

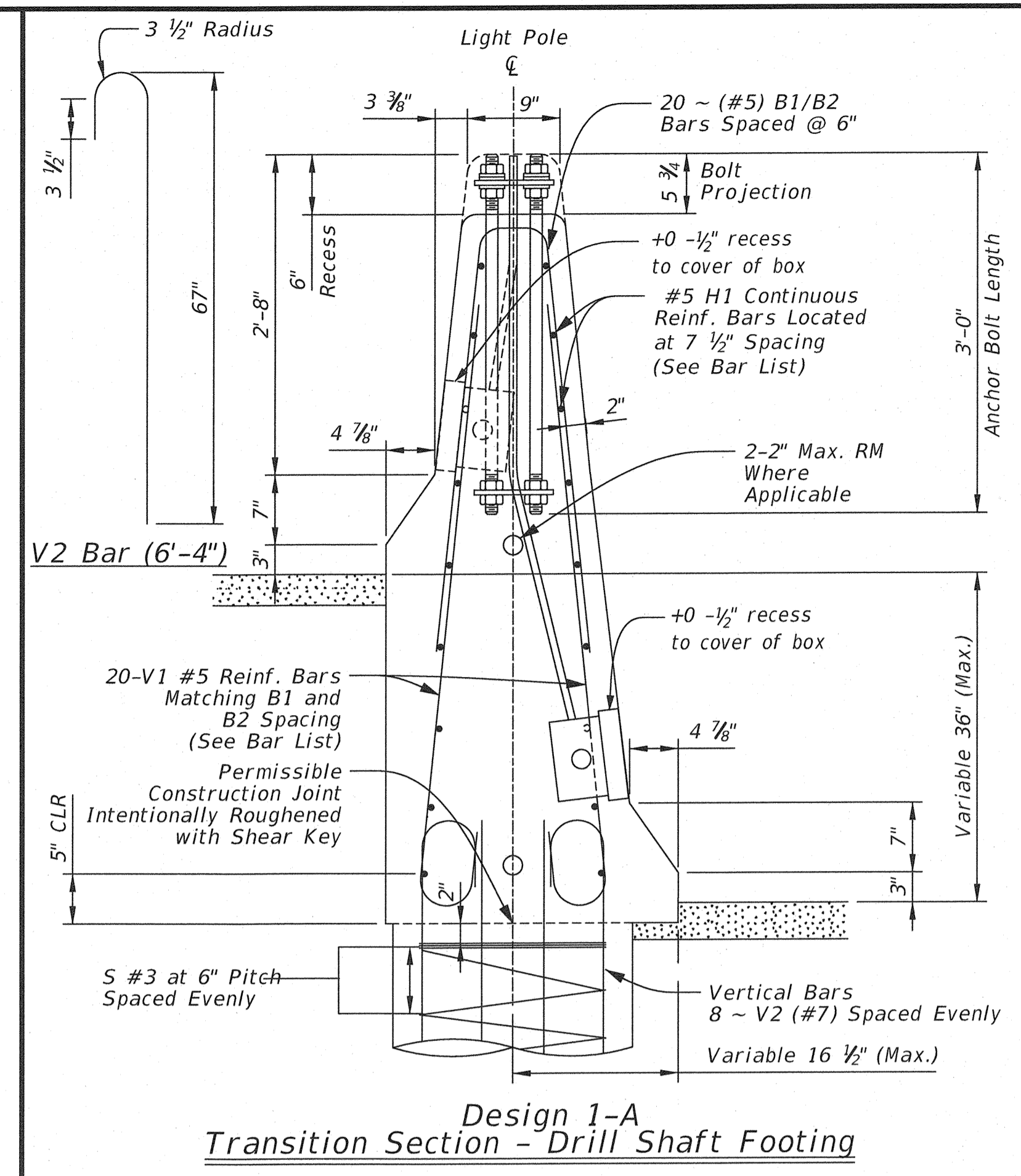
Id.	Qty.	Size	Length	Form	LBS
H2	14	#4	5'-6"	Str.	51.44
H3	14	#6	5'-6"	Str.	115.65
L1	12	#7	5'-4"	Bnt.	130.73
V2	8	#7	6'-4"	Bnt.	103.50
S	1	#3	61'-3"	Bnt.	23.02
Total Lbs. 126.53 (Std. Footing)					
Total Lbs. 297.82 (Spread Footing)					

**Bar Details**

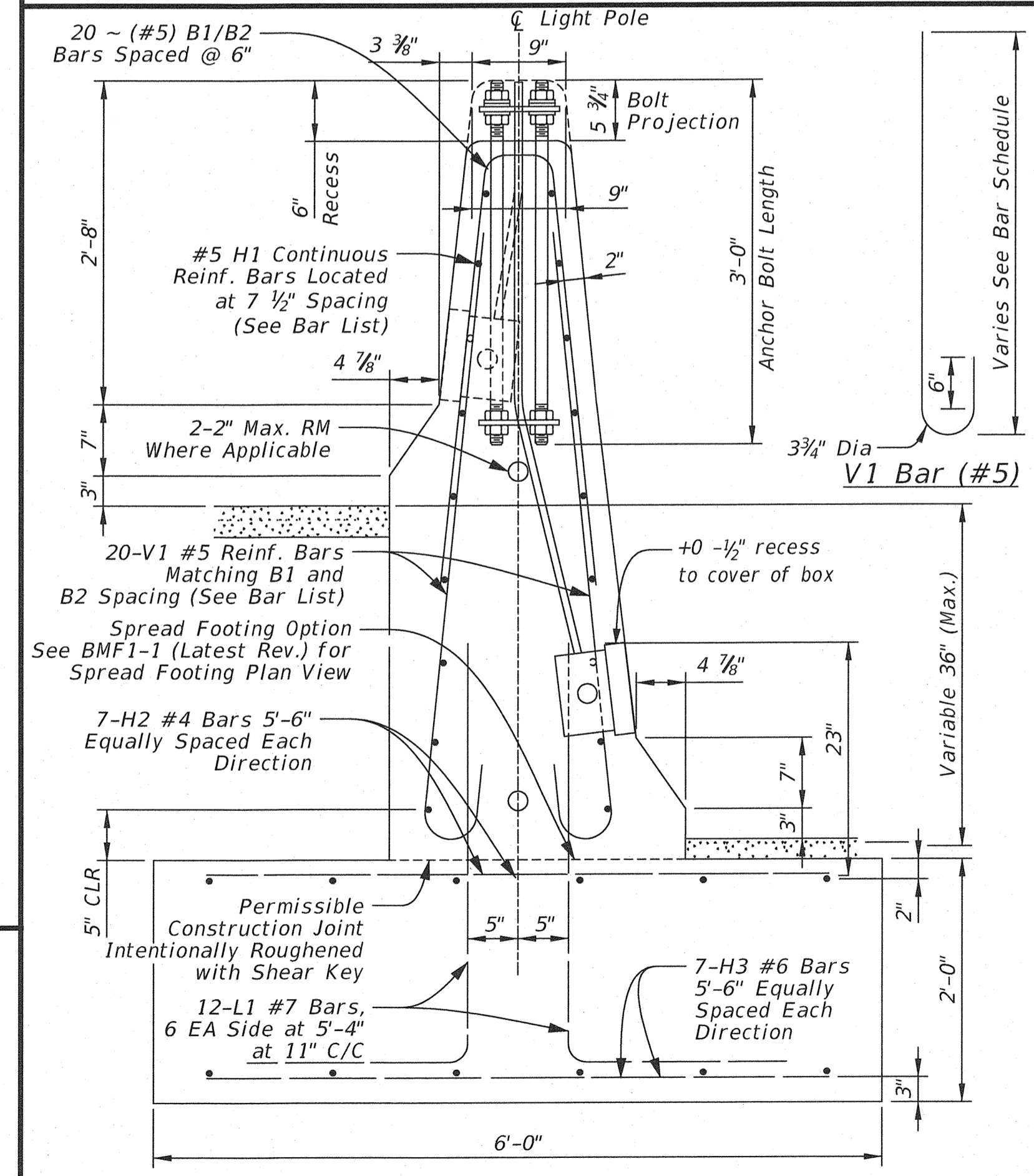
**Elevation Showing The Required Reinforcement and Anchorage For (Type 4) Barrier**

**General Notes:**

- Details for a drilled shaft footing and spread footing have been included. Construct a drilled shaft footing unless otherwise directed or field constraints / utilities prohibit construction and a spread footing is more desirable. All concrete shall be Class A. See Section 509 "Structural Concrete".
- Junction box(es), rigid metal conduit, and non-metallic flexible conduit, when required, shall not be paid for directly, but will be considered subsidiary to the various items of work.
- For luminaire base plate and anchor bolt material specifications and general notes, see Standards HLBP1-1, GMF1-1, and Roadway Standard LECS-4 (Latest Revision).
- Concrete Longitudinal Barrier (CLB) - See Roadway Standard CLB-1 (Latest Revision) for more information.
- Junction box shall be polymer concrete that is externally flanged. The box shall be 12" X 8" X 6" minimum. Ground poles to the rebar footing cage and 3/8" diameter X 8' copper-clad steel ground rod with #4 AWG bare conductor as detailed.
- Install No. 10 AWG or No. 12 AWG stranded conductors from the load side of the fused breakaway connector to the luminaire terminal block. Fused breakaway connectors are required. Install fused breakaway connectors in the pole's handhole. See Standard TEWD1-1 (Latest Revision).
- A template shall be provided to fix the location of the anchor bolts and conduits that project out of the concrete footing and protect during slip-form construction.
- Some footings may require more than the 2 conduits specified. See the plans for locations.



**Design 1-A Transition Section - Drill Shaft Footing**



**Optional Design 1-A Transition Section - Spread Footing**

Difference in Grade Elevation (IN)	Total Concrete (CY)*	H1 Horiz. Reinf. #5 Bars	B1 Reinf. #5 Bars	B2 Reinf. #5 Bars	V1 Vert. Reinf. #5 Bars	Total Reinf. Qty (LBS)
1	1.64	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
2	1.70	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
3	1.76	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
4	1.81	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
5	1.87	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
6	1.93	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
7	1.98	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
8	2.04	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
9	2.10	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
10	2.16	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
11	2.22	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	--	314
12	2.28	14 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	393
13	2.33	16 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	413
14	2.39	16 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	413
15	2.45	16 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	413
16	2.51	16 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	413
17	2.57	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	433
18	2.63	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 3.75'	433
19	2.69	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.25'	443
20	2.76	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.25'	443
21	2.82	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.25'	443
22	2.88	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.25'	443
23	2.94	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.25'	443
24	3.00	18 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.25'	443
25	3.06	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.75'	474
26	3.13	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.75'	474
27	3.19	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.75'	474
28	3.25	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.75'	474
29	3.32	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.75'	474
30	3.38	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 4.75'	474
31	3.44	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 5.25'	484
32	3.51	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 5.25'	484
33	3.57	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 5.25'	484
34	3.64	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 5.25'	484
35	3.70	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 5.25'	484
36	3.77	20 @ 9.67'	16 @ 8.5'	4 @ 7.42'	20 @ 5.25'	484

**CLB Bar Details**

**General Notes (Continued):**

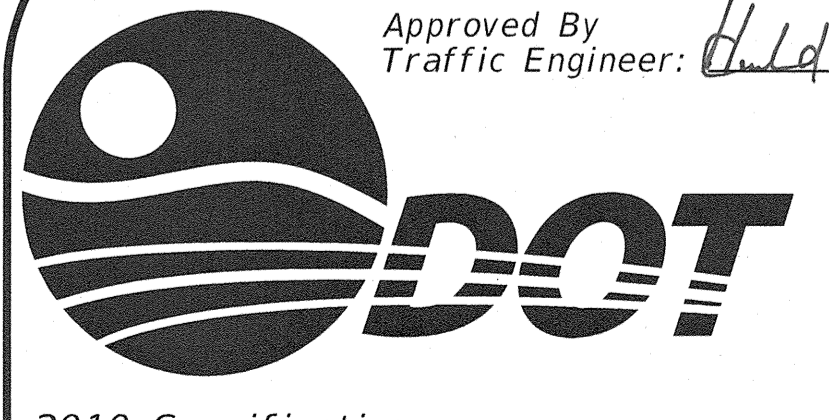
- For information on installation of underground/trenched conduit, see Standard CCD1-1 (Latest Revision).
- The contractor shall protect the anchor bolt threads from accumulations of concrete and shall prevent the entry of concrete into the conduit system.
- The contractor shall use the bubble leveling method to assure that the top of the light pole footings are level when being constructed. This is to avoid the use of shims when installing the light poles on the footings.
- Anchor bolts, templates, anchor bolt hardware, ground rod, and grounding conductor shall not be paid for directly, but will be considered subsidiary to the various items of work under Section 804, "Concrete Footings" for either a drilled shaft footing or spread footing.
- Mount the junction box flush (+0", -1/2") with concrete surface of concrete barrier. Cut and bend bars to fit J-Box securely inside of the reinforcement. J-Box can be secured to the bent vertical bars with conduit clamps or similar strapping material to prevent J-Box from moving during the pouring of the concrete rail.

**Quantities**

Item No.	Item	Unit	Basis of Payment
802(A)	Galvanized Steel Electrical Conduit	LF	Drill Shaft Footing - Design 1A Structural Concrete = 0.58 CY/FTG. Reinforcing Steel = 123.53 LBS./FTG.
802(B)	Polyvinyl Chloride (PVC) Conduit	LF	
802(C)	High Density Polyethylene (HDPE) Conduit	LF	Spread Footing - Optional Design 1A Structural Concrete = 2.67 CY/FTG. Reinforcing Steel = 297.82 LBS./FTG.
804(A)	Structural Concrete	CY	
804(B)	Reinforcing Steel	LBS	CLB Barrier - Design 1A Structural Concrete = See Table Above Reinforcing Steel = See Table Above

Approved By Bridge Engineer: *[Signature]* Date: 3-24-16

Approved By Traffic Engineer: *[Signature]* Date: 3/14/2016



**Traffic Standard Safety Barrier Light Pole Footing Details (Design No. 1A)**

2010 Specifications