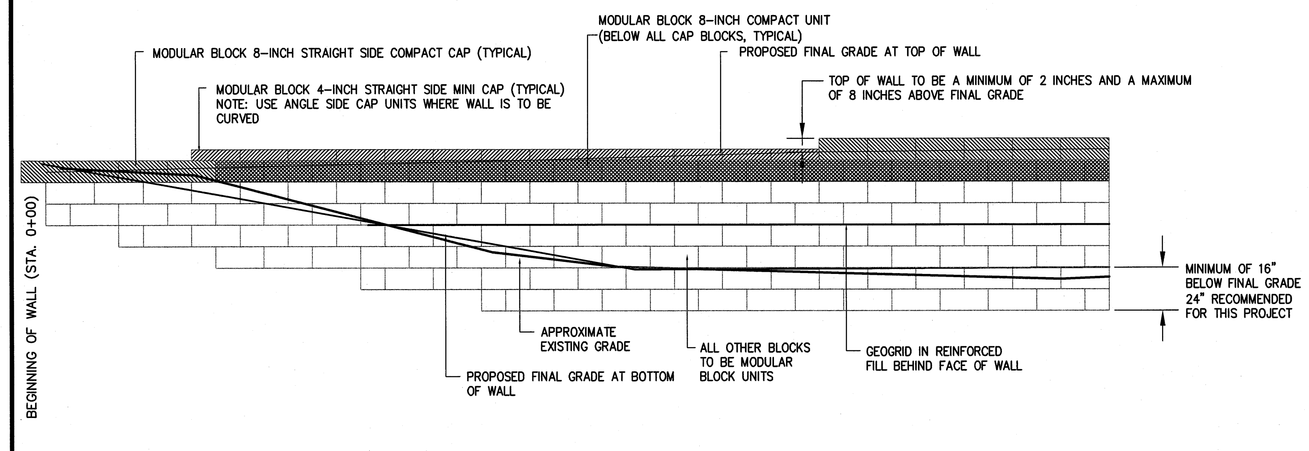
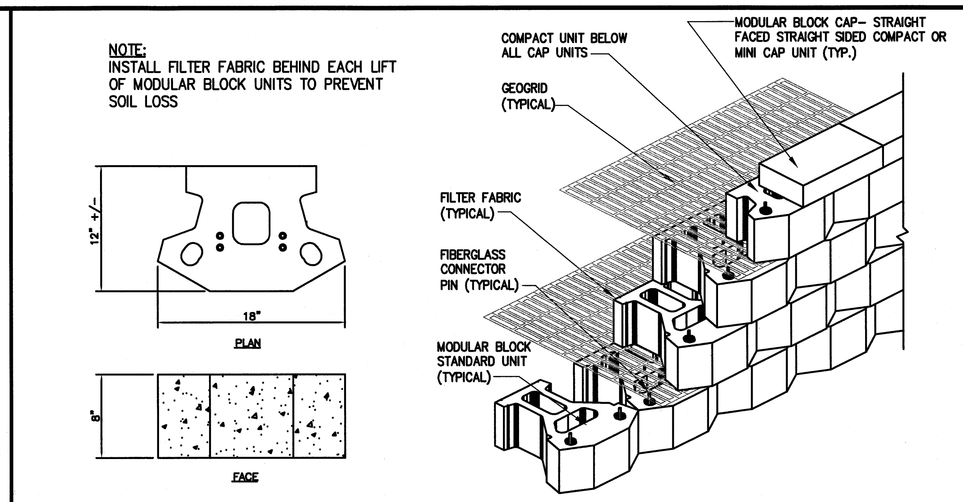
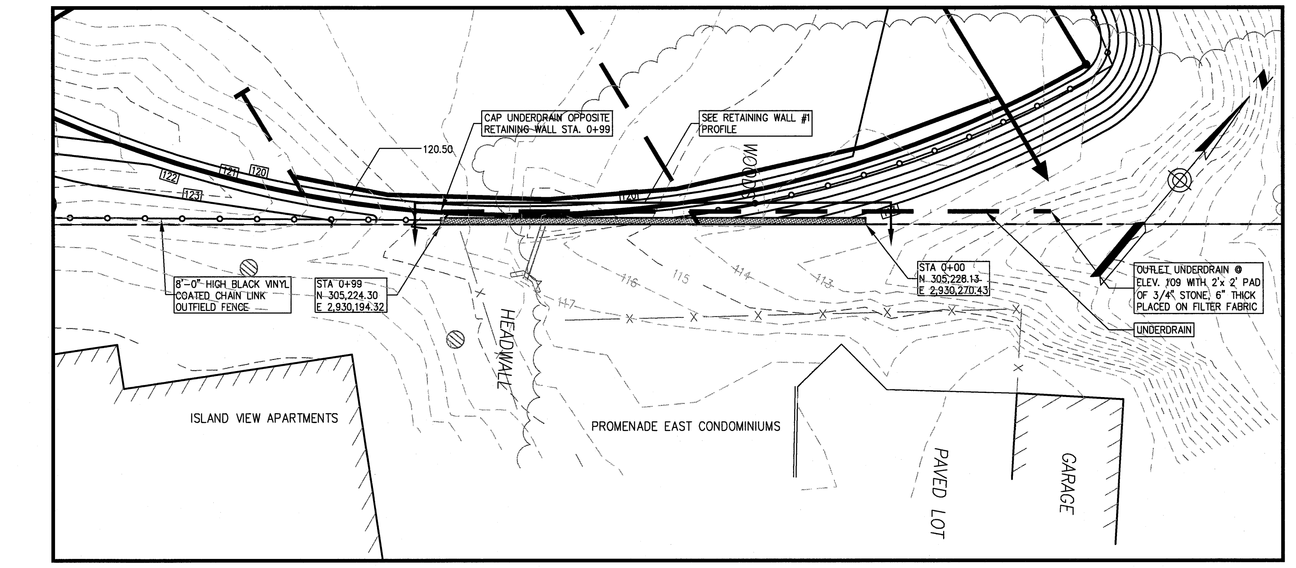




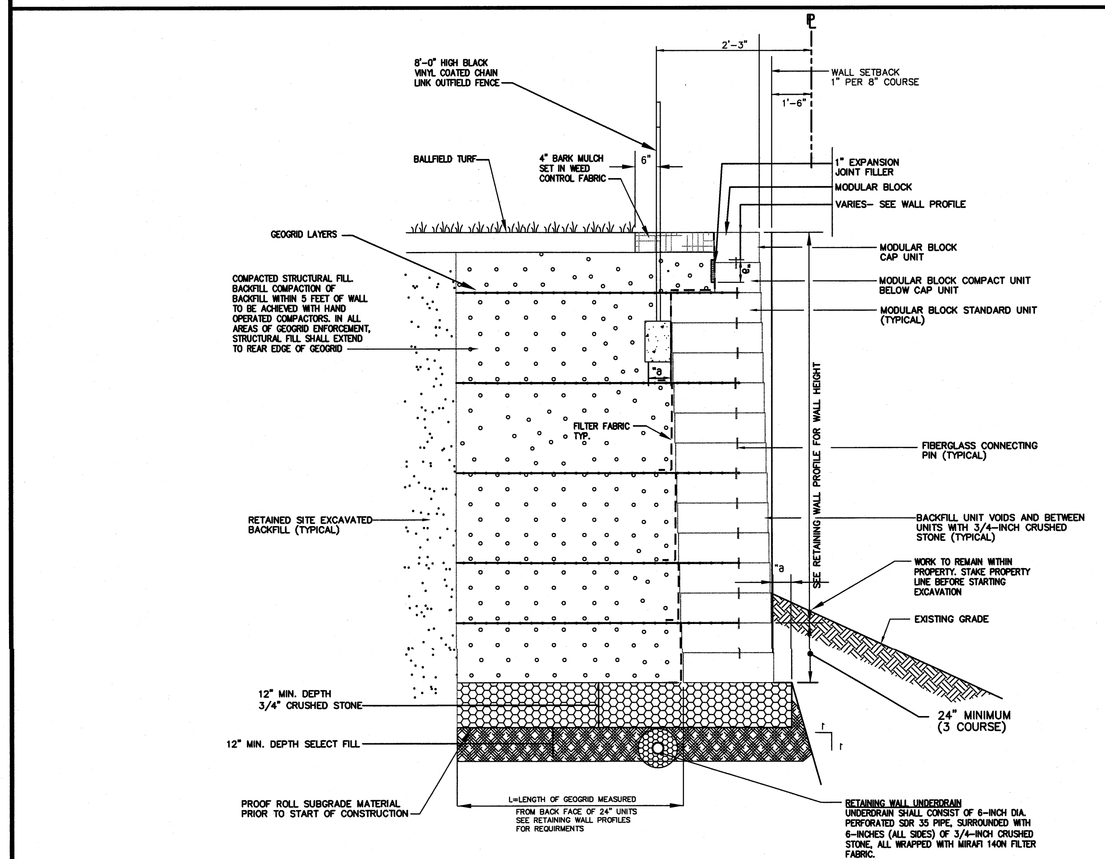
MODULAR BLOCK COMPACT UNIT
N.T.S.

CONCEPTUAL WALL DETAIL
N.T.S.

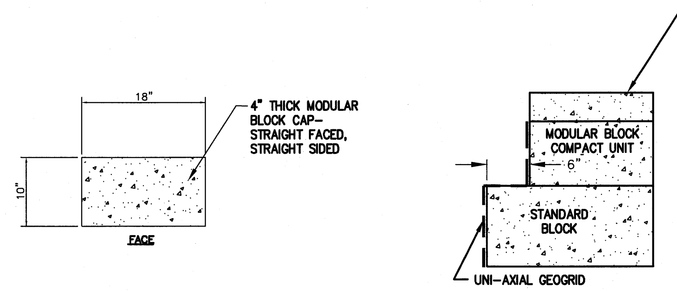


RETAINING WALL #1
PLAN VIEW
scale: 1"=20'

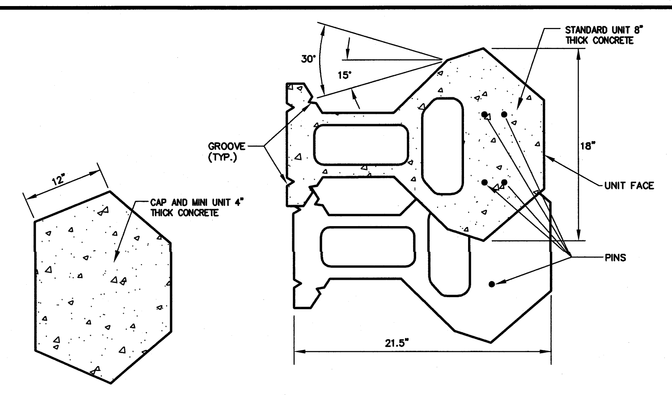
BASE BID



TYPICAL REINFORCED WALL SECTION
STANDARD UNIT – 1" SETBACK
N.T.S.

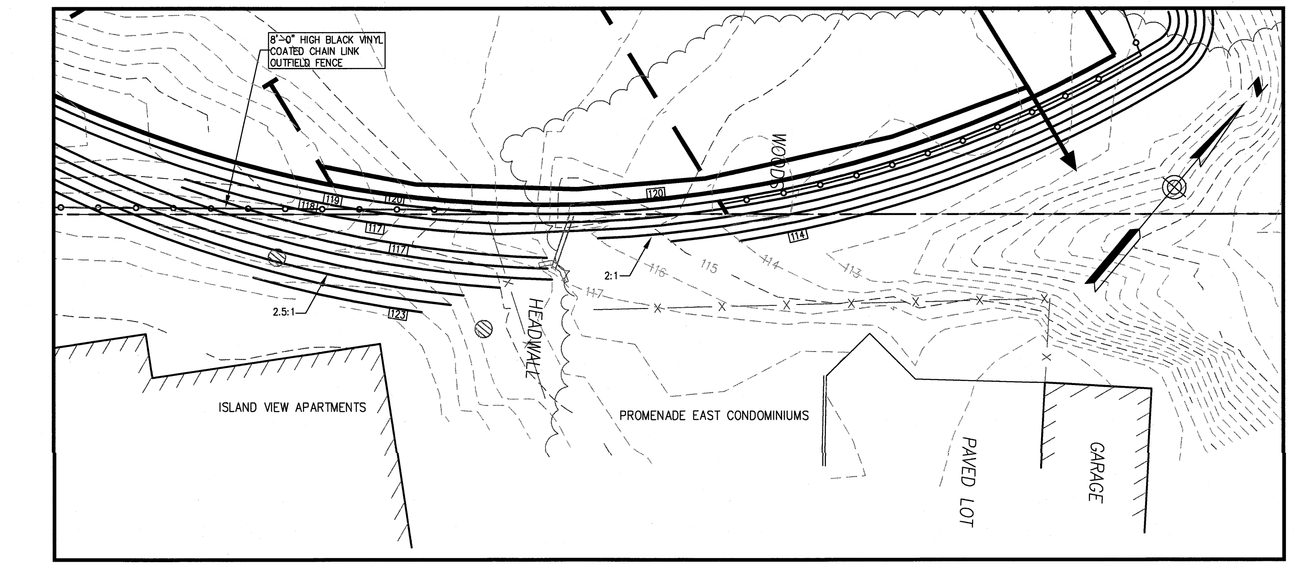


MODULAR BLOCK CAP DETAIL
N.T.S.



NOTES:
1. REMOVE THE EXTENDED TAIL PIECES AT THE GROOVES TO RETURN THE BLOCK SHAPE TO ITS 30° SIDES WHEN BUILDING TIGHT CONVEX CURVES.
2. THE ELONGATED TAIL SECTION PROVIDES ADDITIONAL STABILITY FOR STRAIGHT WALLS AS THE TAIL PIECE RESTS ON THE UNIT BELOW IT.
3. AREA WITHIN, BETWEEN AND 12" BEHIND THE UNITS IS TO BE FILLED WITH 1/2" TO 3/4" CRUSHED STONE WITH LESS THAN 5% PASSING A #200 SIEVE.

MODULAR BLOCK UNIT DETAIL
N.T.S.



GRADING EASEMENT (IF OBTAINED)
W/O RETAINING WALL #1
PLAN VIEW
scale: 1"=20'

BID ALTERNATE #1

RETAINING WALL WILL BE REQUIRED IF EASEMENT IS NOT SECURED FROM ABUTTER. REVIEW PENDING.

GEOGRID LAYERS WILL VARY BASED UPON SUBMITTALS. CONTRACTORS SHOULD ASSUME 3 LAYERS, 8'-0" DEPTH FOR EACH LAYER FOR THE PURPOSE OF BIDDING

THIS DRAWING SHOWS THE BASE BID & BID ALTERNATE #1

GENERAL CONSTRUCTION SEQUENCE FOR GEOSYNTHETIC REINFORCED MODULAR BLOCK RETAINING WALLS

STEP 1 – EXCAVATION AND LEVELING PAD
A. WALL LAYOUT AND GENERAL EXCAVATION
1. SURVEY STAKE WALL LOCATION AND GENERAL EXCAVATION LIMITS FOR WALL CONSTRUCTION.
2. ENSURE THE WALL IS ALONG PROPER ALIGNMENT, AND WITHIN REQUIRED BOUNDARIES.
3. PERFORM GENERAL EXCAVATION FOR WALL SYSTEM.
B. CRUSHED STONE BASE PAD CONSTRUCTION
1. STAKE WALL LOCATION FOR CRUSHED STONE BASE PAD EXCAVATION.
2. EXCAVATE FOR CRUSHED STONE BASE PAD TO PROVIDE MINIMUM THICKNESS AND MINIMUM WIDTH SHOWN ON DRAWINGS. IF REQUIRED, EXTEND EXCAVATION TO REMOVE UNSUITABLE SOILS.
3. PROOF ROLE SUBGRADE.
4. PLACE CRUSHED STONE BASE TO DESIGN GRADES FOR MODULAR BLOCK WALL (MBW) UNITS.

STEP 2 – INSTALL FIRST COURSE OF MBW UNITS (LOWEST ELEVATION)
A. SET FIRST COURSE OF MBW UNITS
1. CHECK CRUSHED STONE BASE PAD ELEVATION AND VERIFY LEVEL SURFACE.
2. STAKE AND STRING LINE THE WALL LOCATION, PAYING CLOSE ATTENTION TO LOCATION OF CURVES, CORNERS AND VERTICAL AND HORIZONTAL STEPS. STRING LINE MUST BE ALONG THE MOLDED FACE (BACK) OF THE MBW UNIT, AND NOT ALONG THE FINISH (FRONT) SURFACE.
3. INSTALL FIRST COURSE OF MBW UNITS, CHECKING LEVEL AS PLACED.
B. BACKFILL FIRST COURSE OF MBW UNITS
1. RECHECK WALL LOCATION.
2. USE CRUSHED STONE TO FILL ANY OPENINGS IN AND BETWEEN HOLLOW MBW UNITS, AS REQUIRED.
3. PLACE AND COMPACT REINFORCED SOIL AGAINST MBW WALL UNITS.
4. PLACE AND COMPACT FILL SOILS IN FRONT OF MBW UNITS.
5. PLACE AND COMPACT REINFORCED FILL SOILS TO REQUIRED DIMENSIONS.
6. CLEAN TOP OF BLOCKS AND CHECK LEVELNESS.

STEP 3 – GEOSYNTHETIC REINFORCEMENT INSTALLATION
A. PLACEMENT OF GEOSYNTHETIC REINFORCEMENT
1. ENSURE THAT REINFORCED FILL AGGREGATE IS SLIGHTLY ABOVE TOP OF MBW UNIT BELOW.
2. THOROUGHLY CLEAN DEBRIS AND AGGREGATE OFF OF TOP OF MBW UNITS.
3. INSTALL ALIGNMENT PINS (IF ANY).
4. CUT GEOSYNTHETIC REINFORCEMENT TO DESIGN LENGTH SHOWN ON PLANS AND INSTALL WITH DESIGN STRENGTH DIRECTION PERPENDICULAR TO THE WALL FACE. PLACE GEOSYNTHETIC REINFORCEMENT ON MBW UNIT (SEE GENERAL NOTE 5).
5. PLACE NEXT COURSE OF MBW UNITS ON GEOSYNTHETIC REINFORCEMENT AND PUSH UNITS FORWARD TO ENGAGE ALIGNMENT PINS AND ESTABLISH PROPER SETBACK, CONSISTENT WITH SETBACK SHOWN ON DETAILS AND IN ACCORDANCE WITH PROJECT PLANS.
B. BACKFILLING OVER GEOSYNTHETIC REINFORCEMENT
1. PLACE CRUSHED STONE IN AND BETWEEN HOLLOW MBW UNITS AS REQUIRED.

2. PULL GEOSYNTHETIC REINFORCEMENT TIGHT USING UNIFORM TENSION WITH A MECHANICAL RAKE WITH E IN THE MIDDLE TENSIONING DEVICE TO REMOVE ALL WRINKLES IN THE GEOSYNTHETIC REINFORCEMENT. HOLD OR STAKE IN PLACE TO MAINTAIN TENSION THROUGHOUT FILL PLACEMENT PROCESS.
3. FIRST PLACE AND COMPACT REINFORCEMENT FILL SOIL AGAINST MBW UNITS. THEN PLACE AND COMPACT REINFORCED FILL WORKING FROM THE WALL BACK TOWARDS THE FREE END OF THE GEOSYNTHETIC REINFORCEMENT.
4. COMPACT CRUSHED STONE AND 12-INCH WIDTH OF REINFORCED FILL.

STEP 4 – PLACE AND BACKFILL MBW UNITS
A. INSTALL NEXT COURSE OF MBW UNITS AS STEP 2A.
B. FILL PLACEMENT AND COMPACTION
1. USE CRUSHED STONE TO FILL OPENINGS IN AND BETWEEN HALLOW MBW UNITS AS REQUIRED.
2. PLACE AND COMPACT REINFORCED SOIL BEHIND MBW WALL UNITS, AS IN STEP 3B.3.
3. COMPACT CRUSHED STONE AND 12-INCH WIDTH OF REINFORCED FILL BEHIND MBW WALL UNITS.
C. INSTALL GEOSYNTHETIC REINFORCEMENT AS STEP 3A.
D. BACKFILL GEOSYNTHETIC REINFORCEMENT AS STEP 3B.
CONTINUE CONSTRUCTION OF WALL TO FULL HEIGHT USING STEPS 3 AND 4.

STEP 5 – CAPPING AND GRADING
1. INSTALL CAP/COPING UNIT AND SECURE IN PLACE PER PROJECT REQUIREMENTS INCLUDING CEMENTING THE GEOGRID.
2. PLACE AND COMPACT FINAL BACKFILL.

GENERAL NOTES:

1. ALIGNMENT, BATTER AND SPECIFIED WALL TOLERANCES SHALL BE CHECKED AS NECESSARY TO MAINTAIN WALL POSITION.CONTRACTOR SHALL DOCUMENT WALL POSITION EVERY FOURTH VERTICAL COURSE OF MBW UNITS.

2. MBW UNITS, REINFORCED FILL, AND RETAINED FILL SHALL BE BROUGHT UP SIMULTANEOUSLY. NONE OF THESE ITEMS SHOULD LEAD ANOTHER BY MORE THAN ONE COURSE HEIGHT.

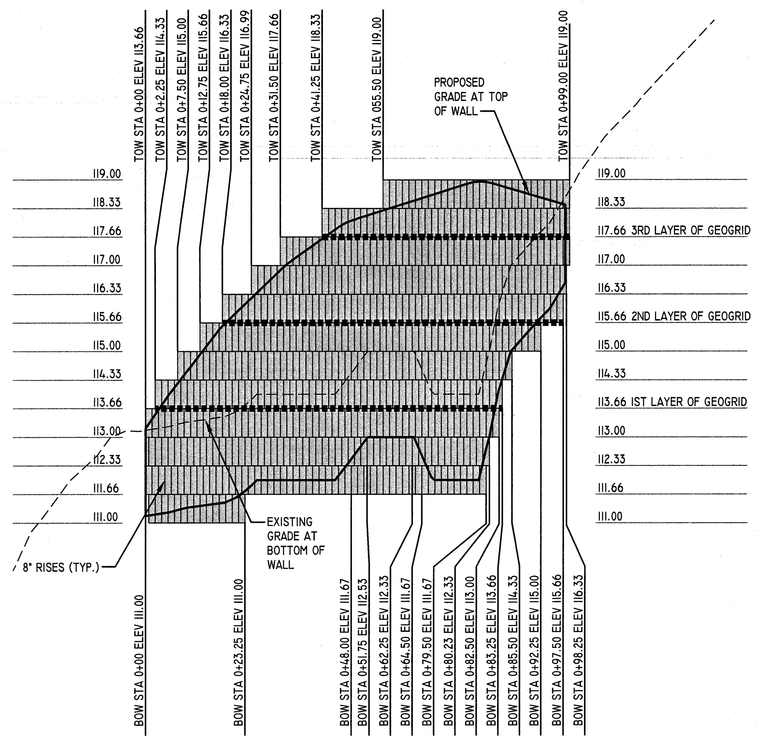
3. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF COMPLETED MBW RETAINING WALL, INCLUDING POSITIONS OF BOTTOM OF WALL, TOP OF WALL, AND WALL BATTER AT 50 FOOT INTERVALS ALONG THE WALL. WALL BATTER SHALL BE CHECKED AT THIRD POINTS OF WALL HEIGHT ON EACH INTERVAL

4. GEOSYNTHETIC REINFORCEMENT FOR CURVES AND CORNERS SHALL FOLLOW NCMA DETAILS IN FIGURES 6-1 AND 6-2 OF DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, SECOND EDITION, 1997.

5. GEOSYNTHETIC REINFORCEMENT SHALL EXTEND TO THE FACE OF EACH MBW UNIT IMMEDIATELY, ABOVE THAT LAYER OF GEOSYNTHETIC REINFORCEMENT, UNLESS SPECIFICALLY DETAILED OTHERWISE BY THE MANUFACTURER AND SHOWN ON THE SHOP DRAWINGS.

6. INSTALL DRAIN PIPE AND LATERALS WITH POSITIVE GRAVITY FLOW TO OUTLETS AS SHOWN ON THE PLANS, CAREFULLY PLACE CRUSHED STONE AROUND PIPE TO CREATE WALL FACE DRAIN COMPACT DRAINAGE AGGREGATE.

7. POST SLEEVES AND GUARD RAIL POSTS SHALL BE PLACED IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. GEOSYNTHETIC REINFORCEMENT MAY ONLY BE SPLIT FROM THE SLEEVE OR POST TO THE BACK SIDE OF THE REINFORCED SOIL ZONE. GEOSYNTHETIC REINFORCEMENT MAY LAY AGAINST SIDE OF THE POST OR SLEEVE. IN NO CASE SHALL THE GEOSYNTHETIC BE CUT PARALLEL TO THE FACE IN ORDER TO FACILITATE INSTALLATION OF POST AND/OR GUARD RAILS.



RETAINING WALL #1 PROFILE
SCALE: 1"=20' HORIZ., 1"=2' VERT.

STATE OF MAINE WILLIAM G. HOFFMAN #4105 REGISTERED PROFESSIONAL ENGINEER
P.E. William G. Hoffman
LIC. #4105

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3 06/28/2004 Released for Bid

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Date: February 24, 2004
Scale: as noted
Drawn by: kew
Checked by: wgh

Drawing Title:
Retaining Wall Details, Plan & Profile

C-31

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