

# WALDEN WEST SCIENCE SCHOOL MODERNIZATION

## CONSTRUCTION DOCUMENTS

### SARATOGA, CALIFORNIA

# HGHB

Architecture, Planning, Urban Design  
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Monterey, California 93940  
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## Walden West Science School Modernization

15555 SANBORN RD. SARATOGA CA.95070

### PROJECT DIRECTORY

CLIENT Walden West Science School 15555 Sanborn Road, Saratoga, CA 95070 (408) 453-4310 Contact: Craig Wilde craig_wilde@sccoe.org	ARCHITECT HGHB 550 Hartnell Street, Suite J Monterey, CA 93940 (831) 375-9594 Contact: Matt Lightner mlightner@hghb.net
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CIVIL C2G/CIVIL CONSULTANTS GROUP,INC. 4444 Scotts Valley Drive Scotts Valley, CA 95066 (831) 438-4420 Contact: Dave Dauphin david@c2gengrs.com	STRUCTURAL Biggs Cardosa Associates 865 The Alameda San Jose, CA 95126 (408) 550-8505 Contact: Mike Luft mluft@biggsCardosa.com
ELECTRICAL Aurum Consulting Engineers Monterey Bay, Inc. 60 Garden Court, Suite 2100 Monterey, CA 93940 (831) 646-3330 Contact: Najib Anwary najib@acemb.com	

### PROJECT DESCRIPTION

Modernization of existing dormitory building and restrooms/shower building, shade structure or multi-purpose building, amphitheater and various site work/utility improvements.

Existing Planting Area within project limits: 1,295 sqft  
Proposed Planting Area within project limits: 8,635 sqft

### WATER EFFICIENT LANDSCAPE ORDINANCE LANDSCAPE DOCUMENTATION CHECKLIST

ITEM	DESCRIPTION	SHEET #
A	Project Information	L-1.0
	1. Date	L-1.0
	2. Project Applicant	L-4.1
	3. Project Address	15555 Sanborn Rd. Saratoga CA, 95070
	4. Landscape Area	8,635 sf
	5. Project Type	Modernization of Ex. Bldgs and Sitework
	6. Water Supply Type	Well
	7. Checklist	L-1.0
	8. Project Contacts	L-1.0
	9. Applicant Signature	L-4.0
B	Water Efficient Landscape Worksheet	L-4.1
	1. Hydrozone Information Table	L-4.1
	2. Water Budget Calcs	L-4.1
C	Soil Management Report	
D	Landscape Design Plan	L-5.0
E	Irrigation Design Plan	L-4.0
	1. Meter & Back-flow Preventer	L-6.0
F	Grading Design Plan	

### GENERAL NOTES

DESIGN INTENT These Drawings and accompanying technical specifications represent the general design intent to be implemented on the site. Contractor shall be responsible for contacting the Owner's Representative for any additional clarification or details necessary to accommodate site conditions.

CONTRACTOR COORDINATION The Contractor shall coordinate and otherwise integrate his work with that of others in an efficient, craftsmanlike and timely manner so as to provide the Owner with a well-constructed, easily maintainable project. Each contractor shall notify others at least two working days in advance of covering, completing or exposing work to be installed by others.

CONTRACTORS' JOB SITE CONDITIONS The Contractor agrees to assume sole and complete responsibility for site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Design Consultant harmless from any and all liability, real or alleged in connection with the performance of work on this project, excepting liability arising from the sole negligence of the Owner or the Design Consultant.

COMPOSITE BASE SHEET The proposed improvements shown on these Drawings are superimposed on a base sheet. This base sheet is compiled from a boundary survey, a topographic survey, architectural and/or engineering documents and other data as made available by the Owner. The Design Consultant shall not be held liable for changes, inaccuracies, omissions or other errors on these documents. The composite base sheet is provided only as an aid, and the Contractor shall be responsible for reviewing these documents and incorporating/integrating all construction as required to accommodate same.

UTILITIES A reasonable effort has been made to locate and delineate all known underground utilities. The Contractor is cautioned that only excavation will reveal the types, extent, sizes, location and depths of such underground utilities. However, the Design Consultant can assume no responsibility for the completeness or accuracy of delineation of such underground utilities, nor for the existence of other buried objects or utilities which are not shown on these Drawings.

- For areas under public ownership or private lands with public utility easements, the Contractor is responsible for contacting utility companies prior to commencing construction, and requesting a visual verification of the locations of their underground utilities. The utility companies are members of the Underground Service Alert (USA) one-call program. Notification shall be a minimum of (2) working days in advance of performing excavation work by contacting USA North at 811 / 1-800-227-2600 / www.usanorth.org for Northern California, and DigAlert 811 / www.digalert.org for Southern California.
- For areas under private ownership and campuses not members of USA, the Contractor is responsible for engaging the services of a private utility locator for a visual verification of the locations of underground utilities. Excavation is defined as being 6 or more inches in depth below the existing surface.

### CODES / STANDARDS

GENERAL: Bring conflicts between Codes, Referenced Standards, Drawings, and Specifications to the attention of the Construction Manager in writing, for resolution before taking any action. Where differences exist between codes and standards, the one affording the greatest protection shall apply. If the year of adoption is omitted from the Code or Standard designation, it shall mean the latest revision in effect on the Bid date.

PROJECT SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

2010 ADA Standards for Accessible Design, Department of Justice; Public Accommodations and Commercial Facilities (Title III regulations, 28 CFR Part 36, Subpart D, as amended by the final rules published on August 11, 2016, and December 2, 2016; 2004 ADAAG, 36 CFR part 1191, Appendices B and D).

Accessibility provisions of the 2016 California Building Codes (CBC): Part 2 of California Code Of Regulations, Title 24, including but not limited to:  
Division 4 Accessible Routes: 11B-402 Accessible Routes; 11B-403 Walking Surfaces; 11B-404 Doors & Gates; 11B-405 Ramps; 11B-406 Curb Ramps  
Division 5 General Site & Building Elements: 11B-502 Parking Spaces; 11B-503 Passenger Drop-off & Loading Zones; 11B-504 Stairways; 11B-505 Handrails  
Division 7 Communication Elements & Features: 11B-703 Signs; 11B-705 Detectable Warnings

California Model Water Efficient Landscape Ordinance 2015 (DWR Title 23 Chapter 2.7) or local ordinance if applicable.

2015 U.M.C as amended by the 2016 California Mechanical Code  
2016 U.P.C as amended by the 2016 California Plumbing Code  
2014 N.E.C as amended by the 2016 California Electrical Code  
2016 California Energy Code  
2016 California Green Building Standards Code (CALGreen)  
2016 California Fire Code  
2016 NFPA Automatic Sprinkler Systems (CA Amended)

### ABBREVIATIONS

AB	Aggregate Base	LB	Pound
AC	Asphalt Concrete	LF	Linear Feet
AD	Area Drain	LOW	Limit of Work
ALT	Alternate	LP	Low Point
APPROX	Approximate	MAX	Maximum
ARCH	Architectural	MECH	Mechanical
BLDG	Building	MED	Medium
BC	Bottom of Curb	MFR	Manufacturer
BW	Bottom of Wall	MH	Manhole
BS	Bottom of Step	MIN	Minimum
BOT	Bottom	MM	Millimeter
CB	Catch Basin	MTL	Metal
CBC	CA Building Code	(N)	New
CI	Cast Iron	NIC	Not In Contract
CL	Centerline	NO	Number
CLR	Clear	NOM	Nominal
CM	Centimeter	NTS	Not To Scale
CMU	Concrete Masonry Unit	OC	On Center
CONC	Concrete	OD	Outside Diameter
CONST	Construction	OPP	Opposite
CONT	Continuous	PA	Plant Area
CO	Cleanout	PB	Pull Box
COORD	Coordinate	PE	Polyethylene
CY	Cubic Yard	PERF	Perforated
DBL	Double	POB	Point of Beginning
DEMO	Demolition	POC	Point of Connection
DET	Detail	POS	Point on Slope
DG	Decomposed Granite	PNT	Point
DIA, Ø	Diameter	PREFAB	Prefabricated
DN	Down	PSI	Pounds per Square Inch
DWG	Drawing	PT	Pressure Treated
(E), EX	Existing	PVC	Polyvinyl Chloride
EA	Each	QTY	Quantity
EG	Existing Grade	R, RAD	Radius
EJ	Expansion Joint	REBAR	Reinforcement Bar
EP	Edge of Paving	REF	Reference
ELEV	Elevation	REQD	Required
ELEC	Electrical	RIM	Rim Elevation
EQ	Equal	RND	Round
EQUIP	Equipment	RWL	Rain Water Leader
EXP	Exposed	S4S	Surface Four Sides
EXT	Exterior	SCH	Schedule
FFE	Finished Floor Elevation	SD	Storm Drain
FG	Finished Grade	SF	Square Foot
FL	Flow Line	SIM	Similar
FOB	Face of Building	SPECs	Specifications
FOC	Face of Curb	SQ	Square
FPS	Feet Per Second	SS	Sanitary Sewer
FS	Finish Surface	STL	Steel
FSF	Finish Surface Field	SY	Square Yard
FT	Foot	SYN	Synthetic
GA	Gauge	TBD	To be Determined
GALV	Galvanized	TC	Top of Curb
GB	Grade Break	THK	Thick
GI	Galvanized Iron	TS	Top of Step
GPH	Gallons Per Hour	TYP	Typical
GPM	Gallons Per Minute	TW	Top of Wall
HDG	Hot Dipped Galvanized	U/G	Underground
HDR	Header	UON	Unless Otherwise Noted
HORIZ	Horizontal	VERT	Vertical
HP	High Point	VIF	Verify in Field
HSS	Hollow Structural Steel	W	Water
ICV	Irrigation Control Valve	WP	Weaked Plane Joint
ID	Inside Diameter	WV	Water Valve
INT	Interior	WWM	Welded Wire Mesh
INV	Invert	W/	With
		WD	Wood

### SYMBOLS

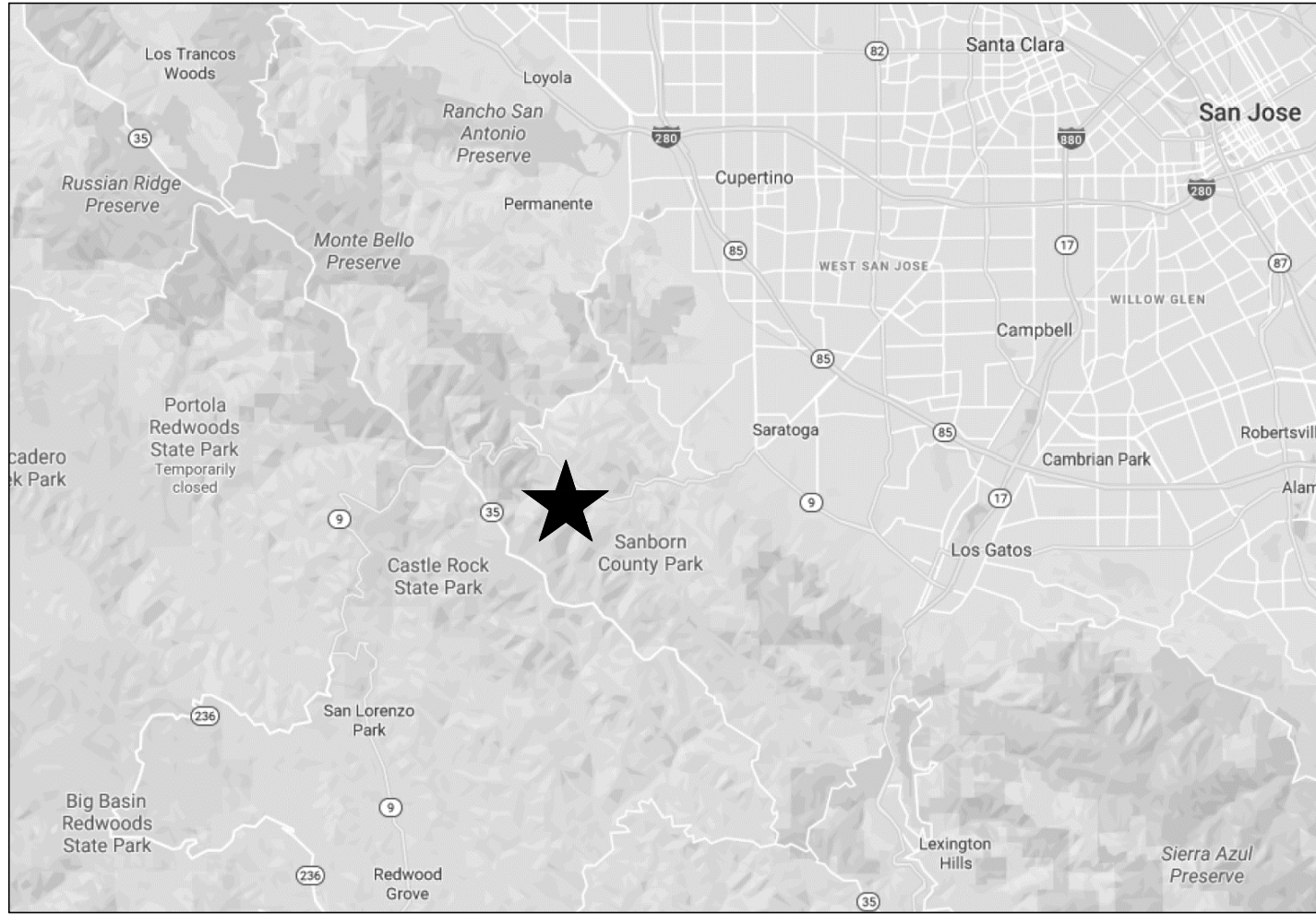
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	Elevation Callout		Reference Note
	Section Callout		Detail Reference

3

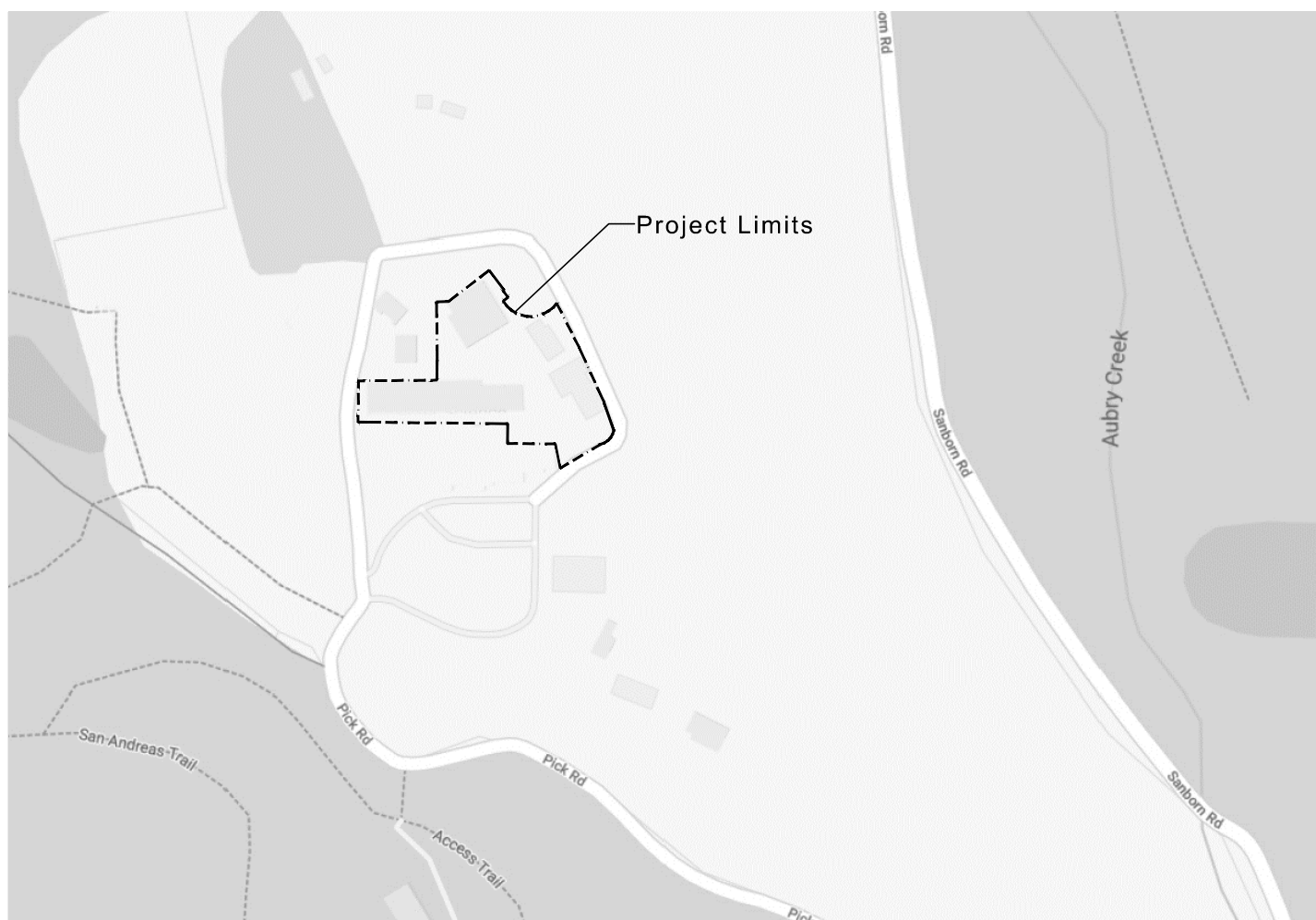
### GEOTECHNICAL REPORT

See Updated Design Level Geotechnical Report from CORNERSTONE EARTH GROUP, dated May 8, 2020 for geotechnical and geological hazard investigation.

### VICINITY MAP



### LOCATION MAP



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ARCHITECTS  
425 PACIFIC STREET #201  
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BFS P#: 19030

Drawing Title:  
**COVER SHEET**

Scale: Sheet:

# L-1.0

Revision:

Date: July 2020



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LEGEND

- LOW** Limit of Work Line
- ES** Pedestrian Concrete Paving: Integral Davis colors. Light sand finish with sawcut control joints. TopCast #3 or #5. Other joints are Weakened Plane Joints UON. See Specs. See (2/L-3.0)
- ES** Vehicular Concrete Paving: Integral Davis Colors, Match Pedestrian Concrete Paving Color and Finish. See Specs. See (3/L-3.0)
- PA** Building Access Paving: See Civil Plans for Limits. See Architectural Plans for Jointing / Scoring. See (3/L-3.1)
- ES** GraniteCrete: See Specs. See (10/L-3.0)
- ES** GraniteCrete in Fire Lane: 4" GraniteCrete over 6" porous base rock. Sim to (10/L-3.0)
- ES** Synthetic Turf: See Specs. See (6/L-3.0)
- ES** Synthetic Turf in Fire Lane: See Specs. See (6/L-3.0)
- ES** Geogrid Fire Lane: See Specs. See (8/L-3.0)
- ES** Concrete Wall: Natural color with board-form finish. See Civil drawings for wall height. See (2/L-3.1)
- ES** Concrete Curb: See (1/L-3.1)
- ES** Boulder: 24 x 36" +/- See (4/L-6.2)
- ES** Metal Edge: See Specs. See (5/L-3.0)
- ES** Fence: 6'-0" Tall. See (5/L-3.1)
- PA** Planting Area: See Planting Plan
- ES** Step Light: See Electrical Plan
- ES** Bollard Light: See (1/L-3.0)
- ES** Drainage Structure: See Civil Plans

REFERENCE NOTES

- (1) Existing Paving: Preserve and protect.
- (2) Sloped Walk: See Civil Drawings
- (3) Bioretention Area: See Civil Drawings.
- (4) Single Pedestrian Gate with Panic Hardware: See (1/L-3.2)
- (5) Double Vehicular Gate: See (2/L-3.2)
- (6) Log Seats: 15" high x 15" dia. See Specs.
- (7) Shade Structure: Base Bid. See Architectural Drawings.
- (8) Concrete Steps with Handrail: See (4/L-3.1)
- (9) Amphitheater Steps with Handrail: See (1/L-3.3) (2/L-3.3)
- (10) Concrete Ramp: See (1/L-3.4)
- (11) ADA Companion Seating Spaces: 36" x 48" Each
- (12) Location for Future BBQ Grill
- (13) Guardrail: 42" high: See Architectural Plans for Detail
- (14) GCFI Outlet: In weatherproof box. See Electrical Plans
- (15) Wood Bench: See (3/L-3.3) (4/L-3.3)

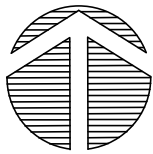
GENERAL NOTES

1. CODES
1. Walking surfaces shall comply with CBC 11B-403 Walking Surfaces. All finishes shall be slip resistant.
2. Curb ramps shall be in compliance with CBC 11B-406 Curb Ramps, Blended Transitions and Islands
3. Ramps, including handrails, shall be in compliance with CBC 11B-405 Ramps
4. Steps, including handrails, shall be in compliance with CBC 11B-504 Stairways
5. Detectable walking surfaces shall be in compliance with CBC 11B-705 Detectable Warnings and Detectable Directional Texture
2. CONTROL JOINTS: PEDESTRIAN CONCRETE PAVING
1. Expansion Joints: locate as shown on the Plans; if not shown then at maximum 60' O.C. in any direction. Locate at all building faces, walls, steps, ramps, and other site structures. See typical joint detail. See Specs.
2. Weakened Plane Joints: locate as shown on the Plans; if not shown then at maximum 20' O.C. in any direction. Joints shall be saw-cut. See typical joint detail. See Specs.
3. CONTROL JOINTS: VEHICULAR CONCRETE PAVING
1. Expansion Joints: locate as shown on the Plans. See typical joint detail. See Specs.
2. Weakened Plane Joints: locate and construct per Section 40-1.08 JOINTS of the California Department of Transportation Standard Specifications.
4. CONTROL JOINTS: CURBS
1. Expansion Joints: align with expansion joints in monolithic paving; at maximum 60' O.C. when adjacent to modular paving, and at all corners, start/end of radiuses, and connections to flush curbing. Full depth.
2. Weakened Plane Joints: align with weakened plane joints in monolithic paving; at a maximum of 20' O.C. when adjacent to modular paving. Construct across the top and visible face.
5. UTILITIES
1. Install utility boxes parallel to curbs / edges of sidewalks. Install utility boxes in plaza paving areas parallel to jointing patterns. Review locations in the field with the Owner's Representative prior to installation.

PLANTING SUMMARY

1. Existing Planting Area within Limit of Work: 1,295 sq ft
2. Proposed Planting Area within Limit of Work: 7,750 sq ft
3. Hydroseed Areas: 0 sq ft
4. Existing Swimming Pool to Remain, Outside of Project Limits

See Sheet L-5.0 for Planting Plan  
See Sheet L-4.0 for Irrigation Plan  
See Sheet L-4.1 for Water Efficient Landscape Worksheet



BFS P#: 19030

Drawing Title:  
**CONSTRUCTION PLAN**

Scale: 1" = 16'-0"

Sheet:

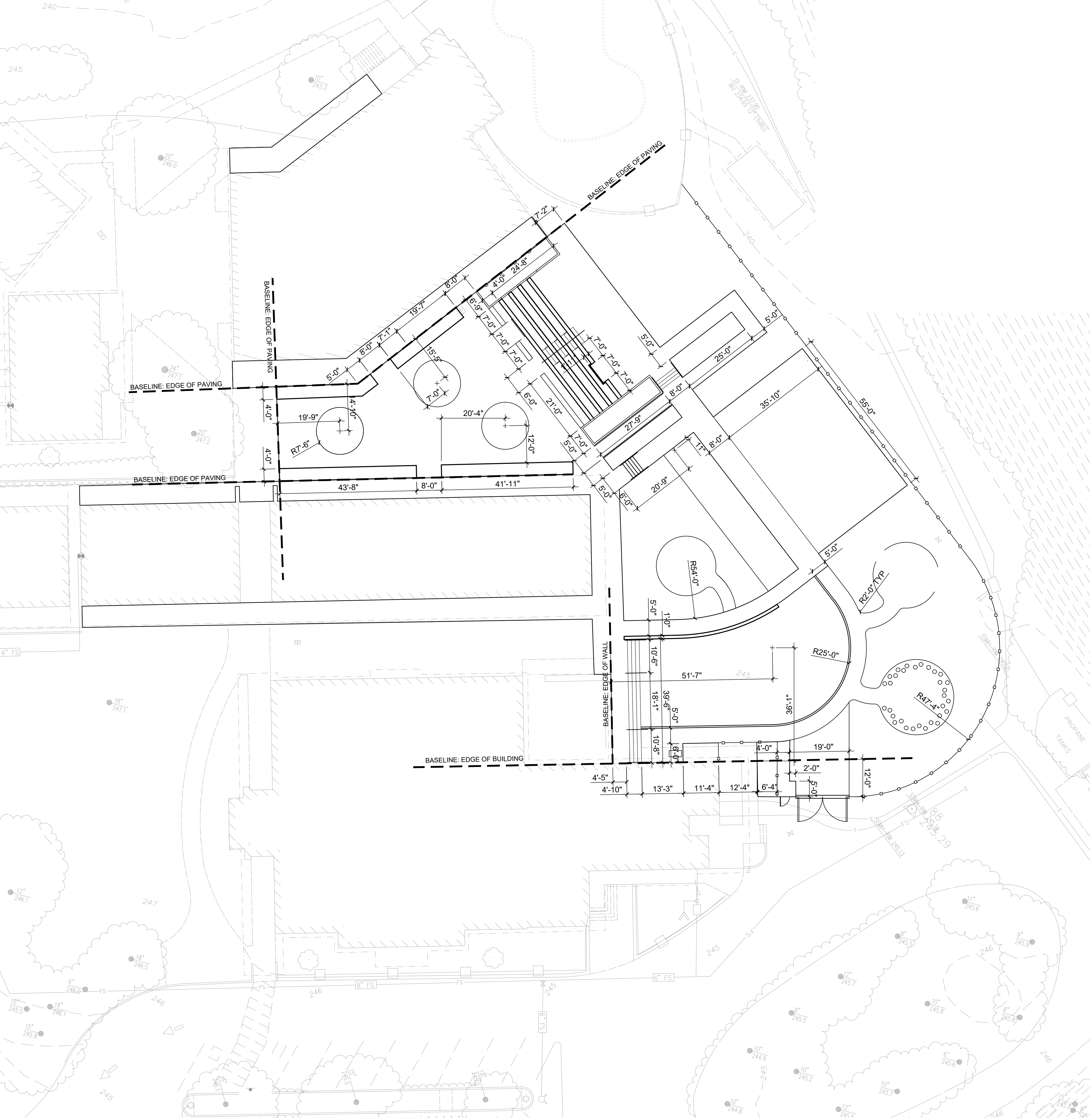
L-2.0

Revision:

Date: July 2020

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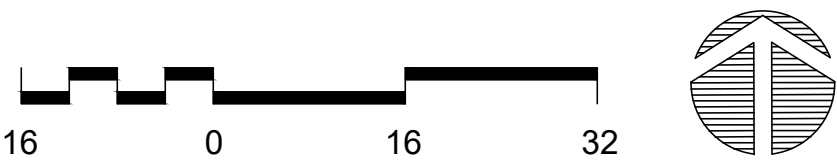
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LAYOUT PLAN

Scale: 1" = 16'-0" Sheet:

L-2.1

Revision:

Date: July 2020

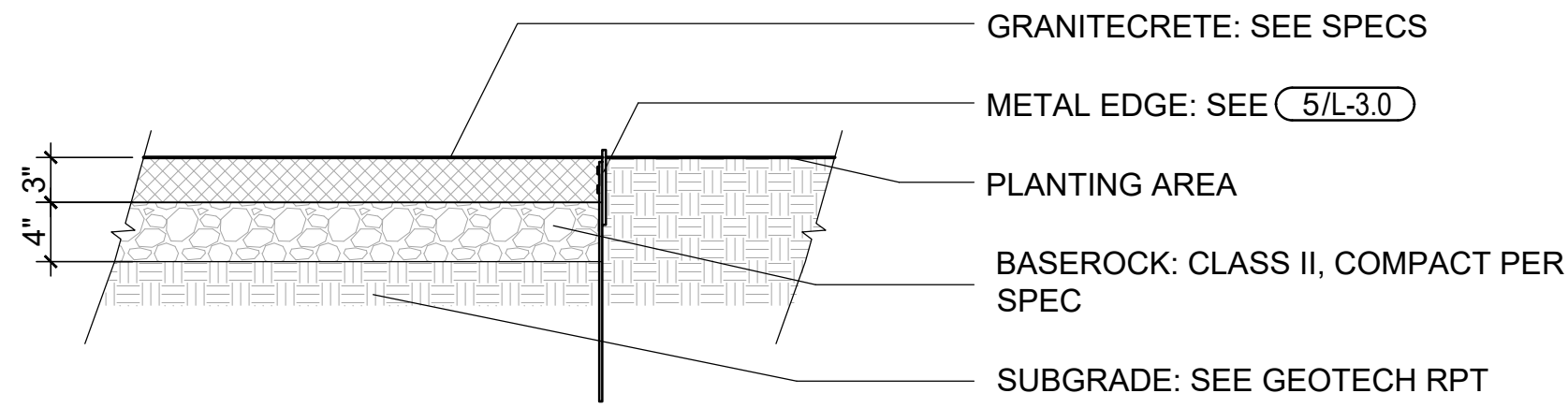




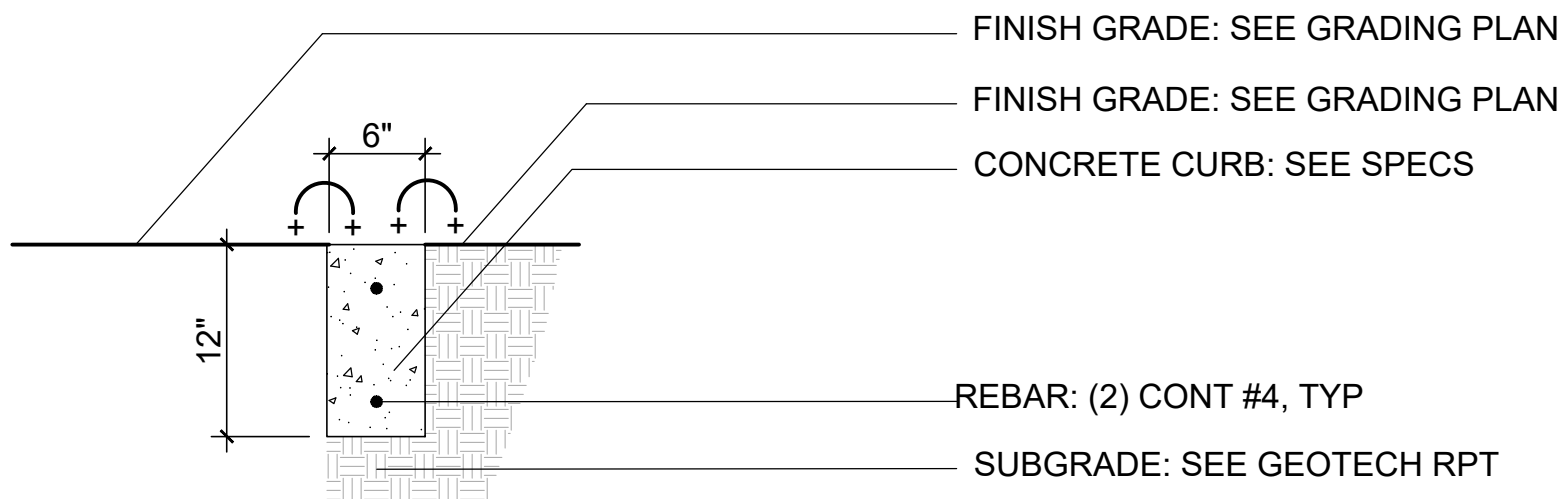
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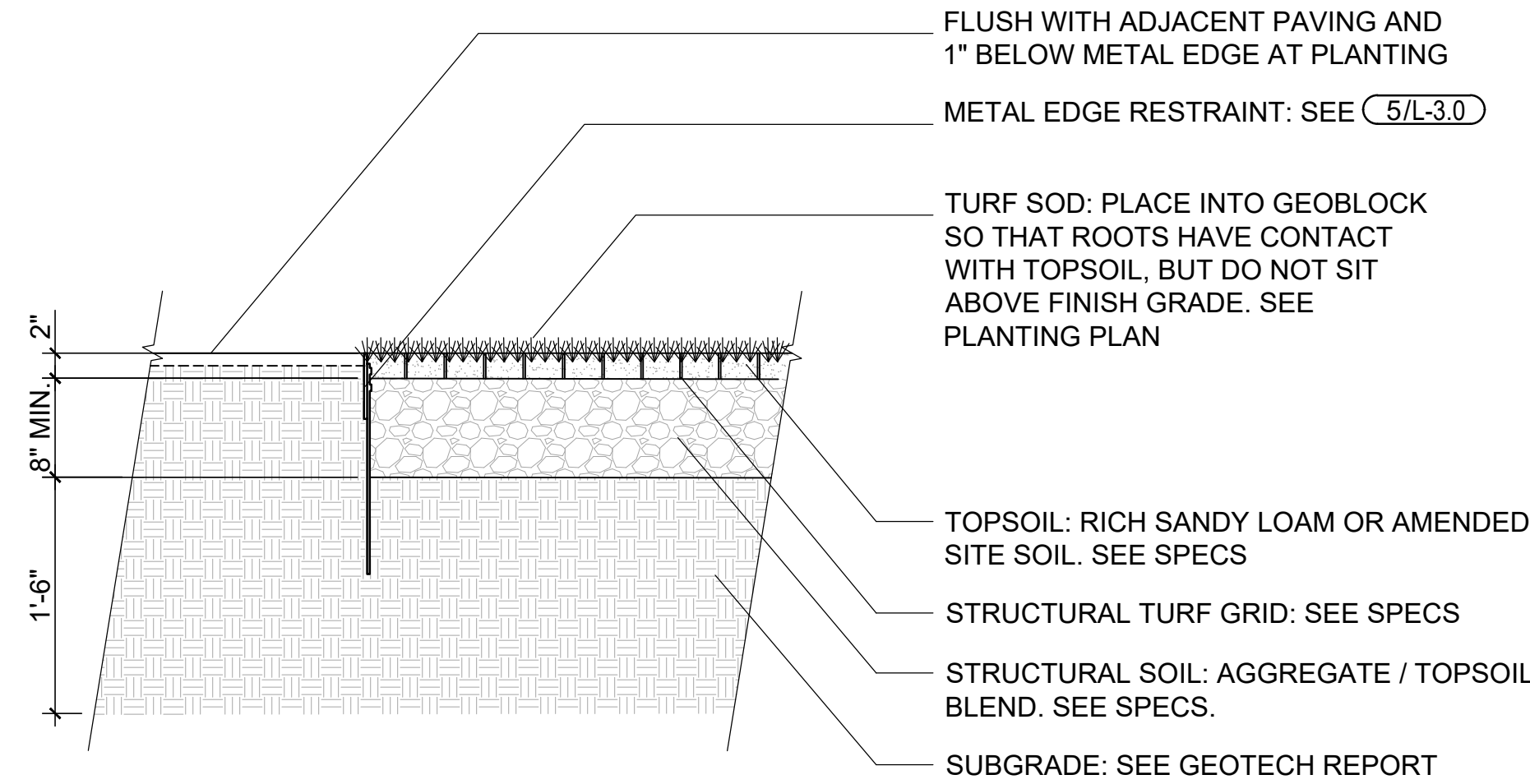
NOTE: CONTRACTOR TO PREPARE UP TO THREE 4'x4' MOCK UPS OF GRANITECRETE FOR APPROVAL PRIOR TO INSTALLATION. MOCK UP SHALL BE VIEWED FOR COLOR, CONSISTENCY AND FINISH AND SHALL REMAIN ON SITE DURING CONSTRUCTION. THE APPROVED SAMPLE SHALL BE THE BASIS OF APPROVAL FOR GRANITECRETE WORK



10 GraniteCrete  
1" = 1'-0"

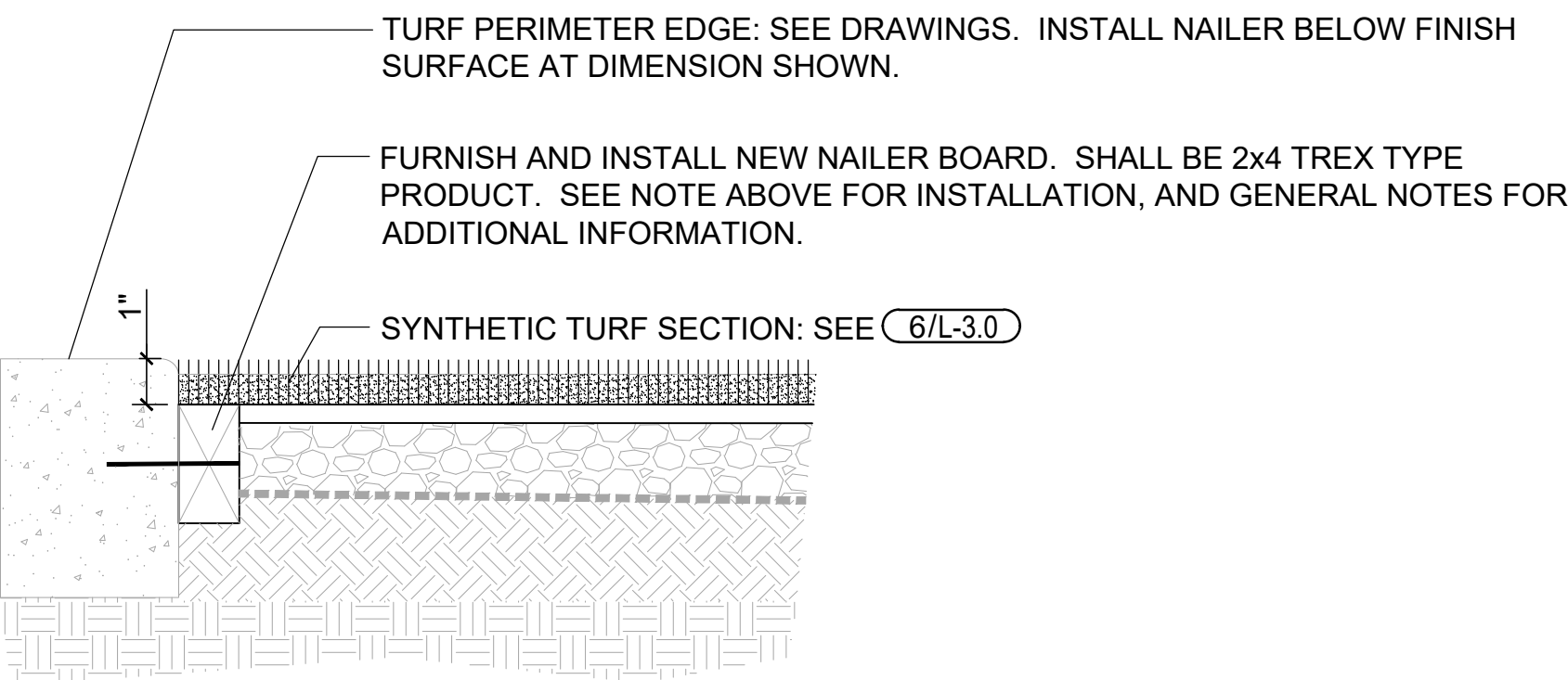


9 Concrete Band  
1" = 1'-0"

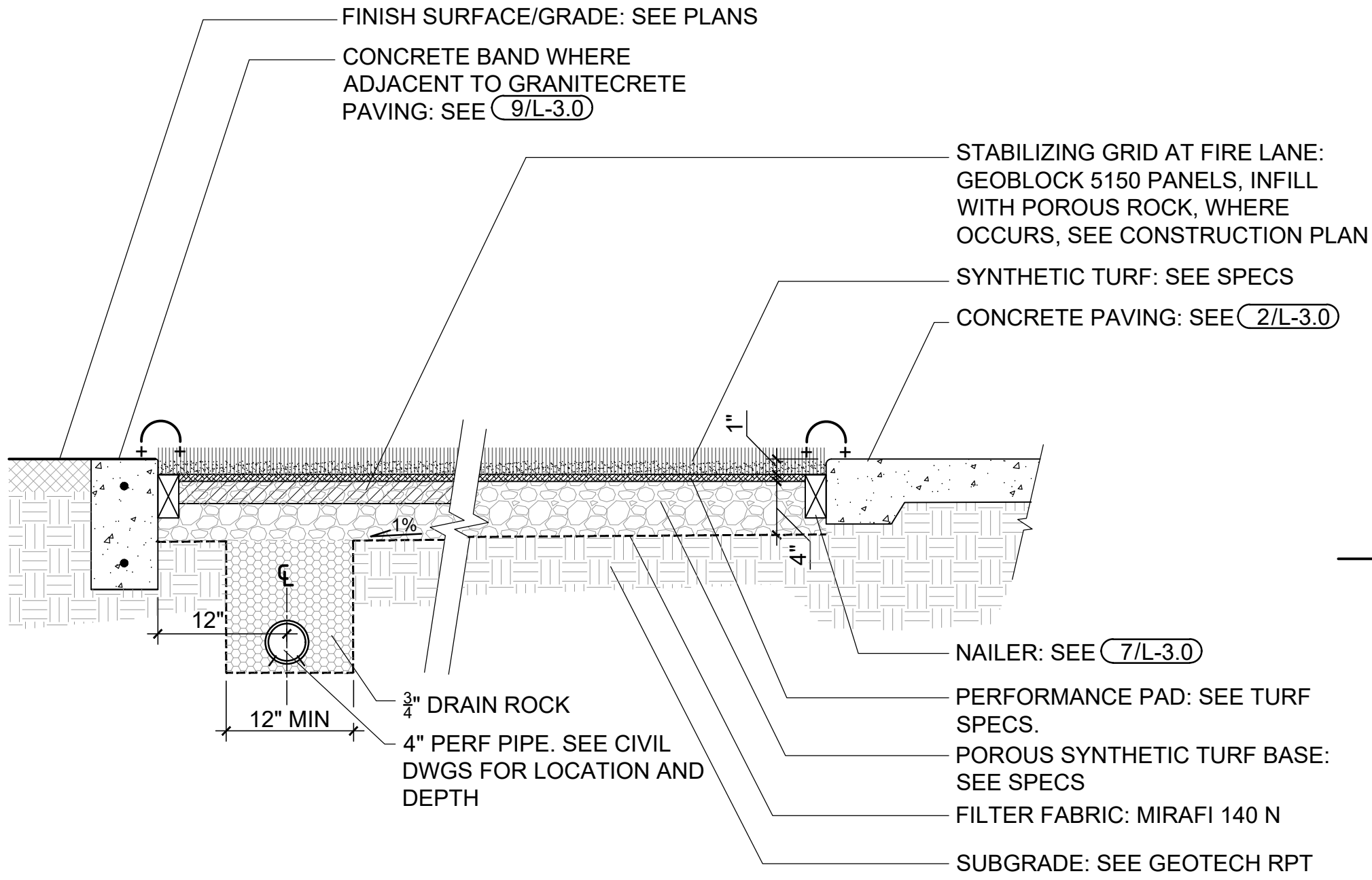


8 Structural Turf Grid  
1" = 1'-0"

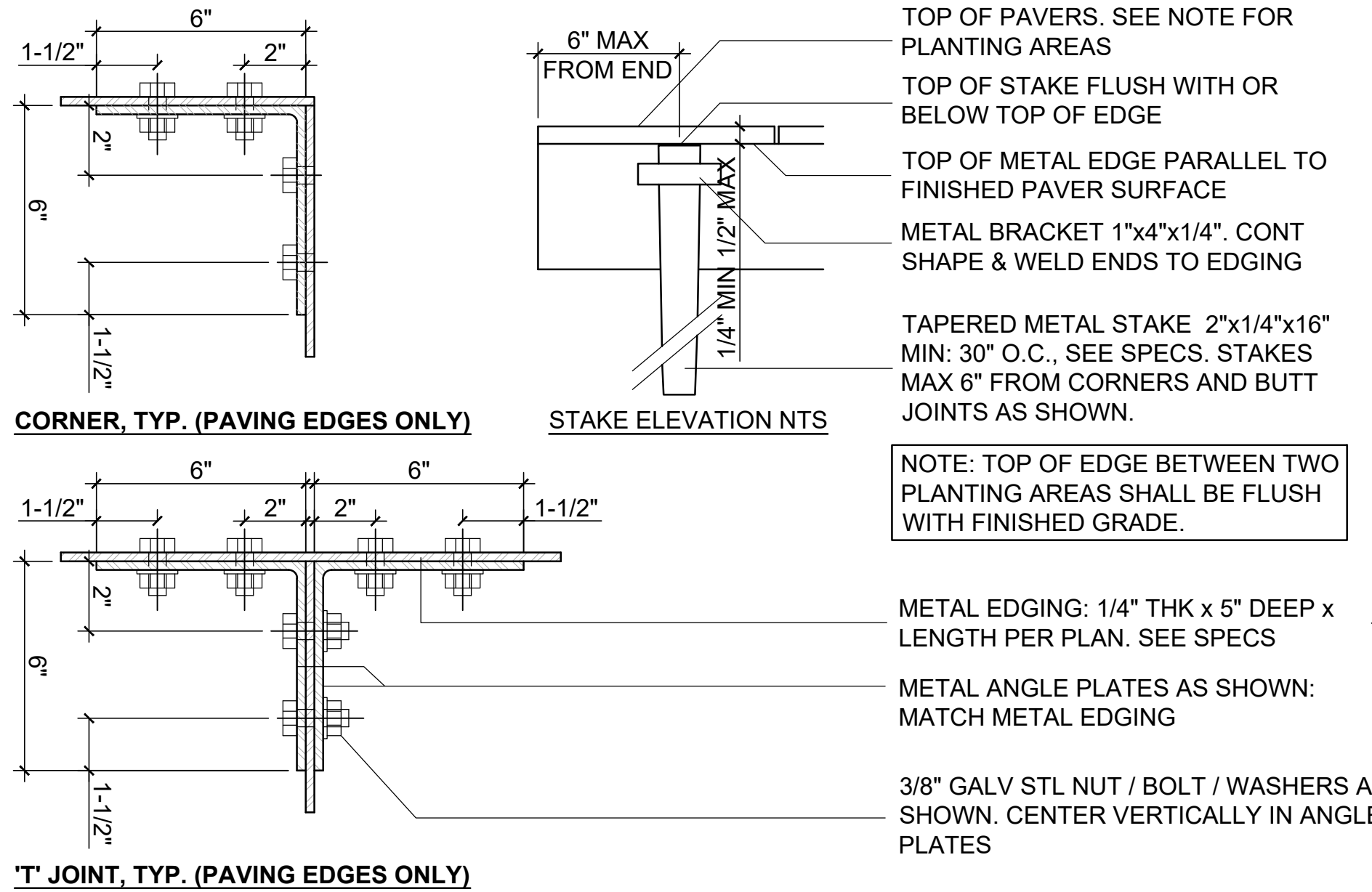
NAILER BOARD INSTALLATION:  
THE BOARD SHALL BE INSTALLED TO THE CONC CURB WITH A NAIL GUN AND 3" NAILS, 24" ON CENTER. EACH END OF THE BOARD ON STRAIGHT RUNS, AND INCLUDING THE CENTER ON CURVED RUNS, SHALL BE SECURED WITH A 3/8" DIA. BY 3.5" LONG EXPANSION BOLT WITH LEAD SLEEVE. CORE DRILL INTO CURB AND TIGHTEN BOLT TO THE BOARD. MAINTAIN 1/2" GAP BETWEEN CONSECUTIVE BOARDS FOR EXPANSION. THE NAILER BOARD SHALL BE INSTALLED ON THE ENTIRE EXISTING PERIMETER EDGES OF NEW SYNTHETIC TURF.



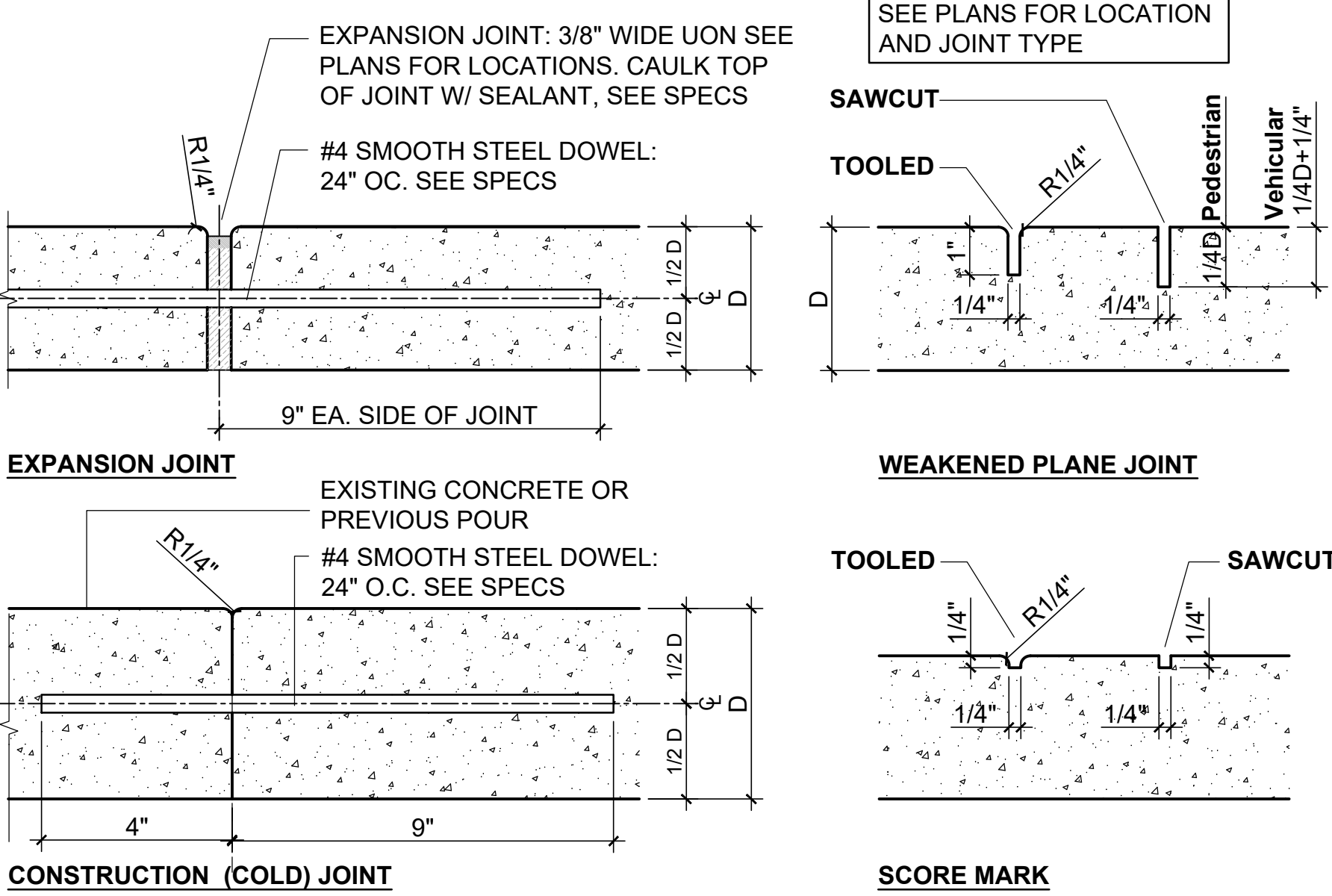
7 Synthetic Turf Nailer  
NTS



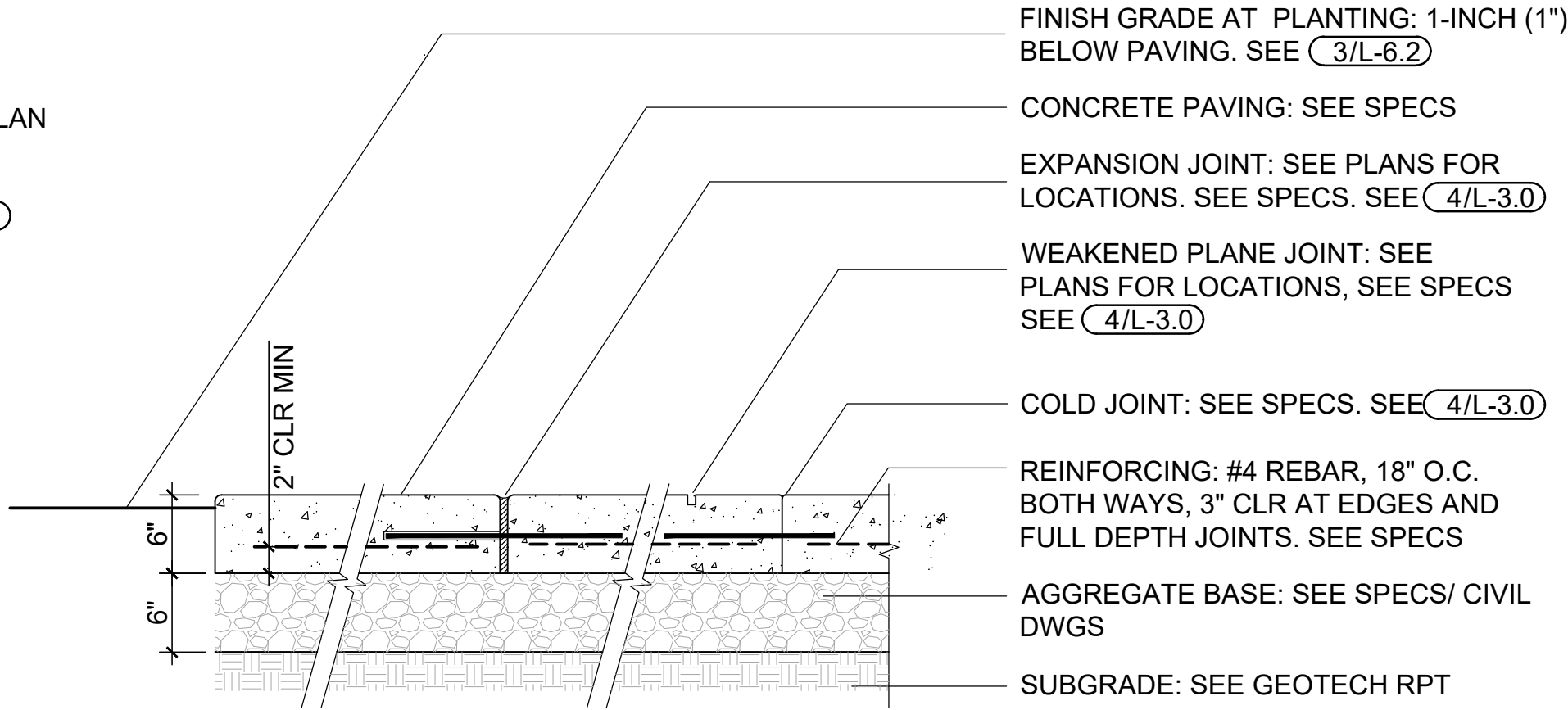
6 Synthetic Turf  
1" = 1'-0"



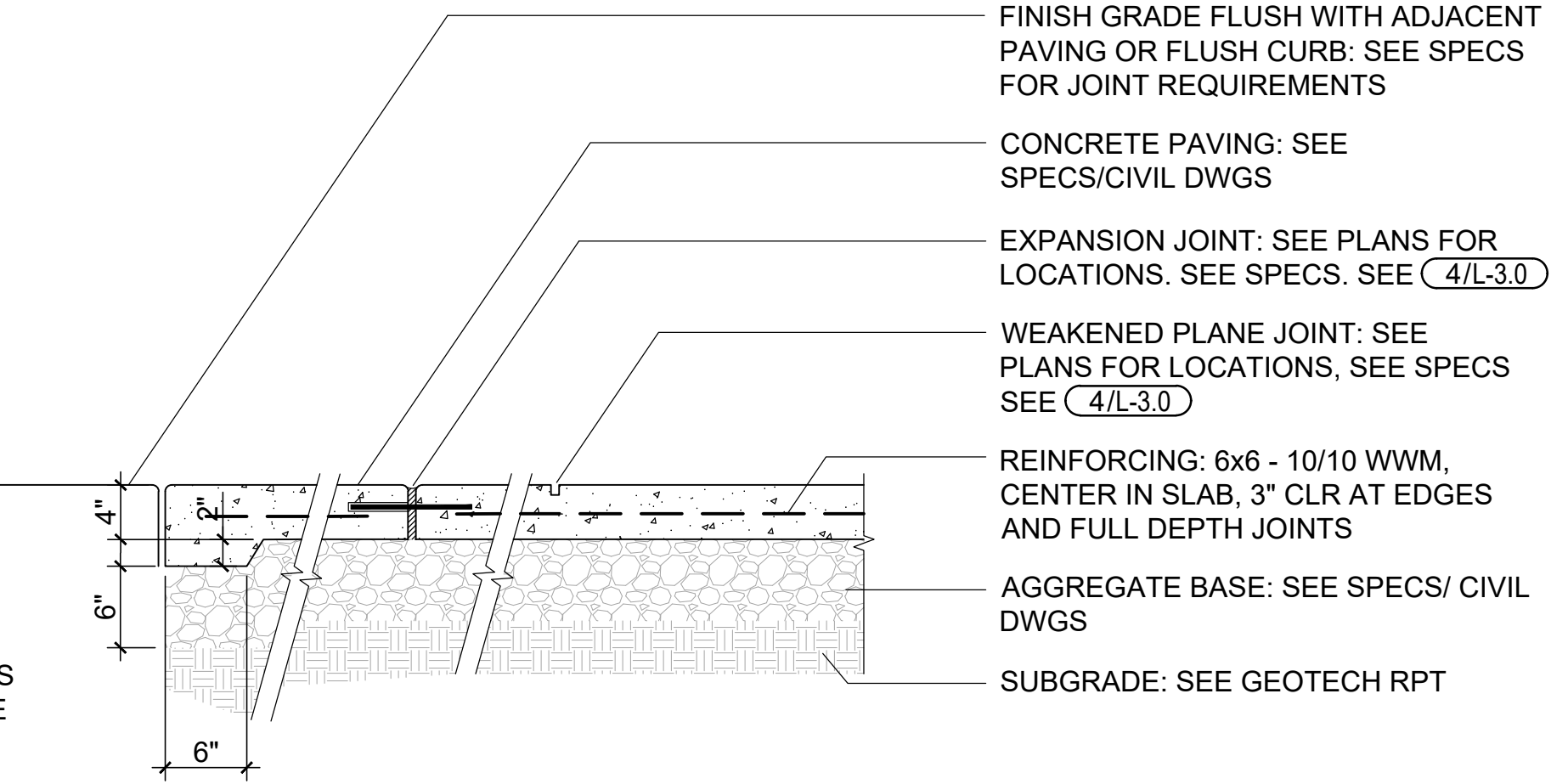
5 Metal Edge Restraint  
3"=1'-0"



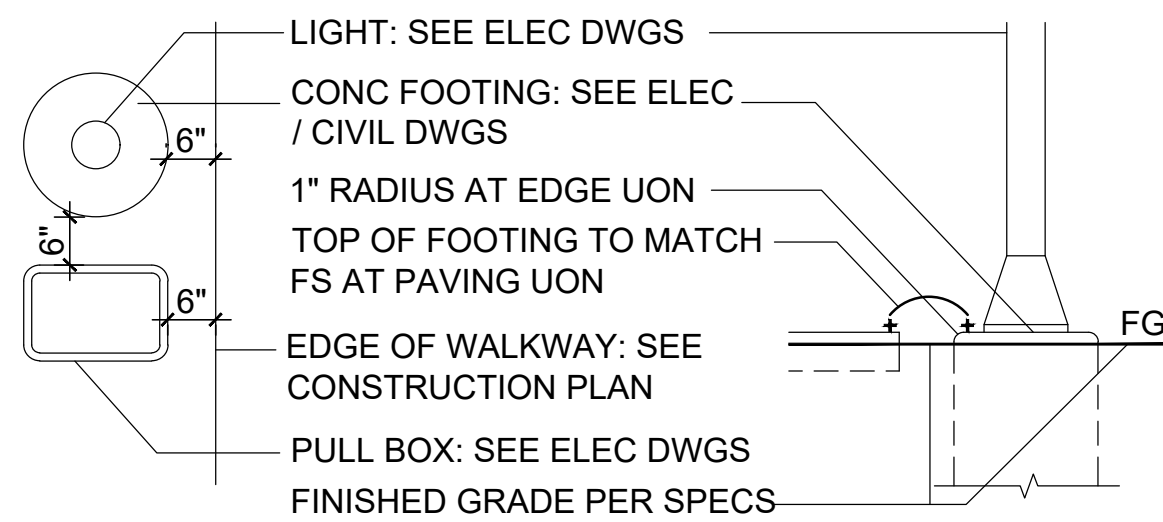
4 Concrete Joints, Typical  
4" = 1'-0"



3 Concrete Paving, Vehicular  
1" = 1'-0"



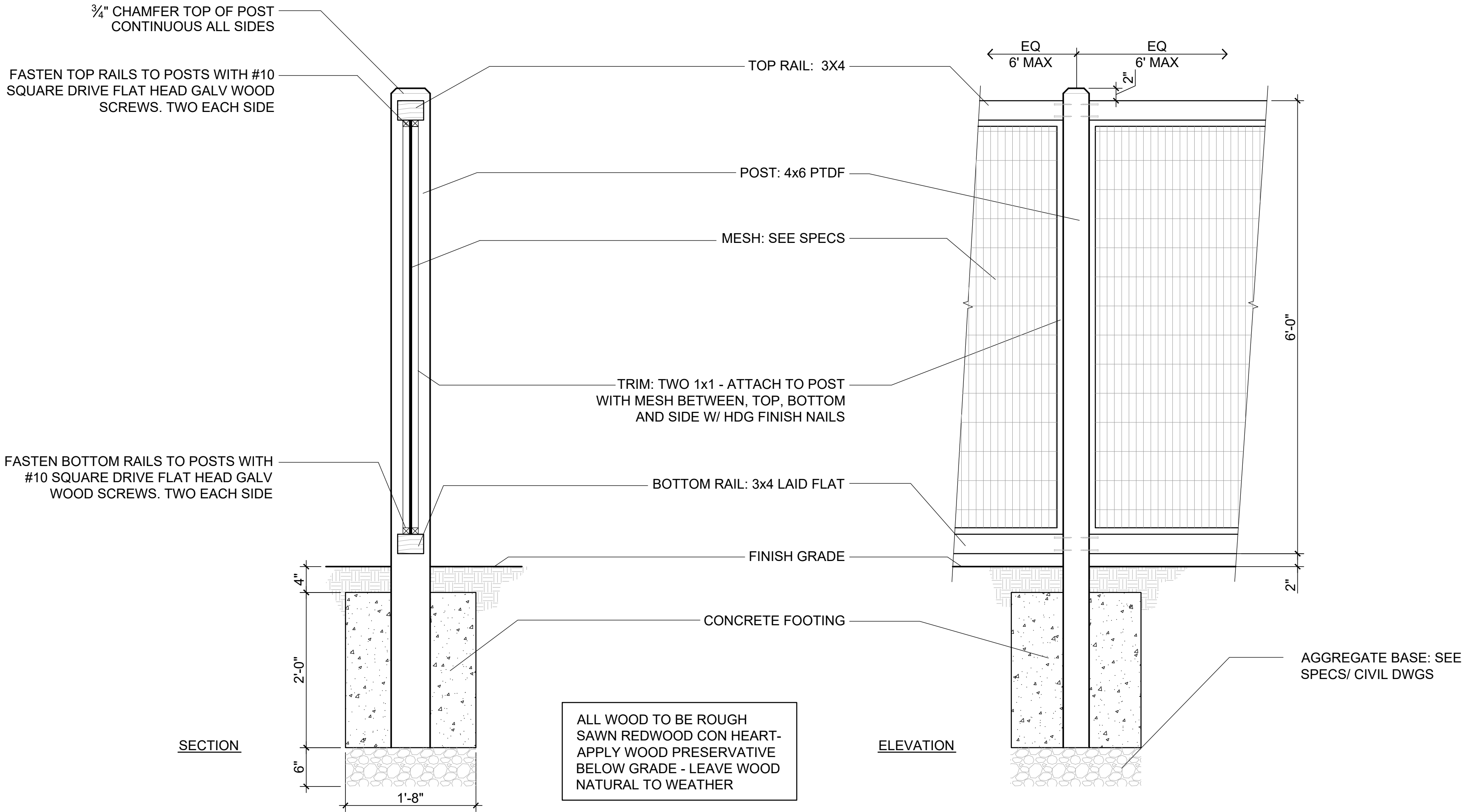
2 Concrete Paving, Pedestrian  
1" = 1'-0"



1 Light Bollard  
NTS

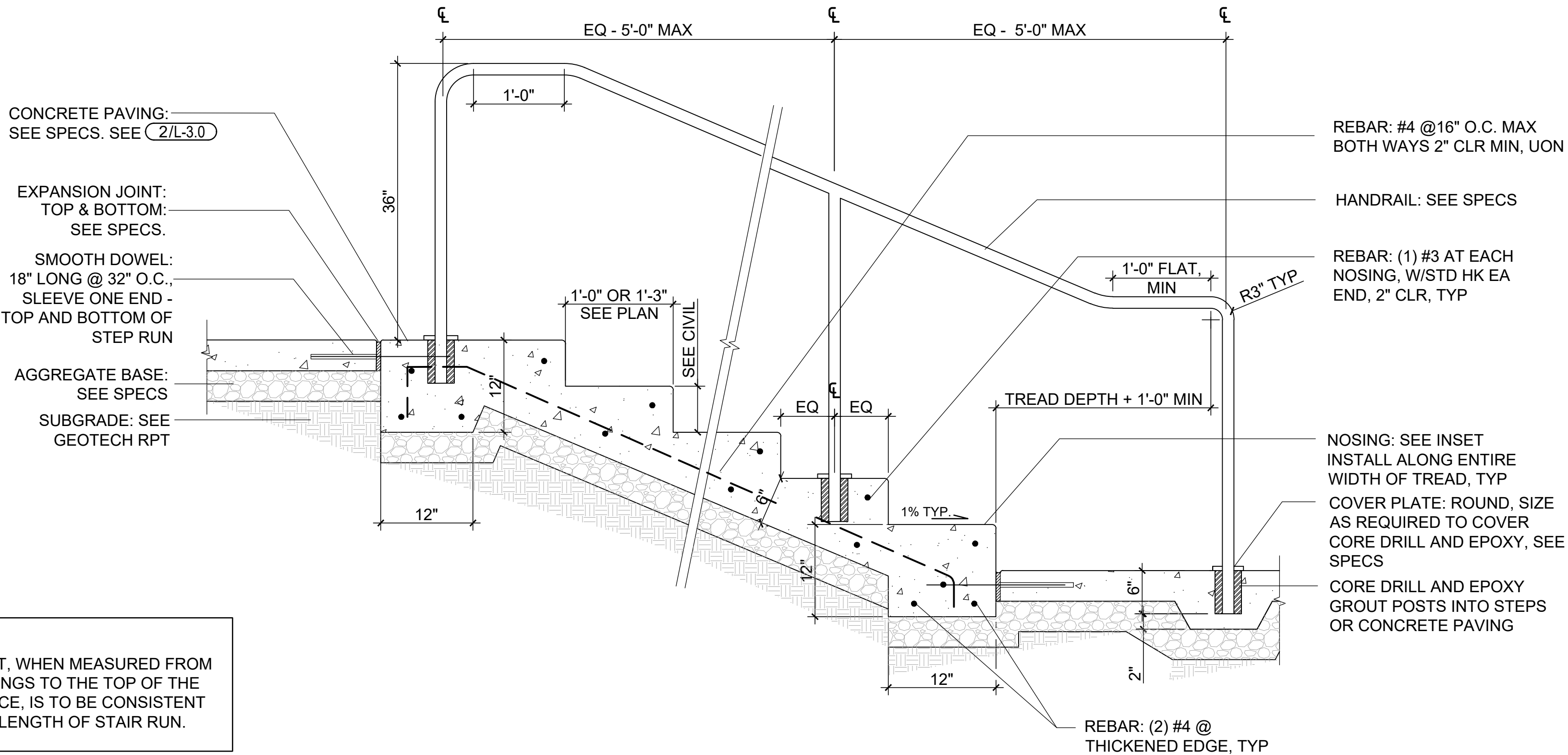
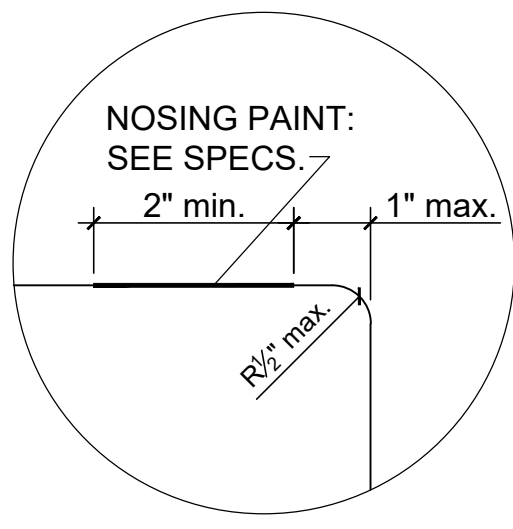
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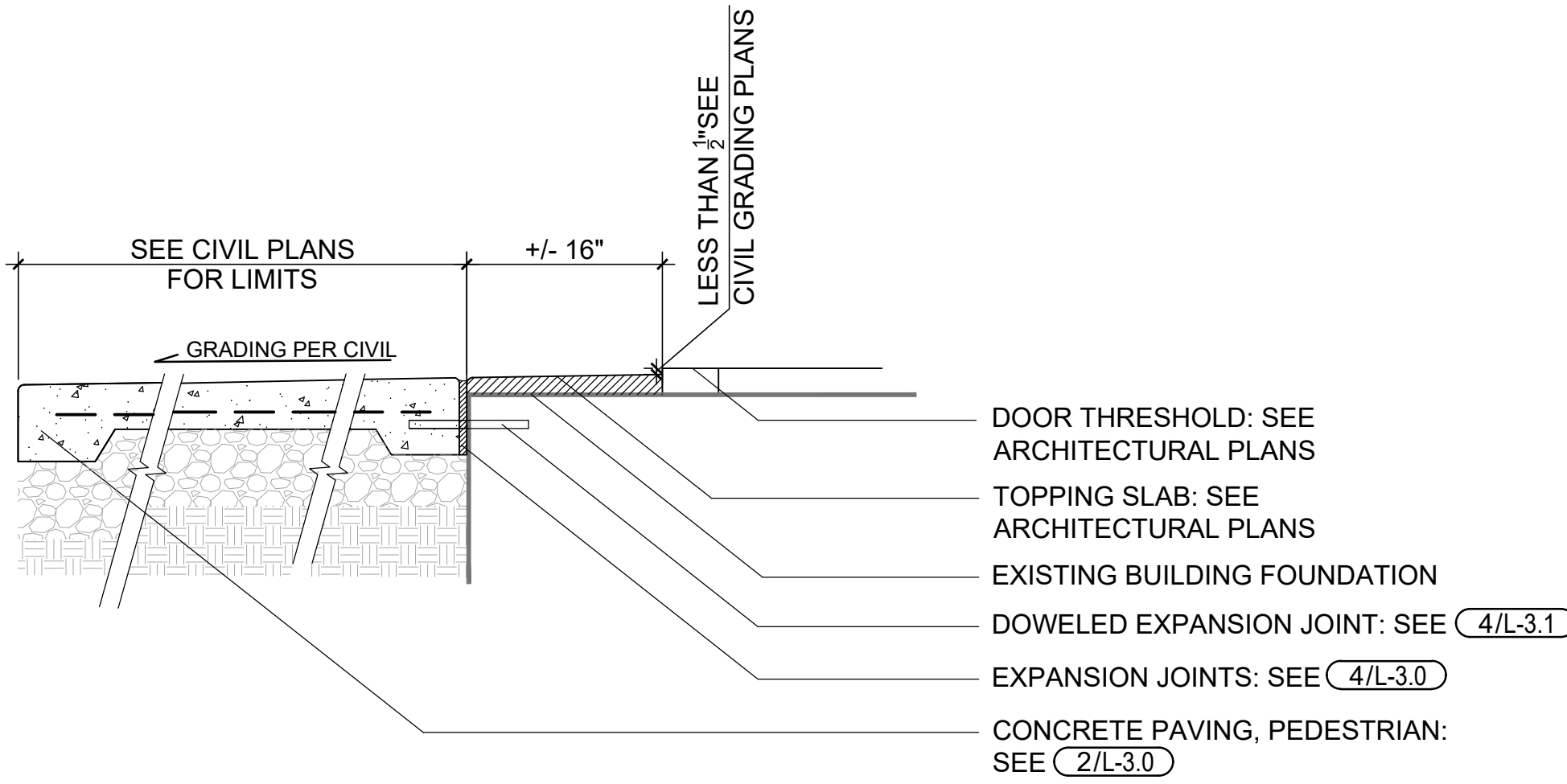
5 Welded Wire Fence

1" = 1'-0"



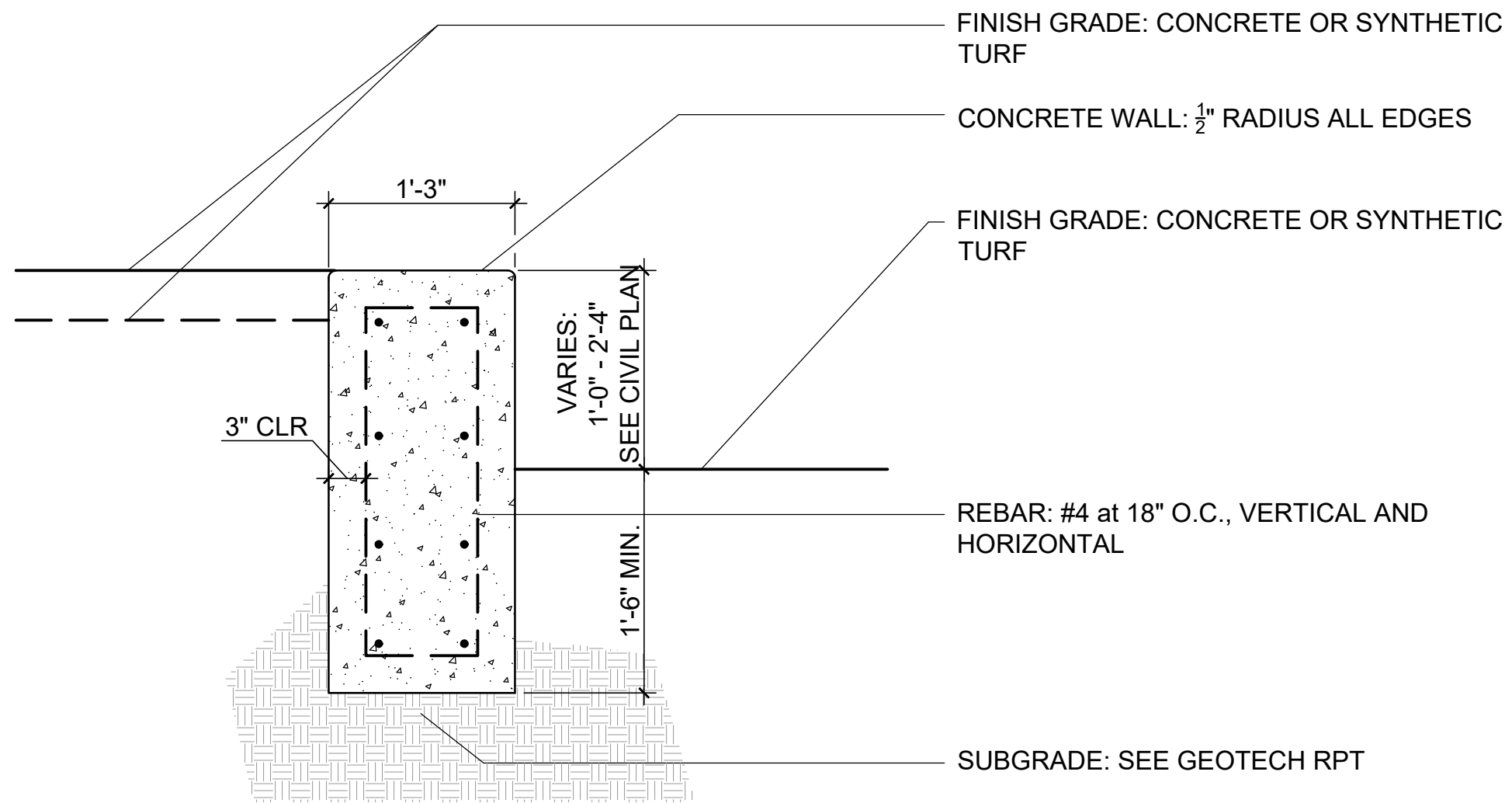
4 Concrete Steps

1" = 1'-0"



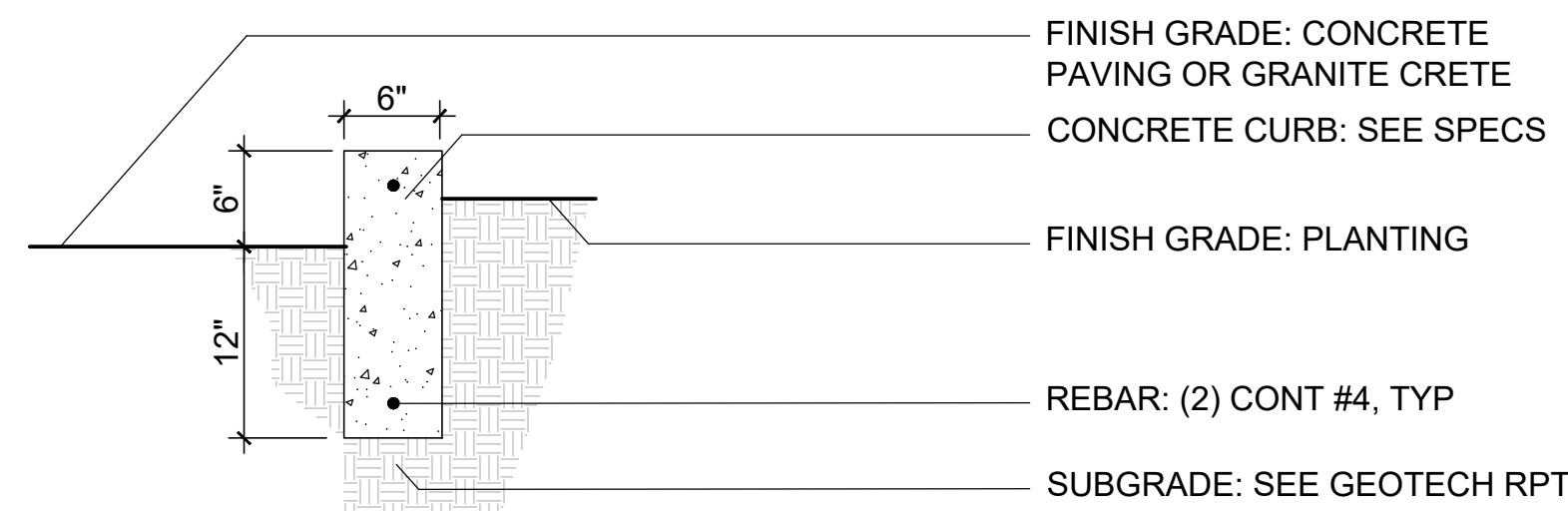
3 Building Access Paving

1" = 1'-0"



2 Amphitheater Wall

1" = 1'-0"

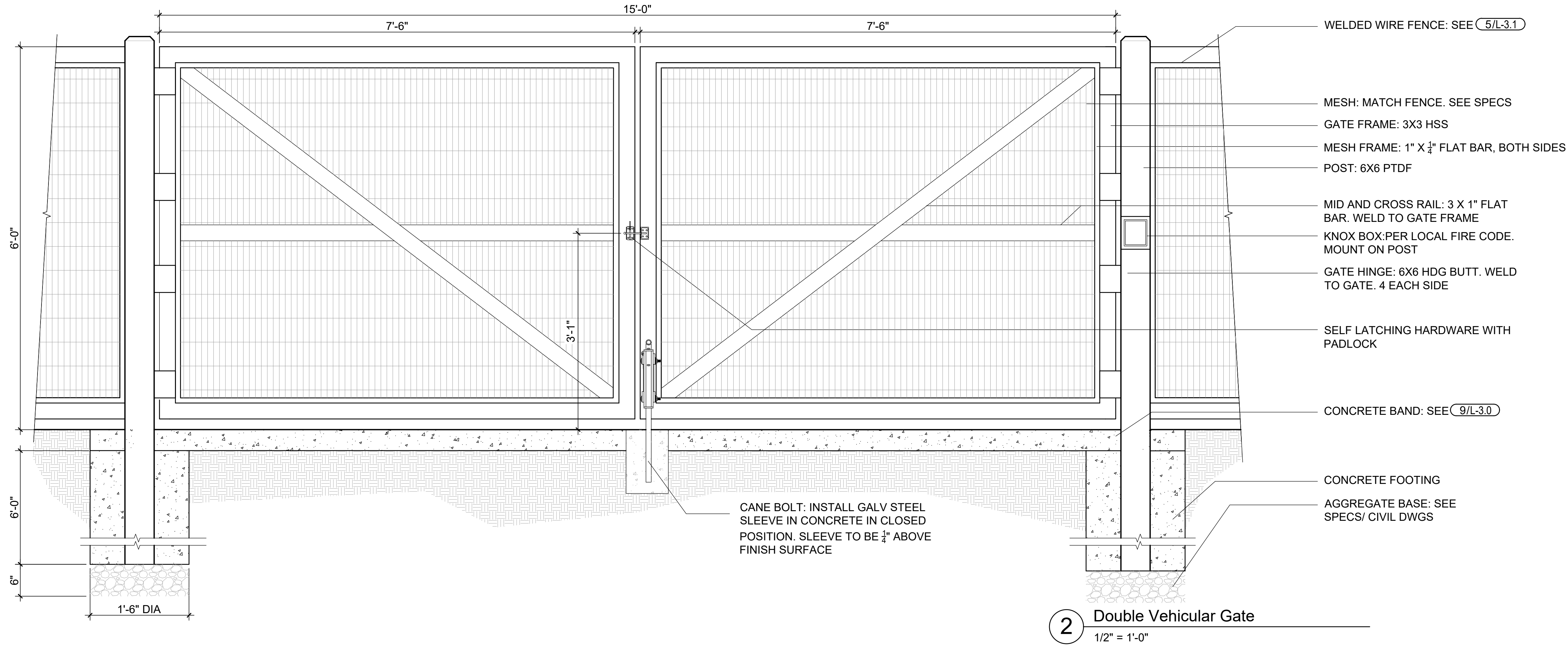


1 Concrete Curb

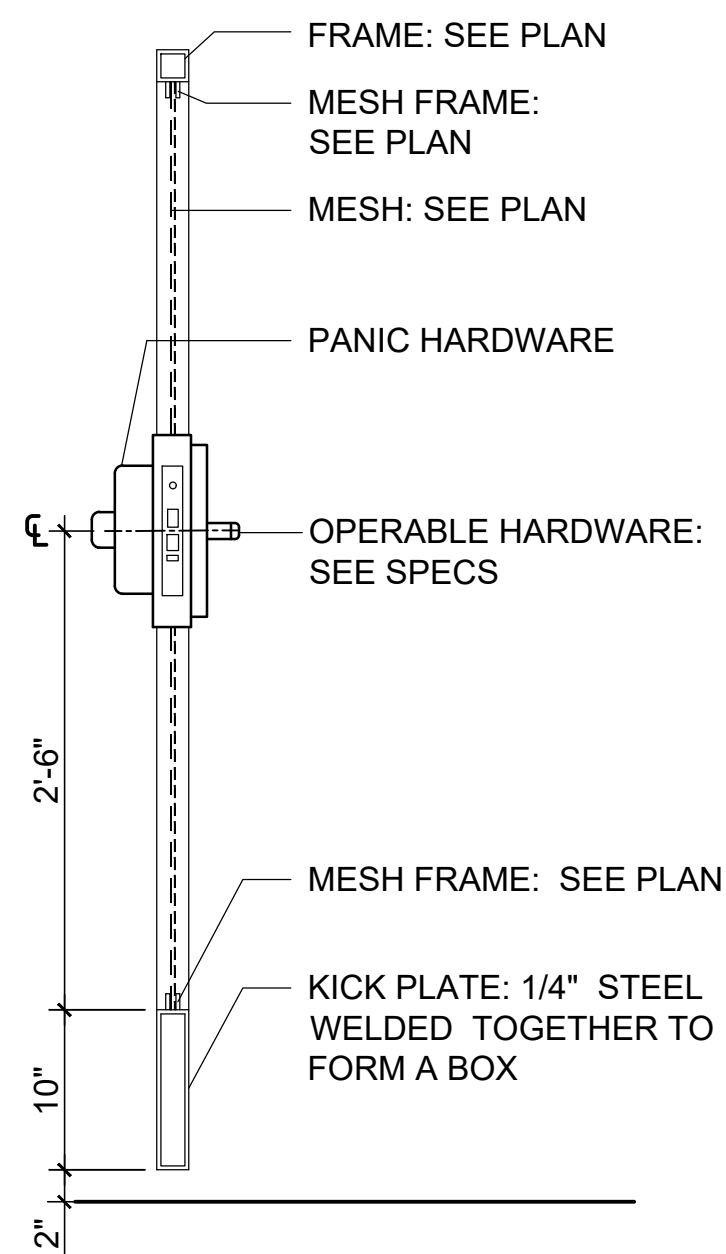
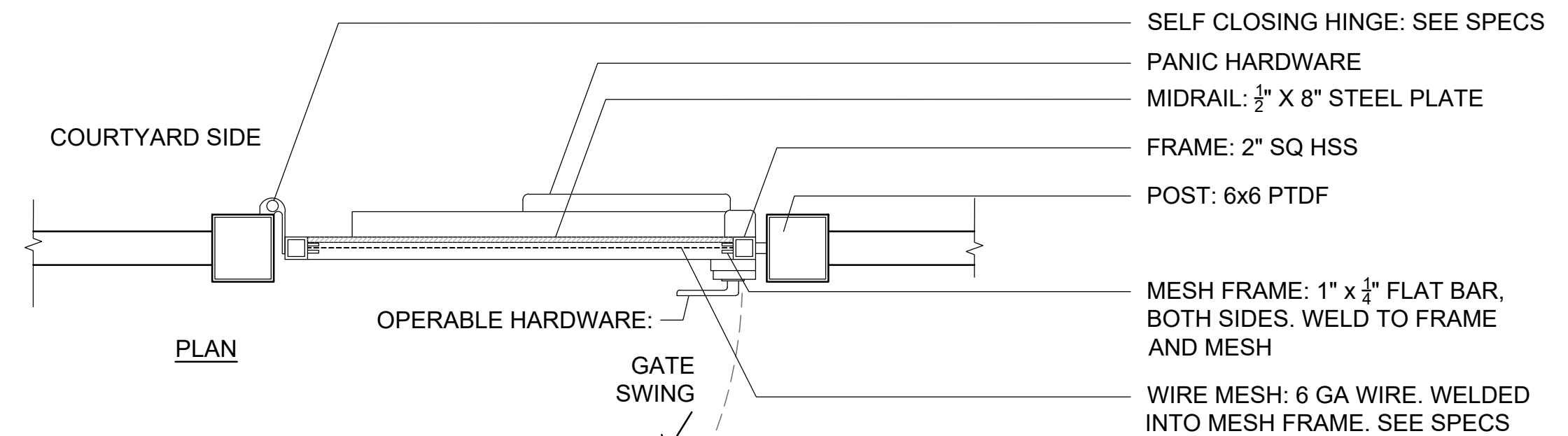
1" = 1'-0"

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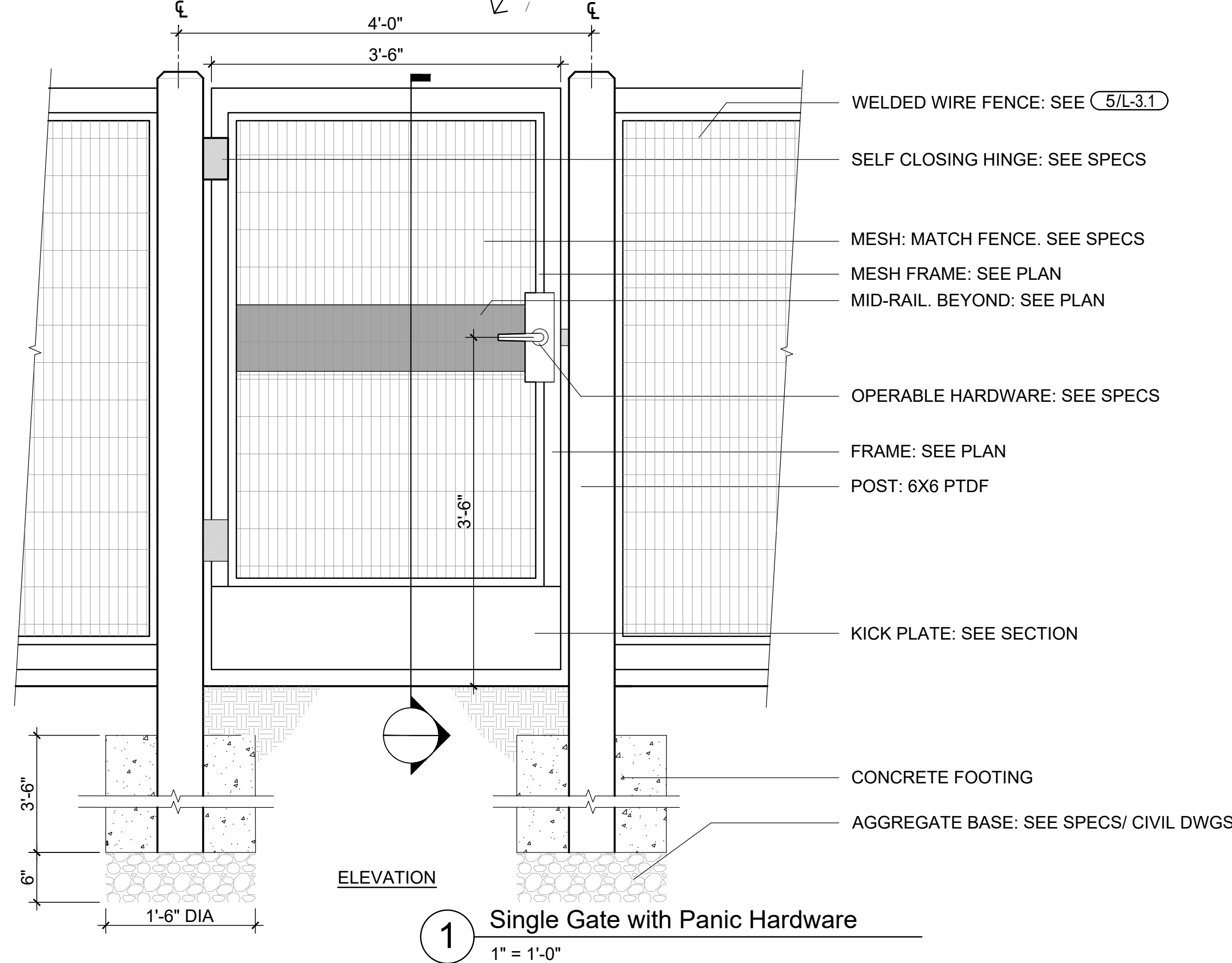
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2 Double Vehicular Gate  
1/2" = 1'-0"



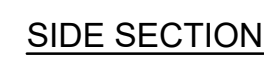
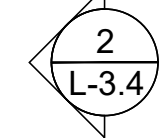
SECTION



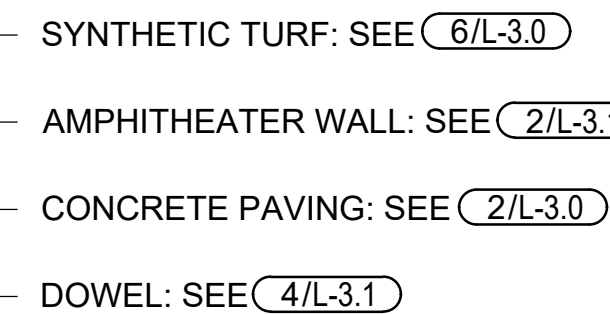
1 Single Gate with Panic Hardware  
1" = 1'-0"

- GATE NOTES:
1. ANCHOR ROD: 5/8" DIA MB WELD TO BACK OF STEEL POST @ 12" O.C. - CORE DRILL AND EPOXY SET IN END OF WALL. GROUT FILL UNDER STEEL PLATE - SET DEPTH TO ALLOW FOR GATE TO OPEN 90 DEGREES
  2. ALL METAL TO BE POWDERCOATED STEEL. COLOR - TBD
  3. CONTRACTOR TO VERIFY APPROXIMATE GATE WEIGHT PRIOR TO FABRICATION AND CONFIRM WEIGHT IS WITHIN GATE CLOSER LIMITS.
  4. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR GATE PRIOR TO FABRICATION.
  5. GATE OPENING PRESSURE TO BE MAXIMUM 5 LBS PER CODE.

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$$1'' = 1'-0''$$

$$1'' = 1'-0''$$


1" = 2'-0"

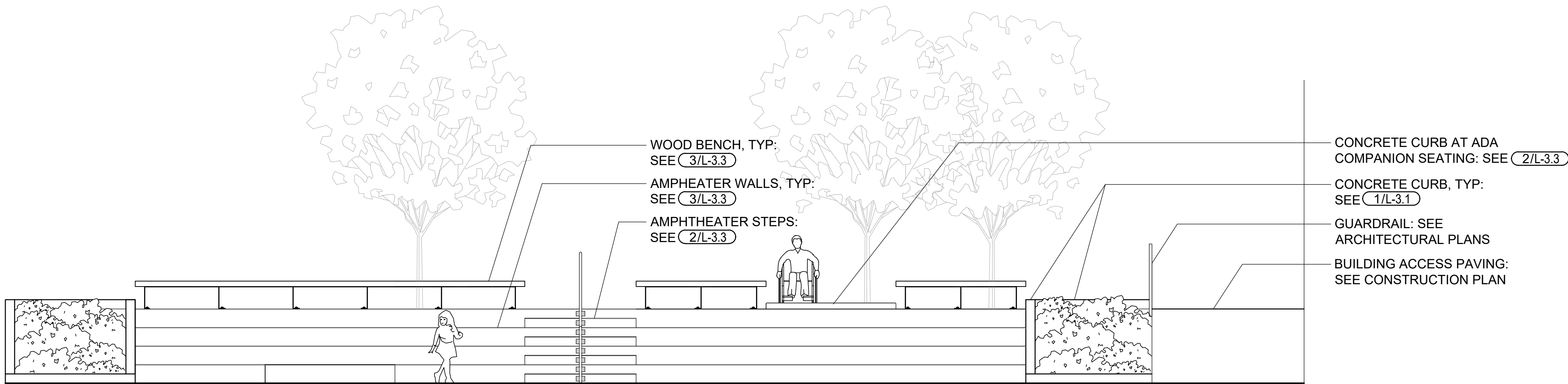


1" = 2'-0"

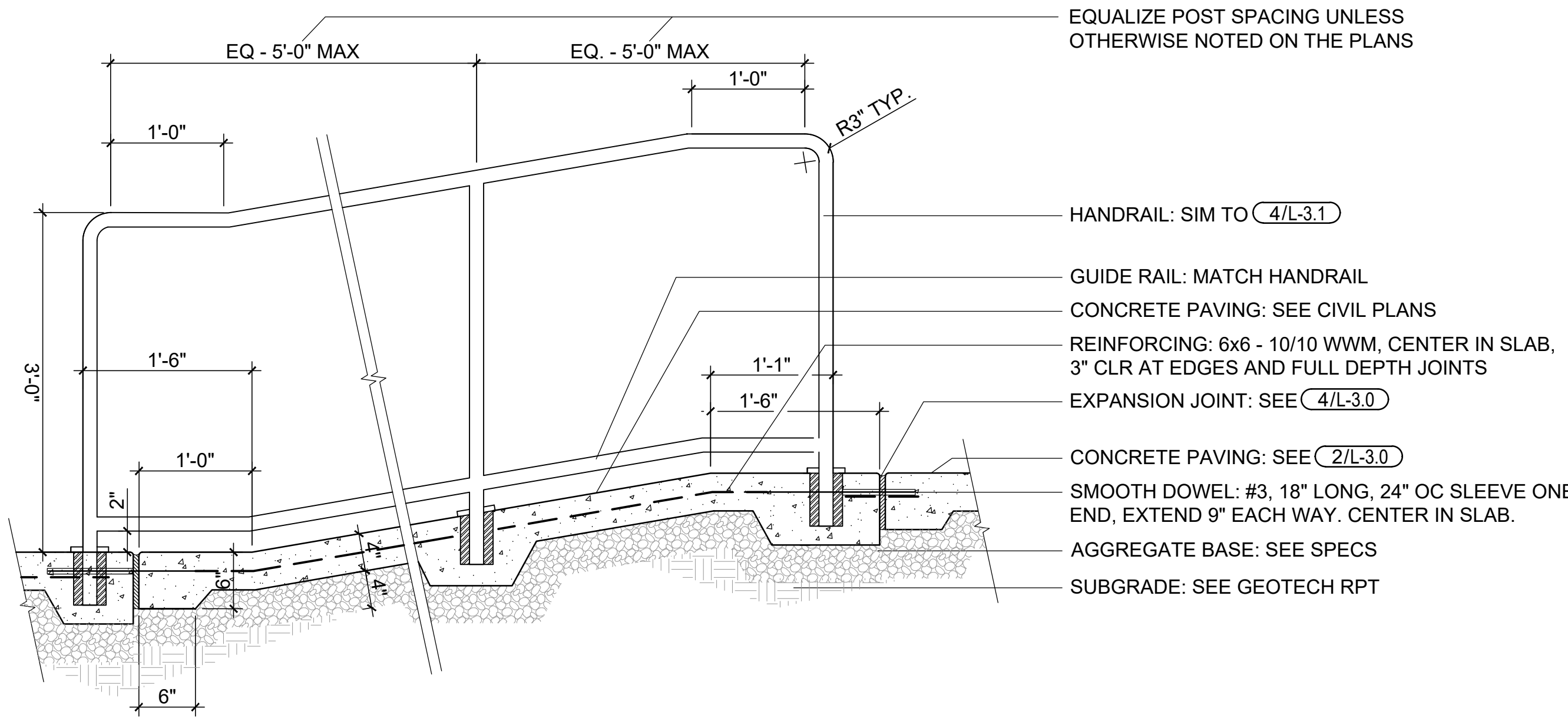


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2 Amphitheater Elevation  
1"=1'-0"



1 Concrete Ramp  
1"=1'-0"



BFS P#: 19030

Drawing Title:  
CONSTRUCTION DETAILS

Scale: Sheet:

L-3.4

Revision:

Date: July 2020



## Walden West Science School Modernization

15555 SANBORN RD. SARATOGA CA.95070

### LEGEND

SYMBOL	MANUFACTURER	DESCRIPTION
		Main Line: 24" minimum cover. Sch/Class for pipe / fittings per Specs. See Plan for sizes.
		Lateral Line / Drip Irrigation Supply Line: 18" min. cover, 24" under AC paving Sch/Class per Specs. See chart for size.
	Rainbird	PEB Remote Control Valve: Size as shown on plan.
	Rainbird	3/4" Quick Coupler. Single lug, 2-pc body, locking cover.
	Rainbird	Water Meter (3/4"). Model #FM075B. See General Note 2 for PSI / GPM.
	Zurn Wilkins	SXL Cast Bronze 'Y' Type Strainer. Line Size. 40-mesh
	Febco	(1") Lead-free Backflow Preventer LF825YA w/ Bronze Wye Strainer. Dark Green cage & blanket: See Details
	Wilkins	500 Series - Line Size. Set Downstream of Backflow Preventer. Set Pressure to 70 PSI

Note: Where applicable, all equipment specified shall comply with NSF/ANSI Standard 61: Drinking Water System Components.

	POC	Point of Connection: Domestic main line stub out. See (1/L-4.0)
	Rainbird	Controller with MV & FS terminals, metal pedestal cabinet 12 Stations. Model # ESPLXBASIC-LXMMSSPED
	Rainbird	ET Sensor: WR2 Wireless Rain+Freeze Sensor (wireless). Model #WR2-48. Attach to building eve. See (2/L-6.0)
	Superior	1-1/2" - 3300 Normally Open Master Valve
	Data Industrial	1" Brass Flow Sensor, # 250BR10. Connect to Controller.
		1" Conduit: 24" Depth minimum. For MV & FS wire and dedicated common. For Sensor & Grounding Wires.

### LEGEND - SPRINKLERS

SYMBOL	MANUF	BODY / NOZZLE	PSI	GPM	RAD	PRECIP In/hr
	Rainbird	RD12-S-P30-5H	30	0.2	5'	1.54
	Rainbird	RD12-S-P30-5F	30	0.41	5'	1.58
	Rainbird	RD06-S-P30-10F	30	1.58	10'	1.52
	Rainbird	RD06-S-P30-12H	30	1.30	12'	1.74
	Rainbird	RD06-S-P30-12Q	30	0.65	12'	1.74

### LEGEND - TREE BUBBLERS / EMITTERS

SYMBOL	MANUFACTURER / DESCRIPTION	MODEL/DESCRIPTION	PSI	GPM / GPH
	Rainbird / Hunter (15 Gallon Trees)	RWS-S-B-C-1401 RZWS-10"-50-CV	30	0.5 GPM

### LEGEND - DRIP IRRIGATION

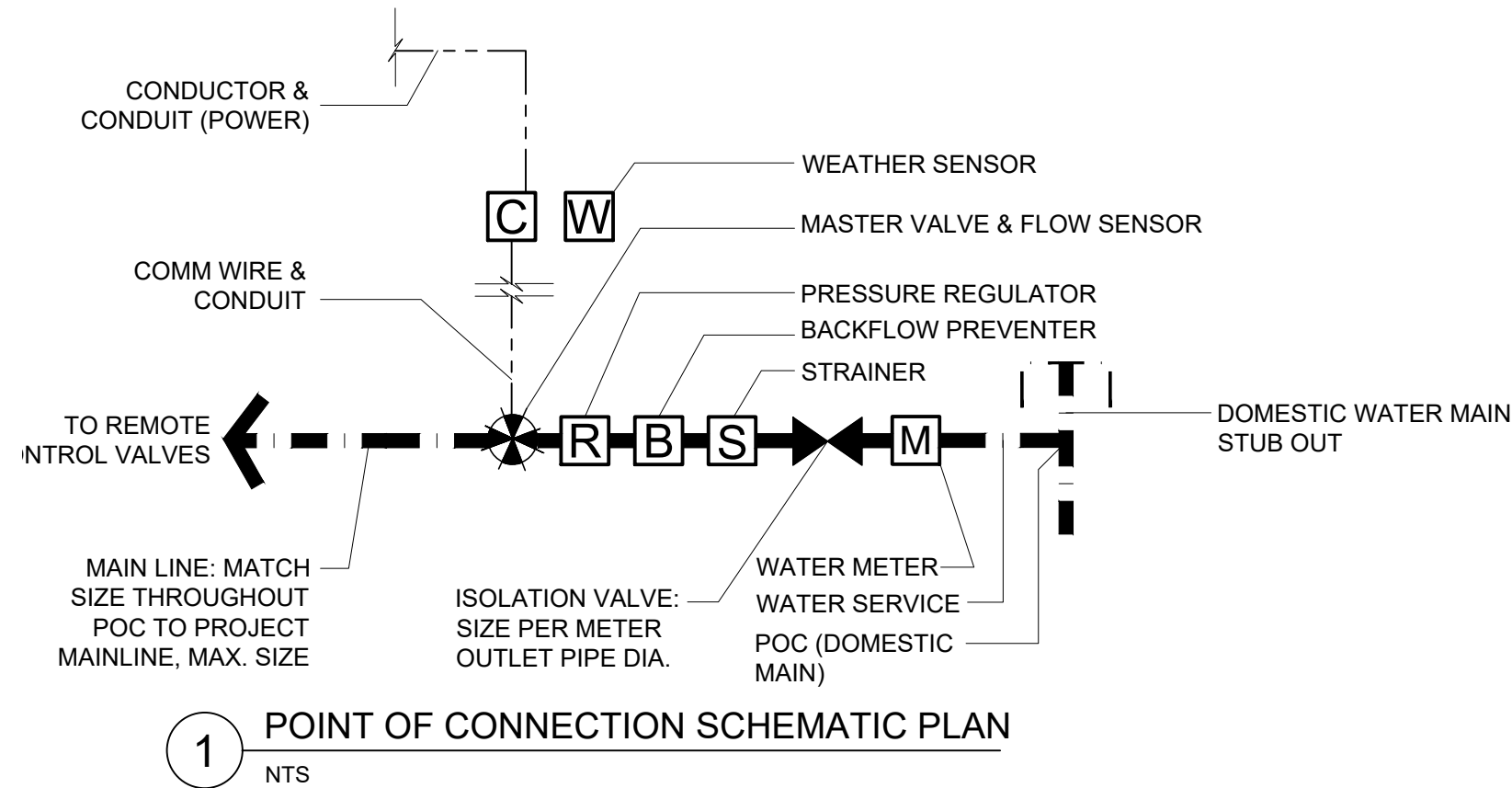
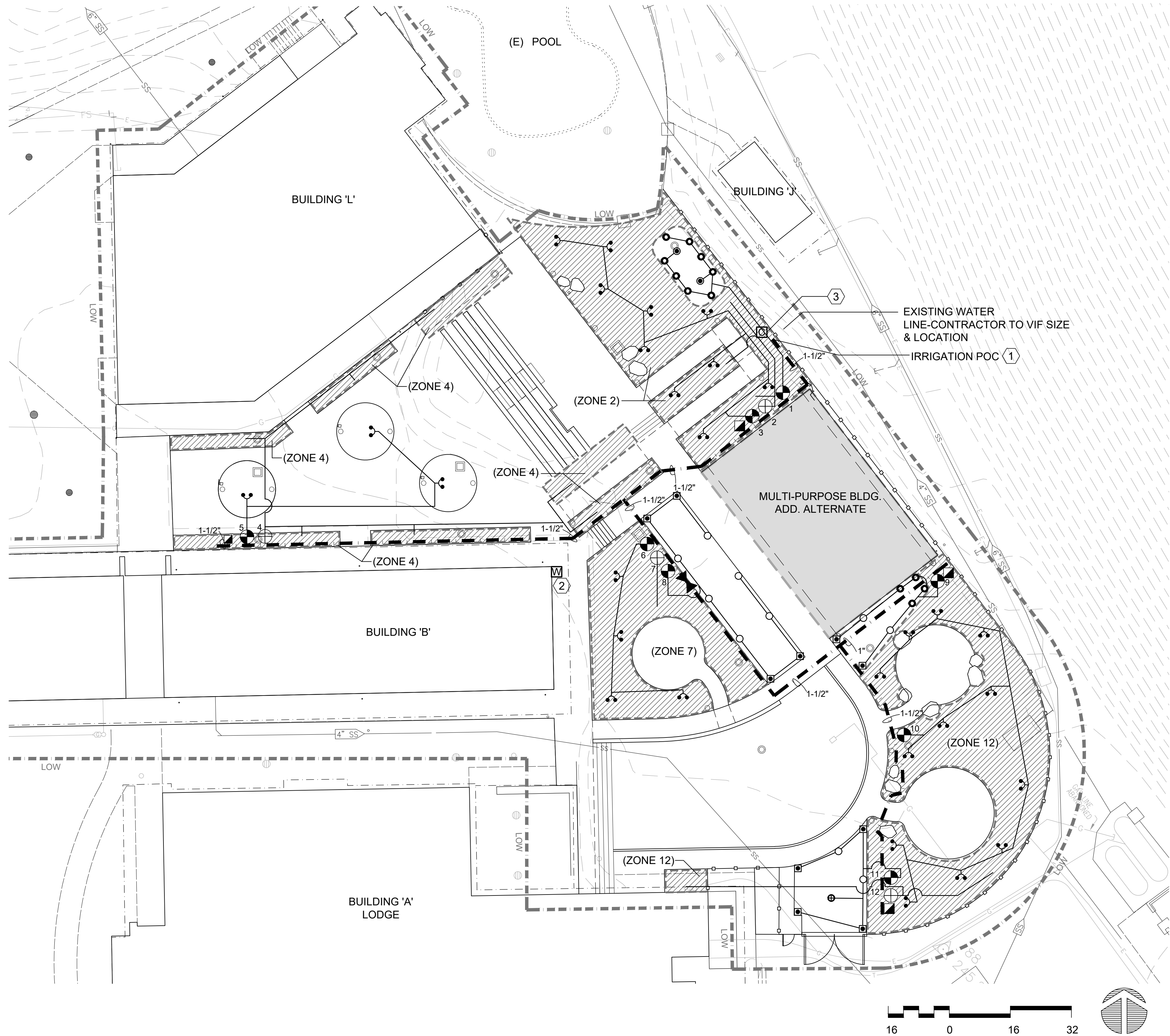
SYMBOL	MANUFACTURER	DESCRIPTION
		POINT-SOURCE: 3/4" I.D. PE supply pipe & 1/4" I.D. PE distribution tubes. See Specs. See Irrigation Details. Emitters: 2.0 GPH pressure compensating w/ bug/dust cap. Rainbird Xeri-Bug / Toro NGE / Netafim WPC. See Emitter Schedule. Manual flush valve at end of each branch of supply pipe. Rainbird Drip Operation Indicator at furthest end of each zone. See Schematic Irrigation Diagram.
	Netafim / Rainbird / Toro	Netafim High Flow Control Zone Kit w/ Disc Filter (4.5-17.6 GPM). Low Flow Kit w/ Disc Filter (0.25-4.4 GPM)
	Rainbird / Hunter	Rainbird XCZLF-100- / XCZ-075 Control Zone Kit. PRBR filter. -100 > 5.0 GPM, -075 < 5.0 gpm as required per zone
	Rainbird / Hunter	Toro DZK-TPV-1-LF / MF Drip Zone Valve Kit. MF > 4.5 GPM LF < 4.5 GPM as required per zone

### VALVE LEGEND

Valve Station Number	Bubbler Drip Rotor Spray	GPM	Size	Irrigation Zone (Z) & Notes
1	S	2.42	1-1/2"	Z1 (Bio)
2	D	6.6	1-1/2"	Z2 (Shrubs)
3	B	10.0	1-1/2"	Z3 (Trees)
4	D	4.8	1-1/2"	Z4 (Shrubs)
5	B	3.0	1-1/2"	Z5 (Trees)
6	B	5.0	1-1/2"	Z6 (Trees)
7	D	10.4	1-1/2"	Z7 (Shrubs)
8	S	11.8	1-1/2"	Z8 (Fire Lane)
9	S	3.16	1-1/2"	Z9 (Bio)
10	B	11.0	1-1/2"	Z9 (Trees)
11	S	5.2	1-1/2"	Z10(Fire Lane)
12	D	7.3	1-1/2"	Z11 (Shrubs)

### REFERENCE NOTES

- Point of Connection: Contractor to tap into existing water line. See Civil Dwg. for installing project meter. Irrigation point of connection configuration, See (1/L-4.0)
- Rain Sensor: Mount wireless sensor on building eave. See (2/L-6.0)
- Irrigation Controller Electrical Connection, See Electrical Dwg.



Drawing Title:

IRRIGATION PLAN

Scale: 1" = 16'-0"

Sheet:

L-4.0

Revision:

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**1. GUARANTEE:**  
Guarantee the irrigation system for one year from date of acceptance.

**2. VERIFICATION:**  
For new systems, design is based on 30 P.S.I. and 11.8 G.P.M. required at discharge outlet of point of connection. Verify same and notify Owner's Representative if such data adversely affects the operation of the system. Such notice shall be made in writing and prior to commencing any irrigation work.

**3. UTILITIES:**  
Verify location of all on-site utilities. Preserve and protect all such utilities unless otherwise noted. Restore damaged utilities to the satisfaction of the Owner's Representative, and at no additional cost to the Owner.

**4. SCHEMATIC:**  
System features are shown schematically for graphic clarity. Install all piping and valves in common trenches where feasible and inside planting areas adjacent to walkways and inside medians whenever possible.

**5. SPECIFICATIONS:**  
See Irrigation specifications for additional information.

**6. CODES:**  
Irrigation system shall be installed in accordance with all local codes and manufacturer's specifications. Notify Owner's Representative by telephone and in writing of any conflicts prior to installation.

**7. MASTER VALVE / FLOW SENSOR:**

- Connect master valve, and flow sensor if included, to controller with communication cable. See Irrigation Details. Install in dedicated 1" diameter PVC conduit.
- Normally closed Master Valves: if irrigation controller does not have a master valve over-ride function / program, then dedicate one station to quick coupler use.
- Flow sensors: See Specifications for instructions on how to program irrigation controller to allow flow sensor to accommodate quick coupler use.

**8. VALVES:**

- For tree bubbler zones, include the MFR's adjustable pressure regulating dial.

**9. QUICK COUPLING VALVES:**  
Install on double swing joint. Locate 12" away from edge of walks, walls, curbs, and headerboards within planting areas. Provide one swivel, hose ell.

**10. CHECK VALVES:**  
Install in-head check valves for sprinklers, and in-line check valves in drip irrigation supply lines, as required to minimize line drainage. Allow in bid price an amount sufficient to provide and install additional check valves to accommodate any necessary field changes.

**11. BORING**  
Jet bore or directional bore under existing rigid paving areas. Do not trench across unless specifically shown on the Drawings and/or approved in writing by the Owner's Representative.

**12. SLEEVING:**  
Sch. 40 PVC pipe for all wiring and irrigation lines installed under paving areas and that pass through drainage trenches with drain rock, 4-inch dia. or twice the aggregate diameter of all pipes contained within the sleeve, whichever is greater. Install (with ends clearly marked above grade) at the necessary depth prior to the construction of paving areas or field bases. Sleeving to extend 12-inches from edge of paving or drainage trench into adjacent subgrade. No unsleeved piping, angle-bends, 90-degree bends, or joints shall be allowed under paving.

**13. HEAD ALLOWANCE:**  
Allow in bid price an amount sufficient to provide and install an additional 5 sprinkler heads of each type specified on plan to accommodate field changes. These heads shall be located as directed by the Owner's Representative. Deliver to the owner any unused additional heads at the end of the maintenance period.

**14. FIELD VERIFICATION:**  
Field verify dimensions of all planting areas to receive sprinkler irrigation. Determine nozzle pattern (1/2 head, 1/4 head, Adjustable Arc, etc.) based on field conditions. Adjust all nozzles in field for optimal coverage and to prevent overspray onto walks, paved areas, buildings, etc.

**15. VALVE TUNING**  
For sprinkler circuits adjust flow control on valves, if required, to optimize coverage and minimize misting.

**16. POP-UP HEIGHT:**  
Use 6" pop-up sprays in turf areas and 12" pop-up sprays in the remaining planting areas, unless otherwise noted. See Legend for Pop-up rotor height.

**17. POP-UP LOCATION:**  
Distance of pop-up sprinkler from paving or headerboard is equal to:

- Minimum 24" if adjacent non-permeable surface drains away from planting.
- 2" if adjacent non-permeable surface drains entirely to planting.
- 2" if adjacent surface is permeable and no runoff occurs.

**18. PRESSURE REGULATION**  
All sprinklers shall be installed with pressure regulating screens or have pressure regulated bodies.

**19. DRIP VALVES**  
Group drip valve run times together to ensure a minimum flow of 2 GPM as required by the flow sensor. Suggested grouping chart will be provided prior to Final Completion.

**21. CONTROLLER:**  
Install controller as shown on the Drawings. All above-grade conduit shall be rigid steel securely fastened to structure and to controller.

**22. PROGRAMMING / SCHEDULING:**

- Set up establishment irrigation schedules for optimum plant growth based on anticipated weather over the maintenance period, water use of plantings (see Planting Plan Legend) and sun exposure. Assume the soil type to be a clay / sand loam.
- Non-ET Controllers: Prior to the end of the maintenance period, schedule the controller for repeat cycle irrigation and multiple programs.
- ET Controllers: Prior to the end of the maintenance period, program the controller per manufacturer's directions.
- Adjust irrigation times for bio-retention soil areas to account for higher percolation rates
- For sprinklers, provide at least three start times for turf and two start times for shrubs if over 5 minutes in length for any one station. Turf and shrubs shall be on separate programs. Shrubs shall be separated into two programs, one for sun valves, one for partial shade to shade valves.
- Do not cycle drip irrigation application more than once per day, adjust length of run time to provide the required volume of water in one cycle.

# Walden West Science School Modernization

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## IRRIGATION NOTES

Sheet:

# L-4.1

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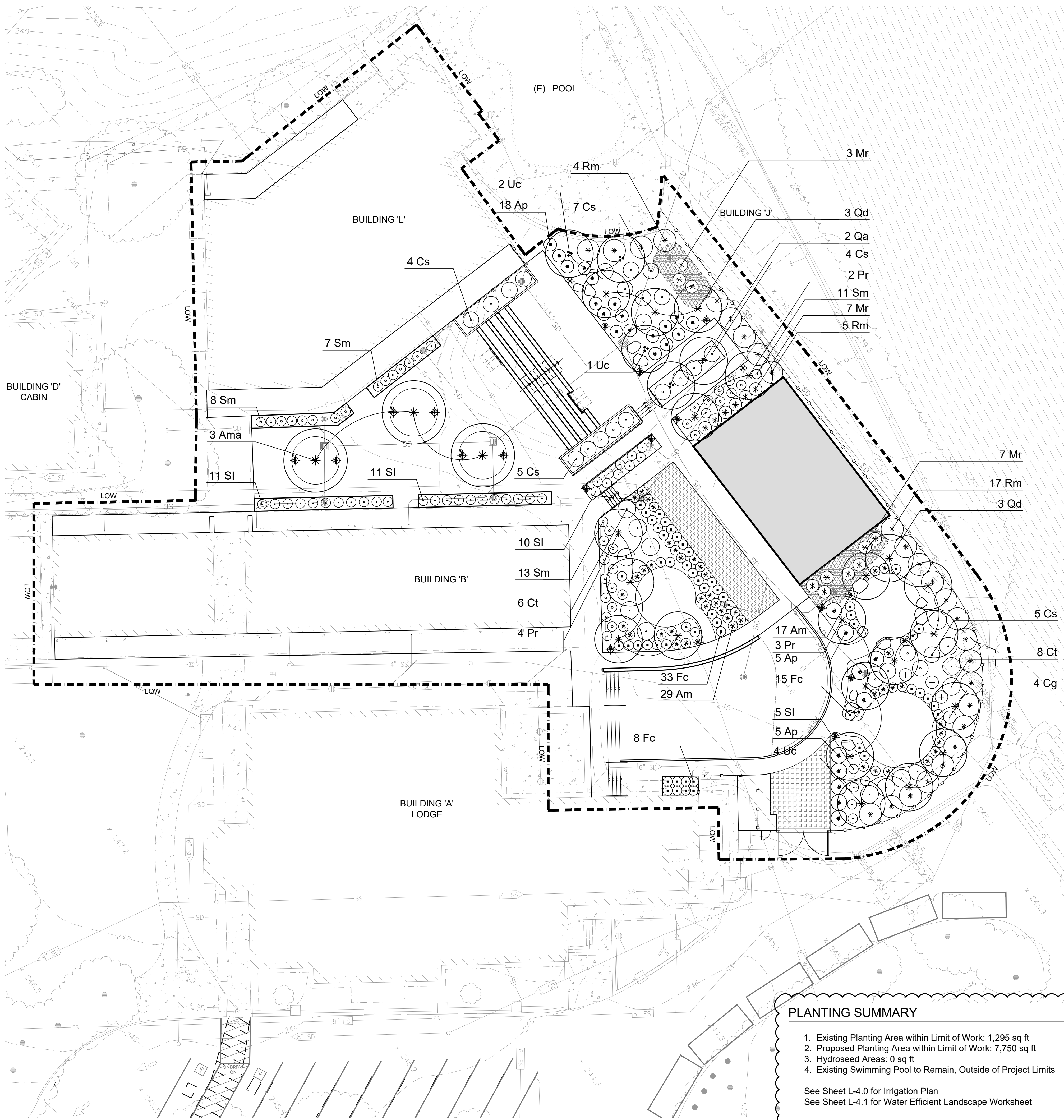
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Date: July 2020

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**PLANTING SUMMARY**

- 1. Existing Planting Area within Limit of Work: 1,295 sq ft
- 2. Proposed Planting Area within Limit of Work: 7,750 sq ft
- 3. Hydroseed Areas: 0 sq ft
- 4. Existing Swimming Pool to Remain, Outside of Project Limits

See Sheet L-4.0 for Irrigation Plan  
See Sheet L-4.1 for Water Efficient Landscape Worksheet

PLANT LEGEND

*WUC	CODE	BOTANICAL NAME	COMMON NAME	SIZE	NOTES / SPACING
<b>Trees</b>					
M	Ama	Acer macrophyllum	Bigleaf Maple	15 Gal.	
M	Pr	Platanus racemosa	Western Sycamore	15 Gal.	
VL	Qa	Quercus agrifolia	Coast Live Oak	15 Gal.	Multi Trunk
VL	Qd	Quercus douglasii	Blue Oak	15 Gal.	
M	Uc	Umbellularia californica	California Bay	15 Gal.	
<b>Shrubs</b>					
L	Am	Achillea millefolium	Common Yarrow	1 Gal.	12" O.C.
L	Ct	Ceanothus thyrsiflorus	Blue Blossom	5 Gal.	84" O.C.
L	Cs	Cistus salvifolius	Sageleaf Rockrose	5 Gal.	60" O.C.
L	Fc	Festuca californica	California fescue	5 Gal.	36" O.C.
L	SI	Salvia leucophylla 'Point Sal Spreader'	Purple Sage	5 Gal.	36" O.C.
L	Sm	Salvia mellifera	Black Sage	5 Gal.	36" O.C.
L	Rm	Rhamnus californica 'Mound San Bruno'	San Bruno Coffeeberry	5 Gal.	84" O.C.
<b>Groundcovers</b>					
L	Ap	Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	5 Gal.	As Shown
L	Cg	Ceanothus griseus 'Yankee Point'	Yankee point ceanothus	5 Gal.	As Shown
<b>Bioretention Plants</b>					
		Carex divulsa	Berkeley Sedge (33%)	Plugs	12" O.C.
L		Festuca californica	California Fescue (33%)	Plugs	12" O.C.
L		Iris douglasiana	Pacific Coast Iris (33%)	Plugs	12" O.C.
L	Mr	Muhlenbergia rigens	Deer Grass	1 Gal.	48" O.C.
<b>Geogrid Planting</b>					
		Delta Bluegrass No-Mow	Turf		

\* WATER USE CATEGORY (WUC) KEY

WUCOLS Region Applicable to this Project: **REGION 1**  
H = High; M = Moderate; L = Low; VL = Very Low; NL = Species Not Listed  
\* from: Water Use Classification of Landscape Species,  
A Guide to the Water Needs of Landscape Plants (WUCOLS)  
Revised 2014, University of California Cooperative Extension, L.R. Costello, K.S. Jones

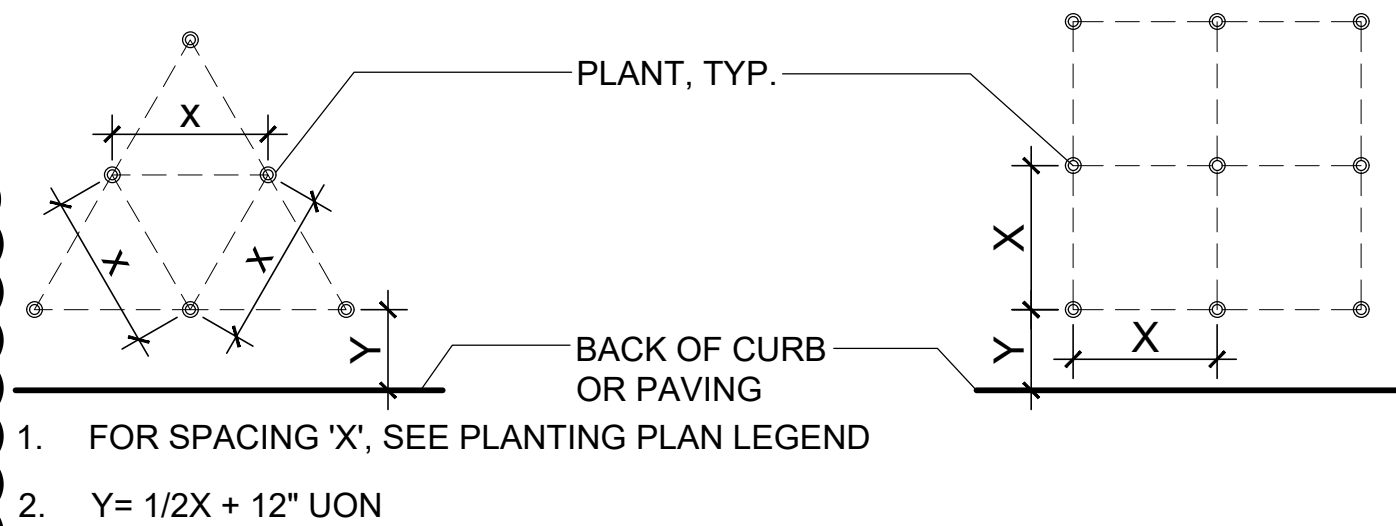
GENERAL NOTES

- See Specifications for materials and procedures including, but not limited to, soil preparation, amendments, fertilizers, herbicides, and mulch application.
- See Specifications for materials and procedures including plant pit size, staking, aeration tubes / bubblers, and windscreen. See (1/L-6.2) (2/L-6.2)
- See Specifications for materials and procedures relating to weed mat and metal edge See (1/L-6.2) (5/L-3.0)
- Install root barrier panels around trees planted within 5' of foundations, walls, and curbs, and in all planters in paved areas. See (1/L-6.2)

GENERAL NOTES

- Landscape Architect to approve plant material BEFORE plant layout commences.
- Landscape Architect to approve layout of all plants BEFORE planting commences.
- Apply pre-emergent herbicide to all planting areas, excluding naturalized hydroseed areas/ See Specifications.
- Apply post-emergent herbicide to all naturalized hydroseed areas. See Specifications.
- Prepare, amend, and fertilize existing soil per Specifications. Import topsoil per Specifications.
- Install weed mat under river rock, gravel, and mulch-only areas. See Specifications. See (1/L-6.2)
- Install weed mat in all planting areas. See Specifications. See (1/L-6.2)
- Install header board / edge restraint per detail. See Specifications.
- Install root barrier panels at trees planted within 5' of foundations, walls, and curbs, and in all planters in paved areas. See Specifications. See (1/L-6.2)
- Pre-mix amendments into soil before backfilling plant pits - do not mix inside pits. Break large clods into small pieces. See Specifications.
- Plant shrubs and groundcovers per detail (2/L-6.2) . See Spacing Diagram.
- Plant and stake trees per detail (1/L-6.2).
- Install mulch to all planting areas. See Specifications for thickness.
- Install windscreen at all trees. See Specifications. See (1/L-6.2)
- Apply deer repellent to all plants. See Specifications.
- See Specifications for Maintenance Period.

PLANT SPACING AND PLANTING SETBACK DIAGRAM



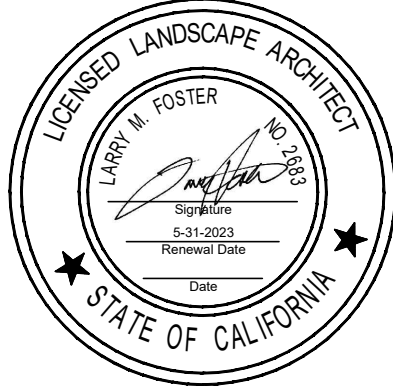
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Walden West  
Science School  
Modernization

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BFS P#: 19030

Drawing Title:  
**PLANTING PLAN**

Scale: 1" = 16'-0"

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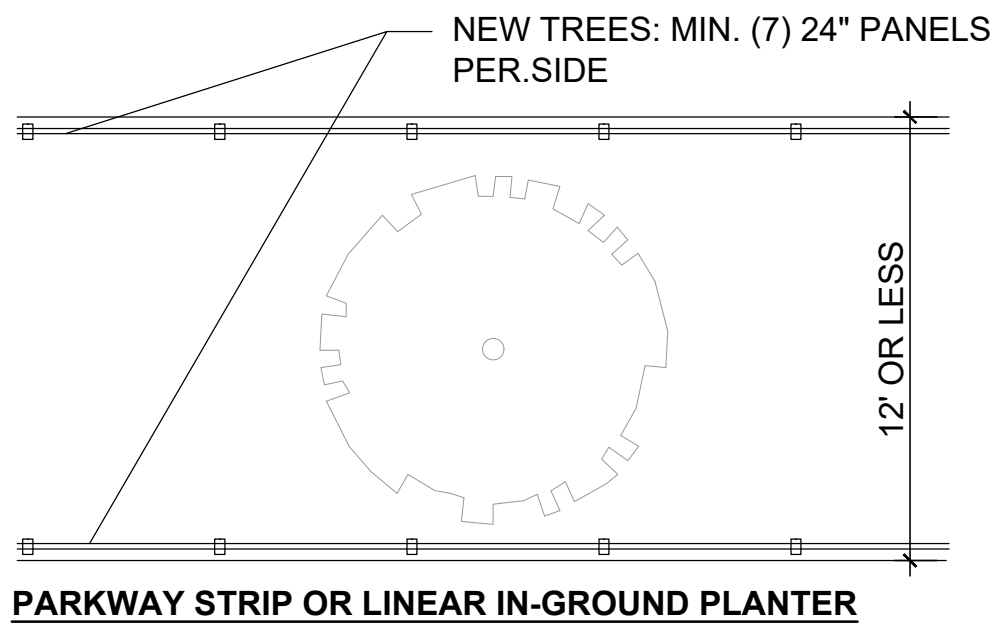
L-5.0

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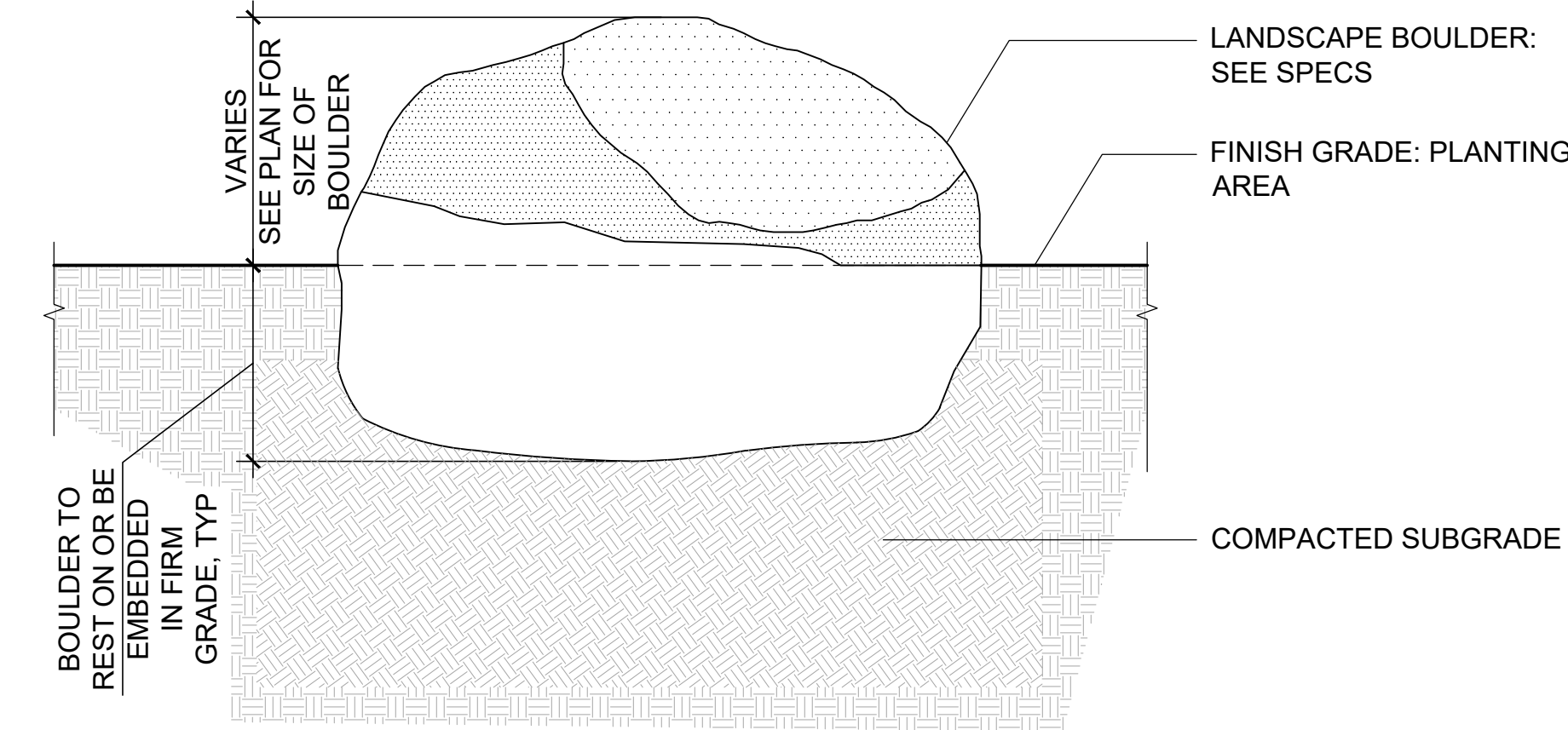


OPEN PLANTING BEDS	
BOX SIZE	24" PANELS
24"	7
36"	9
48"	11
60"	13

EXISTING TREES IN PARKWAY STRIPS	
CANOPY DIA	24" PANELS / SIDE
12'	7
18'	10
24'	13

NOTE: SEE ROOT BARRIER PLAN FOR BARRIER LENGTHS. THIS GENERIC DETAIL IS ONLY APPLICABLE TO TREES WHERE ROOT BARRIERS HAVE NOT BEEN SHOWN ON PLAN.

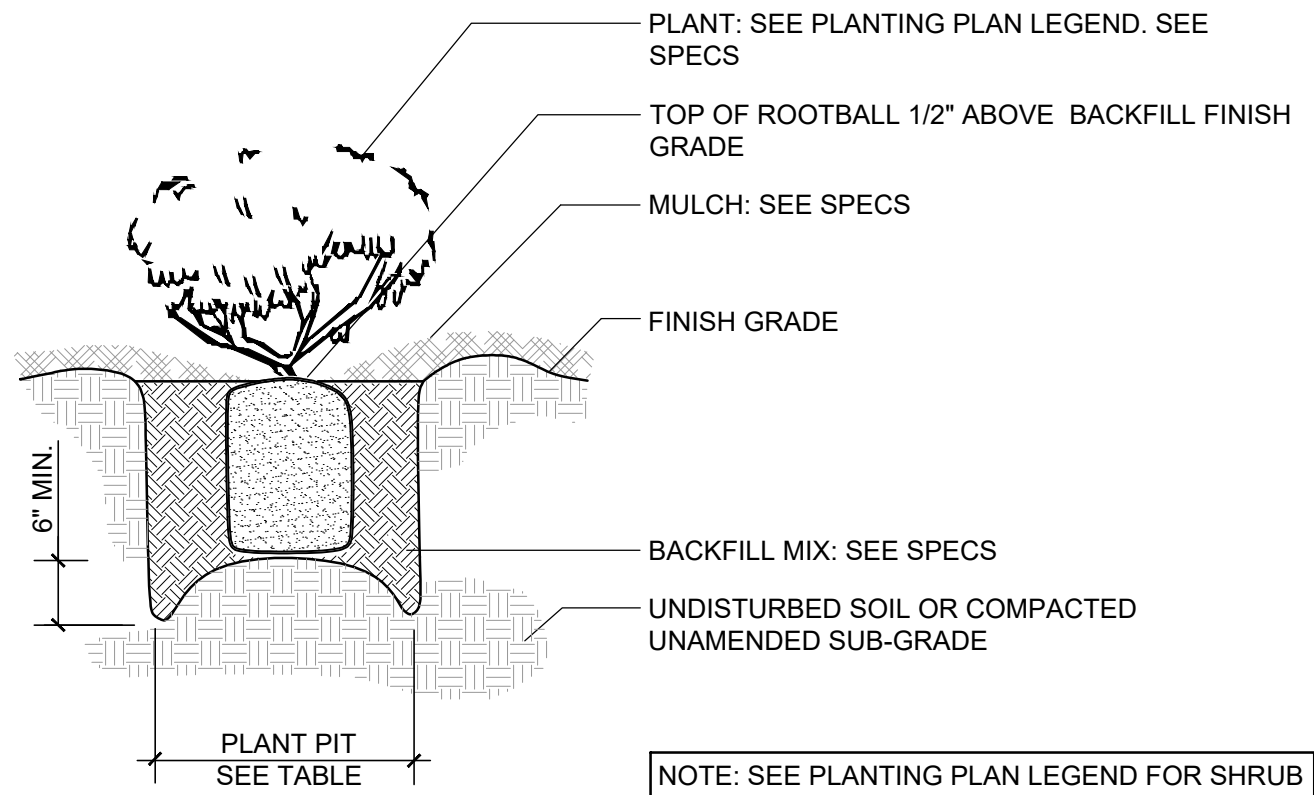
5 Root Barrier  
NTS



4 Boulder  
NTS

3 Finish Grade  
NTS

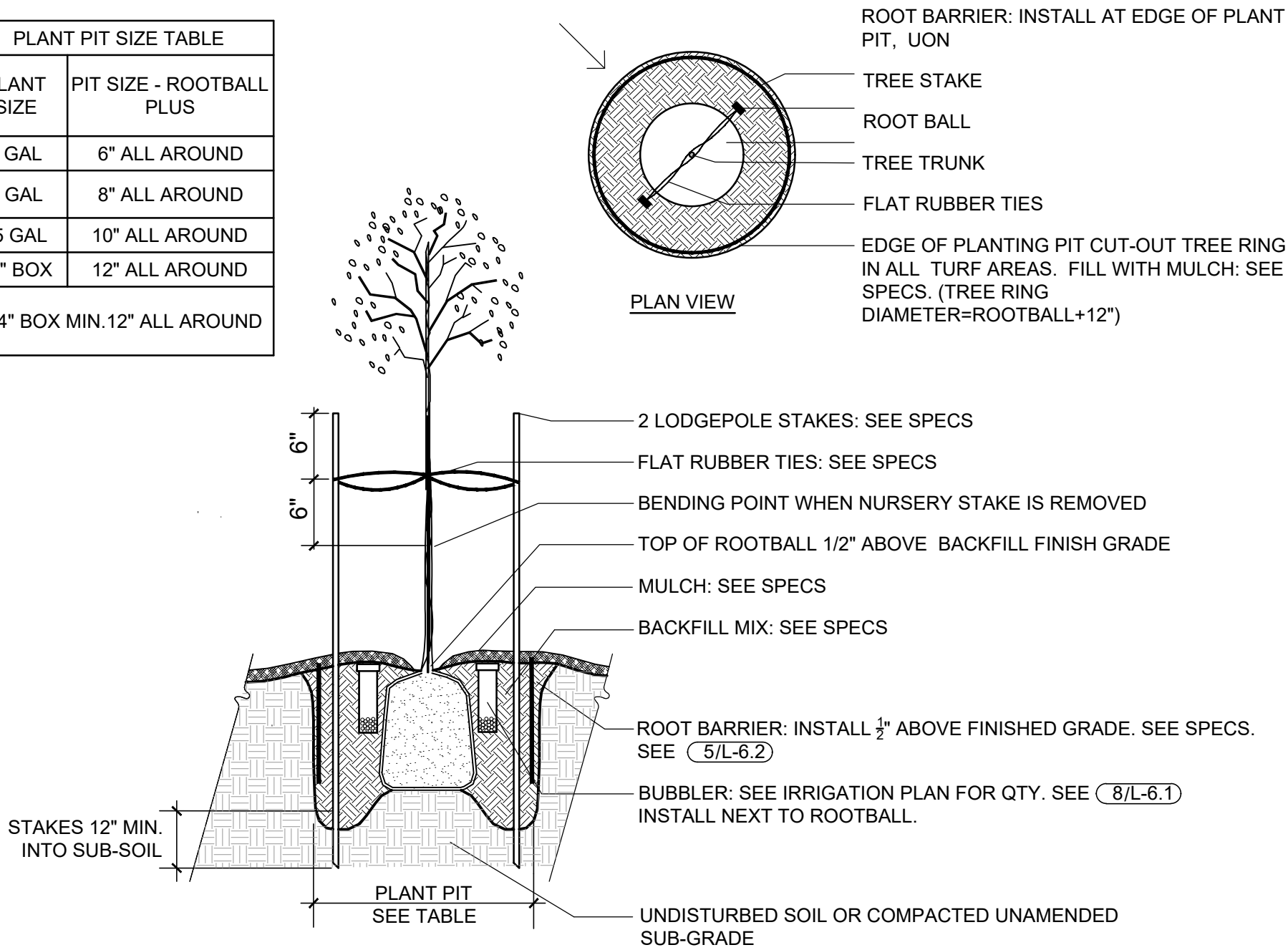
PLANT PIT SIZE TABLE	
PLANT SIZE	PIT SIZE - ROOTBALL PLUS
4"POT	3" ALL AROUND
1 GAL	6" ALL AROUND
5 GAL	8" ALL AROUND
15 GAL	10" ALL AROUND



NOTE: SEE PLANTING PLAN LEGEND FOR SHRUB / GROUND COVER SPACING DIAGRAM.

2 Shrub / Groundcover Planting  
1" = 0'-0"

PLANT PIT SIZE TABLE	
PLANT SIZE	PIT SIZE - ROOTBALL PLUS
1 GAL	6" ALL AROUND
5 GAL	8" ALL AROUND
15 GAL	10" ALL AROUND
24" BOX	12" ALL AROUND
>24" BOX MIN. 12" ALL AROUND	



1 Tree Planting & Staking  
NTS