

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



SECTION 400
STRIPING, SIGNS, LIGHTING AND
APPURTENANCES

LAST REVISION : JULY 2013

MATERIALS:

1. SIGNS SHALL BE DESIGNED, SUPPLIED AND INSTALLED IN CONFORMANCE WITH THE STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN MANUAL, STANDARDS AND SPECIFICATIONS.
2. SIGN POSTS SHALL BE DESIGNED, SUPPLIED AND INSTALLED IN CONFORMANCE WITH THE STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN MANUAL, STANDARDS, AND SPECIFICATIONS
3. INSTALLATION OF TRAFFIC STRIPES AND PAVEMENT MARKINGS WILL BE IN CONFORMANCE WITH THE PROVISIONS OF SECTION 84, "TRAFFIC STRIPES AND PAVEMENT MARKINGS", OF THE CSS. DESIGN OF TRAFFIC STRIPES AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN MANUAL.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



**GENERAL REFERENCES FOR STRIPING, SIGNS,
LIGHTS AND APPURTENANCES**

PUBLIC WORKS
DIRECTOR APPROVAL: _____

DATE: May 7, 2014

STANDARD PLAN

400-1

SHEET 1 OF 1

STREET AND WALKWAY LIGHTING AND ELECTRICAL SYSTEMS

1. LIGHTING SYSTEM SHALL INCLUDE ALL STREET AND WALKWAY LIGHTS, ELECTRICAL CONDUIT AND WIRING, ELECTRICAL SERVICE ENTRANCE PANEL, AND CONTROLS. THE LIGHTING AND ELECTRICAL SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 86 OF THE STANDARD PLAN SPECIFICATIONS, THE MANUFACTURER'S RECOMMENDATION, THE DETAILS IN THESE SPECIAL PROVISIONS.
2. SUBMITTALS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 86 AND THESE SPECIAL PROVISIONS AND SHALL INCLUDE THE FOLLOWING:
 - ENGINEERING CALCULATIONS FOR POLE DESIGN
 - MANUFACTURE'S INFORMATION AND DETAIL DRAWINGS FOR ALL POLES, FIXTURES AND OTHER RELATED HARDWARE
 - PAINT AND COLOR SAMPLES
 - MATERIAL SAFETY DATA SHEETS (MSDS) INFORMATION
 - ELECTRICAL SCHEMATICS AND CIRCUIT DIAGRAMS
 - LIGHTING ISOLUMETRIC DRAWING SHOWING LIGHT SPACING AND LIGHTING DISTRIBUTION PATTERNS FOR ALL LIGHTS IN PROJECT AREA.
 - WIRING AND CONDUIT
 - PULL BOXES AND RECEPTACLE BOXES
 - SERVICE ENTRANCE PEDESTALS
 - PAINT AND COLOR SAMPLES
 - MATERIAL SAFETY DATA SHEETS (MSDS) INFORMATION

AFTER THE SHOP DRAWINGS FOR THE POLES AND FIXTURES HAVE BEEN ACCEPTED, THE CONTRACTOR SHALL **SUBMIT A FULL SIZE POLE AND FIXTURE FOR REVIEW**, IF AN ALTERNATE POLE TYPE HAS BEEN APPROVED .PRIOR TO PLACING FINAL ORDER. APPROVAL OF ALTERNATE POLE TYPE WILL REQUIRE THE CONTRACTOR TO PROVIDE ONE COMPLETE LIGHT POLE ASSEMBLY TO THE TOWN FOR MAINTENANCE/REPLACEMENT.

3. POLES AND FIXTURES. A CONCEPTUAL DRAWING OF THE LIGHT POLES AND FIXTURES IS PROVIDED IN THESE STANDARDS-402, SHEET 3 OF 4. THE LIGHT FIXTURES SHALL BE AS MANUFACTURED BY LUMEC WITH THE DOMUS LM SERIES HAVING A LUMINOUS DOME OR MANUFACTURED BY VISIONAIRE LIGHTING MAMMOTH LAKES CUSTOM MODELS, APPROVED EQUAL.

FIXTURES SHALL BE MADE OF CAST ALUMINUM. ALL FIXTURES ARE A FORWARD THROW FULL CUT OFF TYPE.

THE POLES SHALL BE DESIGNED TO WITHSTAND A 100 MILE-PER-HOUR WIND LOAD. POLES SHALL BE ROUND AND STRAIGHT WITH A MOUNTING BASE. THE MOUNTING BASE SHALL BE ONE AND ONE-HALF TO TWO TIMES THE DIAMETER OF THE POLE WITH A DECORATIVE COVER AT THE POLE/BASE INTERFACE AND A BASE COVER SIMILAR TO LUMEC AM6F DESIGN. POLE HEIGHT SHALL BE LONG ENOUGH TO SUPPORT BOTTOM OF FIXTURE A MINIMUM OF 18 FEET ABOVE THE BASE ALONG THE STREET, A MINIMUM OF 12 FEET ABOVE THE BASE ALONG THE WALKWAY, AND A MINIMUM OF 25 FEET ABOVE THE BASE FOR INTERSECTION LIGHTS. POLES SHALL BE ALUMINUM. BASES MAY BE STEEL, CAST IRON OR ALUMINUM. THE POLE ASSEMBLY SHALL INCLUDE POLE, FIXTURE, BANNER MOUNTING ARMS AND BOTTOM TIE OR PLANT HANGER ARM AND ALL BOLTS AND HARDWARE AND APPURTENANCE FOR REMOVING AND INSTALLING THE BANNER TO MAKE A COMPLETE ASSEMBLY. POLE AND FIXTURE ASSEMBLIES SHALL BE COMPLETE IN ALL RESPECTS. THE LUMEN OUTPUT OF THE INTERSECTION LIGHTS SHALL MEET THE TYPE III MEDIUM CUTOFF 9.1M ISOLUX CURVE ON STANDARD PLAN ES-10.

POLES SHALL BE FINISHED WITH A THERMOSETTING POLYESTER POWDER COAT PAINT AT THE PLACE OF MANUFACTURE. THE COLOR SHALL BE BRONZE (BR) WITH A TEXTURED FINISH AND SHALL MATCH THE EXISTING POLES INSTALLED ALONG THE MAIN STREET PROMENADE OR OLD MAMMOTH ROAD. ALL NICKS SCRATCHES AND DEFECTIVE PAINT SHALL BE REPAIRED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE NORTH VILLAGE SHALL HAVE MAROON COLORED POLES AND SHALL MATCH THE EXISTING POLES.

TOUCH UP PAINT SHALL BE PROVIDED TO MATCH THE COLOR OF THE POLES AND FIXTURES. PAINT SHALL BE PROVIDED IN QUART AND AEROSOL CONTAINERS. THE TOWN SHALL BE SUPPLIED WITH 4 QUARTS AND 6 CANS OF TOUCHUP PAINT IN EACH COLOR AND TYPE.

MANUFACTURE DISTRIBUTORS INCLUDE LIGHTING BY DESIGN PHONE # (209) 264-7777 AND LIGHTING SYSTEMS PHONE # (702) 355-8996.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



LIGHT STANDARD

PUBLIC WORKS
DIRECTOR APPROVAL: 

DATE: May 7, 2014

STANDARD PLAN

401-1

SHEET 1 OF 4

4. LAMPS. THE LIGHTS SHALL BE EQUIPPED WITH THE FOLLOWING BULBS.
 A WALKWAY LIGHTS SHALL BE EQUIPPED WITH A 70 WATT HIGH PRESSURE SODIUM LIGHTS.
 B STREETLIGHTS SHALL BE EQUIPPED WITH 150-WATT HIGH-PRESSURE SODIUM LIGHTS FORWARD THROW.
 C INTERSECTION LIGHTS SHALL BE 250-WATT HIGH-PRESSURE SODIUM LIGHTS. IN INTERSECTIONS GREATER THAN 42 IN WIDTH A 300 OR 400 W SCB-3M LAMP MAY BE REQUIRED TO PROVIDE SAFETY LIGHTING.
 D MANUFACTURE DISTRIBUTORS CONTACTED DURING DESIGN INCLUDE LIGHTING BY DESIGN PHONE # (209) 264-7777 AND LIGHTING SYSTEMS PHONE # (702) 355-8996.
5. RECEPTACLES. ALL POLES SHALL BE EQUIPPED WITH A WEATHER PROOF (GFI) RECEPTACLE NEAR THE TOP OF THE POLE AS SHOWN ON THE APPENDIX DRAWING . RECEPTACLE SHALL BE CONNECTED TO PHOTOCELL.
6. FUSE. PROVIDE A 20 AMP FUSE OR BREAKER IN EACH POLE ASSEMBLY AND RECEPTACLE.
7. PHOTOELECTRIC CONTROLS. ALL POLES SHALL BE EQUIPPED WITH A PHOTOELECTRIC TYPE II UNIT CONFORMING TO THE REQUIREMENTS OF SECTION 86-6.07.
8. FOUNDATION. STREET AND WALKWAY LIGHTING LOCATIONS AND FOUNDATIONS ARE AS SHOWN ON THE PLANS. THE FOUNDATION FOR STREETLIGHTS SHALL HAVE A MAXIMUM OF 3 INCHES ABOVE THE EXISTING GROUND ADJACENT TO THE ROADWAY. THE FOUNDATION FOR WALKWAY LIGHTS SHALL BE 6 INCHES ABOVE THE FINISH GRADE ADJACENT TO THE WALKWAY. STREET AND WALKWAY LIGHTING POLES SHALL BE BOLTED TO FOUNDATIONS PER MANUFACTURER'S RECOMMENDATIONS.
9. CIRCUITS. SEPARATE ELECTRICAL CIRCUITS SHALL BE PROVIDED FOR WALKWAY AND STREET LIGHTING FOR EACH BLOCK ON EACH SIDE OF THE STREET. CIRCUITS SHALL BE 120 VAC.
10. ELECTRICAL WIRING. ELECTRICAL WIRING AND CONDUITS SHALL CONFORM TO SECTION 86 OF THE STANDARD SPECIFICATIONS AND THE 1994 ELECTRICAL CODE. THE CONTRACTOR SHALL SUBMIT DRAWINGS OF THE ELECTRICAL LAYOUT FOR ALL ELECTRICAL WORK PRIOR TO COMMENCING ANY ELECTRICAL WORK.
11. SERVICE ENTRANCE EQUIPMENT AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SCE. CONTRACTOR SHALL COORDINATE WITH SCE FOR ALL OF THE NEW SERVICES.
12. REFER TO SECTION 86 OF THE CSS PARAGRAPH 2.03. DELETE FIRST PARAGRAPH AND INSERT THE FOLLOWING, "ALL CONCRETE WITHIN 18" OF THE GROUND SURFACE SHALL BE CLASS A PER SECTION 90 COLORED AIR ENTRAINED CONCRETE WITH A CLASS 1 FINISH FOR ALL EXPOSED SURFACES."
13. LIGHTING SHALL COMPLY WITH SECTION 17.34 OF THE TOWN OF MAMMOTH LAKES MUNICIPAL CODE

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



LIGHT STANDARD

PUBLIC WORKS
DIRECTOR APPROVAL: _____

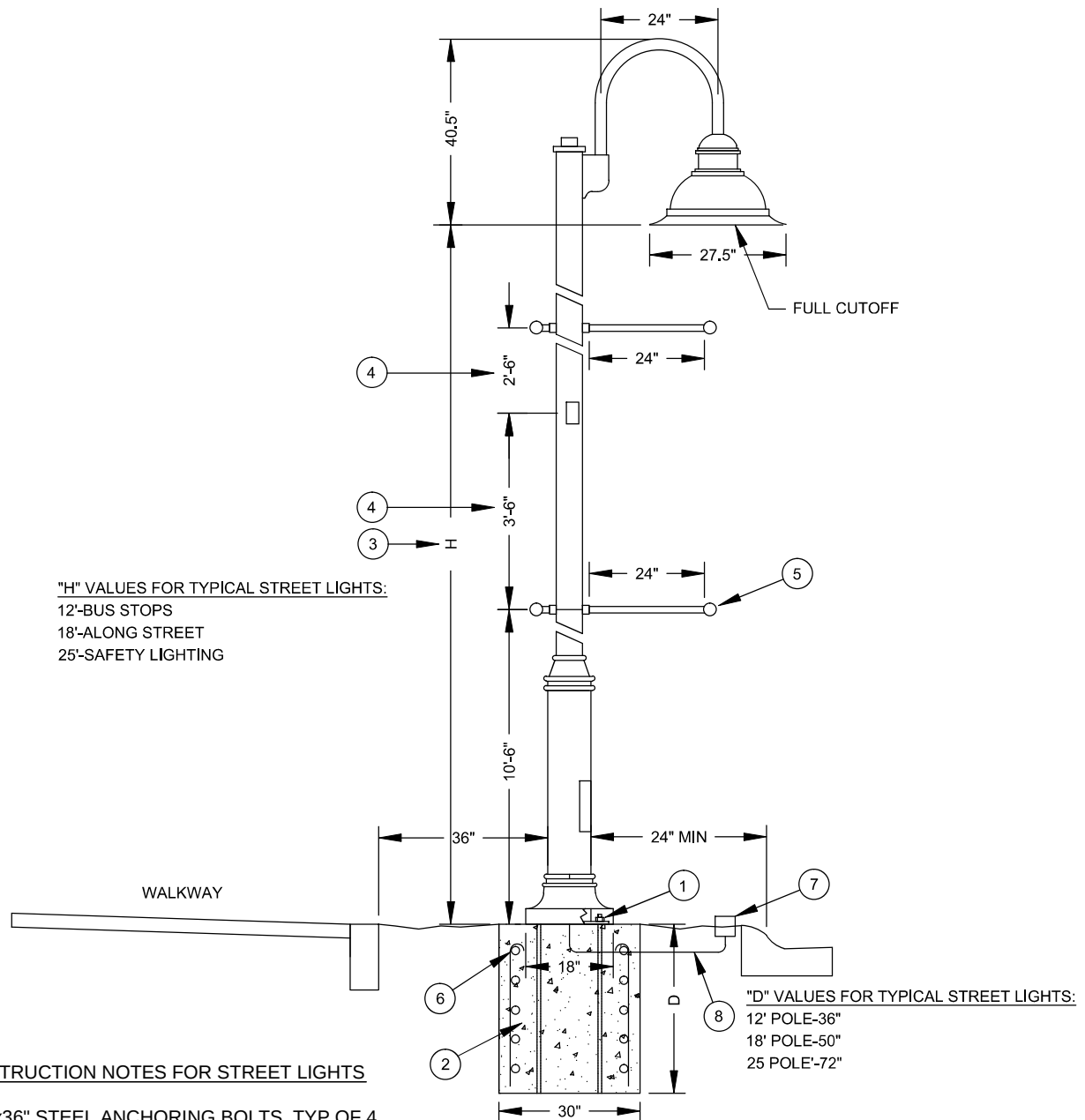
[Signature]

DATE: **May 7, 2014**

STANDARD PLAN

401-1

SHEET 2 OF 4



1. 1"x36" STEEL ANCHORING BOLTS. TYP OF 4.
2. CONCRETE PER TOWN STANDARD 004.
3. SEE TABLE FOR HEIGHT VALUES.
4. FOR "H" VALUES UNDER 18' ELIMINATE THESE APPURTENANCES.
5. REFER TO MANUFACTURER'S SPECIFICATIONS FOR BANNER ARM ASSEMBLY.
6. #4 HOOP BARS @ 8" C-C AND #5 VENT BARS WITH TOP HOOK.
7. 12"x18" TRAFFIC RATED PULL BOX.
8. 3/4" CONDUIT.
9. BREAKAWAY BOLTS SHALL HAVE EXTENDED BASE COVERS

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



LIGHT STANDARD

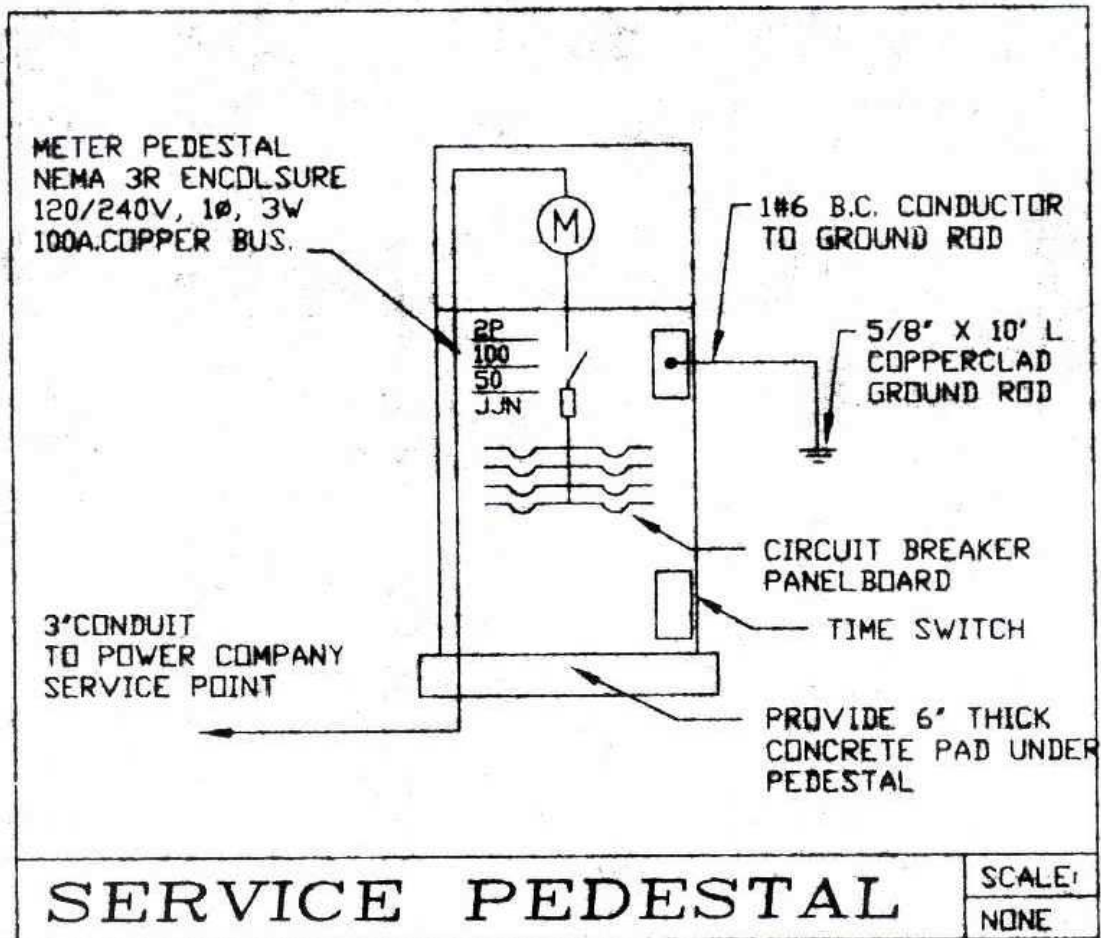
PUBLIC WORKS
 DIRECTOR APPROVAL: *[Signature]*

DATE: **May 7, 2014**

STANDARD PLAN

401-1

SHEET 3 OF 4



CONSTRUCTION NOTES FOR SERVICE PEDESTALS

1. CONTRACTOR TO ADD 4 INCH HIGH REFLECTIVE ADDRESS STREET NUMBERS

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



LIGHT STANDARD

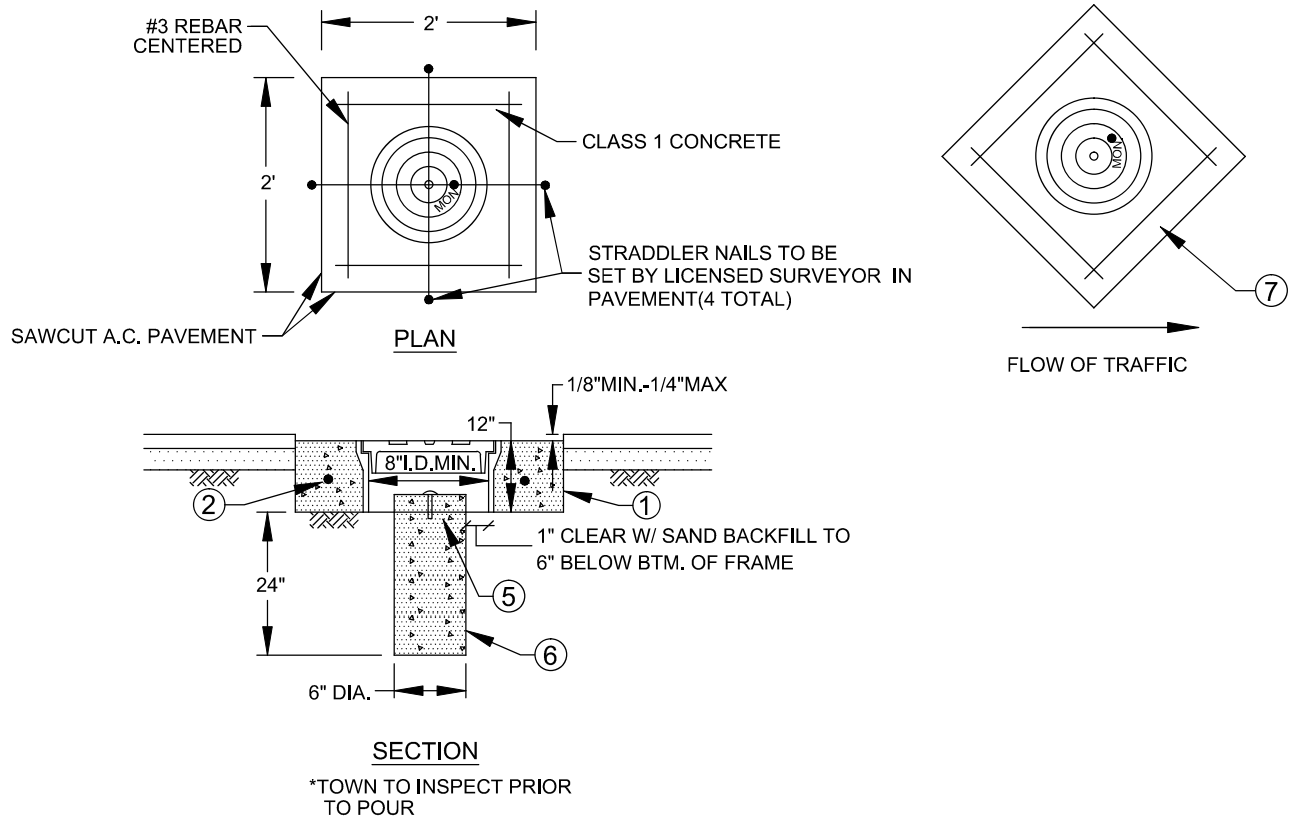
PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: May 7, 2014

STANDARD PLAN

401-1

SHEET 4 OF 4



○ CONSTRUCTION NOTES FOR MONUMENT WELL

1. CONCRETE SHALL BE PER TOWN STANDARDS PLAN 004, AND AS APPROVED BY THE PUBLIC WORKS DIRECTOR.
2. INSTALL #3 REBAR CENTERED PER PLAN.
3. SAW CUT A.C. AS APPROVED BY THE PUBLIC WORKS DIRECTOR.
4. STRADDLER NAILS TO BE SET BY A LICENSED SURVEYOR IN PAVEMENT (4 TOTAL).
5. BRASS MONUMENT IN CONCRETE BY LICENSED SURVEYOR. CONCRETE TO BE POURED AGAINST UNDISTURBED SOIL.
6. DRILL 6" HOLE, 3' DEEP (DEPTH MAY BE REDUCED IF APPROVED BY PUBLIC WORKS DIRECTOR HITTING IMMOBILE BOULDER GREATER THAN 18" BELOW SURFACE).
7. MONUMENT COLLAR SHALL HAVE NO EDGES PERPENDICULAR TO THE TRAVELED WAY.

GENERAL NOTES FOR MONUMENT WELL

1. MONUMENT HANDHOLD FRAME AND COVER STAMPED "MON" TO BE ALHAMBRA FOUNDRY #A-2925 OR EQUIVALENT.
2. CONTRACTOR TO INSTALL FRAME, COVER AND CONCRETE COLLAR TO LOCATION MARKED BY SURVEY CREW AFTER PAVING IS COMPLETED. A.C. PAVEMENT IS TO BE SAW CUT.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



MONUMENT WELL

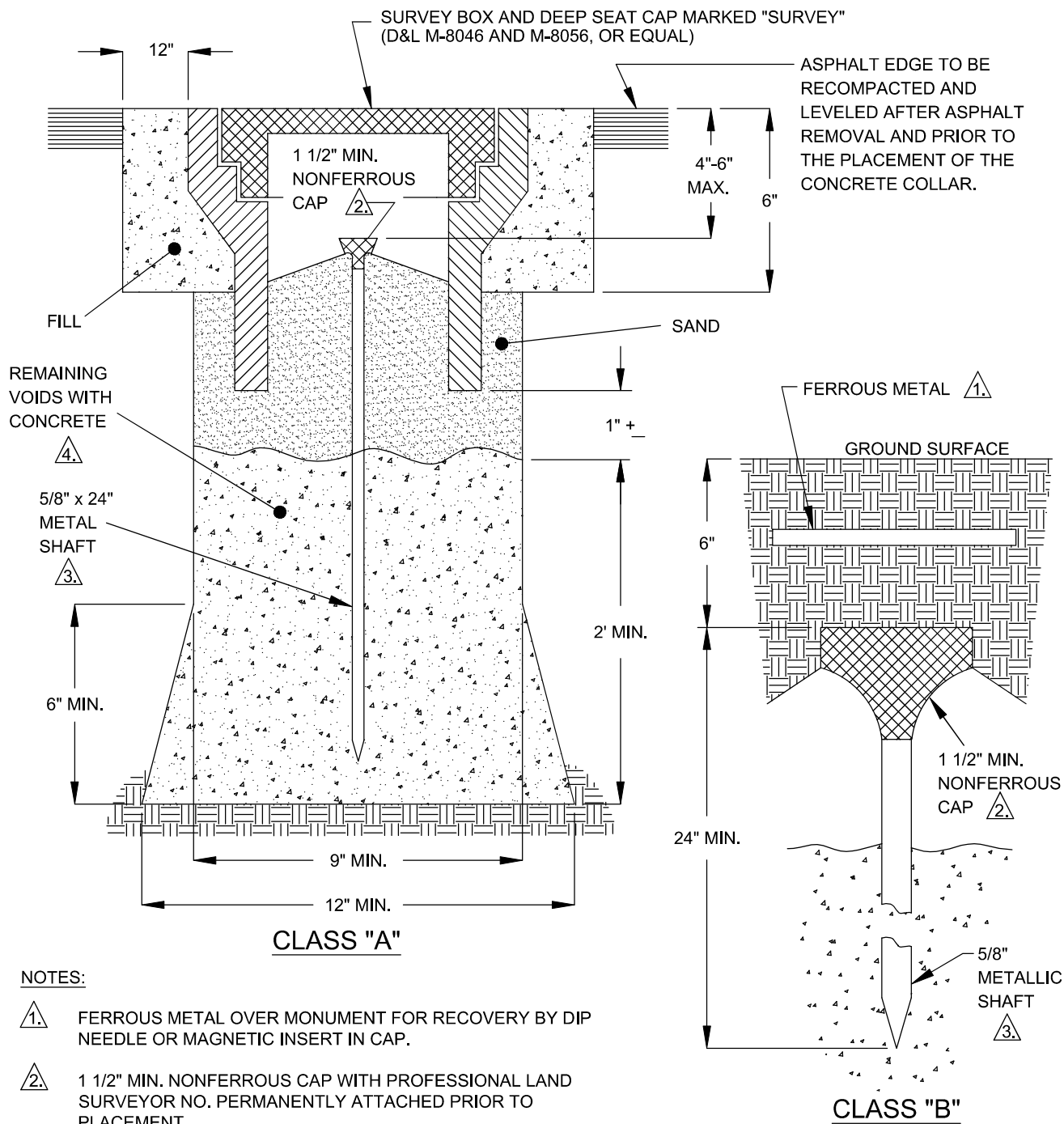
PUBLIC WORKS
DIRECTOR APPROVAL:

DATE: May 7, 2014

STANDARD PLAN

402-1

SHEET 1 OF 2



NOTES:

1. FERROUS METAL OVER MONUMENT FOR RECOVERY BY DIP NEEDLE OR MAGNETIC INSERT IN CAP.
2. 1 1/2" MIN. NONFERROUS CAP WITH PROFESSIONAL LAND SURVEYOR NO. PERMANENTLY ATTACHED PRIOR TO PLACEMENT.
3. 5/8" METALLIC SHAFT (SMOOTH SHAFTS TO BE DEFORMED).
4. CONCRETE SHALL BE PER TOWN STANDARDS PLAN 004.
5. PRE-PUNCHED CAPS SHALL NOT BE PERMITTED.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



MONUMENT WELL

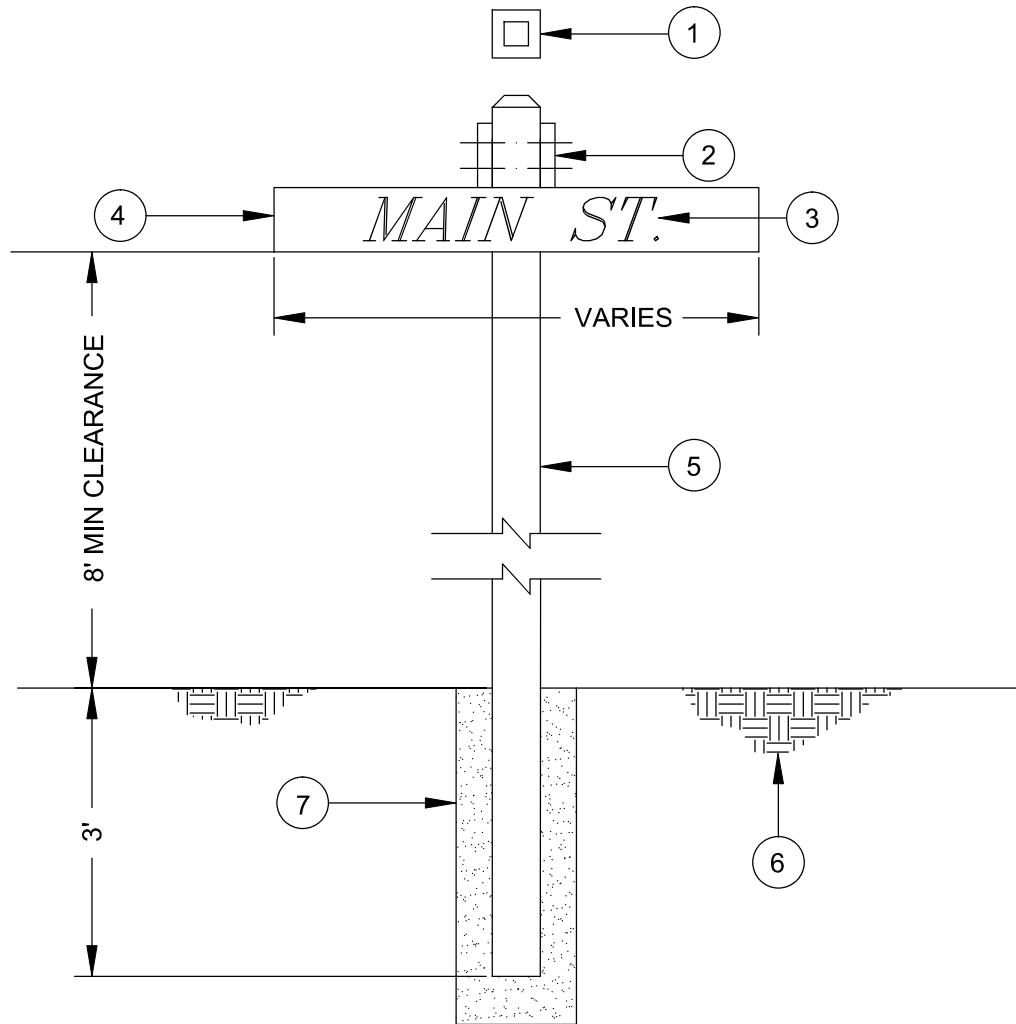
PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: **May 7, 2014**

STANDARD PLAN

402-1

SHEET 2 OF 2



CONSTRUCTION NOTES FOR STREET NAME SIGN

1. 45 DEGREE BEVEL AT TOP OF THE POST
2. 4 $\frac{3}{8}$ " $\varnothing$ X 10" LONG CARRIAGE BOLTS, NUTS & WASHERS: GALVANIZED (TYPICAL)
3. 4 INCH GREEN AND WHITE SIGNS AS REQUIRED BY MUTCD.
4. 2" X 8" BROWN PRESSED AND TREATED DOUGLAS FIR. (TYPICAL)
5. 6" X 6" X 12' LONG REDWOOD POST CONSTRUCTION GRADE - S4S OR BROWN PRESSURE TREATED DOUGLAS FIR.
6. UNDISTURBED SOIL
7. WASHED SAND

GENERAL NOTES FOR STREET NAME SIGN

- A. ALL WOOD TO BE PAINTED WITH 2 COATS REDWOOD PRESERVATIVE.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



STREET NAME SIGN

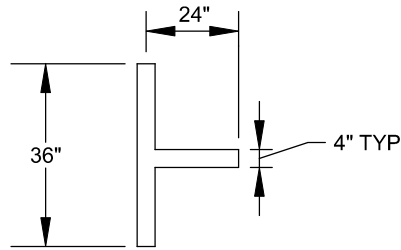
PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: May 7, 2014

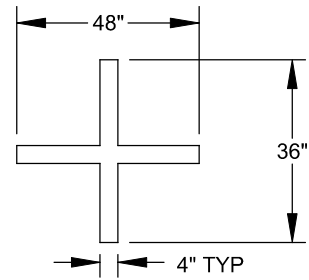
STANDARD PLAN

403-1

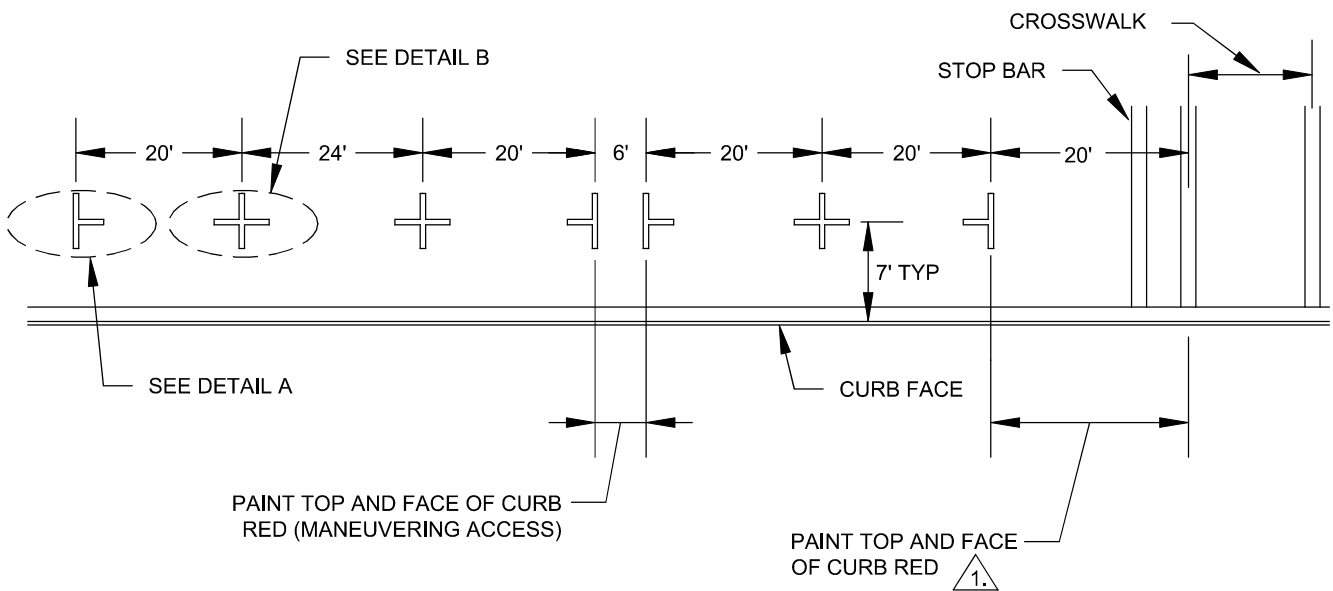
SHEET 1 OF 1



DETAIL A



DETAIL B



NOTES

1. NO PARKING WITHIN 20 FEET OF A CROSSWALK OR 15 FEET ON EITHER SIDE OF A FIRE HYDRANT.
2. PARKING SPACE MARKINGS SHALL BE WHITE, TRAFFIC PAINT. MATERIAL AND APPLICATION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
3. PARKING SPACE MARKINGS SHALL BE SYMMETRICAL ABOUT AXES.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



PARKING SPACE MARKINGS

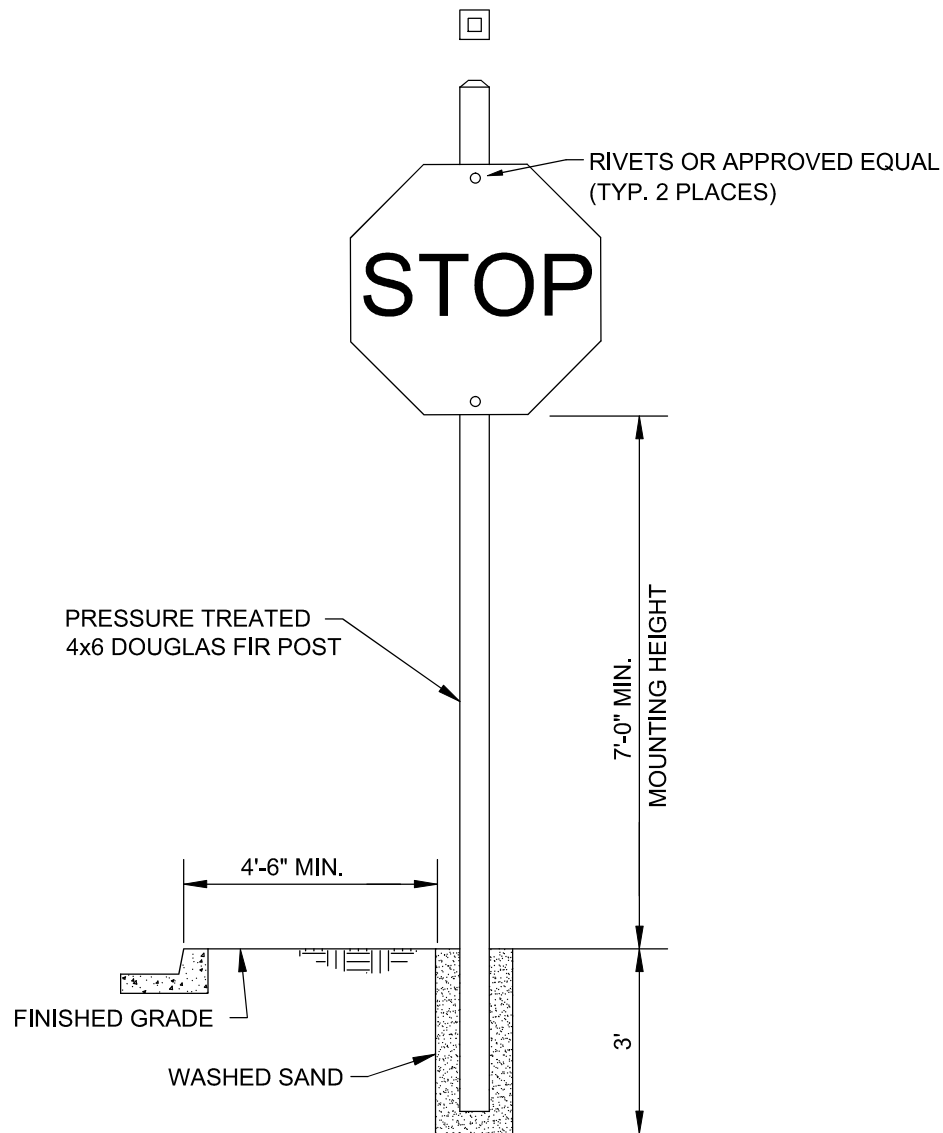
PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: **May 7, 2014**

STANDARD PLAN

404-0

SHEET 1 OF 1



NOTES:

1. SIGN MATERIALS, CONSTRUCTION AND PLACEMENT SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. ON STREETS WHERE CURBING DOES NOT EXIST, SET SIGN 6' MINIMUM FROM PAVEMENT EDGE.
3. ALL REGULATORY SIGNS SHALL USE ASTM TYPE 3 INTENSITY SHEETING.
4. INSTALLATION REQUIRES APPROVAL OF PUBLIC WORKS DEPARTMENT. NOT FOR LOCATIONS WHERE SNOW IS BLOWN.

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



TRAFFIC SIGN INSTALLATION

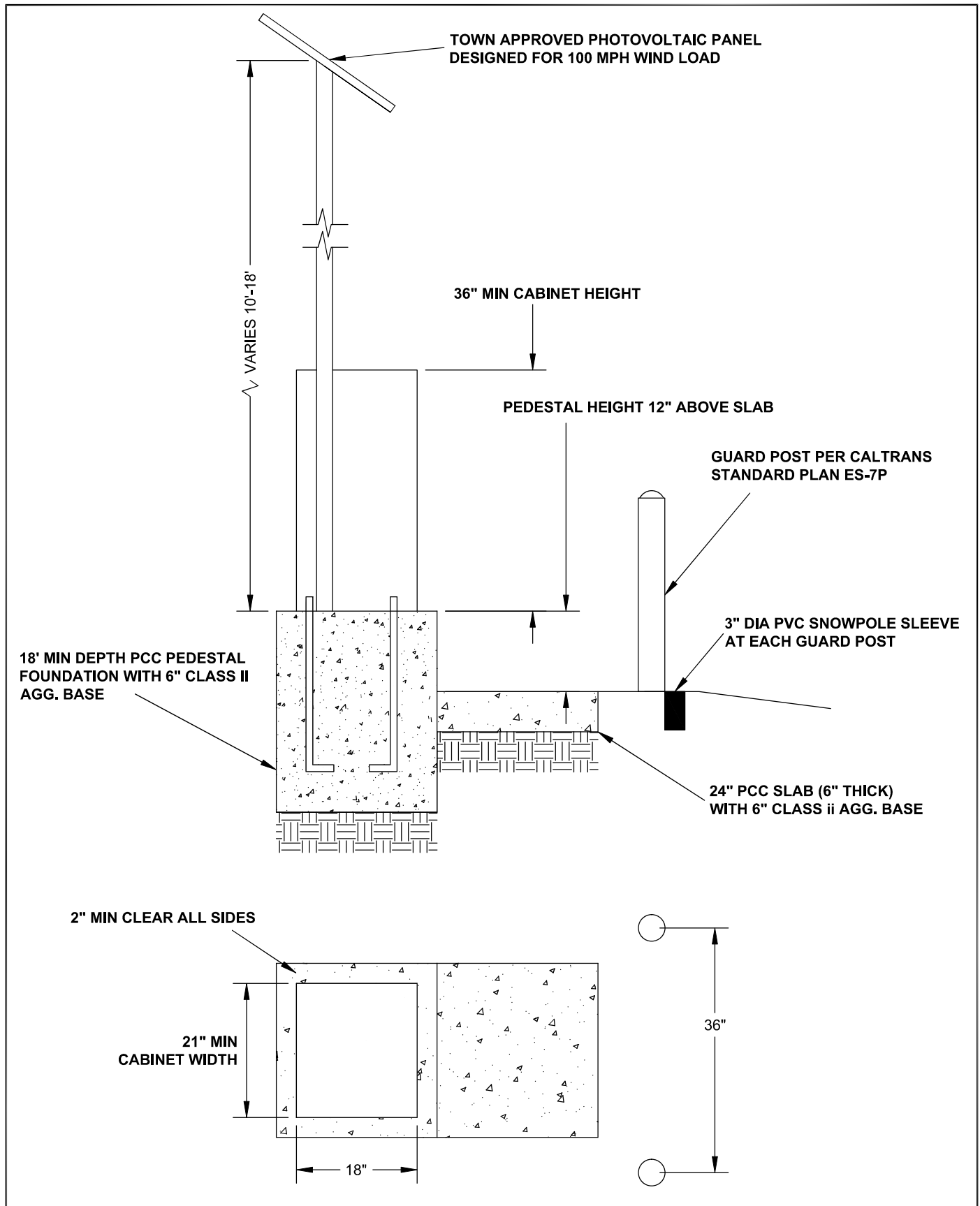
PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: **May 7, 2014**

STANDARD PLAN

405-2

SHEET 1 OF 1



TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



TYPICAL COUNTER STATION

PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: **May 7, 2014**

STANDARD PLAN

406-0

SHEET 1 OF 3

GENERAL COUNTER SPECIFICATIONS

1. ALL TRAFFIC COUNT STATIONS SHALL BE CONSTRUCTED ACCORDING TO TOWN STANDARD AND CONTAIN THE FOLLOWING EQUIPMENT
 - A. ONE EQUIPMENT CABINET - MCCAIN 303 OR EQUIVALENT BARE EQUIPMENT CABINET WITH DRAWER (36 X 21 X 18)
 - B. ONE EQUIPMENT CABINET FOUNDATION AND SLAB
 - C. ONE PULL BOX - PER TOWN STANDARD
 - D. ONE PHOTOVOLTAIC PANEL - TOWN APPROVED TEN-WATT (10W) PHOTOVOLTAIC PANEL SUFFICIENT FOR CHARGING A JAMAR TRAX III PLUS TRAFFIC COUNTER BATTERY SHALL BE MOUNTED ACCORDING TO DETAIL 1
 - E. FOUR INDUCTIVE LOOP DETECTORS - DETECTORS SHALL CONFORM TO THE PROVISIONS IN SECTION 86-5.01 OF THE STANDARD SPECIFICATIONS, AND STANDARD PLANS ES-5A AND ES-5B. TWO INDUCTIVE LOOPS SHALL BE PLACED PER TRAVELED WAY. INDUCTIVE LOOPS SHALL BE CENTERED IN THE TRAVELED WAY AND SPACED SIXTEEN FEET APART.
 - F. TWO GUARD POSTS - GUARD POSTS SHALL BE INSTALLED ACCORDING TO STANDARD PLAN ES-7P
 - G. ONE GROUND ROD 0 GROUND ROD SHALL BE INSTALLED ACCORDING TO SECTION 86-2.10 OF THE STANDARD SPECIFICATIONS.
 - H. ONE JAMAR POWER CORD - SUPPLY AND CONNECT JAMAR TRAX III PLUS TRAFFIC COUNTER POWER CORD TO TERMINATION STRIP
 - I. ONE JAMAR LOOP CABLE - SUPPLY AND CONNECT JAMAR TRAX III PLUS TRAFFIC COUNTER LOOP CABLE (JT+ 3-ELC-K) TO TERMINATION STRIP ACCORDING TO DETAIL 2.

COUNTER CABINET SPECIFICATIONS

MATERIAL	ALUMINUM
FINISH	PAINTED WITH TOWN APPROVED COLOR
DIMENSIONS	36" H x 21" W x 18"D
MOUNTING	PEDESTAL MOUNT WITH 5/8" X 18" ANCHOR BOLTS (2) MIN.
ACCESS	SINGLE LOCKING FRONT DOOR
GASKETS	TYPE 4R RAIN ROOF
INTERNAL	1 EQUIPMENT SHELF (TO HOLD 1-2 TRAX III PLUS TRAFFIC COUNTERS, POWER INPUT PANEL, GFI CONVENIENCE OUTLET, LOOP TERMINAL STRIP (4-8 LOOPS DEPENDING ON LOCATION))
EXTERNAL	PHOTOVOLTAIC PANEL SUFFICIENT FOR CHARGING TRAX III PLUS TRAFFIC COUNTER BATTERY, 1/2" X 8 FOOT MIN GROUND ROD

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



TYPICAL COUNTER STATION

PUBLIC WORKS
DIRECTOR APPROVAL: 

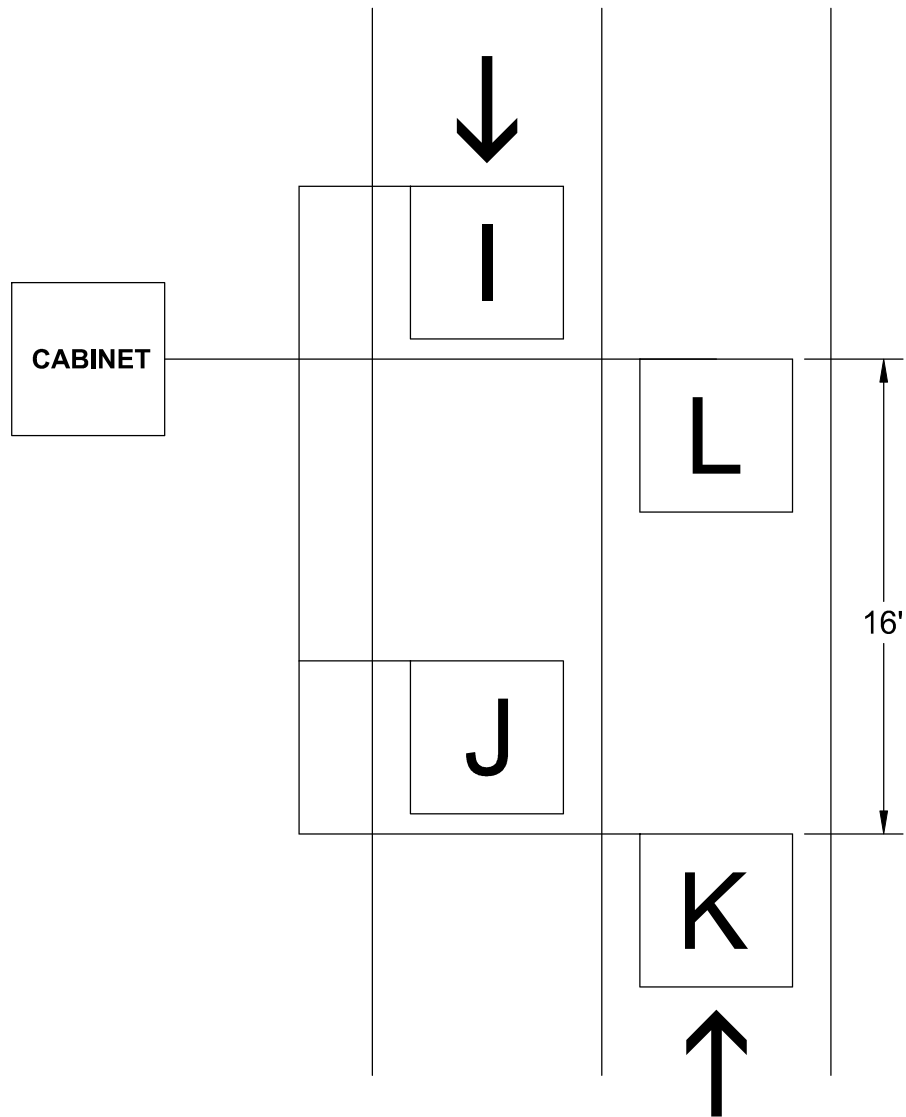
DATE: May 7, 2014

STANDARD PLAN

406-0

SHEET 2 OF 3

TYPICAL PERMANENT STATION LAYOUT: L25
16 FOOT SPACING
4 LOOPS



TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS



TYPICAL COUNTER STATION

PUBLIC WORKS
DIRECTOR APPROVAL: *[Signature]*

DATE: May 7, 2014

STANDARD PLAN

406-0

SHEET 3 OF 3