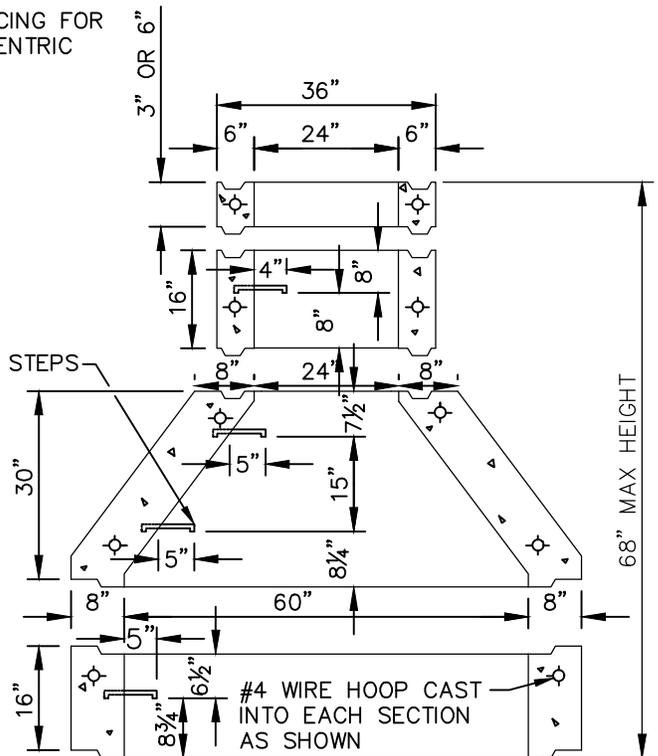


TYPICAL SECTION

48" ID CONCENTRIC  
CONCRETE MANHOLE

\* STEP SPACING FOR  
30" CONCENTRIC  
CONE.



TYPICAL SECTION

60" ID CONCENTRIC  
CONCRETE MANHOLE

**NOTES:**

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GREENBOOK SECTION 303.
2. SEE STD. PLAN 630-3-OC FOR MANHOLE FRAME & COVER DETAIL.
3. SEE STD. PLAN 1507 FOR MANHOLE STEP DETAILS. MAX. SPACING = 17 INCHES.
4. THE MANHOLE PIPES AND GRADE RINGS SHALL BE ARRANGED IN ORDER OF LONGER TO SHORTER LENGTHS FROM BOTTOM TO TOP.
5. MANHOLE DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. PAVEMENT SURFACE SHALL BE FINISHED 1/4 INCH ABOVE MANHOLE FRAME.
7. TOP OF CONE SHALL BE PLACED A MINIMUM OF 6 INCH BELOW BOTTOM OF ROADWAY STRUCTURAL SECTION OR A MINIMUM OF 16 INCHES BELOW FINISH GRADE, WHICHEVER IS GREATEST.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

*Khalid Bazmi*  
Khalid Bazmi, County Engineer

STD. PLAN

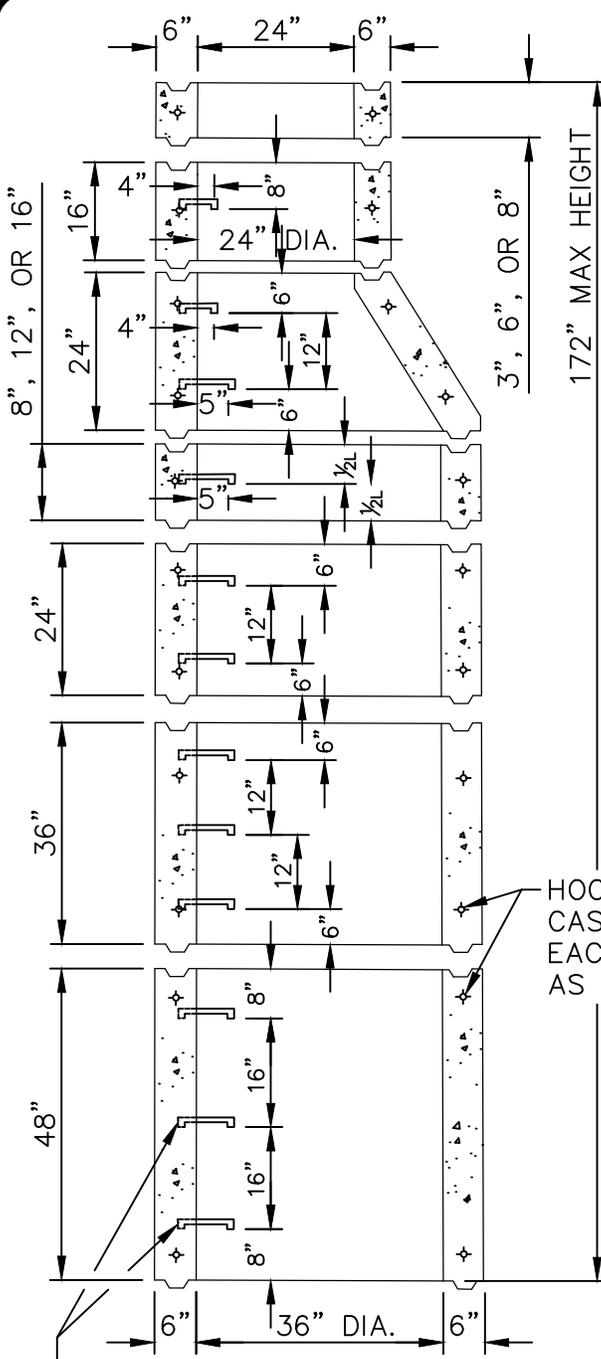
1501

Revision: August 2018

NON-REINF. CONC. CONCENTRIC CONE MANHOLE

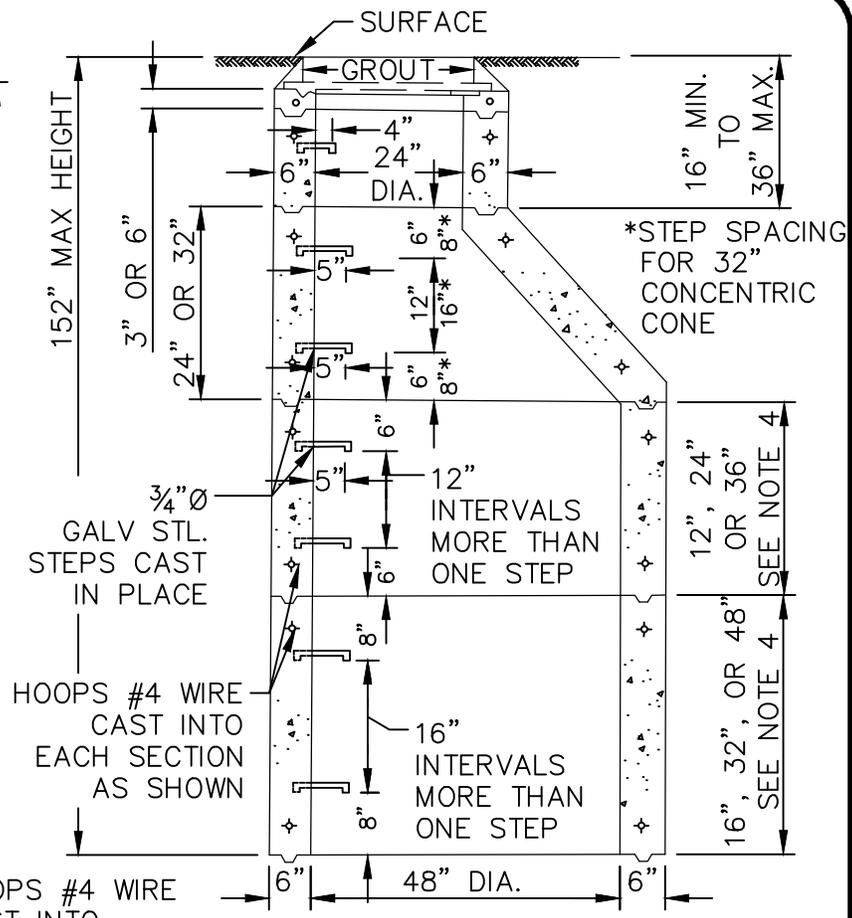
SHT. 1 OF 1





**TYPICAL SECTION 36" ID  
ECCENTRIC CONE MANHOLE**

3/4" Ø GALV.  
STL. STEPS  
CAST IN PLACE



**TYPICAL SECTION 48" ID  
ECCENTRIC CONE MANHOLE**

**NOTES:**

1. SEE STD. PLAN 630-3-OC FOR MANHOLE FRAME AND COVER DETAILS.
2. SEE STD. PLAN 1507 FOR MANHOLE STEPS DETAILS. MAX. SPACING=17 INCHES.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GREENBOOK SECTION 303.
4. THE MANHOLE PIPES AND GRADE RINGS SHALL BE ARRANGED IN ORDER OF LONGER TO SHORTER LENGTHS FROM BOTTOM TO TOP.
5. MANHOLE HEIGHT DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. PAVEMENT TO BE FINISHED 1/4 INCH ABOVE MANHOLE FRAME.
7. TOP OF CONE SHALL BE PLACED A MINIMUM OF 6 INCHES BELOW BOTTOM OF ROADWAY STRUCTURAL SECTION OR A MINIMUM OF 16 INCHES BELOW FINISH GRADE, WHICHEVER IS GREATEST.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved *Khalid Bazmi*  
Khalid Bazmi, County Engineer

Revision: August 2018

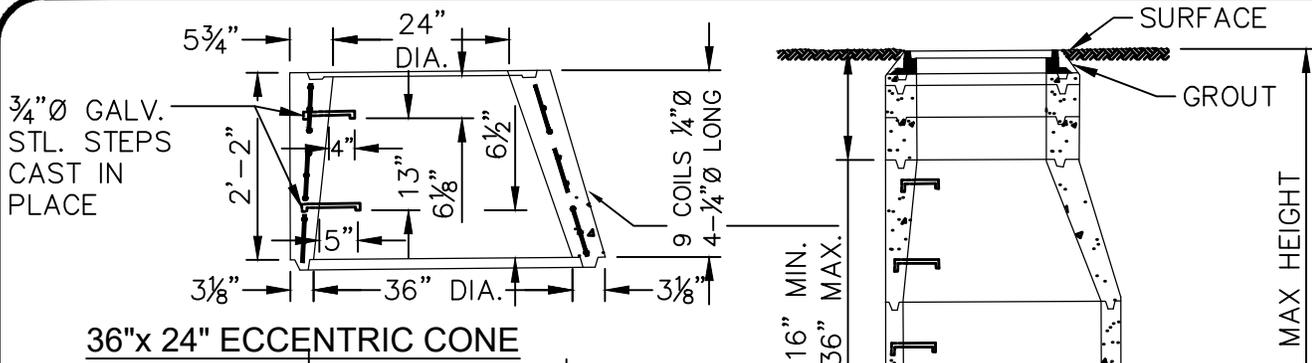
STD. PLAN

**1502**

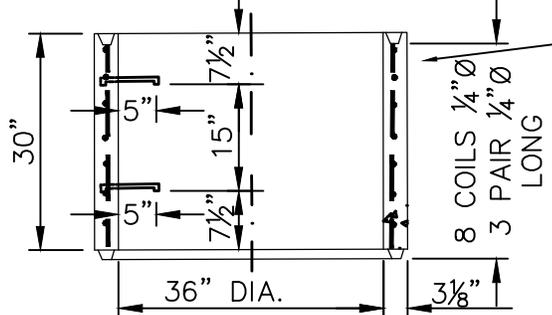
**NON-REINF. CONC. ECCENTRIC CONE MANHOLE**

SHT. 1 OF 1

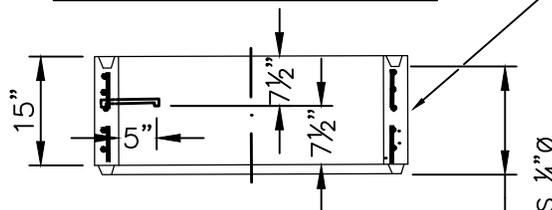




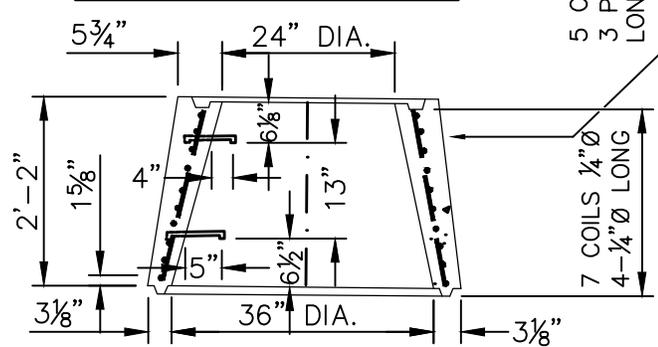
**36"x 24" ECCENTRIC CONE**



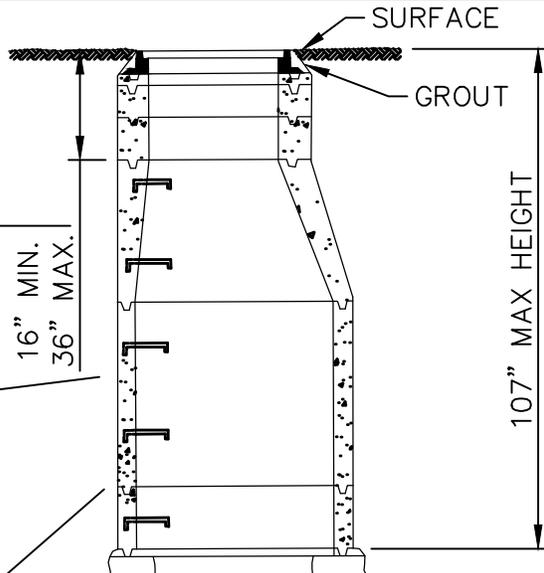
**36"x 30" MANHOLE PIPE**



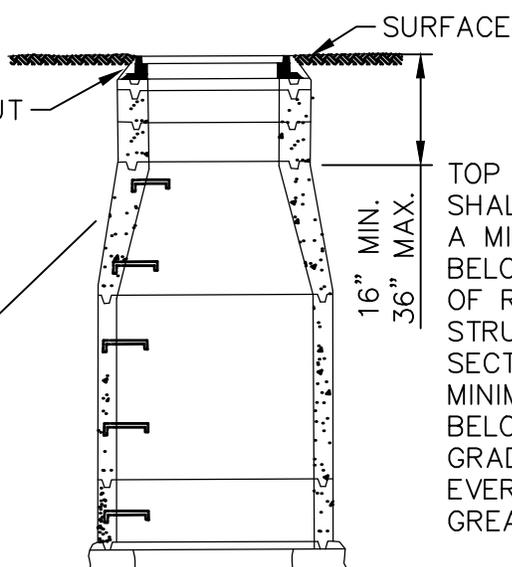
**36"x 15" MANHOLE PIPE**



**36"x 24" CONCENTRIC CONE**



**TYPICAL SECTION  
36" ID ECCENTRIC  
CONE MANHOLE**



**TYPICAL SECTION  
36" ID CONCENTRIC  
CONE MANHOLE**

TOP OF CONE SHALL BE PLACED A MINIMUM OF 6" BELOW BOTTOM OF ROADWAY STRUCTURAL SECTION OR A MINIMUM OF 16" BELOW FINISH GRADE, WHICH—EVER IS GREATEST.

**NOTES:**

1. SEE STD PLAN 630-3-OC FOR MANHOLE FRAME AND COVER DETAILS.
2. SEE STD. PLAN 1507 FOR MANHOLE STEP DETAILS.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GREENBOOK SECTION 303.
4. THE MANHOLE PIPES AND GRADE RINGS SHALL BE ARRANGED IN ORDER OF LONGER TO SHORTER LENGTHS FROM BOTTOM TO TOP.
5. MANHOLE HEIGHT DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. PAVEMENT SHALL BE FINISHED.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved *Khalid Bazmi*  
Khalid Bazmi, County Engineer

Revision: August 2018

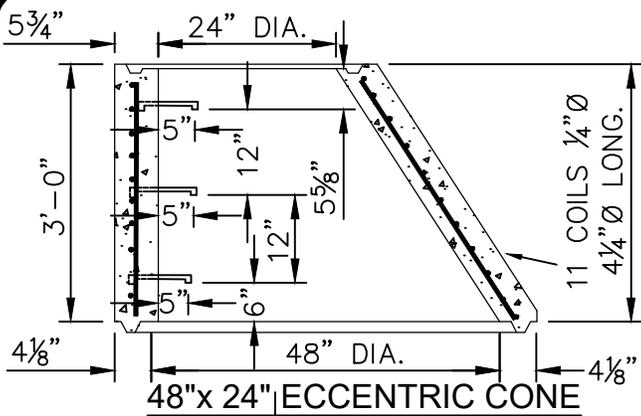
STD. PLAN

**1503**

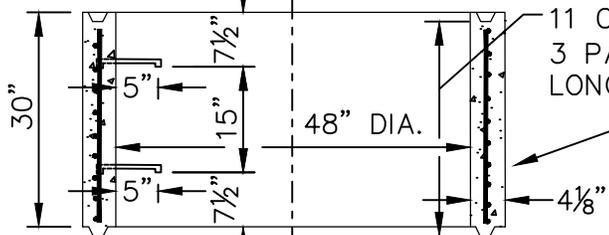
**36" REINFORCED CONCRETE MANHOLE**

SHT. 1 OF 1

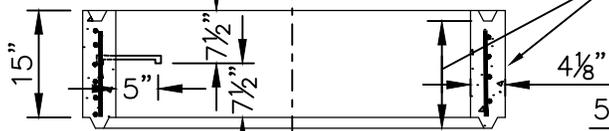




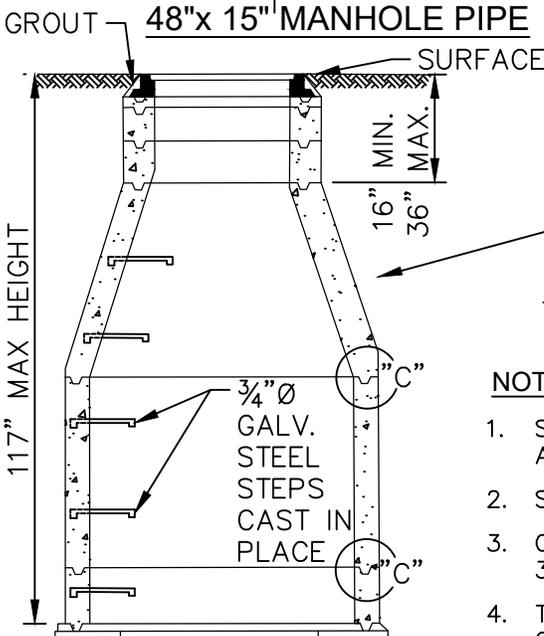
48"x 24" ECCENTRIC CONE



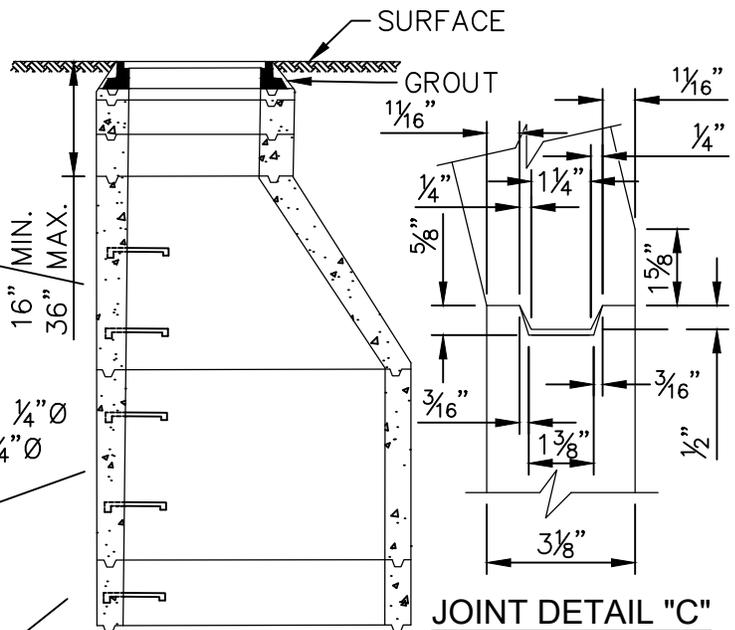
48"x 30" MANHOLE PIPE



48"x 15" MANHOLE PIPE

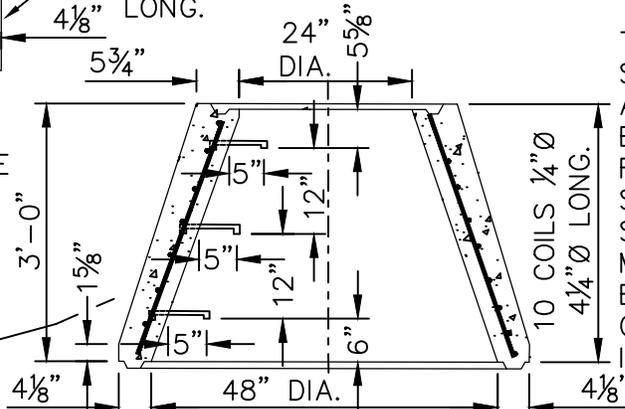


TYPICAL SECTION  
48" ID ECCENTRIC  
CONE MANHOLE



JOINT DETAIL "C"

TYPICAL SECTION  
48" ID ECCENTRIC  
CONE MANHOLE



48"x 24" CONCENTRIC CONE

TOP OF CONE SHALL BE PLACED A MINIMUM OF 6" BELOW BOTTOM OF ROADWAY STRUCTURAL SECTION OR A MINIMUM OF 16" BELOW FINISH GRADE, WHICHEVER IS GREATEST.

NOTES:

1. SEE STD. PLAN 630-3-OC THRU 633-1-OC FOR MANHOLE FRAME AND COVER DETAILS.
2. SEE STD. PLAN 1507 FOR MANHOLE STEP DETAILS.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GREENBOOK SECTION 303.
4. THE MANHOLE PIPES AND GRADE RING SHALL BE ARRANGED IN ORDER OF LONGER TO SHORTER LENGTHS FROM BOTTOM TO TOP.
5. MANHOLE HEIGHT DETAILS SHALL BE SUBMITTED TO THE ENGINEER
6. PAVEMENT TO BE FINISHED 1/4" ABOVE MANHOLE FRAME.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

*Khalid Bazmi*  
Khalid Bazmi, County Engineer

Revision: August 2018

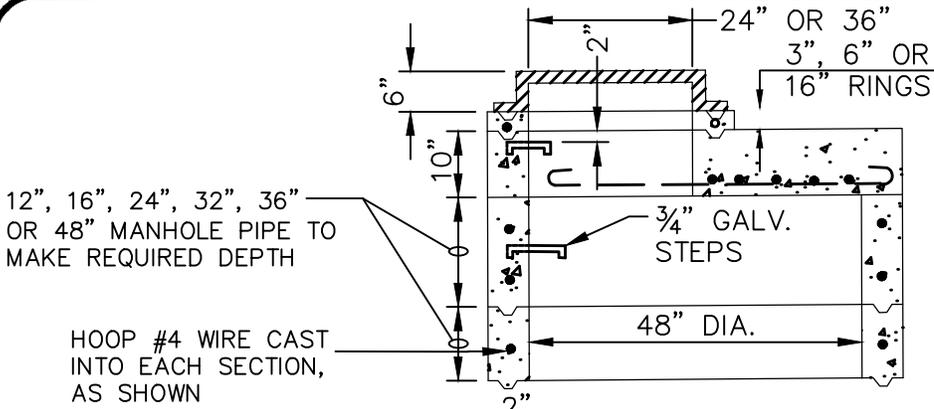
STD. PLAN

1504

48" REINFORCED CONCRETE MANHOLE

SHT. 1 OF 1

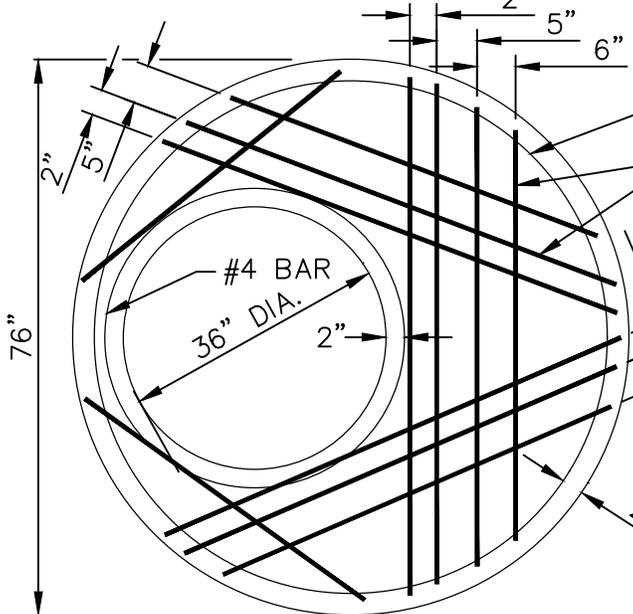




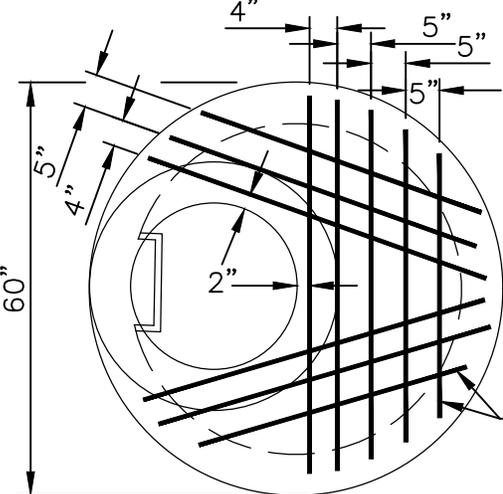
**NOTES:**

1. FOR MANHOLE FRAME & COVER SEE STD. PLAN 630-3-OC & 633-1-OC.
2. FOR MANHOLE STEPS SEE STD. PLAN 1507.
3. FOR RING & MANHOLE PIPE SECTIONS SEE STD. PLAN 1501.
4. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GREENBOOK SECTION 303.

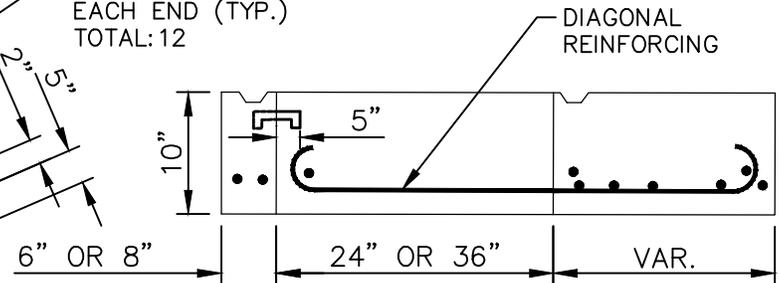
**TYPICAL SECTION  
FLAT TOP MANHOLE**



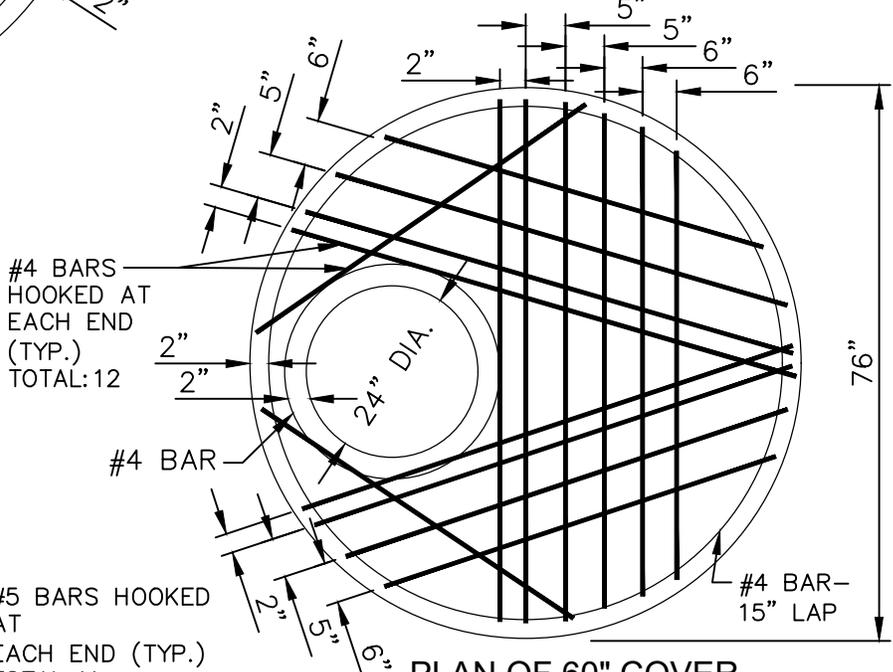
**PLAN OF 60" COVER  
WITH 36" ACCESS**



**PLAN OF 48" COVER  
WITH 24" ACCESS**



**FLAT TOP COVER**



**PLAN OF 60" COVER  
WITH 24" ACCESS**

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

*Khalid Bazmi*  
Khalid Bazmi, County Engineer

STD. PLAN

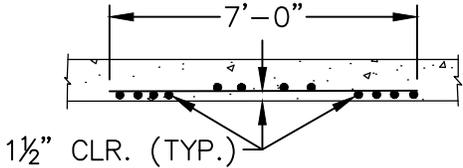
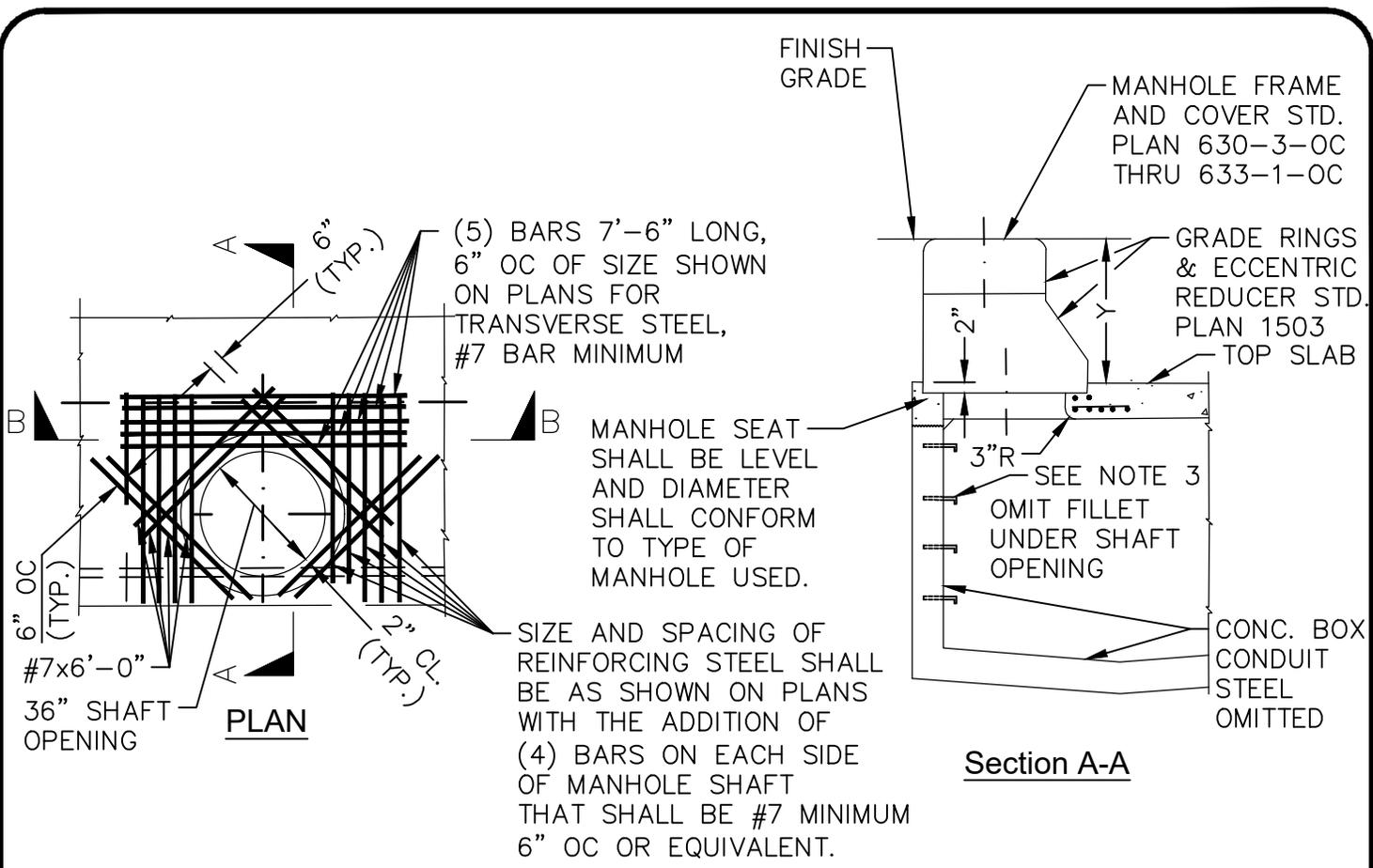
**1505**

Revision: August 2018

**FLAT TOP MANHOLE COVERS**

SHT. 1 OF 1





Section B-B  
(TOP SLAB ONLY)

**NOTES:**

1. MANHOLE SHAFT CENTERLINES ARE SHOWN ON PLANS.
2. ALL REINFORCING STEEL SHOWN SHALL BE PLACED IN BOTTOM FACE ONLY.
3. SEE STD. PLAN 1507 FOR STEP PLACEMENT AND EMBEDMENT DETAILS.
4. ALL STEEL REINFORCEMENT SHALL BE 1 1/2 INCH CLEAR, UNLESS OTHERWISE NOTED
5. WHEN DEPTH Y FROM STREET GRADE TO TOP OF MANHOLE SEAT IS LESS THAN 2 FEET-10 1/2 INCHES IN PAVED STREETS OR 3 FEET 6 INCHES IN UNPAVED STREETS, CONSTRUCT 2-FOOT DIAMETER SHAFT USING CONCRETE RINGS AS PER STD. PLAN 1502, OTHERWISE CONSTRUCT 3-FOOT DIAMETER SHAFT AS SHOWN ON THIS PLAN.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved *Khalid Bazmi*  
Khalid Bazmi, County Engineer

Revision: August 2018

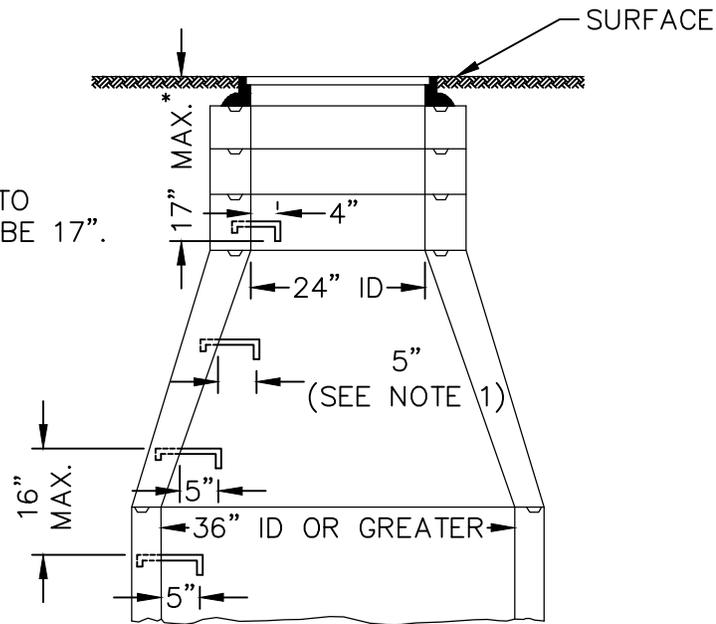
STD. PLAN

1506

REINFORCED CONCRETE BOX MANHOLE

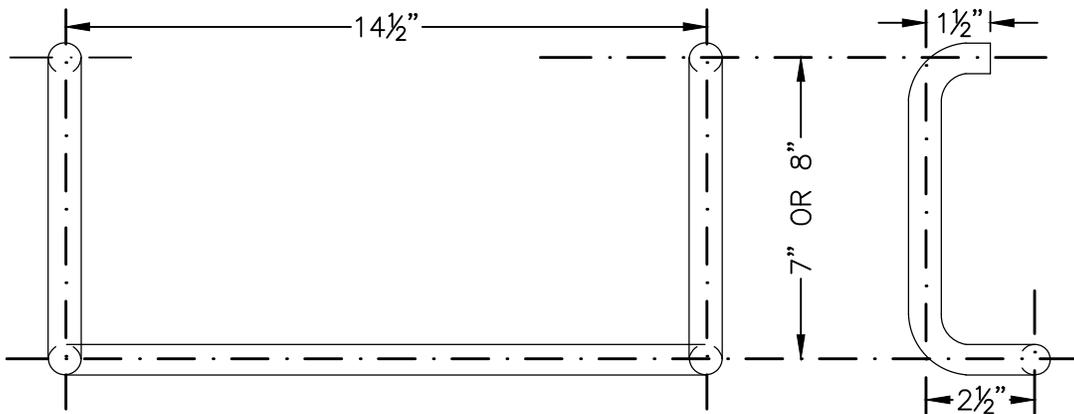
SHT. 1 OF 1





\* THE MAXIMUM DISTANCE FROM SURFACE GRADE TO FIRST STEP SHALL BE 17".

TYPICAL MANHOLE



NOTES:

1. SEE STD. PLAN 1501, 1502, 1503, 1504, 1505, OR 1506 FOR MANHOLE STEP SPACING AND PLACEMENT.
2. STEPS 7 INCHES IN LENGTH SHALL BE USED IN 24 INCH ID UNITS.  
STEPS 8 INCHES IN LENGTH SHALL BE USED IN 36 INCH ID UNITS.  
STEPS 8 INCHES IN LENGTH SHALL BE USED IN 48 INCH ID UNITS.
3. MATERIAL SHALL BE 3/4 INCH DIA. STEEL CONFORMING TO ASTM A615 GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.
4. STEPS SHALL HAVE A MINIMUM OF 4 INCH PROJECTION FROM POINT OF EMBEDMENT AND A MINIMUM OF 3 INCH EMBEDMENT.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

*Khalid Bazmi*  
Khalid Bazmi, County Engineer

Revision: August 2018

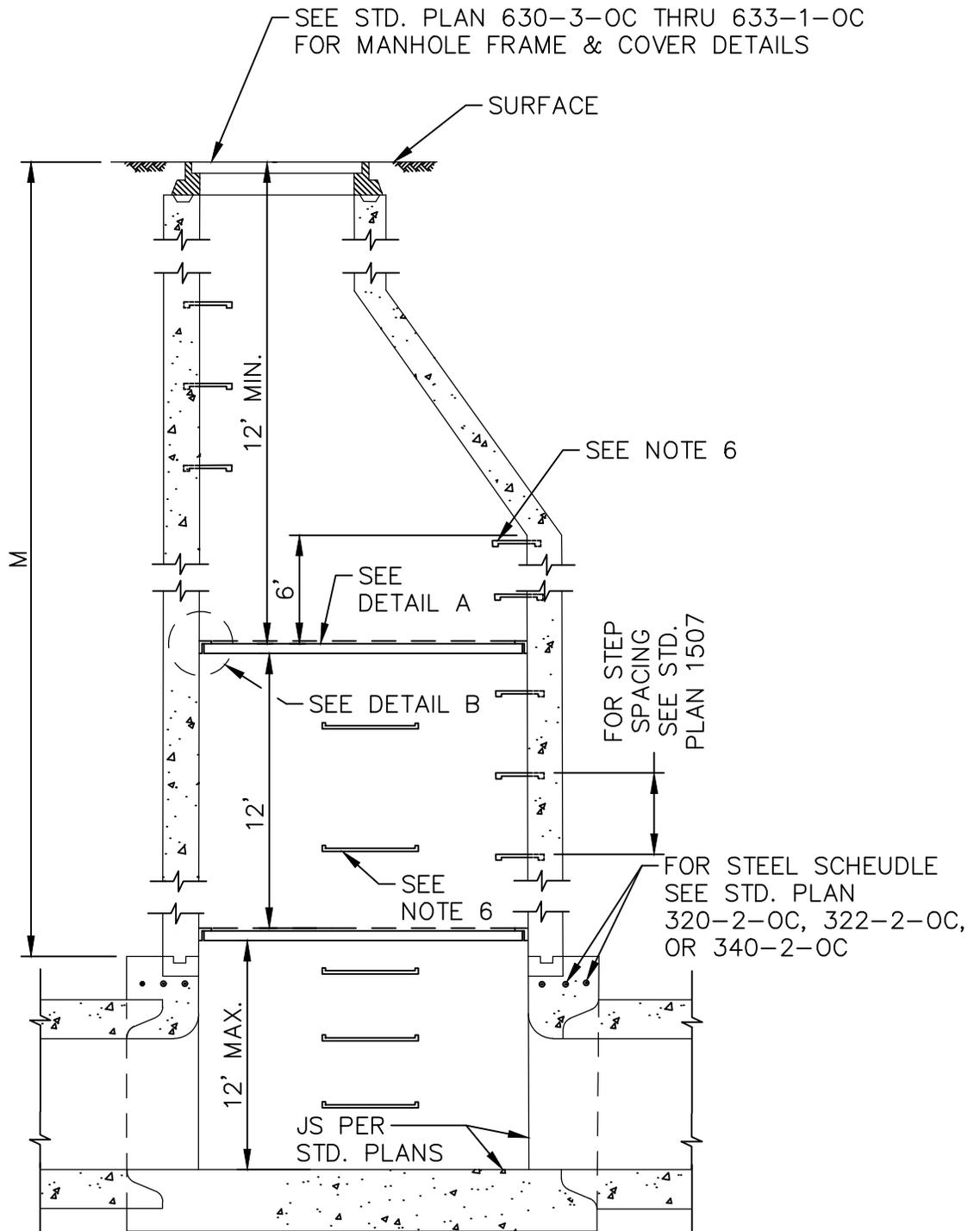
STD. PLAN

1507

MANHOLE STEPS

SHT. 1 OF 1





48" ID ECCENTRIC CONE MANHOLE  
PER STD. PLAN 1504

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved *Khalid Bazmi*  
Khalid Bazmi, County Engineer

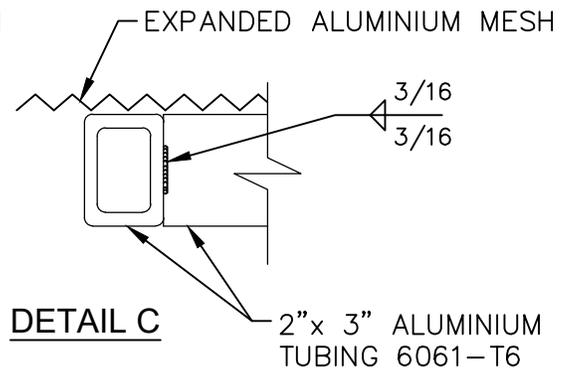
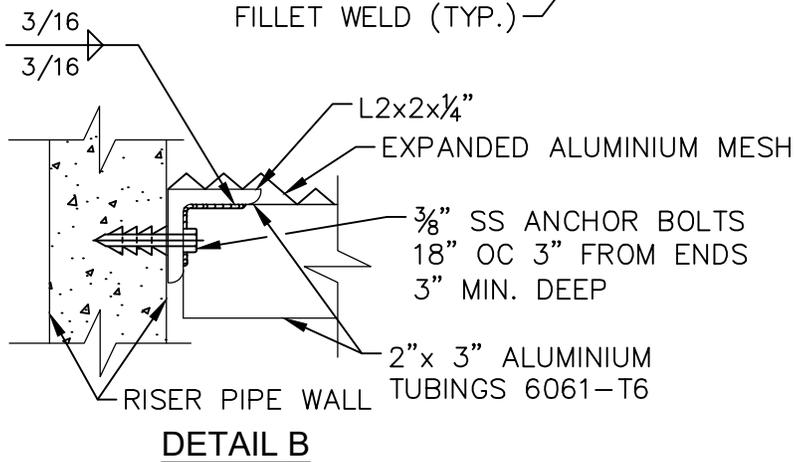
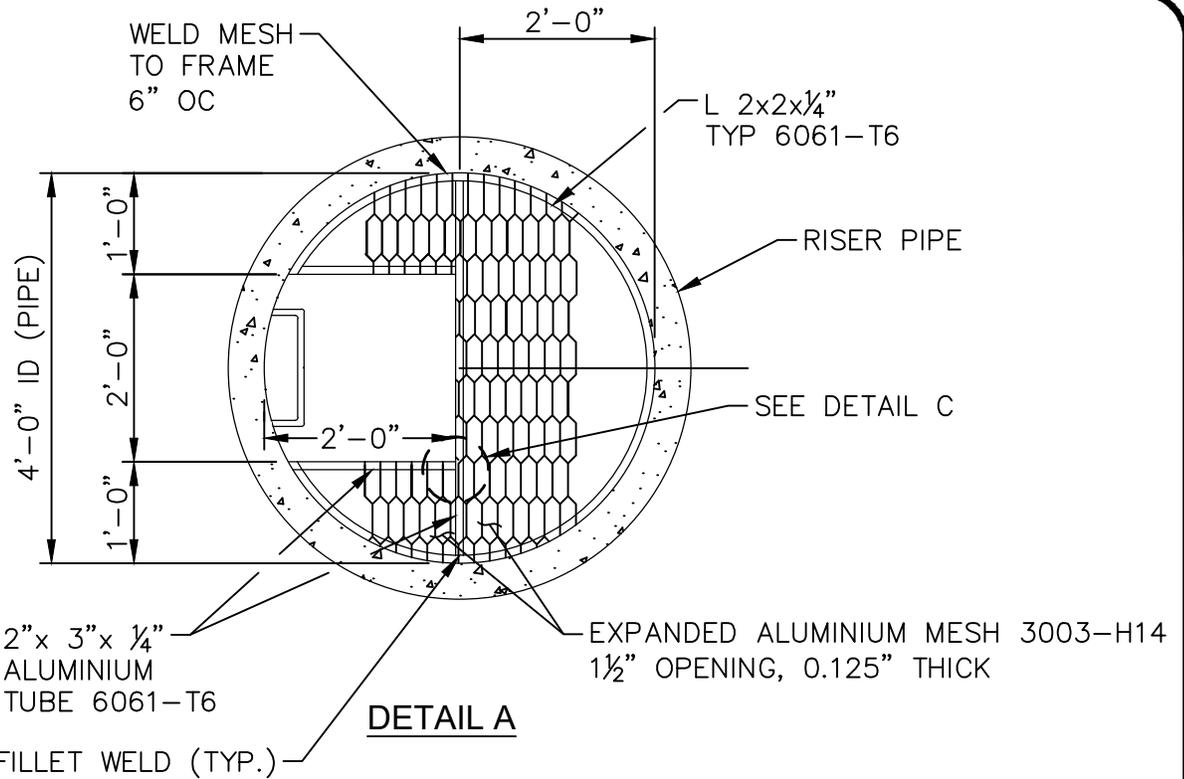
Revision: August 2018

STD. PLAN

1508

DEEP MANHOLE LANDINGS

SHT. 1 OF 2



**NOTES:**

1. SPACING DIMENSIONS BETWEEN LANDINGS TO START AT BOTTOM OF HOLE.
2. ROTATE PLATFORM OPENING 90 DEGREE MINIMUM FROM OPENING BELOW.
3. WELDS TO BE HELI-ARC PER AWS SPECS.
4. FOR BASE SEE STD. PLAN 320-2-OC.
5. FOR PIPE & CONE SEE STD. PLAN 1504.
6. STEPS TO EXTEND MINIMUM FEET ABOVE LANDING FOR USE AS HANDHOLDS.
7. DESIGN LIVE LOAD : 150 PSF.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

*Khalid Bazmi*  
Khalid Bazmi, County Engineer

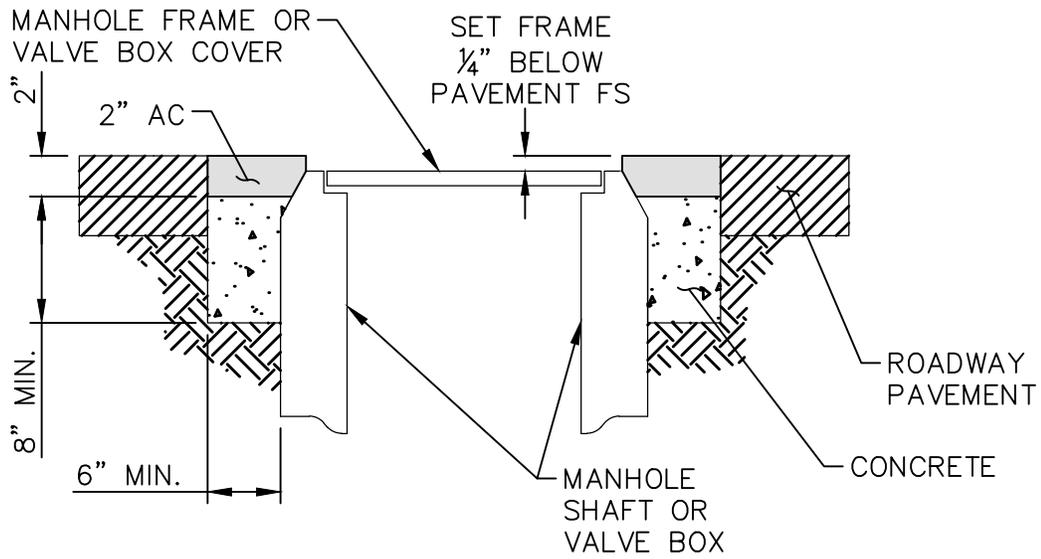
Revision: August 2018

STD. PLAN

1508

DEEP MANHOLE LANDINGS

SHT. 2 OF 2



MANHOLE / VALVE COVER

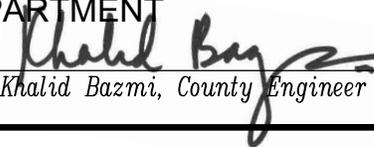
LEGEND:

-  EXISTING PAVEMENT
-  NEW PAVEMENT

NOTE:

1. FRAME AND COVER TO BE SET 1/4 INCH BELOW FINISHED SURFACE OF SURROUNDING ROADWAY PAVEMENT.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved   
Khalid Bazmi, County Engineer

Revision: August 2018

STD. PLAN

1509

MANHOLE/VALVE COVER ADJUSTMENT TO GRADE DETAIL

SHT. 1 OF 1

