NASSPA Annual, DFI Conference, SSP Symposium Meetings
13 – 17 October 2008
Hilton New York, NYC
Planning Itinerary
Business casual dress

• 13 October – travel-on day to NYC; hotel check in (1)
  o No planned activities
• 14 October – NASSPA Annual Meeting; 9AM – 6 PM (2)
• 14 October – NASSPA Group Dinner; 7PM – 10PM (3)
• 15 October – DFI Conference activities (4)
  o 8AM – 12PM – DFI committee meetings
  o 12PM – 1:30PM – DFI welcome lunch
  o 1:45PM – 4:35 PM – DFI technical session
  o 6PM – 8PM DFI welcome reception
• 15 October – NASSPA SSP Symposium speaker dinner; 7PM – 10PM (5)
• 16 October – DFI Conference activities (4)
  o 8:30AM – 11:45 AM – DFI technical session
  o 12PM – 1PM – DFI business lunch
  o 1PM – 5:40PM – DFI technical session
  o 6:30PM – 9:15PM – DFI award reception and banquet
• 17 October – DFI conference activities; 8:30AM – 12:15 PM
• 17 October – NASSPA SSP Symposium; 12:30PM – 3:30PM (6)
• 17 October – travel-out after 3:30PM

(1) Hilton New York
1335 Avenue of the Americans (W.53rd and 6th)
New York, NY 10019
(212) 586-7000
(2) Conference call access will be available
(4) go to www.deepfoundations08.org for conference details
(6) NASSPA sponsored lunch included
# NASSPA meeting planner

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Steel Sheet Piling Guide
COST AND PERFORMANCE

Time and money – the two factors that drive most business decisions. You can find a retaining wall system that delivers on both fronts, and results in a strong and permanent retaining solution. A recent comparison study\(^1\) concludes that hot-rolled steel sheet piling can provide the fastest construction time as well as significant cost savings over other retaining walls.

Evaluating the various retaining wall systems for specific project requirements can be complicated and time consuming. From their decision-making matrix, the Federal Highway Administration concludes that for permanent retaining wall structures, cost and speed of construction are typically among the most important wall selection factors\(^2\) areas where steel sheet piling excels.

In addition to economy, hot-rolled steel sheet piling offers a readily-available, environmentally-friendly solution for retaining structures, providing excellent stability and ease of construction in both permanent and temporary applications.

The following sections present the results of the study cited above, comparing six retaining wall types in a typical permanent application. Each retaining wall system was structurally designed to meet the proposed project requirements. For the resulting wall, corresponding material and construction costs, as well as time to construct, were developed based on national average cost data\(^3\). The results show that the steel sheet piling installation has the shortest construction duration overall, and can provide up to a 60% cost savings over other retaining walls.

A RETAINING WALL SYSTEM COMPARISON

The study\(^1\) considered a one-hundred-foot long retaining wall with a nineteen-foot exposed wall height, used to retain dense fine sand in an area with no water table. Although not generally required for steel sheet pile installation, the study assumed the walls were built in a cut situation with available space for open excavation. In applications where the steel sheet pile can be driven directly into the soil without excavation, the savings in cost and construction time would be even greater than shown below. Six retaining wall types were designed based on these basic design requirements, then costs and time to construct the resulting designs were prepared.

Figures 1 through 6 summarize the results for each retaining wall system.

REFERENCES
Construction duration: 13 days

Construction Sequence:
1. Excavate to limits indicated in cross section detail.
2. Install sheet pilings to depth shown.
3. Install drainage system as indicated.
4. Backfill wall in 12 in. lifts. Compact each lift utilizing vibratory roller and hand operated equipment as necessary.
5. When the elevation of the grouted anchors is reached, install the grouted anchors.
6. Continue backfilling until complete.

FIGURE 1
Grouted Anchor Steel Sheet Piling Retaining Wall

LEGEND
- Excavation Complete
- Wall Face Installed
- Final Grade/Project Complete

Construction duration: 26 days

Construction Sequence:
1. Excavate to limits indicated in cross section detail.
2. Install soldier piles to depth shown at 8 ft spacing.
3. Install drainage system as indicated.
4. Backfill wall in 12 in. lifts. Compact each lift utilizing vibratory roller and hand operated equipment as necessary.
5. When the elevation of the soil anchor is reached, install the soil anchor.
6. When the elevation of the soil anchor is reached, install the soil anchor.
7. Continue installing concrete lagging and backfill.

FIGURE 2
Soldier Pile and Lagging Wall
Construction duration: 31 days

Construction Sequence:
1. Excavate to limits indicated in cross section detail.
2. Install concrete leveling pads as indicated.
3. Place concrete modular units (1 row at a time) as shown. Fill with clean gravel fill.
4. Install drainage system as indicated.
5. Backfill wall in 12 in. lifts after each row is placed.
6. Compact each lift utilizing vibratory roller and hand operated equipment as necessary.

FIGURE 3
Concrete Modular Unit Gravity Wall

LEGEND
- Excavation Complete
- Wall Face Installed
- Final Grade/Project Complete

Construction duration: 35 days

Construction Sequence:
1. Excavate to limits indicated in cross section detail.
2. Install concrete leveling pad as indicated.
3. Place concrete wall panels (1 row at a time) as shown.
4. Backfill wall in 12 in. lifts.
5. Compact each lift utilizing vibratory roller and hand operated equipment as necessary.
6. Attach galvanized steel reinforcement strips at each connection point during backfill procedures.
7. Install drainage system as indicated.

FIGURE 4
Mechanically Stabilized Earth Wall
Construction duration: 47 days

Construction Sequence:
1. Excavate to limits indicated in cross section detail.
2. Place footing form work and footing steel.
3. Pour concrete footing.
4. Set forms for wall stem.
5. Place stem steel.

FIGURE 5
Cast-in-Place Reinforced Concrete Retaining Wall

Construction duration: 64 days

Construction Sequence:
1. Excavate for alternate panel lengths of 8 ft to 12 ft while filling excavation with a bentonite slurry.
2. Place reinforcement cage into excavated area.
3. Place tremmie concrete beginning at bottom of excavation and work up while collecting bentonite slurry for re-use.
4. Allow appropriate cure time, then begin excavating between slurry wall panels while placing bentonite slurry.
5. Place reinforcement cage into excavated area.
6. Place tremmie concrete beginning at bottom of excavation and work up while collecting bentonite slurry for re-use.
7. Allow appropriate cure time, then excavate to final grade.

FIGURE 6
Slurry Wall
TECHNOLOGY & USES

Marine and Water Environments

Ports
- Quay Walls
- Dock Constructions
- Dolphins
- Roll-on/Roll-Off Facilities

Waterways
- Waterway Supports
- Retaining Walls
- Erosion Control
- Berth Facilities
- Scour Protection

Water Engineering Structures
- Locks
- Weirs
- Bridge Abutments
- Culverts
- Safety Gates
- Flood Protection Walls
- Pier Foundations
- Inlets and Outlets

Transportation

Road and Rail
- Support walls
- Bridge Abutments
- Ramps
- Sunken Roads
- Groundwater Retention

Environmental

Pollution Control
- Landfills
- Contaminated Sites
- Enclosures
- Vertical-sealed Enclosure Walls
- Excavations for Soil Replacement
- Tank Enclosures,
- Refuse Tipping Ramps

Noise Abatement
- Noise Protection Walls

Water Protection
- Pumping Stations
- Sewage Works
- Storm Water Overflow
- Storm Water Retention Basins

Civil

Civil Engineering
- Site Excavations
- Foundations
- Trench Sheeting
- Underground Parking
- Erosion Control

NORTH AMERICAN STEEL SHEET PILING ASSOCIATION

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Covering the Colts

On September 7 the Indianapolis Colts will play their first game at brand-new Lucas Oil Stadium. Designed by architect HKS, Inc., the stadium seats 63,000 (and can be expanded to 70,000 when it hosts the Super Bowl in 2012). The playing field is 25 ft below street level, allowing fans unobstructed views from their easily accessed seats.

At the Colts’ first game in its new home—against the Chicago Bears—fans will be sitting beneath an engineering milestone. The stadium’s steel roof, designed by structural engineer Walter P. Moore, is the first ever to divide lengthwise into two retractable panels—160 ft long x 600 ft wide and 2.9 million lb each—with each half sliding down the steep, gabled roof of the stadium into the open position. A 960-hp cable drum drive system moves the retractable roof panels up and down the sloped track in 9 to 11 minutes depending on wind conditions. (Structural steel was fabricated by AISC Member Hillsdale Fabricators/Alberici Constructors.)

The project also features a retractable end wall consisting of six glass panels that move to create an 85-ft-tall x 210-ft-wide opening. Each panel rides on a steel rail while the wall opens and closes, and is supported by two hardened steel wheels.

Indiana Fabricator Wins Free Audit

Indiana Steel and Engineering Corp., a fabricator in Bedford, Ind., has won Quality Management Company’s drawing for a free audit.

Since October 2006, QMC has been administering a voluntary Customer Satisfaction Survey of AISC Certified Fabricators and Erectors upon receipt of their certificate. The objective of the survey is to improve the certification process from invoicing to the audit to issuing the certificate, and companies that complete the survey are automatically entered into the drawing. QMC will draw for another free audit in six months, so keep those surveys coming in!

Best Practices for Installing Steel Sheet Piling

The North American Steel Sheet Piling Association (NASSPA) earlier this year announced the publication of its Best Practices Steel Sheet Piling Installation Guide. This updated and revised manual provides an authoritative guide to the methods of installing steel sheet piling.

The goal is to describe practices that ensure proper steel wall installation, and convey the importance of predicting the “drive-ability” of sheet piling sections following a thorough evaluation of all ground conditions. The manual presents an inventory of the existing driving systems, from impact hammers to vibratory piling drivers and special systems, and also provides a description of driving methods, ancillary equipment (including guide frames), and all necessary procedures to follow when installing sheet piling. Finally, some common installation problems are illustrated and several special aspects of driving are briefly outlined.

The guide can be downloaded from the NASSPA web site, www.nasspa.com. A hard copy is available upon request; call 866.658.8667.