

| MODULAR BLOCK WALL REINFORCEMENT LAYOUT TABLE |   |                                |                             |                       |   |          |             |          |             |          |             |    |
|---|---|--------------------------------|-----------------------------|-----------------------|---|----------|-------------|----------|-------------|----------|-------------|----|
| CASE 1 - LEVEL FILL                           |   |                                |                             |                       |   |          |             |          |             |          |             |    |
| MBW REINFORCEMENT CLASS                       | ① MINIMUM REINFORCEMENT LENGTH, L (FT.) | ② MAXIMUM WALL HEIGHT, H (FT.) | ③ NOMINAL BLOCK WIDTH (IN.) | WALL BATTER (DEGREES) | ⑪ MAXIMUM UNREINFORCED WALL HEIGHT, A (IN.) | ZONE 1   |             | ZONE 2   |             | ZONE 3   |             |    |
|   |   |                                |                             |                       |   | H1 (FT.) | S1max (IN.) | H2 (FT.) | S2max (IN.) | H3 (FT.) | S3max (IN.) |    |
| 1050  | 0.8H                                    | 12.0                           | 12                          | 0 to 4                | 12  | 8        | 24          | 4        | 16          | 0        | 0           |    |
|   |   |                                |                             | 4 to 8                | 12  | 4        | 24          | 4        | 16          | 4        | 8           |    |
|   |   |                                |                             | 18 OR 21              | 0 to 4                                      | 20       | 5           | 32       | 3           | 24       | 4           | 16 |
|   |   |                                |                             |                       | 4 to 8                                      | 20       | 5           | 32       | 5           | 24       | 2           | 16 |
| 1400  | 0.8H                                    | 12.0                           | 12                          | 0 to 4                | 12  | 4        | 32          | 2        | 24          | 6        | 16          |    |
|   |   |                                |                             | 4 to 8                | 12  | 4        | 24          | 5        | 16          | 3        | 8           |    |
|   |   |                                |                             | 18 OR 21              | 0 to 4                                      | 20       | 6           | 32       | 5           | 32       | 1           | 24 |
|   |   |                                |                             |                       | 4 to 8                                      | 20       | 6           | 32       | 5           | 32       | 1           | 24 |
| 2100  | 0.8H                                    | 12.0                           | 12                          | 0 to 4                | 12  | 8        | 24          | 4        | 16          | 0        | 0           |    |
|   |   |                                |                             | 4 to 8                | 12  | 6        | 24          | 6        | 16          | 0        | 0           |    |
|   |   |                                |                             | 18 OR 21              | 0 to 4                                      | 20       | 10          | 32       | 2           | 24       | 0           | 0  |
|   |   |                                |                             |                       | 4 to 8                                      | 20       | 8           | 32       | 4           | 24       | 0           | 0  |

**INSTRUCTIONS TO CONTRACTOR:**

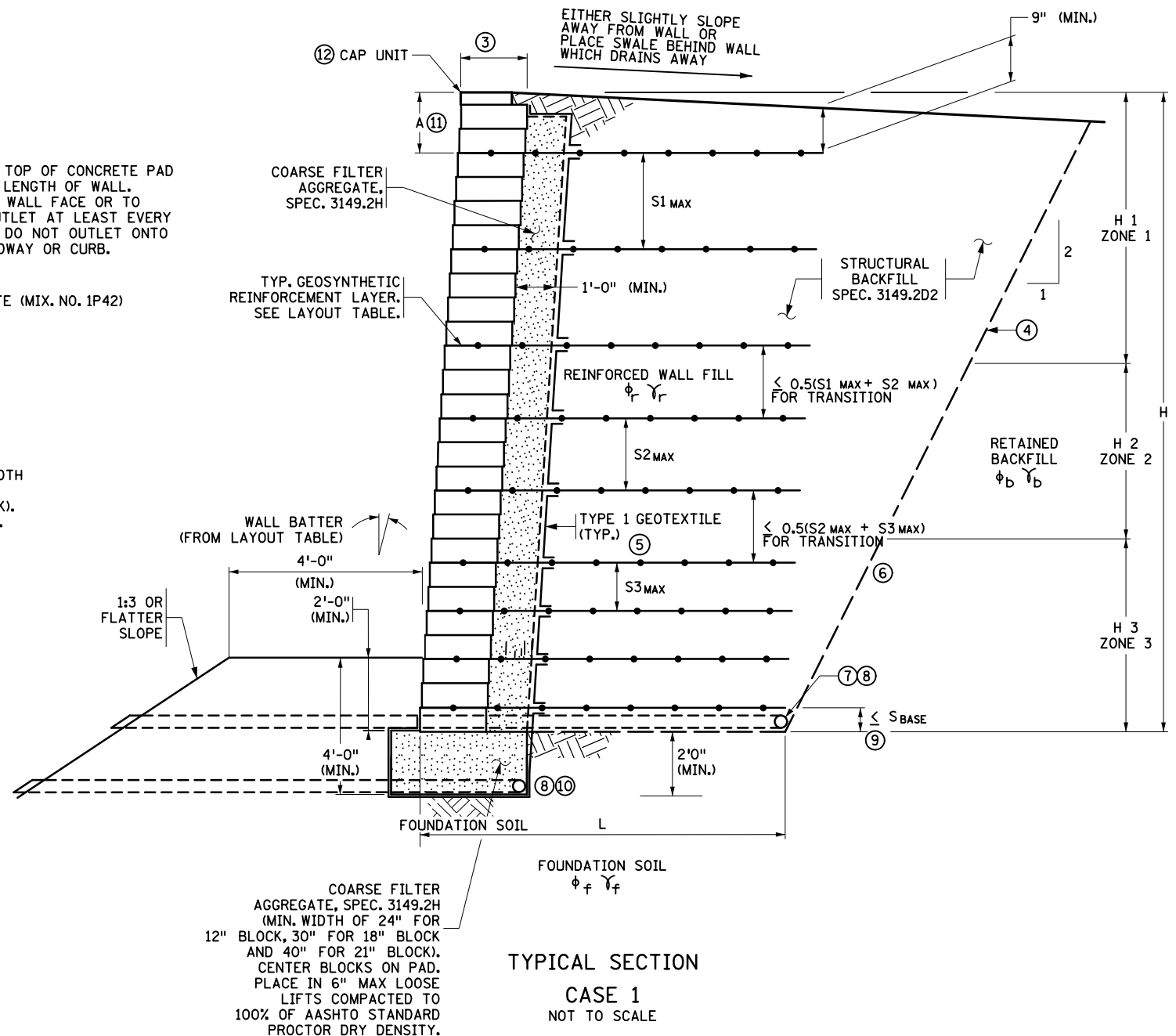
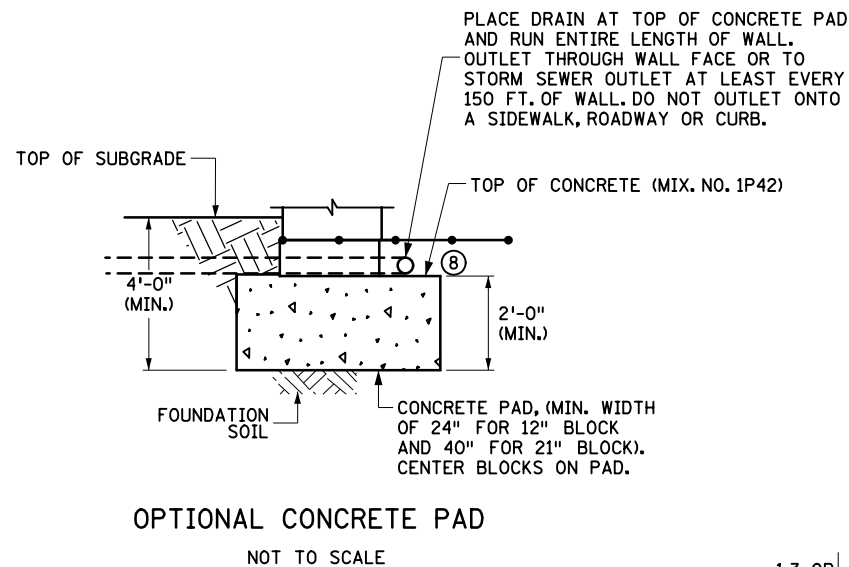
USE AS MANY ZONES AS WALL HEIGHT REQUIRES, STARTING WITH ZONE 1 AND ADDING ADDITIONAL ZONES TO THE BOTTOM OF THE WALL AS NEEDED TO MAKE UP THE TOTAL WALL HEIGHT (H) NEEDED.

REINFORCEMENT CLASS, NOMINAL BLOCK WIDTH AND WALL BATTER ARE GENERALLY THE CONTRACTOR'S OPTION TO SELECT FROM MNDOT APPROVED PRODUCTS LISTS POSTED AT <https://www.dot.state.mn.us>

**NOTES TO CONTRACTOR:**

SEE STANDARD PLAN 5-297.640 FOR STORMWATER MANAGEMENT AND VEGETATION ESTABLISHMENT NOTES.

- ① MINIMUM REINFORCEMENT LENGTH FROM TABLE OR 7 FT. MINIMUM, WHICHEVER IS GREATER AS MEASURED FROM THE FRONT OF THE MODULAR BLOCK UNIT. THE GEOGRID REINFORCEMENT SHALL EXTEND TO THE FRONT BLOCK FACE.
- ② AS MEASURED FROM TOP OF CAP UNIT TO BOTTOM OF LOWERMOST BLOCK UNIT.
- ③ BLOCK WIDTH - MEASURED FROM FRONT TO BACK FACE OF BLOCK UNIT.
- ④ PAY LIMITS OF STRUCTURAL EXCAVATION. ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS; EXCAVATION BEYOND "LIMITS OF STRUCTURAL EXCAVATION" AT CONTRACTOR'S EXPENSE.
- ⑤ THE WRAP BACK LENGTH FOR GEOTEXTILE TYPE 1 SHALL NOT BE MORE THAN 6".
- ⑥ INSPECT EXCAVATION SLOPES FOR ACTIVE SEEPAGE AND PLACE ADDITIONAL DRAINS WHERE SEEPAGE OCCURS. DRAINS SHALL OUTLETSLOPE EVERY 150 FT. MAX.
- ⑦ PLACE DRAIN PIPE WITHIN REINFORCED FILL AT THE INTERFACE OF THE RETAINED BACKFILL AND THE FOUNDATION SOIL AND RUN ENTIRE LENGTH OF WALL. OUTLET THROUGH WALL FACE OR TO STORM SEWER OUTLET AT LEAST EVERY 150 FT. OF WALL. DO NOT OUTLET ONTO A SIDEWALK, ROADWAY OR CURB.
- ⑧ 4" THERMOPLASTIC PERFORATED PIPE, SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE, SPEC. 3733 (TYP.), INSTALLATION IN ACCORDANCE WITH SPEC. 2502. USE PERFORATED DRAIN PIPE EXCEPT FOR PIPE EXTENDING THROUGH BLOCK UNIT AND EXTENDING THROUGH FILL OUTSIDE WALL WHICH SHALL BE SOLID PIPE. PLACE RODENT SCREEN ON END OF PIPE. SCREEN SHALL BE FABRICATED FROM CARBON STEEL FLATTENED EXPANDED METAL, STYLE 1/2" NO. 4F. IT SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
- ⑨  $S_{MAX} = 0.5 S1_{MAX}$  IF THE WALL HEIGHT IS WITHIN ZONE 1.  
 $S_{MAX} = 0.5 S2_{MAX}$  IF THE WALL HEIGHT IS WITHIN ZONE 2.  
 $S_{MAX} = 0.5 S3_{MAX}$  IF THE WALL HEIGHT IS WITHIN ZONE 3.  
 $S_{BASE}$  SHALL BE ONE (1) BLOCK HEIGHT MINIMUM.
- ⑩ IF PIPE AT THIS ELEVATION CANNOT BE SLOPED TO DRAIN, OMIT THE LOWER DRAIN AND USE "OPTIONAL CONCRETE PAD" DETAIL THAT SHOWS DRAIN PIPE ON TOP OF THE LEVELING PAD.
- ⑪ MAXIMUM UNREINFORCED VERTICAL DISTANCE BELOW TOP OF WALL.
- ⑫ ATTACH CAP BLOCK WITH ADHESIVE.



LEAD EXPERT OFFICE  
 AMBER BLANCHARD  
 ACTING DIRECTOR  
 OFFICE OF MATERIALS  
 & ROAD RESEARCH



MODULAR BLOCK RETAINING WALL  
 SOIL REINFORCEMENT FOR LEVEL FILL, CASE 1

APPROVED: 03-29-2023  
 REVISED:

THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

STANDARD PLAN  
 5-297.641

1 OF 1

STANDARD PLAN

STATE PROJ. NO. SHEET NO.  
 TRUNK HWY. TOTAL SHEETS