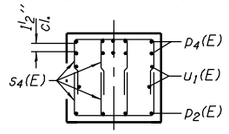
Notes:
Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals = 1½ turn.
**Length is height of spiral.
***Weight includes spacers for spirals.
For bar splicer details, see sheet 21 of 23.
For anchor bolt details, see sheet 17 of 23.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

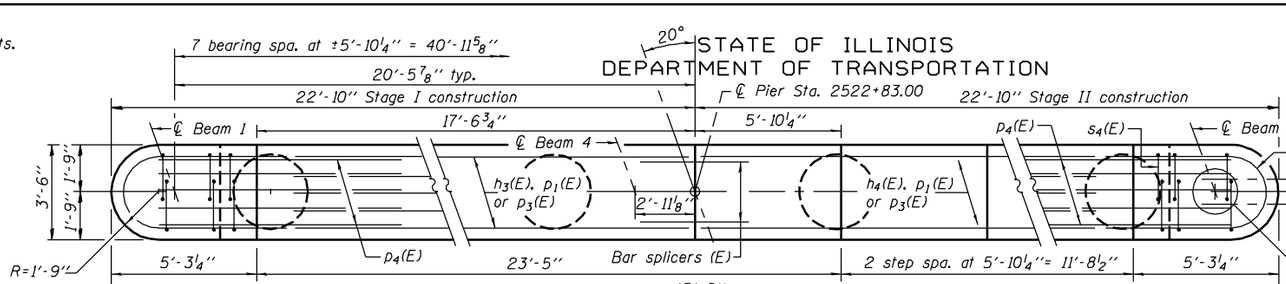
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| FAP 332 | 47BR-2 | VERMILION | 68 | 39 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT- | |

SHEET NO. 20
23 SHEETS

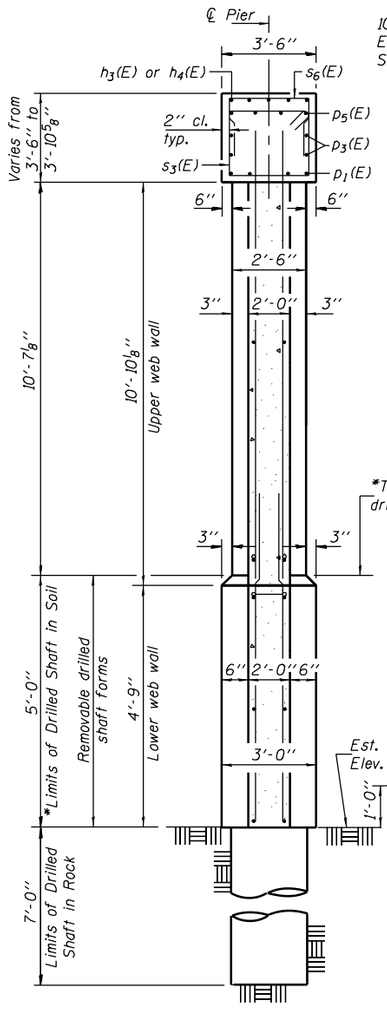
Contract #70420



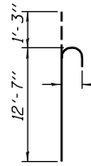

SECTION B-B
($p_3$(E) bars not shown)



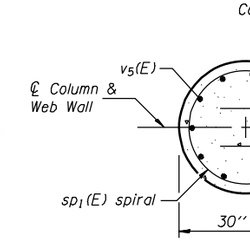

ELEVATION
(Looking north)



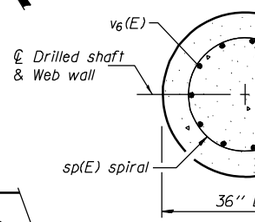

SECTION A-A



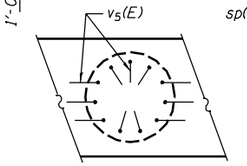

BAR $v_5$(E)



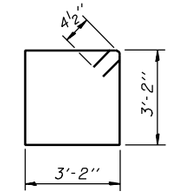

SECTION C-C



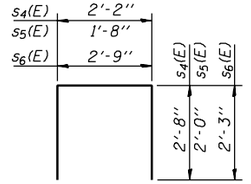

SECTION D-D



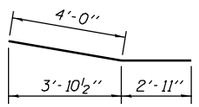

DETAIL A
Plan view of partial cap - Showing hook direction of $v_5$(E) bars




BAR $s_3$(E)

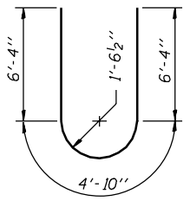



BARS $s_4$(E), $s_5$(E) & $s_6$(E)




BAR $p_2$(E)

MIN. BAR LAP
#8 bar = 6'-4"




BAR $u_1$(E)

## BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| $h_3$(E) | 5 | #5 | 17'-3" | —— |
| $h_4$(E) | 5 | #5 | 5'-6" | —— |
| $h_5$(E) | 102 | #5 | 8'-4" | —— |
| | | | | |
| $p_1$(E) | 8 | #7 | 18'-8" | —— |
| $p_2$(E) | 8 | #7 | 6'-11" | —— |
| $p_3$(E) | 8 | #7 | 20'-11" | —— |
| $p_4$(E) | 20 | #8 | 12'-11" | —— |
| $p_5$(E) | 8 | #7 | 14'-4" | —— |
| | | | | |
| $s_3$(E) | 34 | #4 | 13'-5" | ⊏ |
| $s_4$(E) | 40 | #5 | 7'-6" | ⊔ |
| $s_5$(E) | 36 | #5 | 5'-8" | ⊔ |
| $s_6$(E) | 24 | #4 | 7'-3" | ⊔ |
| | | | | |
| ** sp(E) | 4 | #5 | 11'-8" | ∧∧∧ |
| ** $sp_1$(E) | 4 | #5 | 10'-8" | ∧∧∧ |
| | | | | |
| $u_1$(E) | 6 | #6 | 17'-6" | ⊃ |
| | | | | |
| $v_5$(E) | 44 | #9 | 13'-10" | ⊃ |
| $v_6$(E) | 44 | #9 | 17'-9" | —— |
| $v_7$(E) | 60 | #5 | 10'-3" | —— |
| $v_8$(E) | 60 | #5 | 6'-9" | —— |
| Drilled Shaft in Rock 30" | | | Foot | 28 |
| Drilled Shaft in Soil 36" | | | Foot | 20 |
| Concrete Structures | | | Cu. Yd. | 61.8 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 11570 |
| Structure Excavation | | | Cu. Yd. | 5.7 |
| Underwater Structure Excavation Protection-Location 1 | | | Each | 1 |

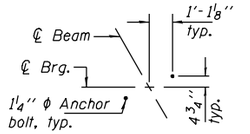
*** $u_1$(E)

Reinforcement bars designated (E) shall be epoxy coated.

Construction Sequence for Web Wall:
1. Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
2. Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
3. If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
4. Construct Columns.
5. Construct upper web walls.

| | |
|---|---|
| DESIGNED | D. P. Narielwala |
| CHECKED | S. M. Ryan |
| DRAWN | h.t. duong |
| CHECKED | DPN/SMR |

August 4, 2006
EXAMINED Thomas J. Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES




ANCHOR BOLT LAYOUT

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

PIER
F.A.P. RTE. 332 - SEC. 47BR-2
VERMILION COUNTY
STATION 2522+72.00
STRUCTURE NO. 092-0206