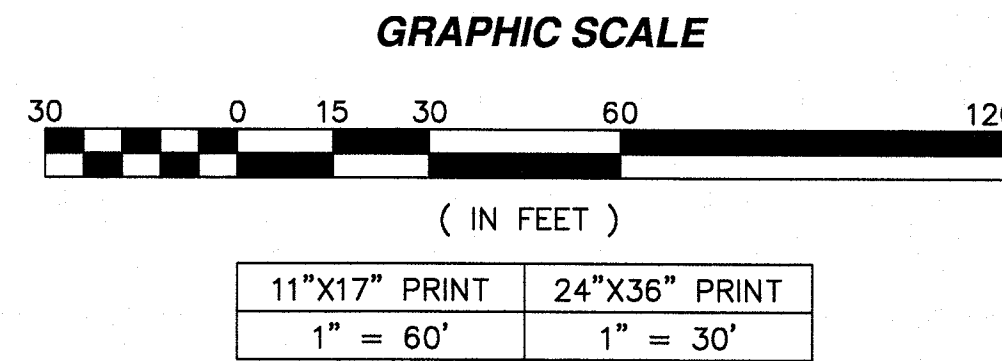


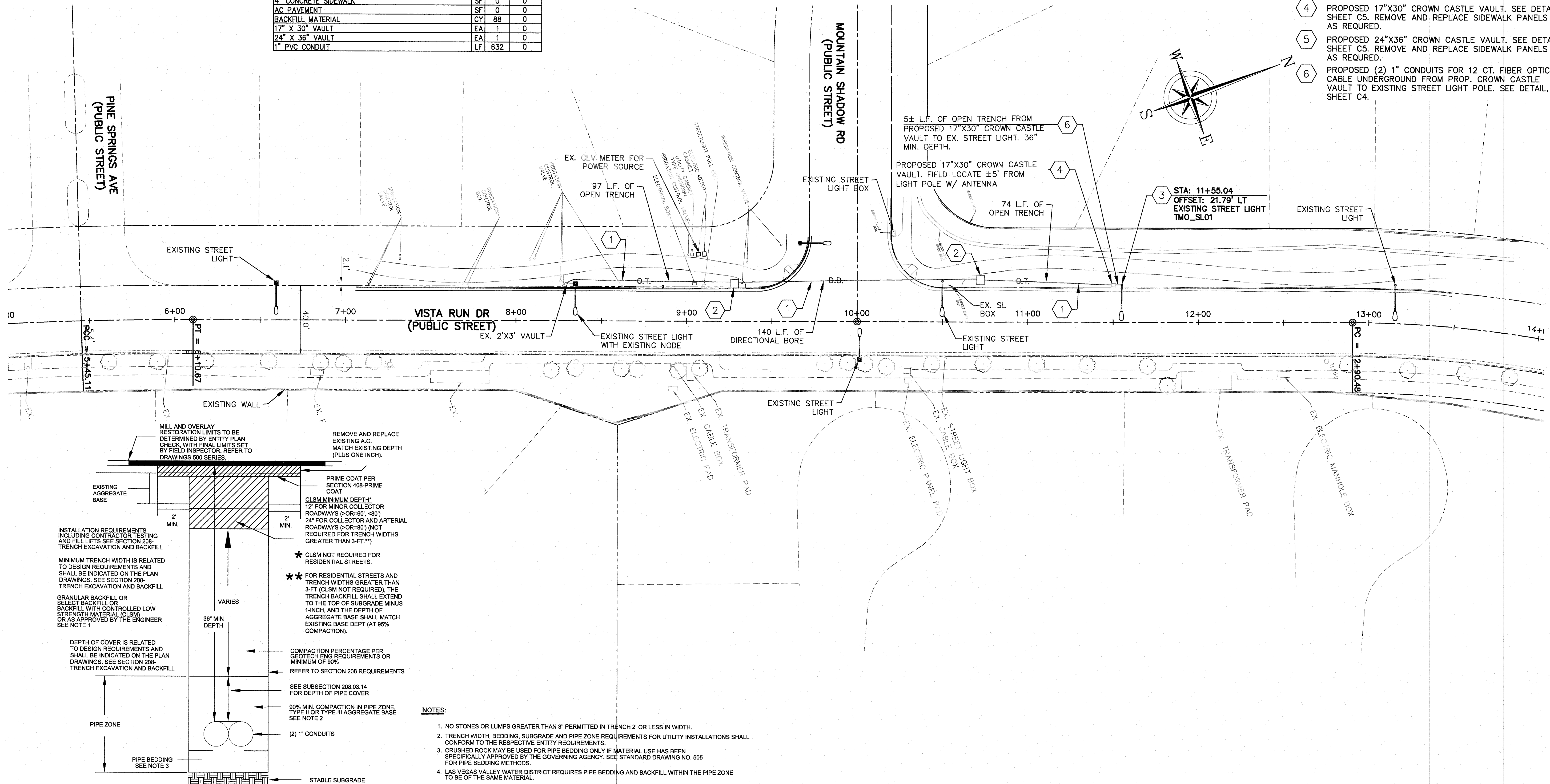
LENGTH IN:
CITY OF LAS VEGAS RIGHT-OF-WAY
OPEN TRENCH/DIRECTIONAL BORE THIS SHEET = 316'
TOTAL OPEN TRENCH/DIRECTIONAL BORE = 316'



- LEGEND**
- E EXISTING ELECTRIC PULLBOX/
HANDHOLE/ VAULT/ MANHOLE
- SL EXISTING STREET LIGHT
PULLBOX/ VAULT
- T EXISTING TELEPHONE
PULLBOX/ VAULT/ MANHOLE
- TS EXISTING TRAFFIC SIGNAL
PULLBOX/ VAULT
- CATV EXISTING CATV
PULLBOX/ VAULT
- No. O EXISTING POWER POLE/ NUMBER
- EXISTING STREET LIGHT
- EXISTING STREET SIGN
- O.T. PROPOSED OPEN TRENCH FOR UNDERGROUND
CONDUIT INSTALLATION. 36-INCH MIN. DEPTH.
- D.B. PROPOSED DIRECTIONAL BORE FOR UNDERGROUND
CONDUIT INSTALLATION. 36-INCH MIN. DEPTH.
- RIGHT-OF-WAY LINE
- STREET CENTERLINE
- EASEMENT LINE
- EXISTING OVERHEAD UTILITY/POWER LINE
- 1 PROPOSED (2) 1" CONDUITS FOR 12 CT. FIBER OPTIC
CABLE. REMOVE AND REPLACE LANDSCAPING,
CONCRETE SIDEWALK, OR AC PAVEMENT AS REQUIRED.
- 2 PROPOSED 5'X5' BORE PIT. REMOVE AND REPLACE
LANDSCAPING, CONCRETE SIDEWALK, OR AC PAVEMENT
AS REQUIRED.
- 3 PROPOSED KS 840 10510 ANTENNA MOUNTED TO TOP
OF EXISTING STREET LIGHT POLE. SEE DETAIL,
SHEET C6.
- 4 PROPOSED 17"X30" CROWN CASTLE VAULT. SEE DETAIL,
SHEET C5. REMOVE AND REPLACE SIDEWALK PANELS
AS REQUIRED.
- 5 PROPOSED 24"X36" CROWN CASTLE VAULT. SEE DETAIL,
SHEET C5. REMOVE AND REPLACE SIDEWALK PANELS
AS REQUIRED.
- 6 PROPOSED (2) 1" CONDUITS FOR 12 CT. FIBER OPTIC
CABLE UNDERGROUND FROM PROP. CROWN CASTLE
VAULT TO EXISTING STREET LIGHT POLE. SEE DETAIL,
SHEET C4.

QUANTITIES

DESCRIPTION	UNIT	PUBLIC	PRIVATE
4" CONCRETE SIDEWALK	SF	0	0
AC PAVEMENT	SF	0	0
BACKFILL MATERIAL	CY	88	0
17" X 30" VAULT	EA	1	0
24" X 36" VAULT	EA	1	0
1" PVC CONDUIT	LF	632	0



**METHOD B FOR RIGID AND FLEXIBLE PIPE
TRENCH BACKFILL - PAVED AREAS**

(N.T.S.)

NOTES:

- NO STONES OR LUMPS GREATER THAN 3" PERMITTED IN TRENCH 2' OR LESS IN WIDTH.
- TRENCH WIDTH, BEDDING, SUBGRADE AND PIPE ZONE REQUIREMENTS FOR UTILITY INSTALLATIONS SHALL CONFORM TO THE RESPECTIVE ENTITY REQUIREMENTS.
- CRUSHED ROCK MAY BE USED FOR PIPE BEDDING ONLY IF MATERIAL USE HAS BEEN SPECIFICALLY APPROVED BY THE GOVERNING AGENCY. SEE STANDARD DRAWING NO. 505 FOR PIPE BEDDING METHODS.
- LAS VEGAS VALLEY WATER DISTRICT REQUIRES PIPE BEDDING AND BACKFILL WITHIN THE PIPE ZONE TO BE OF THE SAME MATERIAL.

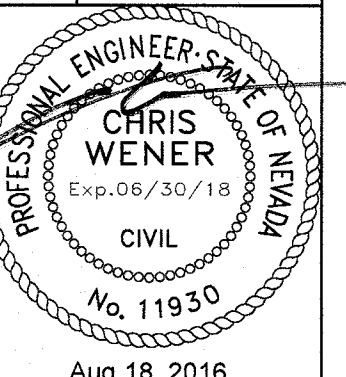
REVISIONS

REV.	DESCRIPTION	APPROVED BY	DATE

SPECTRUM
SPECTRUM SERVICES, INC.
4850 WEST OQUENDO ROAD
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OFFICE: (702) 367-7705
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CROWN CASTLE
2125 WRIGHT AVENUE, STE C-9
LAVERNE, CA 91750

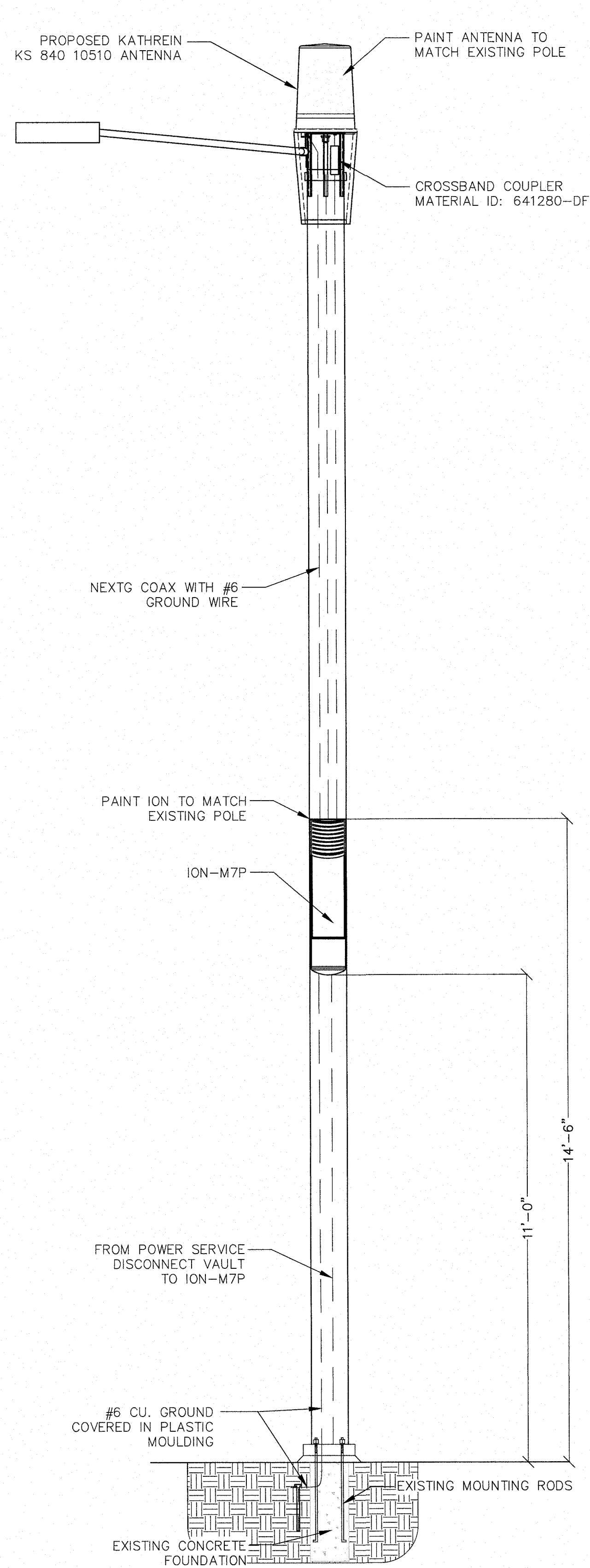
**IMPROVEMENT PLANS
FOR SUMMERLIN**
IMPROVEMENT PLAN
TWO SLO1 FIBER OPTIC CABLE
IMPROVEMENTS IN SUMMERLIN
VISTA RUN DR.
(150 FT. N. OF W. MOUNTAIN SHADOW RD.)



ENGINEER'S SEAL

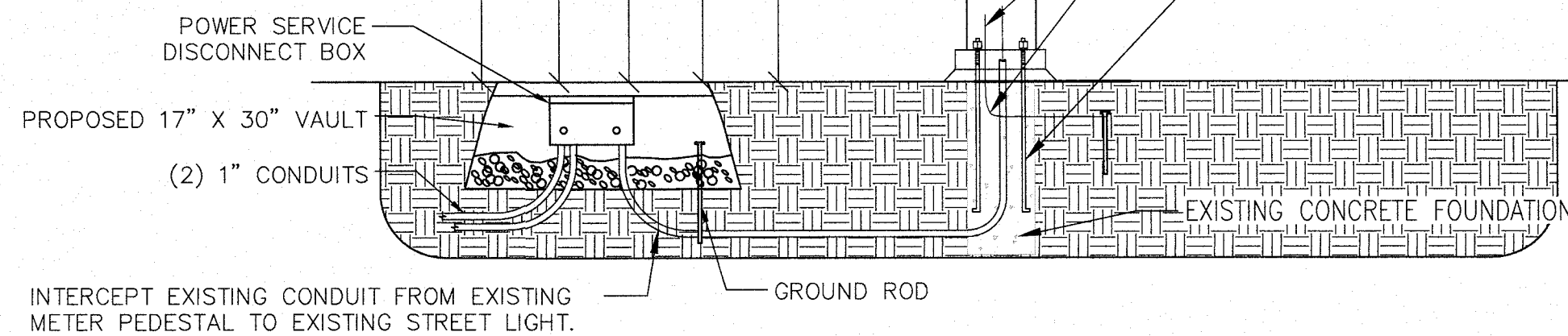
CONTRACTED WITH:
HP COMMUNICATIONS
PERMIT #
DATE: 08/17/16
JOB NO: CD14148
DRAWN BY: NEL
CHECKED BY: CC
SCALE: AS SHOWN

SHEET 3
OF 7

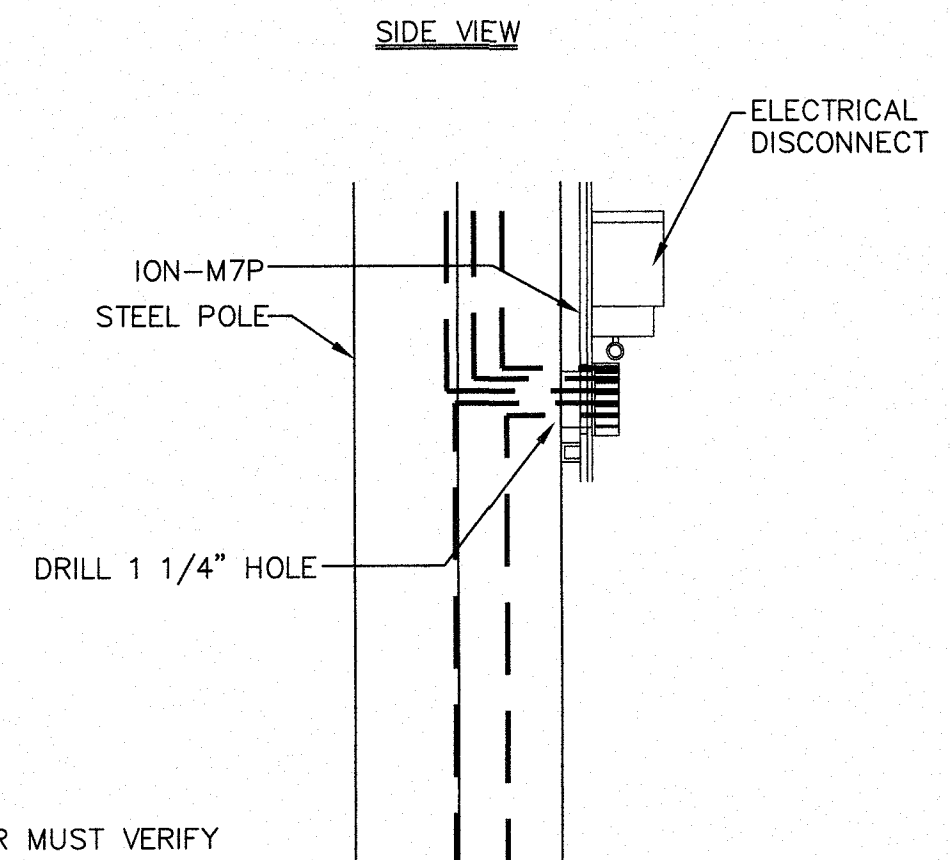
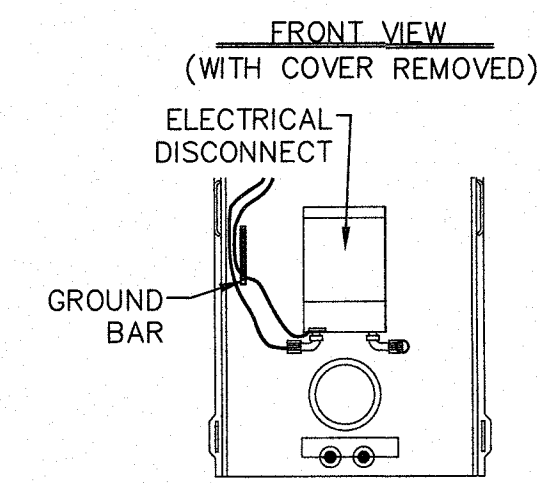
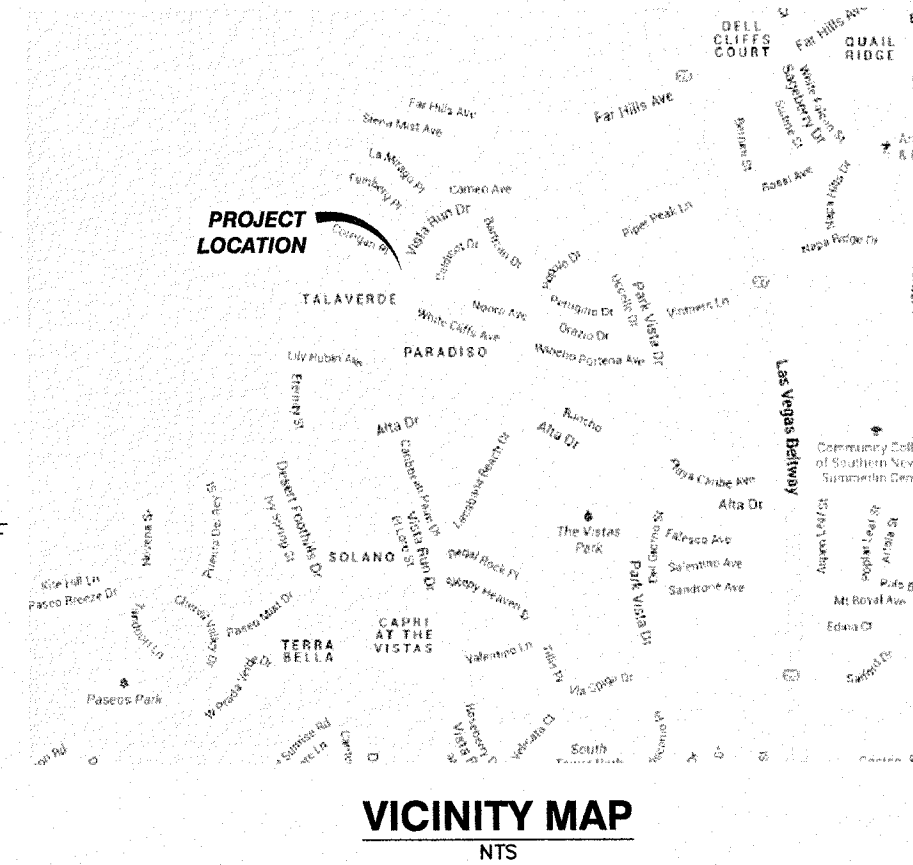
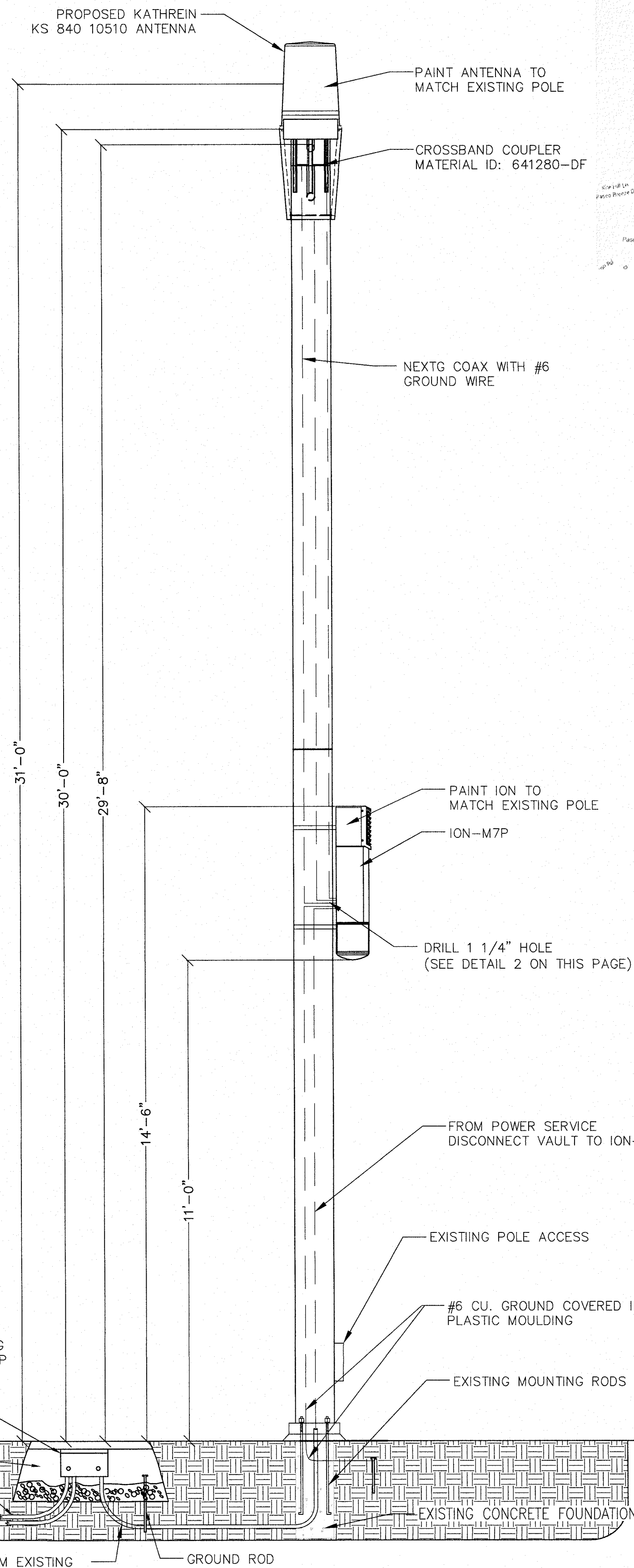


POLE ELEVATION
NTS

NOTE:
NO NEW CONDUIT MAY BE INSTALLED IN EXISTING
STREETLIGHT FOUNDATION, BASE AND CRASH CAP

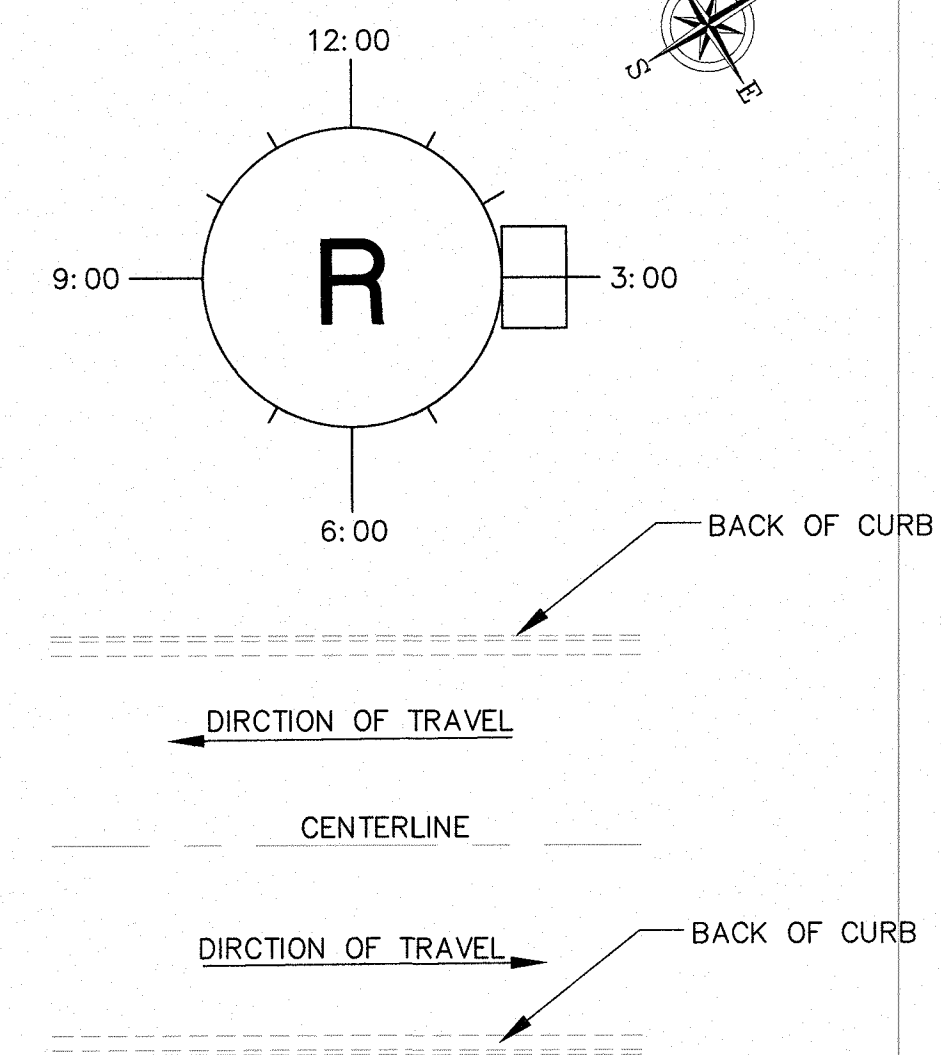


3



NOTE:
CONTRACTOR MUST VERIFY
POWER CAPACITY

HOLE DETAIL
NTS



RISER POLE DETAIL
NTS

REVISIONS

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SPECTRUM SERVICES, INC.
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2125 WRIGHT AVENUE, STE C-9
LAVERNE, CA 91750

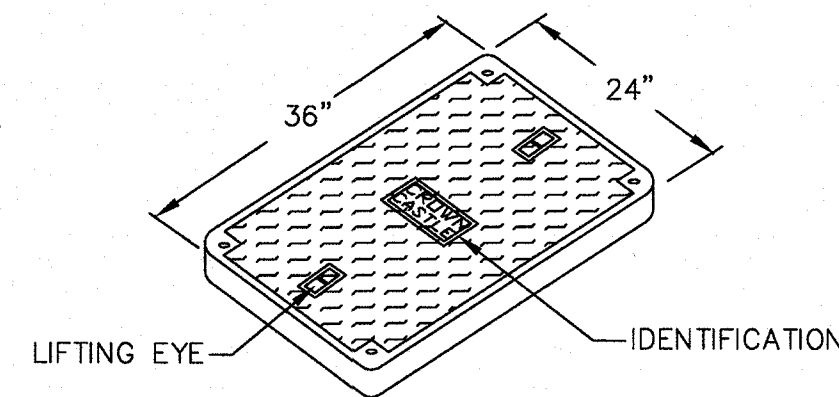
IMPROVEMENT PLANS
FOR SUMMERLIN
PROFILES
TWO SL01 FIBER OPTIC CABLE
IMPROVEMENTS IN SUMMERLIN
VISTA RUN DR.
(150 FT. N. OF W. MOUNTAIN SHADOW RD.)

PROFESSIONAL ENGINEER'S SEAL
CHRIS WENER
Exp. 06/30/18
CIVIL
No. 11930
Aug 18, 2016

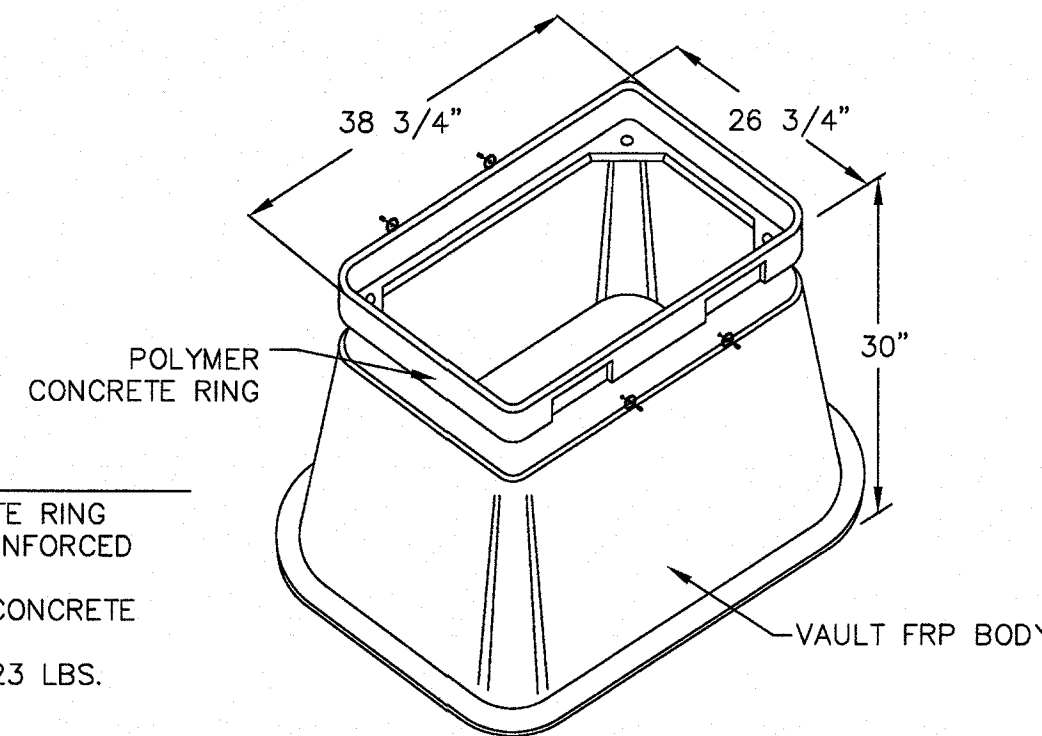
ENGINEER'S SEAL

CONTRACTED WITH:
HP COMMUNICATIONS
PERMIT #
DATE: 06/17/16
JOB NO: CD14148
DRAWN BY: CC
CHECKED BY: RAS
SCALE: NONE
SHEET 4
OF 7

- COVER FEATURES:
- * PW - 10,400 LBS. WHEEL LOAD ON 10" X 10" PLATE.
 - * APPROX. WT. = 72 LBS.
 - * POLYMER CONCRETE
 - * ONE PIECE COVER
 - * FOUR BOLT DOWN
 - * COLOR: CONCRETE GREY
 - * NON - SKID SURFACE



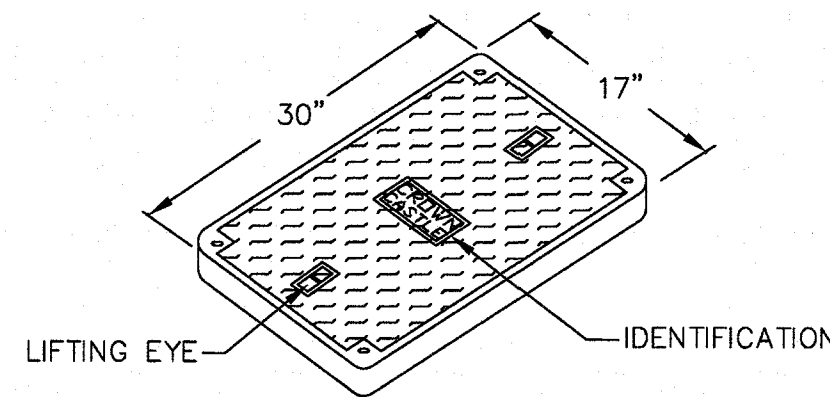
- VAULT FEATURES:
- * POLYMER CONCRETE RING AND FIBERGLASS REINFORCED POLYMER BODY
 - * COLOR OF RING: CONCRETE GREY
 - * APPROX. WT. = 123 LBS.



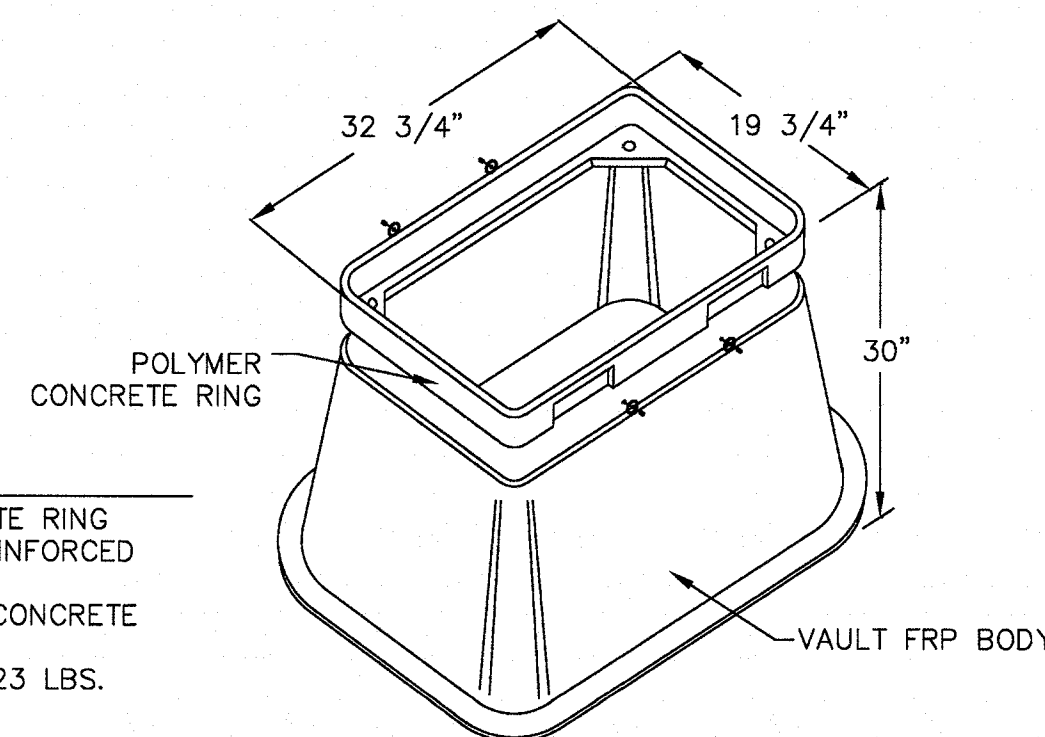
24' X 36' VAULT
NTS

6

- COVER FEATURES:
- * PW - 10,400 LBS. WHEEL LOAD ON 10" X 10" PLATE.
 - * APPROX. WT. = 72 LBS.
 - * POLYMER CONCRETE
 - * ONE PIECE COVER
 - * FOUR BOLT DOWN
 - * COLOR: CONCRETE GREY
 - * NON - SKID SURFACE

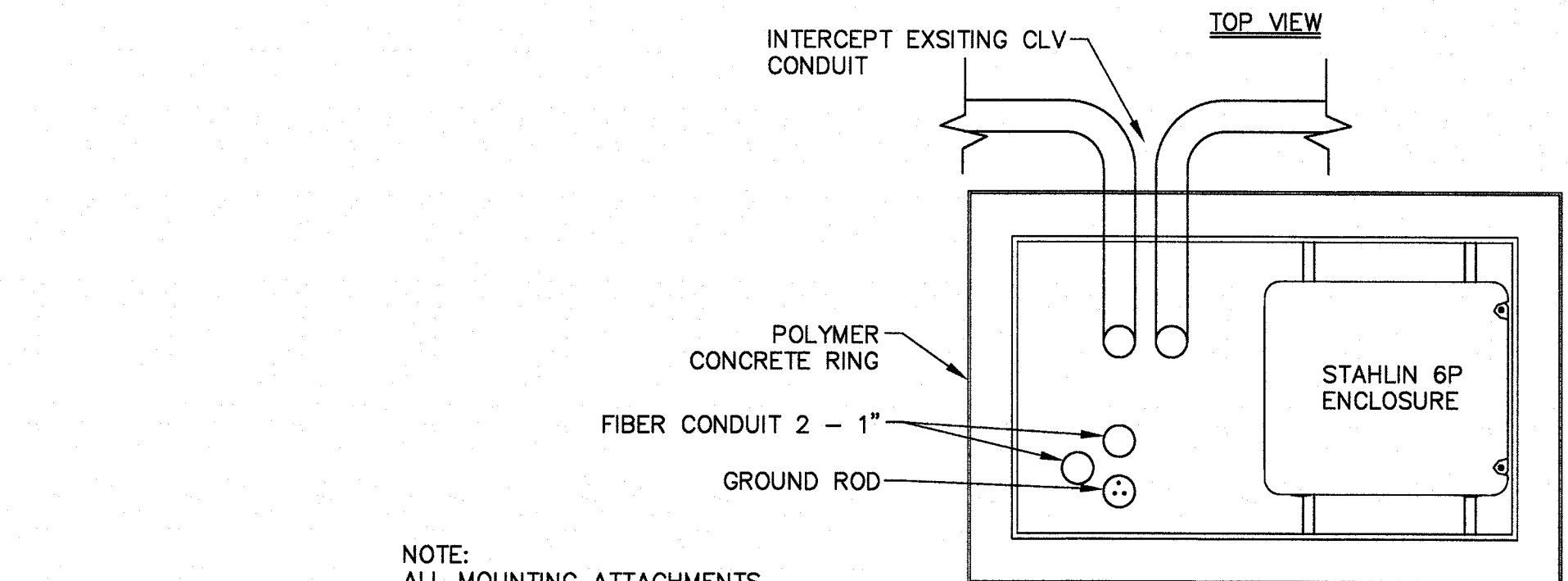


- VAULT FEATURES:
- * POLYMER CONCRETE RING AND FIBERGLASS REINFORCED POLYMER BODY
 - * COLOR OF RING: CONCRETE GREY
 - * APPROX. WT. = 123 LBS.

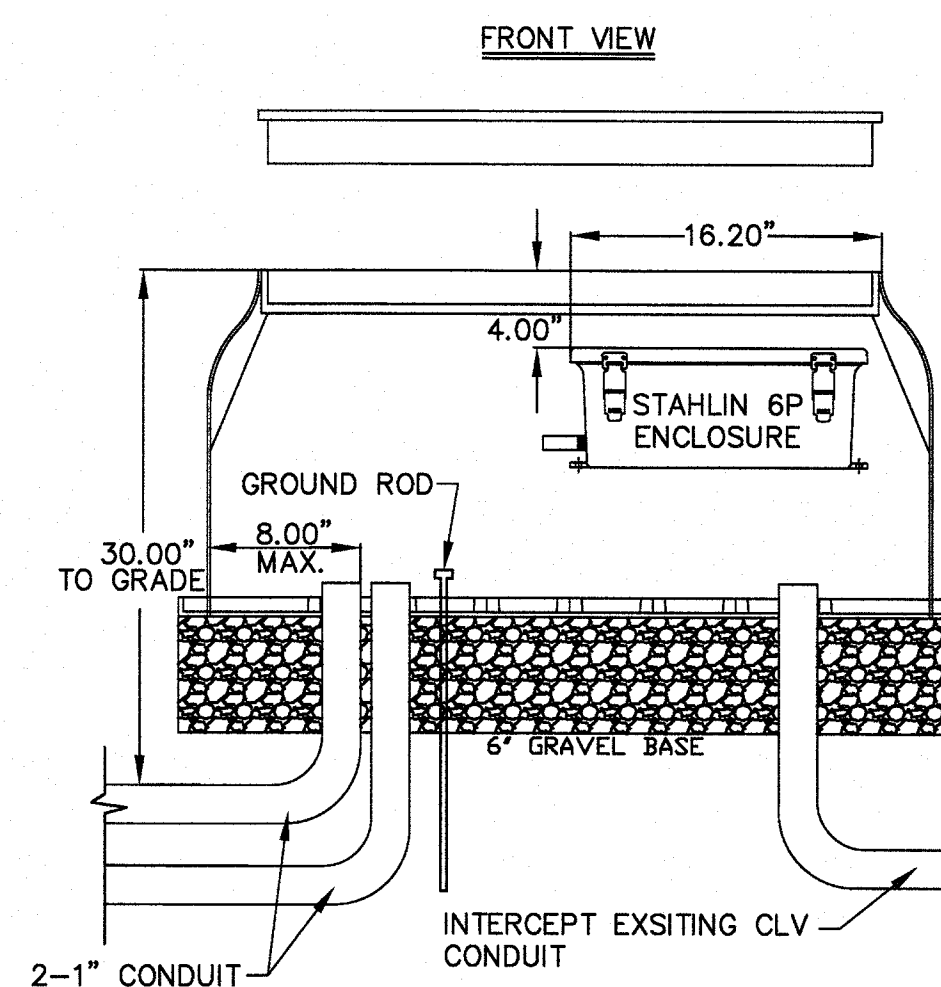
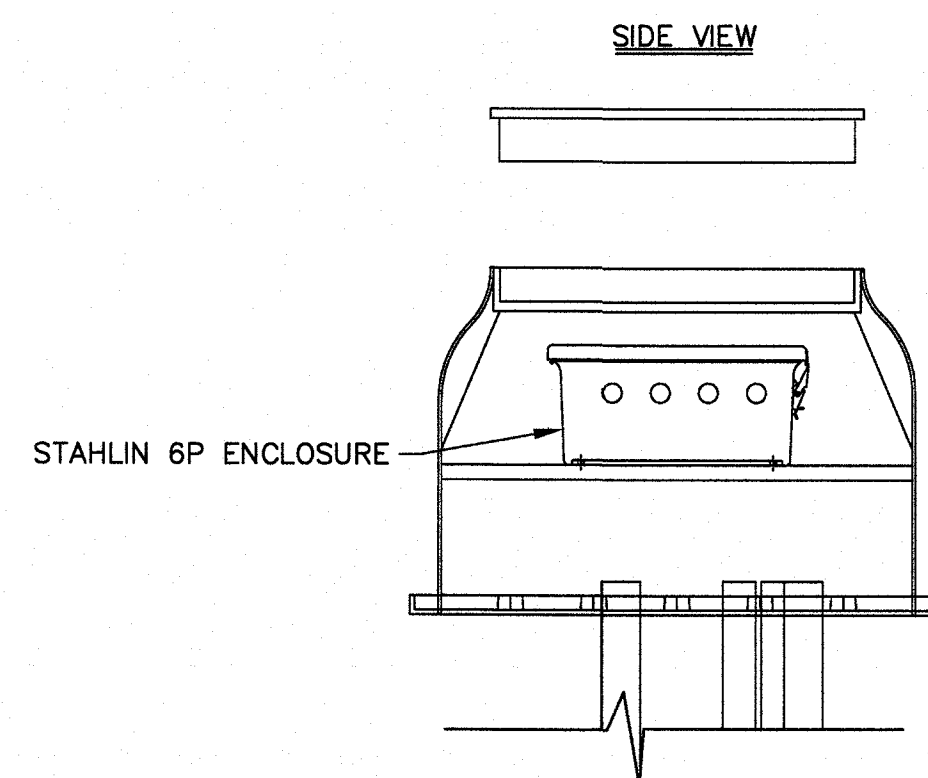


17' X 30' VAULT
NTS

5

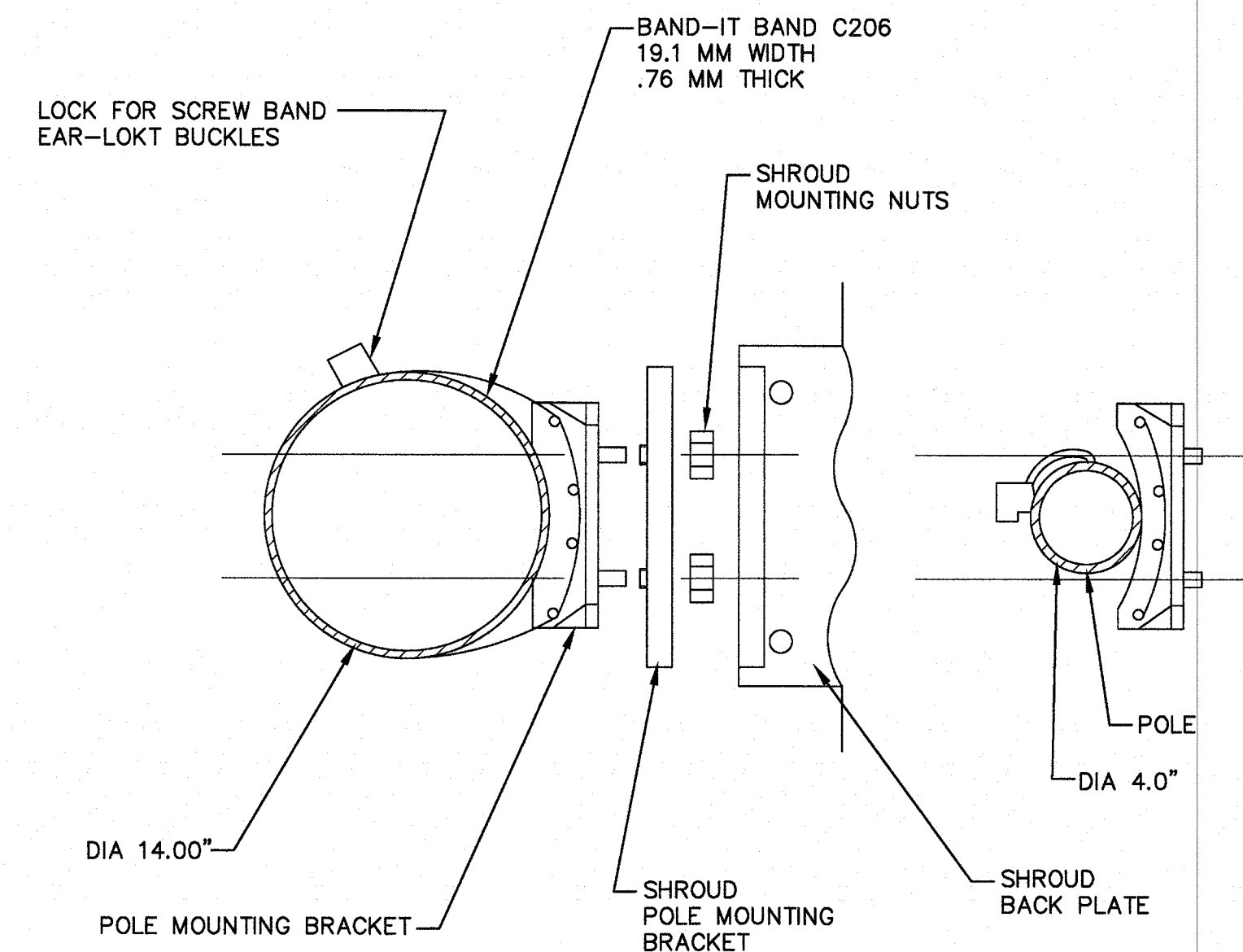


NOTE:
ALL MOUNTING ATTACHMENTS
FOR THIS BOX SHALL BE THROUGH EXTERNAL
MOUNTING FLANGES INTEGRAL WITH BOX.



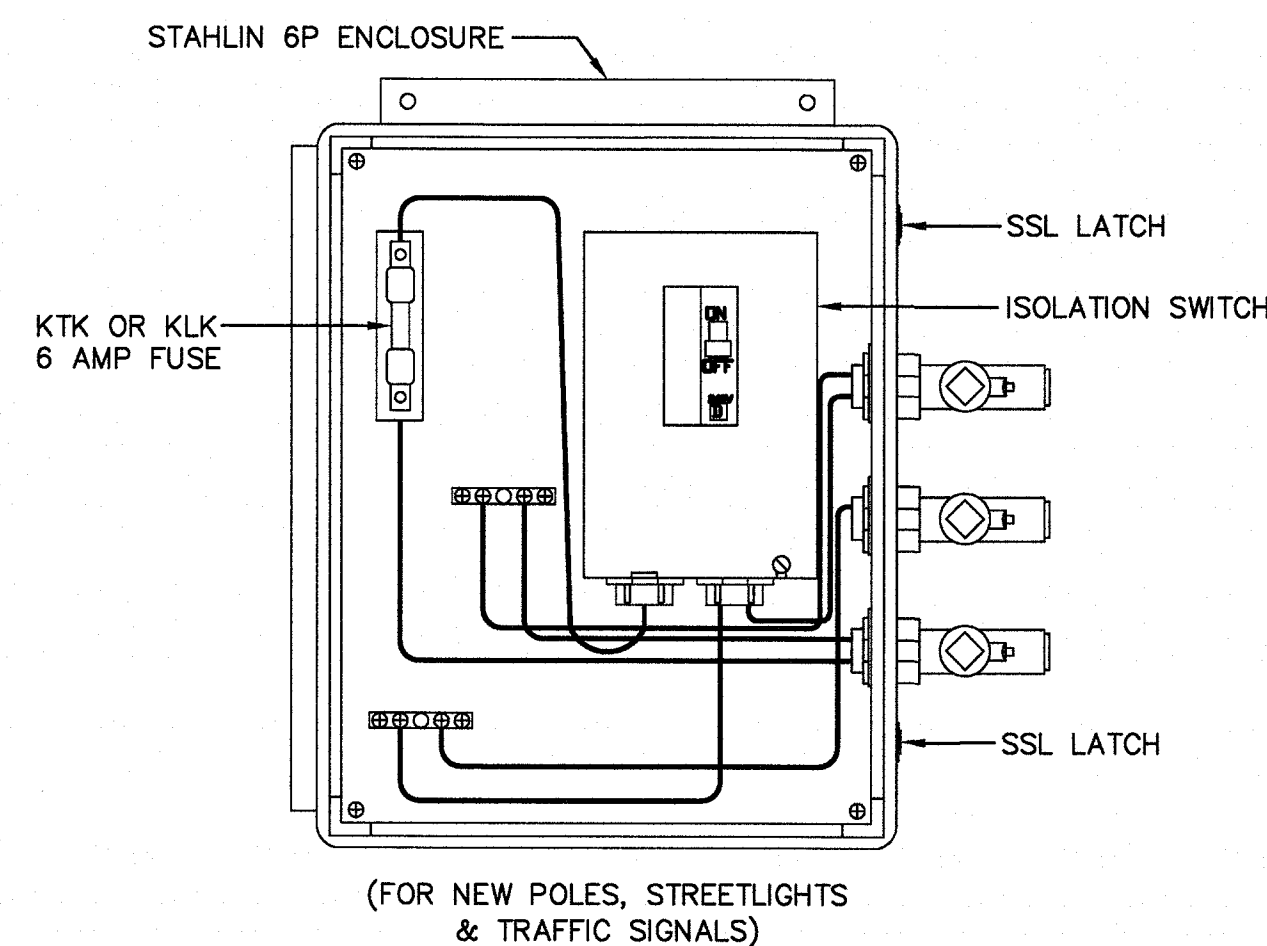
STAHLIN 6P ENCLOSURE
NTS

3



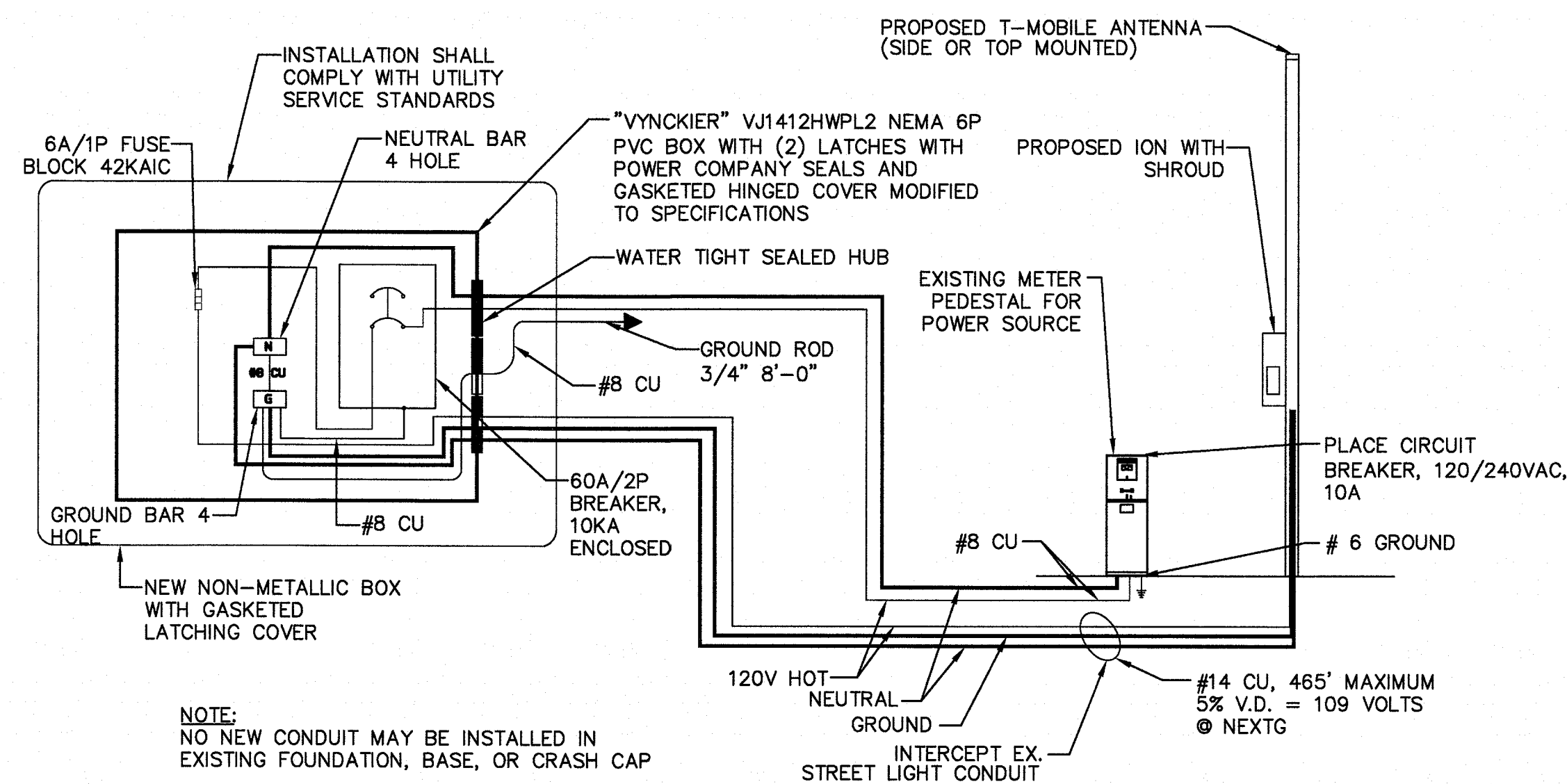
POLE MOUNTING
NTS

2



WTR FUSE BOX
NTS

4



NOTE:
NO NEW CONDUIT MAY BE INSTALLED IN
EXISTING FOUNDATION, BASE, OR CRASH CAP

POWER SINGLE LINE DIAGRAM
NTS

1

REVISIONS		REV.	DESCRIPTION	APPROV BY	DATE

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CROWN CASTLE
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LAVERNE, CA 91750

**IMPROVEMENT PLANS
FOR SUMMERLIN**
DETAIL SHEET
TWO SLOT FIBER OPTIC CABLE
IMPROVEMENTS IN SUMMERLIN
VISTA RUN DR.
(150 FT. N. OF W. MOUNTAIN SHADOW RD.)

PROFESSIONAL ENGINEER STATE OF NEVADA
CHRIS WENER
Exp: 06/30/18
CIVIL
No. 11930
Aug 18, 2016

ENGINEER'S SEAL
CONTRACTED WITH:
HP COMMUNICATIONS
PERMIT #
DATE: 08/17/16
JOB NO: CD14148
DRAWN BY: CC
CHECKED BY: RAS
SCALE: NONE
SHEET 6
OF 7

ION-M7P/7P/85P/19P

ELECTRICAL
POWER SUPPLY
MAINS POWER, VAC 115 OR 230
POWER CONSUMPTION, WATTS 1100 MAX.
<750 @ NORMAL OPERATION

OPTICAL
CONNECTORS E2000/APC 8"
OPTICAL RETURN LOSS, dB 45 MINIMUM
FIBER TYPE, MM SINGLE MODE E9/125
OPTICAL LINK BUDGET, dB 0 TO 10
COMPOSITE INPUT POWER
@ OTRx MASTER SIDE, dBm

700 MHz 7.0 NOMINAL
850 MHz 7.0 NOMINAL
1900 MHz 7.0 NOMINAL
INPUT POWER RANGE, dBm
700 MHz -15 TO +14
850 MHz -15 TO +14
1900 MHz -12 TO +14

RF INTERFACE
BTS SIDE (SMA)
NUMBER OF CONNECTORS STANDARD
CH1 700.....1 UL/1 DL
CH2 700.....1 UL/1 DL
850 MHz.....1 UL/1 DL
1900 MHz.....1 UL/ 1DL

SYSTEM OPTIMIZED FOR BTS POWER, DBM
33
43

700 MHz SISO/MIMO
FREQUENCY RANGE, MHz
UPLINK.....698 TO 716/776 TO 787
DOWNLINK...728 TO 757

OUTPUT PER CARRIER*, dBm
NUMBER OF CARRIERS: 1 2 4 8
LTE 43 40** 37 34

DL OUTPUT TOLERANCE OVER FREQUENCY, dB...±1
DL OUTPUT TOLERANCE OVER TEMPERATURE, dB...±0.5

SPURIOUS EMISSION <-13 dBm/1MHz
SPURIOUS EMISSION INTO PUBLIC SAFETY NARROWBAND
<-46 dBm/6.25 kHz

INPUT ICP3, dBm*
ICP3 OPTIMIZED.....-13.0 MIN.
NOISE FIGURE OPTIMIZED.....-19.0 MIN.

NOISE FIGURE, dB*
ICP3 OPTIMIZED.....+10.5 MAX.
NOISE FIGURE OPTIMIZED.....+6.0 MAX.

850 MHz
FREQUENCY RANGE, MHz
UPLINK.....824 TO 849
DOWNLINK...869 TO 894

OUTPUT PER CARRIER*, dBm
NUMBER OF CARRIERS: 1 2 4 8
GSM/EDGE 43 40 37 34
CDMA 43 40 37 34
LTE 43 40** 37 34
UMTS 42 39 36 33

DL OUTPUT TOLERANCE OVER FREQUENCY, dB...±1
DL OUTPUT TOLERANCE OVER TEMPERATURE, dB...±0.5

SPURIOUS EMISSION <-13 dBm/1MHz

INPUT ICP3, dBm*
ICP3 OPTIMIZED.....-11.0 MIN.
NOISE FIGURE OPTIMIZED.....-18.0 MIN.

NOISE FIGURE, dB*
ICP3 OPTIMIZED.....+10 MAX.
NOISE FIGURE OPTIMIZED.....+6 MAX.
4.5 TYP.

1900 MHz
FREQUENCY RANGE, MHz
UPLINK.....1850 TO 1915
DOWNLINK...1930 TO 1995

OUTPUT PER CARRIER*, dBm
NUMBER OF CARRIERS: 1 2 4 8
GSM/EDGE 43 40 37 34
CDMA 43 40 37 34
LTE 43 40** 37 34
UMTS 42 39 36 33

DL OUTPUT TOLERANCE OVER FREQUENCY, dB...±1
DL OUTPUT TOLERANCE OVER TEMPERATURE, dB...±0.5

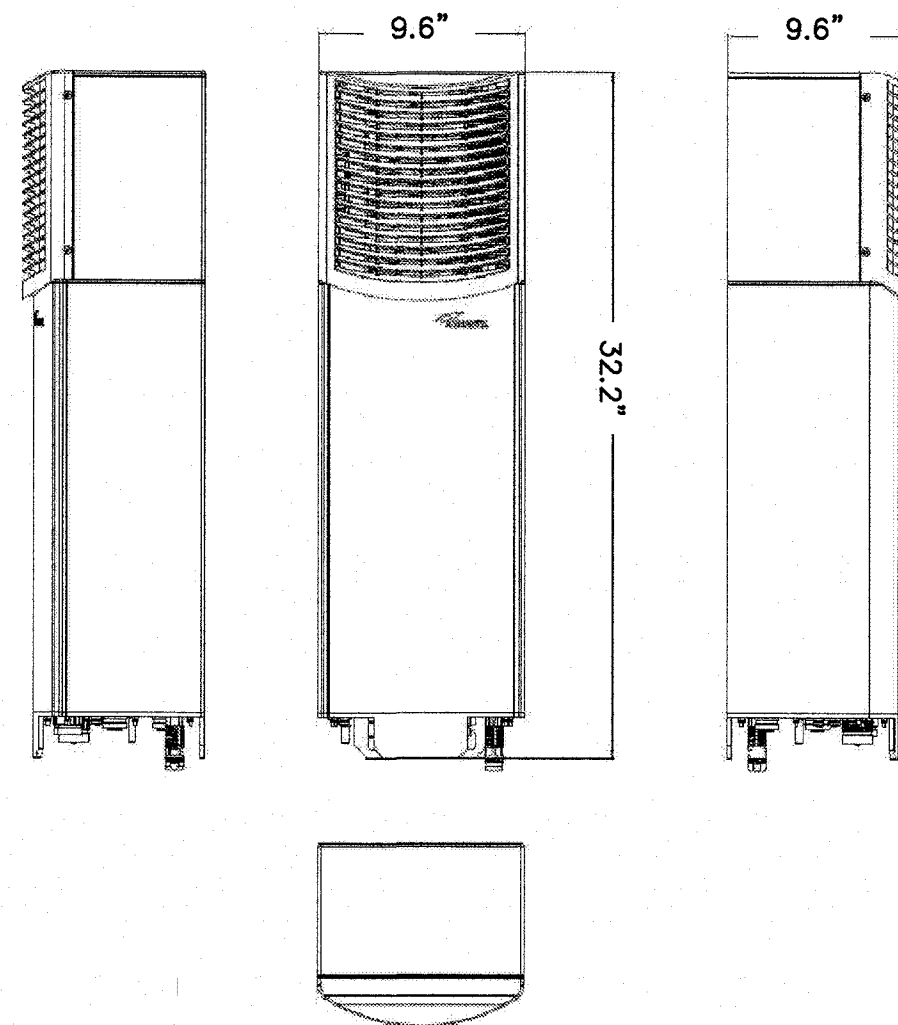
SPURIOUS EMISSION <-13 dBm/1MHz

INPUT ICP3, dBm*
ICP3 OPTIMIZED.....-12 MIN.
NOISE FIGURE OPTIMIZED.....-18 MIN.

NOISE FIGURE, dB*
ICP3 OPTIMIZED.....+11 MAX.
NOISE FIGURE OPTIMIZED.....+6 MAX.
4.5 TYP.

*APPLICABLE TO SINGE MODULATION MODE ONLY
**ADDITIONAL 2dB POWER REDUCTION IF CARRIER BANDWIDTH
< 5 MHz

ALL FIGURES TYP. VALUES, UNLESS OTHERWISE STATED



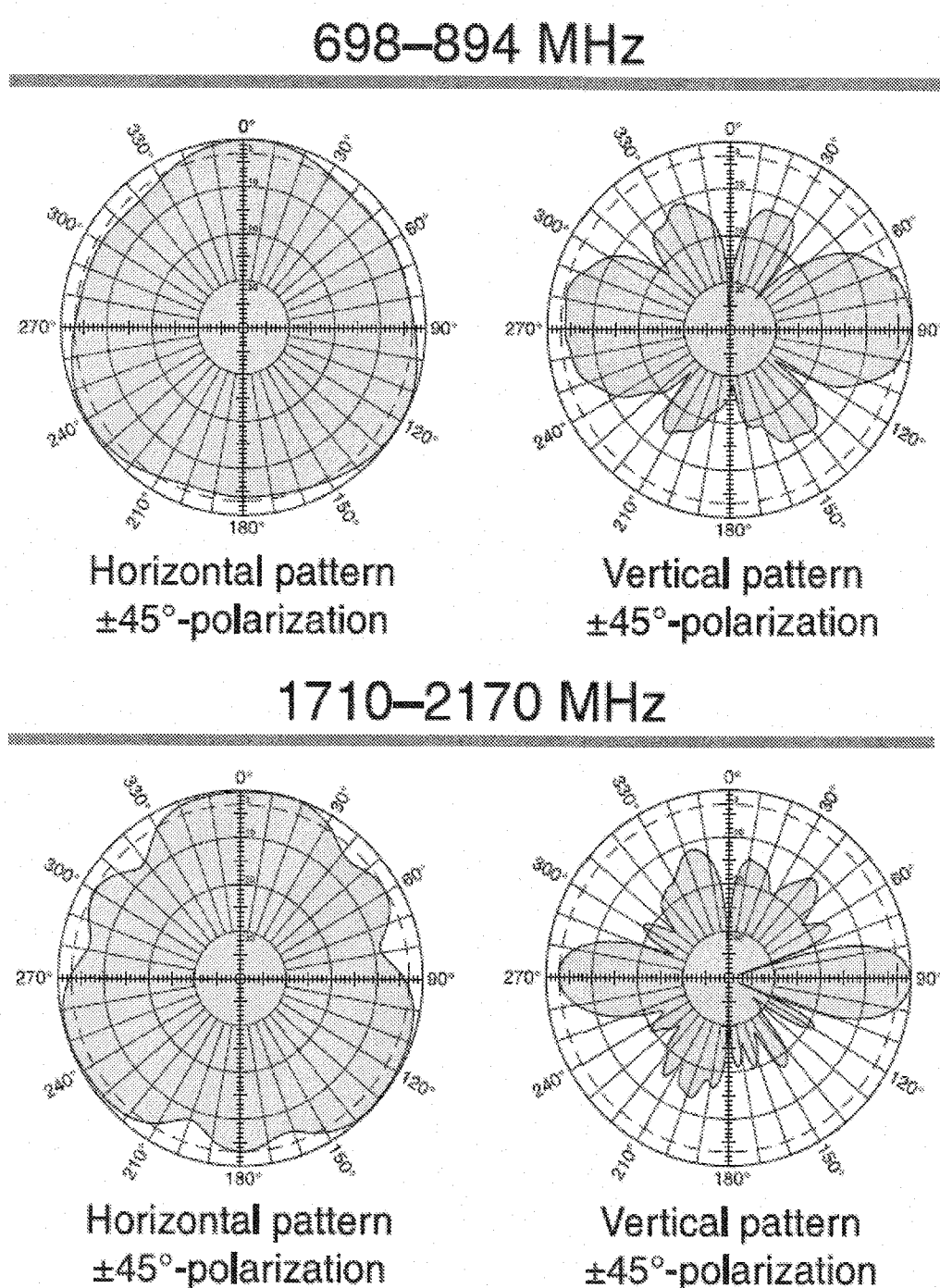
ION-M7P/7P/85P/19P Cabinet Drawing

ION SPECIFICATIONS
NTS

2

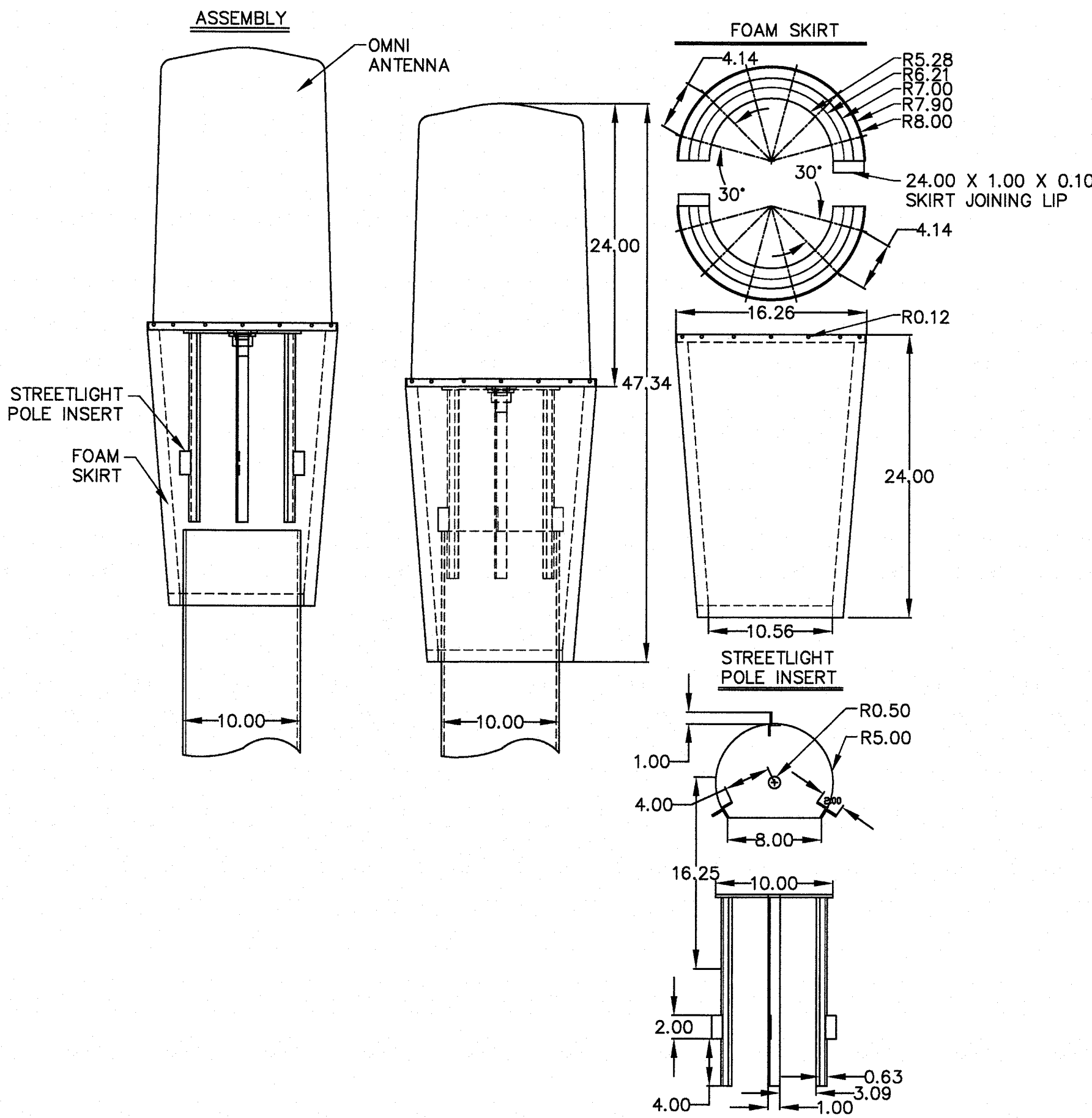
GENERAL SPECIFICATIONS

- FREQUENCY RANGE: 898-894 MHz
1710-2170 MHz
- VSWR: <1.5:1
- IMPEDANCE: 50 OHMS
- INTERMODULATION: IM3: < -150 dBc
- POLARIZATION: +45° UPPER AND LOWER BAND
-45° UPPER AND LOWER BAND
- ISOLATION INTRASYSTEM: > 30 dB
> 40 dB (698-894 // 1710-2170 MHz)
- RADOME COLOR: BROWN OR GREY
- WEIGHT: 45 lb (20.4 kg)
- HEIGHT: 24 INCHES (609 mm)
- RADOME DIAMETER: 16 INCHES (407 mm)
- WIND LOAD SIDE: AT 93 MPH (150 kph)
32 lbf (138 N)
- WIND SURVIVAL RATING: 100 MPH (160 kph)



840 10510 ANTENNA
NTS

1



REVISIONS

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ENGINEER'S SEAL

CONTRACTED WITH:
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PERMIT #
DATE: 08/17/16
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DRAWN BY: CC
CHECKED BY: RAS
SCALE: NONE

C6 SHEET 6
OF 7

