	3	4	4	4	4	4	50	200	200	200	219	2 people share a desk; 10x10 desk space
4.03	Records Specialist	11.5	15	15	15	15	15	36	540	540	540	1075	23 sharing workstations
4.04	Police Light Duty Workstations	0					0	64	0	0	0	0	server at service window
4.05	Statistics Specialist	1	1	1	1	1	1	64	64	64	64	35	
4.06	Warrants Specialist	1	1	1	1	1	1	64	64	64	64	35	
4.07	Customer Service Counter - public side	3	3	3	3	3	3	8	24	24	24	31	3 CSO, 2 cadets current 2 P/T CSO and 1 Cadet
4.08	Report Taking Room	2					2	130	260	260	260	29 - 36	
4.09	Media / Records Review Room	0					0	90	0	0	0	0	
4.10	Patrol Staff Service Window / Officer access	1					1	12	12	12	12	12	
4.11	Active Records / Short term File Strg	0					1	100	100	100	100	0	off site storage
4.12	Archive Record / Long term File Strg	0					1	350	350	350	350	0	off site storage
4.13	Juvenile Files	0					1	40	40	40	40	0	off site storage
4.14	Coffee / kitchenette / Break	1					1	40	40	40	40	79	2-3 at a time
4.15	Records Conference Room	0					1	180	180	180	180	0	4-6 person conference room
4.16	Lockers	0					30	5	150	150	150	0	uniforms
4.17	Changing Room	0					2	80	160	160	160	0	
4.18	Restroom - Male	0					1	70	70	70	70	0	
4.19	Restroom - Female	0					1	70	70	70	70	0	
4.20	Secured Records Storage Closet	1					1	20	20	20	20	54	
4.21	Records copy work room / supplies	1					1	140	140	140	140	110	
4.22	Outside agency office w/ lobby window	0					0	120	0	0	0	0	
<b>total staff:</b>		<b>32</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>40</b>						<b>shift change # of cars?</b>
									<b>NET SQUARE FEET</b>	<b>2,634</b>	<b>2,634</b>	<b>2,634</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.20</b>	<b>1.20</b>	<b>1.20</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>3,161</b>	<b>3,161</b>	<b>3,161</b>	

5.00 EVIDENCE AND PROPERTY													
5.01	Evidence & Property Manager CSO	2	3	4	5	5	5	100	300	300	500	128	10x10 workstations; reduce to 3 workstations in Scheme 1, 2, & 3
5.02	Evidence & Property Staff Cadets	1	2	2	2	2	2	64	128	128	128	77	8x8 workstations
5.03	Copy / Print area	0					1	60	60	60	60	0	
5.04	Evidence Bulk Supply Storage Room	1					1	100	100	100	100	278	
5.05	Evidence Drop / Bag & Tag Area	1					1	350	350	350	350	20	
5.06	Refrigerator	1					2	6	12	12	12	273	
5.07	Freezer	2					2	200	400	400	400	400	
5.08	Lockers - Secure Pass Thru	1					4	6	24	24	24	0	
5.09	Lockers - for temporary evidence strg	0					1	15	15	15	15	0	
5.10	Evidence Strg - General / Property	1					1	6600	6600	6600	6600	6124	PD has offsite storage unit 5000 SF; Switch to HD storage mobile Shelving vs. Stationary; 3,300 SF if build to 30' height.
5.11	Evidence Strg - Weapons	1					1	200	200	200	200	119	

**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
5.12	Evidence Strg - Narcotics	1					1	200	200	200	200	116	
5.13	Evidence Strg - Money / Valuables	1					1	50	50	50	50	16	
5.14	Evidence Strg - Bio-Hazards	0					1	10	10	10	10	0	
5.15	Evidence Strg - Combustible / Hazmat	0					1	48	48	48	48	0	
5.16	Evidence Strg - Large Items?	0					1	300	300	300	300	0	can evidence size be reduced after case is prosecuted
5.17	Large evidence overnight drop cages	0					1	28	28	28	28	0	
5.18	Additional Large evidence & bicycles	1					1	1000	1000	1000	1000	1000	
5.19	Evidence Strg - vehicles	0					0	360	0	0	0	0	
5.20	Long term evidence (Homicides)	0					1	250	250	250	250	0	
5.21	Evidence disposal / staging area	0					1	150	150	150	150	0	
5.22	Evidence / Property Release Counters	0					1	40	40	40	40	0	consider large property pass thru options
5.23	Restroom	1					2	70	140	140	140	37	2 - unisex restrooms
5.24	Evidence / Property Viewing Room	0					0	80	0	0	0	0	for Lawyer review of evidence
5.25	Quartermaster Storage	1					1	150	150	150	150	130	
<b>Evidence Processing</b>													
5.26	Evidence Processing / Crime Scene Lab	0					0	220	0	0	0	0	
5.27	Indoor Vehicle Processing Bay	0					0	600	0	0	0	0	
5.28	Blood Drying Room	1					1	120	120	120	120	96	need space for three cabinets, needs direct exhaust to the exterior.
5.29	Alternate Light Source Room	0					0	80	0	0	0	0	
<b>total staff:</b>		<b>3</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>7</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>7</b>						
									<b>NET SQUARE FEET</b>	<b>10,675</b>	<b>10,675</b>	<b>10,875</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.25</b>	<b>1.25</b>	<b>1.25</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>13,344</b>	<b>13,344</b>	<b>13,594</b>	

<b>6.00 COMMUNICATIONS DIVISION</b>													
Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
6.01	Communications Manager	1	1	1	1	1	1	180	180	180	180	157	
6.02	Assistant Communications Manager	0	0	0	0	0	0	120	0	0	0	0	
6.03	Supervisor Office	0	1	1	1	1	1	300	300	300	300	0	one office Shared by 4 supervisors
6.04	Dispatch (15 current)	7.5	10	10	10	10	10	64	640	640	640	792	10 workstations for 20 dispatchers soft lounge seating, calm, soothing environment; reduce in Scheme 1 & 2
6.05	Dispatch Break Area	1					1	200	80	200	200	71	
6.06	Locker Space	18					24	3	72	72	72	131	
6.07	Dispatch restrooms	0					2	70	140	140	140	0	2 Unisex ADA restrooms
6.08	Dispatch Conference Room	0					1	240	240	240	240	0	8 person Conference Room
6.09	Training Room	0					1	300	150	150	300	0	training workstations room; reduced in Scheme 1, 2, & 3
6.10	Computer / IT work area	0					0	200	0	0	0	0	see IT
6.11	Quiet Lounge / Incident Recovery Room	0					1	100	0	0	100	0	eliminate in Scheme 1, 2, & 3
6.12	911 Equipment	1					1	120	120	120	120	44	existing is combined with Radio/Equip
6.13	Radio / Computer / Phones / UPS	1					1	100	100	100	100	0	
6.14	Copy / Print / work area	0					1	60	60	60	60	0	
6.15	Training Supply Storage Closet	0					1	50	50	50	50	0	
6.16	Exterior patio / balcony space	0					1	100	0	100	100	0	eliminate in Scheme 1 & 2
<b>total staff per shift:</b>		<b>20</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>25</b>						
									<b>NET SQUARE FEET</b>	<b>2,132</b>	<b>2,352</b>	<b>2,602</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.44</b>	<b>1.44</b>	<b>1.44</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>3,070</b>	<b>3,387</b>	<b>3,747</b>	

<b>7.00 INVESTIGATIONS DIVISION</b>														
Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes	
7.01	Captain Office	1	0	0	0	0	0	220	0	0	0	260	see Administration	
7.02	Captain Closet	1	0	0	0	0	0	12	0	0	0	14	see Administration	
7.03	Lieutenants	1	2	2	3	3	3	180	180	180	540	258	Scheme 1, 2, & 3 reduce to (1) Lt.	
<b>(CAP) Crimes Against Persons</b>														
7.04	CAP Sergeant	1	1	1	1	1	1	150	150	150	150	104		
7.05	Detectives	11	12	13	13	13	13	80	1040	1040	1040	1461	8x10 workstation with locker at desk	
7.06	Court Liaison	1	1	1	1	1	1	120	120	120	120	120	0	could go to a workstation

**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
7.07	Storage	1					1	150	150	150	150	79	
	<b>(Beats) Properly Crimes</b>												
7.08	Beats Sergeant	1	1	1	1	1	1	150	150	150	150	104	
7.09	Detectives	8	10	11	11	11	11	80	880	880	880	662	8x10 workstation with locker at desk
7.10	CSO's	5	5	5	5	5	5	64	320	320	320		
7.11	Storage	1					1	150	150	150	150	79	shared with CAP
	<b>Youth Services Unit</b>												
7.12	Lobby	1					1	150	150	150	150	182	separate Lobby from Main public Lobby for Youth and Parents
7.13	Conference Room	1					0	450	0	0	0	220	Used for hearings and meetings, will use one of the new conference rooms in the facility for hearings
7.14	YSU Sergeant	1	1	1	1	1	1	150	150	150	150	160	
7.15	Detectives	2	3	3	3	3	3	120	360	360	360	95	
7.16	Officers	3	5	5	5	5	5	64	320	320	320	974	8x8 workstations. Will have juveniles in holding with the officer at their desk.
7.17	Interview Room	1					1	80	80	80	80	68	
7.18	Storage	1					1	150	150	150	150	126	
	<b>Community Impact Team</b>												
7.19	CIT Sergeant	1	1	1	1	1	1	150	150	150	150	121	
7.20	Officers	6	8	8	9	9	9	64	384	384	576	752	Scheme 1, 2, & 3 reduce to (6)
7.21	Conference Room	0					0	180	0	0	0	0	
7.22	Storage	0					1	150	150	150	150	0	
	<b>Secured Interview Suite:</b>												
7.23	Waiting / Reception	0					1	100	100	100	100	0	
7.24	Hard Interview Room	3					4	80	320	320	320	55	
7.25	Soft Interview Room	0					2	140	280	280	280	0	
7.26	Sex Offender Interview Room	0					1	120	120	120	120	0	
7.27	Interview Suite Secure Restroom	0					1	70	70	70	70	0	
7.28	Interview Observation Recording Room	0					1	80	80	80	80	0	
7.29	A/V equipment room	1					0	100	0	0	0	67	see IT room
	<b>Shared Space Investigation Division</b>												
7.30	Copy / Print / Supplies	0					1	150	150	150	150	0	
7.31	Conference Room - small	0					1	180	0	180	180	0	4-6 person conference room; eliminate in Scheme 1, & 2
7.32	Conference Room - medium	0					1	240	240	240	240	0	8 - person Conference Room
7.33	Conference Room - Large	1					1	475	475	475	475	476	room can be divided in to two rooms
7.34	Men's Restrooms	1					4	125	500	500	500	69	existing: (1) Unisex restroom; restroom requirements per floor because of travel distance
7.35	Women's Restrooms	1					4	125	500	500	500	92	existing: (1) Unisex restroom; restroom requirements per floor because of travel distance
7.36	Break Area	1					1	500	500	500	500	388	
	<b>Computer Crimes</b>												
7.37	Sergeant Office	0	0	1	1	1	1	150	0	0	150	0	eliminate in Scheme 1 & 2
7.38	Detectives	0	0	2	3	3	3	80	0	0	240	0	8x10 workstation with locker built into furniture; Scheme 1, 2, & 3 eliminated
7.39	Evidence lockers	0					1	4	0	0	4	0	evidence lockers with power for electronic evidence; Scheme 1, 2 & 3 eliminated
7.40	Computer work area	0					1	200	0	0	200	0	shielded RFID room; Scheme 1, 2, & 3 eliminated
7.41	Storage	0					0	150	0	0	0	0	
<b>total staff:</b>		<b>41</b>	<b>50</b>	<b>55</b>	<b>58</b>	<b>58</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>58</b>						
									<b>NET SQUARE FEET</b>	<b>8,369</b>	<b>8,549</b>	<b>9,695</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.43</b>	<b>1.43</b>	<b>1.43</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>11,968</b>	<b>12,225</b>	<b>13,864</b>	

<b>8.00 POLICE I.T.</b>													
8.01	IT Waiting Area	0					0	30	0	0	0	0	
8.02	IT Manager	0					0	150	0	0	0	0	
8.03	IT System Analyst	1	1	1	1	1	1	120	120	120	120	106	reports to IT manager of City Hall
8.04	IT Support Specialist / Help Desk	0					0	64	0	0	0	0	

**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
8.05	IT Operator / Clerk Room	0					0	64	0	0	0	0	
8.06	IT Copy / Print / Coffee	0					1	24	24	24	24	0	could be incorporated into office
8.07	IT Workroom / Computer Repair Lab / Strg	0					0	80	0	0	0	0	Shawn will check;
8.08	IT Receiving / Staging Area	0					1	150	150	150	150	0	
8.09	Building Main Server Room	0					1	300	300	300	300	0	
8.10	IT Computer Lab	0					0	525	0	0	0	0	
8.11	IT Closest	0					3	150	450	450	450	0	IT Closet requirements for floor distribution of data and security
<b>total staff:</b>		1	1	1	1	1							
<b>staff parking spaces needed (8am-5pm):</b>							1						
									<b>NET SQUARE FEET</b>	<b>1,044</b>	<b>1,044</b>	<b>1,044</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.28</b>	<b>1.28</b>	<b>1.28</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>1,336</b>	<b>1,336</b>	<b>1,336</b>	

**9.00 COMMUNITY POLICING**

9.01	Captain office	0	0	0	0	0	0	220	0	0	0	0	see Administration
9.02	Patrol Lieutenant Offices	5	6	7	7	8	8	180	1080	1080	1440	0	reduce two Lt. for Conference Rm. For Scheme 1, 2, & 3
9.03	Uniform Patrol Officers	0										0	see Evidence and Property
9.04	Conference Room	0					2	180	360	360	360	0	Conference Rm. Space from Lt. Offices
9.05	Patrol Wellness Rooms	0					2	100	200	200	200	0	bunk Style
9.06	Report Writing Stations	10					12	36	432	432	432	514	
9.07	Roll Call/Briefing Room	1					1	1200	1200	1200	1200	935	
9.08	Patrol Meeting Room	0					1	180	0	180	180	0	4-6 person conference room; eliminated in Scheme 1 & 2
9.09	Patrol Equipment Storage Room	1					1	250	250	250	250	224	
9.10	Patrol Duty Bag Lockers	70					84	4	336	336	336	4	stacked 3 high 2x2x3 lockers with doors
9.11	Break area / kitchenette	0					1	250	250	250	250	0	
9.12	Copy / Supply / Print	0					1	80	80	80	80	0	
9.13	Meeting Room	0					2	180	360	360	360	0	meeting room for 4-6 people
9.14	Staff entry vestibule	0					1	48	48	48	48	0	
9.15	Lobby for SIU / Gangs	0					1	80	80	80	80	0	
9.16	Receptionist	1	1	1	1	1	1	80	80	80	80	65	
<b>Special Investigations Unit</b>													
9.17	SIU Sgt.	1	1	1	1	1	1	150	150	150	150	114	
9.18	Detectives	6	8	8	9	10	10	64	384	384	640	476	Scheme 1, 2, & 3 reduce to (6)
9.19	Interview Room	2					2	80	160	160	160	46	
9.20	Soft Interview Room	0					1	140	140	140	140	0	
9.21	Toilet	0	1	1	1	1	1	80	80	80	80	0	
9.22	Storage	1					1	100	100	100	100	36	
9.23	Lockers	0					10	5	50	50	50	0	
9.24	Changing Room	0					1	64	64	64	64	0	
<b>Traffic Unit</b>													
9.25	Traffic Safety Unit Sergeant	1	2	2	2	2	2	120	240	240	240	104	
9.26	Traffic Safety Unit officers	9	12	12	13	15	15	64	768	768	960	528	Scheme 1, 2, & 3 reduce to (12)
9.27	Traffic Safety Unit Interview Room	0					0	80	0	0	0	0	
9.28	Traffic Safety Unit Storage	0					1	150	150	150	150	0	
9.29	Traffic Safety Unit Garage Storage	6					6	80	480	480	480	0	Semi-covered Motorcycle parking take home bikes
9.30	Traffic CSO	2	2	3	3	3	3	36	108	108	108	0	
<b>Gangs Unit</b>													
9.31	Gangs Unit Sergeant	1	1	1	1	1	1	150	150	150	150	90	
9.32	Conference room	0					1	240	240	240	240	0	8 person Conference room
9.33	Gangs Unit Detectives	9	12	12	13	14	14	64	896	896	896	520	8x8 workstations in open office space
9.34	Gangs Unit Probation Officer	1	1	1	1	1	1	80	80	80	80	23	
9.35	Gangs Unit District Attorney	1	1	1	1	1	1	150	150	150	150	23	
9.36	Gangs Unit CSO	1	1	2	2	2	2	36	72	72	72	23	
9.37	Gangs Unit Interview room	2					2	80	160	160	160	50	
9.38	Storage	1					1	100	100	100	100	8	
<b>East Division WC</b>													

**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes	
9.39	Patrol Sergeants	6	7	8	9	9	9	36	252	252	324		6x6 workstations; Scheme 1, 2, & 3 reduce to (7)	
9.40	Patrol Officers	30	40	40	40	42								
9.41	Crime Analyst	1	2	2	3	4	4	120	240	240	480	210	Scheme 1, 2, & 3 Reduce to (2)	
9.42	IVS/BWC	2	2	2	2	2	2	100	200	200	200	106		
9.43	IVS/BWC Storage	0					1	100	100	100	100			
<b>West Division WC</b>														
9.44	Patrol Sergeants	6	7	7	8	8	8	36	252	252	288		6x6 workstations; Scheme 1, 2, & 3 reduce to (7) Sergeants	
9.45	Patrol Officers	28	40	40	40	42								
9.46	CSO's	3	6	7	8	9	8	64	512	512	512		dedicated report writers	
9.47	CSO's equipment storage	0					1	120	120	120	120	0		
<b>Special Resource Team</b>														
9.48	Sergeant	0	1	1	1	1	1	120	120	120	120	0	req. office	
9.49	Patrol Officers	4	8	9	10	10								
9.50	Mud Room	0					1	150	150	150	150	0	pre-clean area to change and keep contaminants isolated to one area.	
9.51	Lockers	0					12	6	72	72	72	0		
9.52	Shower / changing area	0					2	70	140	140	140	0		
<b>Community Liaison Division</b>														
9.53	Community Liaison Division Manager	1	1	1	1	1	1	120	120	120	120	220		
9.54	Community Service Officer's	4	8	8	9	9	9	64	576	576	576			
9.55	Storage	2					1	200	200	200	200	71	consolidated storage room	
9.56	Volunteer workstation	1	1	1	3	3	3	64	192	192	192			
<b>Intel</b>														
9.57	Intel Sgt.	1	1	1	1	1	1	120	120	120	120			
9.58	K9 Unit staff	2	3	4	4	4	4	36	108	108	144		Scheme 1, 2, & 3 reduce to (3)	
9.59	K9 Indoor kennel	0					1	24	24	24	24	0		
9.60	K9 Food & Equipment Storage	0					1	80	80	80	80	0		
9.61	K9 Wash Area	0					1	70	70	70	70	0		
9.62	K9 outdoor kennel cage & run area	0					1	40	40	40	40	0		
<b>total staff / shift:</b>		127	175	182	193	204								
<b>staff parking spaces needed at shift change</b>								<b>NET SQUARE FEET</b>			13,166	13,346	14,538	
								<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>			1.30	1.30	1.30	
								<b>DEPARTMENT GROSS SQUARE FEET</b>			17,116	17,350	18,899	

**10.00 JAIL - BOOKING AND HOLDING**

10.01	Liaison	1	1	1	1	1	1	120	120	120	120	63	
10.02	Jail Staff	9.5	9.5	9.5	9.5	9.5						141	
10.03	Copy / Print / supply	0					1	40	40	40	40		
10.04	Booking area	2					1	250	250	250	250	220	work counter w/ computer wrkst for completing paperwork, and processing files. Counter to have clear view of entire area to monitor detainees.
10.05	Fingerprint / Photo	1					1	40	40	40	40	77	accommodates live scan machine, clear space for photos and ceiling mounted Camera, space for ink roll fingerprint machine
10.06	DUI Testing Area	1					1	70	70	70	70	99	Work Counter with sing, Sobriety test pattern on floor, intoxilyzer machine, audio and visual recording capabilities, separated from general booking area.
10.07	Temporary Holding Cell - Male	1					1	100	100	100	100	58	Sight and sound separated - ADA
10.08	Temporary Holding Cell - Female	1					1	100	100	100	100	67	Sight and sound separated - ADA
10.09	Temporary Holding Cell - separation	1					1	100	100	100	100	87	Sight and sound separated - ADA
10.10	Padded Cell	0					1	80	80	80	80		
10.11	Detox Holding	0					1	140	140	140	140		Can hold multiple 4-6, has flushing floor drain
10.12	Pat down search	0					1	30	30	30	30		
10.13	Holding area shower	0					2	40	0	0	80		40sf to meet ADA requirements; Scheme 1, 2, & 3 eliminate

POLICE													
Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
10.14	Detainee property area	0					1	250	250	250	250		separate room accessible from the outside, sized for transient belongings
10.15	Interview Room	2					2	80	160	160	160	56	sound isolation and attenuation for audio and video recording
10.16	Security Vestibules	2					2	48	96	96	96	13	interlocking doors for security
10.17	Bond out transaction counter	0					0	65	0	0	0		
10.18	Release / Property Return Vestibule & Lobby	0					1	190	190	190	190	0	separate release point than the main public lobby
10.19	Vehicle Sally Port	1					1	685	685	685	685	297	accommodates 2 Vehicles Stacked, large enough to accommodate an ambulance
10.20	Decon Area	0					1	30	30	30	30		proposed: eye wash area within Sally Port
10.21	Janitor Closet	1					1	40	40	40	40	25	
<b>total staff per shift:</b>		<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>							
<b>staff parking spaces needed (8am-5pm):</b>							<b>11</b>						<b># of parking spaces needed at shift change?</b>
									<b>NET SQUARE FEET</b>	<b>2,521</b>	<b>2,521</b>	<b>2,601</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.44</b>	<b>1.44</b>	<b>1.44</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>3,630</b>	<b>3,630</b>	<b>3,745</b>	

11.00 POLICE SHARED STAFF AREAS													
Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
11.01	Police Staff Entry Lobby	1					1	250	250	250	250		
11.02	Staff Vestibule	0					2	78	156	156	156	0	
11.03	Police Staff Kitchen / Break Area	1					1	800	800	800	800	412	GGPD would like an oven
11.04	Staff Mailboxes	1					1	550	550	550	550		central mail for the building in lieu of mail distribution by cadets
11.05	Vending	1					1	40	40	40	40	40	
11.06	Fitness Room	1					1	2000	2000	2000	2000	446	
11.07	Physical Fitness Supply Storage Rm	0					1	100	100	100	100	0	
<b>total sworn staff projections: (79%/20%/1%: 208/53/3 split)</b>							<b>263</b>						<b>m/1/ag split goal = 49/30/1; may achieve with flexible locker banks between men &amp; women's locker areas</b>
11.08	Male Sworn Counts / Lockers / Showers	220	x	x	x	x	<b>197</b>	15	2955	2955	2955		proposed: 2x2 lockers w/ bench; uniforms, rain gear, binders/manuals, separate boot storage (powered / vented);
	Temp lockers for civilian staff	0					<b>40</b>	8	320	320	320		half size lockers for hoteling
	ADA lockers (no pull out drawer)	0					<b>11</b>	13	143	143	143		5% of overall locker count req'd per code
11.09	Male restrooms adjoining locker area						1	430	430	430	430		4 toilets 4 lavs, 3 urinal
	Male Showers						6	20	120	120	120		Showers; 2 lavs for shaving
11.10	Female Sworn Counts / Lockers / Showers	9	x	x	x	x	<b>51</b>	15	765	765	765		proposed: 2x2 lockers w/ bench; uniforms, rain gear, binders/manuals, separate boot storage (powered / vented)
	Temp lockers for civilian staff	26					<b>41</b>	8	328	328	328		half size lockers for hoteling
	ADA lockers (no pull out drawer)						<b>3</b>	17	51	51	51		5% of overall locker count req'd per code
11.11	Female restrooms adjoining locker areas						1	290	290	290	290		3 Toilets; 2 lavs
	Female Showers						3	20	60	60	60		
11.12	All Gender restrooms adjoining locker areas						1	70	70	70	70		
	All Gender Showers						1	40	40	40	40		
	All Gender Lockers	0	x	x	x	x	4	15	60	60	60		
11.13	Nursing Mother's Room	0					1	120	120	120	120		Needs sink, countertop, chair, side table and refrigerator
11.14	Services Sargent / Quartermaster	1	1	1	1	1	1	150	0	0	150		location with Evidence and Property; service on site need closet centrally located; Scheme 1, 2, & 3 eliminate
11.15	Quartermaster / Uniform Storage	1					1	100	100	100	100		location with Evidence and Property; service on site need closet centrally located
<b>total staff:</b>							<b>0</b>						
<b>staff parking spaces needed (8am-5pm):</b>							<b>0</b>						
									<b>NET SQUARE FEET</b>	<b>9,748</b>	<b>9,748</b>	<b>9,898</b>	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	<b>1.25</b>	<b>1.25</b>	<b>1.25</b>	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	<b>12,185</b>	<b>12,185</b>	<b>12,373</b>	

12.00 TRAINING - FIRING RANGE													
Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
12.01	Bullet Stop / Trap						10	70	0	0	700		Steel trap; Scheme 1, 2, & 3 eliminate
12.02	Firing Lanes for rifles (50yrd)						10	600	0	0	6000		stationary turning targets ea lane, running man, charging man ea lane, dynamic range, ability drive vehicle on to range; Scheme 1, 2, & 3 eliminate

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Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
12.03	Firing Lanes for hand guns (25yrd)						0	300	0	0	0		
12.04	Shooting line						10	60	0	0	600		Scheme 1, 2, & 3 eliminate
12.05	Range Control Room						1	288	0	0	288		Scheme 1, 2, & 3 eliminate
12.06	Range Master	0	1	1	1	1	1	120	0	0	120		Scheme 1, 2, & 3 eliminate
12.07	Range Officers	0	0	0	0	0	0	120	0	0	0		
12.08	Range Training MILO / FATS room						1	900	0	0	900		Scheme 1, 2, & 3 eliminate
12.09	Range restroom						1	70	0	0	70		Scheme 1, 2, & 3 eliminate
12.10	Range entry vestibule						1	45	0	0	45		Scheme 1, 2, & 3 eliminate
12.11	Range storage						1	200	0	0	200		Scheme 1, 2, & 3 eliminate
12.12	Armory						1	300	0	0	300	85	existing in a storage container; Scheme 1, 2, & 3 eliminate
12.13	Armorer's Room / Gun Cleaning						10	25	0	0	250	86	eliminate
12.14	Range air filtration system area						1	200	0	0	200		air blow; Scheme 1, 2, & 3 eliminate
12.15	Range dedicated air handling unit area						1	300	0	0	300		mechanical unit; Scheme 1, 2, & 3 eliminate
<b>total staff:</b>		0	1	1	1	1							
<b>staff parking spaces needed (8am-5pm):</b>							1						
									<b>NET SQUARE FEET</b>	0	0	9,973	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	1.12	1.12	1.12	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	0	0	11,170	

**13.00 FACILITY SUPPORT AREAS (INTERIOR MEP & VERTICAL CIRC)**

13.01	Janitor Closets						4	30	120	120	120		one per floor plus; one for support facility
13.02	HVAC Equipment						2	300	600	600	600		
13.03	Electrical Equipment Room						2	200	400	400	400		main electrical rooms should be constructed for each building (main building and parking garage building). Each should be 10' x 20'.
13.04	Telephone / Fiber Demark						1	64	64	64	64		
13.05	Telecom closets / hub						5	50	250	250	250		IT distribution for each floor and support facility
13.06	Emergency Generator Enclosure						2	350	700	700	700	148	assumes full building back-up. Each building will require a 1250kW back-up generator in a generator room of minimum size 26 feet by 13.5 feet.
13.07	Emergency Generator Equip & Supply						2	40	80	80	80		one generator for each building
13.08	Water / Fire Pump Room						2	120	240	240	240		one at each building
13.09	Facility Maintenance Supply & Wrkrm						1	160	160	160	160		
13.10	Stairs*						3	180	540	540	540		Number of stairs will vary depending on floor plans
13.11	Elevator *						2	90	180	180	180		
13.12	Elevator machine room						0	80	0	0	0		Not required with machineless room elevators
<b>total staff:</b>													
<b>staff parking spaces needed (8am-5pm):</b>													
									<b>NET SQUARE FEET</b>	3,334	3,334	3,334	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	1.20	1.20	1.20	
									<b>DEPARTMENT GROSS SQUARE FEET</b>	4,001	4,001	4,001	

**14.00 SPECIAL WEAPONS AND TACTICS (SWAT)**

14.01	SWAT Individual lockers / Turn Out Room	34	36	36	38	40	40	12	480	480	480		currently in a connex box
14.02	SWAT storage arsenal / workshop	1					1	350	350	350	350		currently in a connex box, Armory
14.03	SWAT Leadership office	1	1	1	1	1	1	120	120	120	120		Shared office for records and tactical plans
14.04	SWAT Team Leaders / planners	0					0	192	0	0	0		not needed. GGPD does not foresee full time SWAT officers need
14.05	SWAT briefing room	0					1	600	0	0	600		incorporate into or adjacent to the lockers; Min. Program eliminate
14.06	SWAT file storage	0					1	80	80	80	80		adjacent to SWAT office
14.07	SWAT copy / print area	0					1	40	40	40	40		in office
14.08	SWAT general storage	1					1	200	200	200	200		Equipment storage room
14.09	SWAT decontamination room	0					0	80	0	0	0		
14.10	SWAT indoor vehicle storage	0					1	2,500	0	2,500	2,500		bearcat, MRAP and Mobile Command
14.11	Hostage Negotiation Team (HNT) Area	0					1	120	120	120	120		for storage and equipment
<b>total staff:</b>		1	1	1	1	1							
<b>staff parking spaces needed (8am-5pm):</b>							1						
									<b>NET SQUARE FEET</b>	1,390	3,890	4,490	
									<b>NET TO DEPARTMENT GROSS FACTOR [circulation/walls]</b>	1.35	1.35	1.35	

**POLICE**

Space #	Spaces	Current (2019)	Future staff +5yr	Future staff +10yr	Future staff +15yr	Future staff +20yr	No. Of Spaces	Space Standard	Scheme 1 Reno & Scheme 2 Low Cost	Scheme 3 Mid Cost	Scheme 4 Full Build-Out Cost	Current sizes	Notes
DEPARTMENT GROSS SQUARE FEET									1,877	5,252	6,062		

				Dewberry		
Dept Gross SF (DGSF)		83,748	89,257	105,660		
Dept Gross to Building Gross Factor		1.15	1.15	1.15		
Building Gross SF (BGSF)		96,310	102,646	121,509		

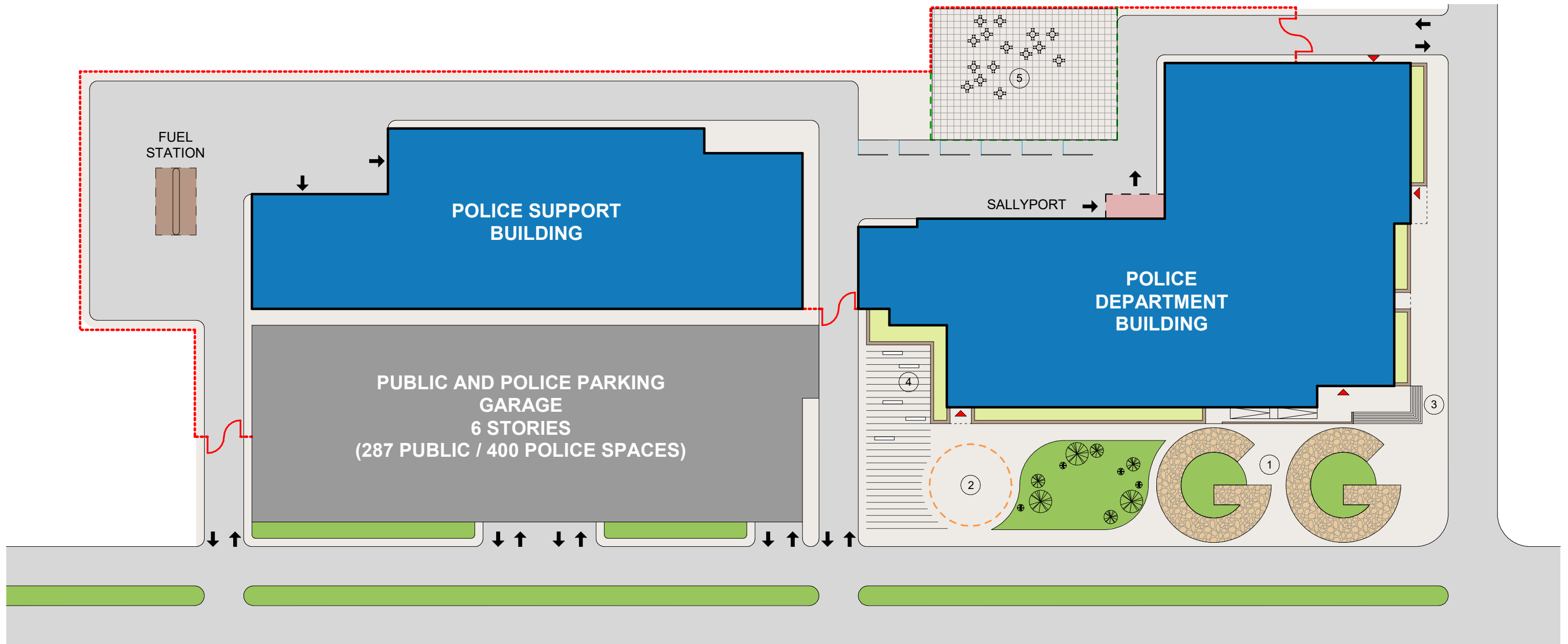
Parking requirements:														
	Staff Parking		300	30 ADA										Covers parking needs for 60% of projected staff
	Patrol Vehicles		84											projected # of squads in 20 years based on patrol staff
	Public Parking		60	6 ADA										4 for parking spaces for Juvenile



# **APPENDIX C: DESIGN OPTIONS AND SCHEMES**



**NEW CONSTRUCTION STUDY OPTION A**  
**SITE PLAN**



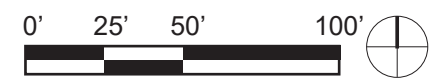
**SITE PLAN LEGEND**

- - - - SECURITY PERIMETER
- - - - VISUAL BARRIER
- - - - BOLLARDS
- EMERGENCY GENERATOR

- PLANTER WALL
- - - - BRIDGE ABOVE
- ▲ BUILDING ENTRANCE

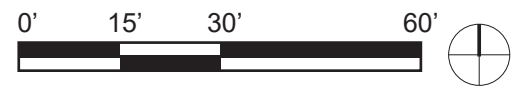
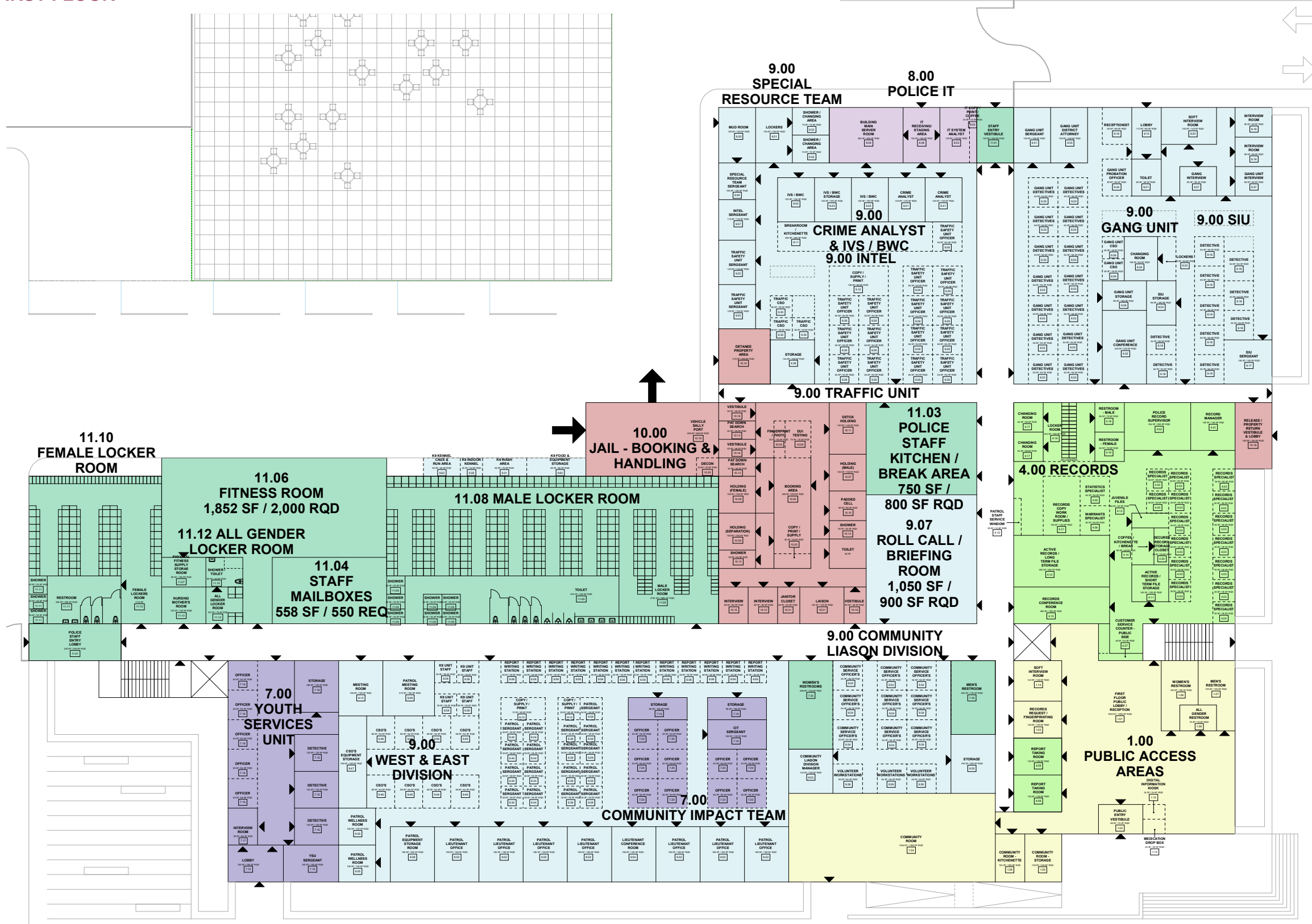
- ① PLAZA & SIGNAGE
- ② PLACE OF REMEMBRANCE
- ③ MAIN PUBLIC ENTRY STEPS

- ④ PUBLIC OUTDOOR SEATING
- ⑤ STAFF OUTDOOR SEATING AND DINING

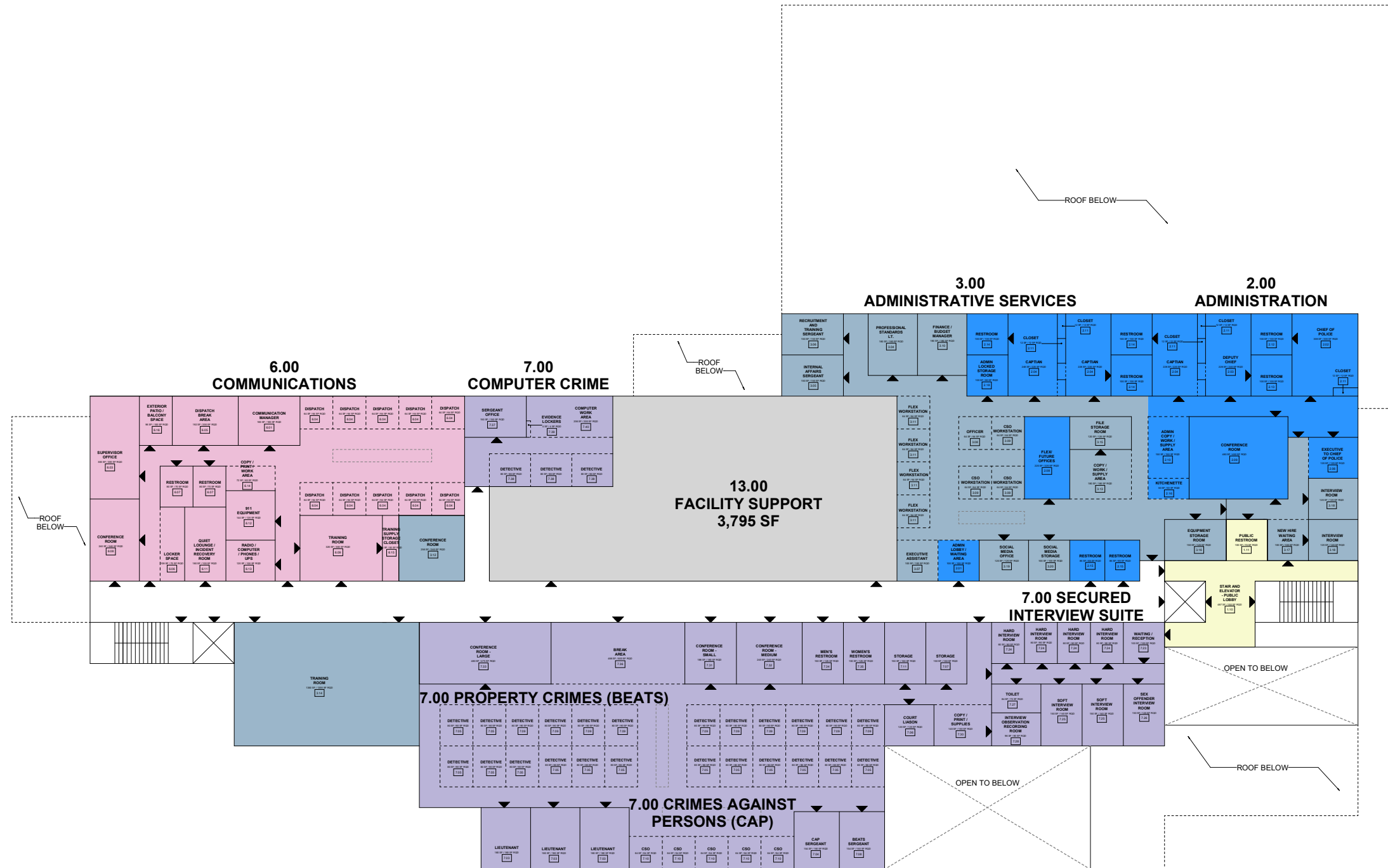


# NEW CONSTRUCTION STUDY OPTION A

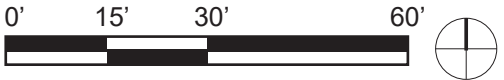
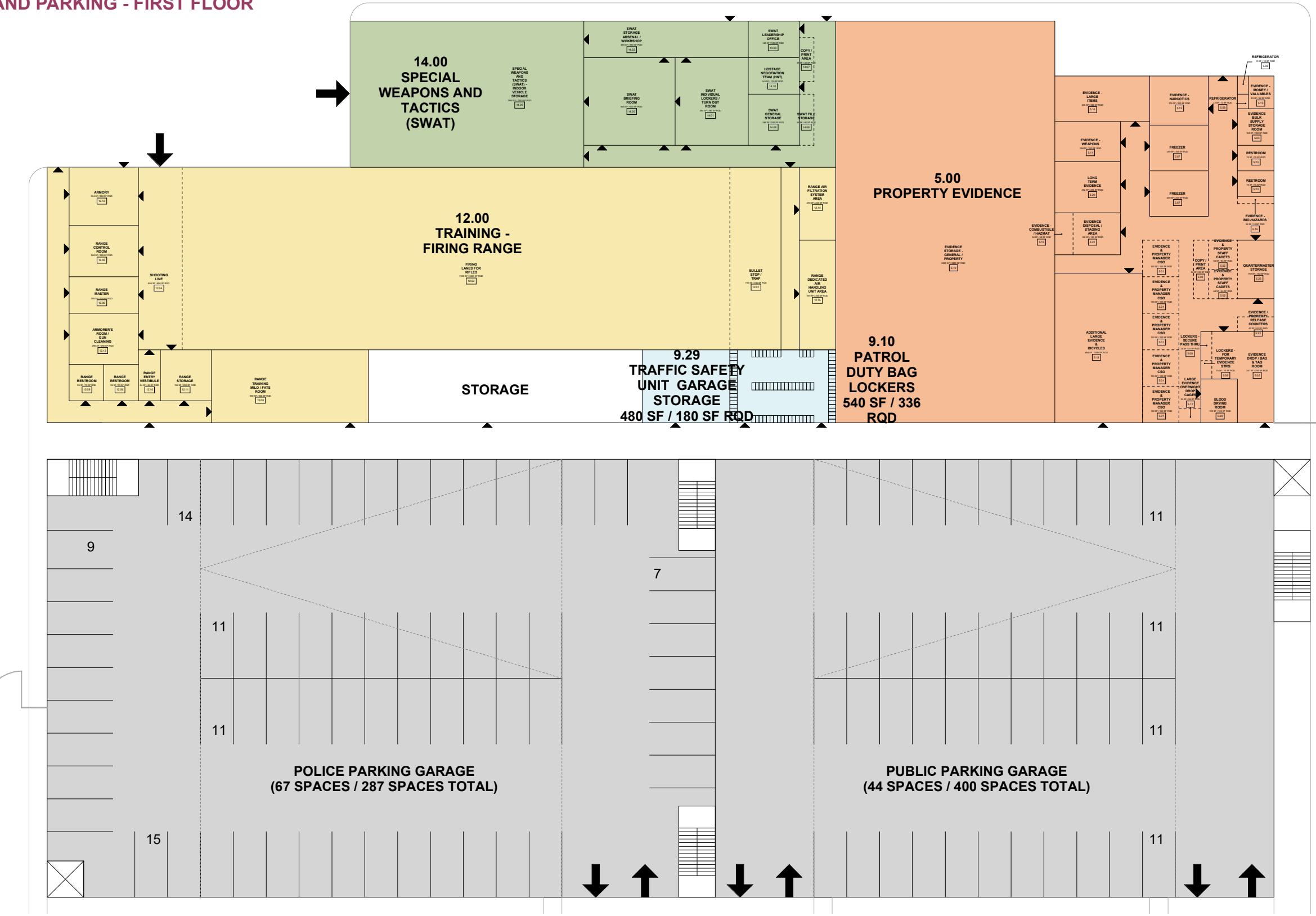
## POLICE BUILDING - FIRST FLOOR



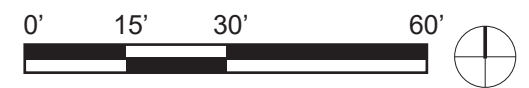
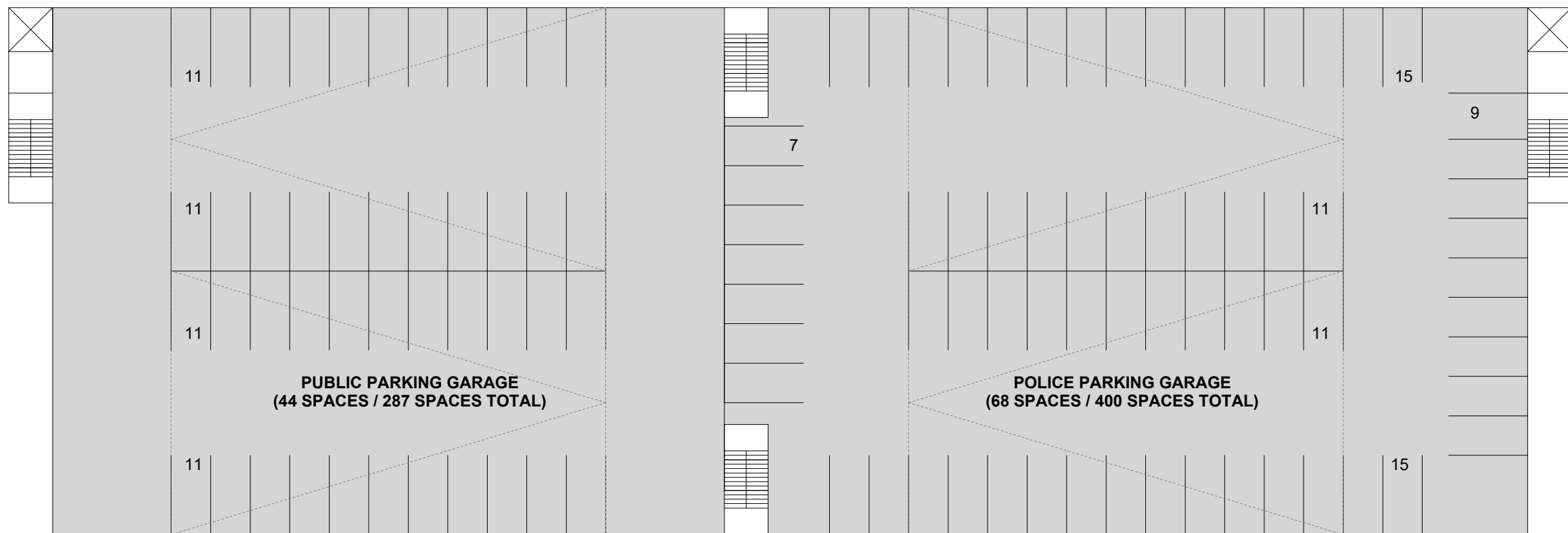
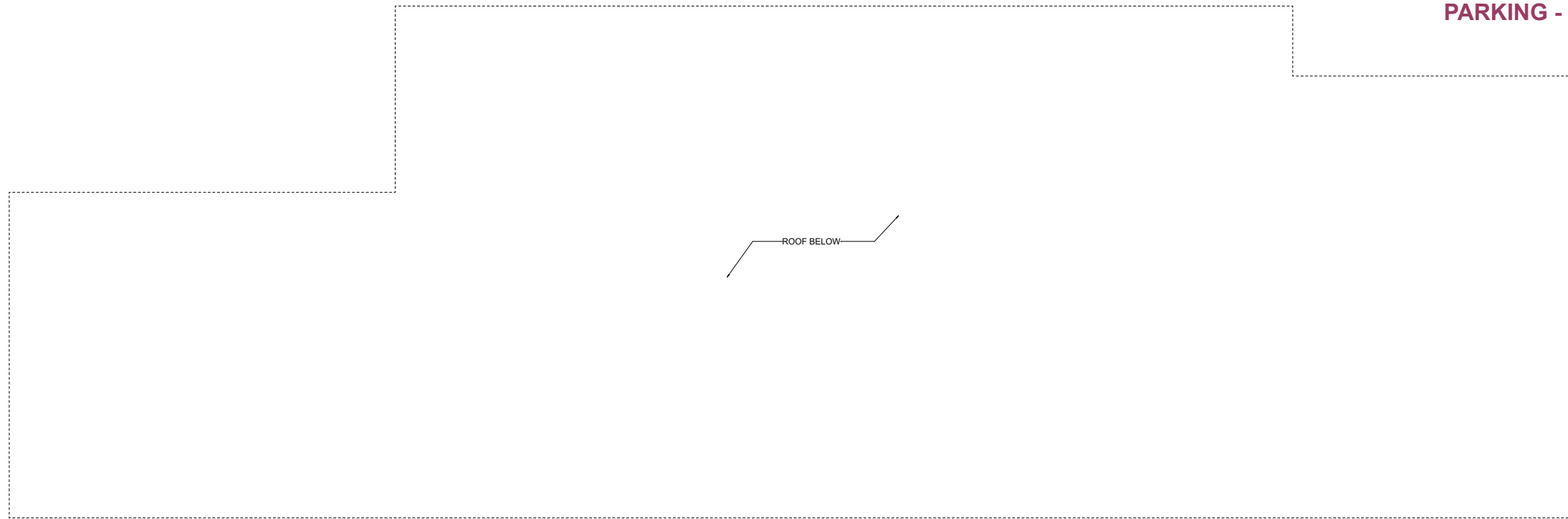
# NEW CONSTRUCTION STUDY OPTION A POLICE BUILDING - SECOND FLOOR



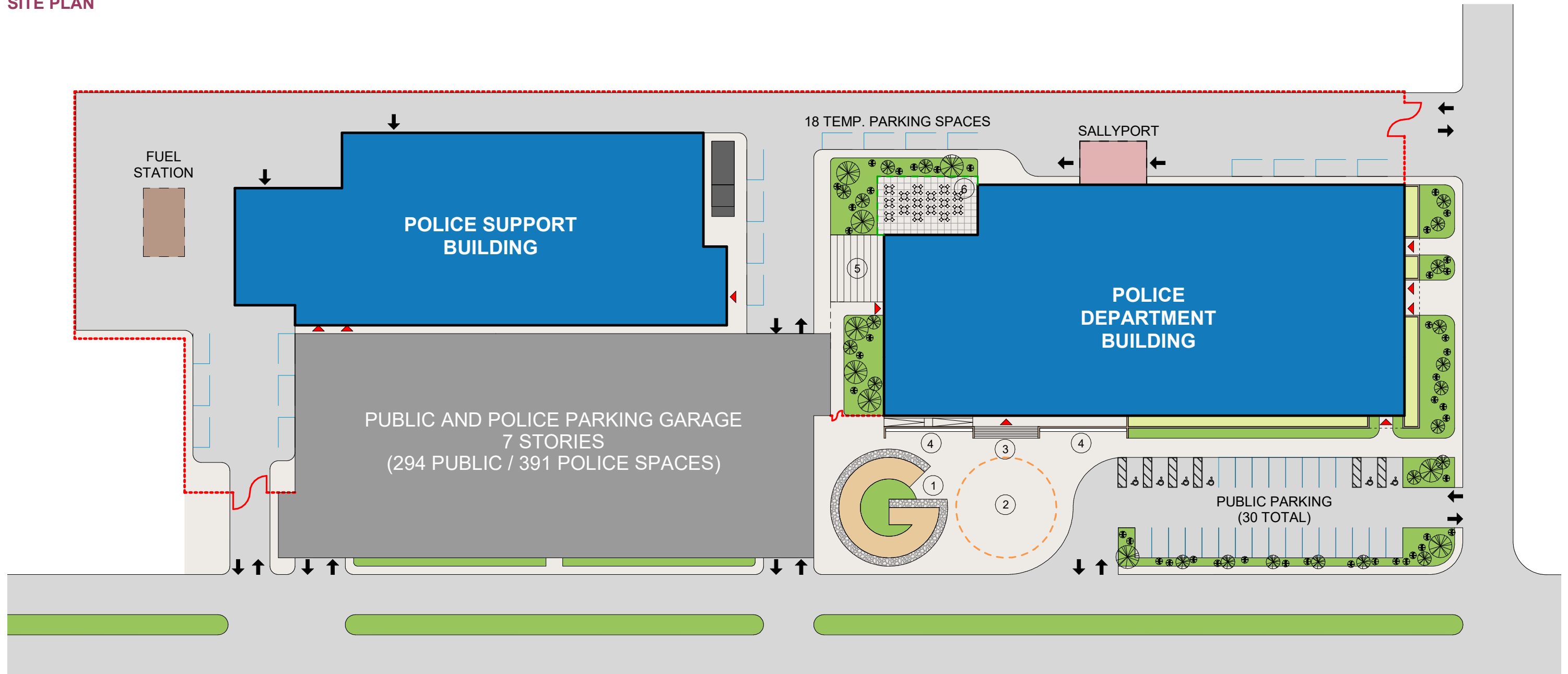
**NEW CONSTRUCTION STUDY OPTION A**  
**POLICE SUPPORT AND PARKING - FIRST FLOOR**



**NEW CONSTRUCTION STUDY OPTION A  
PARKING - SECOND TO SIXTH FLOOR**



**NEW CONSTRUCTION STUDY OPTION B**  
**SITE PLAN**



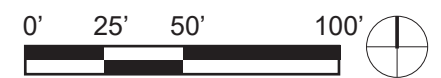
**SITE PLAN LEGEND**

- - - - SECURITY PERIMETER
- - - - VISUAL BARRIER
- BOLLARDS
- EMERGENCY GENERATOR

- PLANTER WALL
- BRIDGE ABOVE
- ▲ BUILDING ENTRANCE

- ① PLAZA & SIGNAGE
- ② PLACE OF REMEMBRANCE
- ③ MAIN PUBLIC ENTRY STEPS

- ④ PUBLIC OUTDOOR SEATING
- ⑤ STAFF OUTDOOR SEATING
- ⑥ STAFF OUTDOOR DINING

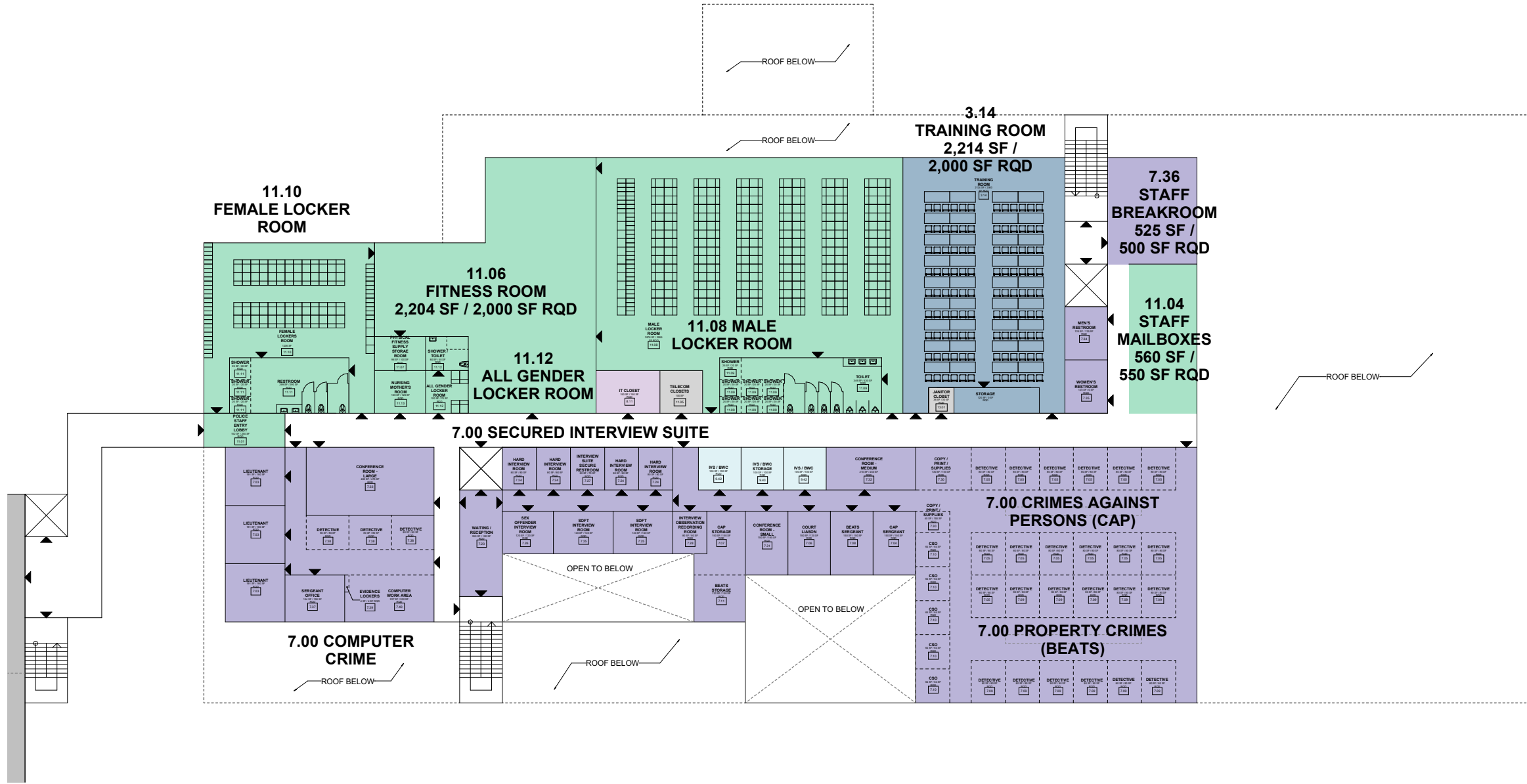




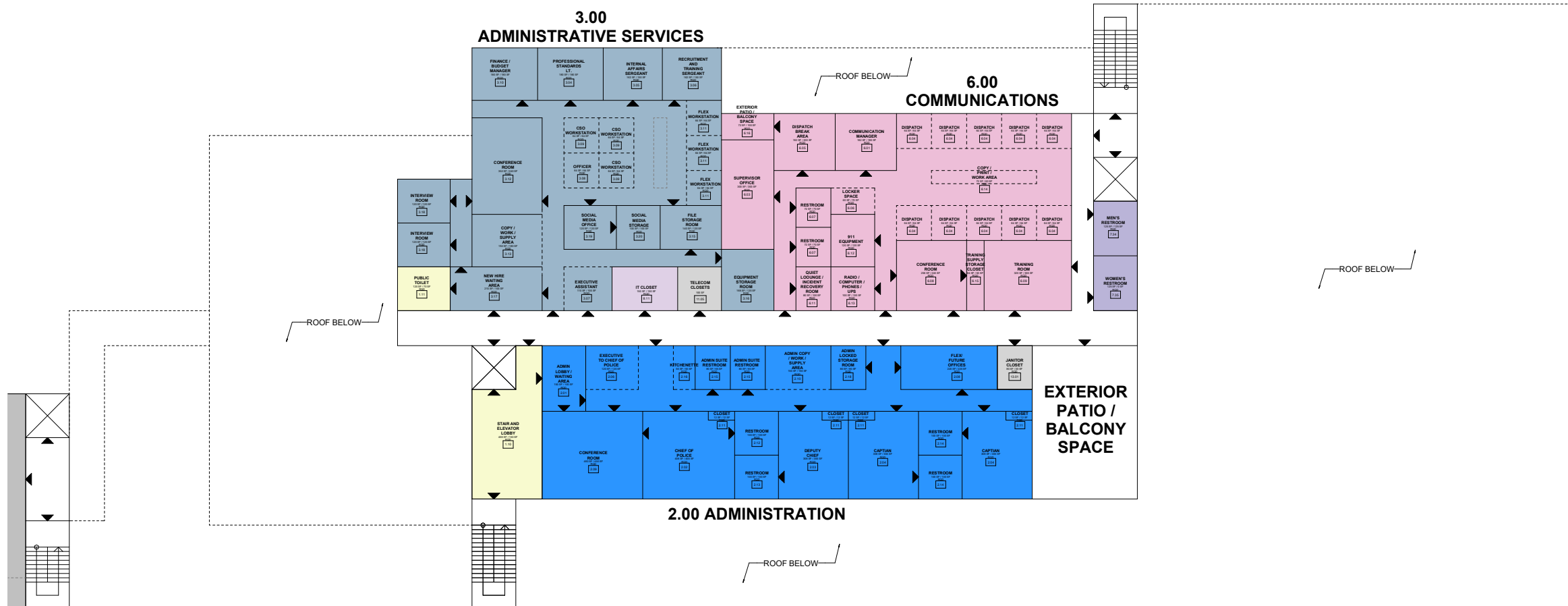
# NEW CONSTRUCTION STUDY OPTION B POLICE BUILDING - FIRST FLOOR



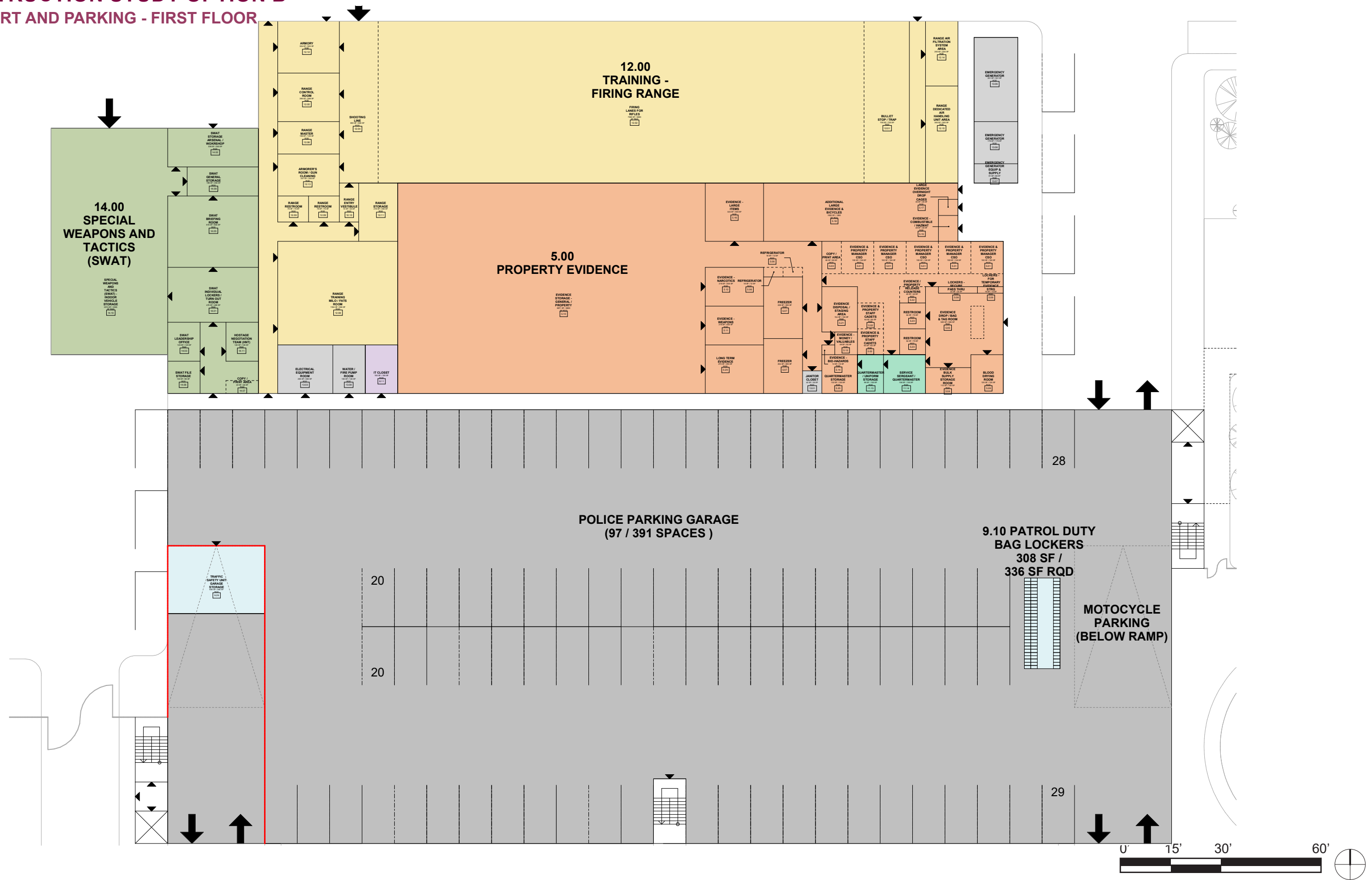
**NEW CONSTRUCTION STUDY OPTION B**  
**POLICE BUILDING - SECOND FLOOR**



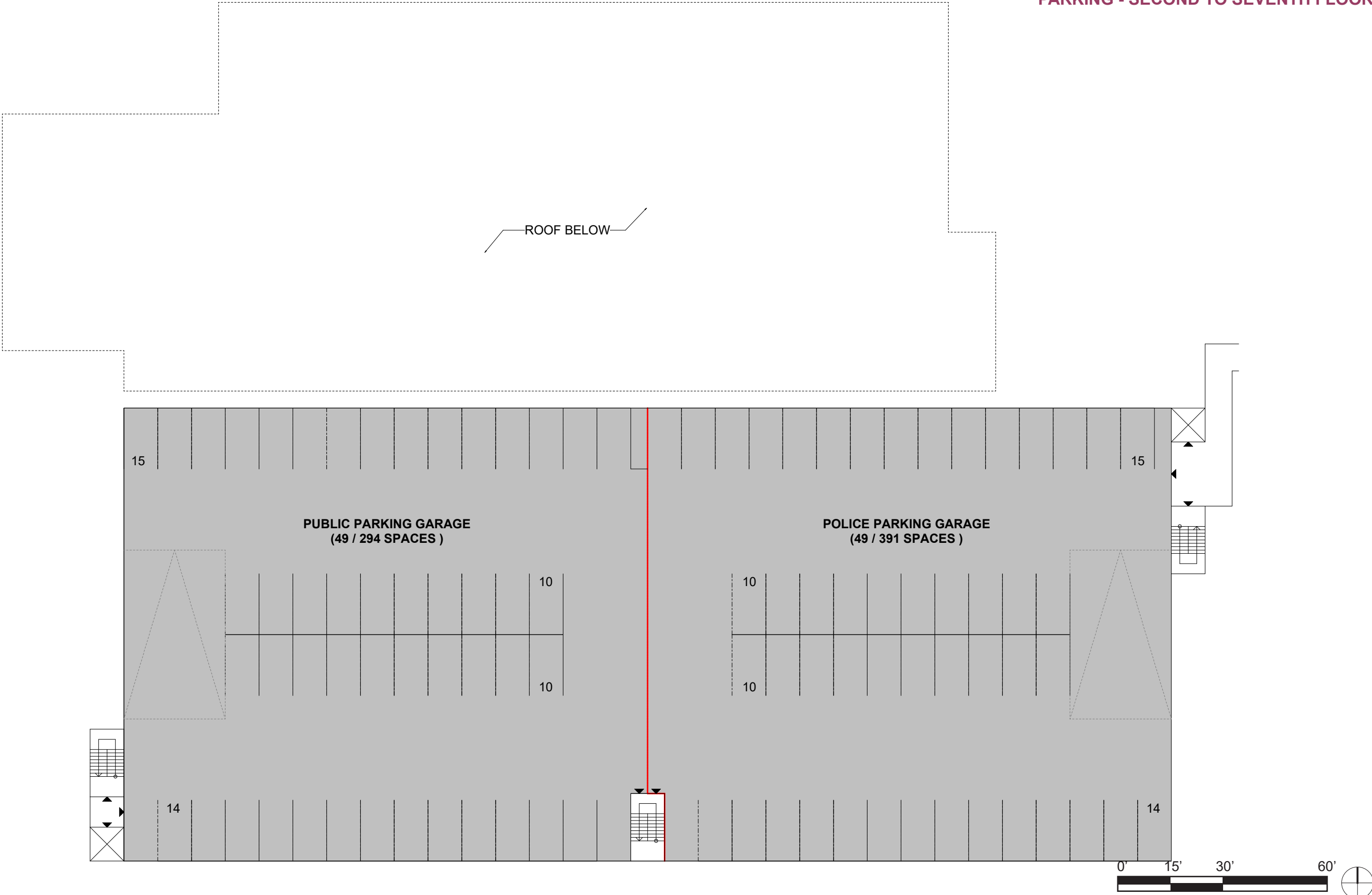
**NEW CONSTRUCTION STUDY OPTION B**  
**POLICE BUILDING - THIRD FLOOR**



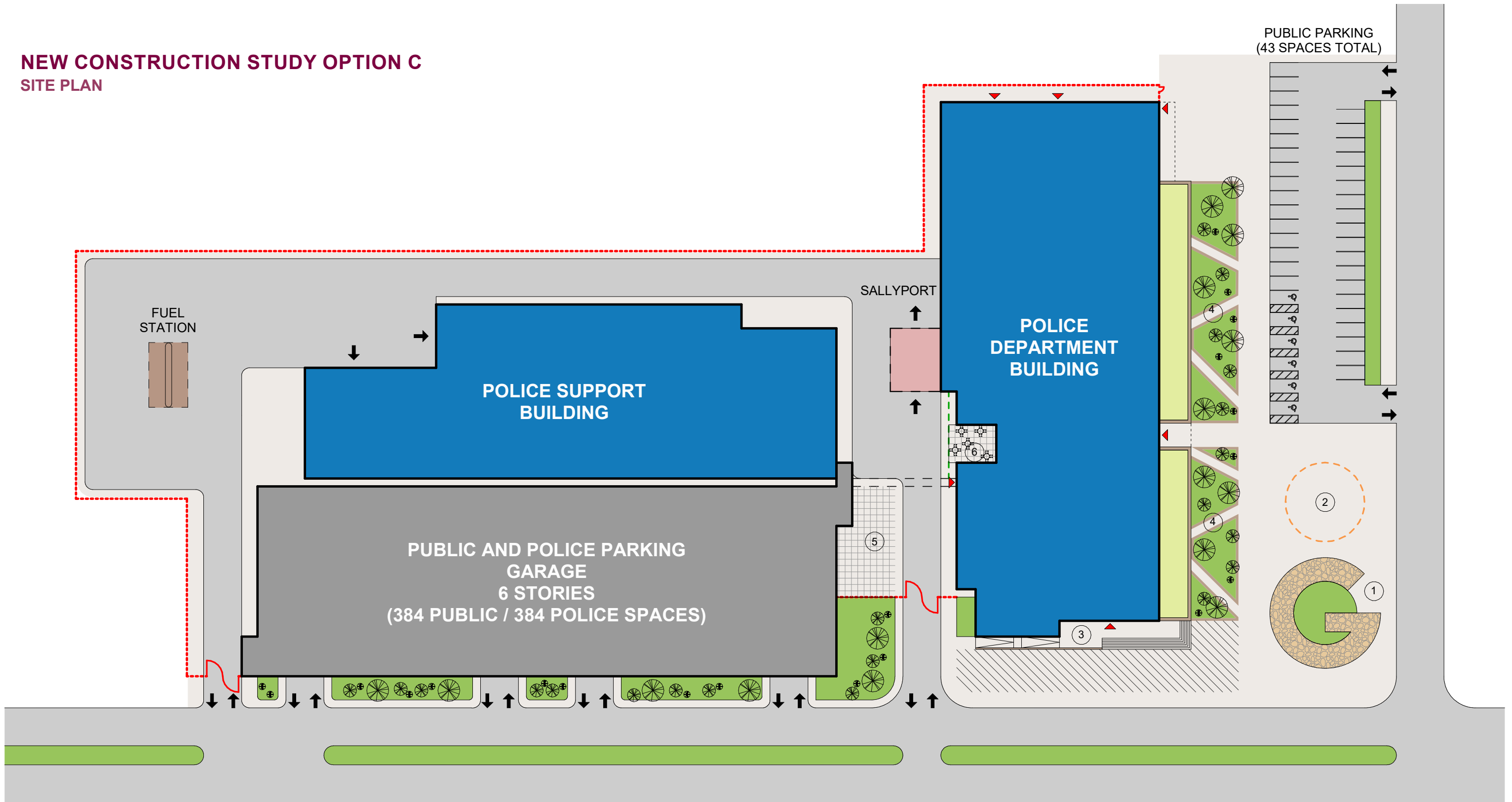
**NEW CONSTRUCTION STUDY OPTION B**  
**POLICE SUPPORT AND PARKING - FIRST FLOOR**



**NEW CONSTRUCTION STUDY OPTION B**  
**PARKING - SECOND TO SEVENTH FLOOR**



**NEW CONSTRUCTION STUDY OPTION C**  
**SITE PLAN**



**SITE PLAN LEGEND**

- - - - - SECURITY PERIMETER
- - - - - VISUAL BARRIER
- · · · · BOLLARDS

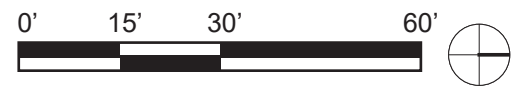
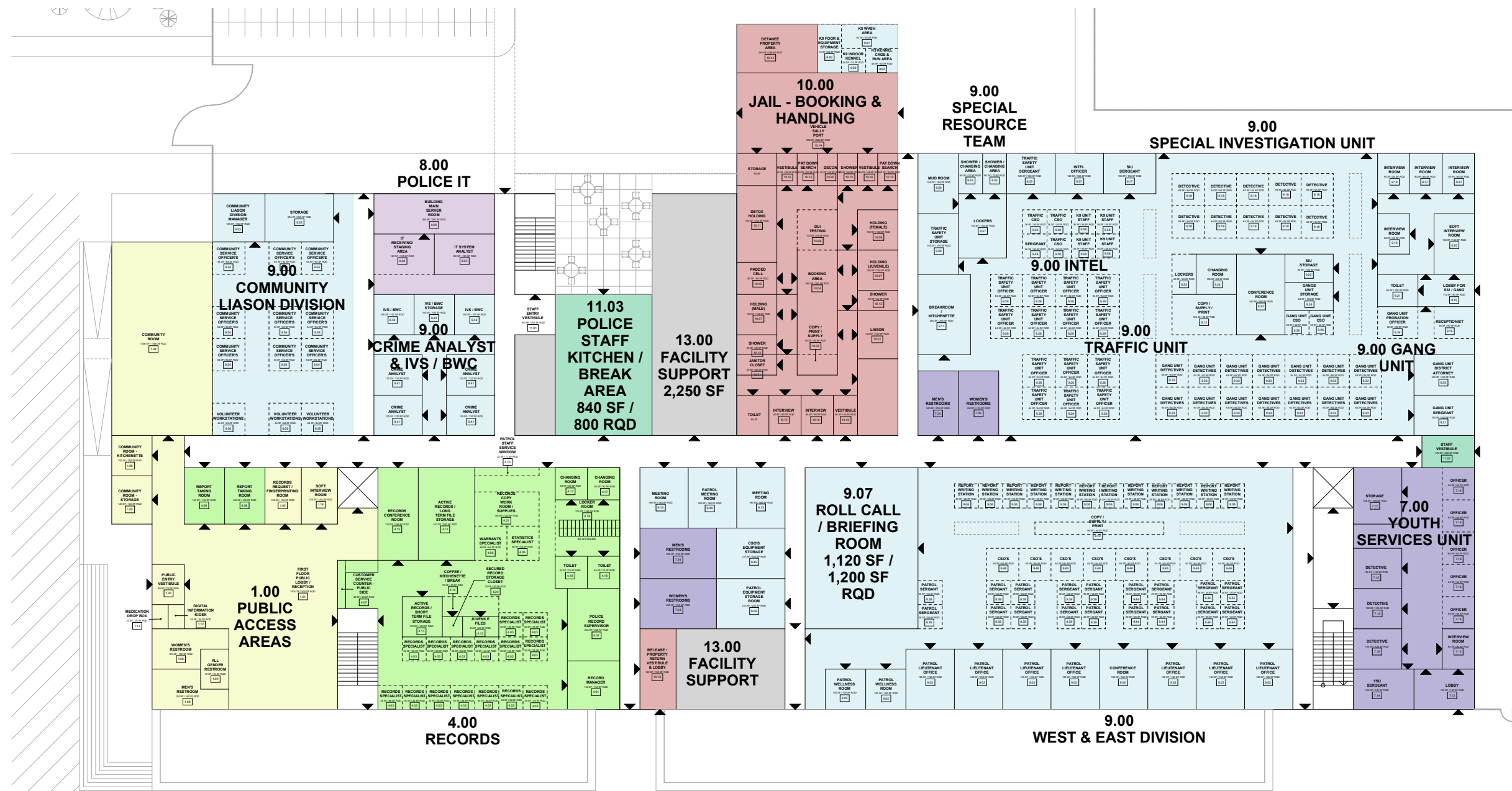
- PLANTER WALL
- BRIDGE ABOVE
- ▲ BUILDING ENTRANCE

- ① PLAZA & SIGNAGE
- ② PLACE OF REMEMBRANCE
- ③ MAIN PUBLIC ENTRY STEPS

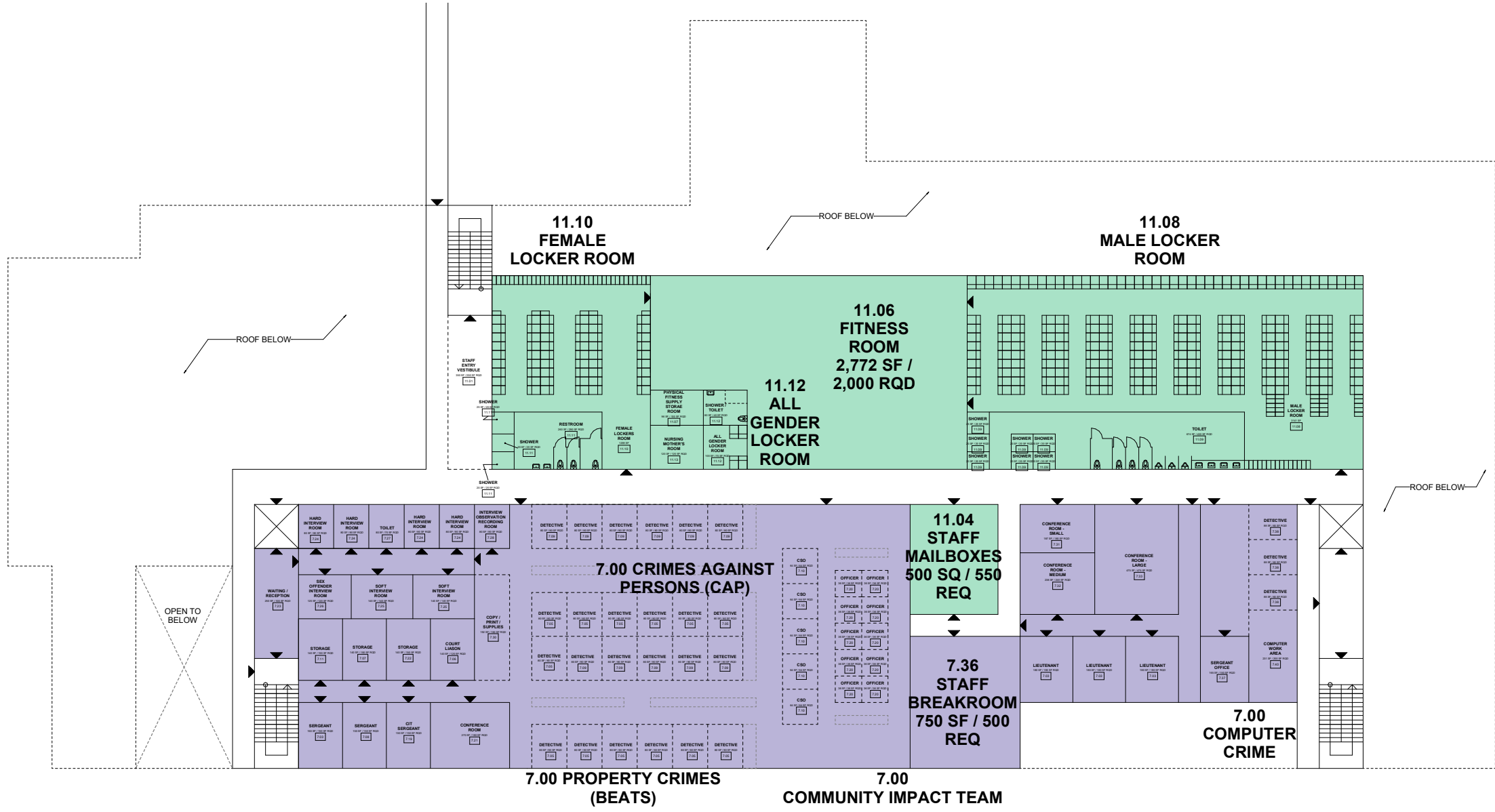
- ④ PUBLIC OUTDOOR SEATING
- ⑤ STAFF OUTDOOR SEATING
- ⑥ STAFF OUTDOOR DINING



# NEW CONSTRUCTION STUDY OPTION B POLICE BUILDING - FIRST FLOOR

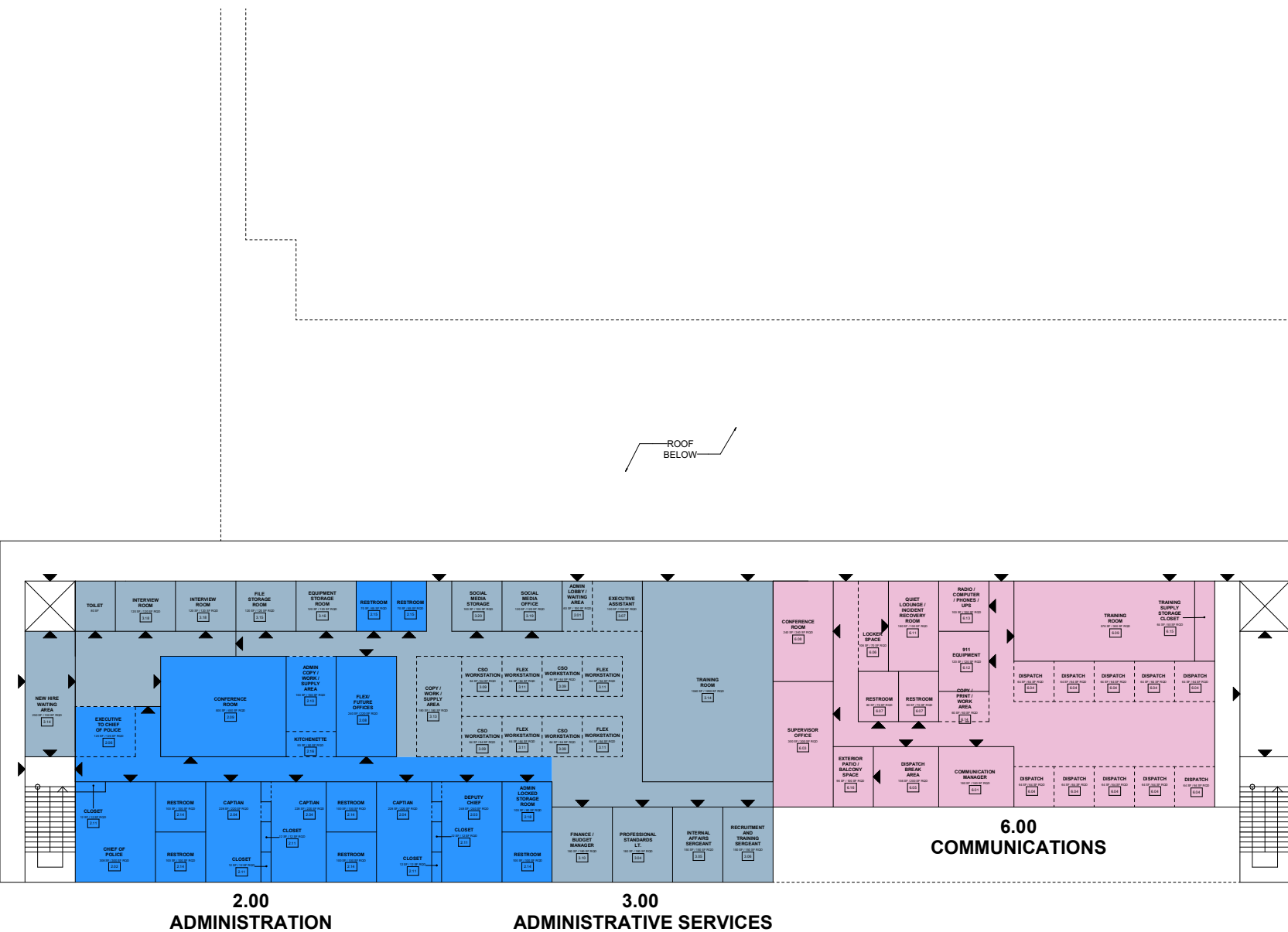


**NEW CONSTRUCTION STUDY OPTION C**  
**POLICE BUILDING - SECOND FLOOR**

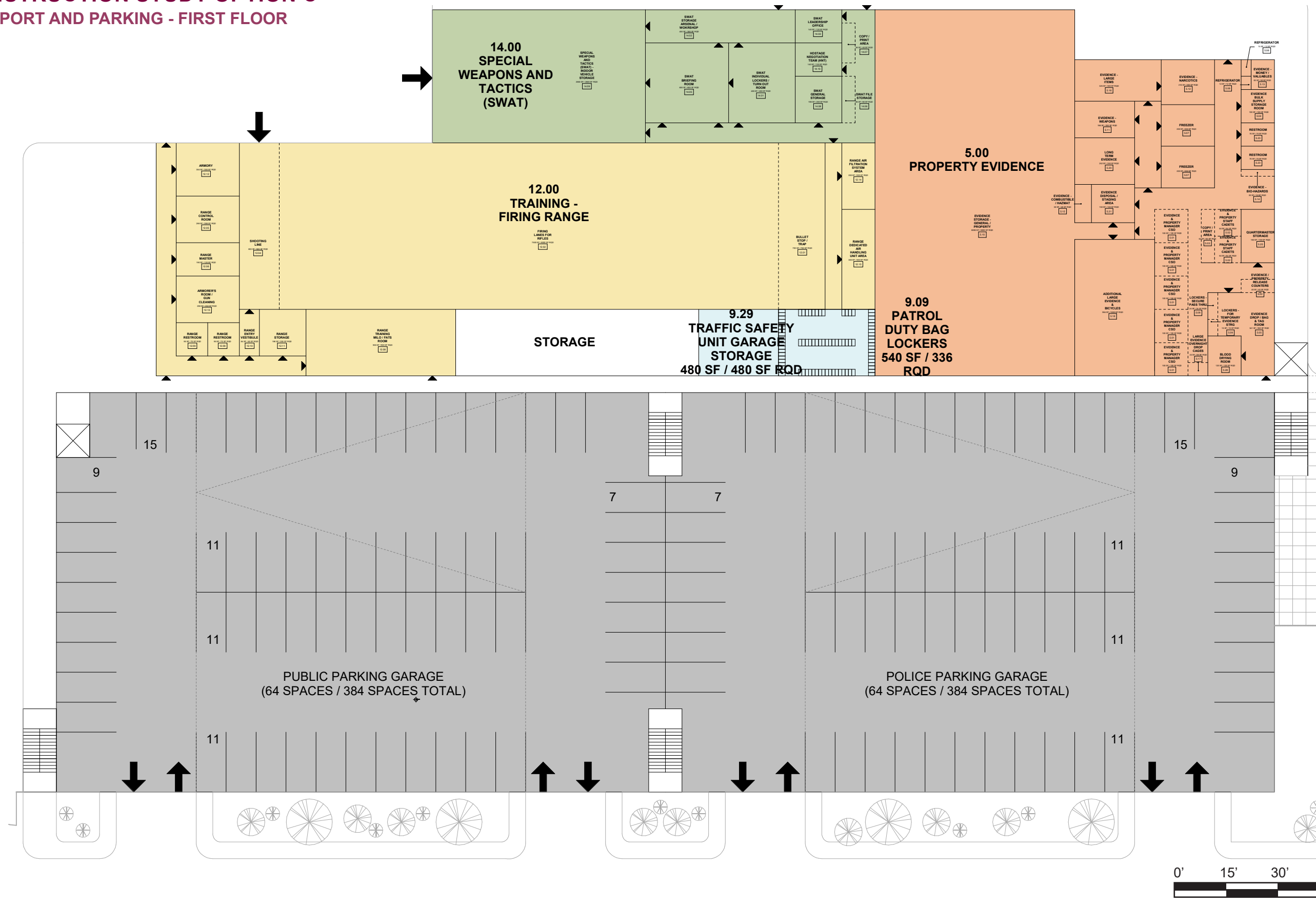




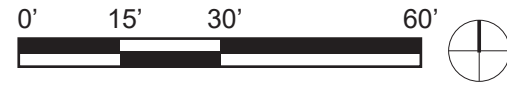
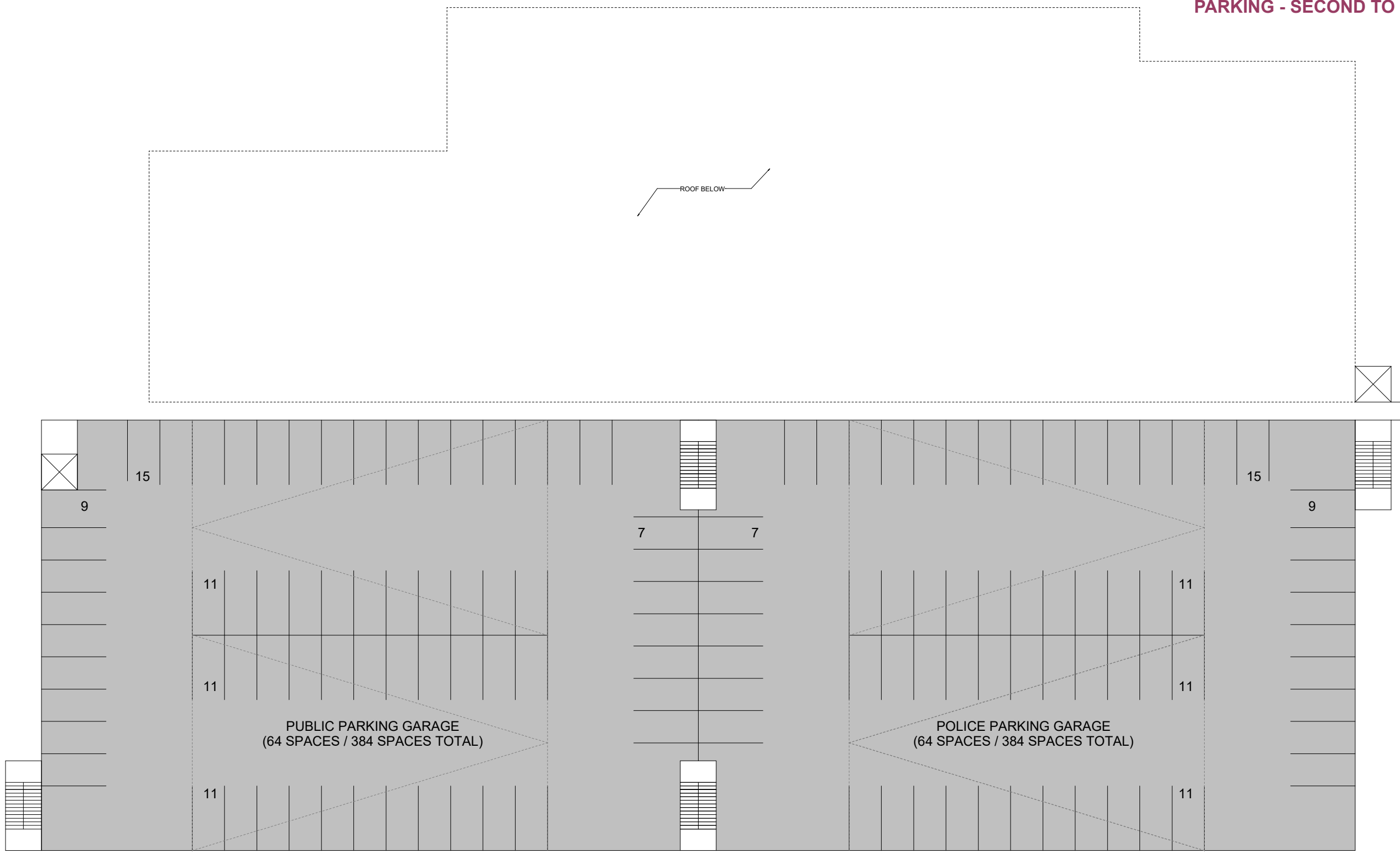
**NEW CONSTRUCTION STUDY OPTION C  
POLICE BUILDING - THIRD FLOOR**



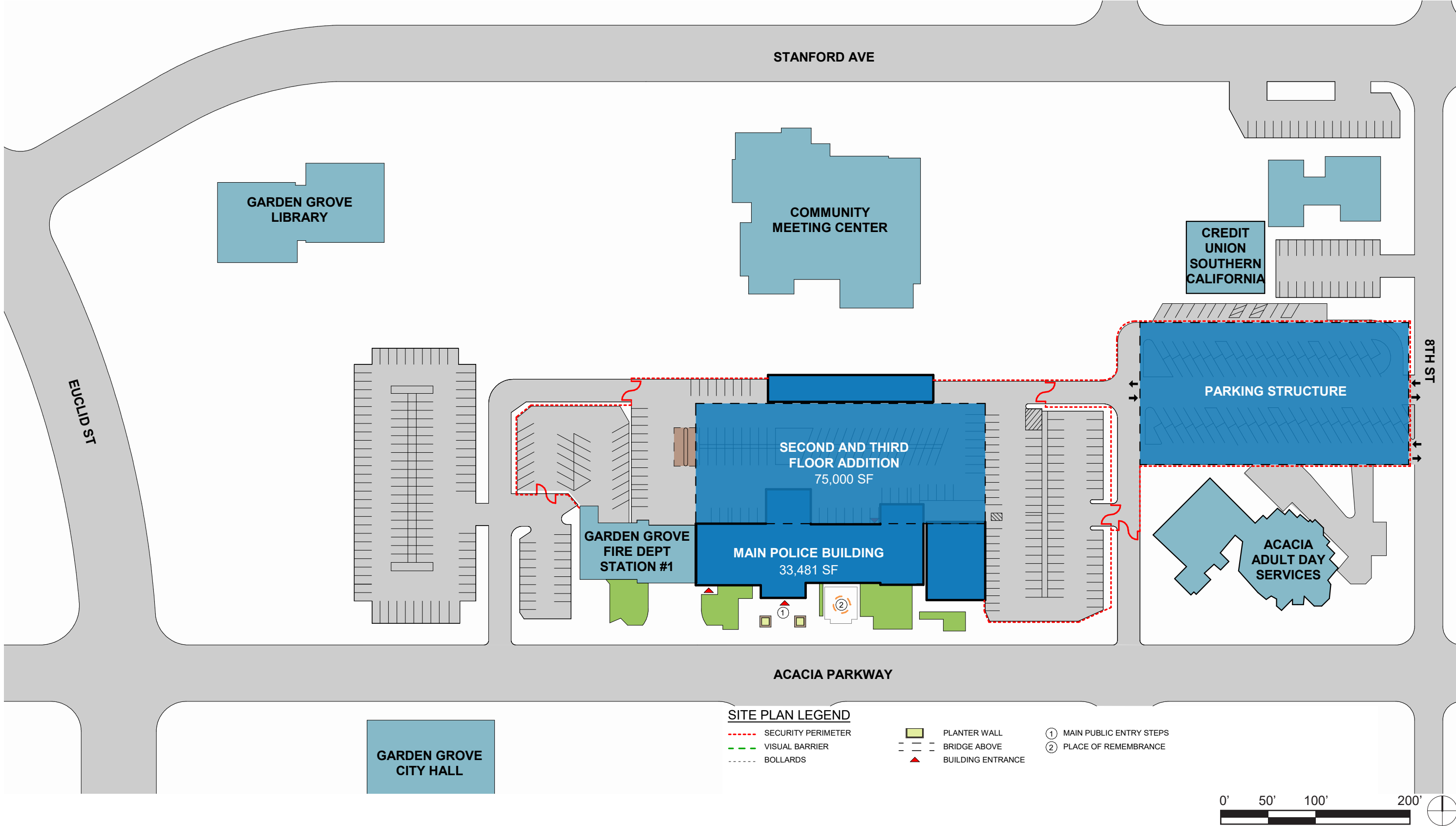
**NEW CONSTRUCTION STUDY OPTION C**  
**POLICE SUPPORT AND PARKING - FIRST FLOOR**



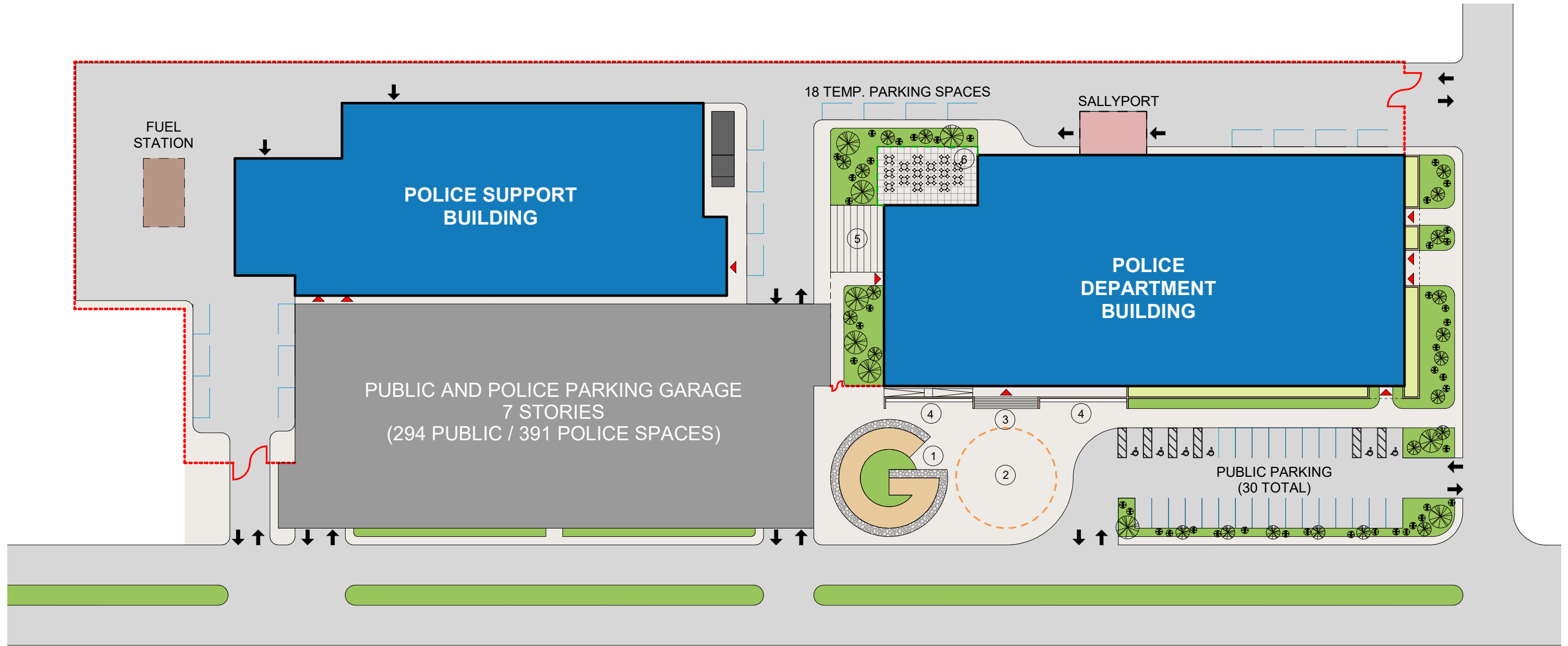
**NEW CONSTRUCTION STUDY OPTION C  
PARKING - SECOND TO SIXTH FLOOR**



**RENOVATION AND ADDITION OF EXISTING FACILITY CONCEPTUAL PLAN**  
**SITE PLAN**



**NEW CONSTRUCTION CONCEPTUAL PLAN**  
**SITE PLAN**

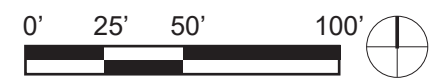


**SITE PLAN LEGEND**

- - - - SECURITY PERIMETER
- - - - VISUAL BARRIER
- BOLLARDS
- EMERGENCY GENERATOR

- PLANTER WALL
- BRIDGE ABOVE
- ▲ BUILDING ENTRANCE

- ① PLAZA & SIGNAGE
- ② PLACE OF REMEMBRANCE
- ③ MAIN PUBLIC ENTRY STEPS
- ④ PUBLIC OUTDOOR SEATING
- ⑤ STAFF OUTDOOR SEATING
- ⑥ STAFF OUTDOOR DINING

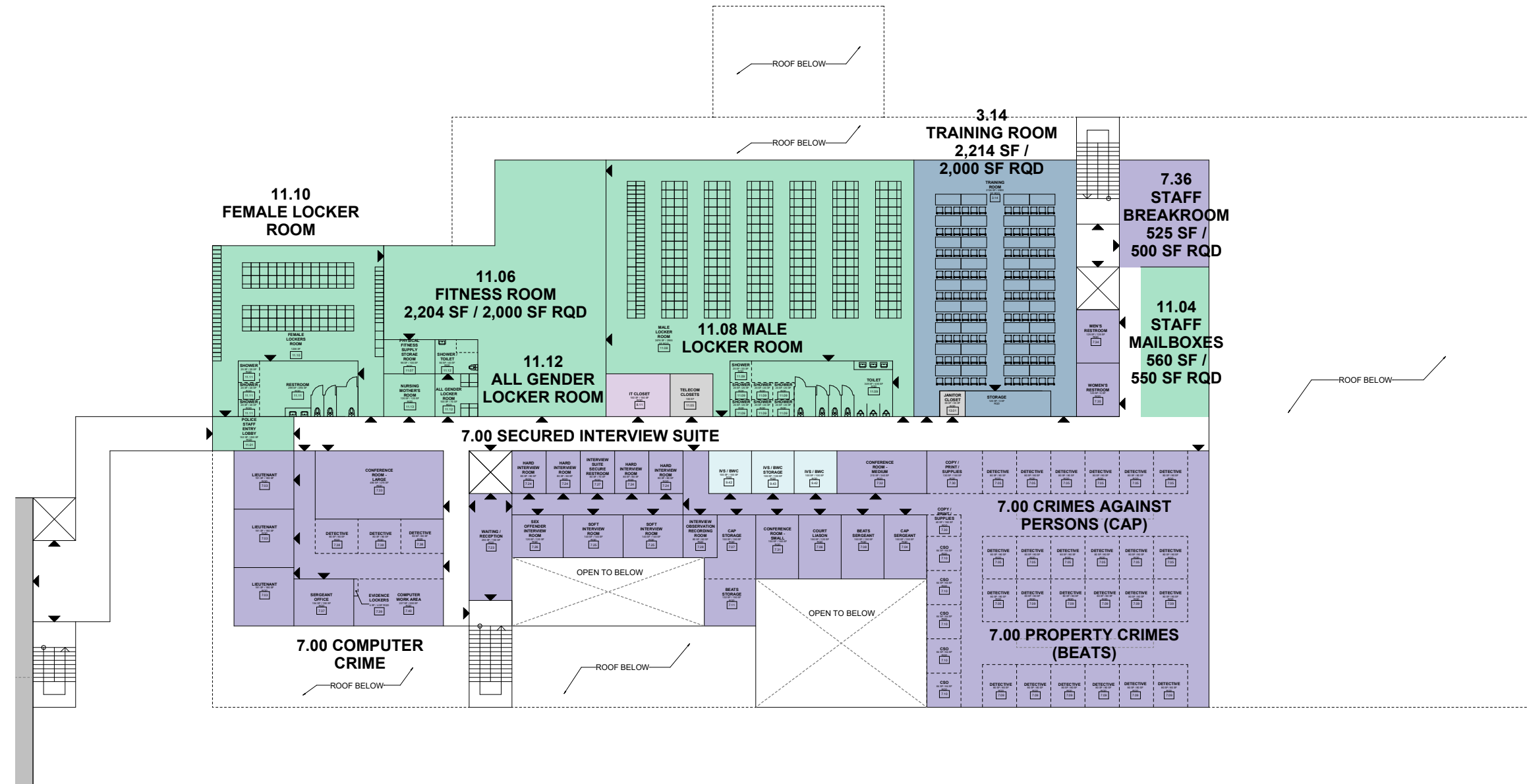


# NEW CONSTRUCTION CONCEPTUAL PLAN

## MAIN POLICE BUILDING - FIRST FLOOR

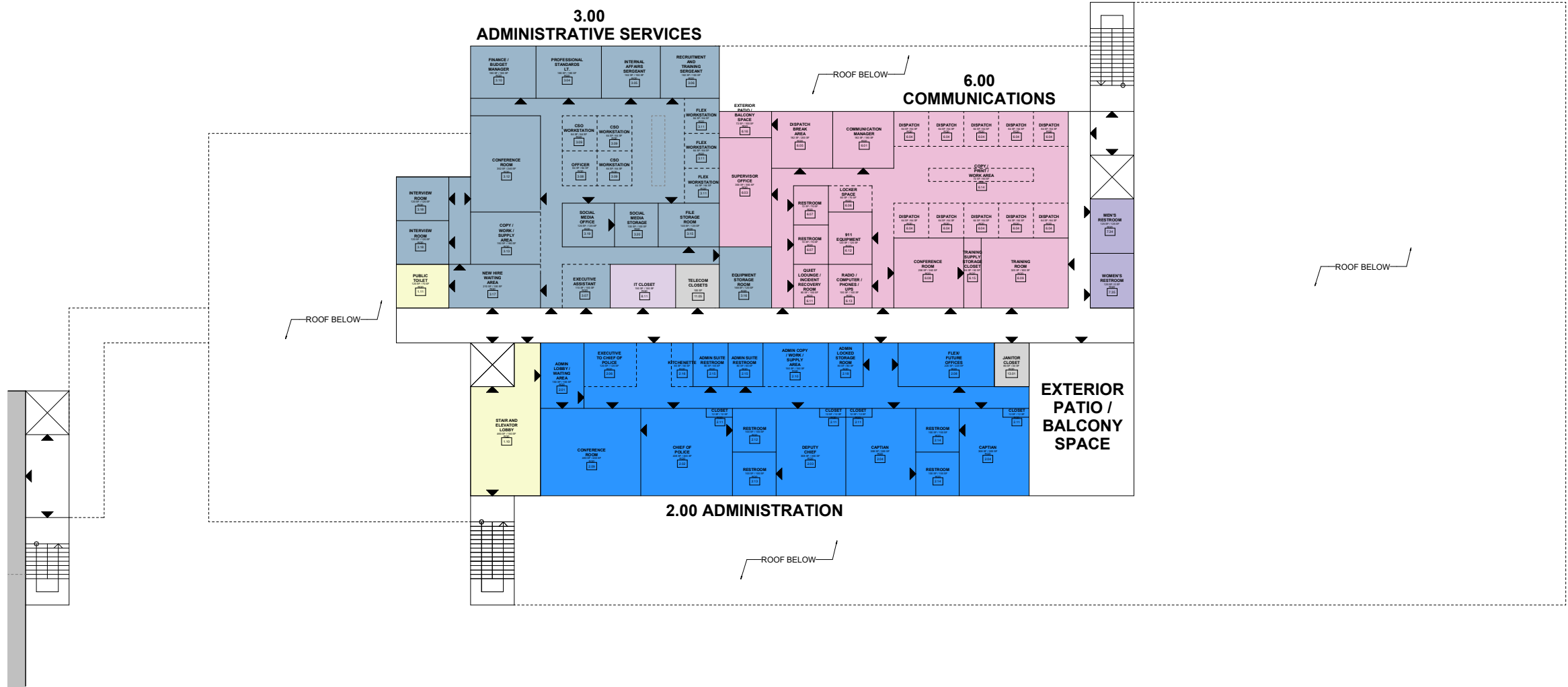


# NEW CONSTRUCTION CONCEPTUAL PLAN MAIN POLICE BUILDING - SECOND FLOOR



# NEW CONSTRUCTION CONCEPTUAL PLAN

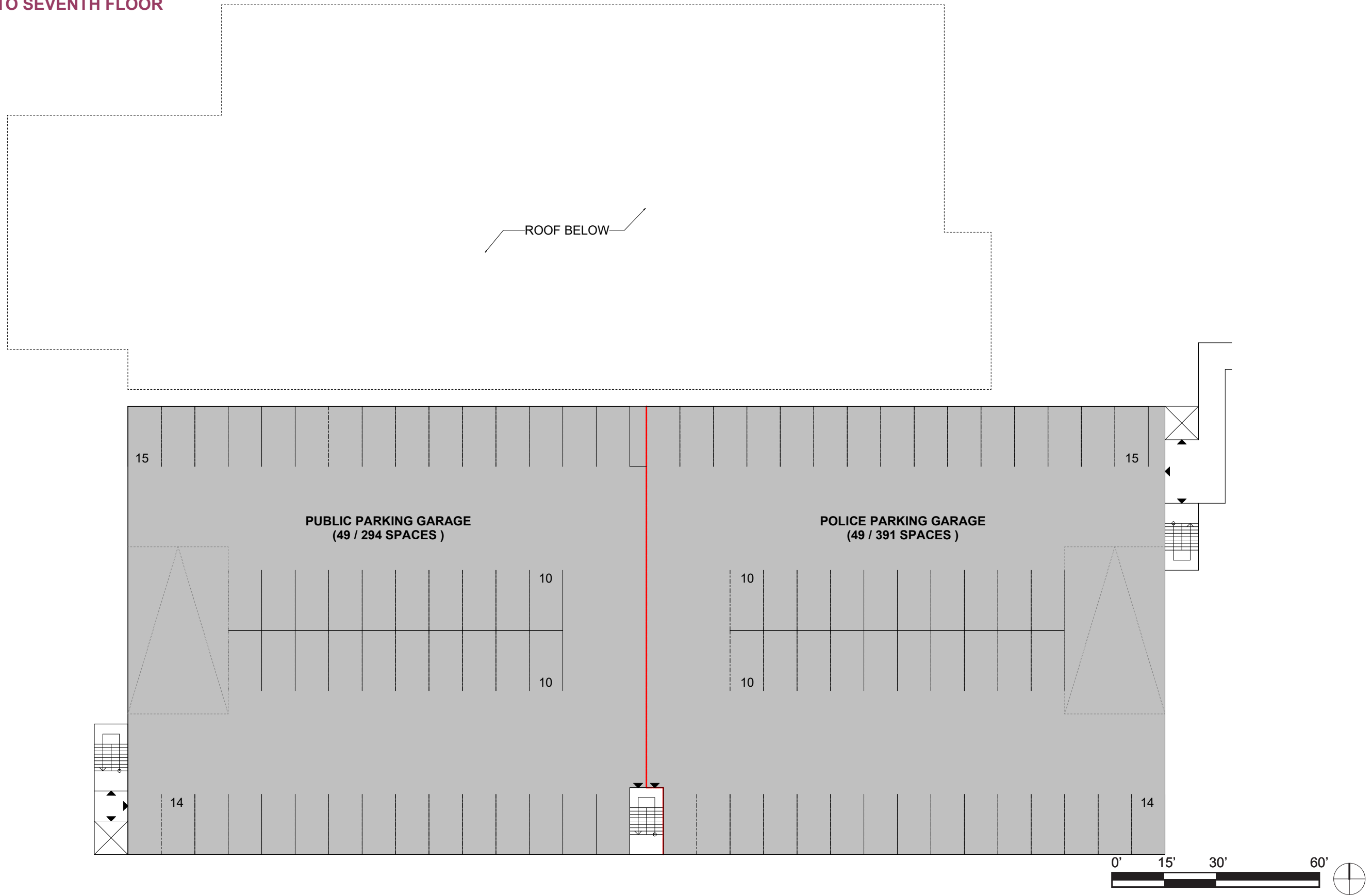
## MAIN POLICE BUILDING - THIRD FLOOR







**NEW CONSTRUCTION CONCEPTUAL PLAN**  
**PARKING - SECOND TO SEVENTH FLOOR**



# **APPENDIX D: COST ESTIMATE**





23 December 2019

Curtis Lockwood, AIA  
Dewberry  
300 North Lake Avenue  
12th Floor  
Pasadena, CA 91101

Regarding: Garden Grove Police Department Infrastructure Space Needs Assessment  
Feasibility Study Analysis for Different Schemes

Dear Curtis:

Please see below a brief summary of our analysis for the different schemes outlined by Dewberry:

SCHEME #1 - RENOVATION TO EXISTING FACILITY		SCHEME #2 - NEW CONSTRUCTION (LOW COST OPTION)		SCHEME #3 - NEW CONSTRUCTION (MIDDLE COST OPTION)		SCHEME #4 - NEW CONSTRUCTION (FULL BUILD-OUT OPTION)	
BUILDING (95,000 GSF)	PARKING STRUCTURE (700 STALLS)	BUILDING (92,000 GSF)	PARKING STRUCTURE (700 STALLS)	BUILDING (98,500 GSF)	PARKING STRUCTURE (700 STALLS)	BUILDING (114,000 GSF)	PARKING STRUCTURE (700 STALLS)
\$ 44.13 M	/95,000 GSF	\$ 41.98 M	/92,000 GSF	\$ 47.49 M	/98,500 GSF	\$ 58.05 M	/114,000 GSF
\$ 18.30 M	/700 STALLS	\$ 18.23 M	/700 STALLS	\$ 18.89 M	/700 STALLS	\$ 19.35 M	/700 STALLS

Our understanding of all the schemes is as follows:

**SCHEME #1:**

- Complete renovation of existing main police building (~25,000 SF). Including upgradation of all mechanical and electrical systems.
- Addition of 70,000 SF of office space above existing parking.
- Exterior Façade – Match existing building.

**SCHEME #2:**

- Removal of existing main police building
- Construction of a new 92,000 GSF police building and new parking structure for 700 stalls.
- Exterior façade is assumed to include plaster/stucco and punched aluminum windows.
- HVAC – Dx cooling system with multiple small packaged units.
- Also, includes Single generator to meet CBC exit lighting.
- Interior finishes include, carpet in the office spaces, VCT in corridors, acoustical ceiling tiles and gypsum board ceiling system.

**SCHEME #3:**

- Removal of existing main police building
- Construction of a new 98,500 GSF police building and new parking structure for 700 stalls.



- Exterior façade is assumed to include metal wall panel and curtainwall with high performance glass.
- HVAC – Dx cooling system with multiple small packaged units.
- Includes dual generator with parallel switchgear.
- Interior finishes include, carpet tiles in the office spaces, polished concrete in corridors, acoustical ceiling tiles and gypsum board ceiling system.

**SCHEME #4:**

- Removal of existing main police building
- Construction of a new 114,000 GSF police building and new parking structure for 700 stalls.
- Exterior façade is assumed to include stone panelized system and curtainwall with high performance glass.
- HVAC – Multiple split units with cooling tower.
- Includes dual generator with parallel switchgear.
- Interior finishes include, carpet tiles in the office spaces, terrazzo in corridors, granite flooring in the lobby area, acoustical ceiling tiles and gypsum board ceiling system.

Our study for this program includes:

- Comparison of cost per division for all four schemes.
- Analysis of ROM cost for each scheme of main police building with regards to their respective construction duration.
- We have prepared and provided detailed cost estimate for all four schemes, outlined by Dewberry.

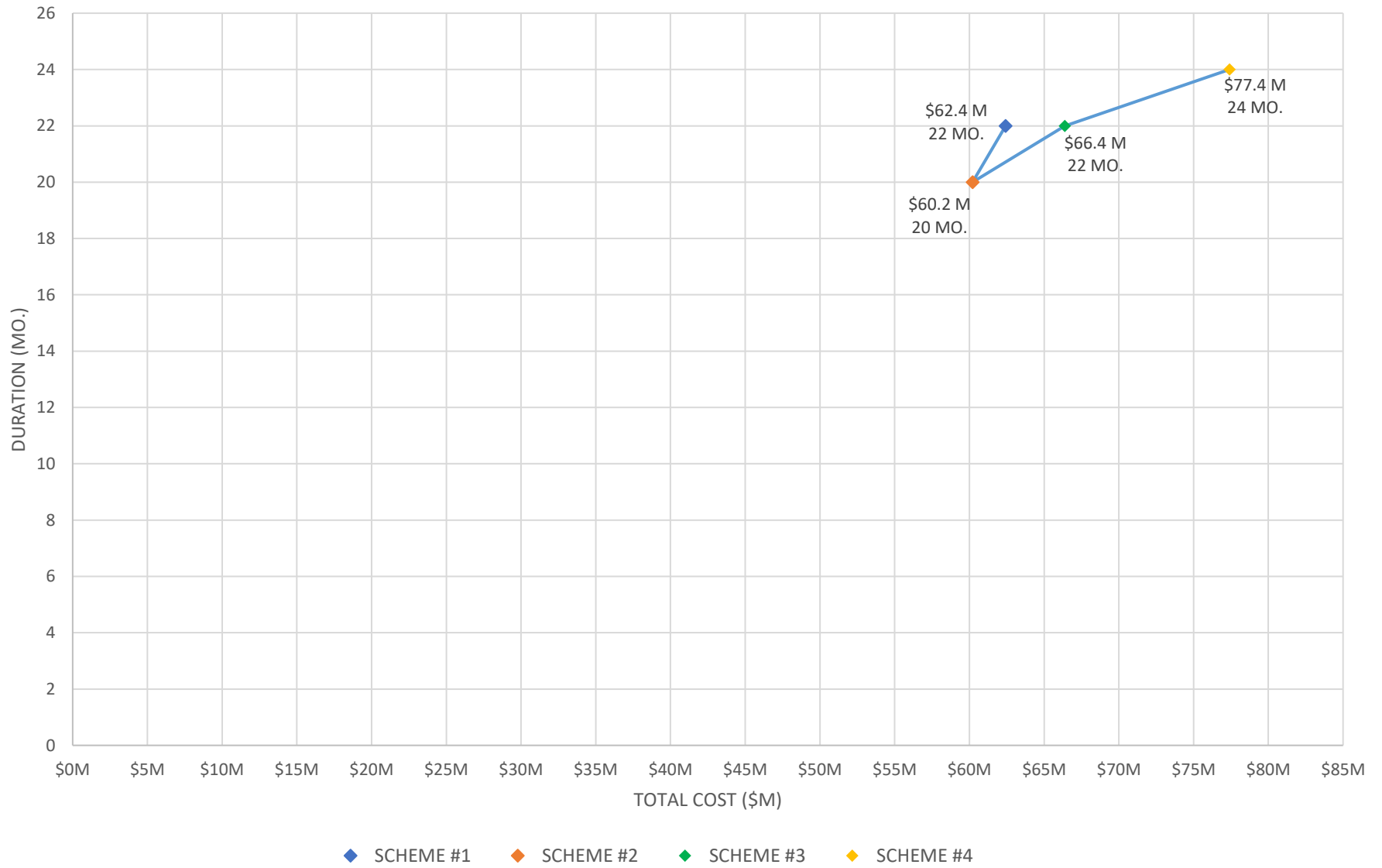
If you have any questions or need any clarifications, please feel free to reach out to me.

Sincerely,

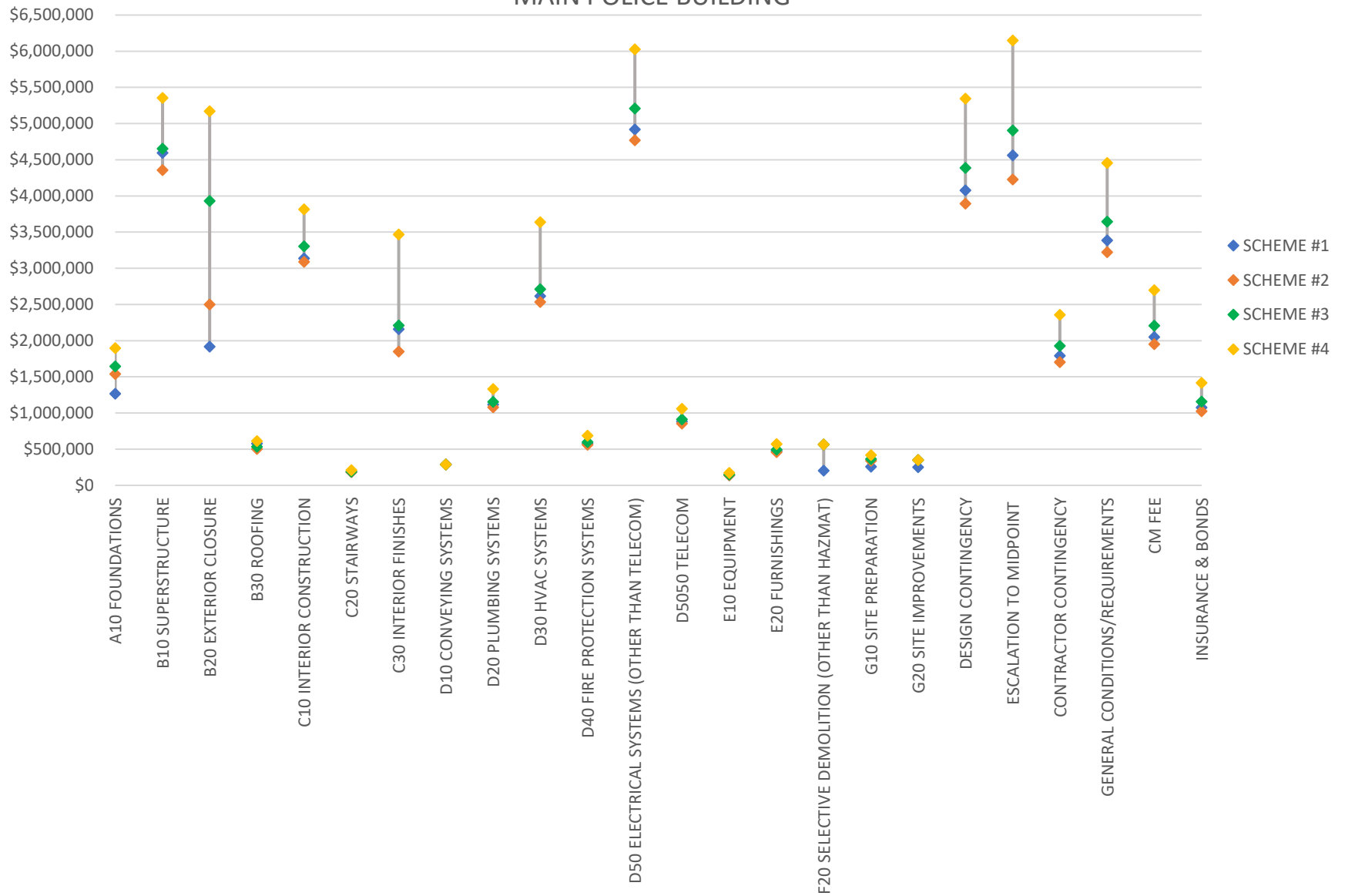
A handwritten signature in blue ink, appearing to read 'Abhi Choukse', with a horizontal line underneath.

Abhi Choukse, LEED AP<sup>BD+C</sup>  
Regional Estimating Manager

### FEASIBILITY ANALYSIS FOR DIFFERENT SCHEMES - MAIN POLICE BUILDING & PARKING STRUCTURE

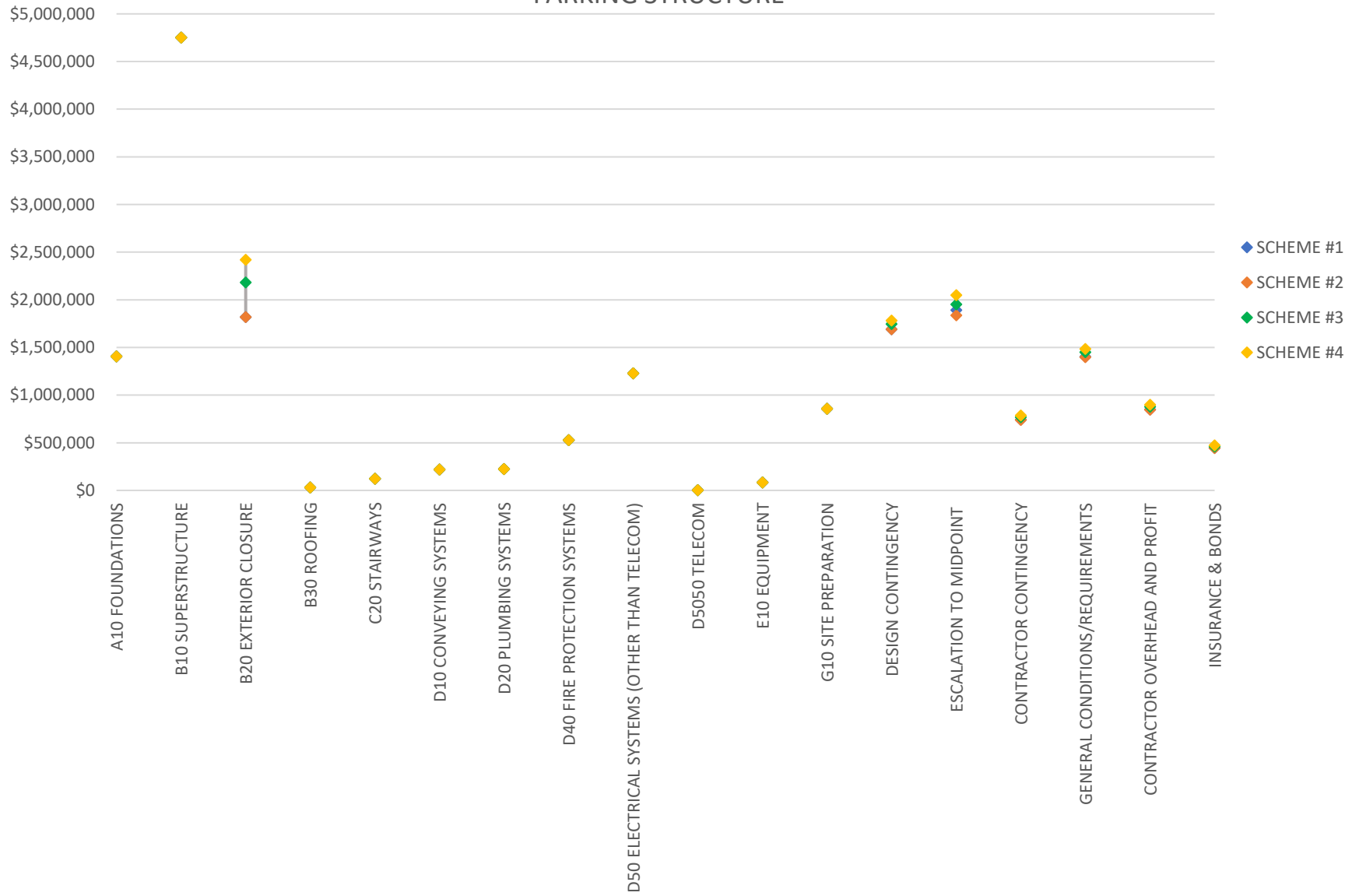


## COST ANALYSIS PER UNIFORMAT DIVISIONS FOR DIFFETENT SCHEMES -MAIN POLICE BUILDING





## COST ANALYSIS PER UNIFORMAT DIVISIONS FOR DIFFETENT SCHEMES -PARKING STRUCTURE







# Garden Grove Police Department Infrastructure Space Needs Assessment

## Scheme #1 - Renovation to Existing Facility

*Garden Grove, CA*

Dewberry  
**ROM COST ESTIMATE - R1**  
Job No. 19342.000  
23 December 2019





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 **COST ESTIMATE**

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**INTRODUCTORY NOTES**

This estimate is based on verbal direction from the client and the following items, received 04 December 2019

<b>Conceptual Layout</b>	07 sheets
<b>GGPD Scheme Pricing Matrix</b>	01 sheet

The following items are excluded from this estimate:

- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Installation of owner furnished equipment.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

The midpoint of construction of November 2022 is based on:

- Construction start date of December 2021
  - Estimated construction duration of 22 months
- 
- This estimate is based on a Construction Manager at Risk delivery method.
  - This estimate is based on prevailing wage labor rates.
  - This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
  - This estimate is based on a minimum of four competitive bids and a stable bidding market.
  - This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
  - We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

# Garden Grove Police Department Infrastructure Space Needs Assessment

Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

### PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. BUILDING	\$44,128,541	95,000	\$464.51
02. PARKING STRUCTURE	\$18,299,778		
<b>TOTAL CONSTRUCTION COST</b>	<b>\$62,428,319</b>		

**NOTE:** 95,000 GSF IS COMPRISED OF 70,000 SF NEW ADDITION + 25,000 EXISTING BUILDING

ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED PROJECT SUMMARY**

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. BUILDING	\$27,187,628	95,000	\$286.19
02. PARKING STRUCTURE	\$11,274,507		
<b>TOTAL NET DIRECT COST</b>			<b>\$38,462,135</b>
<b>GENERAL MARKUPS</b>			
DESIGN CONTINGENCY	15.00%	\$5,769,320	
ESCALATION TO MIDPOINT 11/2022	14.58%	\$6,450,421	
CONTRACTOR CONTINGENCY	5.00%	\$2,534,094	
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$4,789,437	
CM FEE	5.00%	\$2,900,270	
INSURANCE & BONDS	2.50%	\$1,522,642	
<b>TOTAL CONSTRUCTION COST</b>			<b>\$62,428,319</b>

**ROM COST ESTIMATE - SCHEME #1 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

**BUILDING SUMMARY**

<b>ELEMENT</b>		<b>TOTAL COST</b>	<b>\$/SF AREA</b>
A SUBSTRUCTURE		\$1,264,720	\$13.31
B SHELL		\$7,093,862	\$74.67
C INTERIORS		\$5,481,851	\$57.70
D SERVICES		\$10,400,103	\$109.47
E EQUIPMENT AND FURNISHINGS		\$617,500	\$6.50
F OTHER BUILDING CONSTRUCTION		\$1,822,500	\$19.18
G BUILDING SITEWORK		<u>\$507,092</u>	<u>\$5.34</u>
NET DIRECT BUILDING COST		\$27,187,628	\$286.19
DESIGN CONTINGENCY	15.00%	<u>\$4,078,144</u>	<u>\$42.93</u>
SUBTOTAL		\$31,265,772	\$329.11
ESCALATION TO MIDPOINT 11/2022	14.58%	<u>\$4,559,592</u>	<u>\$48.00</u>
SUBTOTAL		\$35,825,364	\$377.11
CONTRACTOR CONTINGENCY	5.00%	<u>\$1,791,268</u>	<u>\$18.86</u>
SUBTOTAL		\$37,616,632	\$395.96
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$3,385,497</u>	<u>\$35.64</u>
SUBTOTAL		\$41,002,129	\$431.60
CM FEE	5.00%	<u>\$2,050,106</u>	<u>\$21.58</u>
SUBTOTAL		\$43,052,236	\$453.18
INSURANCE & BONDS	2.50%	<u>\$1,076,306</u>	<u>\$11.33</u>
<b>TOTAL BUILDING COST</b>		<b>\$44,128,541</b>	<b>\$464.51</b>

GROSS FLOOR AREA: 95,000 SF



**ROM COST ESTIMATE - SCHEME #1 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED SUMMARY**

ELEMENT		TOTAL COST	\$/SF AREA
A10 FOUNDATIONS		\$1,264,720	\$13.31
A20 BASEMENT CONSTRUCTION			
B10 SUPERSTRUCTURE		\$4,595,949	\$48.38
B20 EXTERIOR CLOSURE		\$1,918,356	\$20.19
B30 ROOFING		\$579,557	\$6.10
C10 INTERIOR CONSTRUCTION		\$3,137,253	\$33.02
C20 STAIRWAYS		\$185,748	\$1.96
C30 INTERIOR FINISHES		\$2,158,850	\$22.72
D10 CONVEYING SYSTEMS		\$290,000	\$3.05
D20 PLUMBING SYSTEMS		\$1,114,900	\$11.74
D30 HVAC SYSTEMS		\$2,615,603	\$27.53
D40 FIRE PROTECTION SYSTEMS		\$578,650	\$6.09
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)		\$4,920,300	\$51.79
D5050 TELECOM		\$880,650	\$9.27
E10 EQUIPMENT		\$142,500	\$1.50
E20 FURNISHINGS		\$475,000	\$5.00
F10 SPECIAL CONSTRUCTION		\$1,620,000	\$17.05
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)		\$202,500	\$2.13
F2020 HAZMAT ABATEMENT			
G10 SITE PREPARATION		\$257,092	\$2.71
G20 SITE IMPROVEMENTS		\$250,000	\$2.63
G30 SITE CIVIL/MECHANICAL UTILITIES			
G40 SITE ELECTRICAL UTILITIES			
G90 OTHER SITE CONSTRUCTION			
NET DIRECT BUILDING COST		\$27,187,628	\$286.19
DESIGN CONTINGENCY	15.00%	\$4,078,144	\$42.93
SUBTOTAL		\$31,265,772	\$329.11
ESCALATION TO MIDPOINT 11/2022	14.58%	\$4,559,592	\$48.00
SUBTOTAL		\$35,825,364	\$377.11
CONTRACTOR CONTINGENCY	5.00%	\$1,791,268	\$18.86
SUBTOTAL		\$37,616,632	\$395.96
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$3,385,497	\$35.64
SUBTOTAL		\$41,002,129	\$431.60
CM FEE	5.00%	\$2,050,106	\$21.58
SUBTOTAL		\$43,052,236	\$453.18
INSURANCE & BONDS	2.50%	\$1,076,306	\$11.33
<b>TOTAL BUILDING COST</b>		<b>\$44,128,541</b>	<b>\$464.51</b>

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Standard foundation				
Continuous footing, assembly	149	CY	645.86	\$96,229
Spread footing, assembly	696	CY	536.61	\$373,651
Special foundation				
Grade beam, assembly	610	CY	708.43	\$432,430
Slab on grade				
Reinforced concrete slab, 5" thick, including vapor barrier and float finish	31,667	SF	9.81	\$310,667
Topping slab	1,583	SF	7.00	\$11,083
Miscellaneous				
Elevator pit				
Single	2	EA	12,983.30	\$25,967
Concrete curb	890	LF	15.59	\$13,874
Control joint	890	LF	0.92	\$819

<b>A10 FOUNDATIONS</b>	<b>\$1,264,720</b>
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<b>A SUBSTRUCTURE</b>	<b>\$1,264,720</b>
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## B SHELL

### B10 SUPERSTRUCTURE

Floor construction				
Structural steel				
Wide flange	263	TON	4,500.00	\$1,181,250
Piping and tube steel	88	TON	5,500.00	\$481,250
Miscellaneous steel, including angles and channels	35	TON	8,750.00	\$306,250
Fire protection	385	TON	300.00	\$115,500
Moment connection, Allowance	1	LS	100,000.00	\$100,000
Anchors and baseplates, Allowance	1	LS	50,000.00	\$50,000
Metal deck, 3"	70,000	SF	5.09	\$356,433
Concrete fill to metal deck, lightweight reinforced	324	CY	230.01	\$74,539
Float finish, premium	70,000	SF	1.29	\$90,298
Roof construction				
Structural steel				
Wide flange	70	TON	4,500.00	\$315,000
Piping and tube steel	26	TON	5,500.00	\$144,375
Miscellaneous steel, including angles and channels	10	TON	8,750.00	\$84,219
Fire protection	106	TON	300.00	\$31,763
Moment connection, Allowance	1	LS	25,000.00	\$25,000
Anchors and baseplates, Allowance	1	LS	10,000.00	\$10,000

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Metal deck, 1 1/2"	35,000	SF	2.91	\$101,725
Concrete fill to metal deck, lightweight reinforced	162	CY	230.01	\$37,269
Screed finish, premium	35,000	SF	1.32	\$46,203
Mechanical screen	339	LF	175.00	\$59,375
Seismic upgrade to existing structure including	27,000	SF	36.50	\$985,500

### B10 SUPERSTRUCTURE \$4,595,949

#### B20 EXTERIOR CLOSURE

Exterior walls				
Framing, metal stud	36,483	SF	9.00	\$328,343
Insulation, batt	36,483	SF	1.54	\$56,183
Exterior sheathing	36,483	SF	2.50	\$91,206
Cement plaster	25,538	SF	18.32	\$467,793
Miscellaneous works, including caulking and sealant, weather barrier, louvers etc., Allowance	70,000	SF	2.75	\$192,500
Exterior windows, (assume 30% of exterior closure to be glazing)				
Aluminum window, punched	10,945	SF	64.73	\$708,467
Exterior doors				
Aluminum fully glazed including frame and hardware				
Double	4	PR	5,133.25	\$20,533
Hollow metal including frame and hardware				
Single	4	EA	1,813.01	\$7,252
Double	3	PR	3,058.69	\$9,176
Miscellaneous				
Closer	18	EA	344.26	\$6,197
Hold open	4	EA	506.78	\$2,027
Panic hardware	18	EA	759.92	\$13,679
Miscellaneous work, Allowance	1	LS	15,000.00	\$15,000

### B20 EXTERIOR CLOSURE \$1,918,356

#### B30 ROOFING

Roof coverings, including re-roof for existing building				
PVC single ply membrane	35,833	SF	7.73	\$276,961
Rigid insulation	35,833	SF	4.31	\$154,477
Tapered premium	21,500	SF	2.28	\$48,924
Cant strip	946	LF	3.08	\$2,917
Walk pad, assume 5% of roof area	1,792	SF	7.02	\$12,581
Flashing and sheet metal				
Reglet	946	LF	5.46	\$5,169

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Flashing	946	LF	7.69	\$7,283
Coping, aluminum	946	LF	25.68	\$24,308
Expansion joint assembly	315	LF	125.00	\$39,437
Roof openings				
Access hatch/skylights, Allowance	1	LS	7,500.00	\$7,500

### B30 ROOFING \$579,557

### B - SHELL \$7,093,862

#### C INTERIORS

#### C10 INTERIOR CONSTRUCTION

##### Partitions

Framing, metal stud	109,250	SF	9.00	\$983,250
Furring	2,850	SF	3.75	\$10,688
Shaft wall	5,571	SF	8.95	\$49,854
Cementitious backerboard	3,381	SF	4.15	\$14,030
Insulation, batt	117,671	SF	1.54	\$181,214
Gypsum board				
Taped and finished	235,342	SF	3.47	\$816,040
Underlayment	47,068	SF	1.74	\$81,895
Inside face of exterior wall, taped and finished	36,483	SF	3.93	\$143,376
Shaft liner	5,571	SF	3.30	\$18,406

##### Interior windows

Storefront, Allowance	1	SF	50,000.00	\$50,000
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Interior doors	95,000	SF	5.50	\$522,500
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Fittings, including restroom accessories, signage etc., Allowance	95,000	SF	2.80	\$266,000
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### C10 INTERIOR CONSTRUCTION \$3,137,253

#### C20 STAIRS

##### Metal stair, concrete filled

Riser	483	LFR	114.93	\$55,491
Landing	292	SF	65.54	\$19,117
Handrail, wall mounted, painted	101	LF	88.65	\$8,917
Handrail, floor mounted, painted	101	LF	134.57	\$13,536
Painted steel guardrail	140	LF	226.76	\$31,680
Miscellaneous work, Allowance	1	LS	50,000.00	\$50,000
Metal ladder				
Roof access ladder, Allowance	40	VLF	175.17	\$7,007

### C20 STAIRS \$185,748

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>C30 INTERIOR FINISHES</b>				
Wall				
Paint	231,051	SF	1.07	\$246,440
Ceramic tile	3,381	SF	17.73	\$59,946
Floor				
Carpet	27,788	SF	5.84	\$162,268
Ceramic tile	2,850	SF	15.77	\$44,936
Terrazzo, epoxy	18,525	SF	36.58	\$677,565
Tile	15,438	SF	14.63	\$225,784
Concrete, sealer	6,650	SF	1.40	\$9,339
Base	95,000	SF	0.60	\$57,000
Ceiling				
Acoustical ceiling	39,366	SF	7.50	\$295,242
Hard lid	6,709	SF	12.58	\$84,404
Soffit	5,398	SF	22.55	\$121,720
Paint				
Gypsum board	12,107	SF	1.07	\$12,913
Exposed structure	6,650	SF	1.70	\$11,293
Enhanced finishes, Allowance	1	LS	150,000.00	\$150,000

**C30 INTERIOR FINISHES** **\$2,158,850**

**C INTERIORS** **\$5,481,851**

### D SERVICES

#### D10 CONVEYING SYSTEMS

Conveying equipment	2	EA	145,000.00	\$290,000
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**D10 CONVEYING SYSTEMS** **\$290,000**

#### D20 PLUMBING SYSTEMS

Equipment				
Water heating system	95,000	SF	0.30	\$28,500
Water softener	1	EA	4,870.00	\$4,870
Garbage disposal	2	EA	320.00	\$640
Fixture including rough-in	95,000	SF	1.95	\$185,250
Miscellaneous fittings	95,000	SF	0.85	\$80,750
Domestic water system				
Building entrance	1	LS	10,140.00	\$10,140
Cold water piping, fittings and accessories	95,000	SF	2.00	\$190,000
Hot water piping and fittings, insulation	95,000	SF	0.80	\$76,000

## Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

### ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Valve	95,000	SF	0.10	\$9,500
Sanitary waste system, includes clean-outs	95,000	SF	2.10	\$199,500
Sanitary vent system, includes vent through roofs	95,000	SF	1.85	\$175,750
Roof drainage system	95,000	SF	0.85	\$80,750
Indirect condensate drain system	95,000	SF	0.30	\$28,500
Natural gas system, no work anticipated		NOTE		
Commissioning				
Independent commissioning		NIC		
Support service	1	LS	3,500.00	\$3,500
Elevator sump pump system, Allowance	1	LS	8,000.00	\$8,000
Miscellaneous including seismic control, system test, flush and chlorinate, identification and fire stop	95,000	SF	0.35	\$33,250
<b>D20 PLUMBING SYSTEMS</b>				<b>\$1,114,900</b>

### D30 HVAC SYSTEMS

#### Equipment

Roof top packaged units, DX cool - gas heat	142,500	CFM	6.00	\$855,000
Dedicated AC units				
Computer/data room	3	EA	11,720.00	\$35,160
Electrical/mechanical room	4	EA	5,540.00	\$22,160
Exhaust fans	6	EA	1,477.24	\$8,863
Building	95,000	SF	0.20	\$19,000
Sound attenuation	95,000	SF	0.22	\$20,900
Air distribution system				
Sheet metal ductwork, supports	76,000	LB	8.37	\$636,120
Duct insulation	95,000	SF	2.90	\$275,500
Flexible duct, supports	95,000	SF	0.59	\$56,050
Refrigeration piping system, specialties	95,000	SF	0.33	\$31,350
Air inlets and outlets	95,000	SF	0.99	\$94,050
Fire, smoke and manual dampers	95,000	SF	0.54	\$51,300
Duct smoke detectors	95,000	SF	0.22	\$20,900
Automatic temperature controls	95,000	SF	3.96	\$376,200

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Air/water balance, by an independent contractor	95,000	SF	0.51	\$48,450
Start-up, commission major equipment	95,000	SF	0.32	\$30,400
Miscellaneous including seismic bracing, duct	95,000	SF	0.36	\$34,200

### D30 HVAC SYSTEMS \$2,615,603

#### D40 FIRE PROTECTION SYSTEMS

Automatic fire sprinkler system, wet type

Fire riser, horizontal water distribution, drops and heads	95,000	SF	5.67	\$538,650
Test	1	LS	5,000.00	\$5,000
Fire pump, Allowance	1	LS	35,000.00	\$35,000

### D40 FIRE PROTECTION SYSTEMS \$578,650

#### D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)

Service and distribution

Normal power

Main switch gear, < 3,000 amp	1	EA	100,000.00	\$100,000
Distribution board	95,000	SF	0.94	\$89,300
Panel board	95,000	SF	1.60	\$152,000
Transformer	95,000	SF	0.29	\$27,550
Building feeder	95,000	SF	0.76	\$72,200
Emergency power	95,000	SF	1.15	\$109,250
Building grounding system	95,000	SF	0.35	\$33,250
Equipment connection including disconnect switch, conduit and conductors	95,000	SF	4.13	\$392,350
Lighting system				
Lighting control	95,000	SF	1.17	\$111,150
Fixtures	95,000	SF	11.04	\$1,048,800
Light switch	95,000	SF	0.50	\$47,500
Occupancy sensor	95,000	SF	1.09	\$103,550
Branch wiring	95,000	SF	2.90	\$275,500
Convenience power including branch wiring	95,000	SF	3.50	\$332,500
Fire alarm system	95,000	SF	4.50	\$427,500
Audio visual system	95,000	SF	4.00	\$380,000
Public address system	95,000	SF	0.66	\$62,700
TV outlets and cabling	95,000	SF	0.50	\$47,500

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Clock system, atomic clock	95,000	SF	0.30	\$28,500
Security system				
Access control	95,000	SF	5.00	\$475,000
CCTV system	95,000	SF	4.00	\$380,000
Interview recording system	95,000	SF	2.00	\$190,000
Miscellaneous including seismic bracing, identification and fire stop	95,000	SF	0.36	\$34,200
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$4,920,300</b>
<b>D5050 TELECOM</b>				
Telephone and data system, including intercoms	95,000	SF	4.00	\$380,000
Emergency radio BAS system	95,000	SF	3.25	\$308,750
Fiber optic system	95,000	SF	0.79	\$75,050
Common raceway system	95,000	SF	1.23	\$116,850
<b>D5050 TELECOM</b>				<b>\$880,650</b>
<b>D SERVICES</b>				<b>\$10,400,103</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Commercial equipment	95,000	SF	1.50	\$142,500
<b>E10 EQUIPMENT</b>				<b>\$142,500</b>
<b>E20 FURNISHINGS</b>				
Fixed furnishings	95,000	SF	5.00	\$475,000
<b>E20 FURNISHINGS</b>				<b>\$475,000</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$617,500</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				
<b>F10 SPECIAL CONSTRUCTION</b>				
Temporary relocation/swing space for GGPD, (assuming 30,000 GSF of office rental space)	18	MO	90,000.00	\$1,620,000
<b>F10 SPECIAL CONSTRUCTION</b>				<b>\$1,620,000</b>
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				



# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Interior gut demolition of existing main police building	27,000	SF	7.50	\$202,500
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				<b>\$202,500</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				<b>\$1,822,500</b>
<b>G BUILDING SITEWORK</b>				
<b>G10 SITE PREPARATION</b>				
New police station				
Excavation and fill				
Over excavation	5,401	CY	12.25	\$66,177
Backfill and recompact, assumed 25%	1,350	CY	12.99	\$17,541
Engineered fill and compaction	4,051	CY	27.46	\$111,233
Haul	4,051	CY	15.34	\$62,141
<b>G10 SITE PREPARATION</b>				<b>\$257,092</b>
<b>G20 SITE IMPROVEMENTS</b>				
Miscellaneous site improvements	1	LS	250,000.00	\$250,000
<b>G20 SITE IMPROVEMENTS</b>				<b>\$250,000</b>
<b>G BUILDING SITEWORK</b>				<b>\$507,092</b>

**ROM COST ESTIMATE - SCHEME #1 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

**BUILDING SUMMARY**

ELEMENT		TOTAL COST
A SUBSTRUCTURE		\$1,406,861
B SHELL		\$6,600,545
C INTERIORS		\$121,978
D SERVICES		\$2,203,144
E EQUIPMENT AND FURNISHINGS		\$84,250
F OTHER BUILDING CONSTRUCTION		
G BUILDING SITEWORK		<u>\$857,729</u>
NET DIRECT BUILDING COST		\$11,274,507
DESIGN CONTINGENCY	15.00%	<u>\$1,691,176</u>
SUBTOTAL		\$12,965,683
ESCALATION TO MIDPOINT 11/2022	14.58%	<u>\$1,890,829</u>
SUBTOTAL		\$14,856,512
CONTRACTOR CONTINGENCY	5.00%	<u>\$742,826</u>
SUBTOTAL		\$15,599,337
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$1,403,940</u>
SUBTOTAL		\$17,003,278
CM FEE	5.00%	<u>\$850,164</u>
SUBTOTAL		\$17,853,442
INSURANCE & BONDS	2.50%	<u>\$446,336</u>
<b>TOTAL BUILDING COST</b>		<b><u>\$18,299,778</u></b>

**COST PER STALL: \$26,143**

**DETAILED SUMMARY**

ELEMENT		TOTAL COST
A10 FOUNDATIONS		\$1,406,861
A20 BASEMENT CONSTRUCTION		
B10 SUPERSTRUCTURE		\$4,751,062
B20 EXTERIOR CLOSURE		\$1,819,759
B30 ROOFING		\$29,724
C10 INTERIOR CONSTRUCTION		
C20 STAIRWAYS		\$121,978
C30 INTERIOR FINISHES		
D10 CONVEYING SYSTEMS		\$220,000
D20 PLUMBING SYSTEMS		\$224,406
D30 HVAC SYSTEMS		
D40 FIRE PROTECTION SYSTEMS		\$527,833
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)		\$1,228,405
D5050 TELECOM		\$2,500
E10 EQUIPMENT		\$84,250
E20 FURNISHINGS		
F10 SPECIAL CONSTRUCTION		
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)		
F2020 HAZMAT ABATEMENT		
G10 SITE PREPARATION		\$857,729
G20 SITE IMPROVEMENTS		
G30 SITE CIVIL/MECHANICAL UTILITIES		
G40 SITE ELECTRICAL UTILITIES		
G90 OTHER SITE CONSTRUCTION		
<hr/>		
NET DIRECT BUILDING COST		\$11,274,507
DESIGN CONTINGENCY	15.00%	\$1,691,176
SUBTOTAL		\$12,965,683
ESCALATION TO MIDPOINT 11/2022	14.58%	\$1,890,829
SUBTOTAL		\$14,856,512
CONTRACTOR CONTINGENCY	5.00%	\$742,826
SUBTOTAL		\$15,599,337
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$1,403,940
SUBTOTAL		\$17,003,278
CM FEE	5.00%	\$850,164
SUBTOTAL		\$17,853,442
INSURANCE & BONDS	2.50%	\$446,336
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<b>TOTAL BUILDING COST</b>		<b>\$18,299,778</b>

**COST PER STALL: \$26,143**

Garden Grove Police Department Infrastructure Space Needs Assessment

PARKING STRUCTURE

Garden Grove, CA

ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Spread footing, assembly	1,447	CY	540.74	\$782,397
Slab on grade, assembly	45,126	SF	13.23	\$596,970
Elevator pit, double	1	EA	27,493.95	\$27,494
<b>A10 FOUNDATIONS</b>				<b>\$1,406,861</b>
<b>A SUBSTRUCTURE</b>				<b>\$1,406,861</b>
<b>B SHELL</b>				
<b>B10 SUPERSTRUCTURE</b>				
Concrete column, assembly	834	CY	1,246.15	\$1,039,460
Dowel	865	EA	134.03	\$115,995
Concrete infill between isolation joint and column	125	CY	574.33	\$71,861
Reinforced concrete slab, assembly	888	CY	1,038.56	\$922,132
Float finish	57,536	SF	1.68	\$96,920
Epoxy coating	57,536	SF	10.00	\$575,356
Concrete beam, assembly	1,261	CY	971.61	\$1,225,367
Concrete ramp	364	CY	1,702.44	\$620,371
Elevator shaft wall, assembly	1,938	SF	43.14	\$83,600
<b>B10 SUPERSTRUCTURE</b>				<b>\$4,751,062</b>
<b>B20 EXTERIOR CLOSURE</b>				
Exterior				
Concrete wall, assembly	38,158	SF	44.80	\$1,709,352
Waterproofing, drainage system	4,743	SF	7.00	\$33,198
Paint, exterior concrete	38,158	SF	1.72	\$65,631
Doors				
Rolling steel gate	1	EA	9,078.37	\$9,078
Motorized	1	EA	2,500.00	\$2,500
<b>B20 EXTERIOR CLOSURE</b>				<b>\$1,819,759</b>
<b>B30 ROOFING</b>				
Water proofing				
Elevator pit	2	EA	4,500.00	\$9,000
Ramp	3,768	SF	5.50	\$20,724
<b>B30 ROOFING</b>				<b>\$29,724</b>
<b>B - SHELL</b>				<b>\$6,600,545</b>

C INTERIORS

Garden Grove Police Department Infrastructure Space Needs Assessment

**PARKING STRUCTURE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #1 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>C20 STAIRS</b>				
Stair				
Riser	603	LFR	89.56	\$53,994
Landing	293	SF	60.75	\$17,805
Handrail	402	LF	124.85	\$50,179

<b>C20 STAIRS</b>	<b>\$121,978</b>
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<b>C INTERIORS</b>	<b>\$121,978</b>
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**D SERVICES**

**D10 CONVEYING SYSTEMS**

Hydraulic elevator, 2-stop	2	EA	95,000.00	\$190,000
Cab finish	2	EA	15,000.00	\$30,000

<b>D10 CONVEYING SYSTEMS</b>	<b>\$220,000</b>
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**D20 PLUMBING SYSTEMS**

Deck drain	13	EA	514.00	\$6,886
Trench drain	335	LF	265.00	\$88,756
Sand oil interceptor	1	EA	7,650.00	\$7,650
Pipe with fittings, below grade, cast iron	1,005	LF	67.47	\$67,793
Trench, backfill, and remove excess spoil	234	CY	76.16	\$17,856
Pipe with fittings and supports, above grade, cast iron	268	LF	76.38	\$20,465
Miscellaneous, Allowance	1	LS	15,000.00	\$15,000

<b>D20 PLUMBING SYSTEMS</b>	<b>\$224,406</b>
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**D30 HVAC SYSTEMS**

No work anticipated					NOTE
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<b>D30 HVAC SYSTEMS</b>	
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**D40 FIRE PROTECTION SYSTEMS**

Automatic fire sprinkler system, wet system, ordinary hazard	263,917	SF	2.00	\$527,833
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<b>D40 FIRE PROTECTION SYSTEMS</b>	<b>\$527,833</b>
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**D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)**

**ELECTRICAL SERVICE AND DISTRIBUTION**

Service equipment including associated feeders and building grounding	263,917	SF	0.85	\$224,329
Parking equipment connection	1	LS	30,000.00	\$30,000
Convenience power including branch wiring	263,917	SF	0.10	\$26,392

**LIGHTING AND BRANCH WIRING**

Garden Grove Police Department Infrastructure Space Needs Assessment

PARKING STRUCTURE

Garden Grove, CA

ROM COST ESTIMATE - SCHEME #1 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Lighting system including lighting control, conduit and branch wiring, fittings and accessories	263,917	SF	2.50	\$659,792
<b>SECURITY</b>				
Connect to existing head-end equipment	1	LS	3,500.00	\$3,500
CCTV camera including infrastructure	20	EA	7,150.00	\$143,000
Blue phone system including infrastructure	3	EA	10,000.00	\$30,000
<b>OTHER ELECTRICAL SERVICES</b>				
EV charging station including infrastructure, Allowance	10	EA	8,500.00	\$85,000
Miscellaneous	263,917	SF	0.10	\$26,392
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$1,228,405</b>
<b>D5050 TELECOM</b>				
Telephone and data system	1	LS	2,500.00	\$2,500
<b>D5050 TELECOM</b>				<b>\$2,500</b>
<b>D SERVICES</b>				<b>\$2,203,144</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Entry/exit rolling gate, with control console	4	EA	20,500.00	\$82,000
Traffic spikes, remotely control accessibility	30	LF	75.00	\$2,250
<b>E10 EQUIPMENT</b>				<b>\$84,250</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$84,250</b>
<b>G BUILDING SITEWORK</b>				
<b>G10 SITE PREPARATION</b>				
Site earthwork	263,917	SF	3.25	\$857,729
<b>G10 SITE PREPARATION</b>				<b>\$857,729</b>
<b>G BUILDING SITEWORK</b>				<b>\$857,729</b>



# Garden Grove Police Department Infrastructure Space Needs Assessment

## Scheme #2 - New Construction (Low Cost Option)

*Garden Grove, CA*

Dewberry

**ROM COST ESTIMATE - R1**

Job No. 19342.000

23 December 2019



**OC INSIGHT**







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 **COST ESTIMATE**

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**INTRODUCTORY NOTES**

This estimate is based on verbal direction from the client and the following items, received 04 December 2019

<b>Conceptual Layout</b>	07 sheets
<b>GGPD Scheme Pricing Matrix</b>	01 sheet

The following items are excluded from this estimate:

- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Installation of owner furnished equipment.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

The midpoint of construction of October 2022 is based on:

- Construction start date of December 2021
- Estimated construction duration of 20 months
- This estimate is based on a Construction Manager at Risk delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

# Garden Grove Police Department Infrastructure Space Needs Assessment

Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #2 - R1

OCMI JOB #: 19342.000 | 23 December 2019

### PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. BUILDING	\$41,976,320	92,000	\$456.26
02. PARKING STRUCTURE	\$18,233,233		
<b>TOTAL CONSTRUCTION COST</b>	<b>\$60,209,553</b>		

ROM COST ESTIMATE - SCHEME #2 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED PROJECT SUMMARY**

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. BUILDING	\$25,956,028	92,000	\$282.13
02. PARKING STRUCTURE	\$11,274,507		
<b>TOTAL NET DIRECT COST</b>			<b>\$37,230,535</b>
<b>GENERAL MARKUPS</b>			
DESIGN CONTINGENCY	15.00%	\$5,584,580	
ESCALATION TO MIDPOINT 10/2022	14.17%	\$6,065,475	
CONTRACTOR CONTINGENCY	5.00%	\$2,444,029	
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$4,619,216	
CM FEE	5.00%	\$2,797,192	
INSURANCE & BONDS	2.50%	\$1,468,526	
<b>TOTAL CONSTRUCTION COST</b>			<b>\$60,209,553</b>

**BUILDING SUMMARY**

ELEMENT		TOTAL COST	\$/SF AREA
A SUBSTRUCTURE		\$1,537,909	\$16.72
B SHELL		\$7,357,591	\$79.97
C INTERIORS		\$5,119,789	\$55.65
D SERVICES		\$10,088,205	\$109.65
E EQUIPMENT AND FURNISHINGS		\$598,000	\$6.50
F OTHER BUILDING CONSTRUCTION		\$565,748	\$6.15
G BUILDING SITEWORK		\$688,786	\$7.49
NET DIRECT BUILDING COST		\$25,956,028	\$282.13
DESIGN CONTINGENCY	15.00%	\$3,893,404	\$42.32
SUBTOTAL		\$29,849,432	\$324.45
ESCALATION TO MIDPOINT 10/2022	14.17%	\$4,228,670	\$45.96
SUBTOTAL		\$34,078,102	\$370.41
CONTRACTOR CONTINGENCY	5.00%	\$1,703,905	\$18.52
SUBTOTAL		\$35,782,007	\$388.93
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$3,220,381	\$35.00
SUBTOTAL		\$39,002,387	\$423.94
CM FEE	5.00%	\$1,950,119	\$21.20
SUBTOTAL		\$40,952,507	\$445.14
INSURANCE & BONDS	2.50%	\$1,023,813	\$11.13
<b>TOTAL BUILDING COST</b>		<b>\$41,976,320</b>	<b>\$456.26</b>

GROSS FLOOR AREA: 92,000 SF

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED SUMMARY**

ELEMENT		TOTAL COST	\$/SF AREA
A10 FOUNDATIONS		\$1,537,909	\$16.72
A20 BASEMENT CONSTRUCTION			
B10 SUPERSTRUCTURE		\$4,356,981	\$47.36
B20 EXTERIOR CLOSURE		\$2,498,054	\$27.15
B30 ROOFING		\$502,556	\$5.46
C10 INTERIOR CONSTRUCTION		\$3,089,350	\$33.58
C20 STAIRWAYS		\$181,684	\$1.97
C30 INTERIOR FINISHES		\$1,848,755	\$20.10
D10 CONVEYING SYSTEMS		\$290,000	\$3.15
D20 PLUMBING SYSTEMS		\$1,080,550	\$11.75
D30 HVAC SYSTEMS		\$2,535,095	\$27.56
D40 FIRE PROTECTION SYSTEMS		\$561,640	\$6.10
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)		\$4,768,080	\$51.83
D5050 TELECOM		\$852,840	\$9.27
E10 EQUIPMENT		\$138,000	\$1.50
E20 FURNISHINGS		\$460,000	\$5.00
F10 SPECIAL CONSTRUCTION			
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)		\$565,748	\$6.15
F2020 HAZMAT ABATEMENT			
G10 SITE PREPARATION		\$337,892	\$3.67
G20 SITE IMPROVEMENTS		\$350,894	\$3.81
G30 SITE CIVIL/MECHANICAL UTILITIES			
G40 SITE ELECTRICAL UTILITIES			
G90 OTHER SITE CONSTRUCTION			
NET DIRECT BUILDING COST		\$25,956,028	\$282.13
DESIGN CONTINGENCY	15.00%	\$3,893,404	\$42.32
SUBTOTAL		\$29,849,432	\$324.45
ESCALATION TO MIDPOINT 10/2022	14.17%	\$4,228,670	\$45.96
SUBTOTAL		\$34,078,102	\$370.41
CONTRACTOR CONTINGENCY	5.00%	\$1,703,905	\$18.52
SUBTOTAL		\$35,782,007	\$388.93
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$3,220,381	\$35.00
SUBTOTAL		\$39,002,387	\$423.94
CM FEE	5.00%	\$1,950,119	\$21.20
SUBTOTAL		\$40,952,507	\$445.14
INSURANCE & BONDS	2.50%	\$1,023,813	\$11.13
<b>TOTAL BUILDING COST</b>		<b>\$41,976,320</b>	<b>\$456.26</b>

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Standard foundation				
Continuous footing, assembly	196	CY	645.86	\$126,473
Spread footing, assembly	915	CY	536.61	\$491,084
Special foundation				
Grade beam, assembly	802	CY	708.43	\$568,337
Slab on grade				
Reinforced concrete slab, 5" thick, including vapor barrier and float finish	30,667	SF	9.81	\$300,856
Topping slab	1,533	SF	7.00	\$10,733
Miscellaneous				
Elevator pit				
Single	2	EA	12,983.30	\$25,967
Concrete curb	876	LF	15.59	\$13,653
Control joint	876	LF	0.92	\$806

<b>A10 FOUNDATIONS</b>	<b>\$1,537,909</b>
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<b>A SUBSTRUCTURE</b>	<b>\$1,537,909</b>
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**B SHELL**

**B10 SUPERSTRUCTURE**

Floor construction				
Structural steel				
Wide flange	345	TON	4,500.00	\$1,552,500
Piping and tube steel	115	TON	5,500.00	\$632,500
Miscellaneous steel, including angles and channels	46	TON	8,750.00	\$402,500
Fire protection	506	TON	300.00	\$151,800
Moment connection, Allowance	1	LS	100,000.00	\$100,000
Anchors and baseplates, Allowance	1	LS	50,000.00	\$50,000
Metal deck, 3"	61,333	SF	5.09	\$312,303
Concrete fill to metal deck, lightweight reinforced	284	CY	230.01	\$65,310
Float finish, premium	61,333	SF	1.29	\$79,118
Roof construction				
Structural steel				
Wide flange	92	TON	4,500.00	\$414,000
Piping and tube steel	35	TON	5,500.00	\$189,750
Miscellaneous steel, including angles and channels	13	TON	8,750.00	\$110,688
Fire protection	139	TON	300.00	\$41,745
Moment connection, Allowance	1	LS	25,000.00	\$25,000
Anchors and baseplates, Allowance	1	LS	10,000.00	\$10,000

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Metal deck, 1 1/2"	30,667	SF	2.91	\$89,130
Concrete fill to metal deck, lightweight reinforced	142	CY	230.01	\$32,655
Screed finish, premium	30,667	SF	1.32	\$40,482
Mechanical screen	329	LF	175.00	\$57,500

**B10 SUPERSTRUCTURE** **\$4,356,981**

**B20 EXTERIOR CLOSURE**

Exterior walls				
Framing, metal stud	47,949	SF	9.00	\$431,537
Insulation, batt	47,949	SF	1.54	\$73,841
Exterior sheathing	47,949	SF	2.50	\$119,871
Cement plaster	33,564	SF	18.32	\$614,814
Miscellaneous works, including caulking and sealant, weather barrier, louvers etc., Allowance	92,000	SF	2.75	\$253,000
Exterior windows, (assume 30% of exterior closure to be glazing)				
Aluminum window, punched	14,385	SF	64.73	\$931,127
Exterior doors				
Aluminum fully glazed including frame and hardware				
Double	4	PR	5,133.25	\$20,533
Hollow metal including frame and hardware				
Single	4	EA	1,813.01	\$7,252
Double	3	PR	3,058.69	\$9,176
Miscellaneous				
Closer	18	EA	344.26	\$6,197
Hold open	4	EA	506.78	\$2,027
Panic hardware	18	EA	759.92	\$13,679
Miscellaneous work, Allowance	1	LS	15,000.00	\$15,000

**B20 EXTERIOR CLOSURE** **\$2,498,054**

**B30 ROOFING**

Roof coverings				
PVC single ply membrane	30,667	SF	7.73	\$237,027
Rigid insulation	30,667	SF	4.31	\$132,204
Tapered premium	18,400	SF	2.28	\$41,870
Cant strip	876	LF	3.08	\$2,698
Walk pad, assume 5% of roof area	1,533	SF	7.02	\$10,767
Flashing and sheet metal				
Reglet	876	LF	5.46	\$4,782
Flashing	876	LF	7.69	\$6,738
Coping, aluminum	876	LF	25.68	\$22,487

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Expansion joint assembly	292	LF	125.00	\$36,483
Roof openings Access hatch/skylights, Allowance	1	LS	7,500.00	\$7,500

**B30 ROOFING** **\$502,556**

**B - SHELL** **\$7,357,591**

**C INTERIORS**

**C10 INTERIOR CONSTRUCTION**

Partitions

Framing, metal stud	105,800	SF	9.00	\$952,200
Furring	2,760	SF	3.75	\$10,350
Shaft wall	5,395	SF	8.95	\$48,280
Cementitious backerboard	3,274	SF	4.15	\$13,587
Insulation, batt	113,955	SF	1.54	\$175,491
Gypsum board				
Taped and finished	227,910	SF	3.47	\$790,270
Underlayment	45,582	SF	1.74	\$79,309
Inside face of exterior wall, taped and finished	47,949	SF	3.93	\$188,438
Shaft liner	5,395	SF	3.30	\$17,825

Interior windows

Storefront, Allowance	1	SF	50,000.00	\$50,000
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Interior doors	92,000	SF	5.50	\$506,000
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Fittings, including restroom accessories, signage etc., Allowance	92,000	SF	2.80	\$257,600
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**C10 INTERIOR CONSTRUCTION** **\$3,089,350**

**C20 STAIRS**

Metal stair, concrete filled

Riser	468	LFR	114.93	\$53,739
Landing	282	SF	65.54	\$18,514
Handrail, wall mounted, painted	97	LF	88.65	\$8,635
Handrail, floor mounted, painted	97	LF	134.57	\$13,109
Painted steel guardrail	135	LF	226.76	\$30,680
Miscellaneous work, Allowance	1	LS	50,000.00	\$50,000
Metal ladder				
Roof access ladder, Allowance	40	VLF	175.17	\$7,007

**C20 STAIRS** **\$181,684**

**C30 INTERIOR FINISHES**



**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Wall				
Paint	234,480	SF	1.07	\$250,097
Ceramic tile	3,274	SF	17.73	\$58,053
Floor				
Carpet	59,800	SF	5.84	\$349,208
Ceramic tile	2,760	SF	15.77	\$43,517
VCT	23,000	SF	4.58	\$105,241
Concrete, sealer	6,440	SF	1.40	\$9,044
Base	92,000	SF	0.60	\$55,200
Ceiling				
Acoustical ceiling	77,050	SF	7.50	\$577,875
Hard lid	8,510	SF	12.58	\$107,056
Soffit	5,227	SF	22.55	\$117,876
Paint				
Gypsum board	13,737	SF	1.07	\$14,652
Exposed structure	6,440	SF	1.70	\$10,936
Enhanced finishes, Allowance	1	LS	150,000.00	\$150,000
<b>C30 INTERIOR FINISHES</b>				<b>\$1,848,755</b>
<b>C INTERIORS</b>				<b>\$5,119,789</b>
<b>D SERVICES</b>				
<b>D10 CONVEYING SYSTEMS</b>				
Conveying equipment	2	EA	145,000.00	\$290,000
<b>D10 CONVEYING SYSTEMS</b>				<b>\$290,000</b>
<b>D20 PLUMBING SYSTEMS</b>				
Equipment				
Water heating system	92,000	SF	0.30	\$27,600
Water softener	1	EA	4,870.00	\$4,870
Garbage disposal	2	EA	320.00	\$640
Fixture including rough-in	92,000	SF	1.95	\$179,400
Miscellaneous fittings	92,000	SF	0.85	\$78,200
Domestic water system				
Building entrance	1	LS	10,140.00	\$10,140
Cold water piping, fittings and accessories	92,000	SF	2.00	\$184,000
Hot water piping and fittings, insulation	92,000	SF	0.80	\$73,600
Valve	92,000	SF	0.10	\$9,200
Sanitary waste system, includes clean-outs	92,000	SF	2.10	\$193,200
Prepared by: OCMI				Sheet 8 of 17

## Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

### ROM COST ESTIMATE - SCHEME #2 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Sanitary vent system, includes vent through roofs	92,000	SF	1.85	\$170,200
Roof drainage system	92,000	SF	0.85	\$78,200
Indirect condensate drain system	92,000	SF	0.30	\$27,600
Natural gas system, no work anticipated		NOTE		
Commissioning				
Independent commissioning		NIC		
Support service	1	LS	3,500.00	\$3,500
Elevator sump pump system, Allowance	1	LS	8,000.00	\$8,000
Miscellaneous including seismic control, system test, flush and chlorinate, identification and fire stop	92,000	SF	0.35	\$32,200

<b>D20 PLUMBING SYSTEMS</b>	<b>\$1,080,550</b>
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### D30 HVAC SYSTEMS

#### Equipment

Roof top packaged units, DX cool - gas heat	138,000	CFM	6.00	\$828,000
Dedicated AC units				
Computer/data room	3	EA	11,720.00	\$35,160
Electrical/mechanical room	4	EA	5,540.00	\$22,160
Exhaust fans	6	EA	1,477.24	\$8,863
Building	92,000	SF	0.20	\$18,400
Sound attenuation	92,000	SF	0.22	\$20,240
Air distribution system				
Sheet metal ductwork, supports	73,600	LB	8.37	\$616,032
Duct insulation	92,000	SF	2.90	\$266,800
Flexible duct, supports	92,000	SF	0.59	\$54,280
Refrigeration piping system, specialties	92,000	SF	0.33	\$30,360
Air inlets and outlets	92,000	SF	0.99	\$91,080
Fire, smoke and manual dampers	92,000	SF	0.54	\$49,680
Duct smoke detectors	92,000	SF	0.22	\$20,240
Automatic temperature controls	92,000	SF	3.96	\$364,320
Air/water balance, by an independent contractor	92,000	SF	0.51	\$46,920
Start-up, commission major equipment	92,000	SF	0.32	\$29,440

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Miscellaneous including seismic bracing, duct	92,000	SF	0.36	\$33,120
<b>D30 HVAC SYSTEMS</b>				<b>\$2,535,095</b>
<b>D40 FIRE PROTECTION SYSTEMS</b>				
Automatic fire sprinkler system, wet type				
Fire riser, horizontal water distribution, drops and heads	92,000	SF	5.67	\$521,640
Test	1	LS	5,000.00	\$5,000
Fire pump, Allowance	1	LS	35,000.00	\$35,000
<b>D40 FIRE PROTECTION SYSTEMS</b>				<b>\$561,640</b>
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				
Service and distribution				
Normal power				
Main switch gear, < 3,000 amp	1	EA	100,000.00	\$100,000
Distribution board	92,000	SF	0.94	\$86,480
Panel board	92,000	SF	1.60	\$147,200
Transformer	92,000	SF	0.29	\$26,680
Building feeder	92,000	SF	0.76	\$69,920
Emergency power	92,000	SF	1.15	\$105,800
Building grounding system	92,000	SF	0.35	\$32,200
Equipment connection including disconnect switch, conduit and conductors	92,000	SF	4.13	\$379,960
Lighting system				
Lighting control	92,000	SF	1.17	\$107,640
Fixtures	92,000	SF	11.04	\$1,015,680
Light switch	92,000	SF	0.50	\$46,000
Occupancy sensor	92,000	SF	1.09	\$100,280
Branch wiring	92,000	SF	2.90	\$266,800
Convenience power including branch wiring	92,000	SF	3.50	\$322,000
Fire alarm system	92,000	SF	4.50	\$414,000
Audio visual system	92,000	SF	4.00	\$368,000
Public address system	92,000	SF	0.66	\$60,720
TV outlets and cabling	92,000	SF	0.50	\$46,000
Clock system, atomic clock	92,000	SF	0.30	\$27,600
Security system				
Prepared by: OCMI				

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Access control	92,000	SF	5.00	\$460,000
CCTV system	92,000	SF	4.00	\$368,000
Interview recording system	92,000	SF	2.00	\$184,000
Miscellaneous including seismic bracing, identification and fire stop	92,000	SF	0.36	\$33,120
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$4,768,080</b>
<b>D5050 TELECOM</b>				
Telephone and data system, including intercoms	92,000	SF	4.00	\$368,000
Emergency radio BAS system	92,000	SF	3.25	\$299,000
Fiber optic system	92,000	SF	0.79	\$72,680
Common raceway system	92,000	SF	1.23	\$113,160
<b>D5050 TELECOM</b>				<b>\$852,840</b>
<b>D SERVICES</b>				<b>\$10,088,205</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Commercial equipment	92,000	SF	1.50	\$138,000
<b>E10 EQUIPMENT</b>				<b>\$138,000</b>
<b>E20 FURNISHINGS</b>				
Fixed furnishings	92,000	SF	5.00	\$460,000
<b>E20 FURNISHINGS</b>				<b>\$460,000</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$598,000</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				
Building demolition, including haul-off and disposal	42,000	SF	13.47	\$565,748
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				<b>\$565,748</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				<b>\$565,748</b>
<b>G BUILDING SITEWORK</b>				
<b>G10 SITE PREPARATION</b>				

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
New police station				
Excavation and fill				
Over excavation	7,099	CY	12.25	\$86,976
Backfill and recompact, assumed 25%	1,775	CY	12.99	\$23,053
Engineered fill and compaction	5,324	CY	27.46	\$146,192
Haul	5,324	CY	15.34	\$81,671
<b>G10 SITE PREPARATION</b>				<b>\$337,892</b>
G20 SITE IMPROVEMENTS				
Existing police station				
Engineered fill and compaction	3,148	CY	27.46	\$86,444
Hydroseed	17,000	SF	0.85	\$14,450
Miscellaneous site improvements	1	LS	250,000.00	\$250,000
<b>G20 SITE IMPROVEMENTS</b>				<b>\$350,894</b>
<b>G BUILDING SITEWORK</b>				<b>\$688,786</b>

ROM COST ESTIMATE - SCHEME #2 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**BUILDING SUMMARY**

ELEMENT		TOTAL COST
A SUBSTRUCTURE		\$1,406,861
B SHELL		\$6,600,545
C INTERIORS		\$121,978
D SERVICES		\$2,203,144
E EQUIPMENT AND FURNISHINGS		\$84,250
F OTHER BUILDING CONSTRUCTION		
G BUILDING SITEWORK		<u>\$857,729</u>
NET DIRECT BUILDING COST		\$11,274,507
DESIGN CONTINGENCY	15.00%	<u>\$1,691,176</u>
SUBTOTAL		\$12,965,683
ESCALATION TO MIDPOINT 10/2022	14.17%	<u>\$1,836,805</u>
SUBTOTAL		\$14,802,488
CONTRACTOR CONTINGENCY	5.00%	<u>\$740,124</u>
SUBTOTAL		\$15,542,613
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$1,398,835</u>
SUBTOTAL		\$16,941,448
CM FEE	5.00%	<u>\$847,072</u>
SUBTOTAL		\$17,788,520
INSURANCE & BONDS	2.50%	<u>\$444,713</u>
<b>TOTAL BUILDING COST</b>		<b><u>\$18,233,233</u></b>

**COST PER STALL: \$26,047**

**DETAILED SUMMARY**

ELEMENT		TOTAL COST
A10 FOUNDATIONS		\$1,406,861
A20 BASEMENT CONSTRUCTION		
B10 SUPERSTRUCTURE		\$4,751,062
B20 EXTERIOR CLOSURE		\$1,819,759
B30 ROOFING		\$29,724
C10 INTERIOR CONSTRUCTION		
C20 STAIRWAYS		\$121,978
C30 INTERIOR FINISHES		
D10 CONVEYING SYSTEMS		\$220,000
D20 PLUMBING SYSTEMS		\$224,406
D30 HVAC SYSTEMS		
D40 FIRE PROTECTION SYSTEMS		\$527,833
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)		\$1,228,405
D5050 TELECOM		\$2,500
E10 EQUIPMENT		\$84,250
E20 FURNISHINGS		
F10 SPECIAL CONSTRUCTION		
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)		
F2020 HAZMAT ABATEMENT		
G10 SITE PREPARATION		\$857,729
G20 SITE IMPROVEMENTS		
G30 SITE CIVIL/MECHANICAL UTILITIES		
G40 SITE ELECTRICAL UTILITIES		
G90 OTHER SITE CONSTRUCTION		
<hr/>		
NET DIRECT BUILDING COST		\$11,274,507
DESIGN CONTINGENCY	15.00%	\$1,691,176
SUBTOTAL		\$12,965,683
ESCALATION TO MIDPOINT 10/2022	14.17%	\$1,836,805
SUBTOTAL		\$14,802,488
CONTRACTOR CONTINGENCY	5.00%	\$740,124
SUBTOTAL		\$15,542,613
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$1,398,835
SUBTOTAL		\$16,941,448
CM FEE	5.00%	\$847,072
SUBTOTAL		\$17,788,520
INSURANCE & BONDS	2.50%	\$444,713
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<b>TOTAL BUILDING COST</b>		<b>\$18,233,233</b>

**COST PER STALL: \$26,047**

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Spread footing, assembly	1,447	CY	540.74	\$782,397
Slab on grade, assembly	45,126	SF	13.23	\$596,970
Elevator pit, double	1	EA	27,493.95	\$27,494
<b>A10 FOUNDATIONS</b>				<b>\$1,406,861</b>
<b>A SUBSTRUCTURE</b>				<b>\$1,406,861</b>
<b>B SHELL</b>				
<b>B10 SUPERSTRUCTURE</b>				
Concrete column, assembly	834	CY	1,246.15	\$1,039,460
Dowel	865	EA	134.03	\$115,995
Concrete infill between isolation joint and column	125	CY	574.33	\$71,861
Reinforced concrete slab, assembly	888	CY	1,038.56	\$922,132
Float finish	57,536	SF	1.68	\$96,920
Epoxy coating	57,536	SF	10.00	\$575,356
Concrete beam, assembly	1,261	CY	971.61	\$1,225,367
Concrete ramp	364	CY	1,702.44	\$620,371
Elevator shaft wall, assembly	1,938	SF	43.14	\$83,600
<b>B10 SUPERSTRUCTURE</b>				<b>\$4,751,062</b>
<b>B20 EXTERIOR CLOSURE</b>				
Exterior				
Concrete wall, assembly	38,158	SF	44.80	\$1,709,352
Waterproofing, drainage system	4,743	SF	7.00	\$33,198
Paint, exterior concrete	38,158	SF	1.72	\$65,631
Doors				
Rolling steel gate	1	EA	9,078.37	\$9,078
Motorized	1	EA	2,500.00	\$2,500
<b>B20 EXTERIOR CLOSURE</b>				<b>\$1,819,759</b>
<b>B30 ROOFING</b>				
Water proofing				
Elevator pit	2	EA	4,500.00	\$9,000
Ramp	3,768	SF	5.50	\$20,724
<b>B30 ROOFING</b>				<b>\$29,724</b>
<b>B - SHELL</b>				<b>\$6,600,545</b>

**C INTERIORS**



**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>C20 STAIRS</b>				
Stair				
Riser	603	LFR	89.56	\$53,994
Landing	293	SF	60.75	\$17,805
Handrail	402	LF	124.85	\$50,179

<b>C20 STAIRS</b>	<b>\$121,978</b>
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<b>C INTERIORS</b>	<b>\$121,978</b>
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**D SERVICES**

**D10 CONVEYING SYSTEMS**

Hydraulic elevator, 2-stop	2	EA	95,000.00	\$190,000
Cab finish	2	EA	15,000.00	\$30,000

<b>D10 CONVEYING SYSTEMS</b>	<b>\$220,000</b>
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**D20 PLUMBING SYSTEMS**

Deck drain	13	EA	514.00	\$6,886
Trench drain	335	LF	265.00	\$88,756
Sand oil interceptor	1	EA	7,650.00	\$7,650
Pipe with fittings, below grade, cast iron	1,005	LF	67.47	\$67,793
Trench, backfill, and remove excess spoil	234	CY	76.16	\$17,856
Pipe with fittings and supports, above grade, cast iron	268	LF	76.38	\$20,465
Miscellaneous, Allowance	1	LS	15,000.00	\$15,000

<b>D20 PLUMBING SYSTEMS</b>	<b>\$224,406</b>
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**D30 HVAC SYSTEMS**

No work anticipated					NOTE
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<b>D30 HVAC SYSTEMS</b>	
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**D40 FIRE PROTECTION SYSTEMS**

Automatic fire sprinkler system, wet system, ordinary hazard	263,917	SF	2.00	\$527,833
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<b>D40 FIRE PROTECTION SYSTEMS</b>	<b>\$527,833</b>
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**D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)**

**ELECTRICAL SERVICE AND DISTRIBUTION**

Service equipment including associated feeders and building grounding	263,917	SF	0.85	\$224,329
Parking equipment connection	1	LS	30,000.00	\$30,000
Convenience power including branch wiring	263,917	SF	0.10	\$26,392

**LIGHTING AND BRANCH WIRING**

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #2 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Lighting system including lighting control, conduit and branch wiring, fittings and accessories	263,917	SF	2.50	\$659,792
<b>SECURITY</b>				
Connect to existing head-end equipment	1	LS	3,500.00	\$3,500
CCTV camera including infrastructure	20	EA	7,150.00	\$143,000
Blue phone system including infrastructure	3	EA	10,000.00	\$30,000
<b>OTHER ELECTRICAL SERVICES</b>				
EV charging station including infrastructure, Allowance	10	EA	8,500.00	\$85,000
Miscellaneous	263,917	SF	0.10	\$26,392
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$1,228,405</b>
<b>D5050 TELECOM</b>				
Telephone and data system	1	LS	2,500.00	\$2,500
<b>D5050 TELECOM</b>				<b>\$2,500</b>
<b>D SERVICES</b>				<b>\$2,203,144</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Entry/exit rolling gate, with control console	4	EA	20,500.00	\$82,000
Traffic spikes, remotely control accessibility	30	LF	75.00	\$2,250
<b>E10 EQUIPMENT</b>				<b>\$84,250</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$84,250</b>
<b>G BUILDING SITEWORK</b>				
<b>G10 SITE PREPARATION</b>				
Site earthwork	263,917	SF	3.25	\$857,729
<b>G10 SITE PREPARATION</b>				<b>\$857,729</b>
<b>G BUILDING SITEWORK</b>				<b>\$857,729</b>



# Garden Grove Police Department Infrastructure Space Needs Assessment

## Scheme #3 - New Construction (Middle Cost Option)

*Garden Grove, CA*

Dewberry

**ROM COST ESTIMATE - R1**

Job No. 19342.000

23 December 2019





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 **COST ESTIMATE**

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**INTRODUCTORY NOTES**

This estimate is based on verbal direction from the client and the following items, received 04 December 2019

<b>Conceptual Layout</b>	07 sheets
<b>GGPD Scheme Pricing Matrix</b>	01 sheet

The following items are excluded from this estimate:

- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Installation of owner furnished equipment.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

The midpoint of construction of November 2022 is based on:

- Construction start date of December 2021
  - Estimated construction duration of 22 months
- 
- This estimate is based on a Construction Manager at Risk delivery method.
  - This estimate is based on prevailing wage labor rates.
  - This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
  - This estimate is based on a minimum of four competitive bids and a stable bidding market.
  - This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
  - We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

# Garden Grove Police Department Infrastructure Space Needs Assessment

Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

### PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. BUILDING	\$47,487,179	98,500	\$482.10
02. PARKING STRUCTURE	\$18,888,164		
<b>TOTAL CONSTRUCTION COST</b>	<b>\$66,375,342</b>		

ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED PROJECT SUMMARY**

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. BUILDING	\$29,256,887	98,500	\$297.02
02. PARKING STRUCTURE	\$11,637,012		
<b>TOTAL NET DIRECT COST</b>			<b>\$40,893,899</b>
<b>GENERAL MARKUPS</b>			
DESIGN CONTINGENCY	15.00%	\$6,134,085	
ESCALATION TO MIDPOINT 11/2022	14.58%	\$6,858,248	
CONTRACTOR CONTINGENCY	5.00%	\$2,694,312	
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$5,092,249	
CM FEE	5.00%	\$3,083,640	
INSURANCE & BONDS	2.50%	\$1,618,911	
<b>TOTAL CONSTRUCTION COST</b>			<b>\$66,375,342</b>

**BUILDING SUMMARY**

ELEMENT		TOTAL COST	\$/SF AREA
A SUBSTRUCTURE		\$1,644,213	\$16.69
B SHELL		\$9,117,622	\$92.56
C INTERIORS		\$5,703,460	\$57.90
D SERVICES		\$10,872,934	\$110.39
E EQUIPMENT AND FURNISHINGS		\$640,250	\$6.50
F OTHER BUILDING CONSTRUCTION		\$565,748	\$5.74
G BUILDING SITEWORK		<u>\$712,660</u>	<u>\$7.24</u>
NET DIRECT BUILDING COST		\$29,256,887	\$297.02
DESIGN CONTINGENCY	15.00%	<u>\$4,388,533</u>	<u>\$44.55</u>
SUBTOTAL		\$33,645,420	\$341.58
ESCALATION TO MIDPOINT 11/2022	14.58%	<u>\$4,906,624</u>	<u>\$49.81</u>
SUBTOTAL		\$38,552,044	\$391.39
CONTRACTOR CONTINGENCY	5.00%	<u>\$1,927,602</u>	<u>\$19.57</u>
SUBTOTAL		\$40,479,646	\$410.96
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$3,643,168</u>	<u>\$36.99</u>
SUBTOTAL		\$44,122,814	\$447.95
CM FEE	5.00%	<u>\$2,206,141</u>	<u>\$22.40</u>
SUBTOTAL		\$46,328,955	\$470.34
INSURANCE & BONDS	2.50%	<u>\$1,158,224</u>	<u>\$11.76</u>
<b>TOTAL BUILDING COST</b>		<b>\$47,487,179</b>	<b>\$482.10</b>

GROSS FLOOR AREA: 98,500 SF



**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED SUMMARY**

ELEMENT		TOTAL COST	\$/SF AREA
A10 FOUNDATIONS		\$1,644,213	\$16.69
A20 BASEMENT CONSTRUCTION			
B10 SUPERSTRUCTURE		\$4,651,742	\$47.23
B20 EXTERIOR CLOSURE		\$3,930,977	\$39.91
B30 ROOFING		\$534,903	\$5.43
C10 INTERIOR CONSTRUCTION		\$3,304,087	\$33.54
C20 STAIRWAYS		\$190,491	\$1.93
C30 INTERIOR FINISHES		\$2,208,882	\$22.43
D10 CONVEYING SYSTEMS		\$290,000	\$2.94
D20 PLUMBING SYSTEMS		\$1,154,975	\$11.73
D30 HVAC SYSTEMS		\$2,709,529	\$27.51
D40 FIRE PROTECTION SYSTEMS		\$598,495	\$6.08
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)		\$5,206,840	\$52.86
D5050 TELECOM		\$913,095	\$9.27
E10 EQUIPMENT		\$147,750	\$1.50
E20 FURNISHINGS		\$492,500	\$5.00
F10 SPECIAL CONSTRUCTION			
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)		\$565,748	\$5.74
F2020 HAZMAT ABATEMENT			
G10 SITE PREPARATION		\$361,766	\$3.67
G20 SITE IMPROVEMENTS		\$350,894	\$3.56
G30 SITE CIVIL/MECHANICAL UTILITIES			
G40 SITE ELECTRICAL UTILITIES			
G90 OTHER SITE CONSTRUCTION			
NET DIRECT BUILDING COST		\$29,256,887	\$297.02
DESIGN CONTINGENCY	15.00%	\$4,388,533	\$44.55
SUBTOTAL		\$33,645,420	\$341.58
ESCALATION TO MIDPOINT 11/2022	14.58%	\$4,906,624	\$49.81
SUBTOTAL		\$38,552,044	\$391.39
CONTRACTOR CONTINGENCY	5.00%	\$1,927,602	\$19.57
SUBTOTAL		\$40,479,646	\$410.96
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$3,643,168	\$36.99
SUBTOTAL		\$44,122,814	\$447.95
CM FEE	5.00%	\$2,206,141	\$22.40
SUBTOTAL		\$46,328,955	\$470.34
INSURANCE & BONDS	2.50%	\$1,158,224	\$11.76
<b>TOTAL BUILDING COST</b>		<b>\$47,487,179</b>	<b>\$482.10</b>

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Standard foundation				
Continuous footing, assembly	210	CY	645.86	\$135,409
Spread footing, assembly	980	CY	536.61	\$525,780
Special foundation				
Grade beam, assembly	859	CY	708.43	\$608,491
Slab on grade				
Reinforced concrete slab, 5" thick, including vapor barrier and float finish	32,833	SF	9.81	\$322,112
Topping slab	1,642	SF	7.00	\$11,492
Miscellaneous				
Elevator pit				
Single	2	EA	12,983.30	\$25,967
Concrete curb	906	LF	15.59	\$14,128
Control joint	906	LF	0.92	\$834

<b>A10 FOUNDATIONS</b>	<b>\$1,644,213</b>
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<b>A SUBSTRUCTURE</b>	<b>\$1,644,213</b>
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**B SHELL**

**B10 SUPERSTRUCTURE**

Floor construction				
Structural steel				
Wide flange	369	TON	4,500.00	\$1,662,188
Piping and tube steel	123	TON	5,500.00	\$677,188
Miscellaneous steel, including angles and channels	49	TON	8,750.00	\$430,938
Fire protection	542	TON	300.00	\$162,525
Moment connection, Allowance	1	LS	100,000.00	\$100,000
Anchors and baseplates, Allowance	1	LS	50,000.00	\$50,000
Metal deck, 3"				
Concrete fill to metal deck, lightweight reinforced	304	CY	230.01	\$69,924
Float finish, premium	65,667	SF	1.29	\$84,708
Roof construction				
Structural steel				
Wide flange	99	TON	4,500.00	\$443,250
Piping and tube steel	37	TON	5,500.00	\$203,156
Miscellaneous steel, including angles and channels	14	TON	8,750.00	\$118,508
Fire protection	149	TON	300.00	\$44,694
Moment connection, Allowance	1	LS	25,000.00	\$25,000
Anchors and baseplates, Allowance	1	LS	10,000.00	\$10,000

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Metal deck, 1 1/2"	32,833	SF	2.91	\$95,428
Concrete fill to metal deck, lightweight reinforced	152	CY	230.01	\$34,962
Screed finish, premium	32,833	SF	1.32	\$43,342
Mechanical screen	352	LF	175.00	\$61,563

### B10 SUPERSTRUCTURE \$4,651,742

#### B20 EXTERIOR CLOSURE

##### Exterior walls

Framing, metal stud	51,336	SF	9.00	\$462,026
Insulation, batt	51,336	SF	1.54	\$79,058
Exterior sheathing	51,336	SF	2.50	\$128,340
Composite insulated galvanized metal panel, paint finish	35,935	SF	30.34	\$1,090,139
Miscellaneous works, including caulking and sealant, weather barrier, louvers etc., Allowance	98,500	SF	2.75	\$270,875

##### Exterior windows, (assume 30% of exterior closure to be glazing)

Curtain wall	15,401	SF	118.61	\$1,826,675
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##### Exterior doors

Aluminum fully glazed including frame and hardware				
Double	4	PR	5,133.25	\$20,533
Hollow metal including frame and hardware				
Single	4	EA	1,813.01	\$7,252
Double	3	PR	3,058.69	\$9,176
Miscellaneous				
Closer	18	EA	344.26	\$6,197
Hold open	4	EA	506.78	\$2,027
Panic hardware	18	EA	759.92	\$13,679

Miscellaneous work, Allowance	1	LS	15,000.00	\$15,000
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### B20 EXTERIOR CLOSURE \$3,930,977

#### B30 ROOFING

##### Roof coverings

PVC single ply membrane	32,833	SF	7.73	\$253,773
Rigid insulation	32,833	SF	4.31	\$141,544
Tapered premium	19,700	SF	2.28	\$44,828
Cant strip	906	LF	3.08	\$2,792
Walk pad, assume 5% of roof area	1,642	SF	7.02	\$11,528
Flashing and sheet metal				
Reglet	906	LF	5.46	\$4,948
Flashing	906	LF	7.69	\$6,972

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Coping, aluminum	906	LF	25.68	\$23,268
Expansion joint assembly	302	LF	125.00	\$37,750
Roof openings				
Access hatch/skylights, Allowance	1	LS	7,500.00	\$7,500

### B30 ROOFING \$534,903

### B - SHELL \$9,117,622

#### C INTERIORS

##### C10 INTERIOR CONSTRUCTION

###### Partitions

Framing, metal stud	113,275	SF	9.00	\$1,019,475
Furring	2,955	SF	3.75	\$11,081
Shaft wall	5,776	SF	8.95	\$51,691
Cementitious backerboard	3,505	SF	4.15	\$14,547
Insulation, batt	122,006	SF	1.54	\$187,890
Gypsum board				
Taped and finished	244,013	SF	3.47	\$846,105
Underlayment	48,803	SF	1.74	\$84,913
Inside face of exterior wall, taped and finished	51,336	SF	3.93	\$201,751
Shaft liner	5,776	SF	3.30	\$19,084

###### Interior windows

Storefront, Allowance	1	SF	50,000.00	\$50,000
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Interior doors	98,500	SF	5.50	\$541,750
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Fittings, including restroom accessories, signage etc., Allowance	98,500	SF	2.80	\$275,800
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### C10 INTERIOR CONSTRUCTION \$3,304,087

##### C20 STAIRS

###### Metal stair, concrete filled

Riser	501	LFR	114.93	\$57,535
Landing	302	SF	65.54	\$19,822
Handrail, wall mounted, painted	104	LF	88.65	\$9,245
Handrail, floor mounted, painted	104	LF	134.57	\$14,035
Painted steel guardrail	145	LF	226.76	\$32,847
Miscellaneous work, Allowance	1	LS	50,000.00	\$50,000
Metal ladder				
Roof access ladder, Allowance	40	VLF	175.17	\$7,007

### C20 STAIRS \$190,491

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>C30 INTERIOR FINISHES</b>				
Wall				
Paint	251,047	SF	1.07	\$267,767
Ceramic tile	3,505	SF	17.73	\$62,155
Floor				
Carpet	64,025	SF	5.84	\$373,880
Ceramic tile	2,955	SF	15.77	\$46,591
Polished concrete	24,625	SF	10.78	\$265,352
Concrete, sealer	6,895	SF	1.40	\$9,683
Base	98,500	SF	0.98	\$96,530
Ceiling				
Acoustical ceiling	82,494	SF	7.50	\$618,703
Hard lid	9,111	SF	12.58	\$114,620
Soffit	5,597	SF	22.55	\$126,205
Paint				
Gypsum board	14,708	SF	1.07	\$15,687
Exposed structure	6,895	SF	1.70	\$11,709
Enhanced finishes, Allowance	1	LS	200,000.00	\$200,000
<b>C30 INTERIOR FINISHES</b>				<b>\$2,208,882</b>
<b>C INTERIORS</b>				<b>\$5,703,460</b>
<b>D SERVICES</b>				
<b>D10 CONVEYING SYSTEMS</b>				
Conveying equipment	2	EA	145,000.00	\$290,000
<b>D10 CONVEYING SYSTEMS</b>				<b>\$290,000</b>
<b>D20 PLUMBING SYSTEMS</b>				
Equipment				
Water heating system	98,500	SF	0.30	\$29,550
Water softener	1	EA	4,870.00	\$4,870
Garbage disposal	2	EA	320.00	\$640
Fixture including rough-in	98,500	SF	1.95	\$192,075
Miscellaneous fittings	98,500	SF	0.85	\$83,725
Domestic water system				
Building entrance	1	LS	10,140.00	\$10,140
Cold water piping, fittings and accessories	98,500	SF	2.00	\$197,000
Hot water piping and fittings, insulation	98,500	SF	0.80	\$78,800
Valve	98,500	SF	0.10	\$9,850

## Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

### ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Sanitary waste system, includes clean-outs	98,500	SF	2.10	\$206,850
Sanitary vent system, includes vent through roofs	98,500	SF	1.85	\$182,225
Roof drainage system	98,500	SF	0.85	\$83,725
Indirect condensate drain system	98,500	SF	0.30	\$29,550
Natural gas system, no work anticipated		NOTE		
Commissioning				
Independent commissioning		NIC		
Support service	1	LS	3,500.00	\$3,500
Elevator sump pump system, Allowance	1	LS	8,000.00	\$8,000
Miscellaneous including seismic control, system test, flush and chlorinate, identification and fire stop	98,500	SF	0.35	\$34,475

### D20 PLUMBING SYSTEMS \$1,154,975

#### D30 HVAC SYSTEMS

##### Equipment

Roof top packaged units, DX cool - gas heat	147,750	CFM	6.00	\$886,500
Dedicated AC units				
Computer/data room	3	EA	11,720.00	\$35,160
Electrical/mechanical room	4	EA	5,540.00	\$22,160
Exhaust fans	6	EA	1,477.24	\$8,863
Building	98,500	SF	0.20	\$19,700
Sound attenuation	98,500	SF	0.22	\$21,670
Air distribution system				
Sheet metal ductwork, supports	78,800	LB	8.37	\$659,556
Duct insulation	98,500	SF	2.90	\$285,650
Flexible duct, supports	98,500	SF	0.59	\$58,115
Refrigeration piping system, specialties	98,500	SF	0.33	\$32,505
Air inlets and outlets	98,500	SF	0.99	\$97,515
Fire, smoke and manual dampers	98,500	SF	0.54	\$53,190
Duct smoke detectors	98,500	SF	0.22	\$21,670
Automatic temperature controls	98,500	SF	3.96	\$390,060
Air/water balance, by an independent contractor	98,500	SF	0.51	\$50,235

## Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

### ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Start-up, commission major equipment	98,500	SF	0.32	\$31,520
Miscellaneous including seismic bracing, duct	98,500	SF	0.36	\$35,460
<b>D30 HVAC SYSTEMS</b>				<b>\$2,709,529</b>
<b>D40 FIRE PROTECTION SYSTEMS</b>				
Automatic fire sprinkler system, wet type				
Fire riser, horizontal water distribution, drops and heads	98,500	SF	5.67	\$558,495
Test	1	LS	5,000.00	\$5,000
Fire pump, Allowance	1	LS	35,000.00	\$35,000
<b>D40 FIRE PROTECTION SYSTEMS</b>				<b>\$598,495</b>
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				
Service and distribution				
Normal power				
Paralleling switch gear	1	EA	140,000.00	\$140,000
Distribution board	98,500	SF	0.94	\$92,590
Panel board	98,500	SF	1.60	\$157,600
Transformer	98,500	SF	0.29	\$28,565
Building feeder	98,500	SF	0.76	\$74,860
Emergency power	98,500	SF	1.85	\$182,225
Building grounding system	98,500	SF	0.35	\$34,475
Equipment connection including disconnect switch, conduit and conductors	98,500	SF	4.13	\$406,805
Lighting system				
Lighting control	98,500	SF	1.17	\$115,245
Fixtures	98,500	SF	11.04	\$1,087,440
Light switch	98,500	SF	0.50	\$49,250
Occupancy sensor	98,500	SF	1.09	\$107,365
Branch wiring	98,500	SF	2.90	\$285,650
Convenience power including branch wiring	98,500	SF	3.50	\$344,750
Fire alarm system	98,500	SF	4.50	\$443,250
Audio visual system	98,500	SF	4.00	\$394,000
Public address system	98,500	SF	0.66	\$65,010
TV outlets and cabling	98,500	SF	0.50	\$49,250
Clock system, atomic clock	98,500	SF	0.30	\$29,550

# Garden Grove Police Department Infrastructure Space Needs Assessment

**BUILDING**  
Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Security system				
Access control	98,500	SF	5.00	\$492,500
CCTV system	98,500	SF	4.00	\$394,000
Interview recording system	98,500	SF	2.00	\$197,000
Miscellaneous including seismic bracing, identification and fire stop	98,500	SF	0.36	\$35,460
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$5,206,840</b>
<b>D5050 TELECOM</b>				
Telephone and data system, including intercoms	98,500	SF	4.00	\$394,000
Emergency radio BAS system	98,500	SF	3.25	\$320,125
Fiber optic system	98,500	SF	0.79	\$77,815
Common raceway system	98,500	SF	1.23	\$121,155
<b>D5050 TELECOM</b>				<b>\$913,095</b>
<b>D SERVICES</b>				<b>\$10,872,934</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Commercial equipment	98,500	SF	1.50	\$147,750
<b>E10 EQUIPMENT</b>				<b>\$147,750</b>
<b>E20 FURNISHINGS</b>				
Fixed furnishings	98,500	SF	5.00	\$492,500
<b>E20 FURNISHINGS</b>				<b>\$492,500</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$640,250</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				
Building demolition, including haul-off and disposal	42,000	SF	13.47	\$565,748
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				<b>\$565,748</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				<b>\$565,748</b>

## G BUILDING SITEWORK



**Garden Grove Police Department Infrastructure Space Needs Assessment**

**BUILDING**  
Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>G10 SITE PREPARATION</b>				
New police station				
Excavation and fill				
Over excavation	7,600	CY	12.25	\$93,121
Backfill and recompact, assumed 25%	1,900	CY	12.99	\$24,682
Engineered fill and compaction	5,700	CY	27.46	\$156,521
Haul	5,700	CY	15.34	\$87,442
<b>G10 SITE PREPARATION</b>				<b>\$361,766</b>
<b>G20 SITE IMPROVEMENTS</b>				
Existing police station				
Engineered fill and compaction	3,148	CY	27.46	\$86,444
Hydroseed	17,000	SF	0.85	\$14,450
Miscellaneous site improvements	1	LS	250,000.00	\$250,000
<b>G20 SITE IMPROVEMENTS</b>				<b>\$350,894</b>
<b>G BUILDING SITEWORK</b>				<b>\$712,660</b>

ROM COST ESTIMATE - SCHEME #3 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**BUILDING SUMMARY**

ELEMENT		TOTAL COST
A SUBSTRUCTURE		\$1,406,861
B SHELL		\$6,963,050
C INTERIORS		\$121,978
D SERVICES		\$2,203,144
E EQUIPMENT AND FURNISHINGS		\$84,250
F OTHER BUILDING CONSTRUCTION		
G BUILDING SITEWORK		<u>\$857,729</u>
NET DIRECT BUILDING COST		\$11,637,012
DESIGN CONTINGENCY	15.00%	<u>\$1,745,552</u>
SUBTOTAL		\$13,382,564
ESCALATION TO MIDPOINT 11/2022	14.58%	<u>\$1,951,624</u>
SUBTOTAL		\$15,334,188
CONTRACTOR CONTINGENCY	5.00%	<u>\$766,709</u>
SUBTOTAL		\$16,100,897
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$1,449,081</u>
SUBTOTAL		\$17,549,978
CM FEE	5.00%	<u>\$877,499</u>
SUBTOTAL		\$18,427,477
INSURANCE & BONDS	2.50%	<u>\$460,687</u>
<b>TOTAL BUILDING COST</b>		<b><u>\$18,888,164</u></b>

**COST PER STALL: \$26,983**

**DETAILED SUMMARY**

ELEMENT	TOTAL COST
A10 FOUNDATIONS	\$1,406,861
A20 BASEMENT CONSTRUCTION	
B10 SUPERSTRUCTURE	\$4,751,062
B20 EXTERIOR CLOSURE	\$2,182,264
B30 ROOFING	\$29,724
C10 INTERIOR CONSTRUCTION	
C20 STAIRWAYS	\$121,978
C30 INTERIOR FINISHES	
D10 CONVEYING SYSTEMS	\$220,000
D20 PLUMBING SYSTEMS	\$224,406
D30 HVAC SYSTEMS	
D40 FIRE PROTECTION SYSTEMS	\$527,833
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)	\$1,228,405
D5050 TELECOM	\$2,500
E10 EQUIPMENT	\$84,250
E20 FURNISHINGS	
F10 SPECIAL CONSTRUCTION	
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)	
F2020 HAZMAT ABATEMENT	
G10 SITE PREPARATION	\$857,729
G20 SITE IMPROVEMENTS	
G30 SITE CIVIL/MECHANICAL UTILITIES	
G40 SITE ELECTRICAL UTILITIES	
G90 OTHER SITE CONSTRUCTION	
<hr/>	
NET DIRECT BUILDING COST	\$11,637,012
DESIGN CONTINGENCY	15.00% \$1,745,552
SUBTOTAL	\$13,382,564
ESCALATION TO MIDPOINT 11/2022	14.58% \$1,951,624
SUBTOTAL	\$15,334,188
CONTRACTOR CONTINGENCY	5.00% \$766,709
SUBTOTAL	\$16,100,897
GENERAL CONDITIONS/REQUIREMENTS	9.00% \$1,449,081
SUBTOTAL	\$17,549,978
CM FEE	5.00% \$877,499
SUBTOTAL	\$18,427,477
INSURANCE & BONDS	2.50% \$460,687
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<b>TOTAL BUILDING COST</b>	<b>\$18,888,164</b>

**COST PER STALL: \$26,983**

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Spread footing, assembly	1,447	CY	540.74	\$782,397
Slab on grade, assembly	45,126	SF	13.23	\$596,970
Elevator pit, double	1	EA	27,493.95	\$27,494
<b>A10 FOUNDATIONS</b>				<b>\$1,406,861</b>
<b>A SUBSTRUCTURE</b>				<b>\$1,406,861</b>
<b>B SHELL</b>				
<b>B10 SUPERSTRUCTURE</b>				
Concrete column, assembly	834	CY	1,246.15	\$1,039,460
Dowel	865	EA	134.03	\$115,995
Concrete infill between isolation joint and column	125	CY	574.33	\$71,861
Reinforced concrete slab, assembly	888	CY	1,038.56	\$922,132
Float finish	57,536	SF	1.68	\$96,920
Epoxy coating	57,536	SF	10.00	\$575,356
Concrete beam, assembly	1,261	CY	971.61	\$1,225,367
Concrete ramp	364	CY	1,702.44	\$620,371
Elevator shaft wall, assembly	1,938	SF	43.14	\$83,600
<b>B10 SUPERSTRUCTURE</b>				<b>\$4,751,062</b>
<b>B20 EXTERIOR CLOSURE</b>				
Exterior				
Concrete wall, assembly	38,158	SF	44.80	\$1,709,352
Waterproofing, drainage system	4,743	SF	7.00	\$33,198
Enhanced exterior wall finish	38,158	SF	11.22	\$428,136
Doors				
Rolling steel gate	1	EA	9,078.37	\$9,078
Motorized	1	EA	2,500.00	\$2,500
<b>B20 EXTERIOR CLOSURE</b>				<b>\$2,182,264</b>
<b>B30 ROOFING</b>				
Water proofing				
Elevator pit	2	EA	4,500.00	\$9,000
Ramp	3,768	SF	5.50	\$20,724
<b>B30 ROOFING</b>				<b>\$29,724</b>
<b>B - SHELL</b>				<b>\$6,963,050</b>

**C INTERIORS**

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>C20 STAIRS</b>				
Stair				
Riser	603	LFR	89.56	\$53,994
Landing	293	SF	60.75	\$17,805
Handrail	402	LF	124.85	\$50,179

<b>C20 STAIRS</b>	<b>\$121,978</b>
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<b>C INTERIORS</b>	<b>\$121,978</b>
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**D SERVICES**

**D10 CONVEYING SYSTEMS**

Hydraulic elevator, 2-stop	2	EA	95,000.00	\$190,000
Cab finish	2	EA	15,000.00	\$30,000

<b>D10 CONVEYING SYSTEMS</b>	<b>\$220,000</b>
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**D20 PLUMBING SYSTEMS**

Deck drain	13	EA	514.00	\$6,886
Trench drain	335	LF	265.00	\$88,756
Sand oil interceptor	1	EA	7,650.00	\$7,650
Pipe with fittings, below grade, cast iron	1,005	LF	67.47	\$67,793
Trench, backfill, and remove excess spoil	234	CY	76.16	\$17,856
Pipe with fittings and supports, above grade, cast iron	268	LF	76.38	\$20,465
Miscellaneous, Allowance	1	LS	15,000.00	\$15,000

<b>D20 PLUMBING SYSTEMS</b>	<b>\$224,406</b>
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**D30 HVAC SYSTEMS**

No work anticipated					NOTE
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<b>D30 HVAC SYSTEMS</b>	
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**D40 FIRE PROTECTION SYSTEMS**

Automatic fire sprinkler system, wet system, ordinary hazard	263,917	SF	2.00	\$527,833
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<b>D40 FIRE PROTECTION SYSTEMS</b>	<b>\$527,833</b>
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**D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)**

**ELECTRICAL SERVICE AND DISTRIBUTION**

Service equipment including associated feeders and building grounding	263,917	SF	0.85	\$224,329
Parking equipment connection	1	LS	30,000.00	\$30,000
Convenience power including branch wiring	263,917	SF	0.10	\$26,392

**LIGHTING AND BRANCH WIRING**

Prepared by: OCMI

Sheet 16 of 17

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #3 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Lighting system including lighting control, conduit and branch wiring, fittings and accessories	263,917	SF	2.50	\$659,792
<b>SECURITY</b>				
Connect to existing head-end equipment	1	LS	3,500.00	\$3,500
CCTV camera including infrastructure	20	EA	7,150.00	\$143,000
Blue phone system including infrastructure	3	EA	10,000.00	\$30,000
<b>OTHER ELECTRICAL SERVICES</b>				
EV charging station including infrastructure, Allowance	10	EA	8,500.00	\$85,000
Miscellaneous	263,917	SF	0.10	\$26,392
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$1,228,405</b>
<b>D5050 TELECOM</b>				
Telephone and data system	1	LS	2,500.00	\$2,500
<b>D5050 TELECOM</b>				<b>\$2,500</b>
<b>D SERVICES</b>				<b>\$2,203,144</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Entry/exit rolling gate, with control console	4	EA	20,500.00	\$82,000
Traffic spikes, remotely control accessibility	30	LF	75.00	\$2,250
<b>E10 EQUIPMENT</b>				<b>\$84,250</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$84,250</b>
<b>G BUILDING SITEWORK</b>				
<b>G10 SITE PREPARATION</b>				
Site earthwork	263,917	SF	3.25	\$857,729
<b>G10 SITE PREPARATION</b>				<b>\$857,729</b>
<b>G BUILDING SITEWORK</b>				<b>\$857,729</b>



# Garden Grove Police Department Infrastructure Space Needs Assessment

## Scheme #4 - New Construction (Full Build-Out Option)

*Garden Grove, CA*

Dewberry  
**ROM COST ESTIMATE - R1**  
Job No. 19342.000  
23 December 2019







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 **COST ESTIMATE**

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**INTRODUCTORY NOTES**

This estimate is based on verbal direction from the client and the following items, received 04 December 2019

<b>Conceptual Layout</b>	07 sheets
<b>GGPD Scheme Pricing Matrix</b>	01 sheet

The following items are excluded from this estimate:

- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Installation of owner furnished equipment.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

The midpoint of construction of December 2022 is based on:

- Construction start date of December 2021
  - Estimated construction duration of 24 months
- 
- This estimate is based on a Construction Manager at Risk delivery method.
  - This estimate is based on prevailing wage labor rates.
  - This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
  - This estimate is based on a minimum of four competitive bids and a stable bidding market.
  - This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
  - We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

# Garden Grove Police Department Infrastructure Space Needs Assessment

Garden Grove, CA

## ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

### PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. POLICE BUILDING	\$53,776,387	102,000	\$527.22
02. SHOOTING RANGE	\$4,277,667	12,000	\$356.47
03. PARKING STRUCTURE	\$19,345,351		
<b>TOTAL CONSTRUCTION COST</b>	<b>\$77,399,406</b>		

ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**DETAILED PROJECT SUMMARY**

ELEMENT	TOTAL COST	GFA	\$/SF AREA
01. POLICE BUILDING AND SHOOTING RANGE	\$33,011,631	102,000	\$323.64
02. SHOOTING RANGE	\$2,625,925	12,000	\$218.83
03. PARKING STRUCTURE	\$11,875,502		

<b>TOTAL NET DIRECT COST</b>	<b>\$47,513,058</b>
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**GENERAL MARKUPS**

DESIGN CONTINGENCY	15.00%	\$7,126,959
ESCALATION TO MIDPOINT 12/2022	15.00%	\$8,196,003
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$5,938,004
CM FEE	5.00%	\$3,595,791
INSURANCE & BONDS	2.50%	\$1,887,790

<b>TOTAL CONSTRUCTION COST</b>	<b>\$77,399,406</b>
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ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**BUILDING SUMMARY**

ELEMENT		TOTAL COST	\$/SF AREA
A SUBSTRUCTURE		\$1,897,640	\$16.65
B SHELL		\$11,138,112	\$97.70
C INTERIORS		\$7,494,411	\$65.74
D SERVICES		\$13,031,057	\$114.31
E EQUIPMENT AND FURNISHINGS		\$741,000	\$6.50
F OTHER BUILDING CONSTRUCTION		\$565,748	\$4.96
G BUILDING SITEWORK		<u>\$769,588</u>	<u>\$6.75</u>
NET DIRECT BUILDING COST		\$35,637,556	\$312.61
DESIGN CONTINGENCY	15.00%	<u>\$5,345,633</u>	<u>\$46.89</u>
SUBTOTAL		\$40,983,189	\$359.50
ESCALATION TO MIDPOINT 12/2022	15.00%	<u>\$6,147,478</u>	<u>\$53.93</u>
SUBTOTAL		\$49,487,201	\$434.10
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$4,453,848</u>	<u>\$39.07</u>
SUBTOTAL		\$53,941,049	\$473.17
CM FEE	5.00%	<u>\$2,697,052</u>	<u>\$23.66</u>
SUBTOTAL		\$56,638,102	\$496.83
INSURANCE & BONDS	2.50%	<u>\$1,415,953</u>	<u>\$12.42</u>
<b>TOTAL BUILDING COST</b>		<b>\$58,054,054</b>	<b>\$509.25</b>

GROSS FLOOR AREA: 114,000 SF

ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DETAILED SUMMARY

ELEMENT		TOTAL COST	\$/SF AREA
A10 FOUNDATIONS		\$1,897,640	\$16.65
A20 BASEMENT CONSTRUCTION			
B10 SUPERSTRUCTURE		\$5,354,630	\$46.97
B20 EXTERIOR CLOSURE		\$5,171,762	\$45.37
B30 ROOFING		\$611,720	\$5.37
C10 INTERIOR CONSTRUCTION		\$3,816,151	\$33.48
C20 STAIRWAYS		\$211,497	\$1.86
C30 INTERIOR FINISHES		\$3,466,763	\$30.41
D10 CONVEYING SYSTEMS		\$290,000	\$2.54
D20 PLUMBING SYSTEMS		\$1,332,450	\$11.69
D30 HVAC SYSTEMS		\$3,638,487	\$31.92
D40 FIRE PROTECTION SYSTEMS		\$686,380	\$6.02
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)		\$6,026,960	\$52.87
D5050 TELECOM		\$1,056,780	\$9.27
E10 EQUIPMENT		\$171,000	\$1.50
E20 FURNISHINGS		\$570,000	\$5.00
F10 SPECIAL CONSTRUCTION			
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)		\$565,748	\$4.96
F2020 HAZMAT ABATEMENT			
G10 SITE PREPARATION		\$418,694	\$3.67
G20 SITE IMPROVEMENTS		\$350,894	\$3.08
G30 SITE CIVIL/MECHANICAL UTILITIES			
G40 SITE ELECTRICAL UTILITIES			
G90 OTHER SITE CONSTRUCTION			
NET DIRECT BUILDING COST		\$35,637,556	\$312.61
DESIGN CONTINGENCY	15.00%	\$5,345,633	\$46.89
SUBTOTAL		\$40,983,189	\$359.50
ESCALATION TO MIDPOINT 12/2022	15.00%	\$6,147,478	\$53.93
SUBTOTAL		\$49,487,201	\$434.10
GENERAL CONDITIONS/REQUIREMENTS	9.00%	\$4,453,848	\$39.07
SUBTOTAL		\$53,941,049	\$473.17
CM FEE	5.00%	\$2,697,052	\$23.66
SUBTOTAL		\$56,638,102	\$496.83
INSURANCE & BONDS	2.50%	\$1,415,953	\$12.42
<b>TOTAL BUILDING COST</b>		<b>\$58,054,054</b>	<b>\$509.25</b>

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**POLICE BUILDING AND SHOOTING RANGE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Standard foundation				
Continuous footing, assembly	243	CY	645.86	\$156,716
Spread footing, assembly	1,134	CY	536.61	\$608,517
Special foundation				
Grade beam, assembly	994	CY	708.43	\$704,244
Slab on grade				
Reinforced concrete slab, 5" thick, including vapor barrier and float finish	38,000	SF	9.81	\$372,800
Topping slab	1,900	SF	7.00	\$13,300
Miscellaneous				
Elevator pit				
Single	2	EA	12,983.30	\$25,967
Concrete curb	975	LF	15.59	\$15,199
Control joint	975	LF	0.92	\$897

<b>A10 FOUNDATIONS</b>	<b>\$1,897,640</b>
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<b>A SUBSTRUCTURE</b>	<b>\$1,897,640</b>
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**B SHELL**

**B10 SUPERSTRUCTURE**

Floor construction				
Structural steel				
Wide flange	428	TON	4,500.00	\$1,923,750
Piping and tube steel	143	TON	5,500.00	\$783,750
Miscellaneous steel, including angles and channels	57	TON	8,750.00	\$498,750
Fire protection	627	TON	300.00	\$188,100
Moment connection, Allowance	1	LS	100,000.00	\$100,000
Anchors and baseplates, Allowance	1	LS	50,000.00	\$50,000
Metal deck, 3"	76,000	SF	5.09	\$386,984
Concrete fill to metal deck, lightweight reinforced	352	CY	230.01	\$80,928
Float finish, premium	76,000	SF	1.29	\$98,038
Roof construction				
Structural steel				
Wide flange	114	TON	4,500.00	\$513,000
Piping and tube steel	43	TON	5,500.00	\$235,125
Miscellaneous steel, including angles and channels	16	TON	8,750.00	\$137,156
Fire protection	172	TON	300.00	\$51,728
Moment connection, Allowance	1	LS	25,000.00	\$25,000
Anchors and baseplates, Allowance	1	LS	10,000.00	\$10,000

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**POLICE BUILDING AND SHOOTING RANGE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Metal deck, 1 1/2"	38,000	SF	2.91	\$110,444
Concrete fill to metal deck, lightweight reinforced	176	CY	230.01	\$40,464
Screed finish, premium	38,000	SF	1.32	\$50,163
Mechanical screen	407	LF	175.00	\$71,250

**B10 SUPERSTRUCTURE** **\$5,354,630**

**B20 EXTERIOR CLOSURE**

Exterior walls

Framing, metal stud	59,414	SF	9.00	\$534,730
Insulation, batt	59,414	SF	1.54	\$91,498
Exterior sheathing	59,414	SF	2.50	\$148,536
Stone panel	41,590	SF	38.84	\$1,615,432
Miscellaneous works, including caulking and sealant, weather barrier, louvers etc., Allowance	114,000	SF	2.75	\$313,500

Exterior windows, (assume 30% of exterior closure to be glazing)

Curtain wall	17,824	SF	134.32	\$2,394,202
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Exterior doors

Aluminum fully glazed including frame and hardware				
Double	4	PR	5,133.25	\$20,533
Hollow metal including frame and hardware				
Single	4	EA	1,813.01	\$7,252
Double	3	PR	3,058.69	\$9,176

Miscellaneous

Closer	18	EA	344.26	\$6,197
Hold open	4	EA	506.78	\$2,027
Panic hardware	18	EA	759.92	\$13,679

Miscellaneous work, Allowance	1	LS	15,000.00	\$15,000
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**B20 EXTERIOR CLOSURE** **\$5,171,762**

**B30 ROOFING**

Roof coverings

PVC single ply membrane	38,000	SF	7.73	\$293,707
Rigid insulation	38,000	SF	4.31	\$163,818
Tapered premium	22,800	SF	2.28	\$51,882
Cant strip	975	LF	3.08	\$3,004
Walk pad, assume 5% of roof area	1,900	SF	7.02	\$13,342
Flashing and sheet metal				
Reglet	975	LF	5.46	\$5,323
Flashing	975	LF	7.69	\$7,500
Coping, aluminum	975	LF	25.68	\$25,032

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**POLICE BUILDING AND SHOOTING RANGE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Expansion joint assembly	325	LF	125.00	\$40,612
Roof openings				
Access hatch/skylights, Allowance	1	LS	7,500.00	\$7,500

**B30 ROOFING** **\$611,720**

**B - SHELL** **\$11,138,112**

**C INTERIORS**

**C10 INTERIOR CONSTRUCTION**

Partitions

Framing, metal stud	131,100	SF	9.00	\$1,179,900
Furring	3,420	SF	3.75	\$12,825
Shaft wall	6,685	SF	8.95	\$59,825
Cementitious backerboard	4,057	SF	4.15	\$16,836
Insulation, batt	141,205	SF	1.54	\$217,456
Gypsum board				
Taped and finished	282,411	SF	3.47	\$979,248
Underlayment	56,482	SF	1.74	\$98,274
Inside face of exterior wall, taped and finished	59,414	SF	3.93	\$233,499
Shaft liner	6,685	SF	3.30	\$22,088

Interior windows

Storefront, Allowance	1	SF	50,000.00	\$50,000
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Interior doors	114,000	SF	5.50	\$627,000
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Fittings, including restroom accessories, signage etc., Allowance	114,000	SF	2.80	\$319,200
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**C10 INTERIOR CONSTRUCTION** **\$3,816,151**

**C20 STAIRS**

Metal stair, concrete filled

Riser	579	LFR	114.93	\$66,589
Landing	350	SF	65.54	\$22,941
Handrail, wall mounted, painted	121	LF	88.65	\$10,700
Handrail, floor mounted, painted	121	LF	134.57	\$16,244
Painted steel guardrail	168	LF	226.76	\$38,016
Miscellaneous work, Allowance	1	LS	50,000.00	\$50,000
Metal ladder				
Roof access ladder, Allowance	40	VLF	175.17	\$7,007

**C20 STAIRS** **\$211,497**

**C30 INTERIOR FINISHES**



**Garden Grove Police Department Infrastructure Space Needs Assessment**

**POLICE BUILDING AND SHOOTING RANGE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Wall				
Paint	290,551	SF	1.07	\$309,903
Ceramic tile	4,057	SF	17.73	\$71,936
Floor				
Carpet	68,400	SF	5.84	\$399,428
Granite flooring	5,700	SF	42.06	\$239,747
Ceramic tile	3,420	SF	15.77	\$53,923
Terrazzo, epoxy	28,500	SF	36.58	\$1,042,408
Concrete, sealer	7,980	SF	1.40	\$11,207
Base	114,000	SF	0.98	\$111,720
Ceiling				
Acoustical ceiling	95,475	SF	7.50	\$716,063
Hard lid	10,545	SF	12.58	\$132,656
Soffit	6,477	SF	22.55	\$146,064
Paint				
Gypsum board	17,022	SF	1.07	\$18,156
Exposed structure	7,980	SF	1.70	\$13,552
Enhanced finishes, Allowance	1	LS	200,000.00	\$200,000

**C30 INTERIOR FINISHES** **\$3,466,763**

**C INTERIORS** **\$7,494,411**

**D SERVICES**

**D10 CONVEYING SYSTEMS**

Conveying equipment	2	EA	145,000.00	\$290,000
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**D10 CONVEYING SYSTEMS** **\$290,000**

**D20 PLUMBING SYSTEMS**

Equipment				
Water heating system	114,000	SF	0.30	\$34,200
Water softener	1	EA	4,870.00	\$4,870
Garbage disposal	2	EA	320.00	\$640
Fixture including rough-in	114,000	SF	1.95	\$222,300
Miscellaneous fittings	114,000	SF	0.85	\$96,900
Domestic water system				
Building entrance	1	LS	10,140.00	\$10,140
Cold water piping, fittings and accessories	114,000	SF	2.00	\$228,000
Hot water piping and fittings, insulation	114,000	SF	0.80	\$91,200
Valve	114,000	SF	0.10	\$11,400

## Garden Grove Police Department Infrastructure Space Needs Assessment

### POLICE BUILDING AND SHOOTING RANGE

Garden Grove, CA

#### ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Sanitary waste system, includes clean-outs	114,000	SF	2.10	\$239,400
Sanitary vent system, includes vent through roofs	114,000	SF	1.85	\$210,900
Roof drainage system	114,000	SF	0.85	\$96,900
Indirect condensate drain system	114,000	SF	0.30	\$34,200
Natural gas system, no work anticipated		NOTE		
Commissioning				
Independent commissioning		NIC		
Support service	1	LS	3,500.00	\$3,500
Elevator sump pump system, Allowance	1	LS	8,000.00	\$8,000
Miscellaneous including seismic control, system test, flush and chlorinate, identification and fire stop	114,000	SF	0.35	\$39,900

#### D20 PLUMBING SYSTEMS \$1,332,450

#### D30 HVAC SYSTEMS

##### Equipment

Split units, including cooling tower	171,000	CFM	9.00	\$1,539,000
Dedicated AC units				
Computer/data room	3	EA	11,720.00	\$35,160
Electrical/mechanical room	4	EA	5,540.00	\$22,160
Exhaust fans	6	EA	1,477.24	\$8,863
Building	114,000	SF	0.20	\$22,800
Sound attenuation	114,000	SF	0.22	\$25,080
Air distribution system				
Sheet metal ductwork, supports	91,200	LB	8.37	\$763,344
Duct insulation	114,000	SF	2.90	\$330,600
Flexible duct, supports	114,000	SF	0.59	\$67,260
Refrigeration piping system, specialties	114,000	SF	0.33	\$37,620
Air inlets and outlets	114,000	SF	0.99	\$112,860
Fire, smoke and manual dampers	114,000	SF	0.54	\$61,560
Duct smoke detectors	114,000	SF	0.22	\$25,080
Automatic temperature controls	114,000	SF	3.96	\$451,440
Air/water balance, by an independent contractor	114,000	SF	0.51	\$58,140

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**POLICE BUILDING AND SHOOTING RANGE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Start-up, commission major equipment	114,000	SF	0.32	\$36,480
Miscellaneous including seismic bracing, duct	114,000	SF	0.36	\$41,040

**D30 HVAC SYSTEMS \$3,638,487**

**D40 FIRE PROTECTION SYSTEMS**

Automatic fire sprinkler system, wet type

Fire riser, horizontal water distribution, drops and heads	114,000	SF	5.67	\$646,380
Test	1	LS	5,000.00	\$5,000
Fire pump, Allowance	1	LS	35,000.00	\$35,000

**D40 FIRE PROTECTION SYSTEMS \$686,380**

**D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)**

Service and distribution

Normal power

Paralleling switch gear	1	EA	140,000.00	\$140,000
Distribution board	114,000	SF	0.94	\$107,160
Panel board	114,000	SF	1.60	\$182,400
Transformer	114,000	SF	0.29	\$33,060
Building feeder	114,000	SF	0.76	\$86,640
Emergency power, including dual generators	114,000	SF	2.05	\$233,700
Building grounding system	114,000	SF	0.35	\$39,900
Equipment connection including disconnect switch, conduit and conductors	114,000	SF	4.13	\$470,820
Lighting system				
Lighting control	114,000	SF	1.17	\$133,380
Fixtures	114,000	SF	11.04	\$1,258,560
Light switch	114,000	SF	0.50	\$57,000
Occupancy sensor	114,000	SF	1.09	\$124,260
Branch wiring	114,000	SF	2.90	\$330,600
Convenience power including branch wiring	114,000	SF	3.50	\$399,000
Fire alarm system	114,000	SF	4.50	\$513,000
Audio visual system	114,000	SF	4.00	\$456,000
Public address system	114,000	SF	0.66	\$75,240
TV outlets and cabling	114,000	SF	0.50	\$57,000
Clock system, atomic clock	114,000	SF	0.30	\$34,200

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**POLICE BUILDING AND SHOOTING RANGE**

*Garden Grove, CA*

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
Security system				
Access control	114,000	SF	5.00	\$570,000
CCTV system	114,000	SF	4.00	\$456,000
Interview recording system	114,000	SF	2.00	\$228,000
Miscellaneous including seismic bracing, identification and fire stop	114,000	SF	0.36	\$41,040
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$6,026,960</b>
<b>D5050 TELECOM</b>				
Telephone and data system	114,000	SF	4.00	\$456,000
Emergency radio BAS system	114,000	SF	3.25	\$370,500
Fiber optic system	114,000	SF	0.79	\$90,060
Common raceway system	114,000	SF	1.23	\$140,220
<b>D5050 TELECOM</b>				<b>\$1,056,780</b>
<b>D SERVICES</b>				<b>\$13,031,057</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Commercial equipment	114,000	SF	1.50	\$171,000
<b>E10 EQUIPMENT</b>				<b>\$171,000</b>
<b>E20 FURNISHINGS</b>				
Fixed furnishings	114,000	SF	5.00	\$570,000
<b>E20 FURNISHINGS</b>				<b>\$570,000</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$741,000</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				
Building demolition, including haul-off and disposal	42,000	SF	13.47	\$565,748
<b>F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)</b>				<b>\$565,748</b>
<b>F SPECIAL CONSTRUCTION AND DEMOLITION</b>				<b>\$565,748</b>

**G BUILDING SITEWORK**

Garden Grove Police Department Infrastructure Space Needs Assessment

POLICE BUILDING AND SHOOTING RANGE

Garden Grove, CA

ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>G10 SITE PREPARATION</b>				
New police station				
Excavation and fill				
Over excavation	8,796	CY	12.25	\$107,774
Backfill and recompact, assumed 25%	2,199	CY	12.99	\$28,566
Engineered fill and compaction	6,597	CY	27.46	\$181,152
Haul	6,597	CY	15.34	\$101,202
<b>G10 SITE PREPARATION</b>				<b>\$418,694</b>
<b>G20 SITE IMPROVEMENTS</b>				
Existing police station				
Engineered fill and compaction	3,148	CY	27.46	\$86,444
Hydroseed	17,000	SF	0.85	\$14,450
Miscellaneous site improvements	1	LS	250,000.00	\$250,000
<b>G20 SITE IMPROVEMENTS</b>				<b>\$350,894</b>
<b>G BUILDING SITEWORK</b>				<b>\$769,588</b>

ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

**BUILDING SUMMARY**

ELEMENT		TOTAL COST
A SUBSTRUCTURE		\$1,406,861
B SHELL		\$7,201,540
C INTERIORS		\$121,978
D SERVICES		\$2,203,144
E EQUIPMENT AND FURNISHINGS		\$84,250
F OTHER BUILDING CONSTRUCTION		
G BUILDING SITEWORK		<u>\$857,729</u>
NET DIRECT BUILDING COST		\$11,875,502
DESIGN CONTINGENCY	15.00%	<u>\$1,781,325</u>
SUBTOTAL		\$13,656,827
ESCALATION TO MIDPOINT 12/2022	15.00%	<u>\$2,048,524</u>
SUBTOTAL		\$16,490,619
GENERAL CONDITIONS/REQUIREMENTS	9.00%	<u>\$1,484,156</u>
SUBTOTAL		\$17,974,775
CM FEE	5.00%	<u>\$898,739</u>
SUBTOTAL		\$18,873,513
INSURANCE & BONDS	2.50%	<u>\$471,838</u>
<b>TOTAL BUILDING COST</b>		<b>\$19,345,351</b>

**COST PER STALL: \$27,636**

**DETAILED SUMMARY**

ELEMENT	TOTAL COST
A10 FOUNDATIONS	\$1,406,861
A20 BASEMENT CONSTRUCTION	
B10 SUPERSTRUCTURE	\$4,751,062
B20 EXTERIOR CLOSURE	\$2,420,754
B30 ROOFING	\$29,724
C10 INTERIOR CONSTRUCTION	
C20 STAIRWAYS	\$121,978
C30 INTERIOR FINISHES	
D10 CONVEYING SYSTEMS	\$220,000
D20 PLUMBING SYSTEMS	\$224,406
D30 HVAC SYSTEMS	
D40 FIRE PROTECTION SYSTEMS	\$527,833
D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)	\$1,228,405
D5050 TELECOM	\$2,500
E10 EQUIPMENT	\$84,250
E20 FURNISHINGS	
F10 SPECIAL CONSTRUCTION	
F20 SELECTIVE DEMOLITION (OTHER THAN HAZMAT)	
F2020 HAZMAT ABATEMENT	
G10 SITE PREPARATION	\$857,729
G20 SITE IMPROVEMENTS	
G30 SITE CIVIL/MECHANICAL UTILITIES	
G40 SITE ELECTRICAL UTILITIES	
G90 OTHER SITE CONSTRUCTION	
<hr/>	
NET DIRECT BUILDING COST	\$11,875,502
DESIGN CONTINGENCY	15.00% \$1,781,325
SUBTOTAL	\$13,656,827
ESCALATION TO MIDPOINT 12/2022	15.00% \$2,048,524
SUBTOTAL	\$16,490,619
GENERAL CONDITIONS/REQUIREMENTS	9.00% \$1,484,156
SUBTOTAL	\$17,974,775
CM FEE	5.00% \$898,739
SUBTOTAL	\$18,873,513
INSURANCE & BONDS	2.50% \$471,838
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<b>TOTAL BUILDING COST</b>	<b>\$19,345,351</b>

**COST PER STALL: \$27,636**

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>A SUBSTRUCTURE</b>				
<b>A10 FOUNDATIONS</b>				
Spread footing, assembly	1,447	CY	540.74	\$782,397
Slab on grade, assembly	45,126	SF	13.23	\$596,970
Elevator pit, double	1	EA	27,493.95	\$27,494
<b>A10 FOUNDATIONS</b>				<b>\$1,406,861</b>
<b>A SUBSTRUCTURE</b>				<b>\$1,406,861</b>
<b>B SHELL</b>				
<b>B10 SUPERSTRUCTURE</b>				
Concrete column, assembly	834	CY	1,246.15	\$1,039,460
Dowel	865	EA	134.03	\$115,995
Concrete infill between isolation joint and column	125	CY	574.33	\$71,861
Reinforced concrete slab, assembly	888	CY	1,038.56	\$922,132
Float finish	57,536	SF	1.68	\$96,920
Epoxy coating	57,536	SF	10.00	\$575,356
Concrete beam, assembly	1,261	CY	971.61	\$1,225,367
Concrete ramp	364	CY	1,702.44	\$620,371
Elevator shaft wall, assembly	1,938	SF	43.14	\$83,600
<b>B10 SUPERSTRUCTURE</b>				<b>\$4,751,062</b>
<b>B20 EXTERIOR CLOSURE</b>				
Exterior				
Concrete wall, assembly	38,158	SF	44.80	\$1,709,352
Waterproofing, drainage system	4,743	SF	7.00	\$33,198
Enhanced exterior wall finish, with full buildout and upgraded façade	38,158	SF	17.47	\$666,626
Doors				
Rolling steel gate	1	EA	9,078.37	\$9,078
Motorized	1	EA	2,500.00	\$2,500
<b>B20 EXTERIOR CLOSURE</b>				<b>\$2,420,754</b>
<b>B30 ROOFING</b>				
Water proofing				
Elevator pit	2	EA	4,500.00	\$9,000
Ramp	3,768	SF	5.50	\$20,724
<b>B30 ROOFING</b>				<b>\$29,724</b>
<b>B - SHELL</b>				<b>\$7,201,540</b>



Garden Grove Police Department Infrastructure Space Needs Assessment

PARKING STRUCTURE

Garden Grove, CA

ROM COST ESTIMATE - SCHEME #4 - R1

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>C INTERIORS</b>				
<b>C20 STAIRS</b>				
Stair				
Riser	603	LFR	89.56	\$53,994
Landing	293	SF	60.75	\$17,805
Handrail	402	LF	124.85	\$50,179
<b>C20 STAIRS</b>				<b>\$121,978</b>
<b>C INTERIORS</b>				<b>\$121,978</b>
<b>D SERVICES</b>				
<b>D10 CONVEYING SYSTEMS</b>				
Hydraulic elevator, 2-stop	2	EA	95,000.00	\$190,000
Cab finish	2	EA	15,000.00	\$30,000
<b>D10 CONVEYING SYSTEMS</b>				<b>\$220,000</b>
<b>D20 PLUMBING SYSTEMS</b>				
Deck drain	13	EA	514.00	\$6,886
Trench drain	335	LF	265.00	\$88,756
Sand oil interceptor	1	EA	7,650.00	\$7,650
Pipe with fittings, below grade, cast iron	1,005	LF	67.47	\$67,793
Trench, backfill, and remove excess spoil	234	CY	76.16	\$17,856
Pipe with fittings and supports, above grade, cast iron	268	LF	76.38	\$20,465
Miscellaneous, Allowance	1	LS	15,000.00	\$15,000
<b>D20 PLUMBING SYSTEMS</b>				<b>\$224,406</b>
<b>D30 HVAC SYSTEMS</b>				
No work anticipated			NOTE	
<b>D30 HVAC SYSTEMS</b>				
<b>D40 FIRE PROTECTION SYSTEMS</b>				
Automatic fire sprinkler system, wet system, ordinary hazard	263,917	SF	2.00	\$527,833
<b>D40 FIRE PROTECTION SYSTEMS</b>				<b>\$527,833</b>
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				
<b>ELECTRICAL SERVICE AND DISTRIBUTION</b>				
Service equipment including associated feeders and building grounding	263,917	SF	0.85	\$224,329
Parking equipment connection	1	LS	30,000.00	\$30,000
Convenience power including branch wiring	263,917	SF	0.10	\$26,392

**Garden Grove Police Department Infrastructure Space Needs Assessment**

**PARKING STRUCTURE**

Garden Grove, CA

**ROM COST ESTIMATE - SCHEME #4 - R1**

OCMI JOB #: 19342.000 | 23 December 2019

DESCRIPTION	QUANTITY	UNIT	UNIT RATE	ESTIMATED COST
<b>LIGHTING AND BRANCH WIRING</b>				
Lighting system including lighting control, conduit and branch wiring, fittings and accessories	263,917	SF	2.50	\$659,792
<b>SECURITY</b>				
Connect to existing head-end equipment	1	LS	3,500.00	\$3,500
CCTV camera including infrastructure	20	EA	7,150.00	\$143,000
Blue phone system including infrastructure	3	EA	10,000.00	\$30,000
<b>OTHER ELECTRICAL SERVICES</b>				
EV charging station including infrastructure, Allowance	10	EA	8,500.00	\$85,000
Miscellaneous	263,917	SF	0.10	\$26,392
<b>D50 ELECTRICAL SYSTEMS (OTHER THAN TELECOM)</b>				<b>\$1,228,405</b>
<b>D5050 TELECOM</b>				
Telephone and data system	1	LS	2,500.00	\$2,500
<b>D5050 TELECOM</b>				<b>\$2,500</b>
<b>D SERVICES</b>				<b>\$2,203,144</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				
<b>E10 EQUIPMENT</b>				
Entry/exit rolling gate, with control console	4	EA	20,500.00	\$82,000
Traffic spikes, remotely control accessibility	30	LF	75.00	\$2,250
<b>E10 EQUIPMENT</b>				<b>\$84,250</b>
<b>E EQUIPMENT AND FURNISHINGS</b>				<b>\$84,250</b>
<b>G BUILDING SITEWORK</b>				
<b>G10 SITE PREPARATION</b>				
Site earthwork	263,917	SF	3.25	\$857,729
<b>G10 SITE PREPARATION</b>				<b>\$857,729</b>
<b>G BUILDING SITEWORK</b>				<b>\$857,729</b>

# **APPENDIX E:**

**BASIC CHECKLIST AND IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST  
FOR THE MAIN POLICING BUILDING**



Project Name Garden Grove Police F+  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Main Police Building
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

## 16.1 Basic Checklist

### Very Low Seismicity

#### Structural Components

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input checked="" type="checkbox"/>	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	Unclear how the floor diaphragm conc panels connect to the CMU shearwalls. Drawings state that connection is per the concrete panel shop drawings.
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input checked="" type="checkbox"/>	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	Unclear how the floor diaphragm conc panels connect to the CMU shearwalls. Drawings state that connection is per the concrete panel shop drawings.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

### 16.1.2LS Life Safety Basic Configuration Checklist

**Low Seismicity**

**Building System**

**General**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input checked="" type="checkbox"/>	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	Unclear how the floor diaphragm conc panels connect to the CMU shearwalls. Drawings state that connection is per the concrete panel shop drawings.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1A, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Building Configuration**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)	

**Moderate Seismicity**

**Geologic Site Hazards**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input checked="" type="checkbox"/>	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)	Liquefaction map of Garden Grove shows high risk of liquefaction.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

**High Seismicity**

**Foundation Configuration**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$ . (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police F<sup>+</sup>  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Main Police Building
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**16.15IO Immediate Occupancy Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls and RM1A: Reinforced Masonry Bearing Walls with Stiff Diaphragms**

**Very Low Seismicity**

**Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)	
C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in. <sup>2</sup> . (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)	The 2nd floor walls are non-conforming.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Connections**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input checked="" type="checkbox"/>	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)	Unclear what the connection is between the concrete panels and the CMU walls. Drawings say to refer to concrete panel shop drawings.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	Unclear what the connection is between the concrete panels and the CMU walls. Drawings say to refer to concrete panel shop drawings.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

**Stiff Diaphragms**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)	Unclear what the connection is between the concrete topping slab and the CMU walls.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

**Foundation System**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	DEEP FOUNDATIONS: Piles and piers are capable of transferring the seismic forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high. (Commentary: Sec. A.6.2.4)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**Low, Moderate, and High Seismicity**

**Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides. (Commentary: Sec. A.3.2.4.3. Tier 2: Sec. 5.5.3.1.5)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30. (Commentary: Sec. A.3.2.4.4. Tier 2: Sec. 5.5.3.1.2)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**Diaphragms (Flexible or Stiff)**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)	The opening for the roof access hatch is 17% of the adjacent wall length. Stair #3 opening is approx. 28%.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft long. (Commentary: A.4.1.6. Tier 2: Sec. 5.6.1.3)	See above
C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)	No additional reinforcement at reentrant corners.
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)	

**Flexible Diaphragms**

RATING		DESCRIPTION		COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police F+  
 Project Number 1900237

C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	
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**Connections**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police Facility  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Main Police Building
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Note: This checklist is focusing on the mechanical penthouse.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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Rev. 41-31.1

**16.5IO Immediate Occupancy Structural Checklist for Building Types S2: Steel Braced Frames and S2A: Steel Braced Frames with Flexible Diaphragms**

**Very Low Seismicity**

**Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	COLUMN AXIAL STRESS CHECK: The axial stress caused by gravity loads in columns subjected to overturning forces is less than $0.10F_y$ . Alternatively, the axial stress caused by overturning forces alone, calculated using the Quick Check procedure of Section 4.5.3.6, is less than $0.30F_y$ . (Commentary: Sec. A.3.1.3.2. Tier 2: Sec. 5.5.2.1.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	BRACE AXIAL STRESS CHECK: The axial stress in the diagonals, calculated using the Quick Check procedure of Section 4.5.3.4, is less than $0.50F_y$ . (Commentary: Sec. A.3.3.1.2. Tier 2: Sec. 5.5.4.1)a	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**Connections**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	STEEL COLUMNS: The columns in seismic-force-resisting frames are anchored to the building foundation. (Commentary: Sec. A.5.3.1. Tier 2: Sec. 5.7.3.1)	The columns are anchored to a concrete curb on the roof, unclear if the curb has reinforcing dowels into the concrete topping slab.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Low Seismicity**

**Connections**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	TRANSFER TO STEEL FRAMES: Diaphragms are connected for transfer of seismic forces to the steel frames, and the connections are able to develop the lesser of the strength of the frames or the diaphragms. (Commentary: Sec. A.5.2.2. Tier 2: Sec. 5.7.2)	Unclear how metal deck connects to the beams (and in turn the braces).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

**Moderate Seismicity**

**Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	REDUNDANCY: The number of lines of braced frames in each principal direction is greater than or equal to 2. The number of braced bays in each line is greater than 3. (Commentary: Sec. A.3.1.1.1. Tier 2: Sec. 5.5.1.1)	The north-south direction only has 1 bay of tension bracing in each line. The east-west direction only has 2 bays of tension bracing in each line.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	COLUMN SPLICES: All column splice details located in braced frames develop 100% of the tensile strength of the column. (Commentary: Sec. A.3.3.1.3. Tier 2: Sec. 5.5.4.2)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	SLENDERNESS OF DIAGONALS: All diagonal elements required to carry compression shall have $Kl/r$ ratios less than 200. (Commentary: Sec. A.3.3.1.4. Tier 2: Sec. 5.5.4.3)	Only tension
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	CONNECTION STRENGTH: All the brace connections develop the buckling capacity of the diagonals. (Commentary: Sec. A.3.3.1.5. Tier 2: Sec. 5.5.4.4)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	OUT-OF-PLANE BRACING: Braced frame connections attached to beam bottom flanges located away from beam-column joints are braced out-of-plane at the bottom flange of the beams. (Commentary: Sec. A.3.3.1.6. Tier 2: Sec. 5.5.4.5)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	COMPACT MEMBERS: All brace elements meet compact section requirements set forth by AISC 341, Table B4.1. (Commentary: Sec. A.3.3.1.7. Tier 2: Sec. 5.5.4)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	K-BRACING: The bracing system does not include K-braced bays. (Commentary: Sec. A.3.3.2.1. Tier 2: Sec. 5.5.4.6)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	TENSION-ONLY BRACES: Tension-only braces do not comprise more than 70% of the total seismic-force-resisting capacity in structures more than two stories high. (Commentary: Sec. A.3.3.2.2. Tier 2: Sec. 5.5.4.7)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	CHEVRON BRACING: Beams in chevron, or V-braced, bays are capable of resisting the vertical load resulting from the simultaneous yielding and buckling of the brace pairs. (Commentary: Sec. A.3.3.2.3. Tier 2: Sec. 5.5.4.6)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	CONCENTRICALLY BRACED FRAME JOINTS: All the diagonal braces frame into the beam-column joints concentrically. (Commentary: Sec. A.3.3.2.4. Tier 2: Sec. 5.5.4.8)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Diaphragms (Flexible or Stiff)**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	OPENINGS AT FRAMES: Diaphragm openings immediately adjacent to the moment frames extend less than 15% of the total frame length. (Commentary: Sec. A.4.1.5. Tier 2: Sec. 5.6.1.3)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)	

**Flexible Diaphragms**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U	OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**High Seismicity**

**Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	CONNECTION STRENGTH: All the brace connections develop the yield capacity of the diagonals. (Commentary: Sec. A.3.3.1.5. Tier 2: Sec. 5.5.4.4)	Unclear in 4/S10 as to what the gusset connection.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
C	NC	N/A	U	COMPACT MEMBERS: All column and brace elements meet section requirements set forth by AISC 341, Table D1.1, for highly ductile members. Braced frame beams meet the requirements for moderately ductile members. (Commentary: Sec. A.3.3.1.7. Tier 2: Sec. 5.5.4)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	NET AREA: The brace effective net area is not less than the brace gross area for hollow structural section (HSS) tube and pipes sections. (Commentary: Sec. A.3.3.1.8. Tier 2: Sec. 5.5.4.1)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Connections**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	STEEL COLUMNS: The columns in seismic-force-resisting frames are anchored to the building foundation, and the anchorage is able to develop the least of the tensile capacity of the column, the tensile capacity of the lowest level column splice (if any), or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.1. Tier 2: Sec. 5.7.3.1)	The columns are anchored to a curb on the roof.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**Foundation System**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	DEEP FOUNDATIONS: Piles and piers are capable of transferring the seismic forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high. (Commentary: Sec. A.6.2.4)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



# **APPENDIX F:**

**BASIC CHECKLIST AND LIFE SAFETY STRUCTURAL CHECKLIST FOR THE  
EVIDENCE ANNEX**



Project Name Garden Grove Police Facility  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Evidence Annex
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

## 16.1 Basic Checklist

### Very Low Seismicity

#### Structural Components

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	No out-of-plane wall anchors or straps are shown on the drawings. A34's are provided at each joist/block which provides some out of plane resistance - inadequate capacity
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



### 16.1.2LS Life Safety Basic Configuration Checklist

**Low Seismicity**

**Building System**

**General**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1A, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Building Configuration**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)	

**Moderate Seismicity**

**Geologic Site Hazards**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)	Liquefaction map of Garden Grove shows high risk of liquefaction.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

**High Seismicity**

**Foundation Configuration**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$ . (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)	Slab
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police Facility  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Evidence Annex
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**16.15LS Life Safety Structural Checklist for Building Types RM1:  
 Reinforced Masonry Bearing Walls with Flexible Diaphragms and  
 RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms**

**Low and Moderate Seismicity**

**Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in. <sup>2</sup> . (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)	Assuming addt'l bay of wall based on what was observed at the site visit
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3)	Assuming similar construction in the undocumented walls

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Stiff Diaphragms**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

**Connections**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	Does not appear to be out-of-plane anchors
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)	

**High Seismicity**  
**Stiff Diaphragms**

RATING		DESCRIPTION		COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



C	NC	N/A	U	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

**Flexible Diaphragms**

RATING		DESCRIPTION		COMMENTS	
C	NC	N/A	U	CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)	No straps indicated at the blocking in the east-west direction.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	OTHER DIAPHRAGMS: The diaphragm shall not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police F+  
 Project Number 1900237

**Connections**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



# **APPENDIX G:**

**BASIC CHECKLIST AND LIFE SAFETY CHECKLIST FOR JUVENILE JUSTICE  
CENTER**



Project Name Garden Grove Police Facility  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Juvenile Facility
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police Facility  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Juvenile Facility
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



## 16.1 Basic Checklist

### Very Low Seismicity

#### Structural Components

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input checked="" type="checkbox"/>	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	No details given in the submittal drawings for the top connections at the exterior walls.
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

### 16.1.2LS Life Safety Basic Configuration Checklist

**Low Seismicity**

**Building System**

**General**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	See above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
C	NC	N/A	U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1A, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)	Does not apply to W2
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**Building Configuration**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)	

**Moderate Seismicity**

**Geologic Site Hazards**

RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)	Liquefaction map of Garden Grove shows high risk of liquefaction.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)	

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Project Name Garden Grove Police F+  
 Project Number 1900237

C	NC	N/A	U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

**High Seismicity**

**Foundation Configuration**

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$ . (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name Garden Grove Police Facility  
Project Number 1900237

## ASCE 41-13 Tier 1 Checklists

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FIRM:	KPFF Consulting Engineers
PROJECT NAME:	Garden Grove Police Facility Assessment - Juvenile Facility
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1900237
COMPLETED BY:	LW
DATE COMPLETED:	October 2019
REVIEWED BY:	RY
REVIEW DATE:	November 2019

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

### 16.3LS Life Safety Structural Checklist for Building Type W2: Wood Frames, Commercial and Industrial

**Low and Moderate Seismicity**

**Lateral Seismic-Force-Resisting System**

RATING				DESCRIPTION	COMMENTS
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)	
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the following values (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1): Structural panel sheathing      1,000 lb/ft Diagonal sheathing                700 lb/ft Straight sheathing                  100 lb/ft All other conditions                100 lb/ft	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used as shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)	Shear stress check was re-evaluated after eliminating any wall lengths that did not meet the 2:1 ratio.
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec.5.5.3.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-1. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec. 5.5.3.6.3)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



C	NC	N/A	U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**Connections**

RATING		DESCRIPTION		COMMENTS	
C	NC	N/A	U	WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
C	NC	N/A	U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

**High Seismicity**

**Diaphragms**

RATING				DESCRIPTION	COMMENTS
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)	
C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1)	No top connections in structural set. 2/A-5 shows solid blocking with nailing at top of wall. No straps shown
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. Wood commercial and industrial buildings may have rod-braced systems. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	U <input type="checkbox"/>	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	Diaphragm assembly is blocked.
C <input checked="" type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	

**Connections**

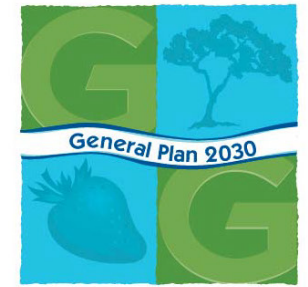
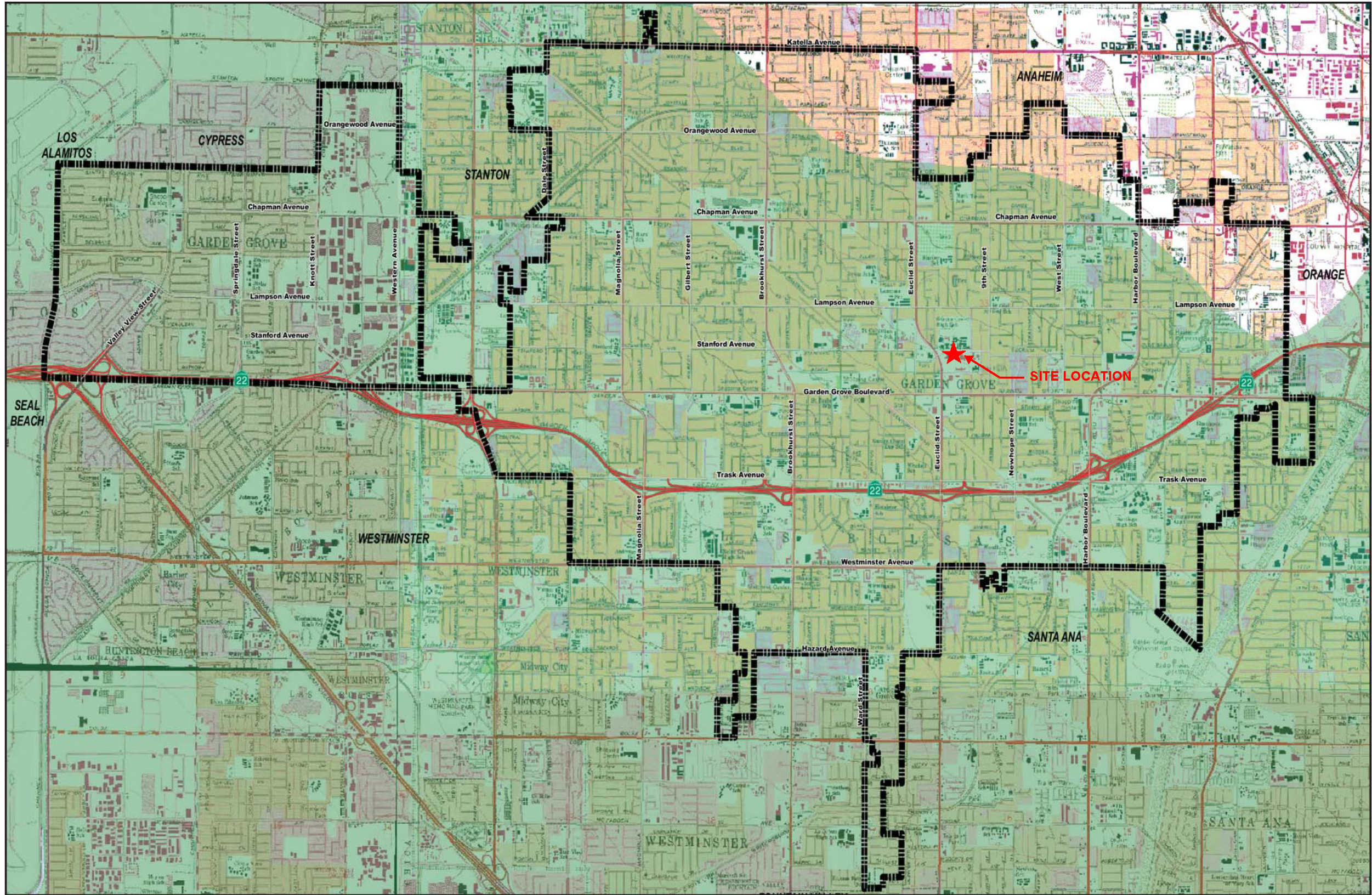
RATING				DESCRIPTION	COMMENTS
C <input type="checkbox"/>	NC <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	WOOD SILL BOLTS: Sill bolts are spaced at 6 ft or less, with proper edge and end distance provided for wood and concrete. (Commentary: A.5.3.7. Tier 2: Sec. 5.7.3.3)	Edge distance for most of the foundation is 2.75" at the stem wall; min of 6D for a 1/2" dia. bolt is 3" which is larger than what is provided.  Checked capacity of the bolts for concrete breakout based on the assumed edge distance of 1.625" based on the channel flange. At Type 1 & 3 shearwalls, acceptable in-plane capacity. Type 2 exceeds capacity. Out-of-plane OK. <span style="float: right;">+</span>

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown




**APPENDIX H:**  
**GARDEN GROVE GENERAL PLAN 2030 -**  
**SAFETY ELEMENT - LIQUEFACTION ZONES MAP**





**LEGEND**

 Liquefaction - Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

 City Boundary



SOURCE: RBF Consulting, 2008.