City of Milpitas

Office of Building Safety

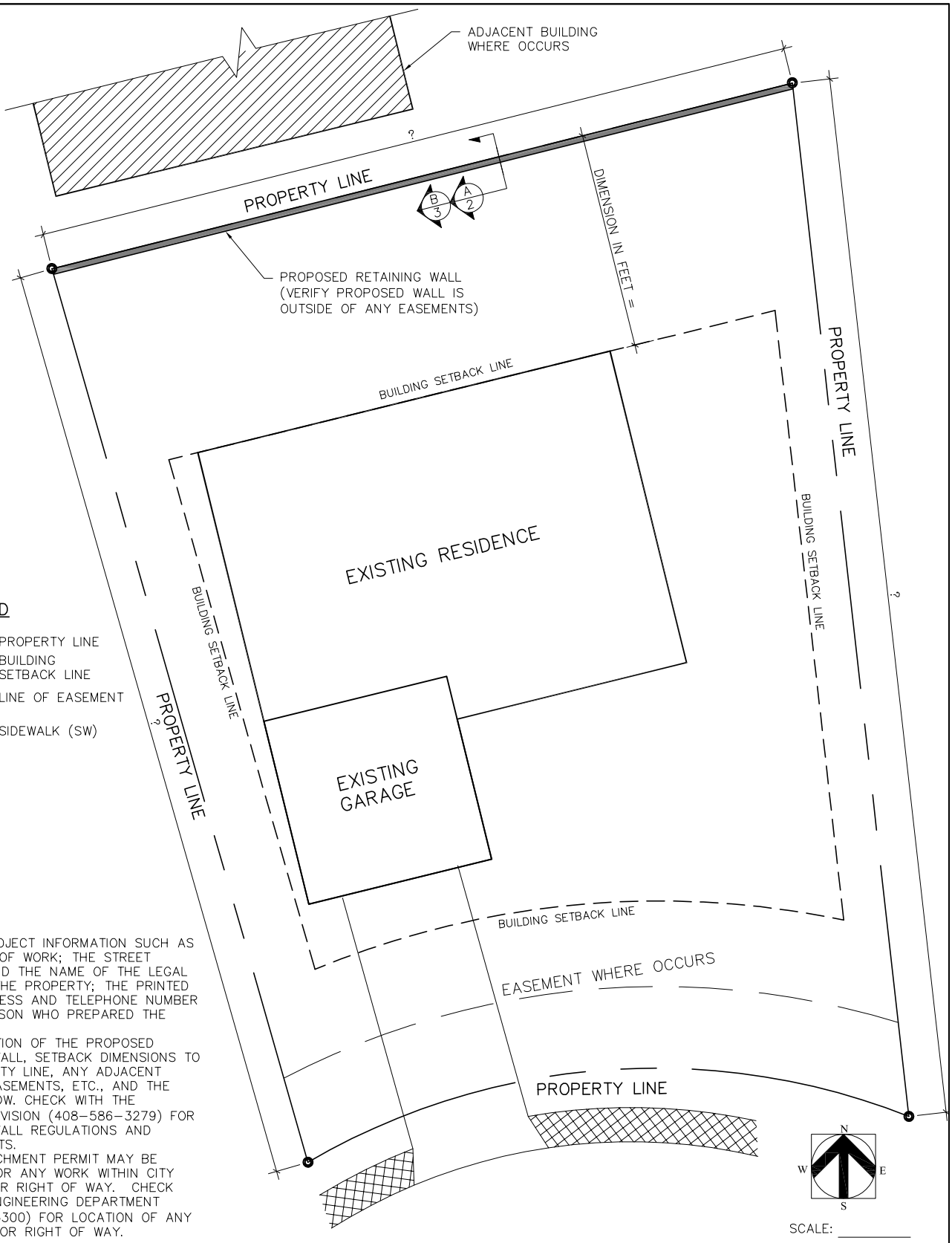
DESIGN GUIDELINE
FOR

RESIDENTIAL RETAINING WALL

455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240
www.milpitas.gov

MARCH 2023

BASED ON
2022 CALIFORNIA CODES



PLAN LEGEND

- PROPERTY LINE
- BUILDING SETBACK LINE
- LINE OF EASEMENT
- SIDEWALK (SW)

NOTE:

1. PROVIDE PROJECT INFORMATION SUCH AS THE SCOPE OF WORK; THE STREET ADDRESS AND THE NAME OF THE LEGAL OWNER OF THE PROPERTY; THE PRINTED NAME, ADDRESS AND TELEPHONE NUMBER OF THE PERSON WHO PREPARED THE PLANS.
2. SHOW LOCATION OF THE PROPOSED RETAINING WALL, SETBACK DIMENSIONS TO THE PROPERTY LINE, ANY ADJACENT BUILDING, EASEMENTS, ETC., AND THE NORTH ARROW. CHECK WITH THE PLANNING DIVISION (408–586–3279) FOR RETAINING WALL REGULATIONS AND REQUIREMENTS.
3. AN ENCROACHMENT PERMIT MAY BE REQUIRED FOR ANY WORK WITHIN CITY EASEMENT OR RIGHT OF WAY. CHECK WITH THE ENGINEERING DEPARTMENT (408–586–3300) FOR LOCATION OF ANY EASEMENTS OR RIGHT OF WAY.

SCALE: _____

VER	DATE	BY
1	MAR 2023	IH
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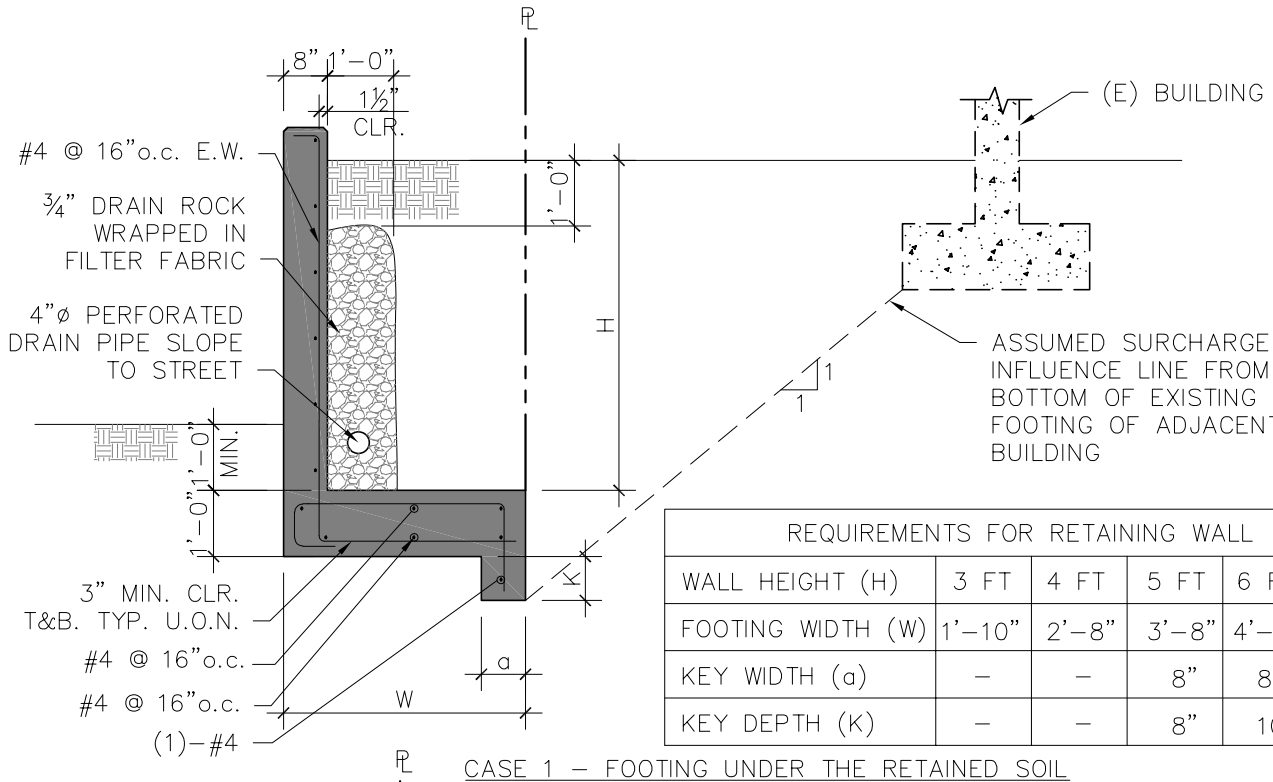
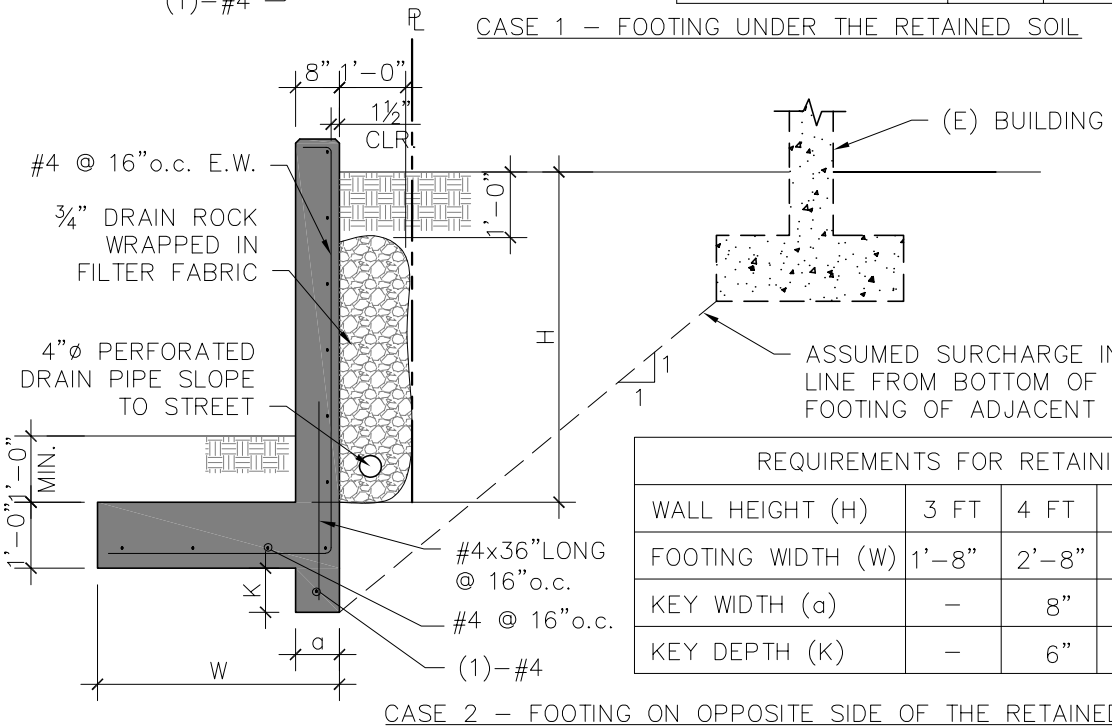
RESIDENTIAL RETAINING WALL

SHEET 1 OF 3 SHEETS



REQUIREMENTS FOR RETAINING WALL				
WALL HEIGHT (H)	3 FT	4 FT	5 FT	6 FT
FOOTING WIDTH (W)	1'-10"	2'-8"	3'-8"	4'-10"
KEY WIDTH (a)	–	–	8"	8"
KEY DEPTH (K)	–	–	8"	10"

CASE 1 – FOOTING UNDER THE RETAINED SOIL



REQUIREMENTS FOR RETAINING WALL				
WALL HEIGHT (H)	3 FT	4 FT	5 FT	6 FT
FOOTING WIDTH (W)	1'-8"	2'-8"	3'-2"	4'-2"
KEY WIDTH (a)	–	8"	8"	8"
KEY DEPTH (K)	–	6"	9"	1'-3"

CASE 2 – FOOTING ON OPPOSITE SIDE OF THE RETAINED SOIL

SEE SHEET 3 FOR ADDITIONAL NOTES

A CONCRETE RETAINING WALL

SCALE: N.T.S.

VER	DATE	BY
1	MAR 2023	IH
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RESIDENTIAL RETAINING WALL

CONCRETE RETAINING WALL DETAILS

SHEET 2 OF 3 SHEETS

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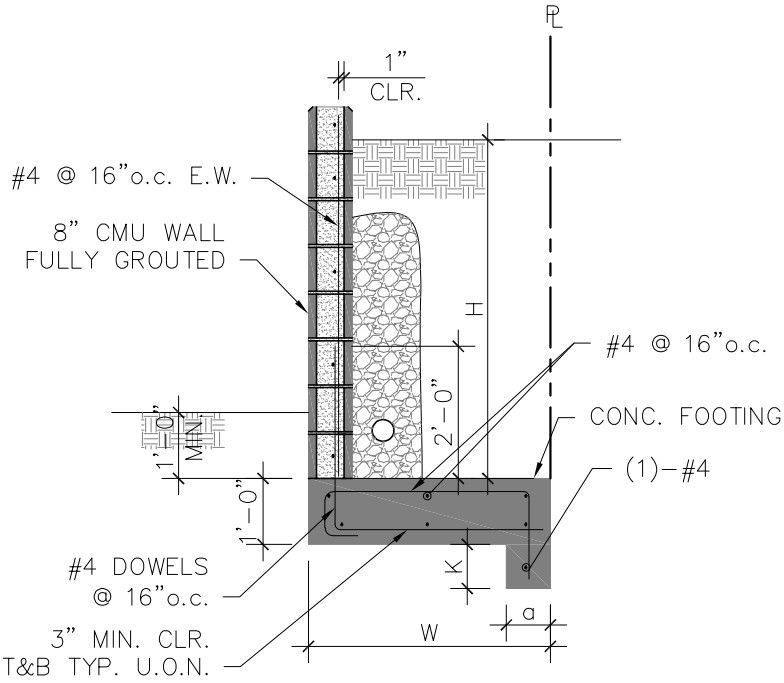
NOTES:

1. THE GUIDELINE COVERS RETAINING WALLS UP TO 6' MEASURING FROM THE TOP OF FOOTING TO THE TOP OF THE RETAINED SOIL.
2. THE BACKFILL OF RETAINING WALLS SHALL BE LEVEL AND HAVE NO SURCHARGE AND THE WATER LEVEL SHALL BE BELOW THE BASE OF THE FOOTING OF THE WALL.
3. THE HORIZONTAL DISTANCE OF THE AREA IN FRONT OF THE RETAINING WALL SHALL BE LEVEL AT LEAST 10' MEASURING FROM THE FACE OF THE WALL.
4. DRAINAGE SHALL BE PROVIDED BEHIND THE RETAINING WALL PER DETAILS.
5. THE MAXIMUM ACTIVE EARTH PRESSURE OF THE RETAINED SOIL IS 50 PCF EQUIVALENT FLUID WEIGHT.
6. RETAINING WALLS TALLER THAN 6', NOT MEETING THE ABOVE CONDITIONS OR ON THE HILL-SIDE SHALL BE DESIGNED BY AN ARCHITECT OR ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.
7. CONCRETE SHALL BE NORMAL WEIGHT WITH COMPRESSIVE STRENGTH OF 2,500 PSI MINIMUM AT 28 DAYS.
8. MASONRY COMPRESSIVE STRENGTH SHALL BE 1,500 PSI AND GROUT STRENGTH SHALL BE 2000 PSI. MORTAR SHALL BE TYPE M WITH 1900 PSI COMPRESSIVE STRENGTH.
9. REINFORCEMENT SHALL BE GRADE 60.
10. THE INFORMATION PROVIDED IN THIS DESIGN GUIDE CARRIES NO IMPLIED OR INFERRED GUARANTEE AGAINST FAILURE OR DEFECTS. BY USING THIS DESIGN GUIDE, THE CONTRACTOR/OWNER ACCEPTS THE FULL RESPONSIBILITY OF RISK. ALTERNATE DESIGN MAY BE USED WHEN PROVIDED WITH WET STAMPED AND SIGNED STRUCTURAL CALCULATIONS & DETAILS BY A CALIFORNIA LICENSED ENGINEER OR ARCHITECT.



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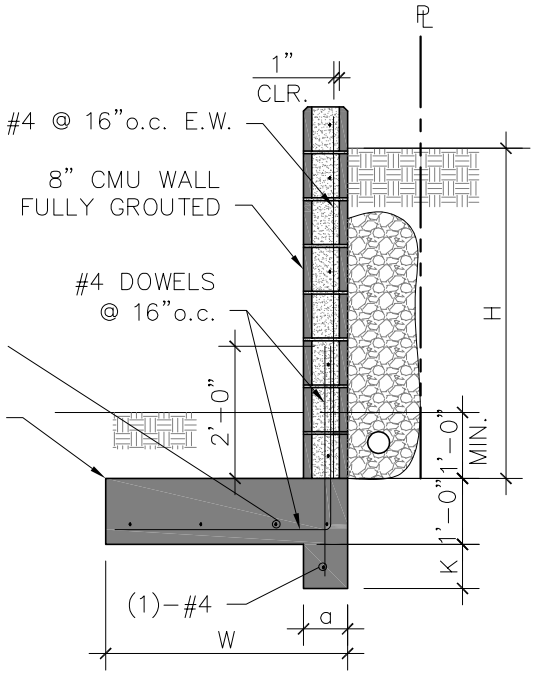

CASE 2 – FOOTING ON OPPOSITE SIDE OF THE RETAINED SOIL

SEE SHEET 2 FOR FOOTING SIZE TABLE AND DETAILS NOT SHOWN

B CMU RETAINING WALL

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1	MAR 2023	IH
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CONCRETE RETAINING WALL DETAILS

SHEET 3 OF 3 SHEETS

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