

TYP. POLE FOUNDATION ELEVATION

SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:
 THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).

POLE IDENTIFICATION

POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT ²)
A1	LSS80B	5B	8 (6)	18.2
A2	LSS80B	5B	8 (6)	17.6
B1, B2	LSS80B	5B	10 (4+4)	23.0
C1	LSS70C	4B	6 (6)	14.4
C2	LSS70C	4B	6 (6)	13.8
T1, T8	LSS60A	2B	5 (3)	7.7
T2, T7	LSS60A	2B	5 (3)	7.4
T3	LSS70C	4B	11 (6)	18.4
T4	LSS70C	4B	8 (6)	14.0

- POLES A1, A2, B1, & B2 EACH HAVE (2) MUSCO 24LED FIXTURES AT 50'-0" AGL INCL. ABOVE.
- POLES T1-T4, T7, & T8 EACH HAVE (2) MUSCO 24LED FIXTURES AT 40'-0" AGL INCL. ABOVE.
- POLE T3 ALSO HAS (3) MUSCO 64LED FIXTURES AT 50'-0" AGL INCLUDED ABOVE.

CONCRETE/REINFORCEMENT NOTES

CONCRETE SHALL COMPLY WITH THE FOLLOWING ASTM STANDARDS: MIXTURE WITH ASTM C-94, PORTLAND CEMENT WITH ASTM C-150 TYPE 1-A, AGGREGATES WITH ASTM C-33 AND BE IN CONFORMANCE WITH ACI 318.

CONCRETE SHALL BE AIR-ENTRAINED (COMPLY WITH ASTM C-260), HAVE A MAXIMUM WATER-CEMENT RATIO, w/cm = 0.43 AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4,000 PSI.

DESIGN SLUMP LIMITS ARE 4" MINIMUM AND 6" MAXIMUM. THE JOB SITE SLUMP MAY BE INCREASED BY THE USE OF A WATER REDUCING AGENT MEETING ASTM C494-92.

CONCRETE REINFORCEMENT SHALL COMPLY WITH ASTM A615 GRADE 60, EXCEPT TIES CAN BE OF GRADE 40 AND BE IN CONFORMANCE WITH ACI 315 & 318.

CONCRETE DRILLED PIERS MUST ATTAIN 3,000 PSI STRENGTH PRIOR TO POLE INSTALLATION AND FIXTURE MOUNTING.

THE DEPTH EQUAL TO THE PRECAST BASE EMBEDMENT SHALL BE THOROUGHLY CONSOLIDATED BY MECHANICAL VIBRATION DURING PLACEMENT.

INSTALLATION NOTE (DOES NOT APPLY TO T1 & T7):
 CONCRETE TO BE PLACED IN A CONTINUOUS POUR OR A COLD JOINT WILL BE ACCEPTABLE AT THE BOTTOM OF THE PRECAST BASE. TWO POUR: WITH THE REINFORCEMENT IN PLACE, THE CONCRETE BELOW THE BOTTOM OF THE PRECAST BASE MAY BE POURED AND ALLOWED TO SET UP FOR APPROXIMATELY FOUR HOURS (CURE LONG ENOUGH TO SUPPORT WEIGHT OF PRECAST BASE). THEN THE PRECAST BASE MAY BE SET IN PLACE AND THE REST OF THE CONCRETE CONCRETE BACKFILL POURED.

DESIGN NOTES

DESIGN PARAMETERS:
 WIND: 100 MPH (EXP. C, I = 1.0) PER IBC CODE, 2009 EDITION (ASCE 7-05). DESIGN WIND PARAMETERS ARE NOTED. ACTUAL WIND SPEED AND EXPOSURE MUST BE VERIFIED FOR THE SITE BY THE PROPER GOVERNING OFFICIAL.

GEOTECHNICAL PARAMETERS:
 ALLOWABLE END BEARING SOIL PRESSURE: 2,500 PSF
 ALLOWABLE LATERAL SOIL BEARING PRESSURE: 0 PSF/FT (GRADE TO -2'-0"); VARIABLE (BELOW -2'-0")
 IN ACCORDANCE WITH THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE, CHAPTER 18.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE GEOTECHNICAL ENGINEERING REPORT, PROJECT NO. 2140758, PREPARED BY WESTON & SAMPSON; PEABODY, MA.

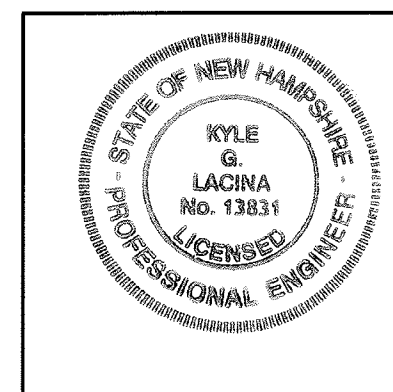
A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF IS RECOMMENDED (NOT REQUIRED) TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A LICENSED ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A TREMIE WHEN SLURRY OR WATER IS PRESENT WITHIN THE EXCAVATION OR WHEN THE FREE DROP EXCEEDS 6'-0".

CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

GENERAL NOTES:
 FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION. ENGINEER MUST BE NOTIFIED IF FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WITHIN / NEAR ANY SLOPES STEEPER THAN 3H : 1V. POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION PER MUSCO LIGHTING.



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW HAMPSHIRE.

Kyle G. Lacina 7-31-2015
 KYLE G. LACINA - NO. 13831 DATE:
 SEPC OF IOWA - 1427

LICENSE RENEWAL DATE: NOVEMBER 30, 2015
 DRAWING NO. COVERED BY THIS SEAL: C1, C2

LEARY
 FIELD
 LIGHTING
 PORTSMOUTH, NH



SEPC OF IOWA
 114 NICHOLAS DRIVE
 MARSHALLTOWN, IOWA 50158
 PHONE NUMBER: 641-752-6334
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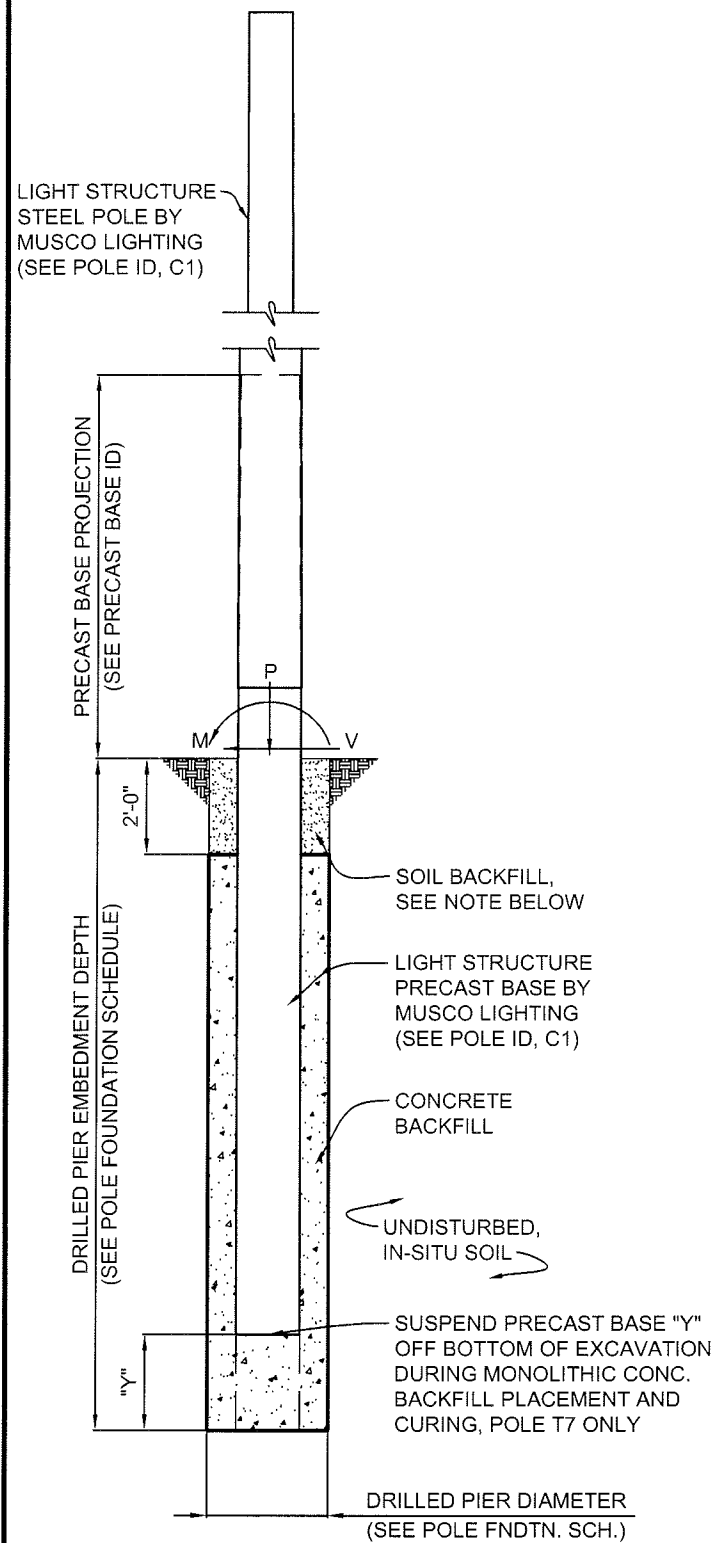
DRAWING TITLE:
 POLE AND FOUNDATION
 SCALE: SEE PLAN
 NOTES:
 SCAN #160813C

PROJECT NUMBER
 160813

DATE
 31 JULY 2015

DRAWING NUMBER
C1

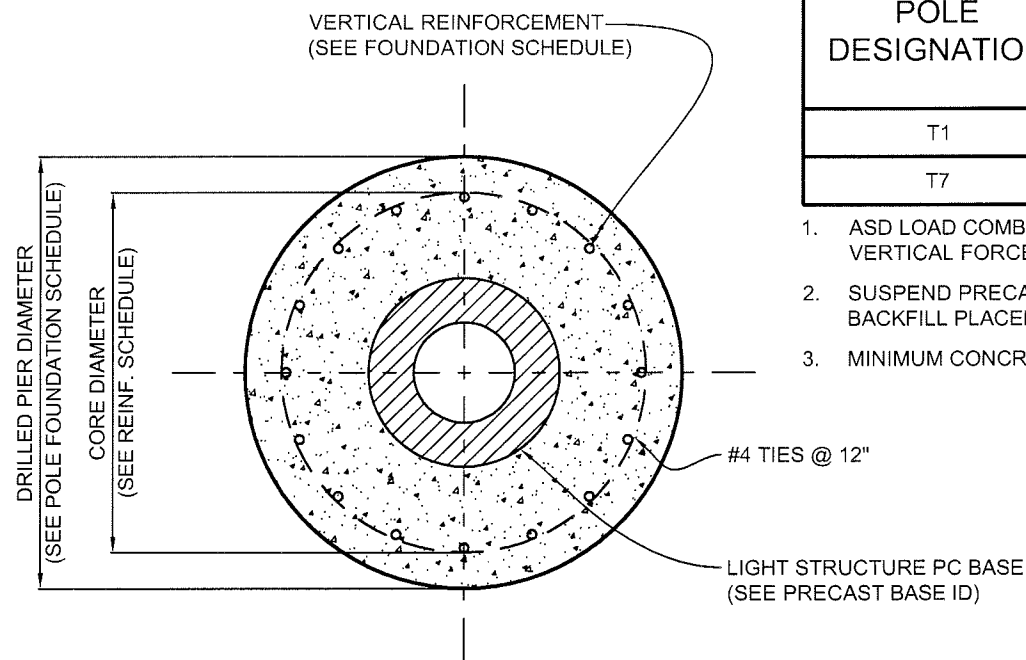
OF TWO



POLES T1 & T7 FOUNDATION ELEVATION

SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:
 THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).



A PIER DETAIL

SCALE: NOT TO SCALE

TYP. POLE FOUNDATION SCHEDULE									
POLE DESIGNATION	FORCES (1.)			DRILLED PIER			REINFORCING		
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH (4.)	CONCRETE BACKFILL YD ³ (2.)	CORE DIAMETER INCH (3.)	VERTICAL REINFORCING	HORIZONTAL TIES
A1	109,993	2,215	3,192	42	36'-0"	11.2	35	16 - #6	#4 @ 12"
A2	108,495	2,197	3,192	42	21'-0"	5.9	35	16 - #6	#4 @ 12"
B1	122,605	2,384	3,372	42	31'-0"	9.4	35	16 - #6	#4 @ 12"
B2	122,605	2,384	3,372	42	21'-0"	5.9	35	16 - #6	#4 @ 12"
C1	74,843	1,675	2,097	36	23'-0"	4.9	29	12 - #6	#4 @ 12"
C2	73,529	1,657	2,097	36	20'-0"	4.2	29	12 - #6	#4 @ 12"
T2	38,620	1,036	1,249	36	24'-0"	5.6	29	12 - #6	#4 @ 12"
T3	79,222	1,782	2,422	36	24'-0"	5.2	29	12 - #6	#4 @ 12"
T4	72,526	1,659	2,257	36	21'-0"	4.4	29	12 - #6	#4 @ 12"
T8	39,159	1,045	1,249	36	20'-0"	4.5	29	12 - #6	#4 @ 12"

- ASD LOAD COMBINATION D+W. VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT).
- MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.
- CORE DIAMETER EQUAL TO INSIDE DIAMETER OF TIES.
- PIER MUST PENETRATE AT LEAST 2' BEYOND SOFT CLAY INTO MEDIUM DENSE SAND (OR BETTER) - SEE SOIL REPORT. IN NO CASE SHALL EMBEDMENT BE LESS THAN GIVEN. AUGERING INTO ROCK MAY BE REQUIRED.

POLES T1 & T7 FOUNDATION SCHEDULE							
POLE DESIGNATION	FORCES (1.)			DRILLED PIER			
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH	SUSPENSION "Y" (2.)	CONCRETE BACKFILL YD ³ (3.)
T1	39,159	1,045	1,249	42	10'-0"	NA	2.7
T7	38,620	1,036	1,249	42	12'-0"	2'-0"	3.4

- ASD LOAD COMBINATION D+W. VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT)
- SUSPEND PRECAST BASE "Y" OFF THE BOTTOM OF THE EXCAVATION DURING MONOLITHIC CONCRETE BACKFILL PLACEMENT AND CURING. NA = NOT APPLICABLE, SUSPENSION NOT REQUIRED.
- MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.

PRECAST BASE IDENTIFICATION					
PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH	PROJECTION ABOVE GRADE	STANDARD EMBEDMENT	OUTSIDE DIAMETER
2B	1,690 LBS	17'-3"	7'-3"	10'-0"	12.00"
4B	3,490 LBS	22'-0"	8'-0"	14'-0"	15.75"
5B	4,580 LBS	23'-11"	7'-11"	16'-0"	18.25"

REFERENCE POLE ID TABLE ON SHEET C1 FOR POLE TO PRECAST BASE TYPES

LEARY
FIELD
LIGHTING
PORTSMOUTH, NH

MUSCO Lighting
 CORPORATION: 100 1ST AVE WEST
 OSKALOOSA, IA 52577
 (800) 825-6020

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 PHONE NUMBER: 641-752-6334
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