DULUTH INTERNATIONAL AIRPORT

NEW PASSENGER TERMINAL
BID PACKAGE 2B - ISSUED FOR BID
VOLUME 1 OF 3
CIVIL, STRUCTURAL

AUGUST 23, 2011
**CONSTRUCTION SAFETY PLAN**

This plan is designed to ensure the safety of all personnel involved in the construction of the project. It adheres to the guidelines outlined in the Safety Manual and the OSHA regulations. The plan includes the following key elements:

1. **Safety Requirements**
   - Ensuring that all workers are wearing the appropriate personal protective equipment (PPE) as specified in the Safety Manual.
   - Regular safety meetings and site inspections to monitor compliance with safety regulations.
   - Implementing emergency procedures for accidents or incidents.

2. **Security Requirements**
   - Ensuring that all areas of the site are secured and access is controlled.
   - Monitoring all materials and equipment to prevent theft or unauthorized use.
   - Implementing procedures for handling and disposal of hazardous materials.

3. **Construction Safety Plan**
   - Prior to commencement of work, the contractor shall prepare and submit a Construction Safety Plan to the project owner.
   - The plan shall cover all aspects of safety and security, including equipment, materials, and personnel.

4. **Emergency Response**
   - In the event of an emergency, the site shall be evacuated according to the pre-established procedures.
   - All personnel shall be trained in emergency response procedures.

5. **Materials Handling**
   - All materials shall be handled in accordance with the OSHA regulations for handling hazardous materials.
   - Proper storage and labeling of materials to prevent accidents.

6. **Site Security**
   - The site shall be secured with gates and barriers.
   - Access to the site shall be controlled and monitored.

7. **Personal Protective Equipment**
   - All workers shall wear the appropriate PPE as specified in the Safety Manual.
   - Regular checks of PPE to ensure they are in good condition and fit properly.

8. **Fire Prevention**
   - Regular fire safety inspections and drills.
   - Fire extinguishers shall be placed at strategic locations.

9. **Health and Safety Training**
   - All workers shall receive training on safety and health-related issues.
   - Regular refresher training for workers.

10. **Safety Meetings**
    - Daily safety meetings shall be held to discuss safety issues and concerns.
    - Weekly safety meetings to review the safety plan and address any necessary updates.

11. **Emergency Contact Information**
    - Contact information for emergency services shall be posted at strategic locations.
    - Emergency numbers shall be provided to all workers.

This plan is reviewed and updated regularly to ensure the safety and security of all personnel involved in the project.
**DESIGN LOADS:**

Paul A. Johnson

The contract structural drawings and specifications represent the completed structure. The contractor is responsible for bracing and shoring (without overstressing) all structural elements as necessary at any stage of construction. The contractor shall verify the location of all existing and new underground utilities and tanks prior to beginning excavation. All masonry units are placed in running bond fashion. Corners shall have a standard bond by overlapping units. The contractor shall confirm the proper preparation of bearing conditions. Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing requirements with the architect.

Requests for information shall be submitted in writing and shall reference the part of the construction documents which they concern. Site observation visits by the Structural Engineer do not include review of the contractor's safety programs. Do not cut or damage reinforcing steel or P-T tendons.

SPCC of 1 East Wacker Drive, Suite 103, Chicago IL 60601

**SCOPE OF WORK**: The contract structural drawings and specifications represent the completed structure. The contractor is responsible for bracing and shoring (without overstressing) all structural elements as necessary at any stage of construction. The contractor shall verify the location of all existing and new underground utilities and tanks prior to beginning excavation. All masonry units are placed in running bond fashion. Corners shall have a standard bond by overlapping units. The contractor shall confirm the proper preparation of bearing conditions. Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing requirements with the architect.

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The maximum dimension from exterior grade to bottom of footing and foundation shall be 72" in unheated areas. For underground utilities adjacent to foundations and through foundations reference drawings for detail showing step cut outs. Foundation and retaining walls shall be back filled with free draining fill approved by the Geotechnical Engineer. All bars shall be tied to prevent displacement while placing concrete. All chairs and slab bolsters shall be plastic ties unless otherwise specified in shop drawings.

**FINISH FLOOR**: The finish floor shall be a 2004 supplement. ASCE 7-05 Minimum design loads for buildings and other structures including supplement NO. 1 and ASCE 7-00 Minimum design loads for buildings and other structures, including the 2000 supplement. The contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing requirements with the architect.

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Each beam or column shall be tied to parallel reinforcing steel. Conduit may not cross within slabs 5" or less in thickness. Conduit placement drawings may be required in areas of high conduit concentricity.

The contractor shall confirm the proper preparation of bearing conditions. Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing requirements with the architect.

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**SHOP DRAWINGS**: All engineering design provided by others and submitted for review shall bear the certification stamp and signature of a Professional Engineer (P.E.). The contractor shall verify the location of all existing and new underground utilities and tanks prior to beginning excavation. The contractor shall confirm the proper preparation of bearing conditions. Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing requirements with the architect.

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**NON-COMPOSITE STEEL FLOOR DECK:**

Manufacturer shall be a current member of the Steel Deck Institute (SDI).

Non-composite steel floor deck shall be as noted on plan. Detail, manufacture and install non-composite steel floor deck and accessories in accordance with the SDI specifications. Powder actuated or pneumatically driven fasteners are not allowed.

Refer to drawings for non-composite steel floor deck fastening requirements. Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material.

Provide reinforcement or frames for deck openings as indicated on the drawings.

**LIGHT GAUGE METAL FRAMING:**

Stud in exterior walls shall be minimum 600S162-43 (6"-18 gauge) studs at 16" OC. See architectural for additional spacing requirements at exterior finishes.

Studs shall be cold rolled steel, galvanized, C shape, with minimum 1 5/8" flange and minimum 1/2" of opening and a minimum one additional stud each side for lintel bearing.

Anchor bottom track to concrete or masonry with minimum 5/32" x 1 1/4" power driven fasteners at 16" OC.

Interior Architects:
SJA ARCHITECTS
11 E Superior Street Suite 340 Duluth MN 55802
TEL: (218) 724-8578 / FAX: (218) 724-8717

Structural Engineers:
COSENTINI
501 Lake Avenue South, Suite 300, Duluth MN 55802
TEL: (218) 591-5079

Baggage Handling Systems Consultants:
BNP ASSOCIATES INC.
101 East Ridge Office Park, Suite 103, Danbury CT 06810
TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscape Consultants:
APPOLD DESIGN
2432 East First Street, Duluth MN 55812
TEL: (218) 591-5079

For wall studs providing lateral support to other materials, provide L/360. For wall studs providing lateral support to other materials, provide L/360.

Light gage metal framing fasteners shall be minimum #10 self-drilling sheet metal screws, 16 threads per inch. Fasten light gage framing to wood with minimum #10 x 1 7/8" bugle head wood screws. Pre-drill holes in metal studs. Provide a minimum of two screws per connection unless noted otherwise.

Framing components may be pre-assembled into panels prior to erecting. Prefabricated panels shall be square, licensed Professional Engineer under the laws of the State of Minnesota. Touch up all light gage material at welds with zinc-rich paint. Welders shall be qualified in accordance with AWS D1.3 and shall be experienced in light-gage welding.

SPECIAL INSPECTION SCHEDULE:

| SHEET TITLE | SHEET NUMBER | DATE ISSUED | DRAWN BY | REVIEWED BY | REG. NO. | DATE ISSUED | REVIEWED BY | REG. NO. | DATE ISSUED | DRAWN BY | REVIEWED BY | REG. NO. | DATE ISSUED | REVIEWED BY | REG. NO. | DATE ISSUED | DRAWN BY | REVIEWED BY | REG. NO. | DATE ISSUED |
|-------------|--------------|-------------|----------|-------------|--------|-------------|-------------|--------|-------------|----------|-------------|--------|-------------|----------|--------|-------------|----------|-------------|--------|-------------|----------|-------------|
| GENERAL NOTES | S003 | 08-23-11 | SJL | CWB | 20379 | 08-23-11 | SJL | CWB | 20379 | 08-23-11 | SJL | CWB | 20379 | 08-23-11 | SJL | CWB | 20379 | 08-23-11 | SJL | CWB | 20379 | 08-23-11 | SJL | CWB | 20379 |

**NOTES:**

1. Anchors
2. Bolts
3. Cast-in-place concrete
4. Grouting
5. Shotcrete
6. Reinforcing steel including anchors and connectors
7. Interior non-load bearing light gage framing not shown on the structural drawings. Interior light gauge framing is to be designed for 5 psf lateral pressure by the light gauge supplier.

Temporary bracing shall be furnished by the light gauge supplier and framing installer and maintained until permanent support is in place.

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OVERALL FOUNDATION PLAN

BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY
S101

OVERALL FIRST LEVEL FLOOR PLAN

Date: June 2, 2011  Reg No. 61797

Print Name: Paul A. Johnson
Signature:  Date:  

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Reg. No.:  June 3, 2010

NEW TERMINAL DESIGN

CONSULTANTS

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MBJ CONSULTING ENG.
501 Lake Avenue South, Suite 300, Duluth MN 55802
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REYNOLDS, SMITH AND HILLS, INC.
4525 Airport Approach Rd, Ste A Duluth, Minnesota 55811
218-722-1227  FAX 218-722-1052
www.rsandh.com

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STRUCTURAL ENGINEERS:
PAJ / CWB

M/E/P/FP ENGINEERS:

BID PACKAGE 2B
ISSUED FOR BID
OVERALL FOUNDATION PLAN

NOTE:

A.1

C 2009 REYNOLDS, SMITH AND HILLS INC.

DULUTH INTERNATIONAL AIRPORT
DULUTH, MN
NEW TERMINAL DESIGN

For use by the designer, architect, engineer, contractor, or owner of the building or structure.

Print Name: Paul A. Johnson
Signature:  Date:  

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

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NOTE:

A.1
ELEVATION AT GRID "C"

SECTION AT COLUMN HEAD

SECTION AT BRACING INTERSECTION

SECTION AT COLUMN TO GIRT CONNECTION

SECTION AT COLUMN BASE

NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES ON SHEET S301, TYPICAL THIS SHEET.

2. DULUTH INTERNATIONAL AIRPORT

DULUTH, MN

NEW TERMINAL DESIGN

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M/E/P/FP Engineers:

Baggage Handling Systems Consultants:

Landscape Consultants:

Print Name: PAUL A. JOHNSON

Signature: PAUL A. JOHNSON

Date: 06/03/10

Registration No.: 57979

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

FOR REFERENCE ONLY

S302
1. EACH DRILLED PIER BOTTOM SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO CONCRETE PLACEMENT - SEE SPECIFICATIONS.
2. VERTICAL REINFORCING AND TIES SHALL EXTEND THE TOTAL LENGTH OF PIER.
3. FIRST TIE SHALL BE PLACED A MAXIMUM OF 6" FROM TOP OF PIER.
4. ANY LAP SPLICES IN VERTICAL REINFORCING OF THE PIER SHALL BE CLASS "B" LAP SPLICE, TYPICAL.
5. VERIFY LIGHT POLE MANUFACTURER'S RECOMMENDATIONS FOR NO GROUT BENEATH BASE PLATE.

CL BEAM
WBM - SEE PLAN
4" MIN, 6" MAX
T.O. BM TO T.O. PIPE

NOTES:
1. SEE PLAN FOR BEAM WEB OPENING LOCATION.
2. WELDING TO BE AS PER AWS D1.1. CARE IS TO BE TAKEN NOT TO DAMAGE PORTIONS OF BEAM TO REMAIN DURING CUTTING OF BEAM WEB.

Dashed line indicates bond breaker to be placed at top 6' of drilled pier CLR

Tie lap = 48 bar diameters

VERIFY W/CIVIL
MIN 2'-0"
DESIGN AND SUPPLY OF ANCHOR BOLTS BY LIGHT POLE SUPPLIER

T.O. APRON
APRON LIGHT POLE DESIGN AND SUPPLY BY OTHERS.

GRID 1'

TOP 3 TIES AT 3" OC

EL = +12'-6"
T.O. PIER

EL = +10'-6"

EXACT EL TO BE DETERMINED IN THE FIELD BY THE PROJECT GEOTECHNICAL ENGINEER

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