

# GENERAL STRUCTURAL NOTES

## BUILDING CODE:

2021 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) SHALL BE USED AND SUPPLEMENTED WITH (ASCE) 7-16.

## BUILDING CODE REFERENCES:

ALL CODE REFERENCES HEREFTER SHALL CORRESPOND TO THE FOLLOWING EDITIONS, U.N.O.:

MATERIAL	CODE EDITION
CONCRETE	BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, (ACI 318)-19.
REINFORCING STEEL	2020 ACI DETAILING MANUAL (ACI MNL-66). 15TH EDITION OF (AISC) STEEL CONSTRUCTION MANUAL.
WELDING	STRUCTURAL WELDING CODE - STEEL, (AWS) D1.1-15.
LIGHT GAGE STEEL	2016 (AISI) NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

## LOADS:

### DESIGN DATA:

ROOF DEAD LOAD AT CARPORTS	
DL ROOFING AND TRIM	1.03 PSF
DL FOR PURLINS	SELF WEIGHT
ROOF SNOW LOAD	30 PSF

### WIND:

THE WIND LOADS ARE DETERMINED IN ACCORDANCE WITH ASCE 7-16

BASIC WIND SPEED V:	110 MPH
EXPOSURE CATEGORY:	C
RISK CATEGORY:	II

### SEISMIC:

IMPORTANCE FACTOR  $I_e = 1.0$ .  
 LATITUDE = 47.1652636; LONGITUDE = -122.289753.  
 $S_s = 1.263$ ,  $S_1 = 0.435$ , SEISMIC SITE CLASS = C.  
 $S_{ds} = 1.01$ ,  $S_{d1} = 0.435$ , SEISMIC DESIGN CATEGORY = D.  
 $RW = 1.25$  STEEL ORDINARY CANTILEVER COLUMNS  
 $CS = 0.808$ .

### FOUNDATION:

ORIGINAL GROUND OR 95% COMPACTED STRUCTURAL FILL.  
 ALLOWABLE SOIL BEARING CAPACITY (DL+LL): 2,000 PSF PER GEOTECHNICAL REPORT 0419036006 PROVIDED BY GEORESOURCES. ALL FOOTINGS SHALL BE PLACED ON 2'-0" OF PROPERLY PLACED STRUCTURAL FILL OR NATIVE SOIL APPROVED BY THE GEOTECHNICAL ENGINEER.

CONTRACTOR SHALL VERIFY SOIL CONDITION PRIOR TO PROCEEDING WITH CONSTRUCTION.

### CONCRETE:

MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3,000 PSI TO COMPLY WITH EXPOSURE REQUIREMENT OF IBC TABLE 1904.2. STRUCTURAL DESIGN IS BASED ON  $f'_c$  OF 2,500 PSI. PER IBC 1705.3, NO SPECIAL INSPECTION IS REQUIRED.

ALL CONCRETE CONSTRUCTION SHALL CONFORM TO ACI. MAXIMUM WATER/CEMENT RATIO (W/C) SHALL BE 0.55. PROVIDE AIR ENTRAINMENT (5% ± 1%) IN CONCRETE EXPOSED TO FREEZE-THAW ACTION.

### REINFORCING STEEL FOR CONCRETE:

USE ASTM A615, GRADE 60 ( $F_y = 60$  KSI), DEFORMED BARS FOR ALL BARS. ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. ACI 318 SHALL APPLY. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE AND CORROSION. ALL BARS SHALL BE PER ACI MNL-66. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

## STRUCTURAL STEEL:

STRUCTURAL STEEL MATERIALS, FABRICATION AND ERECTION SHALL CONFORM TO CURRENT AISC STEEL CONSTRUCTION MANUAL IN ACCORDANCE WITH IBC CHAPTER 22.

PAINT ALL STRUCTURAL STEEL EXPOSED TO WEATHER UNLESS NOTED OTHERWISE ON DRAWINGS

MATERIAL SPECIFICATION, UNLESS NOTED OTHERWISE:  
 STRUCTURAL SHAPES: ASTM A992 GRADE 50  
 BARS AND PLATES: ASTM A36  
 STRUCTURAL TUBING/HSS: ASTM A500, GRADE B ( $F_y = 46$  KSI)  
 BOLTS: ASTM A307  
 FLAT: ASTM F844  
 BEVELED WASHERS: ASTM F436  
 DIRECT-TENSION WASHERS: ASTM F959  
 FILLER METAL: E70XX ELECTRODES

ALL WELDS SHALL BE SINGLE PASS 3/16 UNLESS NOTED OTHERWISE:

COLD FORMED SHAPES: ASTM A653,  $F_y = 50$  KSI  
 ROOF METAL DECK: ASTM A792,  $F_y = 80$  KSI.

### SCREW FASTENERS:

SELF DRILLING AND SELF-TAPPING SCREWS SHALL BE #12-14 TEK SCREWS OR APPROVED EQUAL AND SHALL CONFORM TO ASTM A 545 OR SAEJ78. SAEJ93, OR ANSI/ASME B18.6.4.

### ROOFING:

1 3/8" PROFILE x 26 GA ROOF DECK (VLINE-32) OR EQUIVALENT WITH #12-14 TEK SCREWS. PROVIDE (4) SCREWS PER 32" WIDE PANEL @ EACH SUPPORT.

ROOFING IS VLINE-32 26 GA.

GAUGE	WEIGHT (LBS/FT <sup>2</sup> )	S+	I+	S-	I-
		(IN3/FT)	(IN4/FT)	(IN3/FT)	(IN4/FT)
26	0.91	0.0847	0.0619	0.0833	0.0619

### PURLINS:

ALL PURLINS ARE ASTM A653 UNLESS NOTED OTHERWISE, WITH THE FOLLOWING MINIMUM GROSS PROPERTIES:

GAUGE	DEPTH (IN)	FLANGE (IN)	LIP (IN)	SX (IN3)	IX (IN4)	$F_y$ (KSI)
12	10	3.5	1.000	5.63	28.148	50

### GENERAL:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS OR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH OWNER PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE OWNER.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY, U.N.O.

AS REV. ON DRAWING:

SUBJECT OF REVISION:

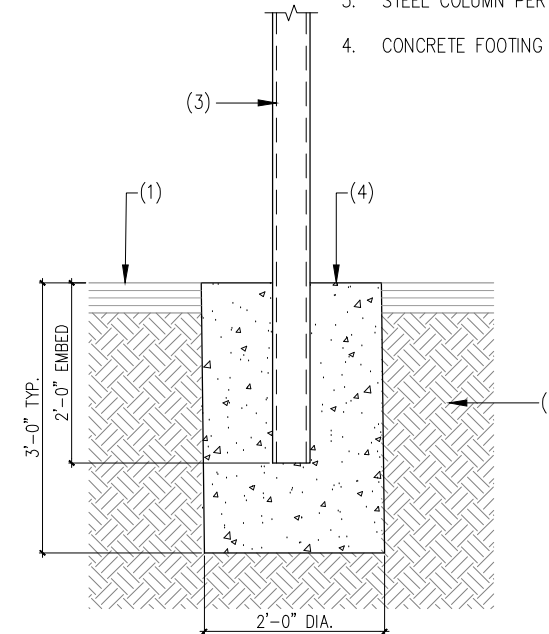
REVISION #:

DATE:

TYPE:

## NOTES:

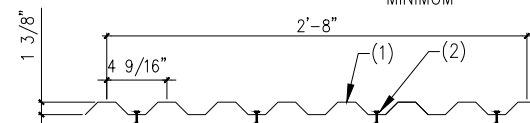
1. ASPHALT OR NATIVE SOIL AS OCCURS
2. NATIVE SOIL, OR STRUCTURAL FILL PER GSN
3. STEEL COLUMN PER PLAN
4. CONCRETE FOOTING



**101 TYPICAL COLUMN FOOTING**  
SCALE: N.T.S.

## NOTES:

1. METAL DECK PER PLAN AND GSN
2. #12-14 TEK SCREWS AT 9" O.C. MAX. - PROVIDE (4) SCREWS PER PANEL MINIMUM



**103 ROOF SCREW PATTERN**  
SCALE: N.T.S.

Approval of submitted plans is not an approval of omissions or oversights by this office or non compliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.

The approved construction plans, documents, and all engineering must be posted on the job at all inspections in a visible and readily accessible location.

Full sized legible color plans are required to be provided by the permittee on site for inspection.

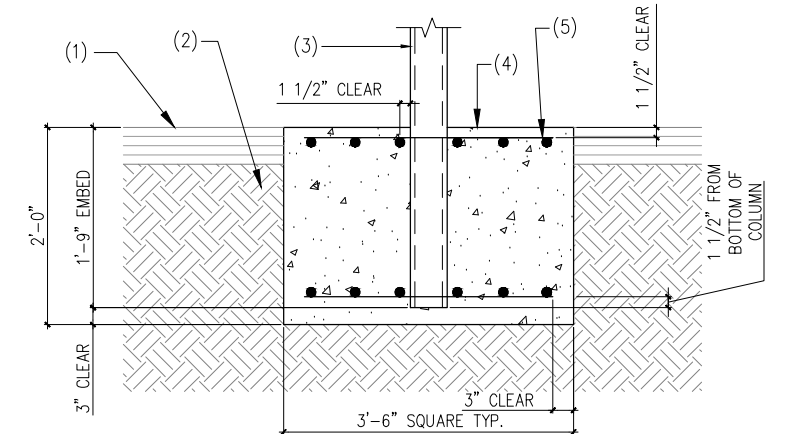
## NOTES:

1. ASPHALT OR CONCRETE AS OCCURS
2. SUBGRADE PER GSN
3. STEEL COLUMN PER PLAN
4. CONCRETE FOOTING
5. PROVIDE MIN. (6) #4 BARS E.W. TOP AND BOTTOM - PLACE (1) BAR WITHIN 1 1/2" OF EACH SIDE OF THE COLUMN, EACH WAY TYPICAL.

Separate Electrical Permit is required with the Washington State Department of Labor & Industries.

<https://lni.wa.gov/licensing-permits/electrical/electrical-permits-fees-and-in-specions>

or call for Licensing Information:  
1-800-647-0982



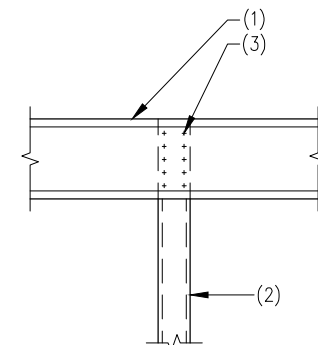
**102 ALTERNATE COLUMN FOOTING**  
SCALE: N.T.S.

## NOTES:

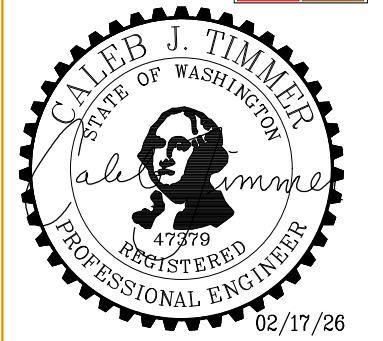
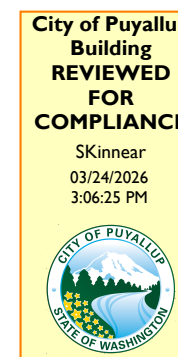
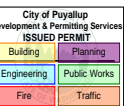
1. PURLIN PER PLAN
2. STEEL COLUMN PER PLAN
3. (10) #12-14 TEK SCREWS

## NOTES:

- A. SPLICE LOCATIONS SHALL OCCUR AT A COLUMN - CENTER EACH END OF PURLIN ON COLUMN AND PROVIDE (4) SCREWS MINIMUM INTO EACH PURLIN.
- B. DO NOT SPLICE AT CANTILEVER.

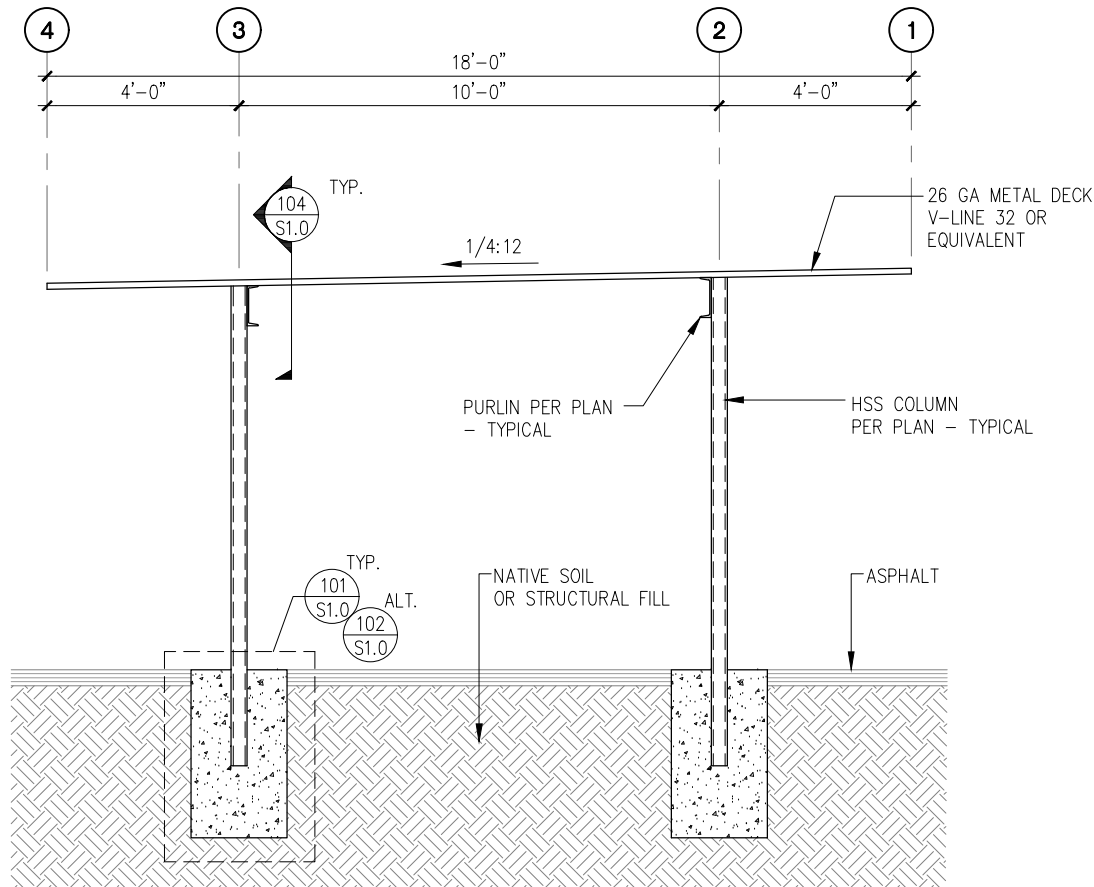
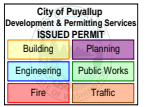


**104 POST TO PURLIN CONNECTION**  
SCALE: N.T.S.



02/17/26

PROJECT <b>BRADLEY HEIGHTS CARPORTS</b> PUYALLUP, WA 98374	PREPARED FOR <b>CARPORTS OF WASHINGTON</b> P.O. BOX 2389 BUCKLEY, WASHINGTON 98321	PREPARED BY <b>sh sitts &amp; hill</b> CIVIL   STRUCTURAL   SURVEY 4815 CENTER STREET   TACOMA, WA. 98409 PHONE: (253) 474-9449   FAX: (253) 474-0153 <a href="http://www.sittshill.com/">http://www.sittshill.com/</a>	APPROVALS DESIGNED: JPR DRAWN: JPR CHECKED: CJT DATE: 02/17/26 SCALE: AS NOTED	SHEET NO. <b>S10</b> PROJECT NO. <b>21178</b>
SHEET TITLE <b>GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS</b>		PROJECT NO. <b>PRCP20260245</b>		



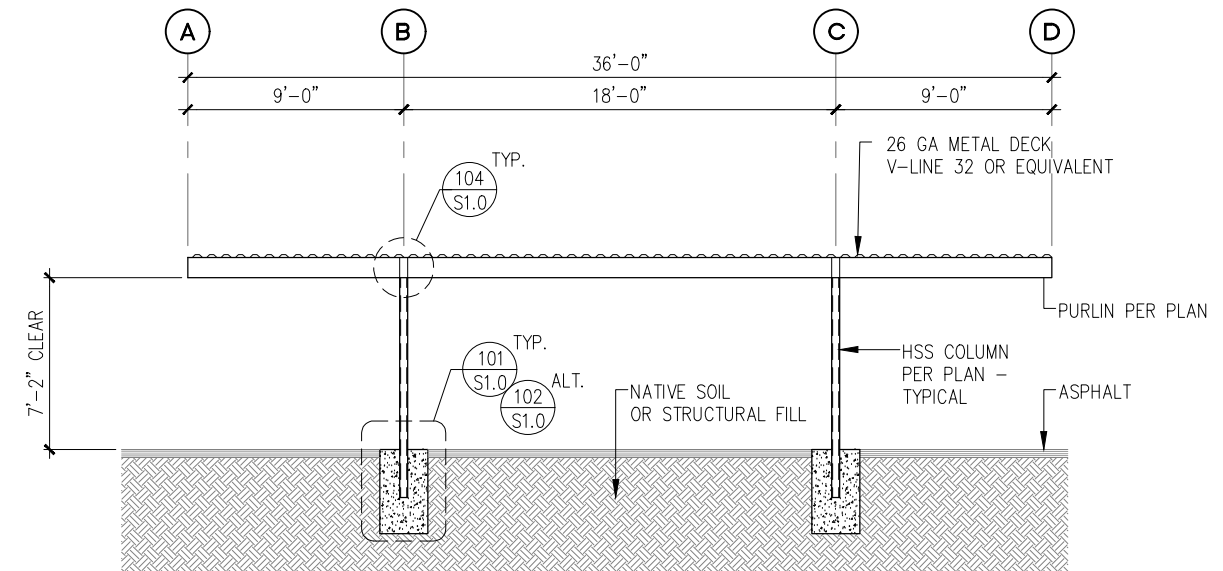
**A TYPICAL SECTION**

SCALE: 1/4" = 1'-0"

**NOTES:**

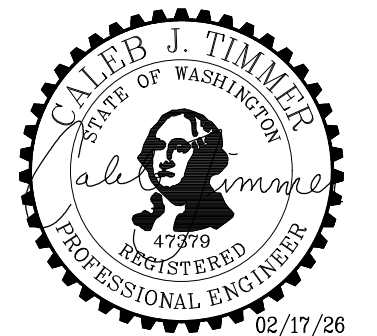
1. SEE STRUCTURAL NOTES ON SHEET S1.0.
2. VERIFY ALL DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. BAY DIMENSIONS ARE MAXIMUMS. IT IS STRUCTURALLY ACCEPTABLE TO USE SMALLER DIMENSIONS.
4. SEE TABLE BELOW FOR SHEET SHOWING ASSOCIATED STALL CONFIGURATION:

CONFIGURATION	SHEET #
4-STALL	S3.0
6-STALL	S4.0
8-STALL	S5.0



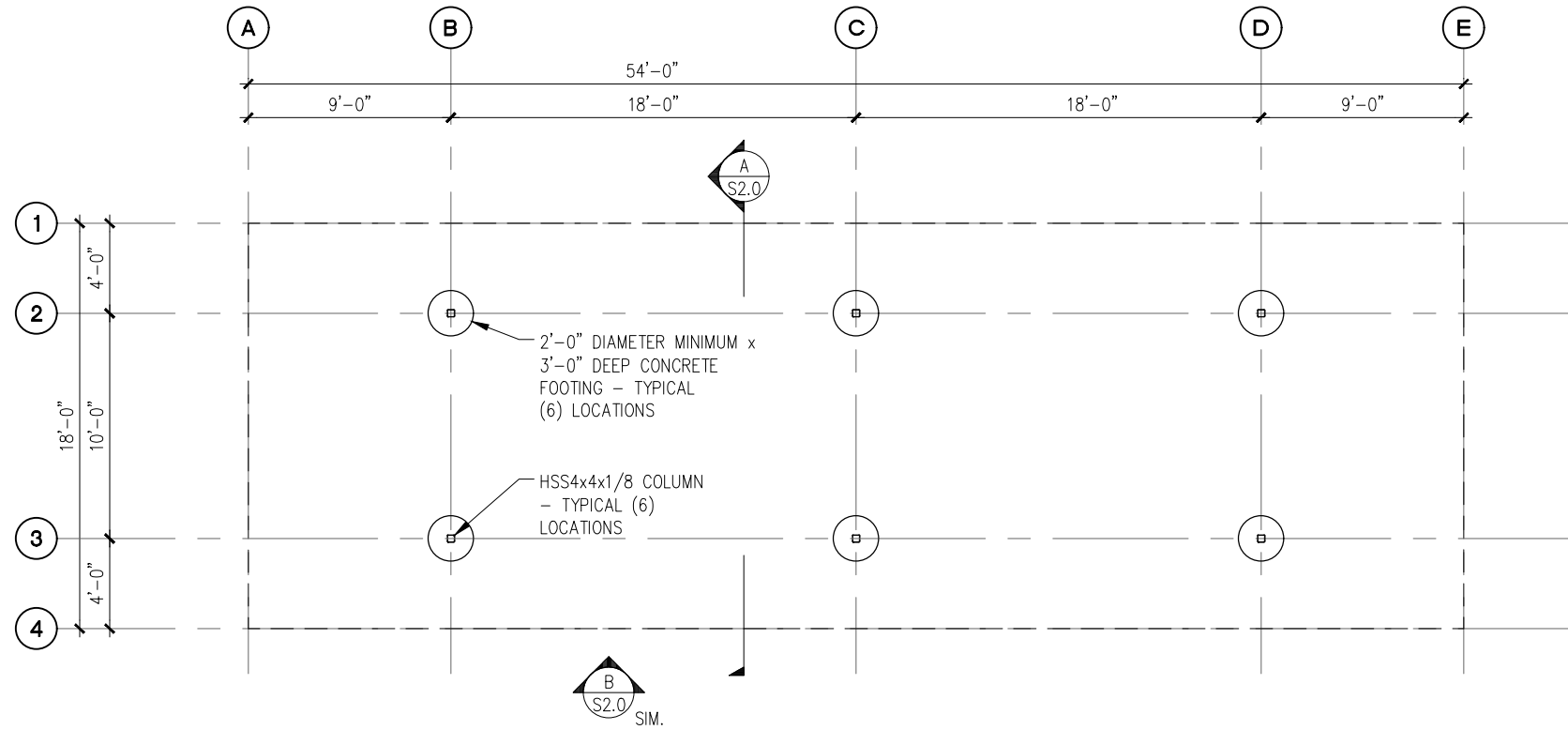
**B TYPICAL ELEVATION**

SCALE: 1/8" = 1'-0"

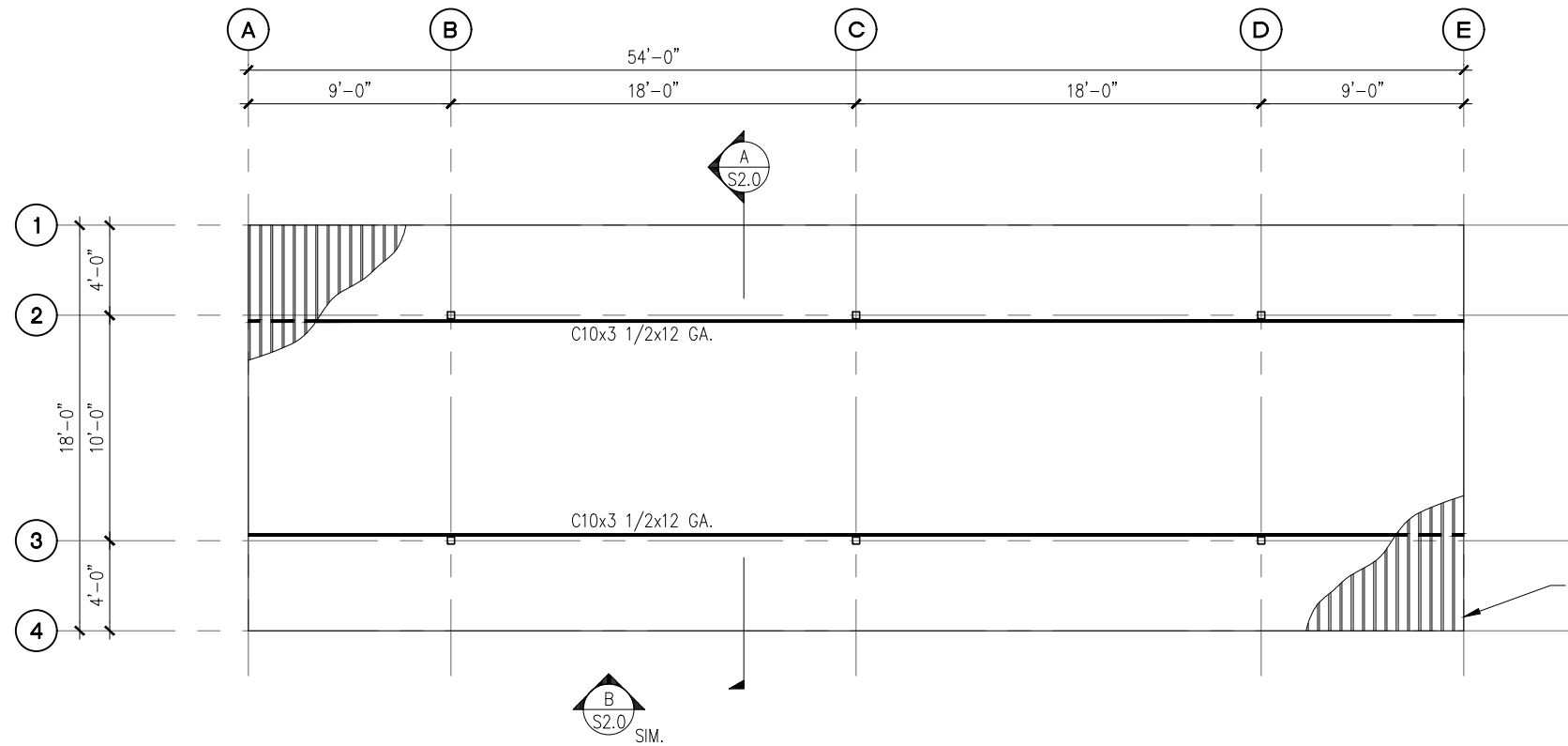


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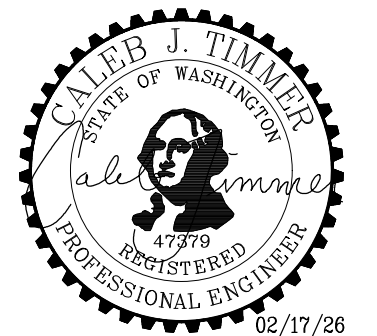
**A** 6-STALL CARPORT FOUNDATION PLAN  
SCALE: 1/8" = 1'-0"



**B** 6-STALL CARPORT ROOF FRAMING PLAN  
SCALE: 1/8" = 1'-0"

**NOTES:**

1. SEE STRUCTURAL NOTES ON SHEET 1.0.
2. VERIFY ALL DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. SEE SHEET S2.0 FOR ADDITIONAL INFORMATION.
4. BAY DIMENSIONS ARE MAXIMUMS - IT IS STRUCTURALLY ACCEPTABLE TO USE SMALLER DIMENSIONS.

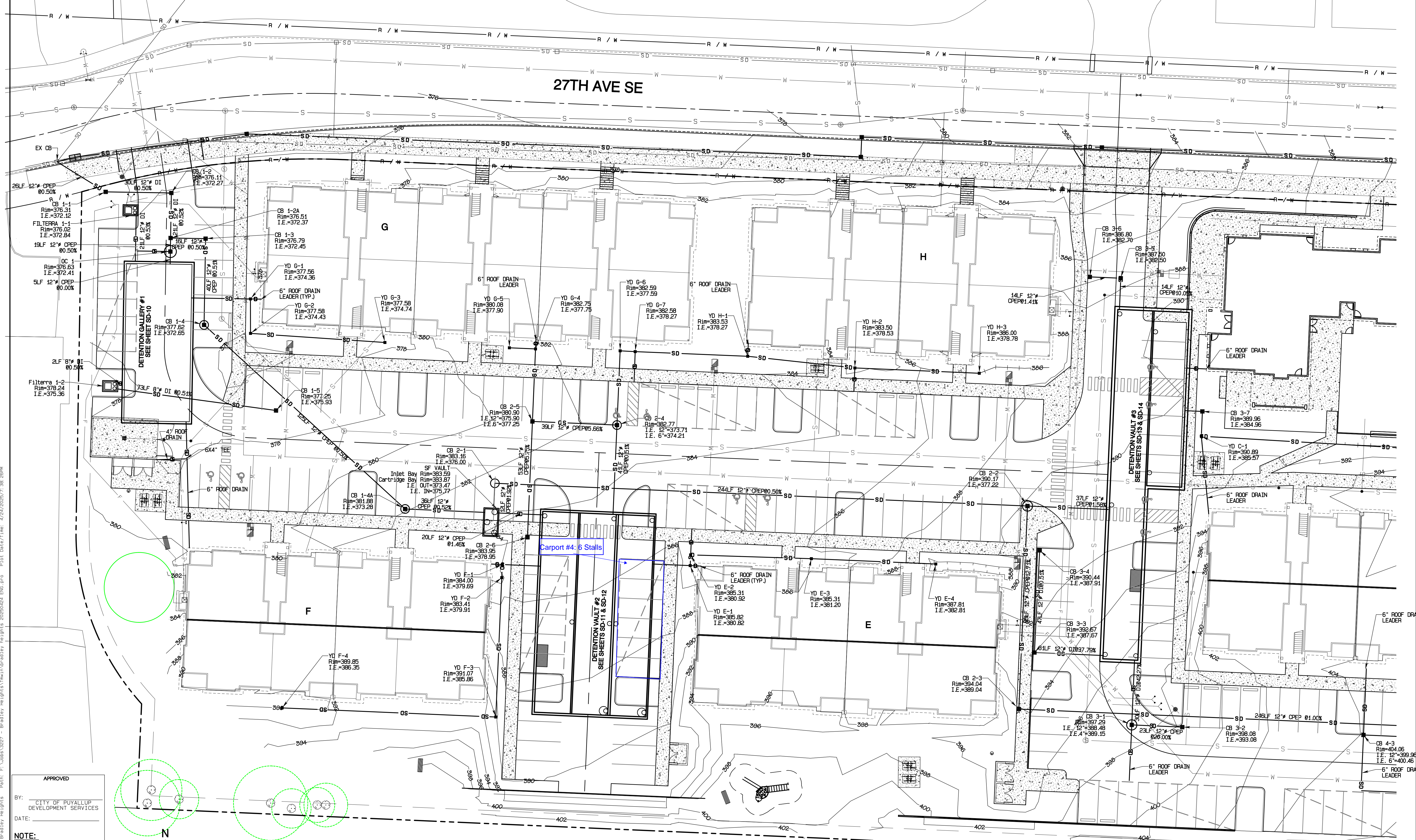
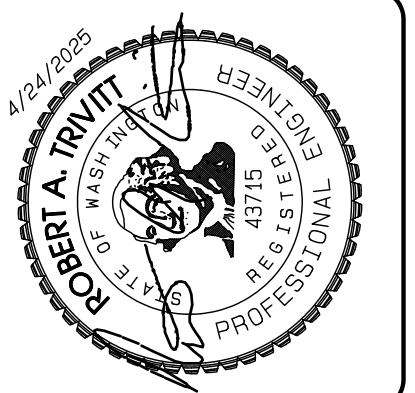
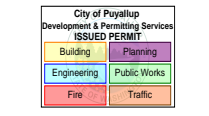


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# Bradley Heights

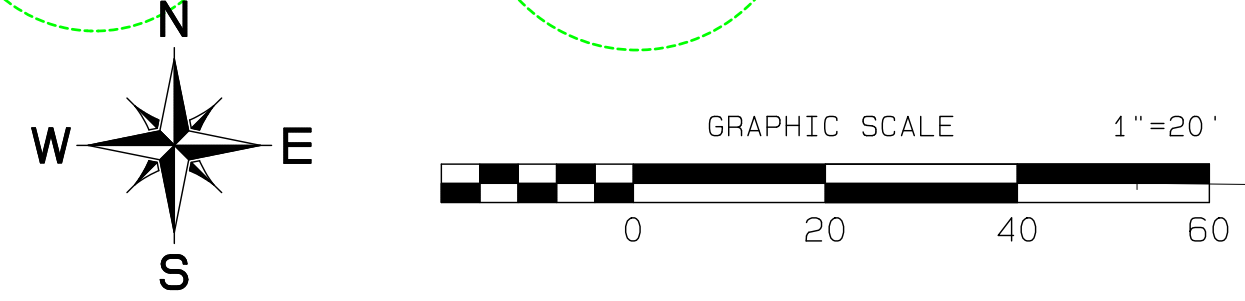
Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



27TH AVE SE

Carport #4: 6 Stalls

APPROVED  
BY: CITY OF PUYALLUP  
DEVELOPMENT SERVICES  
DATE: \_\_\_\_\_  
NOTE:  
THIS APPROVAL IS VOID AFTER 180  
DAYS FROM APPROVAL DATE.  
THE CITY WILL NOT BE RESPONSIBLE  
FOR ERRORS AND/OR OMISSIONS  
ON THESE PLANS.  
FIELD CONDITIONS MAY DICTATE  
CHANGES TO THESE PLANS AS  
DETERMINED BY THE ENGINEERING  
SERVICES MANAGER.



REVISION	DATE
1	11/26/24
2	3/4/25
3	4/21/25
4	
5	
6	
7	
8	
9	
10	

DESIGNED BY: R. TRIVITT  
DRAWN BY: R. TRIVITT  
CHECKED BY: R. TRIVITT  
APPROVED BY: R. TRIVITT

**AZURE GREEN**  
CONSULTANTS  
+ feasibility + planning + engineering + surveying  
409 East Pioneer, Suite A - Puyallup, WA 98372  
phone: 253.770.3144, fax: 253.770.3142

**Storm Plan**  
Bradley Heights  
Timberlane Partners  
1816 11th Ave Unit C  
Seattle, WA 98122  
Phone 509.896.0326  
Fax jordan@timberlanepartners.com

PRCP20260245

DRAWING  
**SD-5**  
SHEET 19  
OF 60