

COMBINED CONCRETE SIDEWALK AND RETAINING WALL**PART 1 - GENERAL****1.01 SECTION INCLUDES**

Combined Concrete Sidewalk and Retaining Wall

1.02 DESCRIPTION OF WORK

Constructing combined concrete sidewalk and retaining wall.

1.03 SUBMITTALS

Comply with Division 1 - General Provisions and Covenants, as well as the following:

Upon request, submit certification that products supplied comply with identified specifications.

1.04 SUBSTITUTIONS

Comply with Division 1 - General Provisions and Covenants.

1.05 DELIVERY, STORAGE, AND HANDLING

Comply with Division 1 - General Provisions and Covenants.

1.06 SCHEDULING AND CONFLICTS

Comply with Division 1 - General Provisions and Covenants.

1.07 SPECIAL REQUIREMENTS

None.

1.08 MEASUREMENT AND PAYMENT**A. Combined Concrete Sidewalk and Retaining Wall:**

1. **Measurement:** Measurement will be in cubic yards for the volume of combined sidewalk and retaining wall.
2. **Payment:** Payment will be at the unit price per cubic yard of combined sidewalk and retaining wall.
3. **Includes:** Unit price includes, but is not limited to, excavation; foundation preparation; furnishing and placing concrete and reinforcing steel; joint material; subdrain; porous backfill material; suitable backfill material; finishing disturbed areas; and shoring as necessary.

B. Fence: Comply with Section 9060, 1.08, A.

C. Safety Rail: Comply with Section 9080, 1.08, C.

PART 2 - PRODUCTS**2.01 MATERIALS****A. Combined Concrete Sidewalk and Retaining Wall:**

1. **Portland Cement Concrete:** Comply with Section 6010, 2.03.
2. **Reinforcing Steel:** Comply with Iowa DOT Section 4151.
3. **Expansion Joint:** Comply with Iowa DOT Article 4136.02. Use resilient filler when the type is not specified.

B. Subdrain: Comply with Section 4040, 2.02. Minimum 4 inch diameter.

C. Porous Backfill Material (for Subdrain): Comply with Section 4040, 2.04.

D. Suitable Backfill Material: Comply with Section 2010.

E. Rodent-proof Hardware Cloth: Comply with Iowa DOT Materials I.M. 443.01.

F. Fence: If the contract documents require a fence, comply with Section 9060.

G. Safety Rail: If the contract documents require a safety rail, comply with Section 9080.

PART 3 - EXECUTION**3.01 EXCAVATION AND EMBANKMENT**

- A. Prior to beginning wall construction, compact proposed embankment behind the wall according to the field quality control requirements of Section 2010 with the following exception: compact to a minimum of 90% of maximum Standard Proctor Density.
- B. Excavate to the line and grade specified in the contract documents. Minimize over-excavation. Install sheeting, shoring, or other retention systems as required to ensure the stability of the excavation.

3.02 INSTALLATION**A. General:**

- 1. Comply with Section 6010.
- 2. Forming the back of the wall is not required. Where the back of the walls is not formed and sloughing occurs, remove the loose material, and replace with concrete at no additional cost to the Contracting Authority.
- 3. Install 3 inch diameter weep holes at 8 foot intervals. Form weep holes with an approved rustproof device backed with rodent-proof hardware cloth.
- 4. Install 8 inch wide trench of porous backfill behind the wall. Install subdrain within porous backfill trench. Ensure positive drainage on subdrain.

B. Backfill Material Placement:

- 1. Place the backfill material in maximum 8 inch lifts, spread, and compact.
- 2. Compact granular backfill material according to the field quality control requirements of Section 2010 with the following exception: ensure the moisture content falls within a range from 3% under optimum moisture to no more than the optimum moisture content.
- 3. Use only hand-operated compaction equipment within 3 feet of the front of the wall face.

C. Fence: If the contract documents require a fence, comply with Section 9060.

D. Safety Rail: If the contract documents require a safety rail, comply with Section 9080.

3.03 JOINTS

- A. Form ED joints in the wall at no more than 60 foot spacing. Affix expansion material to retaining wall.
- B. Form C joints in the wall at no more than 20 foot spacing.
- C. Form E joints in the sidewalk to coincide with ED joints in the wall. Form C joints in the sidewalk at spacing equal to the sidewalk width.
- D. Form a longitudinal joint in the sidewalk when the sidewalk width is greater than 8 feet.

3.04 RUSTICATION

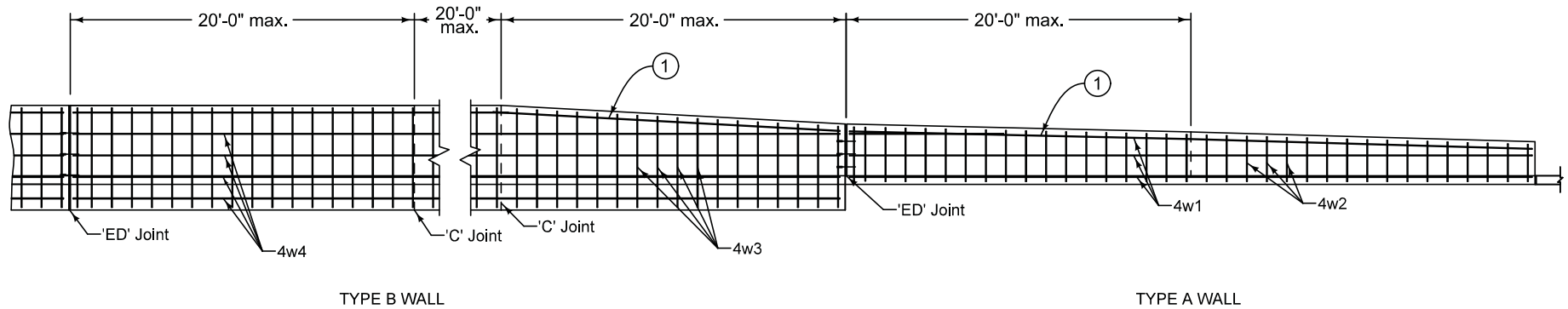
Decorative form liners or inserts may be used when forming the face of the wall with the approval of the Engineer. Form rustications as specified in the contract documents.

END OF SECTION

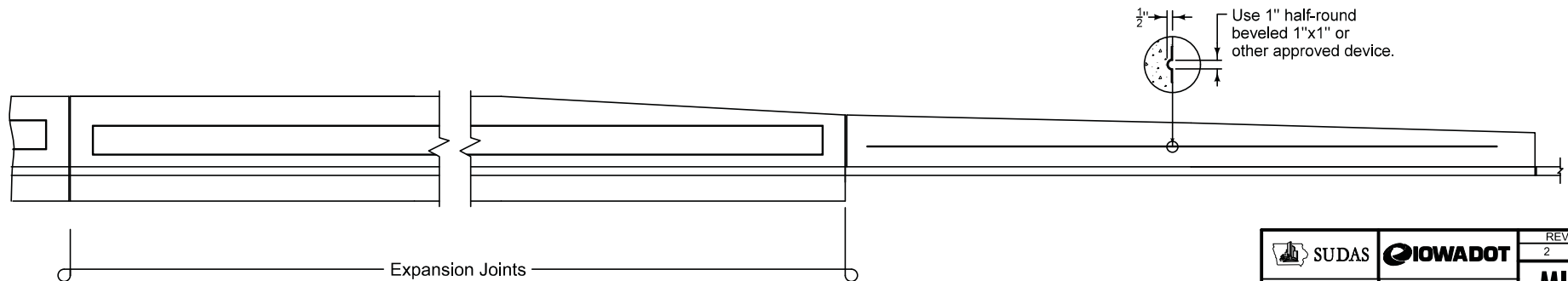
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Provide a minimum concrete cover to near reinforcement of 1 1/2 inches. Provide 3 inches minimum cover at the ends of bars.

① Top bar parallel to top of wall. Lap 6 inch minimum as necessary. Tie securely.



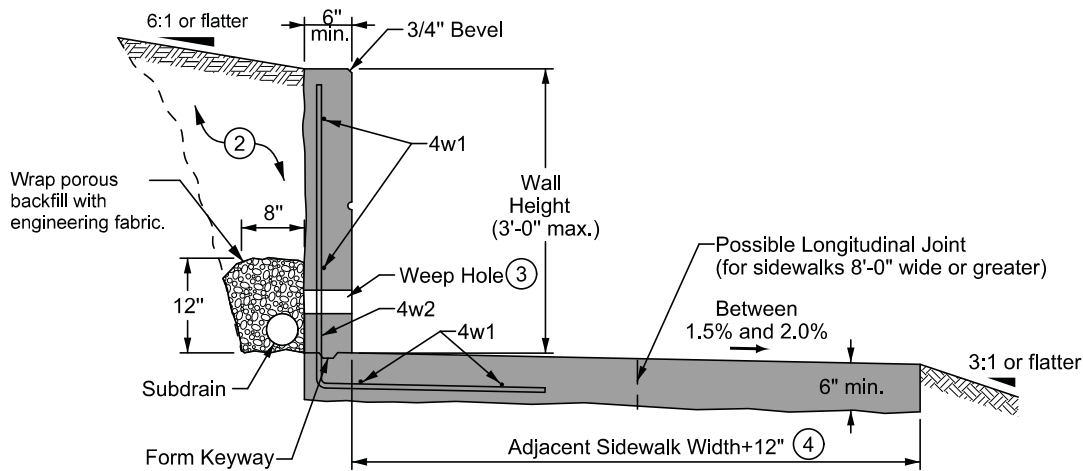
TYPICAL LONGITUDINAL SECTION OF RETAINING WALL



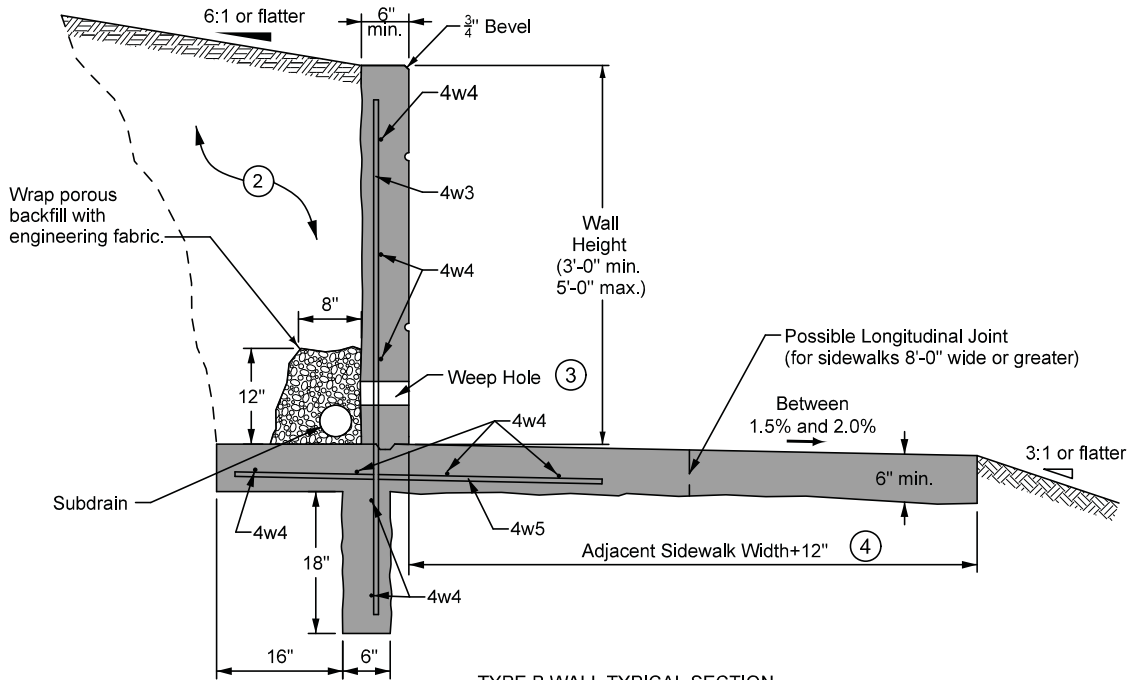
TYPICAL RUSTICATION DETAIL

FIGURE 9072.221 SHEET 1 OF 2

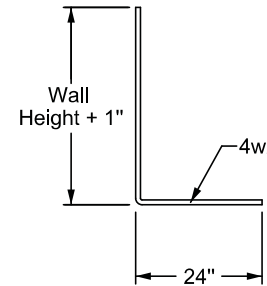
SUDAS	IOWADOT	REVISION
		2 10-20-15
FIGURE 9072.221		MI-221
STANDARD ROAD PLAN		SHEET 1 OF 2
REVISIONS: Replaced DOT and SUDAS logos with new versions.		
<i>Paul D. Wigand</i> SUDAS DIRECTOR		<i>Brian Smith</i> DESIGN METHODS ENGINEER
COMBINED RETAINING WALL - SIDEWALK		



TYPE A WALL TYPICAL SECTION



TYPE B WALL TYPICAL SECTION



BENT BARS

Provide a minimum concrete cover to near reinforcement of 1 1/2 inches. Provide 3 inches minimum cover at the ends of bars.

- ② Excavate and place backfill material as necessary.
- ③ Provide 3 inch diameter weep holes at 8 foot intervals. Install rodent guards in weep holes. Align bottom of weep hole with top of subdrain.
- ④ Additional 12 inch width is adjacent to wall.

REINFORCING BAR LIST

Wall Type	Mark	Size	Shape	Length	Spacing
Type A	4w1	4	—	Variable	15"
	4w2	4	L	Variable	14"
Type B	4w3	4	—	Wall Height + 18"	14"
	4w4	4	—	Variable	15"
	4w5	4	—	3'-10"	14"

	REVISION 2 10-20-15
	MI-221 SHEET 2 OF 2
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