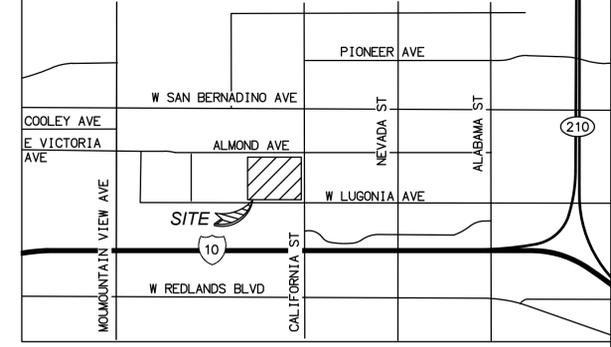


FIRE PROTECTION LEGEND

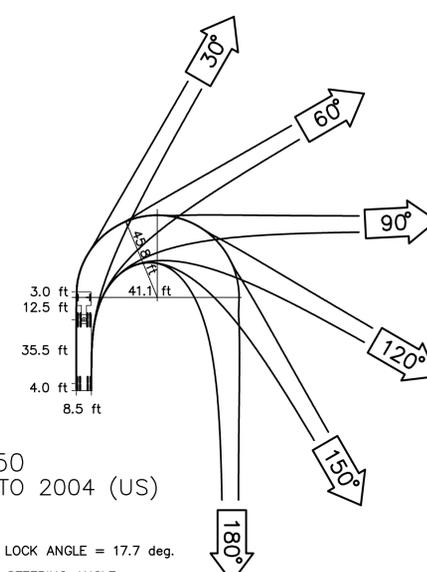
- PROPOSED FIRE HYDRANT
- PROPOSED PIV
- PROPOSED FDC
- PROPOSED FIRE MAIN
- HOSE PULL (150' MAX)
- RED PAINTED CURB
- FIRE TRUCK TURNING MOVEMENT
- EXISTING FIRE HYDRANT
- EXISTING PIV
- EXISTING FDC
- EXISTING FIRE MAIN
- EXISTING FIRE ROUTE



VICINITY MAP
N.T.S.

FIRE NOTES

1. FIRE APPARATUS ACCESS ROADS AND WATER SUPPLIES FOR FIRE PROTECTION, SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING TIME OF CONSTRUCTION. CFC 501.4
2. STREET OR ROAD SIGNS - TEMPORARY SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES. SIGNS SHALL BE OF AN APPROVED SIZE, WEATHER RESISTANT AND BE MAINTAINED UNTIL REPLACED BY PERMANENT SIGNS. CFC 505.2
3. FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE SURFACED SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. CFC 503.2.3
4. POST INDICATOR VALVES, FIRE DEPARTMENT CONNECTIONS, AND ALARM BELL ARE TO BE LOCATED ON THE ADDRESS/ACCESS SIDE OF THE BUILDING.
5. CLEAR SPACE AROUND HYDRANTS - A THREE (3) FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS, EXCEPT AS OTHERWISE REQUIRED OR APPROVED. CFC 507.5.5
6. PHYSICAL PROTECTION - WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, GUARD POSTS OR OTHER APPROVED MEANS SHALL COMPLY WITH SECTION 312. CFC 507.5.6
7. DEAD ENDS - DEAD END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED AREA FOR TURNING AROUND FIRE APPARATUS. CFC 503.2.5
8. SECURITY GATES - WHERE SECURITY GATES ARE INSTALLED, THEY SHALL HAVE AN APPROVED MEANS OF EMERGENCY OPERATION. THE SECURITY GATES AND EMERGENCY OPERATION SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM G 2200.
9. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE ACCESS TO ALL HYDRANTS, VALVES, FIRE DEPARTMENT CONNECTIONS, PULL STATIONS, EXTINGUISHERS, SPRINKLER RISERS, ALARM CONTROL PANELS, RESCUE WINDOWS AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES. VEGETATION OF BUILDING FEATURES SHALL NO OBSTRUCT ADDRESS NUMBERS OR INHIBIT THE FUNCTIONING OF ALARM BELLS, HORNS OR STROBES.
10. APPROVED DOCUMENTS - CONSTRUCTION DOCUMENTS APPROVED BY THE FIRE CODE OFFICIAL ARE APPROVED WITH THE INTENT THAT SUCH CONSTRUCTION DOCUMENTS COMPLY IN ALL RESPECTS WITH THIS CODE. REVIEW AND APPROVAL BY THE FIRE CODE OFFICIAL SHALL NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY OF COMPLIANCE WITH THIS CODE. CFC 105.4.4



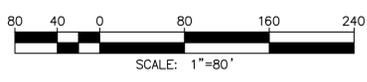
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Trailer Width	: 35.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

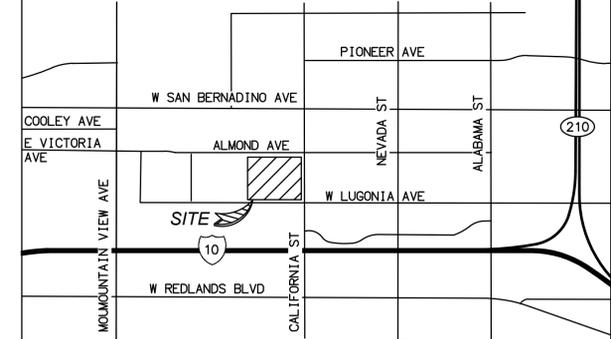
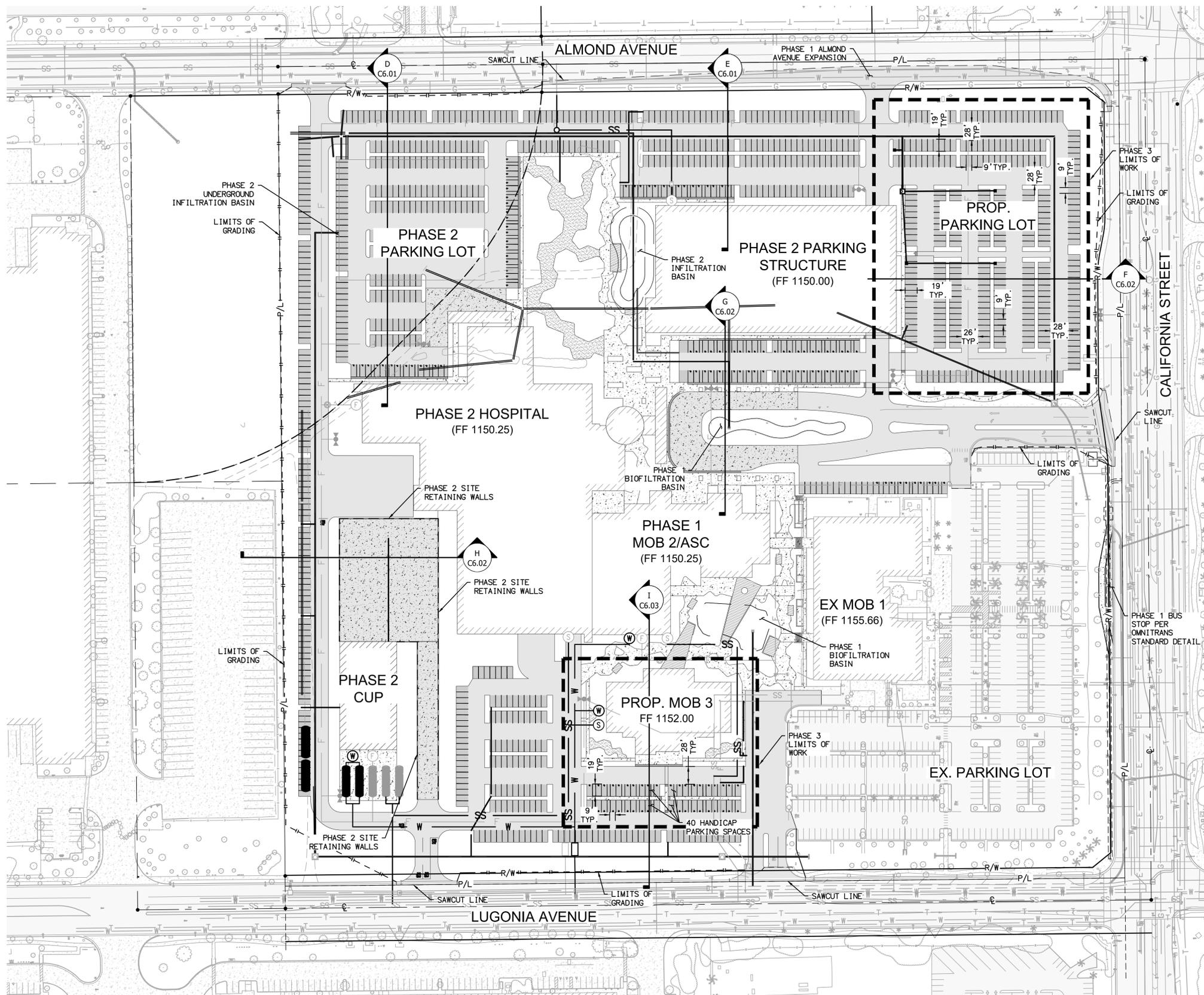
WB-50
AASHTO 2004 (US)
[ft]

STEERING LOCK ANGLE = 17.7 deg.

ACHIEVED STEERING ANGLE:

- 30 deg. SWEEP ANGLE: 14.4 deg.
- 60 deg. SWEEP ANGLE: 17.1 deg.
- 90 deg. SWEEP ANGLE: 17.6 deg.
- 120 deg. SWEEP ANGLE: 17.7 deg.
- 150 deg. SWEEP ANGLE: 17.7 deg.
- 180 deg. SWEEP ANGLE: 17.7 deg.

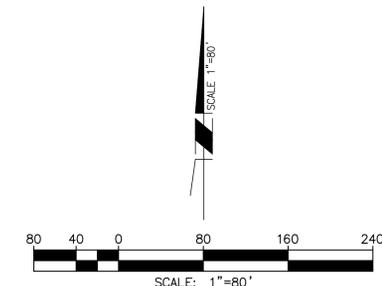




VICINITY MAP
N.T.S.

LEGEND

RIGHT OF WAY	---
PROPERTY LINE	---
CURB AND GUTTER	---
AC PAVEMENT	▨
HEAVY VEHICULAR AC PAVEMENT	▨
HEAVY VEHICULAR CONCRETE PAVEMENT	▨
PEDESTRIAN CONCRETE PAVEMENT	▨
DG PATH	▨
PROPOSED BUILDING	▨
TRUNCATED DOMES	▨
LIMITS OF WORK LINE	---



SITE PHASING - 3
SITE PLAN

SEPTEMBER 09, 2022

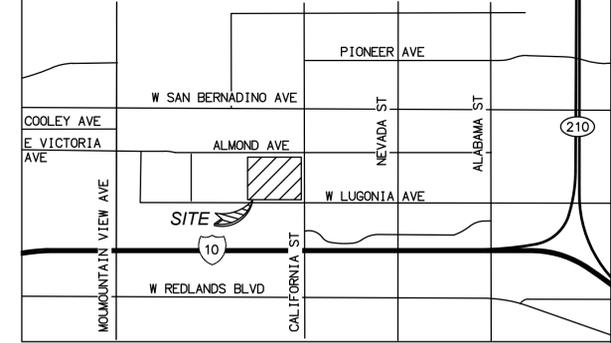
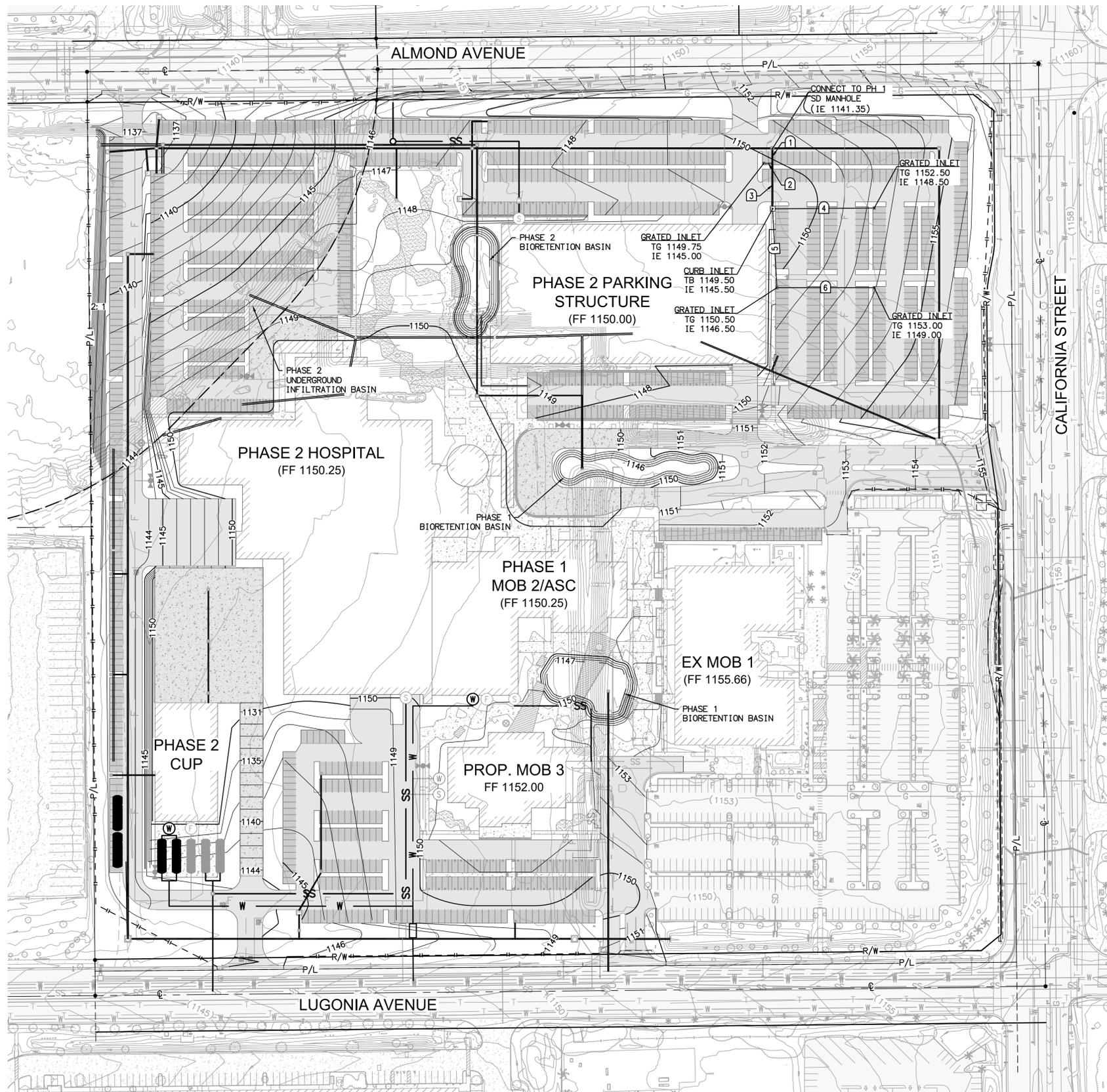


REDLANDS MEDICAL CENTER

Sheet: **C4.00**

CITY OF REDLANDS

Site Development Plan Number:	PHONE: 626.405.6333
OWNER: Kaiser Foundation Hospitals	ADDRESS: 393 E. Walnut Street, Pasadena, CA 91108
ARCHITECT/ENGINEER/DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	



VICINITY MAP
N.T.S.

GRADING GENERAL NOTES

- ALL GRADING AND ON-SITE CONSTRUCTION SHALL MEET THE MINIMUM REQUIREMENTS OF THE UNIFORM BUILDING CODE, LATEST EDITION, APPENDIX CHAPTER 33 AND THE CALIFORNIA BUILDING CODE, LATEST EDITION. THESE CODES ARE AMENDED IN THE CITY OF REDLANDS MUNICIPAL CODE. IF CONTRADICTIONS ARISE BETWEEN PROVISIONS IN THESE PLANS FROM THOSE IN THE VARIOUS CODES, THE MOST RESTRICTIVE PROVISIONS WILL GOVERN.
- AFTER THE GRADING PERMIT HAS BEEN ISSUED, THE PROJECT MANAGER SHALL CONVENE AN ON-SITE PRECONSTRUCTION MEETING WITH THE CITY OF REDLANDS INSPECTOR, THE ENGINEER OF RECORD, THE GEOTECHNICAL ENGINEER AND THE GRADING CONTRACTOR. AT THIS MEETING, THE PROJECT SUPERINTENDENT SHALL BE IDENTIFIED AND AN EMERGENCY CONTACT PERSON SHALL BE IDENTIFIED TO THE INSPECTOR.
- USE BEST MANAGEMENT PRACTICES (BMPs) TO PREVENT AND CONTAIN ILLEGAL DISCHARGES WITHIN THE PROJECT BOUNDARY. THIS WILL BE IN EFFECT FOR THE ENTIRE DURATION OF THE PROJECT CONSTRUCTION TO ITS COMPLETION.
- BUILDING PERMITS SHALL NOT BE ISSUED UNTIL THE PROJECT SITE HAS BEEN GRADED AND THE ENGINEER OF RECORD HAS CERTIFIED TO THE SATISFACTION OF THE CITY ENGINEER THAT THE SITE HAS BEEN PREPARED ACCORDING TO THE RECOMMENDATIONS OF THE SOILS REPORT(S) AND TO THE SPECIFICATIONS OF THE APPROVED GRADING PLANS. IN ADDITION, A FINAL COMPACTION REPORT SHALL BE SUBMITTED TO BOTH THE INSPECTOR AND THE BUILDING OFFICIAL FOR APPROVAL.
- A WRITTEN REPORT BY A GEOTECHNICAL ENGINEER IS TO BE FURNISHED TO BOTH THE CITY'S MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT AND BUILDING AND SAFETY DIVISION, TO CERTIFY THAT ALL FILL MATERIAL AND MATERIAL UPON WHICH FILL IS TO BE PLACED IS ADEQUATE TO SUPPORT THE LOADS OF THE PROPOSED DEVELOPMENT. THIS REPORT SHALL INCLUDE SOIL TEST DATA ON ALL FILLS OF TWO FEET OR MORE.
- PREPARATION OF THE SITE SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE INSTRUCTIONS OF A GEOTECHNICAL ENGINEER AND ALL FILLS WILL BE MADE UNDER HIS DIRECTION.
- IN NO CASE IS ANY SLOPE TO EXCEED A GRADIENT OF TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE EXISTENCE AND LOCATIONS OF UNDERGROUND UTILITY LINES, STRUCTURES OR IRRIGATION LINES. THE CONTRACTOR IS TO MAKE AN ON-SITE INSPECTION AND NOTIFY ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK OR EXCAVATION TO DETERMINE THE EXACT LOCATION OF ANY AND ALL UNDERGROUND FACILITIES.
- THE CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR CLEARING THE SITE IN PREPARATION FOR CONSTRUCTION.
- THE ENGINEER'S ESTIMATE IS 79,000 CY OF EXCAVATION AND 105,000 CY OF EMBANKMENT FOR THE SITE GRADING. THESE ARE RAW QUANTITIES WITHOUT ALLOWANCES FOR LOSS, SHRINKAGE OR COMPACTION.
- INSTALL FIRE HYDRANTS AS REQUIRED PRIOR TO THE DELIVERY OF ANY BUILDING MATERIAL TO THE SITE.
- BENCHMARK: ENTER PROJECT SPECIFIC DATA HERE. ELEVATION:
- ALL SLOPES THREE FEET OR GREATER MUST BE LANDSCAPED AND IRRIGATED PRIOR TO OCCUPANCY.
- ACREAGE OF THE PROJECT IS: ACRE(S).
- APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL FOR THE CONSTRUCTION OF ANY WALLS, SIDEWALKS, SLABS, PAVING, ETC. TO BE CONSTRUCTED ON-SITE AS SHOWN HEREON. A SEPARATE PERMIT IS REQUIRED FROM THE BUILDING AND SAFETY DIVISION FOR THE CONSTRUCTION OF THESE ON-SITE ITEMS.
- ALL EARTHWORK SHALL CONFORM TO THE PRELIMINARY GEOTECHNICAL AND/OR GEOLOGIC INVESTIGATION REPORT FOR _____ PREPARED BY _____, DATED _____.
- THE ENGINEER OF RECORD MUST SET GRADE STAKES FOR ALL DRAINAGE DEVICES.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY INSPECTIONS PRIOR TO POURING ANY CONCRETE.

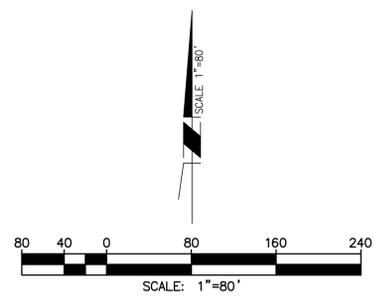
LEGEND

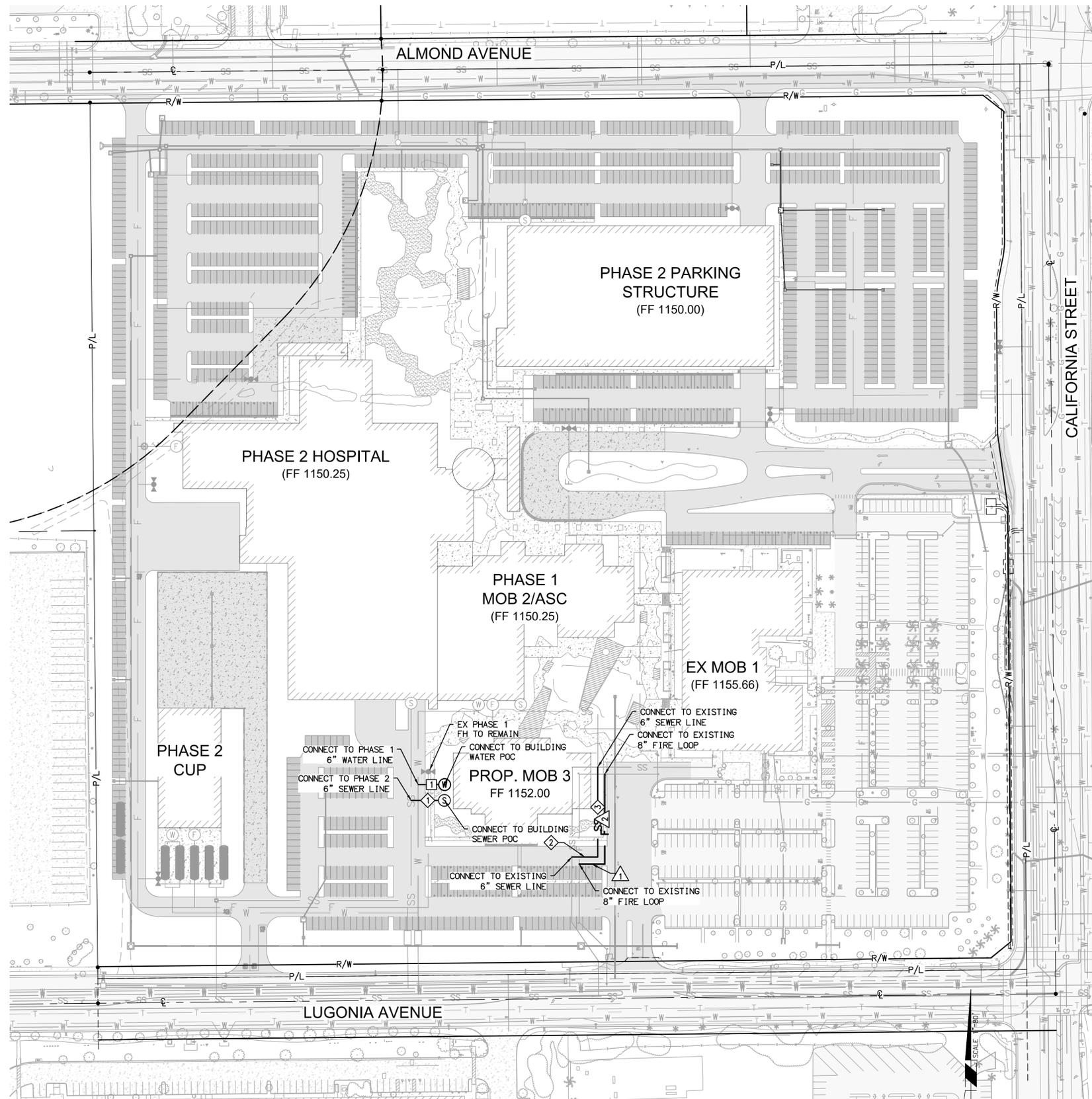
- MAJOR CONTOUR
- MINOR CONTOUR
- DAYLIGHT LINE
- SAWCUT LINE
- STORM DRAIN
- CURB INLET
- STORM DRAIN MANHOLE
- CATCH BASIN INLET
- CONCRETE HEADWALL
- CONCRETE STRUCTURE INLET

EARTHWORK

CUT: 79,000 CY
 FILL: 105,000 CY
 NET: 26,000 CY FILL

STORM DRAIN DATA TABLE				
NO	BEARING/DELTA	LENGTH	SIZE/TYPE	SLOPE (%)
1	N 00°18'03" W	19.39'	18" HDPE	5.1
2	N 89°41'57" E	10.48'	12" HDPE	25.4
3	N 00°18'03" W	61.86'	12" HDPE	5.1
4	N 89°35'35" E	140.80'	8" PVC	2.1
5	N 03°11'09" W	107.97'	12" HDPE	1.0
6	N 90°00'00" W	136.00'	8" PVC	1.8





LEGEND

- WATER LINE — W —
- SEWER LINE — SS —
- FIRE LINE — F —
- PROP. FIRE HYDRANT
- EX. FIRE HYDRANT
- UTILITY POC
- UNDERGROUND EMERGENCY TANKS

WATER GENERAL NOTES

1. MATERIAL AND INSTALLATION SHALL CONFORM TO THE CITY OF REDLANDS MUNICIPAL WATER DIVISION STANDARD SPECIFICATION (LATEST REVISION THEREOF).
2. THE APPROXIMATE LOCATIONS OF EXISTING UNDERGROUND UTILITY LINES ARE SHOWN IN THESE PLANS. THE LINES ARE PLOTTED FROM A COMBINATION OF RECORD AND FIELD DATA, AND THE CITY HAS TRIED WITHIN ITS AVAILABLE RESOURCES TO LOCATE ALL SUCH FACILITIES WITH REASONABLE ACCURACY. BY ENTERING INTO A CONTRACT FOR THIS WORK, THE CONTRACTOR AGREES PRIOR TO EXCAVATION TO NOTIFY ALL UTILITY AND IRRIGATION COMPANIES OPERATING IN THE AREA OF THE WORK, AND TO DETERMINE WITH AS MUCH ACCURACY AS IS NEEDED TO PERFORM THIS WORK, THE EXACT LOCATIONS OF ALL UNDERGROUND MAIN OR TRUNKLINE UTILITY FACILITIES.
3. ALL SERVICE CONNECTIONS TO BE MINIMUM 1-INCH COPPER LATERALS.
4. STANDARD WATER MAIN LOCATION IS 7 FEET OFF CURB FACE.
5. THIS DRAWING IS SCHEMATIC ONLY, DO NOT SCALE.
6. THE CONTRACTOR SHALL MAKE ALL WATER MAIN CONNECTIONS TO EXISTING WATER MAINS, UNLESS OTHERWISE NOTED.
7. EXISTING UTILITIES ARE SHOWN ON DEVELOPMENT PLAN.
8. HYDRO TEST TO XXX P.S.I. MIN 2 HOUR DURATION AT THE LOWEST POINT IN THE WATER MAIN.
9. BUTTERFLY VALVES TO BE DRESSER 450 OR KENNEDY ADAP-TORQ, CLOW STYLE #2810.
10. CONTRACTOR SHALL USE DOUBLE STRAP SERVICE CLAMPS OR H.D. TAPPED COUPLINGS WHEN CONNECTING SERVICE LATERALS.
11. CONTRACTOR SHALL NOTIFY CITY 48 HOURS PRIOR TO SHUTDOWN OF WATER MAINS.
12. INSTALLATION SHALL CONFORM TO MANUFACTURERS SPECIFICATIONS AND LATEST CITY SPECIFICATIONS AND/OR AS DIRECTED BY THE ENGINEER.
13. METER BOXES IN THE SIDEWALK SHALL HAVE CAST IRON LIDS.
14. PROVIDE A MINIMUM OF 10 FOOT SEPARATION BETWEEN SEWER AND WATER LATERALS WHERE POSSIBLE.
15. BACKFILL COMPACTION AND RE-SURFACING IN EXISTING STREETS SHALL CONFORM TO STREET DIVISION SPECIFICATIONS (LATEST REVISION THEREOF).
16. ALL VALVES INSTALLED BY THE CONTRACTOR SHALL BE ACCESSIBLE FOR OPERATION WITH COMPLETE VALVE BOX TO GRADE DIRECTLY FOLLOWING CONNECTION TO EXISTING WATER SYSTEM.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE SIZING OF THRUST BLOCKS BASED ON FIELD CONDITIONS. THE SIZE SHOWN ON THE PLANS IS THE MINIMUM SIZE REQUIRED.
18. SAND BEDDING AND BACKFILL TO A DEPTH OF 12" ABOVE PIPE IS REQUIRED.
19. IF WATER MAINS ARE ABANDONED AS A RESULT OF THIS PROJECT THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RECONNECTION OR REPLACEMENT OF SERVICE LATERALS AS DIRECTED BY THE CITY INSPECTOR. SERVICE LATERALS THAT ARE REPLACED SHALL BE THE SAME SIZE AS EXISTING.
20. INTERIOR WATER SYSTEM INCLUDING FIRE HYDRANTS SHALL BE COMPLETE AND ACCEPTED BY THE CITY BEFORE ANY FRAMING PERMITS WILL BE ISSUED. CONTACT CITY FIRE MARSHALL FOR INTERIOR SYSTEM INSPECTIONS.
21. CONTACT THE MUNICIPAL WATER DIVISION 48 HOURS PRIOR TO ANY WATER SYSTEM CONSTRUCTION.
22. WHERE DESIGNATED ON THE PLANS, THE CONTRACTOR SHALL INSTALL POLY PIGS AND POLY PIG OUTLETS. THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS IN ADVANCE TO REQUEST THE CITY TO FLUSH POLY PIGS THROUGH THE MAINS. THE FLUSHING PROCESS SHALL TAKE PLACE PRIOR TO HYDROSTATIC TESTING CHLORINATION AND FINAL FLUSHING OF THE MAIN BY THE CONTRACTOR. FINAL CONNECTIONS SHALL NOT BE MADE PRIOR TO BACTERIA TEST SAMPLES THAT MEET CITY REQUIREMENTS AND AUTHORIZATION FOR TIE-INS BY THE CITY INSPECTOR.
23. A COMPLETE SET OF AS BUILT DRAWINGS SHALL BE SUBMITTED TO THE MUNICIPAL UTILITIES DEPARTMENT PRIOR TO FINAL INSPECTION.
24. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING CITY WATER SYSTEM VALVES.
25. WATER VALVE CANS SHALL BE PER SPEC A-20514 (SLIP CAN TYPE).

SEWER GENERAL NOTES

1. SEWER INSTALLATION IS TO BE IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS AND DETAIL DRAWINGS OF THE CITY OF REDLANDS LATEST REVISION THEREOF.
2. ALL SEWER PIPE ELEVATIONS GIVEN REFER TO THE FLOW LINE INVERT ELEVATIONS.
3. THE APPROXIMATE LOCATIONS OF KNOWN EXISTING UNDERGROUND UTILITY LINES ARE SHOWN ON THESE PLANS. THE LINES ARE PLOTTED FROM A COMBINATION OF RECORD AND FIELD DATA. THE CITY HAS TRIED WITHIN ITS AVAILABLE RESOURCES TO LOCATE ALL SUCH FACILITIES WITH REASONABLE ACCURACY. BY ENTERING INTO A CONTRACT FOR THIS WORK THE CONTRACTOR AGREES, PRIOR TO ANY EXCAVATION TO NOTIFY ALL UTILITY AND IRRIGATION COMPANIES OPERATING IN THE AREA OF THE WORK AND TO DETERMINE WITH AS MUCH ACCURACY AS IS NEEDED TO PERFORM THIS WORK, THE EXACT LOCATIONS OF ALL UNDERGROUND MAIN OR SERVICE UTILITY FACILITIES.
4. SAND BEDDING AND BACKFILL TO A DEPTH OF 12" ABOVE PIPE IS REQUIRED FOR ALL SEWER PIPE MAY BE REQUIRED IF IN THE OPINION OF THE CITY, THE NATIVE BACKFILL MATERIAL IS DEEMED UNSUITABLE.
5. PVC SEWER IS NOT PERMITTED ON ANY HORIZONTAL OR VERTICAL CURVE.
6. THE CONTRACTOR SHALL AIR TEST THE SEWER SYSTEM IN ACCORDANCE WITH CITY STANDARDS AFTER ALL OTHER UTILITIES HAVE BEEN INSTALLED AND COMPLETED WITHIN THE TRACT OR DEVELOPMENT. IN ADDITION, AFTER FINAL AIR TEST, THE CONTRACTOR SHALL CONNECT THE SEWER LATERALS TO THE HOUSE LATERALS AT THE PROPERTY.
7. SEWER LATERALS SHALL BE CLEARLY MARKED WITH AN "L" CHISELED IN CURB FACE.
8. REQUIRED SEPARATION OF THE WATER AND SEWER MAINS AND LATERALS SHALL BE STRICTLY ADHERED TO. INSTALLATION SHALL COMPLY WITH THE STATE DEPARTMENT OF HEALTH REGULATIONS AND BE A MINIMUM OF 10 FEET SEPARATION.
9. SEWER LATERAL LOCATIONS SHALL NOT BE CHANGED MORE THAN 3 FEET (HORIZONTAL) WITHOUT AUTHORIZATION FROM THE CITY.
10. IF PLASTIC SEWER PIPE IS USED, A MANDREL TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE CITY INSPECTOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE MUNICIPAL UTILITIES DEPARTMENT. LATEST REVISIONS EXCEPT THE MANDREL SHALL BE SUPPLIED BY THE PIPE MANUFACTURER APPROVED BY CITY OF REDLANDS AND SHALL BE PULLED THROUGH THE PIPE BY HAND. PVC PIPE - MAXIMUM 15" DIAMETER ALLOWABLE.
11. PRIOR TO PAVING OF STREETS OVER NEW SEWER MAIN ALL COMPACTION TESTS, AIR TESTS, BALLING AND MANDREL TESTS SHALL BE COMPLETED AND APPROVED BY THE CITY AND A COMPLETE SET OF AS-BUILT DRAWINGS SUBMITTED TO THE MUNICIPAL UTILITIES DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF AS-BUILT DRAWINGS.
12. PRIOR TO ACCEPTANCE BY THE CITY, NEW SEWER LINE SHALL REMAIN PLUGGED AT OR PHYSICALLY SEPARATED FROM THE DOWNSTREAM MAIN HOLE AND STREETS SHALL BE PAVED.
13. THE CONTRACTOR SHALL REPLACE EXISTING STRIPING AS NECESSARY. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FOR SEWER CONSTRUCTION FROM THE CITY OF REDLANDS PUBLIC WORKS DEPARTMENT PRIOR TO COMMENCEMENT OF WORK.
14. PVC SEWER PIPE AND FITTINGS SHALL CONFORM TO AMERICAN SOCIETY FOR TESTING AND MATERIALS (A.S.T.M.) DESIGNATION D-3034, 15" MAXIMUM SIZE, SDR 35 LATEST REVISION.
15. THE JOINTING OF PVC SEWER PIPE SHALL BE BY USING ELECTROMETRIC GASKET JOINTS. THE CRITICAL SEALING DIMENSIONS OF THE BELL, SPIGOT, AND GASKET SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD DIMENSIONS AND TOLERANCES.
16. MANHOLE RIM ELEVATIONS INDICATED HEREON ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL RIMS TO FINAL FINISH GRADE, IN COORDINATION WITH STREET IMPROVEMENTS.
17. ALL SEWER STATIONS ARE CENTERLINE ON SEWER MAIN UNLESS OTHERWISE INDICATED.
18. DURING THE PERIOD OF CONSTRUCTION THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN ALL WARNINGS, SIGNS, BARRICADES AND OTHER SAFETY MEASURES IN CONFORMANCE WITH THE STATE MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES, LATEST EDITION. THE CONTRACTOR SHALL PROVIDE SAFE AND CONTINUOUS PASSAGE FOR PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES.



SEWER DATA TABLE

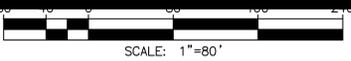
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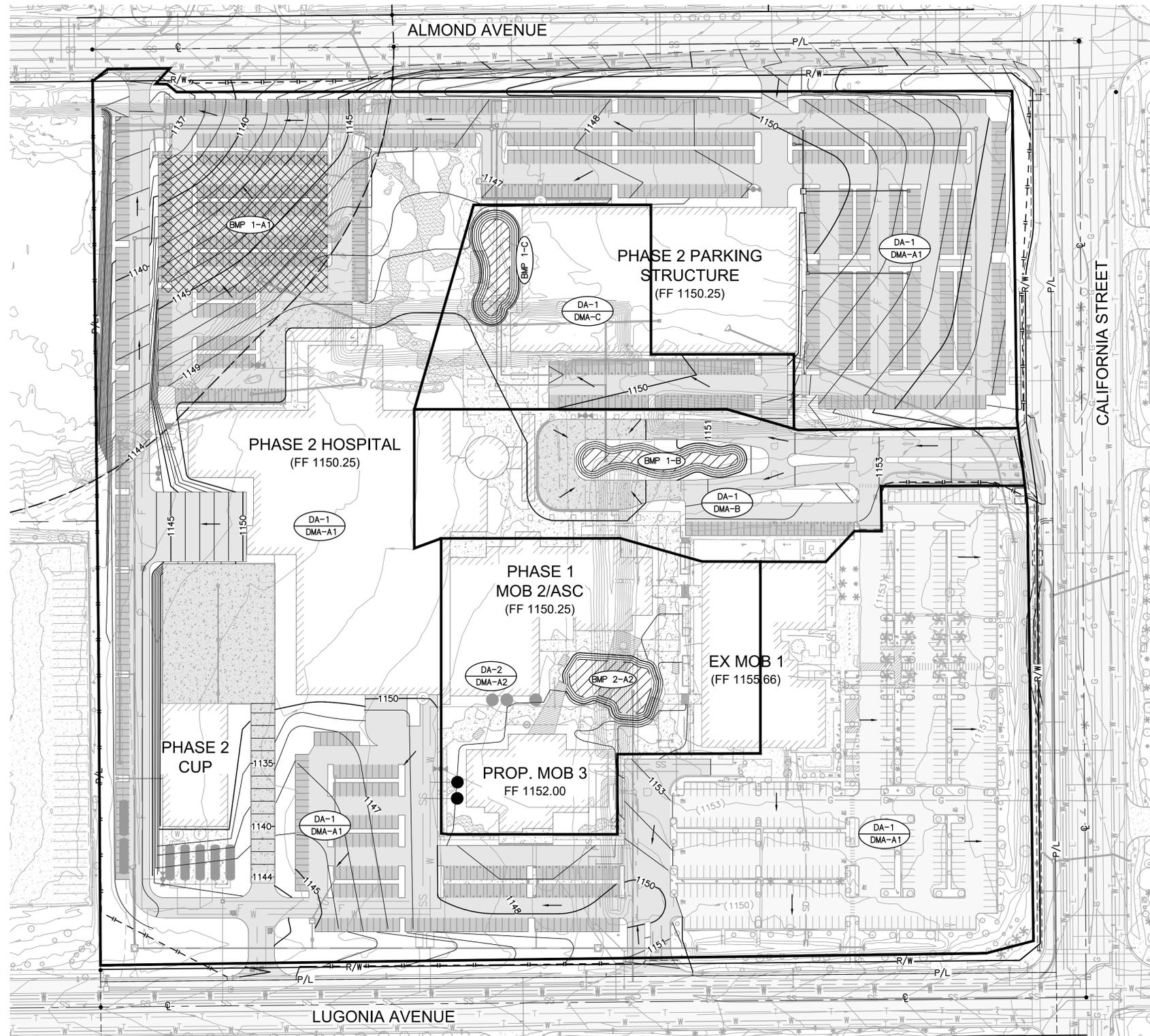
WATER DATA TABLE

ID	BEARING/Delta	LENGTH	SIZE/TYPE
1	N 90°00'00" E	37.90'	6" PVC (C900 DR18)

FIRE DATA TABLE

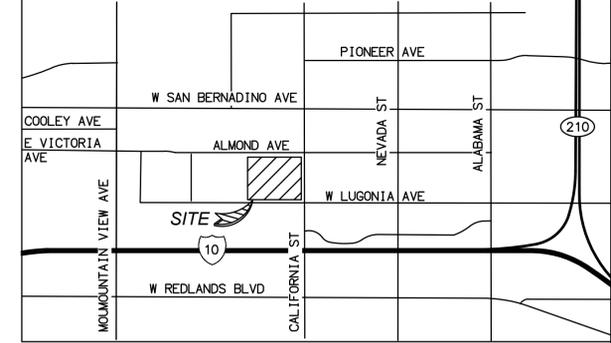
ID	BEARING/Delta	RADIUS	LENGTH	SIZE/TYPE
1	N 90°00'00" E	--	36.43'	8" PVC (C900 DR14)
2	N 00°00'00" E	--	127.78'	8" PVC (C900 DR14)



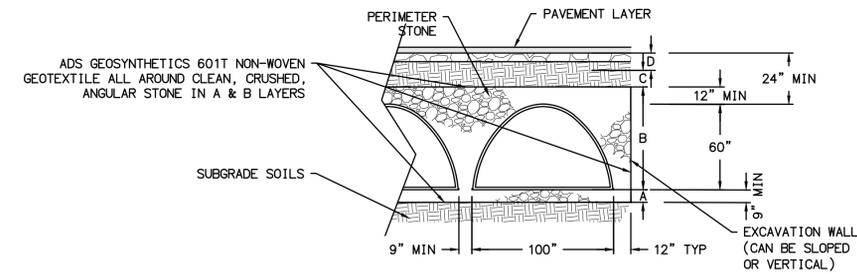


LEGEND

- STORM WATER BASIN
- UNDERGROUND INFILTRATION CHAMBERS
- DRAINAGE BOUNDARY
- FLOW ARROW
- FLOW DIRECTION
- DMA/DA ID
- BMP ID



VICINITY MAP
N.T.S.

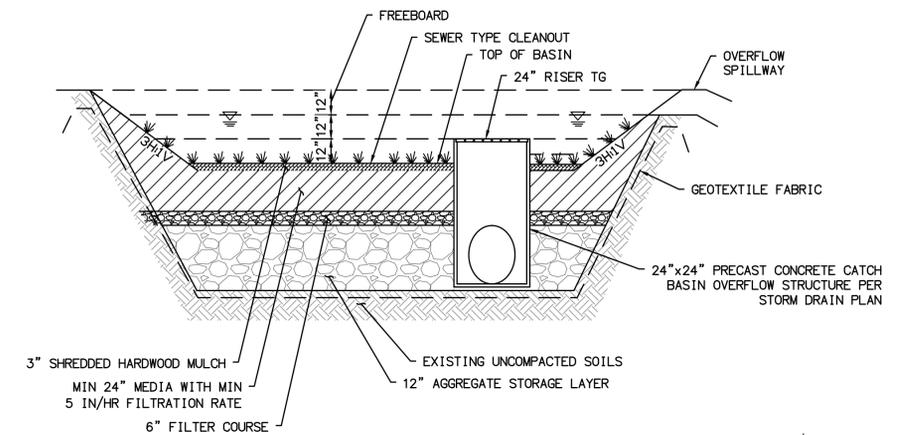


NOTES:

1. SECTION A - FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER
2. SECTION B - EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.
3. SECTION C - INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.
4. SECTION D - FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.

TYPICAL UNDERGROUND ADS STORMWATER CHAMBER INFILTRATION DETAIL

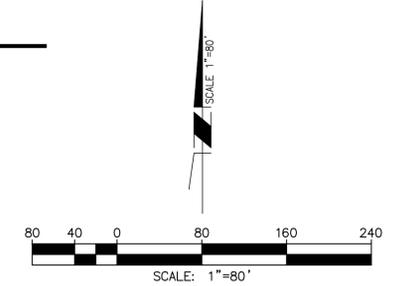
SCALE: NOT TO SCALE



TYPICAL BIO-RETENTION BASIN DETAIL

SCALE: NOT TO SCALE

DA	DMA	TOTAL AREA (SF)	IMPERVIOUS RATIO	DMA RUNOFF FACTOR	DESIGN CAPTURE VOLUME (CF)	BMP PROPOSED SURFACE AREA (SF)	VOLUME RETAINED BY BMP (CF)	BMP TYPE
1	A1	1,197,394	85%	0.66	91,866	43,500	92,438	UNDERGROUND INFILTRATION (SIZED FOR ULTIMATE PHASE 4)
1	B	126,200	85%	0.66	9,682	4,200	9,765	BIORETENTION WITH NO UNDERDRAIN (SIZED FOR ULTIMATE PHASE 4)
1	C	109,300	85%	0.66	8,386	4,000	9,300	BIORETENTION WITH NO UNDERDRAIN (SIZED FOR ULTIMATE PHASE 4)
2	A2	152,000	85%	0.66	11,662	6,035	14,031	BIORETENTION WITH NO UNDERDRAIN (SIZED FOR ULTIMATE PHASE 4)



**SITE PHASING - 3
BMP PLAN**

SEPTEMBER 09, 2022

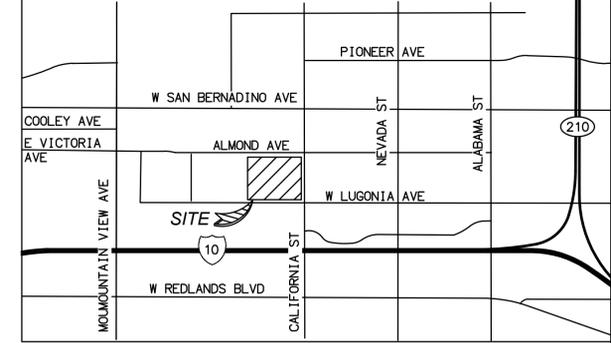
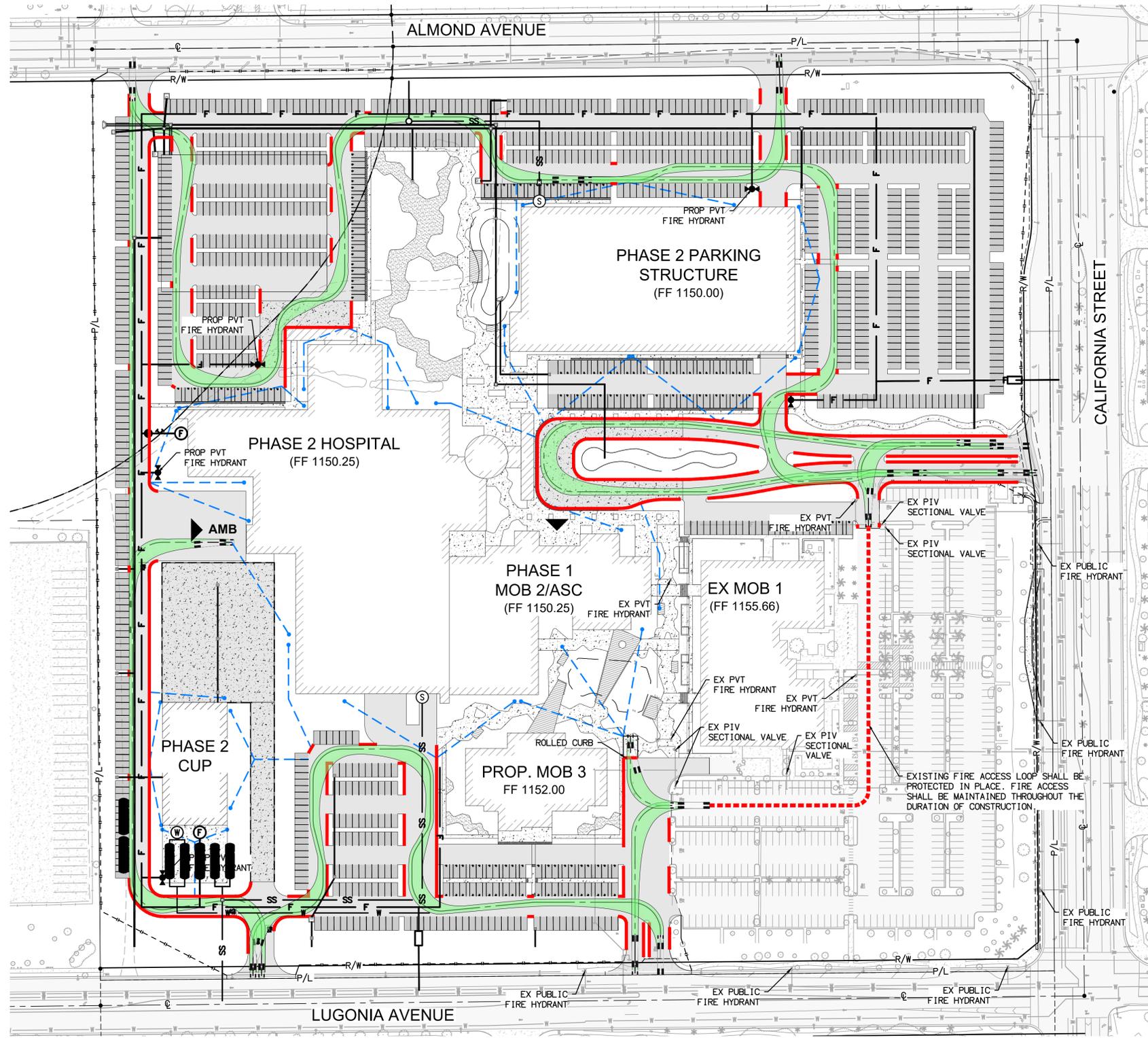


REDLANDS MEDICAL CENTER

Sheet: **C4.03**

CITY OF REDLANDS

Site Development Plan Number:	PHONE: 626.405.6333
OWNER: Kaiser Foundation Hospitals	ADDRESS: 383 E Walnut Street Pasadena, CA 91108
ARCHITECT/ENGINEER/DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	



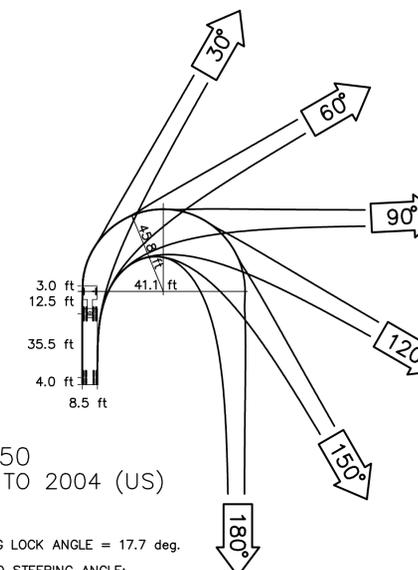
VICINITY MAP
N.T.S.

FIRE PROTECTION LEGEND

- PROPOSED FIRE HYDRANT
- PROPOSED PIV
- PROPOSED FDC
- PROPOSED FIRE MAIN
- HOSE PULL (150' MAX)
- RED PAINTED CURB
- FIRE TRUCK TURNING MOVEMENT
- EXISTING FIRE HYDRANT
- EXISTING PIV
- EXISTING FDC
- EXISTING FIRE MAIN
- EXISTING FIRE ROUTE

FIRE NOTES

1. FIRE APPARATUS ACCESS ROADS AND WATER SUPPLIES FOR FIRE PROTECTION, SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING TIME OF CONSTRUCTION. CFC 501.4
2. STREET OR ROAD SIGNS - TEMPORARY SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES. SIGNS SHALL BE OF AN APPROVED SIZE, WEATHER RESISTANT AND BE MAINTAINED UNTIL REPLACED BY PERMANENT SIGNS. CFC 505.2
3. FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE SURFACED SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. CFC 503.2.3
4. POST INDICATOR VALVES, FIRE DEPARTMENT CONNECTIONS, AND ALARM BELL ARE TO BE LOCATED ON THE ADDRESS/ACCESS SIDE OF THE BUILDING.
5. CLEAR SPACE AROUND HYDRANTS - A THREE (3) FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS, EXCEPT AS OTHERWISE REQUIRED OR APPROVED. CFC 507.5.5
6. PHYSICAL PROTECTION - WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, GUARD POSTS OR OTHER APPROVED MEANS SHALL COMPLY WITH SECTION 312. CFC 507.5.6
7. DEAD ENDS - DEAD END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED AREA FOR TURNING AROUND FIRE APPARATUS. CFC 503.2.5
8. SECURITY GATES - WHERE SECURITY GATES ARE INSTALLED, THEY SHALL HAVE AN APPROVED MEANS OF EMERGENCY OPERATION. THE SECURITY GATES AND EMERGENCY OPERATION SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM G 2200.
9. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE ACCESS TO ALL HYDRANTS, VALVES, FIRE DEPARTMENT CONNECTIONS, PULL STATIONS, EXTINGUISHERS, SPRINKLER RISERS, ALARM CONTROL PANELS, RESCUE WINDOWS AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES. VEGETATION OF BUILDING FEATURES SHALL NO OBSTRUCT ADDRESS NUMBERS OR INHIBIT THE FUNCTIONING OF ALARM BELLS, HORNS OR STROBES.
10. APPROVED DOCUMENTS - CONSTRUCTION DOCUMENTS APPROVED BY THE FIRE CODE OFFICIAL ARE APPROVED WITH THE INTENT THAT SUCH CONSTRUCTION DOCUMENTS COMPLY IN ALL RESPECTS WITH THIS CODE. REVIEW AND APPROVAL BY THE FIRE CODE OFFICIAL SHALL NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY OF COMPLIANCE WITH THIS CODE. CFC 105.4.4



Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Tractor Track	: 8.50	Steering Angle	: 17.7
Trailer Width	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

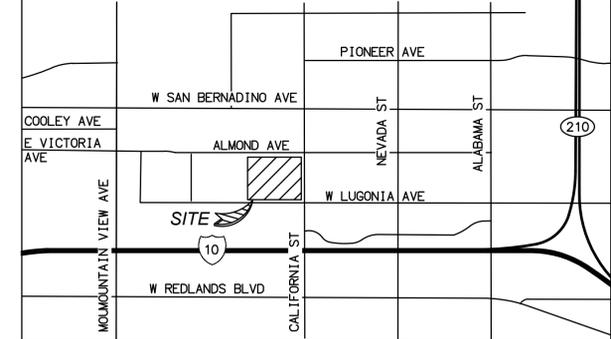
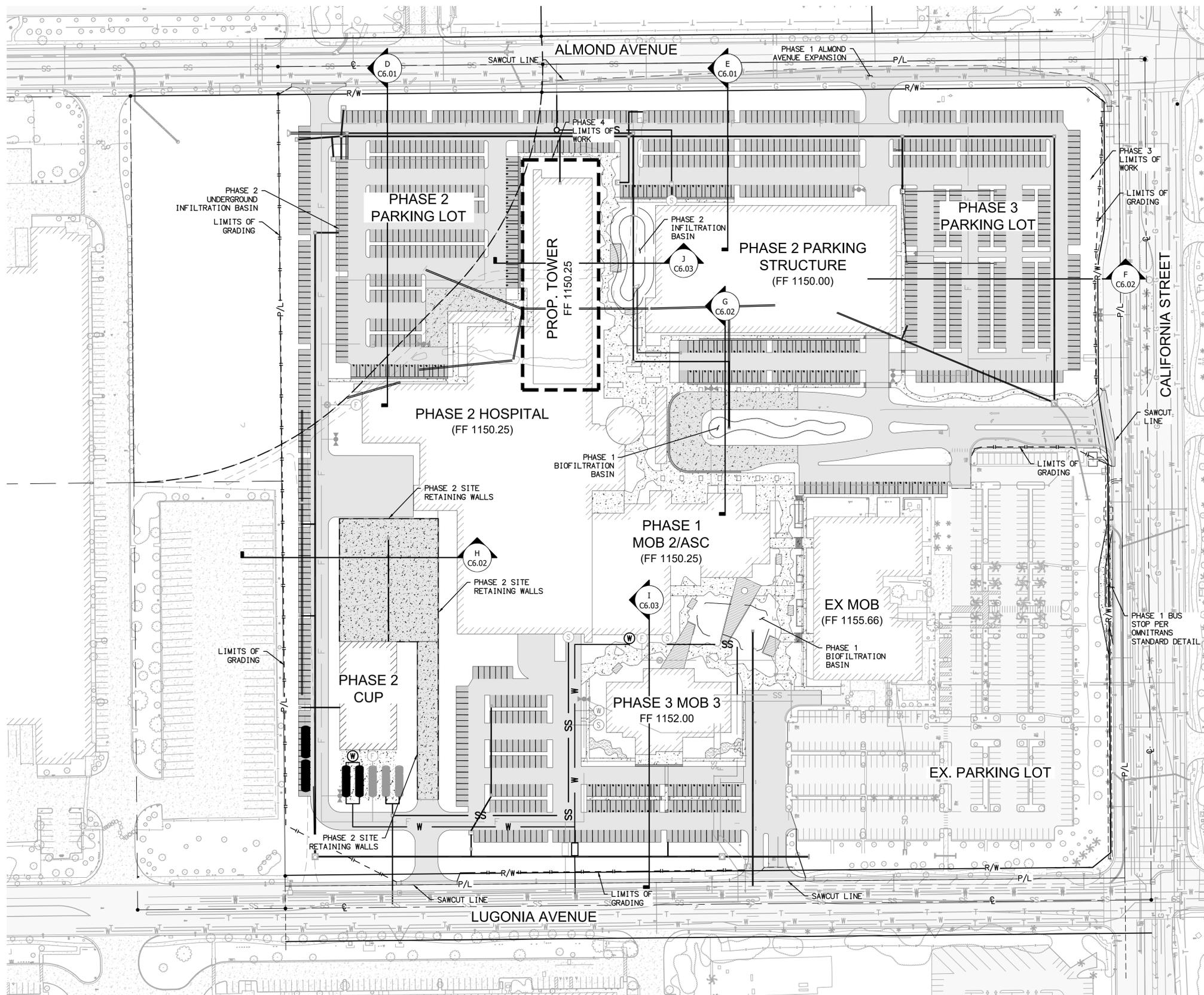
WB-50
AASHTO 2004 (US)
[ft]

STEERING LOCK ANGLE = 17.7 deg.

ACHIEVED STEERING ANGLE:

- 30 deg. SWEEP ANGLE: 14.4 deg.
- 60 deg. SWEEP ANGLE: 17.1 deg.
- 90 deg. SWEEP ANGLE: 17.6 deg.
- 120 deg. SWEEP ANGLE: 17.7 deg.
- 150 deg. SWEEP ANGLE: 17.7 deg.
- 180 deg. SWEEP ANGLE: 17.7 deg.

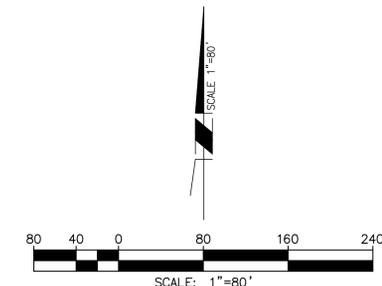




VICINITY MAP
N.T.S.

LEGEND

RIGHT OF WAY	---
PROPERTY LINE	---
CURB AND GUTTER	---
AC PAVEMENT	▨
HEAVY VEHICULAR AC PAVEMENT	▨
HEAVY VEHICULAR CONCRETE PAVEMENT	▨
PEDESTRIAN CONCRETE PAVEMENT	▨
DG PATH	▨
PROPOSED BUILDING	▨
TRUNCATED DOMES	▨
LIMITS OF WORK LINE	---



SITE PHASING - 4
SITE PLAN

SEPTEMBER 09, 2022

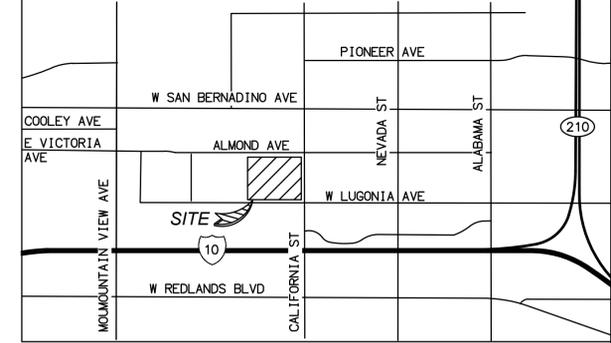
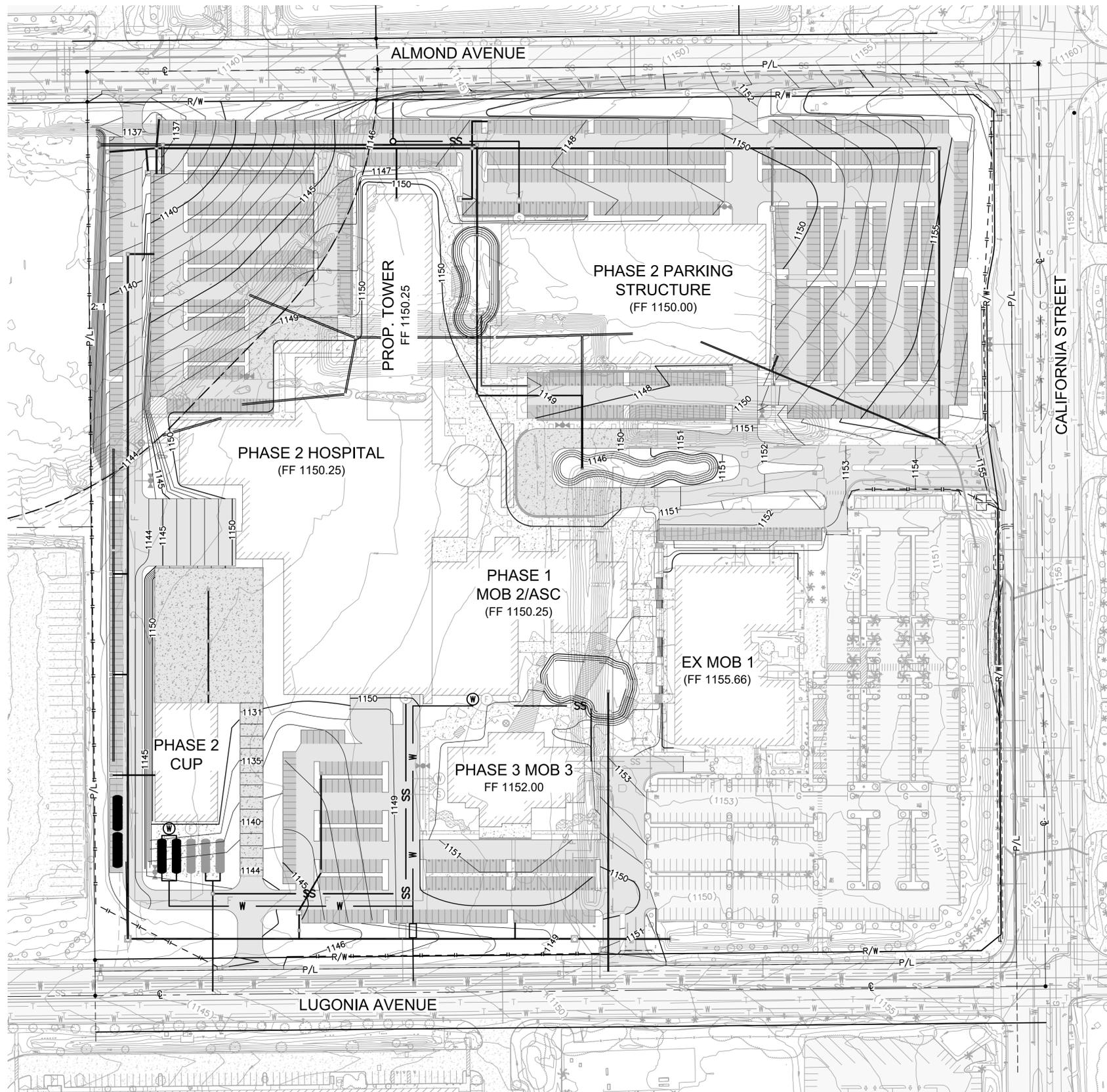


REDLANDS MEDICAL CENTER

Sheet: **C5.00**

CITY OF REDLANDS

Site Development Plan Number:	PHONE: 626.405.6333
OWNER: Kaiser Foundation Hospitals	ADDRESS: 393 E Walnut Street Pasadena, CA 91108
ARCHITECT/ENGINEER/DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	



VICINITY MAP
N.T.S.

GRADING GENERAL NOTES

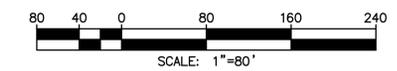
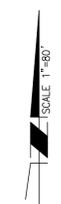
- ALL GRADING AND ON-SITE CONSTRUCTION SHALL MEET THE MINIMUM REQUIREMENTS OF THE UNIFORM BUILDING CODE, LATEST EDITION, APPENDIX CHAPTER 33 AND THE CALIFORNIA BUILDING CODE, LATEST EDITION. THESE CODES ARE AMENDED IN THE CITY OF REDLANDS MUNICIPAL CODE. IF CONTRADICTIONS ARISE BETWEEN PROVISIONS IN THESE PLANS FROM THOSE IN THE VARIOUS CODES, THE MOST RESTRICTIVE PROVISIONS WILL GOVERN.
- AFTER THE GRADING PERMIT HAS BEEN ISSUED, THE PROJECT MANAGER SHALL CONVENE AN ON-SITE PRECONSTRUCTION MEETING WITH THE CITY OF REDLANDS INSPECTOR, THE ENGINEER OF RECORD, THE GEOTECHNICAL ENGINEER AND THE GRADING CONTRACTOR. AT THIS MEETING, THE PROJECT SUPERINTENDENT SHALL BE IDENTIFIED AND AN EMERGENCY CONTACT PERSON SHALL BE IDENTIFIED TO THE INSPECTOR.
- USE BEST MANAGEMENT PRACTICES (BMPs) TO PREVENT AND CONTAIN ILLEGAL DISCHARGES WITHIN THE PROJECT BOUNDARY. THIS WILL BE IN EFFECT FOR THE ENTIRE DURATION OF THE PROJECT CONSTRUCTION TO ITS COMPLETION.
- BUILDING PERMITS SHALL NOT BE ISSUED UNTIL THE PROJECT SITE HAS BEEN GRADED AND THE ENGINEER OF RECORD HAS CERTIFIED TO THE SATISFACTION OF THE CITY ENGINEER THAT THE SITE HAS BEEN PREPARED ACCORDING TO THE RECOMMENDATIONS OF THE SOILS REPORT(S) AND TO THE SPECIFICATIONS OF THE APPROVED GRADING PLANS. IN ADDITION, A FINAL COMPACTION REPORT SHALL BE SUBMITTED TO BOTH THE INSPECTOR AND THE BUILDING OFFICIAL FOR APPROVAL.
- A WRITTEN REPORT BY A GEOTECHNICAL ENGINEER IS TO BE FURNISHED TO BOTH THE CITY'S MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT AND BUILDING AND SAFETY DIVISION, TO CERTIFY THAT ALL FILL MATERIAL AND MATERIAL UPON WHICH FILL IS TO BE PLACED IS ADEQUATE TO SUPPORT THE LOADS OF THE PROPOSED DEVELOPMENT. THIS REPORT SHALL INCLUDE SOIL TEST DATA ON ALL FILLS OF TWO FEET OR MORE.
- PREPARATION OF THE SITE SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE INSTRUCTIONS OF A GEOTECHNICAL ENGINEER AND ALL FILLS WILL BE MADE UNDER HIS DIRECTION.
- IN NO CASE IS ANY SLOPE TO EXCEED A GRADIENT OF TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE EXISTENCE AND LOCATIONS OF UNDERGROUND UTILITY LINES, STRUCTURES OR IRRIGATION LINES. THE CONTRACTOR IS TO MAKE AN ON-SITE INSPECTION AND NOTIFY ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK OR EXCAVATION TO DETERMINE THE EXACT LOCATION OF ANY AND ALL UNDERGROUND FACILITIES.
- THE CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR CLEARING THE SITE IN PREPARATION FOR CONSTRUCTION.
- THE ENGINEER'S ESTIMATE IS 79,000 CY OF EXCAVATION AND 105,000 CY OF EMBANKMENT FOR THE SITE GRADING. THESE ARE RAW QUANTITIES WITHOUT ALLOWANCES FOR LOSS, SHRINKAGE OR COMPACTION.
- INSTALL FIRE HYDRANTS AS REQUIRED PRIOR TO THE DELIVERY OF ANY BUILDING MATERIAL TO THE SITE.
- BENCHMARK: ENTER PROJECT SPECIFIC DATA HERE. ELEVATION:
- ALL SLOPES THREE FEET OR GREATER MUST BE LANDSCAPED AND IRRIGATED PRIOR TO OCCUPANCY.
- ACREAGE OF THE PROJECT IS: ACRE(S).
- APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL FOR THE CONSTRUCTION OF ANY WALLS, SIDEWALKS, SLABS, PAVING, ETC. TO BE CONSTRUCTED ON-SITE AS SHOWN HEREON. A SEPARATE PERMIT IS REQUIRED FROM THE BUILDING AND SAFETY DIVISION FOR THE CONSTRUCTION OF THESE ON-SITE ITEMS.
- ALL EARTHWORK SHALL CONFORM TO THE PRELIMINARY GEOTECHNICAL AND/OR GEOLOGIC INVESTIGATION REPORT FOR _____ PREPARED BY _____, DATED _____.
- THE ENGINEER OF RECORD MUST SET GRADE STAKES FOR ALL DRAINAGE DEVICES.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY INSPECTIONS PRIOR TO POURING ANY CONCRETE.

LEGEND

MAJOR CONTOUR	
MINOR CONTOUR	
DAYLIGHT LINE	
SAWCUT LINE	
STORM DRAIN	
CURB INLET	
STORM DRAIN MANHOLE	
CATCH BASIN INLET	
CONCRETE HEADWALL	
CONCRETE STRUCTURE INLET	

EARTHWORK

CUT: 79,000 CY
FILL: 105,000 CY
NET: 26,000 CY FILL



**SITE PHASING - 4
GRADING PLAN**

SEPTEMBER 09, 2022

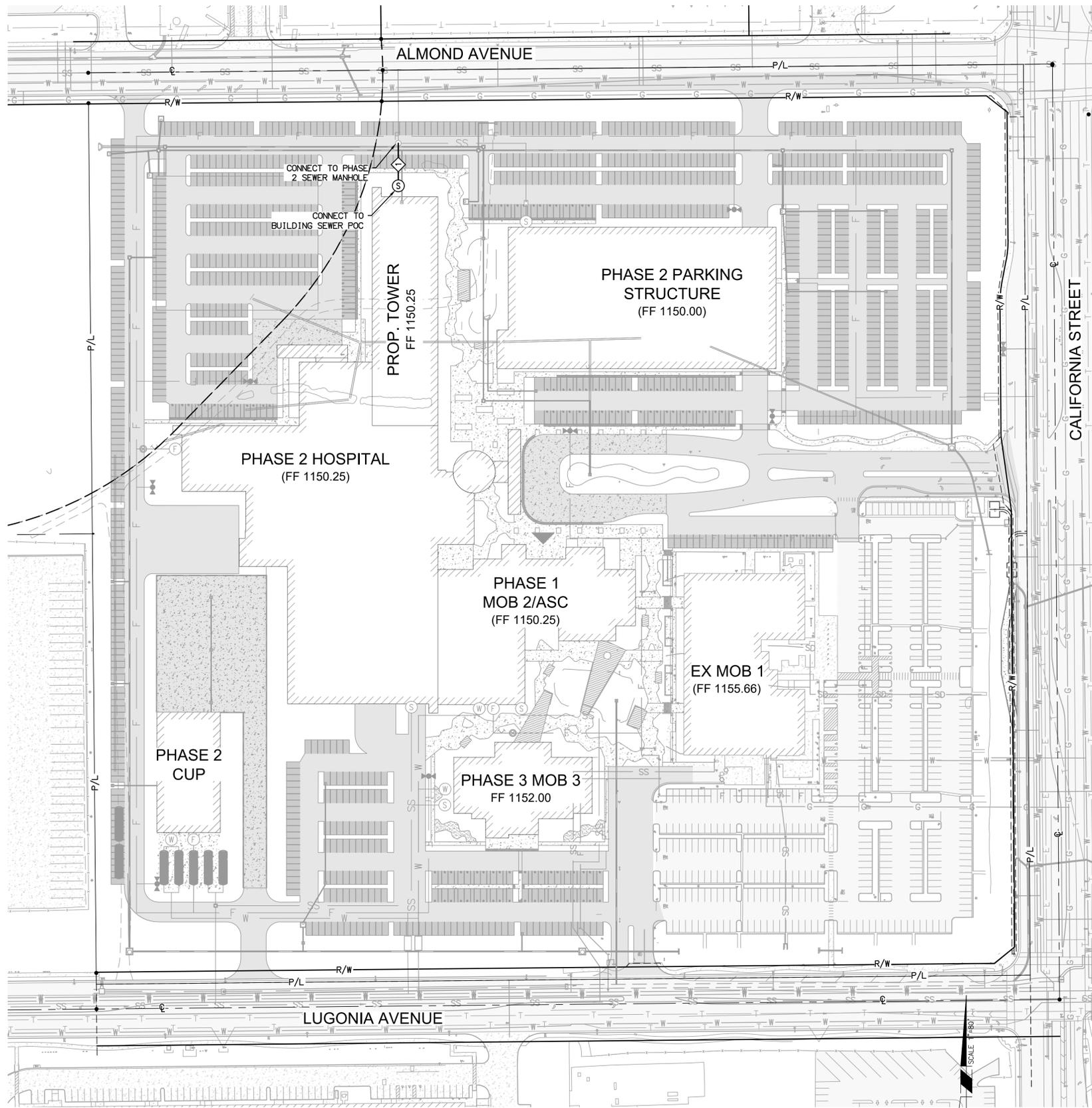


REDLANDS MEDICAL CENTER

Sheet: **C5.01**

CITY OF REDLANDS

Site Development Plan Number:	PHONE: 626.405.6333
OWNER: Kaiser Foundation Hospitals	ADDRESS: 303 E Walnut Street Pasadena, CA 91168
ARCHITECT: ENGINEER: DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
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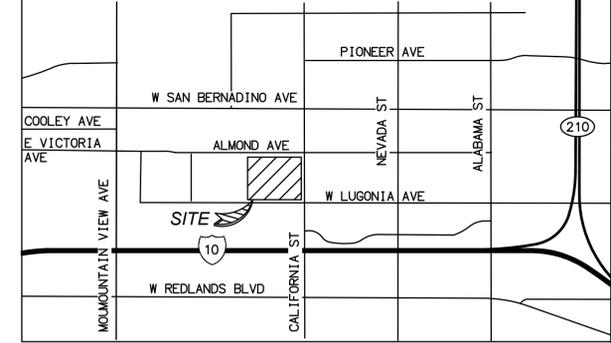


LEGEND

- WATER LINE — W —
- SEWER LINE — SS —
- FIRE LINE — F —
- PROP. FIRE HYDRANT
- EX. FIRE HYDRANT
- UTILITY POC
- UNDERGROUND EMERGENCY TANKS

WATER GENERAL NOTES

1. MATERIAL AND INSTALLATION SHALL CONFORM TO THE CITY OF REDLANDS MUNICIPAL WATER DIVISION STANDARD SPECIFICATION (LATEST REVISION THEREOF).
2. THE APPROXIMATE LOCATIONS OF EXISTING UNDERGROUND UTILITY LINES ARE SHOWN IN THESE PLANS. THE LINES ARE PLOTTED FROM A COMBINATION OF RECORD AND FIELD DATA, AND THE CITY HAS TRIED WITHIN ITS AVAILABLE RESOURCES TO LOCATE ALL SUCH FACILITIES WITH REASONABLE ACCURACY. BY ENTERING INTO A CONTRACT FOR THIS WORK, THE CONTRACTOR AGREES PRIOR TO EXCAVATION TO NOTIFY ALL UTILITY AND IRRIGATION COMPANIES OPERATING IN THE AREA OF THE WORK, AND TO DETERMINE WITH AS MUCH ACCURACY AS IS NEEDED TO PERFORM THIS WORK, THE EXACT LOCATIONS OF ALL UNDERGROUND MAIN OR TRUNKLINE UTILITY FACILITIES.
3. ALL SERVICE CONNECTIONS TO BE MINIMUM 1-INCH COPPER LATERALS.
4. STANDARD WATER MAIN LOCATION IS 7 FEET OFF CURB FACE.
5. THIS DRAWING IS SCHEMATIC ONLY, DO NOT SCALE.
6. THE CONTRACTOR SHALL MAKE ALL WATER MAIN CONNECTIONS TO EXISTING WATER MAINS, UNLESS OTHERWISE NOTED.
7. EXISTING UTILITIES ARE SHOWN ON DEVELOPMENT PLAN.
8. HYDRO TEST TO XXX P.S.I. MIN 2 HOUR DURATION AT THE LOWEST POINT IN THE WATER MAIN.
9. BUTTERFLY VALVES TO BE DRESSER 450 OR KENNEDY ADAP-TORQ, CLOW STYLE #2810.
10. CONTRACTOR SHALL USE DOUBLE STRAP SERVICE CLAMPS OR H.D. TAPPED COUPLINGS WHEN CONNECTING SERVICE LATERALS.
11. CONTRACTOR SHALL NOTIFY CITY 48 HOURS PRIOR TO SHUTDOWN OF WATER MAINS.
12. INSTALLATION SHALL CONFORM TO MANUFACTURERS SPECIFICATIONS AND LATEST CITY SPECIFICATIONS AND/OR AS DIRECTED BY THE ENGINEER.
13. METER BOXES IN THE SIDEWALK SHALL HAVE CAST IRON LIDS.
14. PROVIDE A MINIMUM OF 10 FOOT SEPARATION BETWEEN SEWER AND WATER LATERALS WHERE POSSIBLE.
15. BACKFILL COMPACTION AND RE-SURFACING IN EXISTING STREETS SHALL CONFORM TO STREET DIVISION SPECIFICATIONS (LATEST REVISION THEREOF).
16. ALL VALVES INSTALLED BY THE CONTRACTOR SHALL BE ACCESSIBLE FOR OPERATION WITH COMPLETE VALVE BOX TO GRADE DIRECTLY FOLLOWING CONNECTION TO EXISTING WATER SYSTEM.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE SIZING OF THRUST BLOCKS BASED ON FIELD CONDITIONS. THE SIZE SHOWN ON THE PLANS IS THE MINIMUM SIZE REQUIRED.
18. SAND BEDDING AND BACKFILL TO A DEPTH OF 12" ABOVE PIPE IS REQUIRED.
19. IF WATER MAINS ARE ABANDONED AS A RESULT OF THIS PROJECT THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RECONNECTION OR REPLACEMENT OF SERVICE LATERALS AS DIRECTED BY THE CITY INSPECTOR. SERVICE LATERALS THAT ARE REPLACED SHALL BE THE SAME SIZE AS EXISTING.
20. INTERIOR WATER SYSTEM INCLUDING FIRE HYDRANTS SHALL BE COMPLETE AND ACCEPTED BY THE CITY BEFORE ANY FRAMING PERMITS WILL BE ISSUED. CONTACT CITY FIRE MARSHALL FOR INTERIOR SYSTEM INSPECTIONS.
21. CONTACT THE MUNICIPAL WATER DIVISION 48 HOURS PRIOR TO ANY WATER SYSTEM CONSTRUCTION.
22. WHERE DESIGNATED ON THE PLANS, THE CONTRACTOR SHALL INSTALL POLY PIGS AND POLY PIG OUTLETS. THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS IN ADVANCE TO REQUEST THE CITY TO FLUSH POLY PIGS THROUGH THE MAINS. THE FLUSHING PROCESS SHALL TAKE PLACE PRIOR TO HYDROSTATIC TESTING CHLORINATION AND FINAL FLUSHING OF THE MAIN BY THE CONTRACTOR. FINAL CONNECTIONS SHALL NOT BE MADE PRIOR TO BACTERIA TEST SAMPLES THAT MEET CITY REQUIREMENTS AND AUTHORIZATION FOR TIE-INS BY THE CITY INSPECTOR.
23. A COMPLETE SET OF AS BUILT DRAWINGS SHALL BE SUBMITTED TO THE MUNICIPAL UTILITIES DEPARTMENT PRIOR TO FINAL INSPECTION.
24. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING CITY WATER SYSTEM VALVES.
25. WATER VALVE CANS SHALL BE PER SPEC A-20514 (SLIP CAN TYPE).



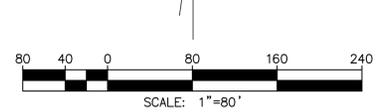
VICINITY MAP
N.T.S.

SEWER GENERAL NOTES

1. SEWER INSTALLATION IS TO BE IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS AND DETAIL DRAWINGS OF THE CITY OF REDLANDS LATEST REVISION THEREOF.
2. ALL SEWER PIPE ELEVATIONS GIVEN REFER TO THE FLOW LINE INVERT ELEVATIONS.
3. THE APPROXIMATE LOCATIONS OF KNOWN EXISTING UNDERGROUND UTILITY LINES ARE SHOWN ON THESE PLANS. THE LINES ARE PLOTTED FROM A COMBINATION OF RECORD AND FIELD DATA. THE CITY HAS TRIED WITHIN ITS AVAILABLE RESOURCES TO LOCATE ALL SUCH FACILITIES WITH REASONABLE ACCURACY. BY ENTERING INTO A CONTRACT FOR THIS WORK THE CONTRACTOR AGREES, PRIOR TO ANY EXCAVATION TO NOTIFY ALL UTILITY AND IRRIGATION COMPANIES OPERATING IN THE AREA OF THE WORK AND TO DETERMINE WITH AS MUCH ACCURACY AS IS NEEDED TO PERFORM THIS WORK, THE EXACT LOCATIONS OF ALL UNDERGROUND MAIN OR SERVICE UTILITY FACILITIES.
4. SAND BEDDING AND BACKFILL TO A DEPTH OF 12" ABOVE PIPE IS REQUIRED FOR ALL SEWER PIPE MAY BE REQUIRED IF IN THE OPINION OF THE CITY, THE NATIVE BACKFILL MATERIAL IS DEEMED UNSUITABLE.
5. PVC SEWER IS NOT PERMITTED ON ANY HORIZONTAL OR VERTICAL CURVE.
6. THE CONTRACTOR SHALL AIR TEST THE SEWER SYSTEM IN ACCORDANCE WITH CITY STANDARDS AFTER ALL OTHER UTILITIES HAVE BEEN INSTALLED AND COMPLETED WITHIN THE TRACT OR DEVELOPMENT. IN ADDITION, AFTER FINAL AIR TEST, THE CONTRACTOR SHALL CONNECT THE SEWER LATERALS TO THE HOUSE LATERALS AT THE PROPERTY.
7. SEWER LATERALS SHALL BE CLEARLY MARKED WITH AN "L" CHISELED IN CURB FACE.
8. REQUIRED SEPARATION OF THE WATER AND SEWER MAINS AND LATERALS SHALL BE STRICTLY ADHERED TO. INSTALLATION SHALL COMPLY WITH THE STATE DEPARTMENT OF HEALTH REGULATIONS AND BE A MINIMUM OF 10 FEET SEPARATION.
9. SEWER LATERAL LOCATIONS SHALL NOT BE CHANGED MORE THAN 3 FEET (HORIZONTAL) WITHOUT AUTHORIZATION FROM THE CITY.
10. IF PLASTIC SEWER PIPE IS USED, A MANDREL TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE CITY INSPECTOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE MUNICIPAL UTILITIES DEPARTMENT. LATEST REVISIONS EXCEPT THE MANDREL SHALL BE SUPPLIED BY THE PIPE MANUFACTURER APPROVED BY CITY OF REDLANDS AND SHALL BE PULLED THROUGH THE PIPE BY HAND. PVC PIPE-MAXIMUM 15" DIAMETER ALLOWABLE.
11. PRIOR TO PAVING OF STREETS OVER A NEW SEWER MAIN ALL COMPACTION TESTS, AIR TESTS, BALLING AND MANDREL TESTS SHALL BE COMPLETED AND APPROVED BY THE CITY AND A COMPLETE SET OF AS-BUILT DRAWINGS SUBMITTED TO THE MUNICIPAL UTILITIES DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF AS-BUILT DRAWINGS.
12. PRIOR TO ACCEPTANCE BY THE CITY, NEW SEWER LINE SHALL REMAIN PLUGGED AT OR PHYSICALLY SEPARATED FROM THE DOWNSTREAM MANHOLE AND STREETS SHALL BE PAVED.
13. THE CONTRACTOR SHALL REPLACE EXISTING STRIPING AS NECESSARY. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FOR SEWER CONSTRUCTION FROM THE CITY OF REDLANDS PUBLIC WORKS DEPARTMENT PRIOR TO COMMENCEMENT OF WORK.
14. PVC SEWER PIPE AND FITTINGS SHALL CONFORM TO AMERICAN SOCIETY FOR TESTING AND MATERIALS (A.S.T.M.) DESIGNATION D-3034, 15" MAXIMUM SIZE, SDR 35 LATEST REVISION.
15. THE JOINTING OF PVC SEWER PIPE SHALL BE BY USING ELECTROMETRIC GASKET JOINTS. THE CRITICAL SEALING DIMENSIONS OF THE BELL, SPIGOT, AND GASKET SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD DIMENSIONS AND TOLERANCES.
16. MANHOLE RIM ELEVATIONS INDICATED HEREON ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL RIMS TO FINAL FINISH GRADE, IN COORDINATION WITH STREET IMPROVEMENTS.
17. ALL SEWER STATIONS ARE CENTERLINE SEWER MAIN UNLESS OTHERWISE INDICATED.
18. DURING THE PERIOD OF CONSTRUCTION THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN ALL WARNINGS, SIGNS, BARRICADES, AND OTHER SAFETY MEASURES IN CONFORMANCE WITH THE STATE MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES, LATEST EDITION. THE CONTRACTOR SHALL PROVIDE SAFE AND CONTINUOUS PASSAGE FOR PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES.

UNDERGROUND UTILITY NOTE

THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE GENERATED FROM RECORDS AND/OR UTILITY PROVIDER RECORD MAPS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO OTHER EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS. ALL DAMAGES THERE TO CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE APPROPRIATE SPECIFICATIONS AND STANDARDS AT THE EXPENSE OF THE CONTRACTOR.



SEWER DATA TABLE				
NO.	BEARING/DELTA	RADIUS	LENGTH	SIZE/TYPE
1	N 00°00'00" E	--	60.16'	6" PVC (SDR-35)

SITE PHASING - 4
UTILITY PLAN

SEPTEMBER 09, 2022

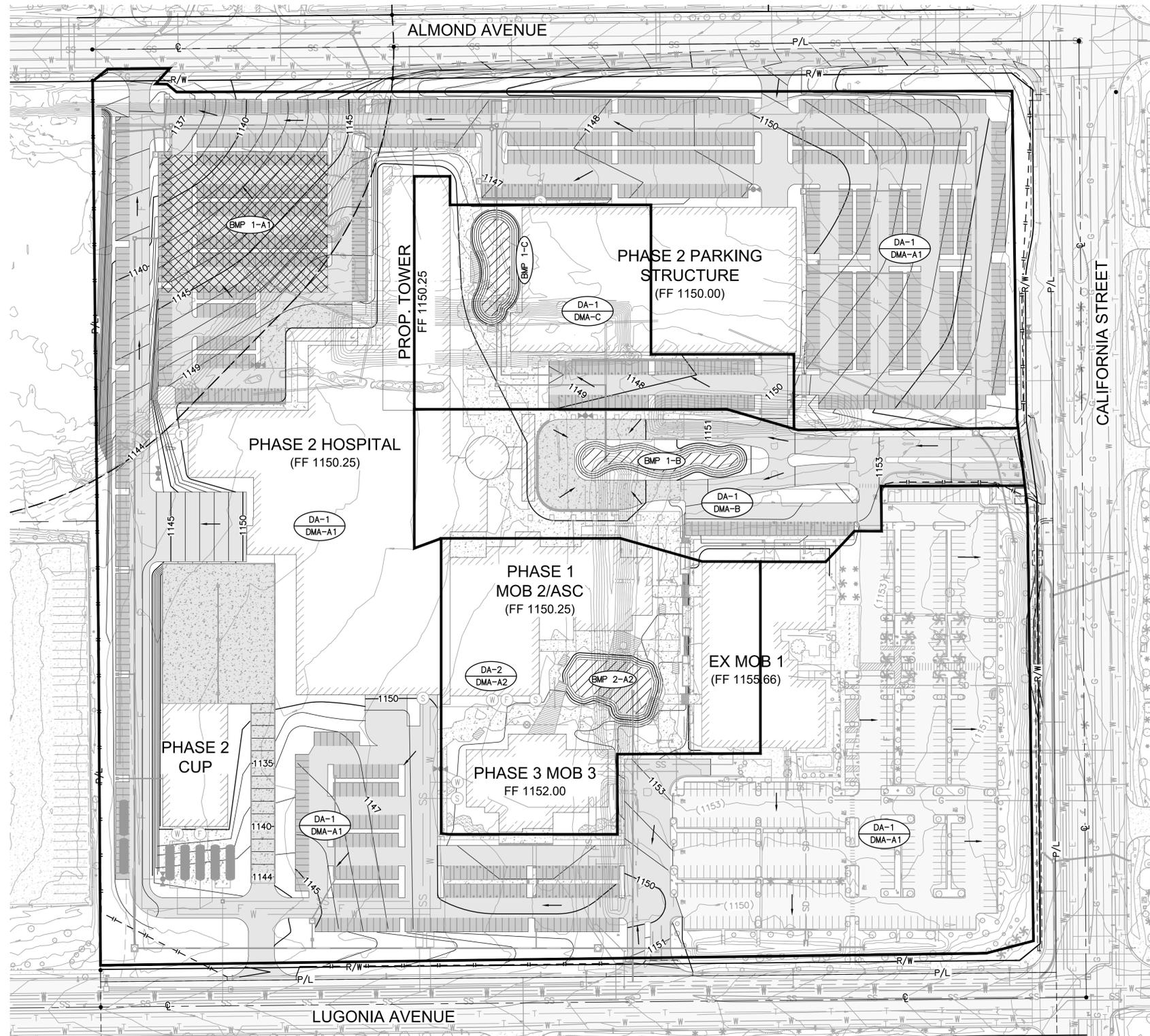


REDLANDS MEDICAL CENTER

Sheet: **C5.02**

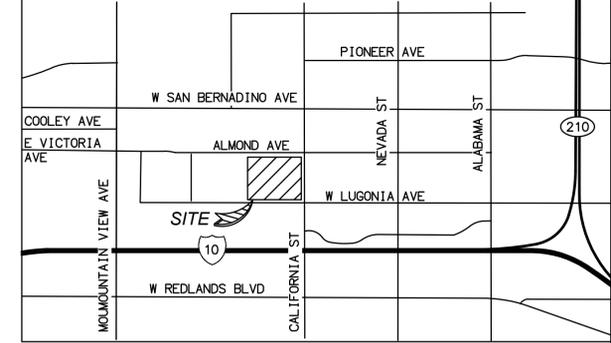
CITY OF REDLANDS

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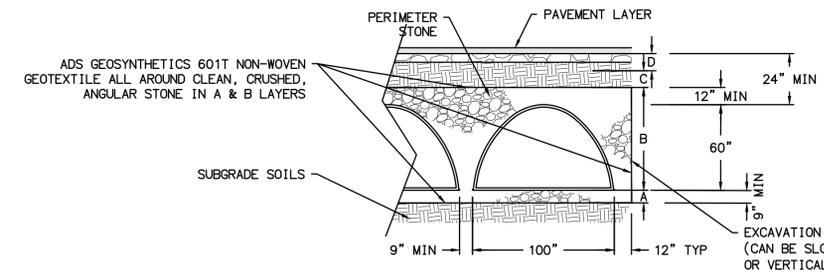


LEGEND

- STORM WATER BASIN
- UNDERGROUND INFILTRATION CHAMBERS
- DRAINAGE BOUNDARY
- FLOW ARROW
- FLOW DIRECTION
- DMA/DA ID
- BMP ID



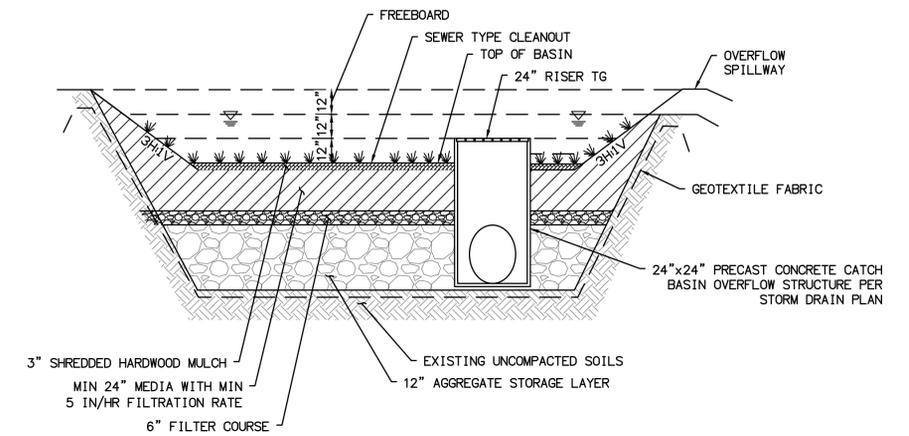
VICINITY MAP
N.T.S.



NOTES:

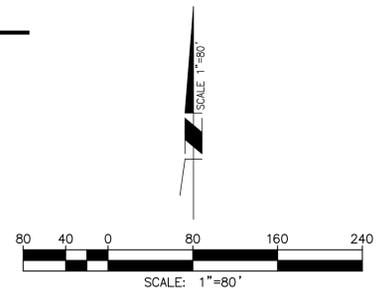
1. SECTION A - FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER
2. SECTION B - EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.
3. SECTION C - INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.
4. SECTION D - FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.

TYPICAL UNDERGROUND ADS STORMWATER CHAMBER INFILTRATION DETAIL
SCALE: NOT TO SCALE



TYPICAL BIO-RETENTION BASIN DETAIL
SCALE: NOT TO SCALE

DA	DMA	TOTAL AREA (SF)	IMPERVIOUS RATIO	DMA RUNOFF FACTOR	DESIGN CAPTURE VOLUME (CF)	BMP PROPOSED SURFACE AREA (SF)	VOLUME RETAINED BY BMP (CF)	BMP TYPE
1	A1	1,197,394	85%	0.66	91,866	43,500	92,438	UNDERGROUND INFILTRATION (SIZED FOR ULTIMATE PHASE 4)
1	B	126,200	85%	0.66	9,682	4,200	9,765	BIORETENTION WITH NO UNDERDRAIN (SIZED FOR ULTIMATE PHASE 4)
1	C	109,300	85%	0.66	8,386	4,000	9,300	BIORETENTION WITH NO UNDERDRAIN (SIZED FOR ULTIMATE PHASE 4)
2	A2	152,000	85%	0.66	11,662	6,035	14,031	BIORETENTION WITH NO UNDERDRAIN (SIZED FOR ULTIMATE PHASE 4)



**SITE PHASING - 4
BMP PLAN**

SEPTEMBER 09, 2022

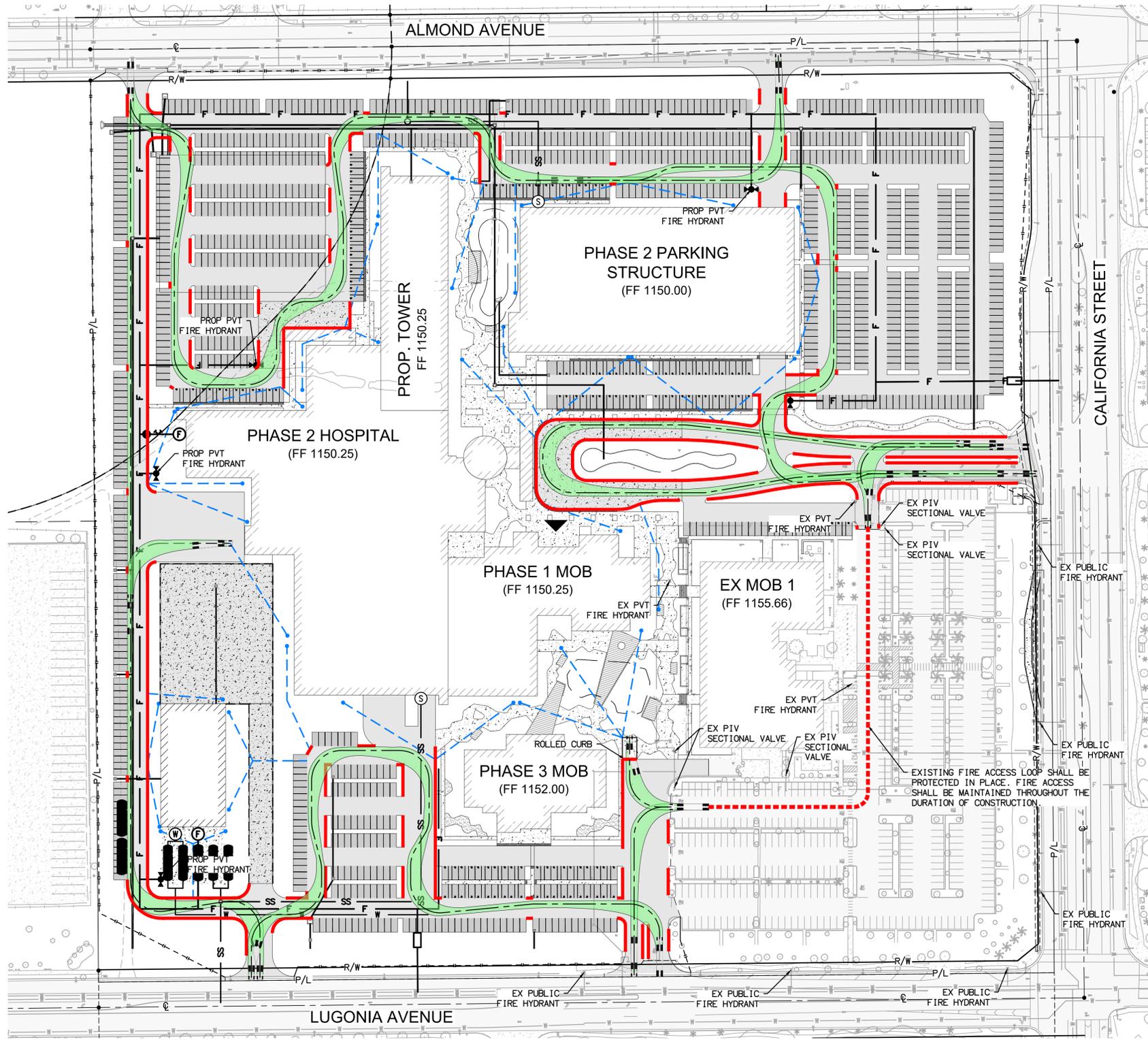


REDLANDS MEDICAL CENTER

Sheet: **C5.03**

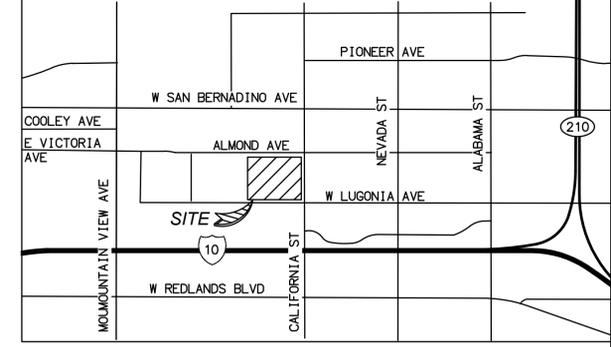
CITY OF REDLANDS

Site Development Plan Number:	PHONE: 626.405.6333
OWNER: Kaiser Foundation Hospitals	ADDRESS: 383 E Walnut Street Pasadena, CA 91108
ARCHITECT/ENGINEER/DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	



FIRE PROTECTION LEGEND

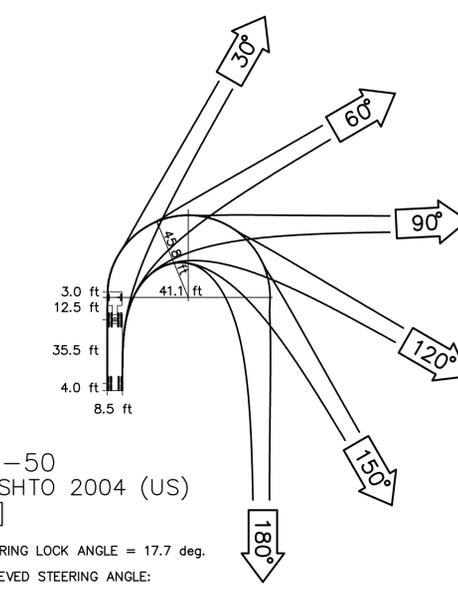
- PROPOSED FIRE HYDRANT
- PROPOSED PIV
- PROPOSED FDC
- PROPOSED FIRE MAIN
- HOSE PULL (150' MAX)
- RED PAINTED CURB
- FIRE TRUCK TURNING MOVEMENT
- EXISTING FIRE HYDRANT
- EXISTING PIV
- EXISTING FDC
- EXISTING FIRE MAIN
- EXISTING FIRE ROUTE



VICINITY MAP
N.T.S.

FIRE NOTES

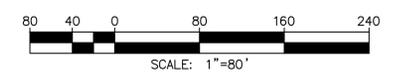
1. FIRE APPARATUS ACCESS ROADS AND WATER SUPPLIES FOR FIRE PROTECTION, SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING TIME OF CONSTRUCTION. CFC 501.4
2. STREET OR ROAD SIGNS - TEMPORARY SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES. SIGNS SHALL BE OF AN APPROVED SIZE, WEATHER RESISTANT AND BE MAINTAINED UNTIL REPLACED BY PERMANENT SIGNS. CFC 505.2
3. FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE SURFACED SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. CFC 503.2.3
4. POST INDICATOR VALVES, FIRE DEPARTMENT CONNECTIONS, AND ALARM BELL ARE TO BE LOCATED ON THE ADDRESS/ACCESS SIDE OF THE BUILDING.
5. CLEAR SPACE AROUND HYDRANTS - A THREE (3) FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS, EXCEPT AS OTHERWISE REQUIRED OR APPROVED. CFC 507.5.5
6. PHYSICAL PROTECTION - WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, GUARD POSTS OR OTHER APPROVED MEANS SHALL COMPLY WITH SECTION 312. CFC 507.5.6
7. DEAD ENDS - DEAD END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED AREA FOR TURNING AROUND FIRE APPARATUS. CFC 503.2.5
8. SECURITY GATES - WHERE SECURITY GATES ARE INSTALLED, THEY SHALL HAVE AN APPROVED MEANS OF EMERGENCY OPERATION. THE SECURITY GATES AND EMERGENCY OPERATION SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM G 2200.
9. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE ACCESS TO ALL HYDRANTS, VALVES, FIRE DEPARTMENT CONNECTIONS, PULL STATIONS, EXTINGUISHERS, SPRINKLER RISERS, ALARM CONTROL PANELS, RESCUE WINDOWS AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES. VEGETATION OF BUILDING FEATURES SHALL NO OBSTRUCT ADDRESS NUMBERS OR INHIBIT THE FUNCTIONING OF ALARM BELLS, HORNS OR STROBES.
10. APPROVED DOCUMENTS - CONSTRUCTION DOCUMENTS APPROVED BY THE FIRE CODE OFFICIAL ARE APPROVED WITH THE INTENT THAT SUCH CONSTRUCTION DOCUMENTS COMPLY IN ALL RESPECTS WITH THIS CODE. REVIEW AND APPROVAL BY THE FIRE CODE OFFICIAL SHALL NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY OF COMPLIANCE WITH THIS CODE. CFC 105.4.4

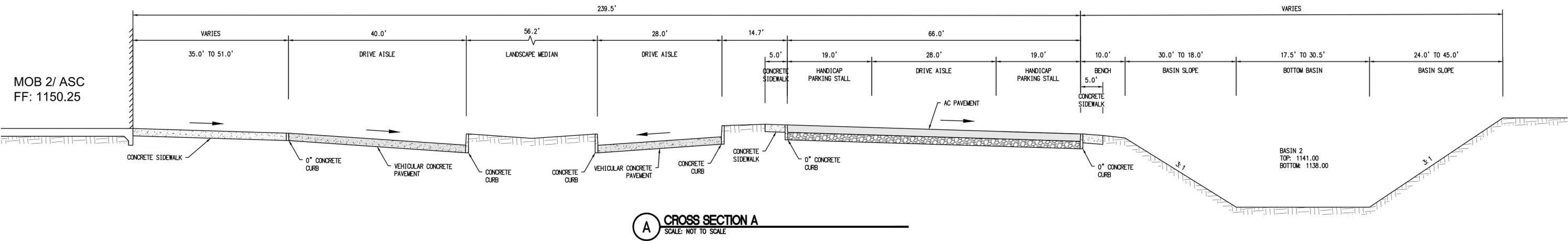


WB-50		feet	
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Tractor Track	: 8.50	Steering Angle	: 17.7
Trailer Width	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

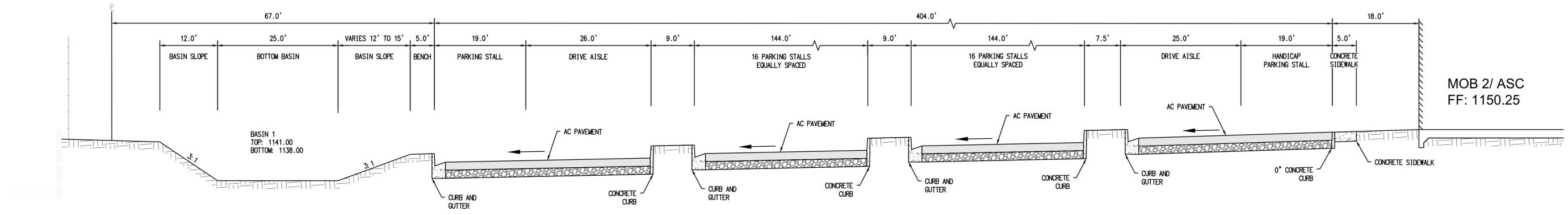
WB-50
AASHTO 2004 (US)
[ft]

STEERING LOCK ANGLE = 17.7 deg.
ACHIEVED STEERING ANGLE:
30 deg. SWEEP ANGLE: 14.4 deg.
60 deg. SWEEP ANGLE: 17.1 deg.
90 deg. SWEEP ANGLE: 17.6 deg.
120 deg. SWEEP ANGLE: 17.7 deg.
150 deg. SWEEP ANGLE: 17.7 deg.
180 deg. SWEEP ANGLE: 17.7 deg.

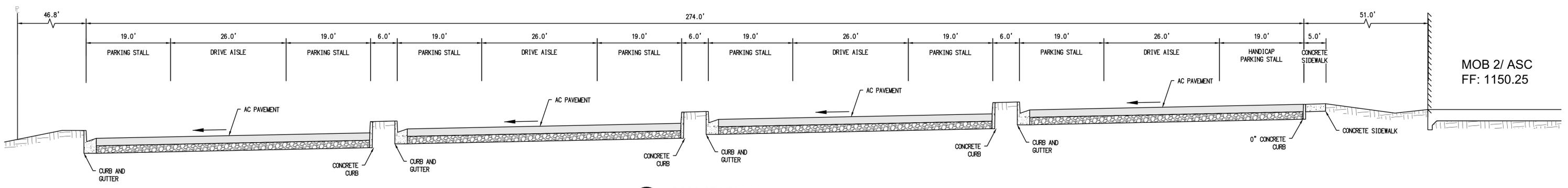




A CROSS SECTION A
SCALE: NOT TO SCALE



B CROSS SECTION B
SCALE: NOT TO SCALE



C CROSS SECTION C
SCALE: NOT TO SCALE

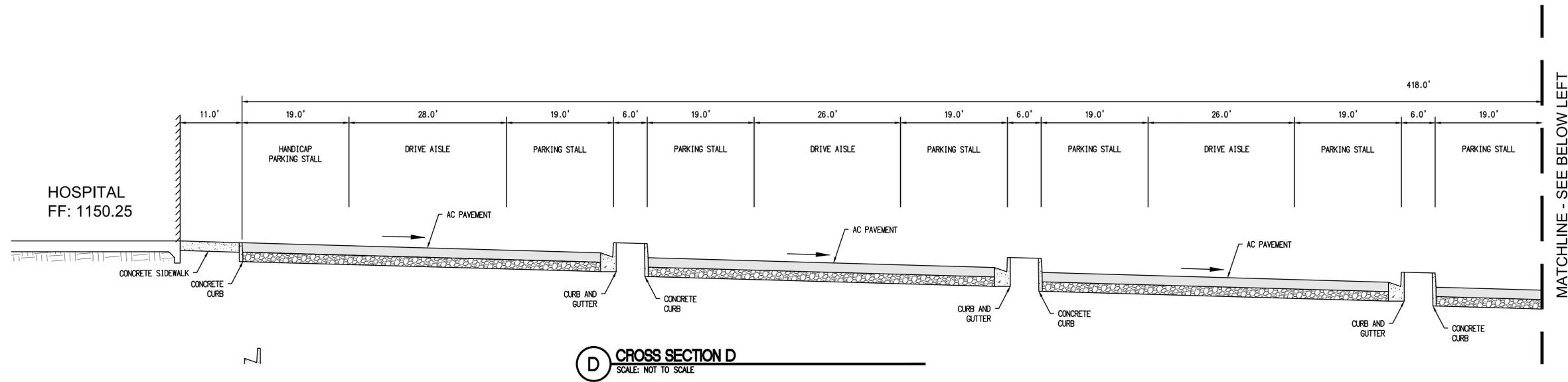
CROSS SECTIONS

SEPTEMBER 09, 2022

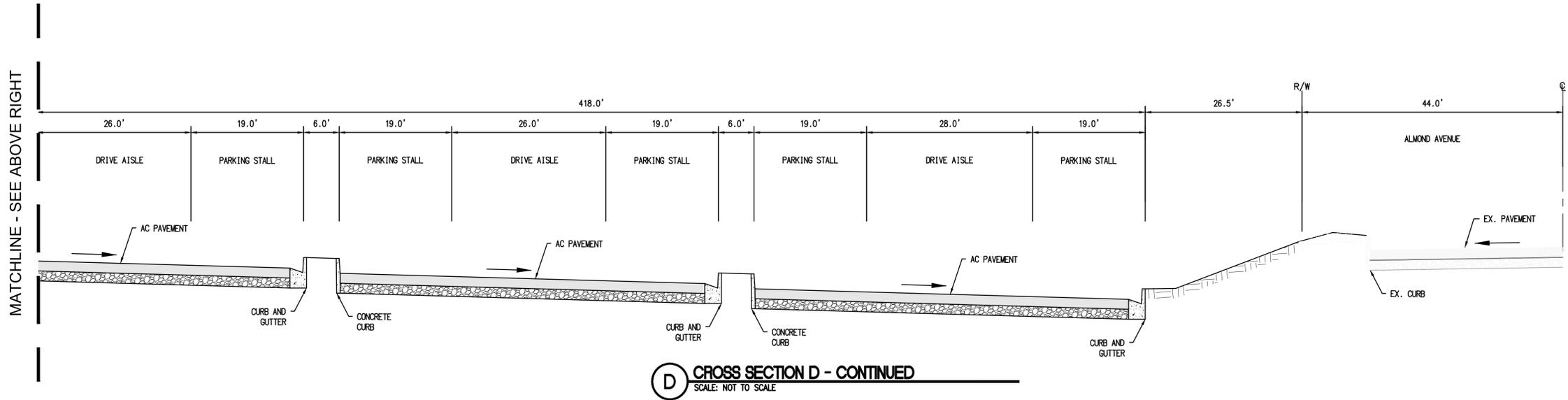


REDLANDS MEDICAL CENTER

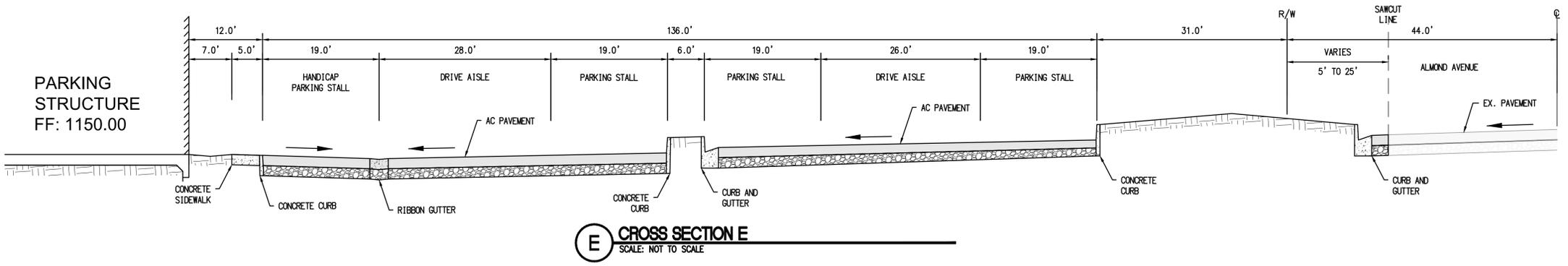
Sheet: C6.00	CITY OF REDLANDS
Site Development Plan Number:	
OWNER: Kaiser Foundation Hospitals	PHONE: 626.405.6333
ADDRESS: 383 E. Walnut Street Pasadena, CA 91108	
ARCHITECT/ENGINEER/DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	



D CROSS SECTION D
SCALE: NOT TO SCALE



D CROSS SECTION D - CONTINUED
SCALE: NOT TO SCALE



E CROSS SECTION E
SCALE: NOT TO SCALE

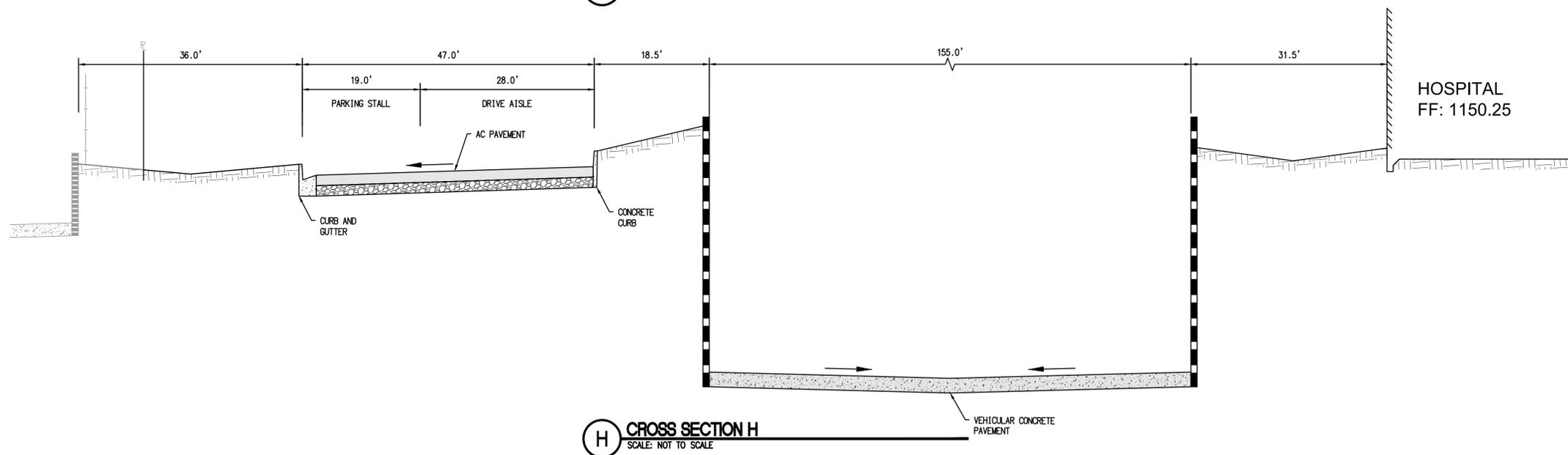
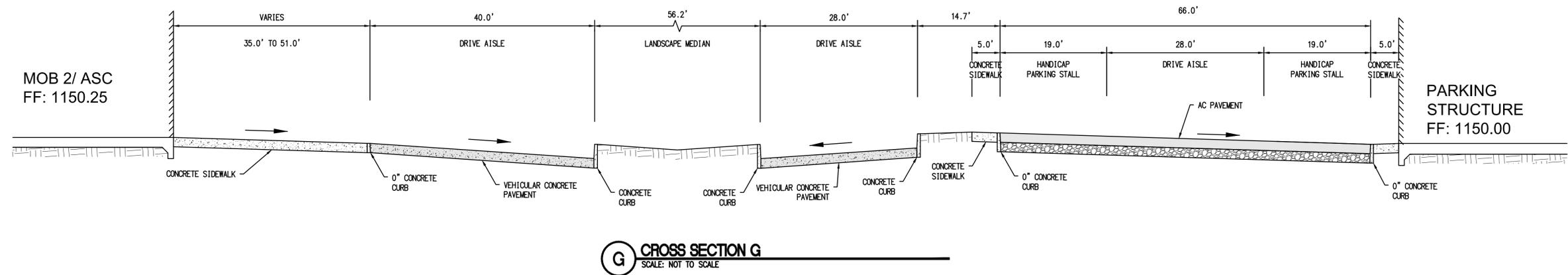
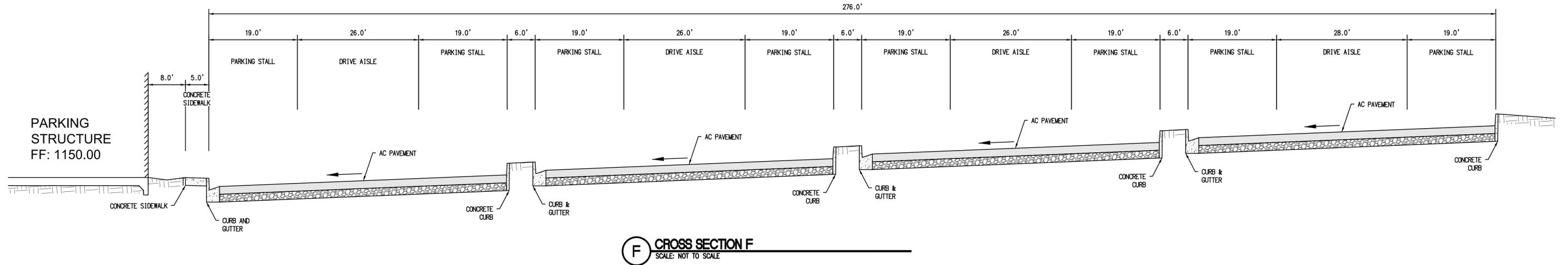
CROSS SECTIONS

SEPTEMBER 09, 2022



REDLANDS MEDICAL CENTER

Sheet: C6.01	CITY OF REDLANDS
Site Development Plan Number:	
OWNER: Kaiser Foundation Hospitals	PHONE: 626.405.6333
ADDRESS: 383 E. Walnut Street, Pasadena, CA 91108	
ARCHITECT/ENGINEER/DESIGNER: CO Architects, Michael Baker Int'l., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	



CROSS SECTIONS

SEPTEMBER 09, 2022

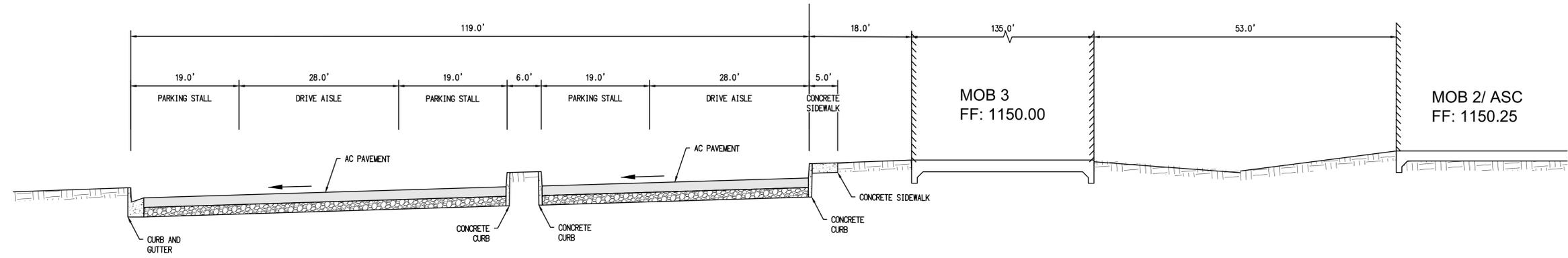
CO ARCHITECTS

REDLANDS MEDICAL CENTER

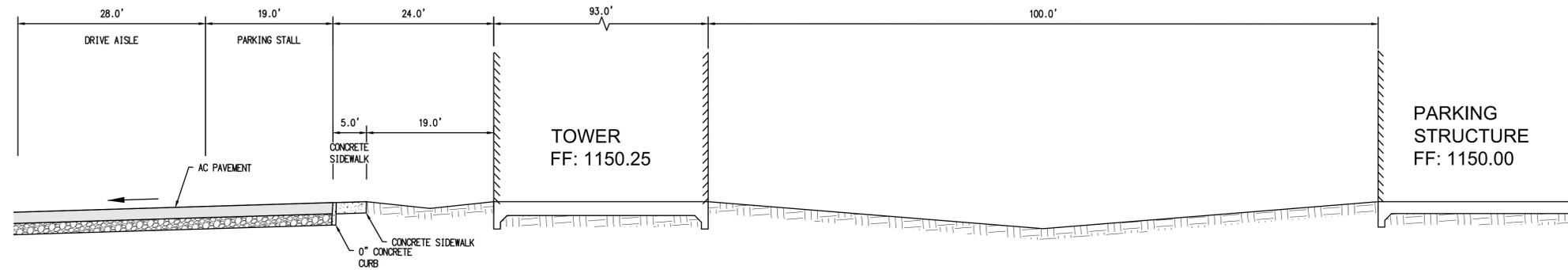
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CITY OF REDLANDS

Site Development Plan Number:	OWNER: Kaiser Foundation Hospitals	PHONE: 626.405.6333
ADDRESS: 383 E. Walnut Street Pasadena, CA 91108	ARCHITECT: ENGINEER: DESIGNER: CO Architects, Michael Baker Int'l., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374	
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000	
ZONE: CR ZONE		



I CROSS SECTION I
SCALE: NOT TO SCALE



J CROSS SECTION J
SCALE: NOT TO SCALE

CROSS SECTIONS

SEPTEMBER 09, 2022

CO ARCHITECTS

REDLANDS MEDICAL CENTER

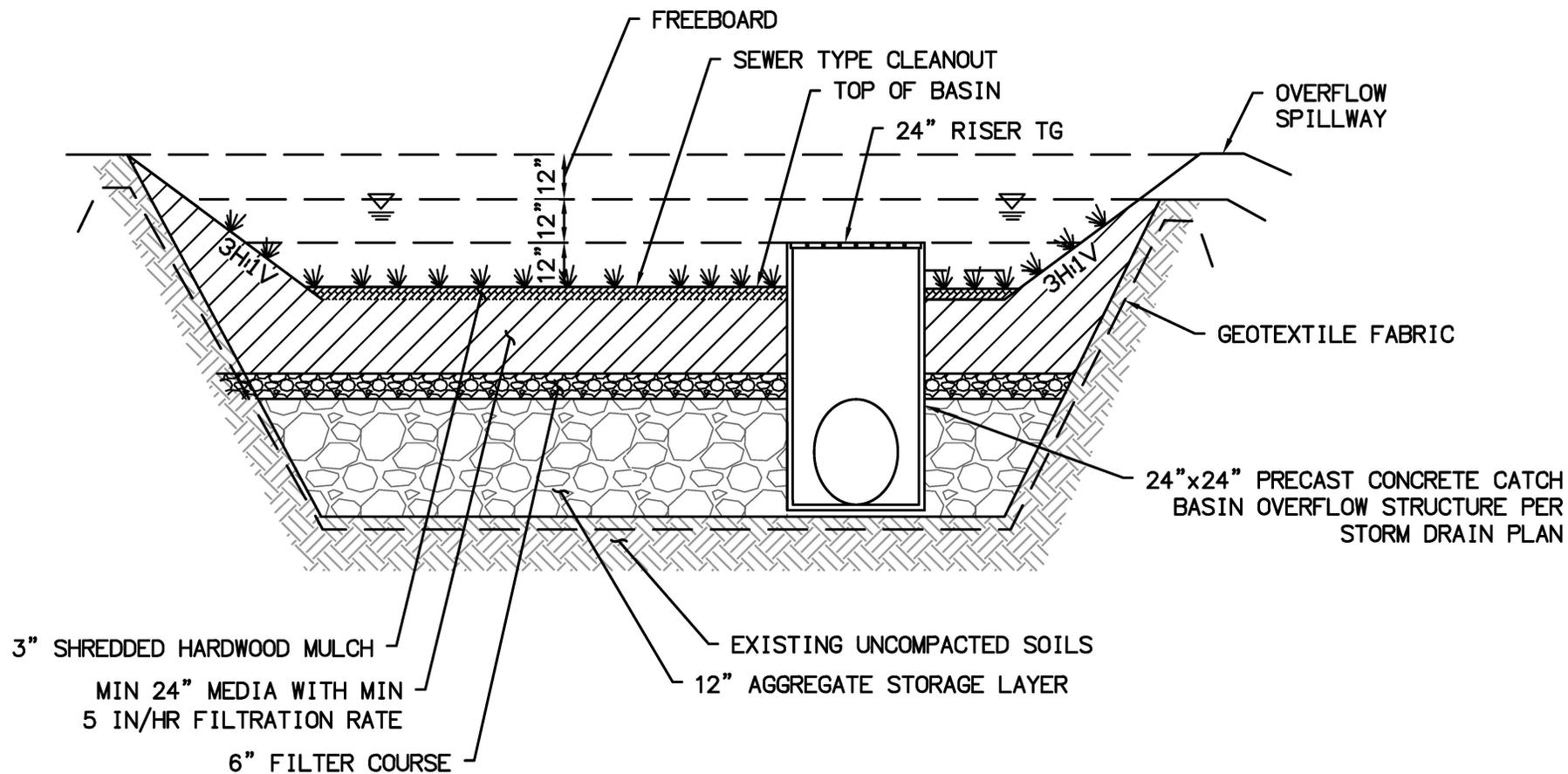
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CITY OF REDLANDS

Site Development Plan Number:	PHONE: 626.405.6333
OWNER: Kaiser Foundation Hospitals	ADDRESS: 393 E. Walnut Street, Pasadena, CA 91108
ARCHITECT: ENGINEER: DESIGNER: CO Architects, Michael Baker Intl., Ridge Landscape Architects	PHONE: 323.525.0500 (Architect)
ADDRESS: 5750 Wilshire Boulevard, Suite 550, Los Angeles CA 90036 (Architect)	LOCATION: 1301 California Street, Redlands, CA 92374
TYPE OF DEVELOPMENT: XXXXX	ACCESSOR'S PARCEL NUMBER: 0167-441-07-0-000
ZONE: CR ZONE	

Appendix C

BMP Details



TYPICAL BIO-RETENTION BASIN DETAIL

SCALE: NOT TO SCALE

Alternative for underground infiltration proposed in the northwest corner of the site (Phase 2).



MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (+1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/IN. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418 AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

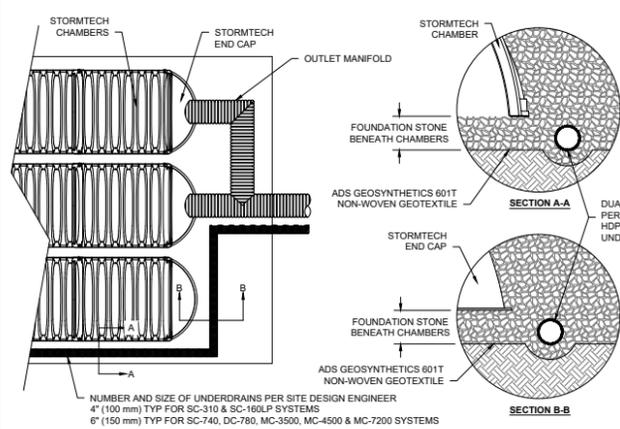
- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

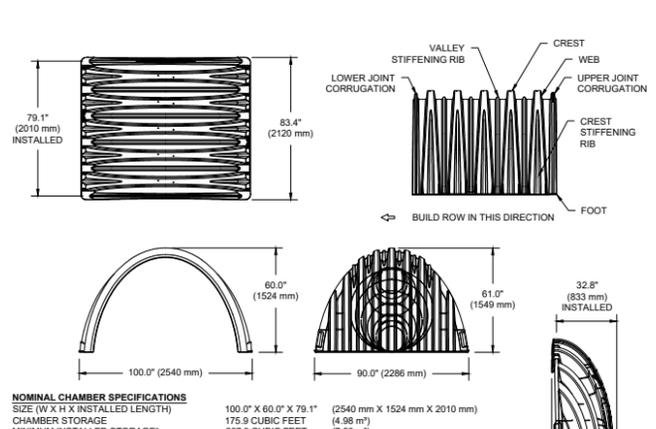
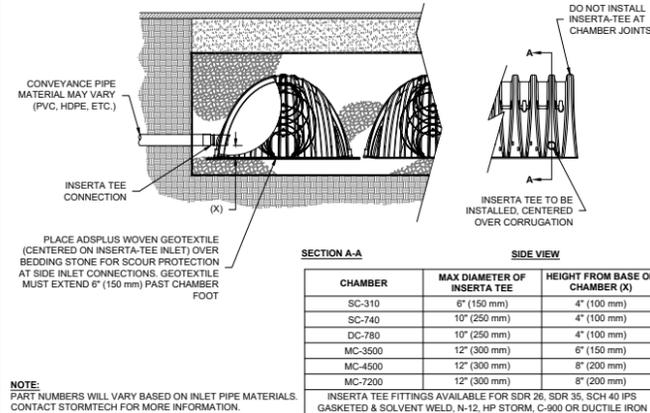
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



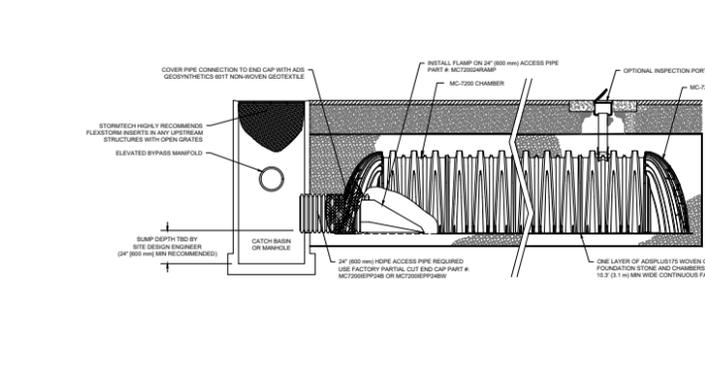
5 UNDERDRAIN DETAIL



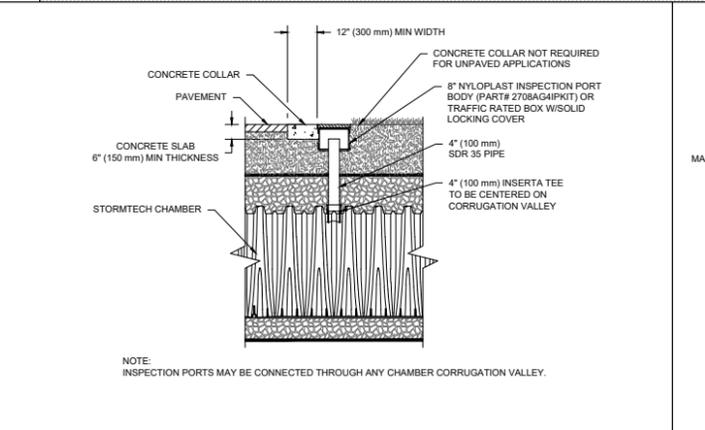
2 MC-7200 TECHNICAL SPECIFICATIONS

PART #	STUB	B	C
MC7200EPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200EPP06B	---	---	0.86" (22 mm)
MC7200EPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200EPP08B	---	---	1.01" (26 mm)
MC7200EPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200EPP10B	---	---	1.33" (34 mm)
MC7200EPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200EPP12B	---	---	1.55" (39 mm)
MC7200EPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200EPP15B	---	---	1.70" (43 mm)
MC7200EPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200EPP18B	---	---	1.97" (50 mm)
MC7200EPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200EPP24B	---	---	2.26" (57 mm)
MC7200EPP30B	---	---	2.95" (75 mm)
MC7200EPP36B	---	---	3.25" (83 mm)
MC7200EPP42B	---	---	3.55" (90 mm)

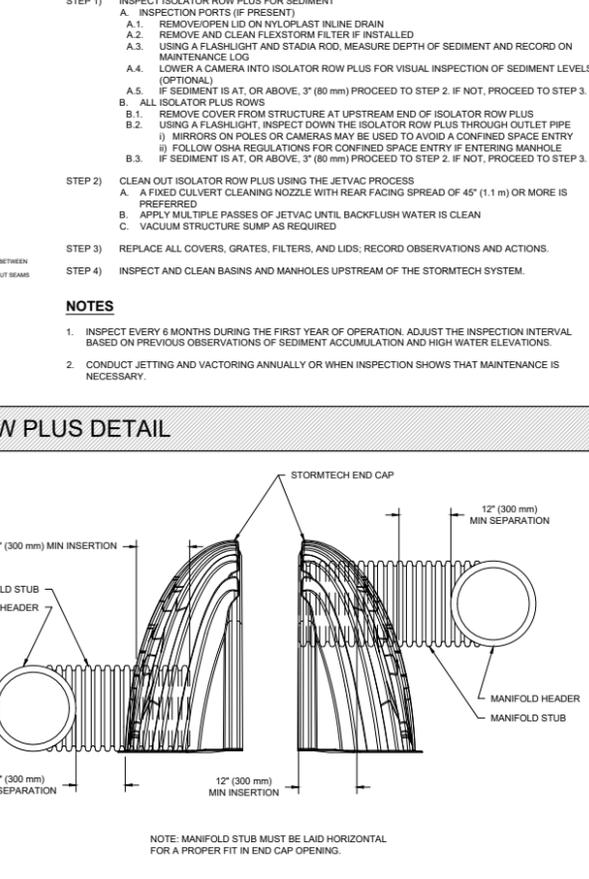
3 MC-7200 ISOLATOR ROW PLUS DETAIL



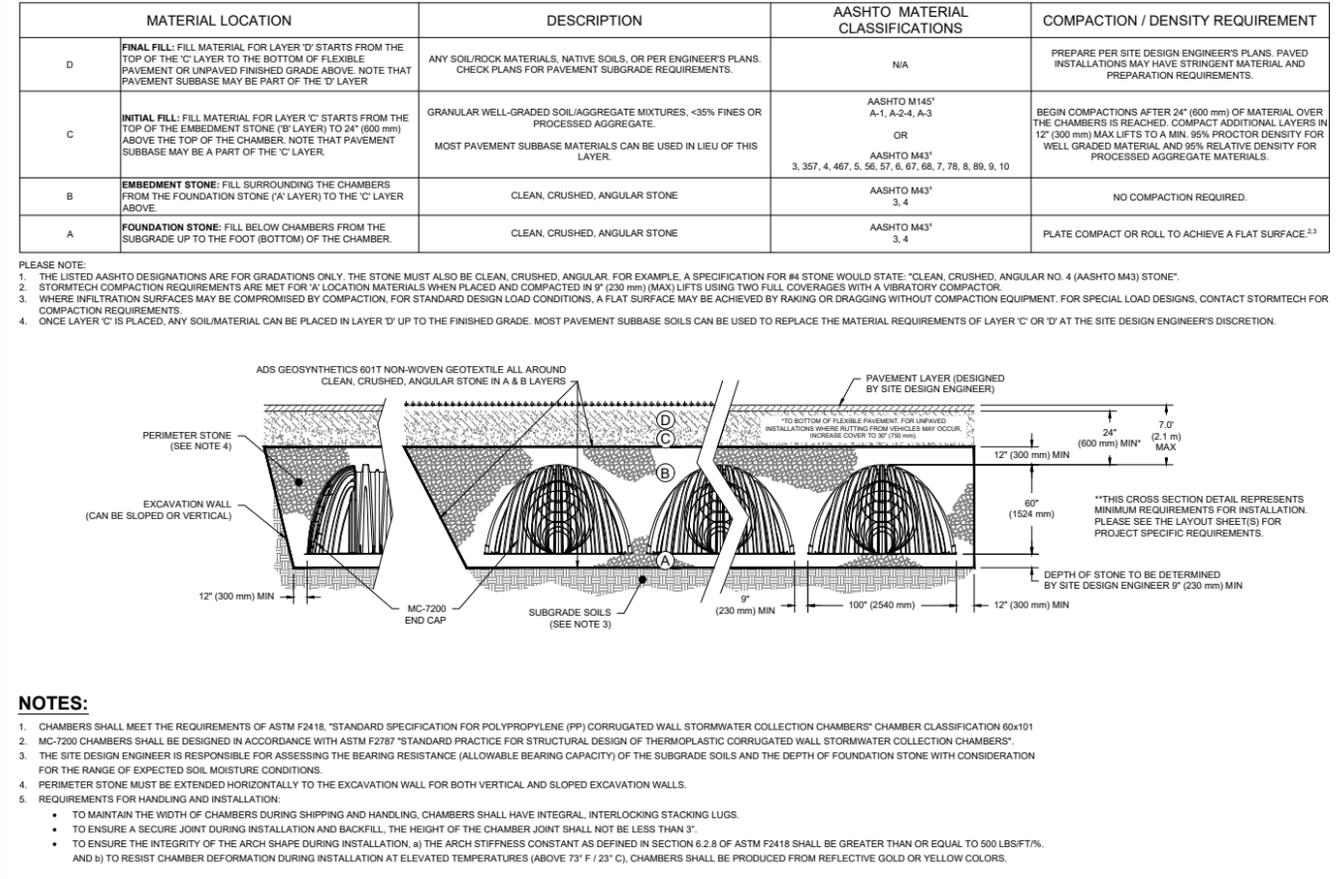
4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)



7 MC-SERIES END CAP INSERTION DETAIL



1 MC-7200 CROSS SECTION DETAIL



DATE: PROJECT NO: NOT TO SCALE

DRAWN: REVIEWED: REV:

MC-7200 STANDARD DETAILS

StormTech Chamber System
 888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
 HILLIARD, OH 43026

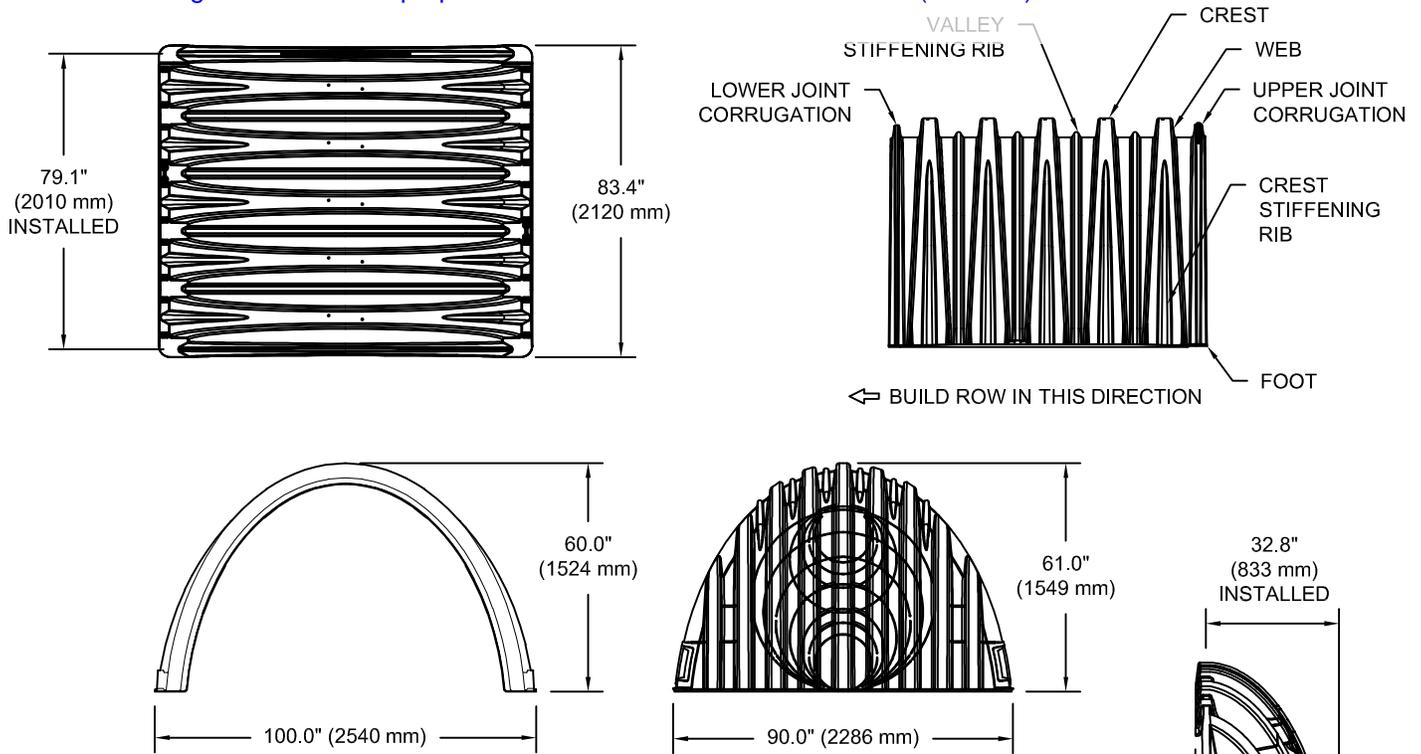
ADS
 Advanced Drainage Systems, Inc.

SHEET

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MC-7200 TECHNICAL SPECIFICATION

Alternative for underground infiltration proposed in the northwest corner of the site (Phase 2).



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m ³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m ³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

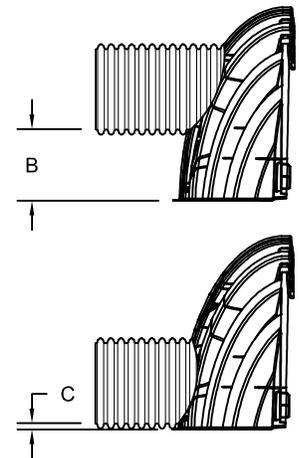
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m ³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m ³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
 PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
 END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW		---	---
MC7200IEPP18B		---	1.97" (50 mm)
MC7200IEPP18BW		---	---
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW		---	---
MC7200IEPP24B		---	2.26" (57 mm)
MC7200IEPP24BW		---	---
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

NOTE: ALL DIMENSIONS ARE NOMINAL

Alternative for underground infiltration proposed in the northwest corner of the site (Phase 2).



STORMWATER MANAGEMENT

IS YOUR STORMWATER SYSTEM TAKING UP TOO MUCH SPACE?

Reduce the size with the R-Tank System, an efficient and versatile underground stormwater storage system. This system will reduce your underground stormwater storage system footprint to resolve a utility conflict or free up space for a future expansion.

It will also provide additional options for vehicular loading and cover depths, and deliver greater installation versatility.

DOES YOUR PROJECT REQUIRE A UNIQUE SOLUTION DUE TO DEPTH OR TRAFFIC LOADS?

With five different module configurations, R-Tank provides system height options from 2" to over 7' deep. It also delivers support for HS-20 and HS-25 traffic, with cover depths from 6" to over 16'.

With an unlimited array of system footprints and configurations, R-Tank solves tough stormwater problems by adapting to the needs of your site - whether you're designing a project at the beach with minimal depth over a water table or a deep system in the hills.



BENEFITS

HIGH CAPACITY

- 95% void internal area

STRENGTH

- Easily supports traffic loading from parking lots and roads
- Module options for HS-20 and HS-25 rating with cover depths from 6 inches to 16 feet

DESIGN & CONSTRUCTION VERSATILITY

- Modules can be combined into various shapes efficiently and effectively use space
- Varied height from 2 inches to 7 feet

INCREASED INFILTRATION AND EXILFILTRATION

- Outer shell is 90% open
- Increases groundwater recharge, reducing post-construction discharge volumes

EASY TO TRANSPORT

- Can be supplied unassembled for reduced delivery costs

LIGHTWEIGHT AND QUICK TO INSTALL

- Installed by hand; no cranes required
- Reduces site access delays

RECYCLED CONTENT

- Manufactured with recycled polypropylene



- Light Duty module (30 psi)
- Ideal for applications in green space
- Not rated for vehicular traffic
- 12" Minimum cover, 36" maximum cover
- Four internal plates



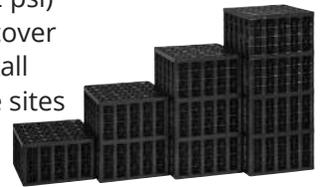
- Heavy Duty module (33.4 psi)
- Standard module for HS-20 traffic applications
- 20" Minimum cover, 84" Maximum cover
- Five internal plates



- Super Duty module (42.9 psi)
- Higher safety factors for shallow traffic applications and deeper cover
- 18" Minimum cover, 120" Maximum cover
- Five internal plates



- Ultra Duty module (134.2 psi)
- Traffic loads with 12" of cover
- Available from 14" - 66" tall
- Ideal for high water table sites



- Extreme Duty module (240.2 psi)
- Traffic loads with 6" cover
- 16.5' maximum cover
- Available from 2" - 10' tall
- 90% void



DESIGN CONSIDERATIONS

Many factors will influence the design of the R-Tank® system. While this list is not intended to be all-inclusive, the following design considerations are worth highlighting:

1. PRE-TREATMENT

Removing pollutants from runoff before they enter an underground detention system is the smart way to design & build a system. Trash Guard Plus® (see page 6) is a great tool for this. Be sure the system you select will remove, heavy sediments, gross pollutants (trash) and biodegradable debris.

2. BACKFILL MATERIALS

Backfill materials should be stone (<1.5" in diameter) or soil (GW, GP, SW or SP per the Unified Soil Classification System). Material must be free from lumps, debris and sharp objects that could cut the geotextile. See the R-Tank® narrative specification section 2.03 for additional information.

3. RUNOFF REDUCTION

Most designs incorporate an outlet to drain the system at a controlled rate and/or an overflow to prevent flooding in extreme events. Any infiltration that can be achieved on the site should also be taken advantage of. Consider raising the invert of your outlet or creating a sump to capture and infiltrate the water quality volume whenever possible.

4. WATER TABLE

While installing R-Tank® below the water table is manageable, a stable base must be created to account for the system's ability to drain water out or limit its ability to enter the system. If a liner is used to prevent ground water from entering, measures must be taken to prevent the system from floating.

5. CONSTRUCTION LOADS

Construction loads are often the heaviest loads the system will experience. Care must be taken during backfilling and compaction (see specification section 3.05), and post-installation construction traffic should be routed around the system (Install Guide step 12).

6. LATERAL LOADS

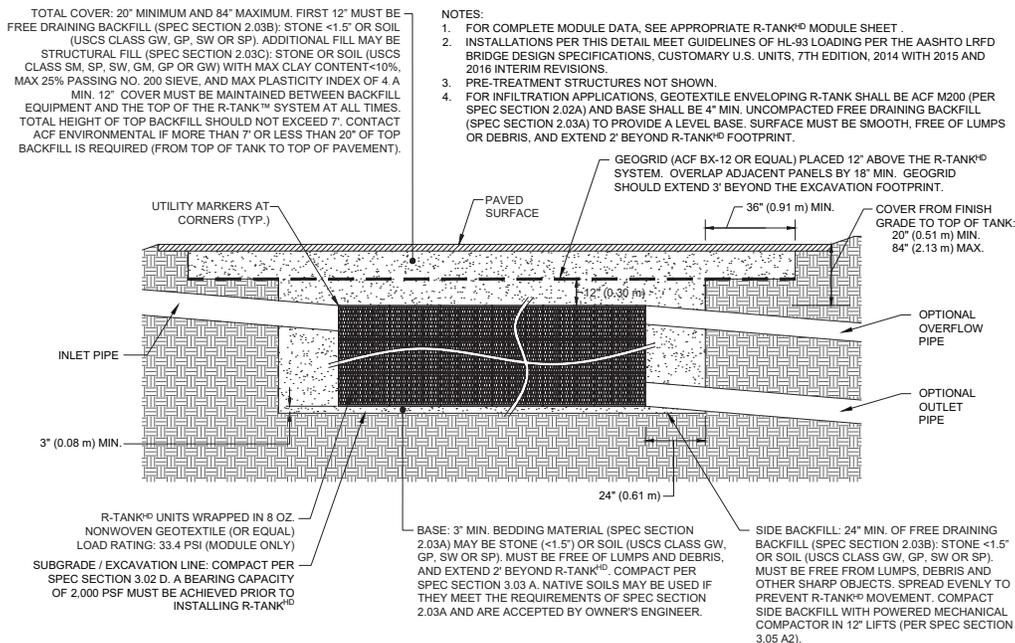
As systems get deeper, the loads acting on the sides of the tank increase. While vertical loads often control the design, lateral loads should also be considered.

7. R-TANK MODULES

Selecting the right module for your application is critical. See page 3 and the specs on the back of this brochure, for details. Our team is also here to help!

8. LOAD MODELING

A safety factor of >1.75 is required when designing an R-Tank System using the AASHTO LRFD Bridge Design Specifications. It is also necessary to run your own loading model with specific site requirements. Example models can be found in our Tech Note on loading capabilities, and minimum cover requirements can be found in the specs on the back of this brochure.



LOW IMPACT DESIGN & GREEN INFRASTRUCTURE

As much of the nation's Gray Infrastructure continues to decay, new concepts for rebuilding it are emerging through Green Infrastructure (GI) and Low Impact Development (LID). This type of reconstruction moves beyond traditional systems that do one thing well, to systems that accomplish multiple objectives simultaneously.

ACF Environmental has several technologies that dovetail with the goals of LID and GI and can play a significant role in the redevelopment process.



R-TANK®

Pipe and stone are used in traditional systems to move and store runoff. R-Tank accomplishes the same purpose with several additional benefits.

- Stores and moves runoff
- Moves water slowly, increasing time of concentration
- Open system encourages infiltration
- Fully accessible for maintenance
- Stores 138% more water than stone
- Maximizes storage potential of GI practices
- Easily handles traffic loads
- Ships flat to reduce site disturbance



PERMEABLE PAVEMENTS

Traditional pavements move vehicles efficiently, but are easily damaged by stormwater. ACF Environmental specializes in permeable pavements that handle traffic loads, while providing surface infiltration rates 10x higher than traditional pervious pavements, helping reduce the expense of long-term maintenance.

- Handles all vehicular loads
- Drains ten times faster than competing pervious pavements
- Reduces long-term maintenance costs
- Encourages infiltration
- Pair with R-Tank® to maximize water storage and transport

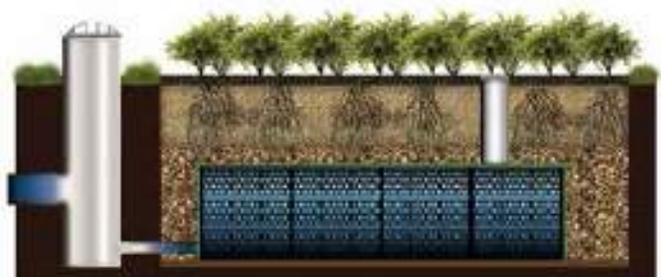


FOCALPOINT

Traditional landscaping adds aesthetic value to projects, but has more potential. Many developers turn to bioretention, but are forced to surrender massive land areas and dedicate significant future funds to maintenance. FocalPoint reduces the space requirements and maintenance costs of bioretention by up to 90% while providing similar pollutant removal.

- Adds aesthetic value to properties
- Cleans runoff to improve water quality
- Reduces space requirements and maintenance costs of traditional bioretention systems
- Encourages infiltration to reduce volume of water discharged
- Pairs with R-Tank® to maximize water storage and transport

R-Tank maximizes the storage capabilities of bioretention and permeable pavement systems.



MAINTENANCE

DESIGNING AN R-TANK SYSTEM WITH LONGEVITY & MAINTENANCE IN MIND IS A THREE-STEP PROCESS:

1. PREVENT

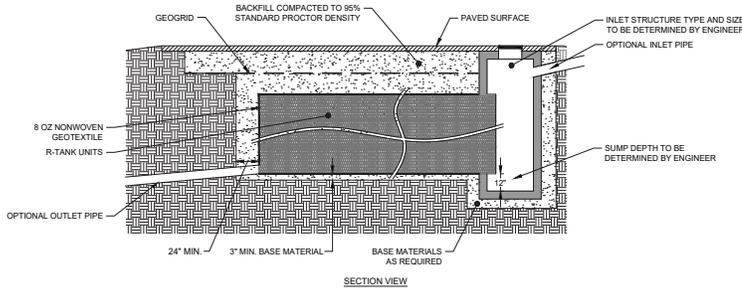
Keep debris and sediment out of the system by pre-treating runoff with the Trash Guard Plus® unit (see below). For a more centralized approach, you could consider having the R-Tank units penetrate the connecting structure, which allows the use of the R-Tank® as its own trash screen. This works best with a structure that includes a sump (see Inlet Connection drawing below).

2. ISOLATE

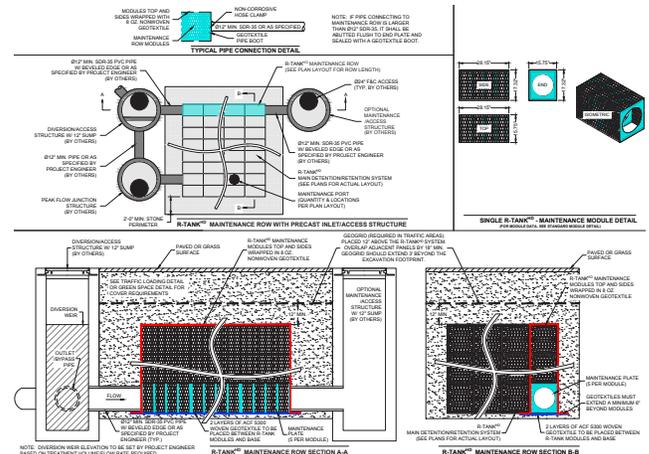
Trap solid pollutants inside the maintenance row (see Maintenance Row drawing below) where they can be easily removed, using the Maintenance Modules (available in LD, HD, and UD only). These modules are wrapped in geotextile to retain solids and are fully accessible by conventional jet-vac systems to remove captured pollutants.

3. PROTECT

Ensure a long system life by including maintenance ports to remove any pollutants that evade the pre-treatment system and maintenance row. Maintenance ports should be specified within 10' of inlet and outlet connections, and roughly 50' on center (see detail on page 7).



INLET CONNECTION



MAINTENANCE ROW

MAINTENANCE PREVENTION

TRASH GUARD PLUS®

Trash Guard Plus® is a patented stormwater pretreatment device that captures debris, sediment and floatables. Easy to install and maintain, it is a fraction of the cost of other pretreatment devices.

BENEFITS

- Simple retrofit to existing catch basins
- Installs without heavy equipment
- Quick and easy assembly
- Adjusts to irregular catch basin bottoms and/or walls
- Eliminates stormwater trash at public parks, beaches, and waterways
- Removes harmful nutrients and regulated metals

