

Observatory
Development Considerations

Act ID	Description	Rem Dur	Early Start	Early Finish	Total Float	%	Resource	Budgeted Cost	2019						
									APR 22	APR 29	MAY 06	MAY 13	MAY 20	JUN 27	
196		1d	30APR19	30APR19	0	0	0								
1000	Observatory Promotions & Advertising	7h	30APR19	30APR19	0	0	0								
1005	Obtain Client	1d	30APR19	30APR19	0	0	0								
1010	Feasibility Study	1d	30APR19	30APR19	0	0	0								
1020	Funding Sources	1d	30APR19	30APR19	0	0	0								
1030	Development of Operations Manual	1d	30APR19	30APR19	0	0	0								
1040	Client Needs Meetings	1d	30APR19	30APR19	0	0	0								
1050	Why An Observatory,? Here's Why	1d	30APR19	30APR19	0	0	0								
1060	Potential Sites Locations	1d	30APR19	30APR19	0	0	0								
1070	Client Site Approval	1d	30APR19	30APR19	0	0	0								
1080	Option Real Estate	1d	30APR19	30APR19	0	0	0								
1090	Geophysical Investigation	1d	30APR19	30APR19	0	0	0								
1100	Soils Investigation & Testing	1d	30APR19	30APR19	0	0	0								
1110	Seismic Investigation	1d	30APR19	30APR19	0	0	0								
1115	Review Municipal Requirements	1d	30APR19	30APR19	0	0	0								
1120	Review Findings, Client, Architect, Engineers	1d	30APR19	30APR19	0	0	0								
1130	Close On Real Estate	1d	30APR19	30APR19	0	0	0								
1140	Hire Local Attorney In Favor	1d	30APR19	30APR19	0	0	0								
1150	Set Date Municipal Calendar For Approvals	1d	30APR19	30APR19	0	0	0								
1155	Conceptual & Preliminary Design Studies	1d	30APR19	30APR19	0	0	0								
1156	Analysis For Low Thermal Mass Considerations	1d	30APR19	30APR19	0	0	0								
1157	Minimize Heat Generating Equipment InDome	1d	30APR19	30APR19	0	0	0								
1160	Attorney, Architect, Engineer, PlaneWave....	1d	30APR19	30APR19	0	0	0								
1161	...To Prepare Presentations	1d	30APR19	30APR19	0	0	0								
1630	Obtain Municipal Approvals	1d	30APR19	30APR19	0	0	0								
1635	Prepare Project Budgets & Estimates	1d	30APR19	30APR19	0	0	0								
1640	Consultant to Submit for Permits	1d	30APR19	30APR19	0	0	0								
1650	Obtain Community Approvals or Objections	1d	30APR19	30APR19	0	0	0								
1660	Commit Architect To Working Drawings & Specs	1d	30APR19	30APR19	0	0	0								
1670	Place PlaneWave Telescope Order	1d	30APR19	30APR19	0	0	0								
1680	Place Baader Dome Order See more below	1d	30APR19	30APR19	0	0	0								
1690	Prepare Project Schedules	1d	30APR19	30APR19	0	0	0								
1700	Hire Required Contractors	1d	30APR19	30APR19	0	0	0								
1710	Place Suppliers Orders , Components & Materials	1d	30APR19	30APR19	0	0	0								

- | Observatory Promotions & Advertising
- | Obtain Client
- | Feasibility Study
- | Funding Sources
- | Development of Operations Manual
- | Client Needs Meetings
- | Why An Observatory,? Here's Why
- | Potential Sites Locations
- | Client Site Approval
- | Option Real Estate
- | Geophysical Investigation
- | Soils Investigation & Testing
- | Seismic Investigation
- | Review Municipal Requirements
- | Review Findings, Client, Architect, Engineers
- | Close On Real Estate
- | Hire Local Attorney In Favor
- | Set Date Municipal Calendar For Approvals
- | Conceptual & Preliminary Design Studies
- | Analysis For Low Thermal Mass Considerations
- | Minimize Heat Generating Equipment InDome
- | Attorney, Architect, Engineer, PlaneWave
- | ...To Prepare Presentations
- | Obtain Municipal Approvals
- | Prepare Project Budgets & Estimates
- | Consultant to Submit for Permits
- | Obtain Community Approvals or Objections
- | Commit Architect To Working Drawings & Specs
- | Place PlaneWave Telescope Order
- | Place Baader Dome Order See more below
- | Prepare Project Schedules
- | Hire Required Contractors
- | Place Suppliers Orders , Components & Material

Start date — 30APR19 Finish date — 30APR19 Data date — 30APR19 Run date — 01MAY19 Page number — 1A	These are Sor Ofbl: Factors lhw Nfd To Be Taken lto CoMiderdon Fc ANfw ObMrvatory OeY86pmetC.F'armg Construcon 1lwN No Soml OF The Fctcnlbat NHd To Be Taken U.o ConskStrat Ion For A New ObHvatory Dmlpnm,Plalh CO11n.Ltion	-Early bar -Progress bar -Critical bar — Summary bar Start milestone point Finish milestone point
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Development Considerations

Act ID	Description	Rem Dur	Early Start	Early Finish	Total Float	%	Resource	Budgeted Cost	2019					
									APR	MAY	JUN			
1730	Architects Considerations: 1, Telescope Access.	1d	30APR19	30APR19	0	0		0	22	29	06	13	20	27
1731	2 Visitor & Use Flow, 3, Optimal Seeing Cond.	1d	30APR19	30APR19	0	0		0						
1732	4, ADA Handicap Access	1d	30APR19	30APR19	0	0		0						
1742		1d	30APR19	30APR19	0	0		0						
1752		1d	30APR19	30APR19	0	0		0						
1760	Construction Building & Equipment	1d	30APR19	30APR19	0	0		0						
1770	General Conditions & Overhead Expenses	1d	30APR19	30APR19	0	0		0						
1771	See Notes Below for GC&O	1d	30APR19	30APR19	0	0		0						
1780		1d	30APR19	30APR19	0	0		0						
1785	Hire Testing Labs	1d	30APR19	30APR19	0	0		0						
1790	Surveying	1d	30APR19	30APR19	0	0		0						
1800	Permits	1d	30APR19	30APR19	0	0		0						
1810	Community Development Fees if any	1d	30APR19	30APR19	0	0		0						
1820	Site Clearing & Demolition	1d	30APR19	30APR19	0	0		0						
1830	Excavation & Backfill	1d	30APR19	30APR19	0	0		0						
1840	Grading Rough	1d	30APR19	30APR19	0	0		0						
1841		1d	30APR19	30APR19	0	0		0						
1850	Utilities	1d	30APR19	30APR19	0	0		0						
1861	Power	1d	30APR19	30APR19	0	0		0						
1862	Sewer	1d	30APR19	30APR19	0	0		0						
1863	Water	1d	30APR19	30APR19	0	0		0						
1864	Gas if required	1d	30APR19	30APR19	0	0		0						
1865	High Speed Data	1d	30APR19	30APR19	0	0		0						
1866	Antennas & Telecommunications	1d	30APR19	30APR19	0	0		0						
1870	Finish Grading & Topsoil	1d	30APR19	30APR19	0	0		0						
1880	Roads, Paving & Drainage	1d	30APR19	30APR19	0	0		0						
1890	Parking	1d	30APR19	30APR19	0	0		0						
1900	Walkways	1d	30APR19	30APR19	0	0		0						
1910	Building Foundations	1d	30APR19	30APR19	0	0		0						
1920	Pier Foundations	1d	30APR19	30APR19	0	0		0						
1930	Install Telescope Sole Plate	1d	30APR19	30APR19	0	0		0						
1935	Plan Building Machinery Locations	1d	30APR19	30APR19	0	0		0						
1940	Vibration Isolation Considerations	1d	30APR19	30APR19	0	0		0						

Start date	30APR19	Th9HN• OFtht FtotcnThM NMdTo BI,.....trto ForANew OltT Dewtoprn.n.tJtl CaMtNdlon Then/In Some OfTht hctonThlt NMd To Be Dken lrio CClrlldIntkIn ForANIWObMMitry ConllJ'ction	— Early bar — Progress bar — Critical bar — Summary bar ● Start milestone point
Finish date	30APR19		
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Observatories
Development Considerations

Act ID	Description	Rem Dur	Early Start	Early Finish	Total Float	%	Resource	Budgeted Cost	2019						
									APR 22	APR 29	MAY 06	MAY 13	MAY 20	JUN 27	
1941	Building	1d	30APR19	30APR19	0	0	0								
1943	Machinery	1d	30APR19	30APR19	0	0	0								
1944	Floor	1d	30APR19	30APR19	0	0	0								
1945	Pier	1d	30APR19	30APR19	0	0	0								
1950		1d	30APR19	30APR19	0	0	0								
1960		1d	30APR19	30APR19	0	0	0								
1970	Masonry	1d	30APR19	30APR19	0	0	0								
1980	Block & Brick	1d	30APR19	30APR19	0	0	0								
1990	Concrete	1d	30APR19	30APR19	0	0	0								
2000	Floors	1d	30APR19	30APR19	0	0	0								
2010	Steps	1d	30APR19	30APR19	0	0	0								
2020	Carpentry Rough & Finish	1d	30APR19	30APR19	0	0	0								
2030	Counters & Cabinets	1d	30APR19	30APR19	0	0	0								
2040	Metals	1d	30APR19	30APR19	0	0	0								
2050	Structural Steel	1d	30APR19	30APR19	0	0	0								
2060	Metal Deck	1d	30APR19	30APR19	0	0	0								
2070	Railings	1d	30APR19	30APR19	0	0	0								
2080	Exterior Building Panels if required	1d	30APR19	30APR19	0	0	0								
2090	Dome Substructure , Test & Level	1d	30APR19	30APR19	0	0	0								
2100	Doors, Windows & Hardware	1d	30APR19	30APR19	0	0	0								
2110	Dome Installation	1d	30APR19	30APR19	0	0	0								
2120	Moisture Protection & Weather Stripping	1d	30APR19	30APR19	0	0	0								
2130	Roofing	1d	30APR19	30APR19	0	0	0								
2140	Caulking	1d	30APR19	30APR19	0	0	0								
2150	Gutters & Downspouts	1d	30APR19	30APR19	0	0	0								
2160	Telescope Installation	1d	30APR19	30APR19	0	0	0								
2170	Helicopter Services or Crane Services if Needed	1d	30APR19	30APR19	0	0	0								
2180	Install Telescope&Observatory Control Equipment	1d	30APR19	30APR19	0	0	0								
2181	Monitors, Cameras, Computers, Servers,	1d	30APR19	30APR19	0	0	0								
2182	Devices, Remote Controls	1d	30APR19	30APR19	0	0	0								
2183	Control Room Equipment	1d	30APR19	30APR19	0	0	0								
2184	Desks, Racks, Shelving	1d	30APR19	30APR19	0	0	0								
2185	Insulation & Isolation of Control Room	1d	30APR19	30APR19	0	0	0								
2190	Dome Lighting White & Red on Dimmers	1d	30APR19	30APR19	0	0	0								

Start date 30APR19 Finish date 30APR19 Data date 30APR19 Run date 01MAY19 Page number 3A © Primavera Systems, Inc.	This file is for the use of the user only. It is not to be distributed outside the user's organization. For a new observation, please contact the user.	<ul style="list-style-type: none"> - Early bar — Progress bar — Critical bar — Summary bar ● Start milestone point ● Finish milestone point
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Act ID	Description	Rem Dur	Early Start	Early Finish	Total Float	%	Resource	Budgeted Cost	2019									
									APR 22	APR 29	MAY 06	MAY 13	MAY 20	MAY 27	JUN 03			
2200	Drywall & Spackle	1d	30APR19	30APR19	0	0		0										
2210	HVAC & Humidification Equipment	1d	30APR19	30APR19	0	0		0										
2220	Air-Lock of All Doors From Conditioned Space	1d	30APR19	30APR19	0	0		0										
2230		1d	30APR19	30APR19	0	0		0										
2240		1d	30APR19	30APR19	0	0		0										
2250	Control Room Placed North of Telescope	1d	30APR19	30APR19	0	0		0										
2251	100sfmin-250+sf	1d	30APR19	30APR19	0	0		0										
2252	Setup Like Multi-User Computer Lab	1d	30APR19	30APR19	0	0		0										
2253	Include Exterior Door & Window Into Dome Area	1d	30APR19	30APR19	0	0		0										
2263		1d	30APR19	30APR19	0	0		0										
2273		1d	30APR19	30APR19	0	0		0										
2283	Baaeder Domes Procedures	1d	30APR19	30APR19	0	0		0										
2284	Place Dome Order, Contract, Warranty Papers	1d	30APR19	30APR19	0	0		0										
2285	Obtain Schedule For Dome Manufacturing Time	1d	30APR19	30APR19	0	0		0										
2286	Obtain Cut Sheets & Shop Drawings For Arch /Eng	1d	30APR19	30APR19	0	0		0										
2287	Schedule Delivery of Dome, Method & Time	1d	30APR19	30APR19	0	0		0										
2289	Receive & Store Dome, Inspect Delivery	1d	30APR19	30APR19	0	0		0										
2290	Install & Test Dome	1d	30APR19	30APR19	0	0		0										
2300	Lockers, Carpet & Mats, Seating	1d	30APR19	30APR19	0	0		0										
2310	Alarm & Intercom Systems	1d	30APR19	30APR19	0	0		0										
2320	Rest Room Equipment	1d	30APR19	30APR19	0	0		0										
2330	Glass & Glazing	1d	30APR19	30APR19	0	0		0										
2340	Plumbing	1d	30APR19	30APR19	0	0		0										
2350	Electric Lights & Power	1d	30APR19	30APR19	0	0		0										
2351	Conduites Installation	1d	30APR19	30APR19	0	0		0										
2361	Ceramic / Quarry Tile if Required	1d	30APR19	30APR19	0	0		0										
2371	Window Shades / Drapes	1d	30APR19	30APR19	0	0		0										
2381	Interior Finishes Walls, Ceilings, Floors	1d	30APR19	30APR19	0	0		0										
2391	Chalk Board / Bulletin Board Installation	1d	30APR19	30APR19	0	0		0										
2401	Fumishin s	1d	30APR19	30APR19	0	0		0										
2411	Special Construction if Required	1d	30APR19	30APR19	0	0		0										
2421	Generators	1d	30APR19	30APR19	0	0		0										
2431	Sewa e S terns	1d	30APR19	30APR19	0	0		0										
2441	Access Road Construction & Drainage	1d	30APR19	30APR19	0	0		0										

Start date	30APR19	<p>TheN/nSaLM OfThll FactcnThmtNMdToScTa.Ino ForA NewObMrlwory o.v.lapmft,Pllring Conltnctuan IIIHtl Vr Some OffTht F+ctcnThll Need Ta Be Tlbn Into Ccaldmlon ForA New aa.v.tary .Aamng Construction</p>	<p>— Early bar — Progress bar — Critical bar — Summary bar</p> <p>● Start milestone point</p>
Finish date	30APR19		
Data date	30APR19		
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Development Considerations

Act ID	Description	Rem Dur	Early Start	Early Finish	Total Float	%	Resource	Budgeted Cost	2019											
									APR 22	APR 29	MAY 06	MAY 13	MAY 20	MAY 27	JUN					
2451	Sound Control & Deadening	1d	30APR19	30APR19	0	0		0												
2461		1d	30APR19	30APR19	0	0		0												
2471	Items Covered Under General Conditions	1d	30APR19	30APR19	0	0		0												
2481	Architects & Engineering Fees	1d	30APR19	30APR19	0	0		0												
2491	Consultants' Fees	1d	30APR19	30APR19	0	0		0												
2501	Equipment & Tools, Rentals, Purchases	1d	30APR19	30APR19	0	0		0												
2511	Project Superintendent	1d	30APR19	30APR19	0	0		0												
2521	Insurances	1d	30APR19	30APR19	0	0		0												
2531	Trash Removals	1d	30APR19	30APR19	0	0		0												
2541	General Contractors O&P	1d	30APR19	30APR19	0	0		0												
2551	Contingencies For Unforeseen Conditions	1d	30APR19	30APR19	0	0		0												
2561	Legal & Accounting Fees	1d	30APR19	30APR19	0	0		0												
2571	Temporary Utilities During Construction	1d	30APR19	30APR19	0	0		0												
2581	Temporary Construction Office	1d	30APR19	30APR19	0	0		0												
2591	Signs	1d	30APR19	30APR19	0	0		0												
2601	Temporary Office Supplies	1d	30APR19	30APR19	0	0		0												
2611	Cleaning Services	1d	30APR19	30APR19	0	0		0												
2620	Punch List Completion	1d	30APR19	30APR19	0	0		0												
2621	As Built Drawings	1d	30APR19	30APR19	0	0		0												
2631	Progress Photos	1d	30APR19	30APR19	0	0		0												
2641	Barricades	1d	30APR19	30APR19	0	0		0												
2651	Provide 3 Operations, Maintenance, Market Manual	1d	30APR19	30APR19	0	0		0												
2661	Operators Training 2 Days	1d	30APR19	30APR19	0	0		0												
2671	Start Up Services	1d	30APR19	30APR19	0	0		0												
2681	Mobilization, Warranties, Taxes, Governmental	1d	30APR19	30APR19	0	0		0												
2682	Inspections Schedules, hdemnifications	1d	30APR19	30APR19	0	0		0												
2683	Travel Expenses, Conferences, Meetings	1d	30APR19	30APR19	0	0		0												
2684	Test & Balance Systems, Safety Procedures	1d	30APR19	30APR19	0	0		0												
2691	Development & Management Fee WCC	1d	30APR19	30APR19	0	0		0												
2701		1d	30APR19	30APR19	0	0		0												
2711		1d	30APR19	30APR19	0	0		0												
2721		1d	30APR19	30APR19	0	0		0												

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These Are Some Of The Factors That Need To Be Taken Into Consideration For A New Observatory Development, Planning Construction

- Early bar
- Progress bar
- Critical bar
- -Summary bar
- Start milestone point
- Finish milestone point