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## GENERAL NOTES

1. ALL FIRE HYDRANTS AND VALVE BOXES TO BE SET TO PROPOSED FINAL GRADE WITH STEAMER NOZZLE 24" ABOVE GROUND LEVEL.
2. ALL EXISTING WATER MAINS BEING ABANDONED BY ANY PROJECT ARE TO REMAIN THE PROPERTY OF THE CITY OF EDMOND, AND SHALL BE SALVAGED FOR THE CITY WATER DEPARTMENT.
3. SANITARY SEWER CROSSINGS TO BE DUCTILE IRON PIPE 10' EITHER SIDE OF WATER MAIN, TO BE MEASURED AT RIGHT ANGLES, IN ACCORDANCE WITH EDMOND CITY WATER DEPARTMENT STANDARD AND/OR OKLAHOMA STATE DEPARTMENT OF ENVIROMENTAL QUALITY STANDARDS.
4. SET END OF MAIN STUBS IN CUL-DE-SACS AT A POINT 5'-0" OFF FRONT PROPERTY LINE. THIS POINT BEING IN LINE WITH SIDE PROPERTY LINE.
5. IN INSTANCES WHERE FLOW LINES ARE NOT INDICATED ON THE DRAWINGS, MAIN SHALL BE CONSTRUCTED WITH A MINIMUM OF 4'-0" COVER, OR AS DIRECTED BY THE CITY ENGINEER AND IN ACCORDANCE WITH OKLAHOMA STATE DEPARTMENT OF ENVIRONMENTAL QUALITY STANDARDS.
6. FIRE HYDRANTS SHALL BE LOCATED 5' TO 9' FROM BACK OF CURB. SIDEWALK LOCATIONS TO BE PRE-DETERMINED SO HYDRANTS WILL NOT BE LOCATED IN SIDEWALK.
7. ALL EMBANKMENTS AND BACKFILL SHALL MEET CITY OF EDMOND STANDARD SPECIFICATION 615.03 (g).

D:\CITY WATER ENGINEERING\CONSTRUCTION DRAWINGS\EDMOND\STANDARD CONSTRUCTION DRAWINGS (JULY 2004)\WATER & REVISIONS\WL-01REV1.DWG  
 JULY 26, 2004 REBER

REVISIONS	ND.	DATE	ITEM CHANGED
	1	7/26/2004	HYDRANT

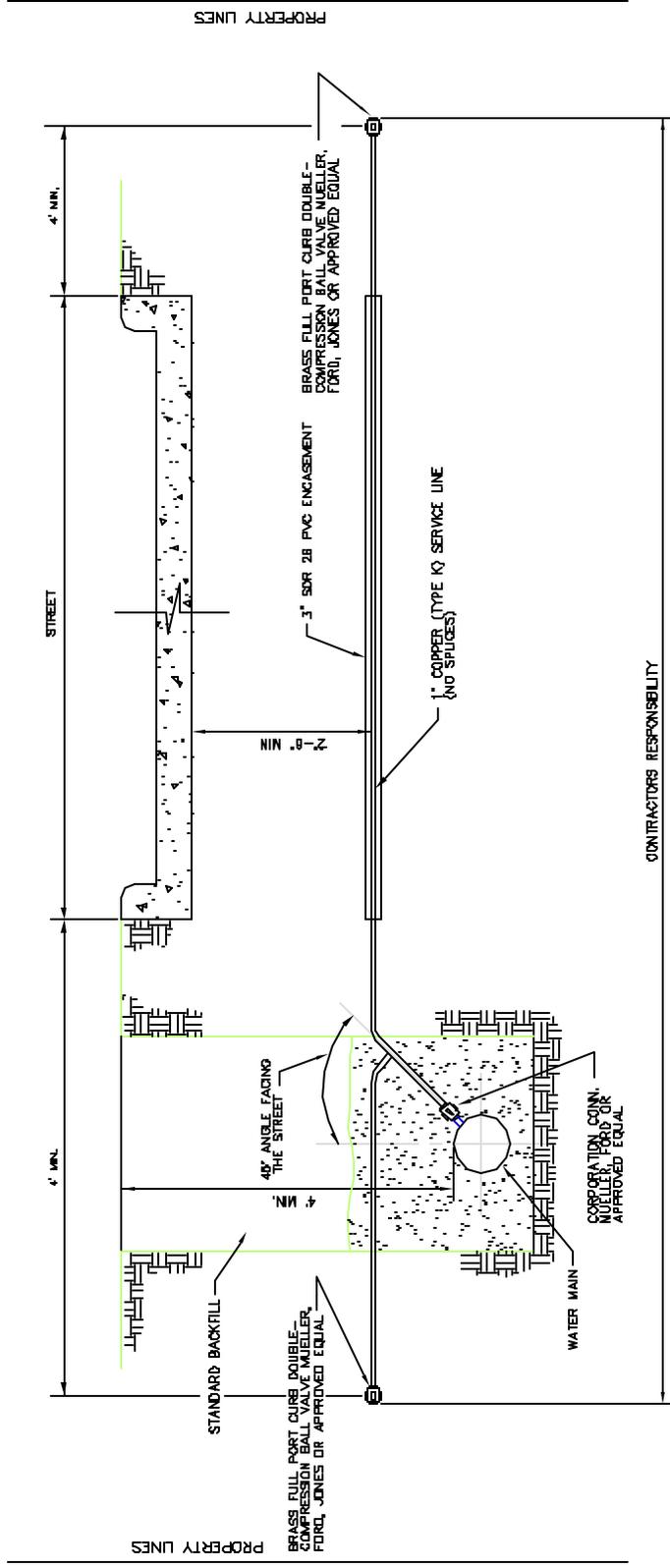
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

## GENERAL NOTES

WATER

SPECIFICATION NO. 615

WL-01 PAGE 1



CONTRACTORS RESPONSIBILITY

- NOTE:
1. PVC ENCASEMENT SHALL BE PROVIDED FOR ALL SERVICE LINES CROSSING UNDER PAVING.
  2. EACH SERVICE LINE LONG OR SHORT, SHALL BE PROVIDED WITH A SEPARATE CORPORATION CONNECTION. USE OF A SINGLE CORPORATION CONNECTION TO PROVIDE SERVICE TO MORE THAN ONE (1) LOCATION IS PROHIBITED.
  3. PLACEMENT OF ONE (1) OR MORE SERVICE LINES WITHIN THE REQUIRED PVC ENCASEMENT WILL BE ALLOWED AS APPROVED BY THE ENGINEER.
  4. ALL CORPORATION CONNECTIONS SHALL BE CONSTRUCTED ON THE STREET SIDE OF WATER MAIN.
  5. COPPER SERVICE LINES ATTACHED TO CAST IRON OR DUCTILE IRON WATER MAIN SHALL BE WRAPPED A MINIMUM OF 3' FROM THE MAIN WITH PLASTIC-BACKED ADHESIVE TAPE, POLYKAN #400 OR SCOTCH-RAP #50 OR EQUAL, 2" IN WIDTH.

REVISIONS	NO.	DATE	ITEM CHANGED
	1	7-26-2004	COPPER SERVICE

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TYPICAL WATER SERVICE LINE**

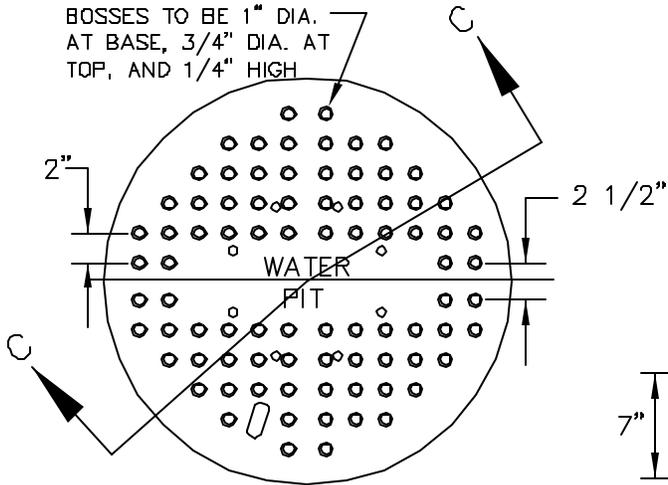
<b>WATER</b>	
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WL-02	PAGE 2



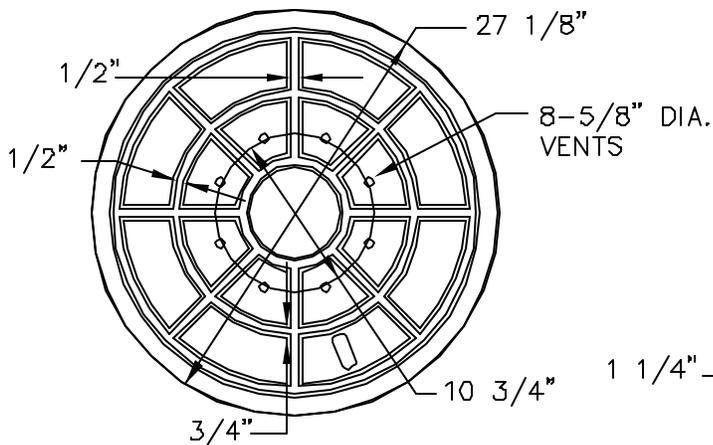
## GENERAL NOTES

1. CASTINGS SHALL CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR GRAY IRON CASTINGS SERIAL DESIGNATION A 48-29.
2. WHEN EACH COVER IS PLACED IN ANY POSITION IN ITS ASSOCIATED FRAME, THE SIDE PLAY IN ANY DIRECTION SHALL NOT EXCEED ONE-EIGHTH (1/8) INCH.
3. NO WORDING OR MARKINGS OF ANY KIND, OTHER THAN THOSE SHOWN ON THIS PLAN, WILL BE PERMITTED ON THESE CASTINGS.
4. PICK HOLES REQUIRED ON ALL TYPES OF LIDS.
5. ALTERNATE LID TYPES ACCEPTED AS APPROVED BY THE CITY OF EDMOND.

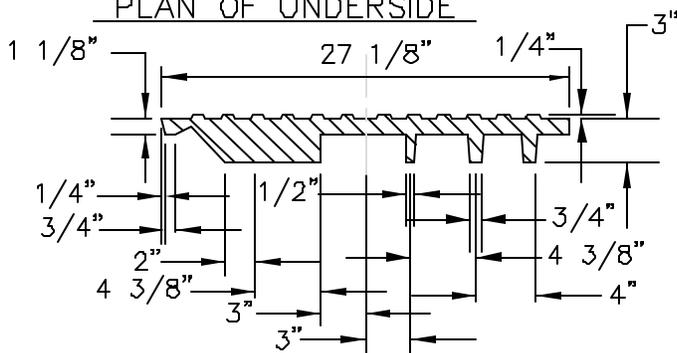
BOSSSES TO BE 1" DIA.  
AT BASE, 3/4" DIA. AT  
TOP, AND 1/4" HIGH



PLAN OF TOP



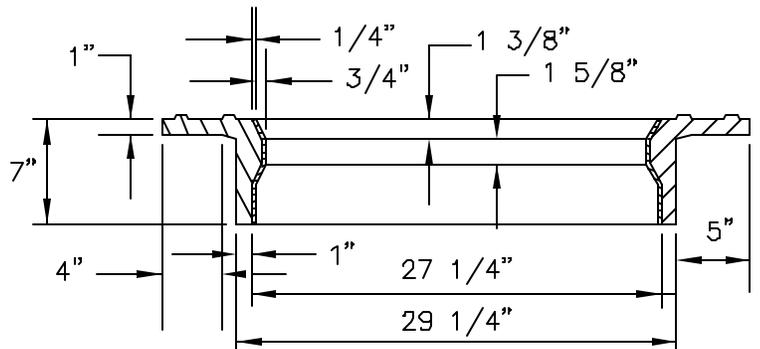
PLAN OF UNDERSIDE



SECTION C-C

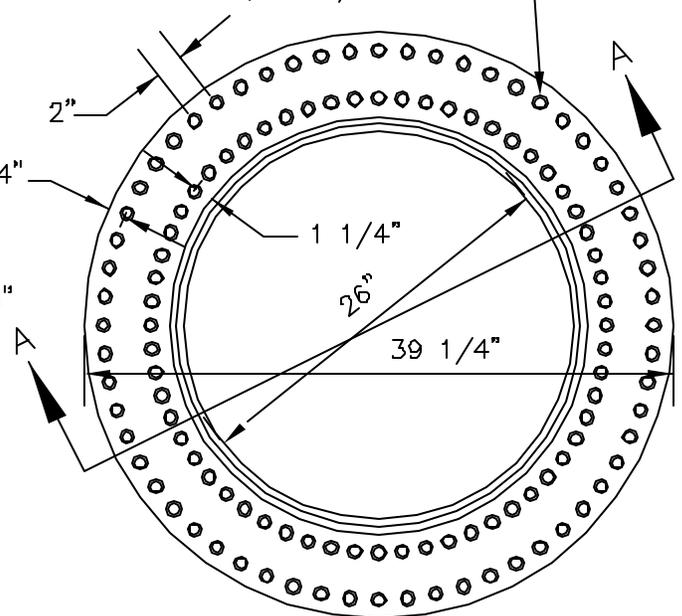
STANDARD COVER

CASTING WEIGHTS  
THE AVERAGE WEIGHT OF CASTINGS  
WILL NOT BE LESS THAN 98% OF  
WEIGHTS SHOWN BELOW.  
WEIGHTS OF INDIVIDUAL CASTINGS  
WILL NOT BE LESS THAN 95% OF  
WEIGHTS SHOWN BELOW.  
RING ONLY 392 LBS.  
COVER ONLY 251 LBS.  
TOTAL 643 LBS.



SECTION A-A

BOSSSES TO BE 1" DIA.  
AT BASE, 3/4" DIA. AT  
TOP, AND 1/4" HIGH



PLAN OF TOP

STANDARD FRAME

REVISIONS	NO.	DATE	ITEM CHANGED

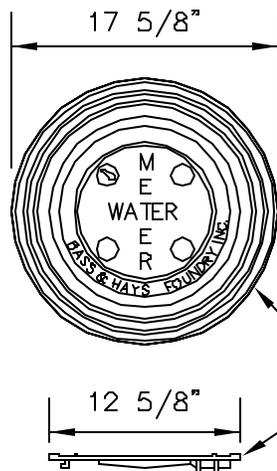
**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**METER PIT FRAME  
& COVER**

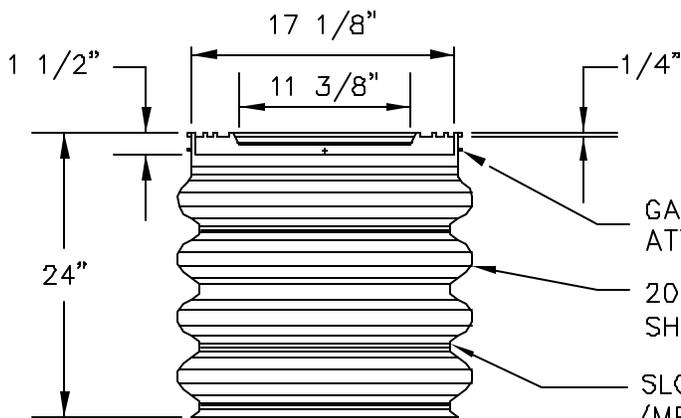
WATER

SPECIFICATION NO. 616

WL-04 PAGE 4



LID & RING SHALL BE CAST IRON



GALVANIZED BOLTS FOR ATTACHING RING TO CAN

20 GAUGE GALVANIZED SHELL (CORRUGATED)

SLOTTED (EACH SIDE) (METER BOX SHALL BE SLOTTED TO ACCOMMODATE SIDE ENTRY SERVICE LINE, ALL CUTS SHALL BE PAINTED WITH 2 COATS OF ALUMINUM PAINT.)

METER BOX RING & COVER

(MATERIALS PURCHASED THROUGH CITY OF EDMOND)  
(UNLESS OTHERWISE PROVIDED FOR IN THE PLANS.)

CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
1115 230 PM 10/20/04

REVISIONS	NO.	DATE	ITEM CHANGED

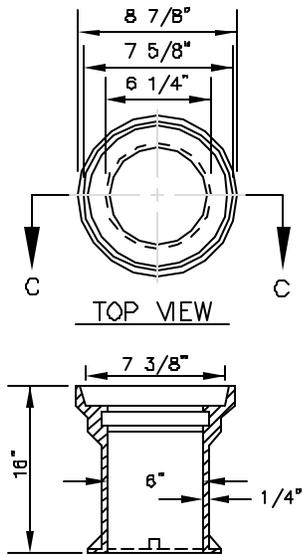
**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**METER BOX RING  
& COVER**

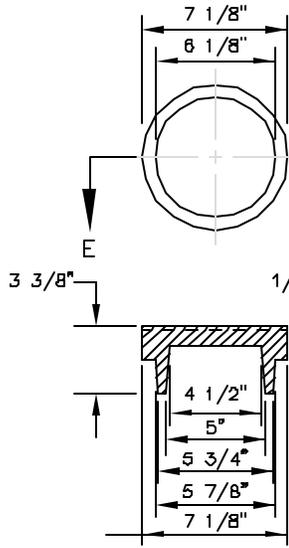
**WATER**

SPECIFICATION NO. 616

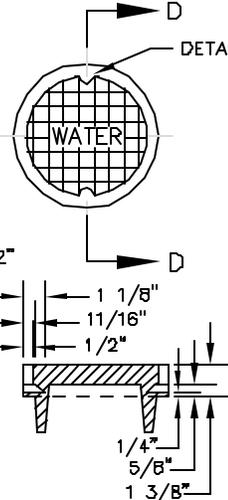
WL-05 PAGE 5



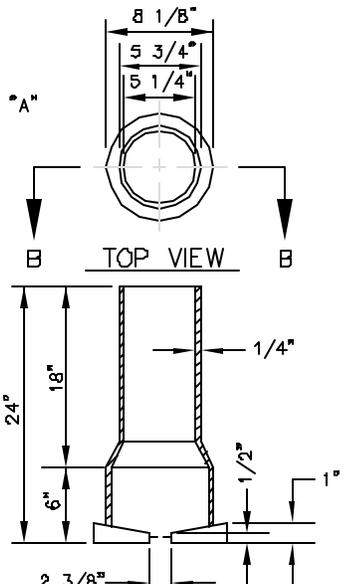
SECTION C-C  
TOP SECTION  
WEIGHT 45 LBS



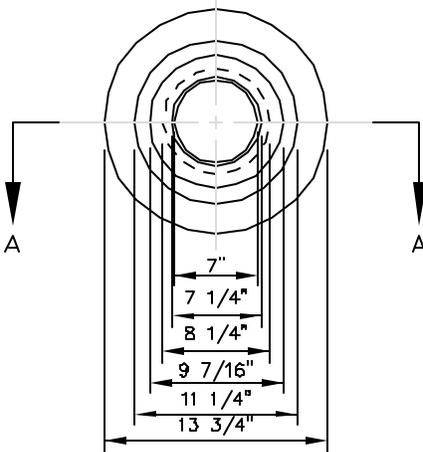
SECTION E-E  
TOP VIEW



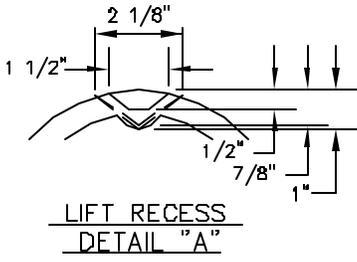
SECTION D-D  
TOP VIEW



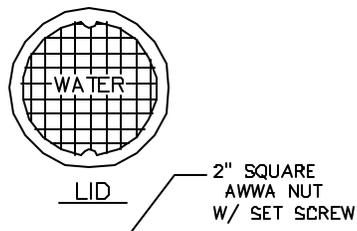
SECTION B-B  
EXTENSION SECTION  
WEIGHT 30 LBS



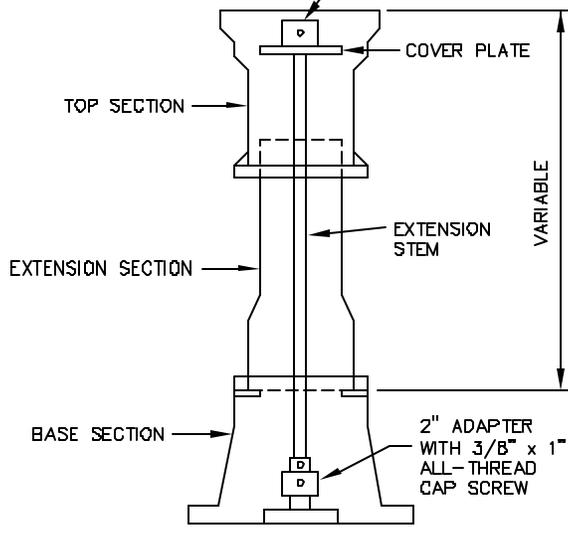
SECTION A-A  
BASE SECTION  
WEIGHT 35 LBS



LIFT RECESS  
DETAIL "A"



LID  
2" SQUARE  
AWWA NUT  
W/ SET SCREW



ASSEMBLED VALVE BOX  
ASSEMBLED CASTING  
WEIGHT 110 LBS

NOTE: NO PVC VALVE BOXES SHALL BE USED

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

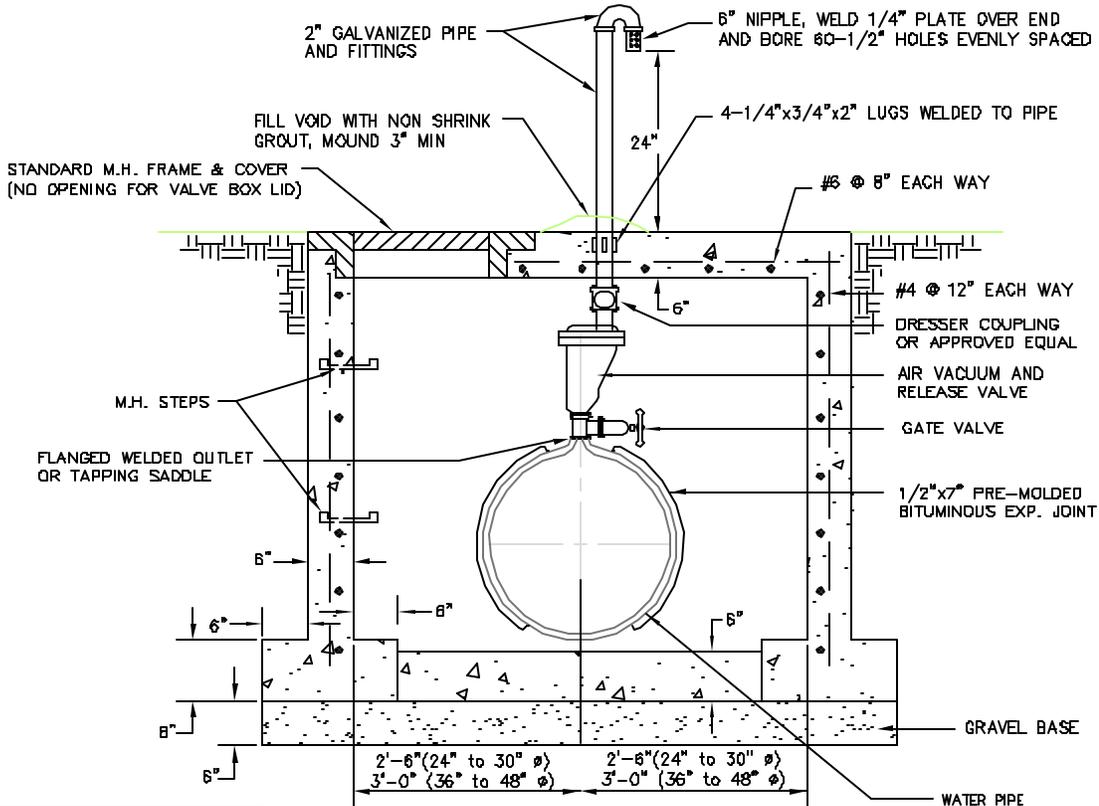
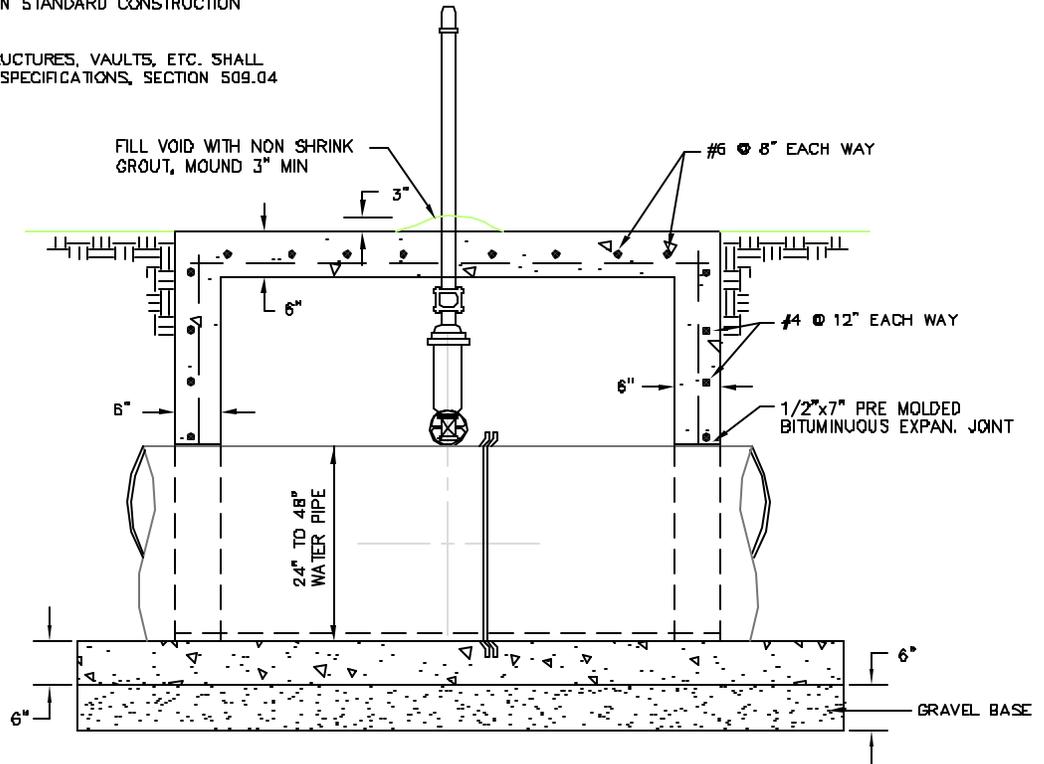
CAST IRON VALVE  
BOX & LID

WATER  
SPECIFICATION NO. 616  
WL-05 PAGE 6

AS SUPPLEMENT TO SPECIFICATION NO. 616 - 05/11/11  
 DEC. 11, 1988 2:58 PM WJG:RDL

**NOTE:**

- UNLESS OTHERWISE REQUIRED, DENSITY TESTING SHALL BE PERFORMED ON AVERAGE OF EVERY 200 L.F. OF TRENCH EACH 5 FT. OF DEPTH. DENSITY REQUIREMENTS FOR TRANSVERSE CROSSINGS UNDER PAVING OR DRIVEWAYS SHALL COMPLY WITH THE SCHEDULE SHOWN ON STANDARD CONSTRUCTION DETAIL PC-D7.
- PLACEMENT OF CONCRETE STRUCTURES, VAULTS, ETC. SHALL COMPLY WITH THE STANDARD SPECIFICATIONS, SECTION 509.04
- SEE PLANS FOR VALVE SIZE.



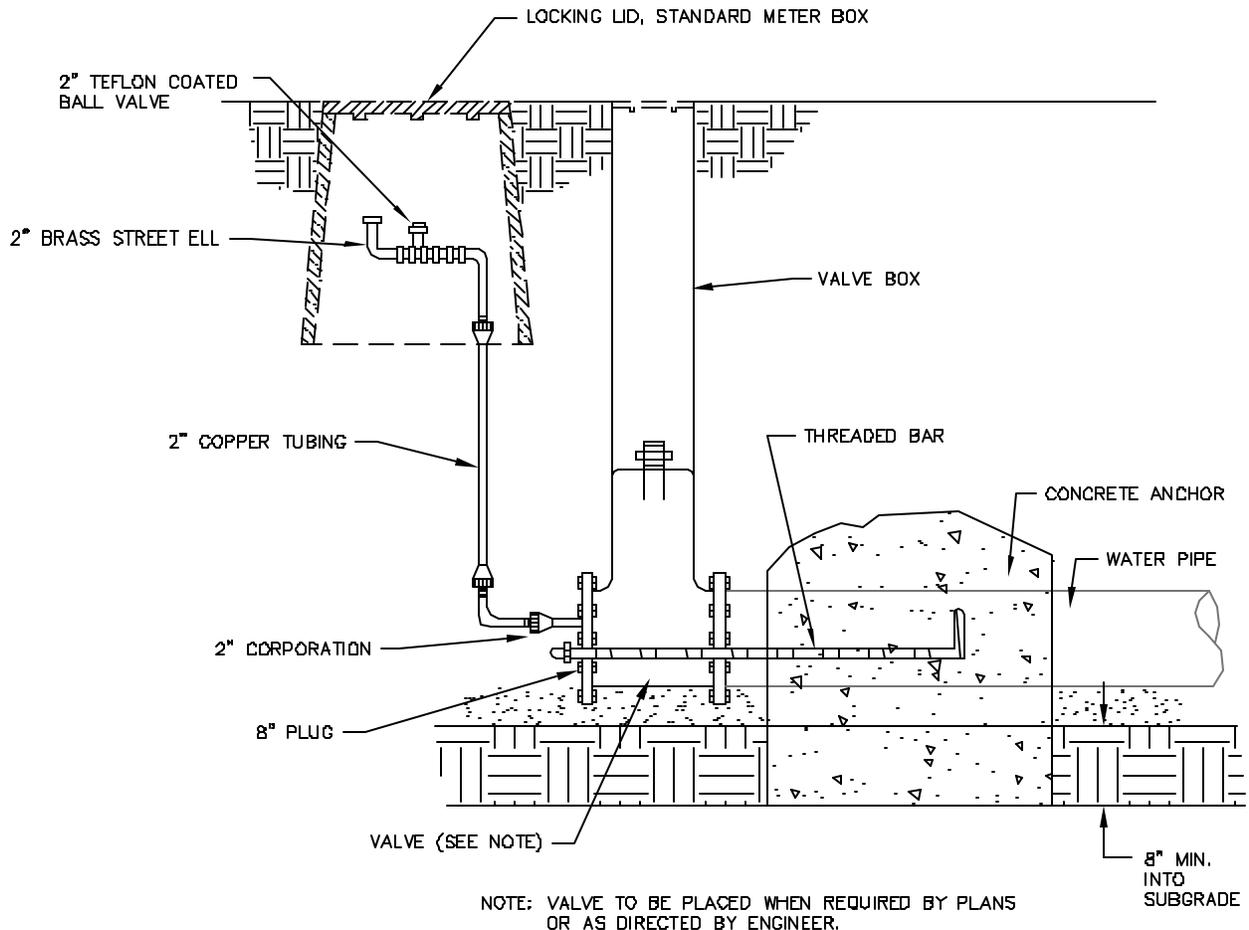
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

**AIR VACUUM &**  
**AIR RELEASE VALVE**

**WATER**  
 SPECIFICATION NO. 616  
 WL-07 PAGE 7

AS APPROVED BY: [Signature] DATE: 11/16/07  
 DCL: T. WILSON 12:26 PM 11/16/07



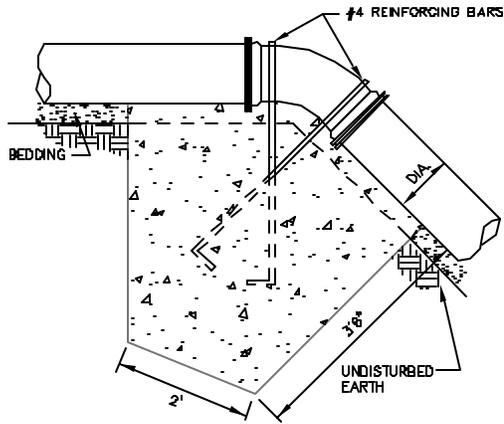
AS SHOWN ON DRAWING REVISED BY: J.A.G. - 08/10/08  
 OCT. 1, 1989 2:30 PM - 10/08/08

REVISIONS	NO.	DATE	ITEM CHANGED

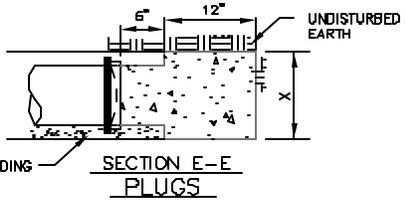
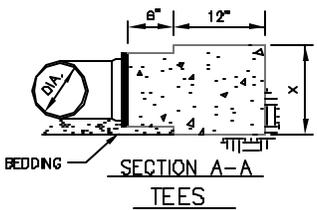
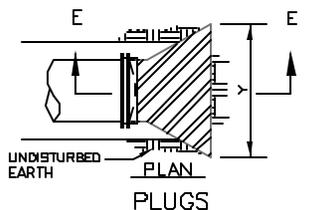
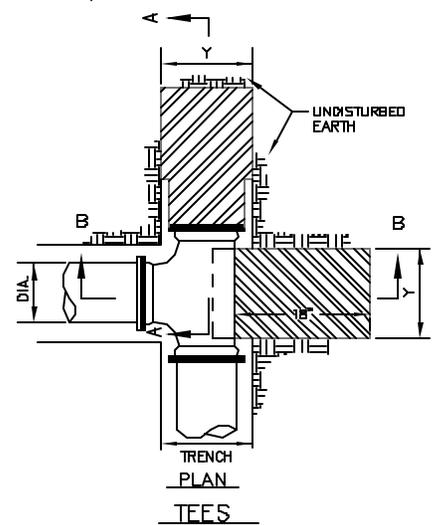
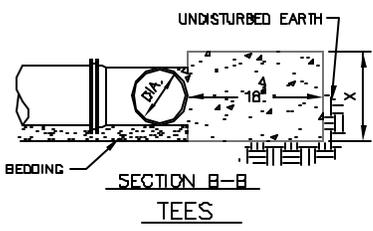
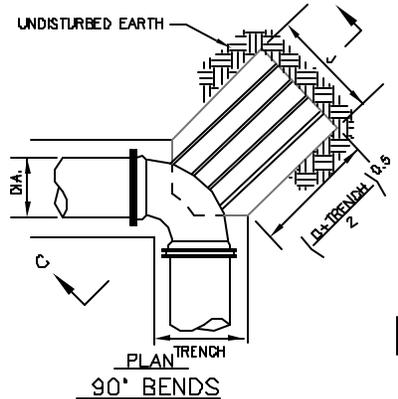
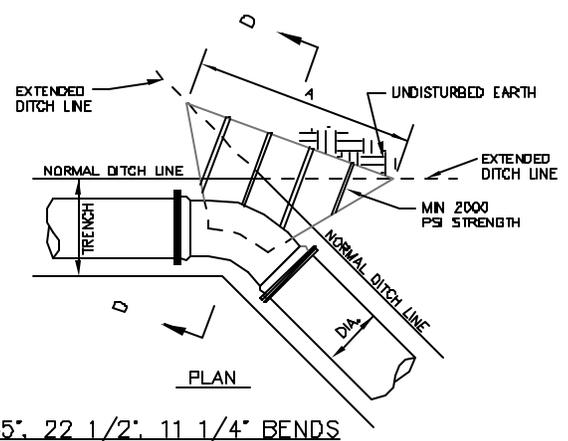
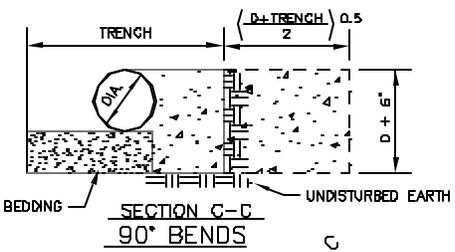
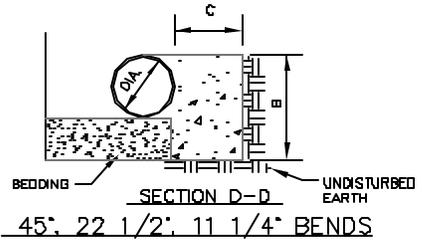
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**2" BLOW OFF CONNECTION**

<b>WATER</b>	
SPECIFICATION NO. 616	
WL-08	PAGE 8



SECTION FOR VERTICAL BENDS (14" OR SMALLER)  
45°, 22 1/2°, 11 1/4° BENDS



PIPE DIA.	TRENCH WIDTH	DIMENSIONS FOR CONCRETE ANCHORAGES												
		45° BEND			22 1/2° BEND			11 1/4° BEND			TEE OR PLUG		90° BEND	
		A	B	C	A	B	C	A	B	C	X	Y	J	J
36	60	7'-0"	3'-0"	2'-6"	8'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	3'-4"	4'-0"	6'-5"	
30	54	5'-8"	2'-6"	2'-0"	4'-8"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	3'-0"	3'-6"	5'-8"	
24	44	3'-9"	2'-6"	1'-10"	2'-6"	2'-6"	1'-1"	2'-0"	2'-6"	1'-0"	3'-0"	3'-3"	4'-9"	
20	39	2'-9"	2'-2"	1'-8"	2'-0"	2'-2"	1'-1"	2'-0"	2'-2"	0'-11"	2'-0"	3'-0"	4'-1"	
18	37	2'-3"	2'-0"	1'-6"	2'-0"	2'-0"	1'-1"	2'-0"	2'-0"	0'-11"	2'-0"	2'-3"	3'-9"	
16	35	2'-0"	1'-10"	1'-5"	2'-0"	1'-10"	1'-1"	2'-0"	1'-10"	0'-11"	2'-0"	1'-6"	3'-6"	
12	30	2'-0"	1'-6"	1'-4"	2'-0"	1'-6"	1'-0"	2'-0"	1'-6"	0'-11"	2'-0"	1'-0"	3'-0"	
10	28	2'-0"	1'-4"	1'-4"	2'-0"	1'-4"	1'-0"	1'-10"	1'-4"	0'-11"	1'-8"	1'-0"	2'-8"	
B	26	2'-0"	1'-2"	1'-4"	1'-10"	1'-2"	1'-0"	1'-6"	1'-2"	0'-11"	1'-6"	0'-10"	2'-4"	
B	24	2'-0"	1'-1"	1'-4"	1'-8"	1'-1"	1'-0"	1'-6"	1'-0"	0'-11"	1'-4"	0'-8"	2'-1"	

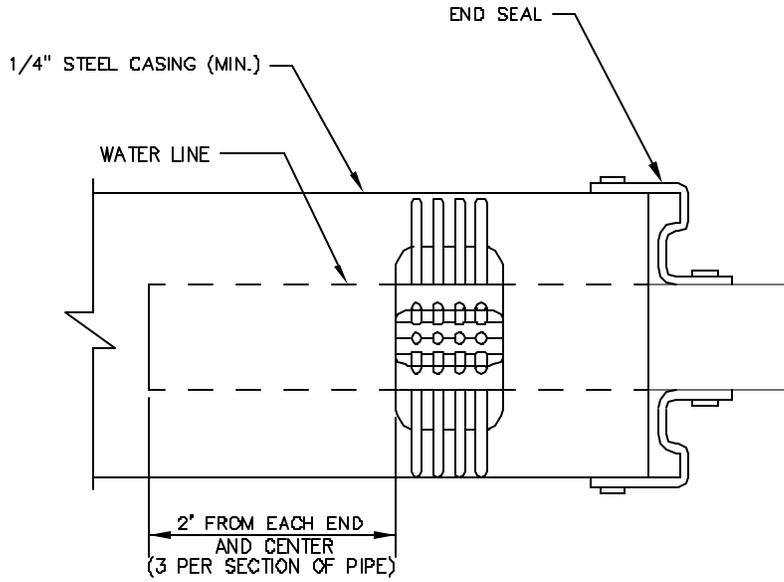
REVISIONS	NO.	DATE	ITEM CHANGED
	1	7/26/2004	*X'S UNDER TEE/PLUGS

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

HORIZONTAL CONCRETE ANCHORAGES

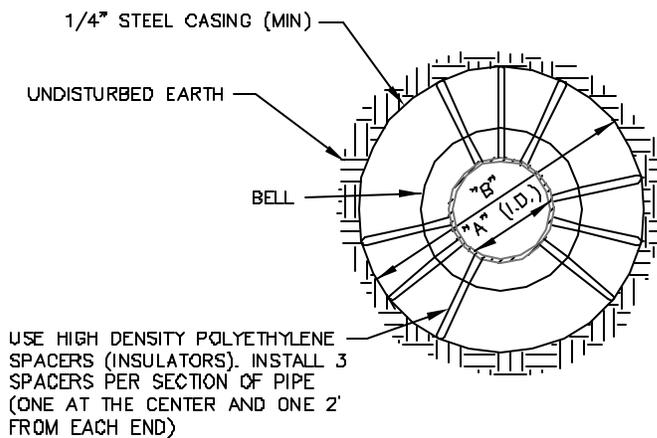
WATER  
SPECIFICATION NO. 616  
WL-09 PAGE 9

10.000 WATER FORMS STANDARD CONSTRUCTION DRAWINGS STANDARD CONSTRUCTION DRAWINGS (JULY 2004) NEW & REVISED WL-06/08/09/10  
 JULY 26, 2004 REBER



PIPE & STEEL CASING SCHEDULE	
PIPE DIAMETER "A"	CASING DIAMETER "B"
6"	16"
8"	18"
10"	20"
12"	24"
16"	30"
18"	30"
24"	42"

- NOTES:
- 1.) CONSTRUCT WATER TIGHT PLUG AT EACH END OF CASING.
  - 2.) ALL WATER LINE JOINTS WITHIN CASING SHALL BE RESTRAINED.



REVISIONS	ND.	DATE	ITEM CHANGED
1	1	7/26/2004	JOINT RESTRAINT

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

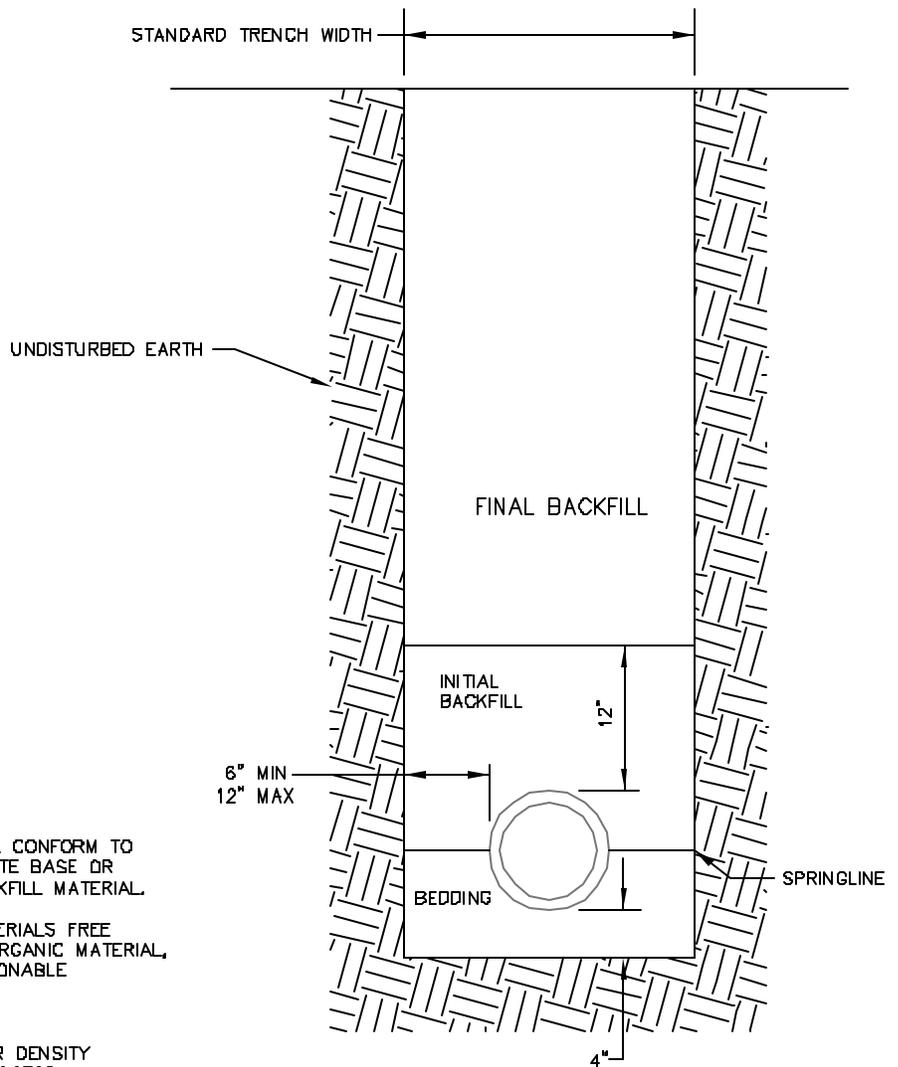
STANDARD ROAD  
 CROSSING BORE

WATER	
SPECIFICATION NO. 615	
WL-10	PAGE 10

D:\DWG\WATER FORMS\STANDARD CONSTRUCTION DRAWINGS\STANDARD CONSTRUCTION DRAWINGS (JULY 2004)\NEW & REVISED\WL-10RS.DWG  
 JULY 26, 2004 REBER



INSIDE PIPE DIAMETER (IN.)	STANDARD TRENCH WIDTH (IN.)
6	18
8	24
10	30
12	30
15	36
18	36
21	42
24	42
27	48
30	48
36	54
42	60
48	66



**NOTES:**

1. STANDARD BEDDING MATERIAL (SBM) SHALL CONFORM TO CITY OF EDMOND 703.01, TYPE A AGGREGATE BASE OR CITY OF EDMOND 529, LOW STRENGTH BACKFILL MATERIAL.
2. SELECT FILL CONSISTS OF EXCAVATED MATERIALS FREE OF ROCKS LARGER THAN 2-1/2 INCHES, ORGANIC MATERIAL, RUBBISH, DEBRIS, AND ALL OTHER OBJECTIONABLE MATERIAL.
3. COMPACTION REQUIREMENTS:
  - A. PAVED AREAS: 95% STANDARD PROCTOR DENSITY
  - B. NON-PAVED AREAS: 90% STANDARD PROCTOR DENSITY IF COVER DEPTH < 10'. 95% STANDARD PROCTOR DENSITY IF COVER DEPTH > 10'.

BEDDING MATERIALS				
DESCRIPTION	PAVED AREAS		NON-PAVED AREAS	
	FLEXIBLE PIPE	RIGID PIPE	FLEXIBLE PIPE	RIGID PIPE
FINAL BACKFILL	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	EXCAVATED MATERIAL	EXCAVATED MATERIAL
INITIAL BACKFILL	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	COVER DEPTH ≤ 10' - SELECT FILL COVER DEPTH ≥ 10' - STAND. BEDDING MATERIAL	SELECT FILL
BEDDING	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)

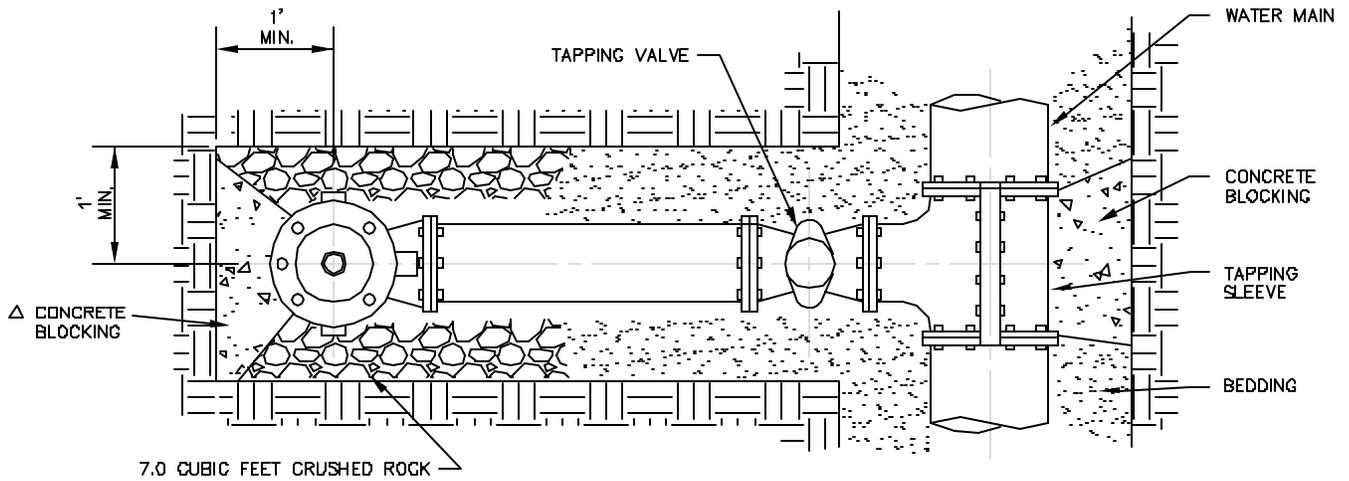
REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

**PIPE**  
**INSTALLATION**

**WATER**  
 SPECIFICATION NO. 616  
 WL-11A PAGE 11A

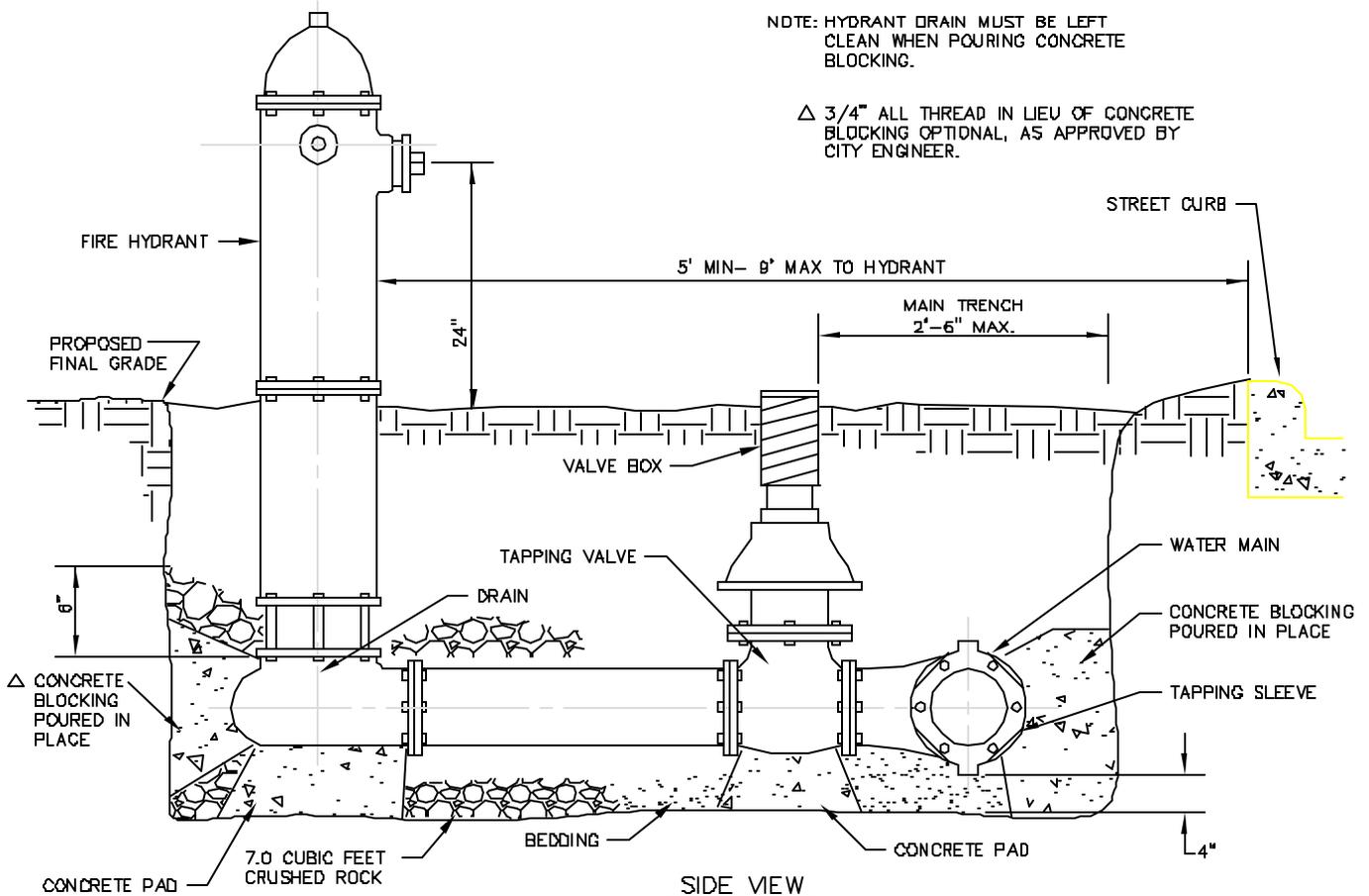
AS SHOWN ON DRAWING, SEE CITY OF EDMOND SPECIFICATIONS FOR STANDARD PIPE MATERIALS



TOP VIEW

NOTE: HYDRANT DRAIN MUST BE LEFT CLEAN WHEN POURING CONCRETE BLOCKING.

△ 3/4" ALL THREAD IN LIEU OF CONCRETE BLOCKING OPTIONAL, AS APPROVED BY CITY ENGINEER.



SIDE VIEW

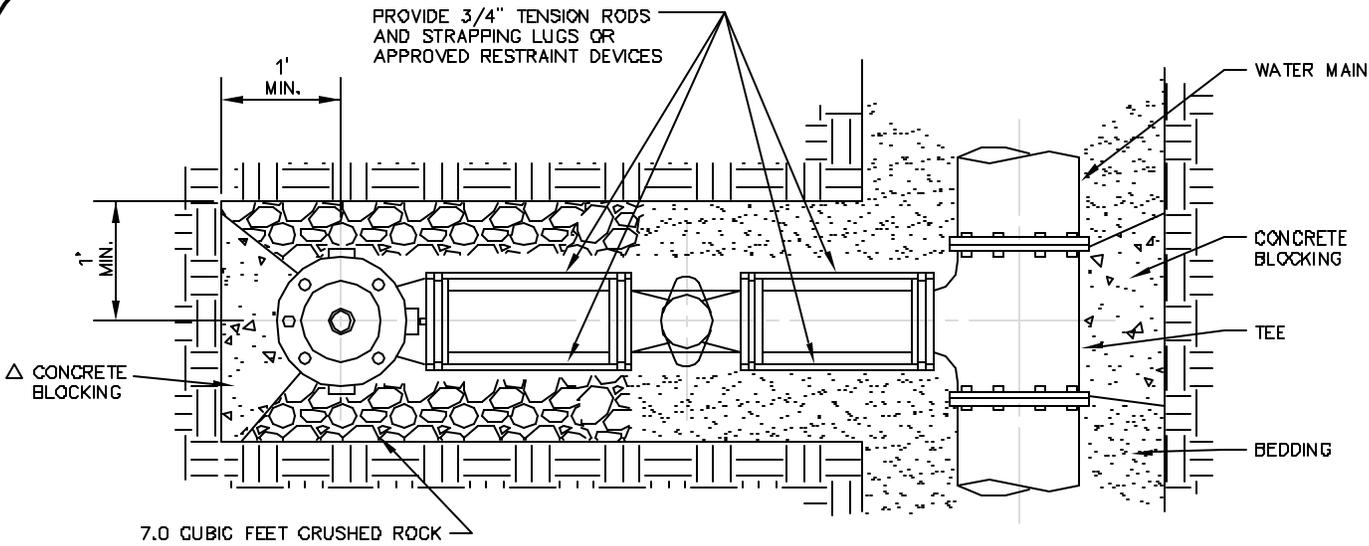
50' DIA WATER FORMER STANDARD CONSTRUCTION DRAWINGS (JULY 2004) NEW & REVISED V. 12/20/04  
 JULY 2004 REBER

REVISIONS	ND.	7/26/2004	STEAMER HEIGHT
		DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**INSTALLATION OF FIRE  
 HYDRANT ON EX. MAIN**

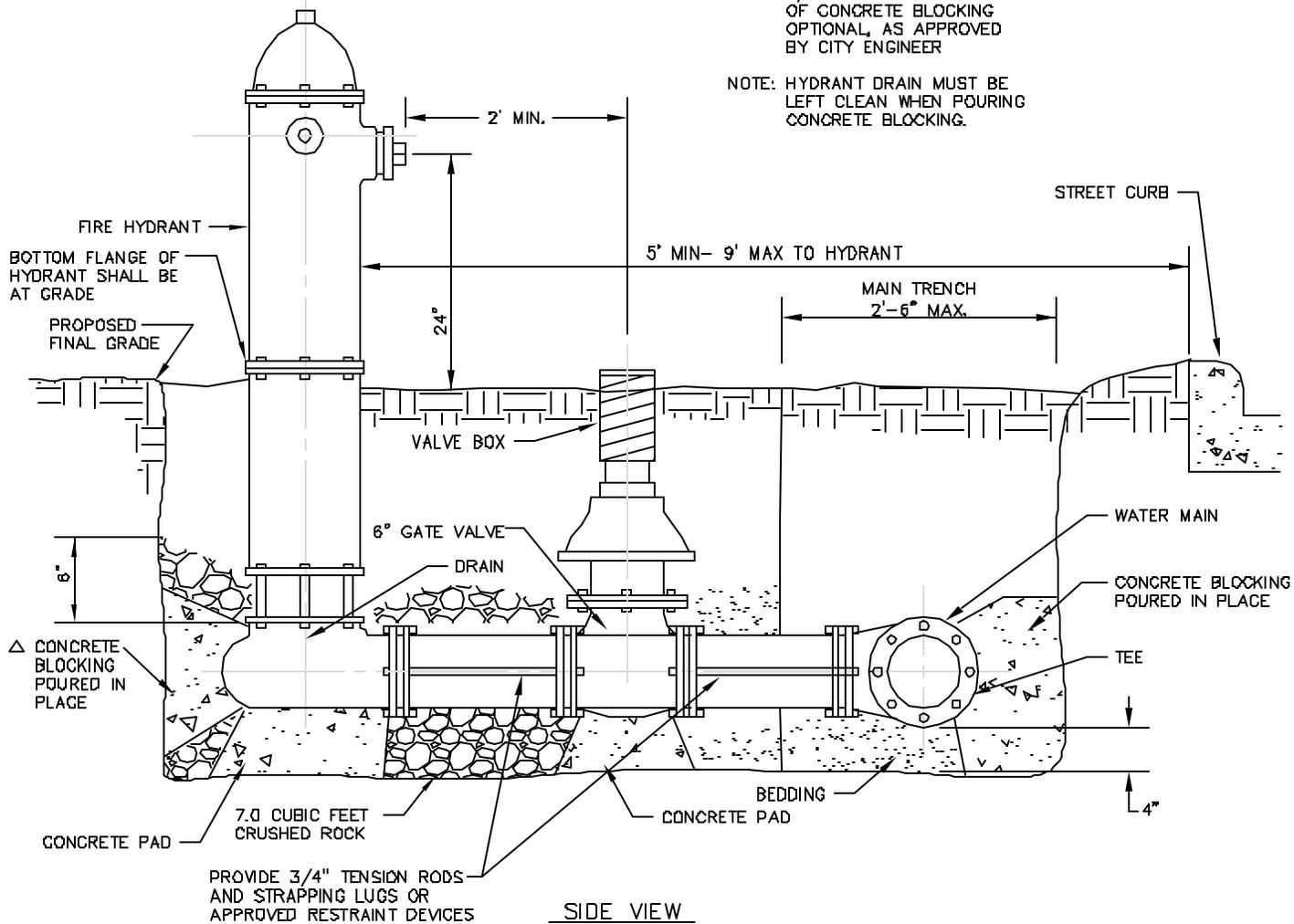
<b>WATER</b>	
SPECIFICATION NO. 616	
WL-12	PAGE 12



TOP VIEW

△ 3/4" ALL THREAD IN LIEU OF CONCRETE BLOCKING OPTIONAL, AS APPROVED BY CITY ENGINEER

NOTE: HYDRANT DRAIN MUST BE LEFT CLEAN WHEN POURING CONCRETE BLOCKING.



SIDE VIEW

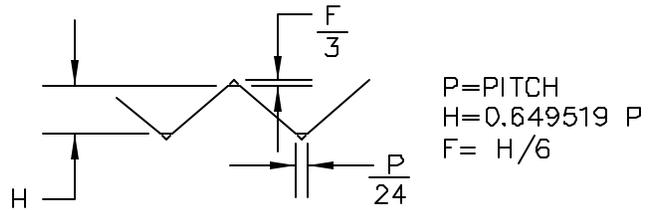
REVISIONS	ND.	DATE	STEAMER HEIGHT	ITEM CHANGED
	1	7/26/2004		

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

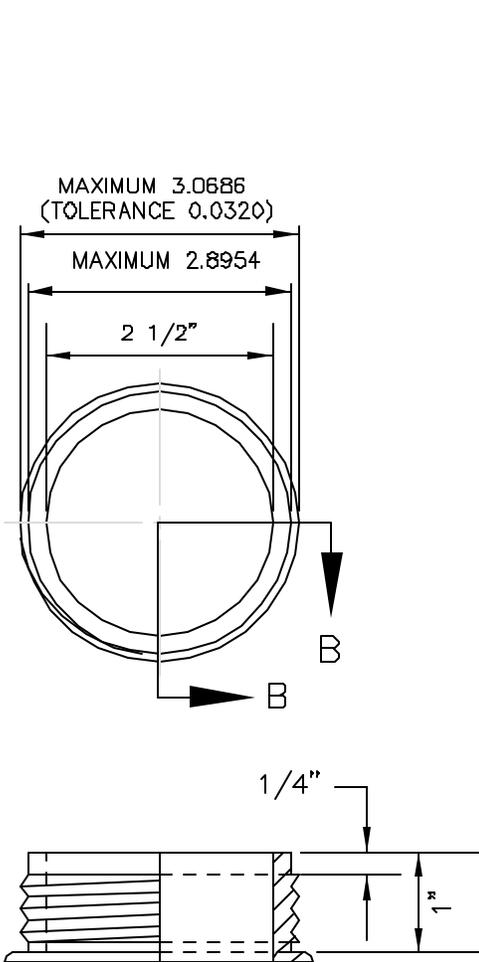
INSTALLATION OF FIRE  
HYDRANT ON NEW MAIN

WATER  
SPECIFICATION NO. 616  
WL-13 PAGE 13

10-0000 WATER FORMER APPROVED CONSTRUCTION DRAWINGS (JULY 2007) NEW & REVISED WL-13RS/010  
 JULY 26, 2004 REBER

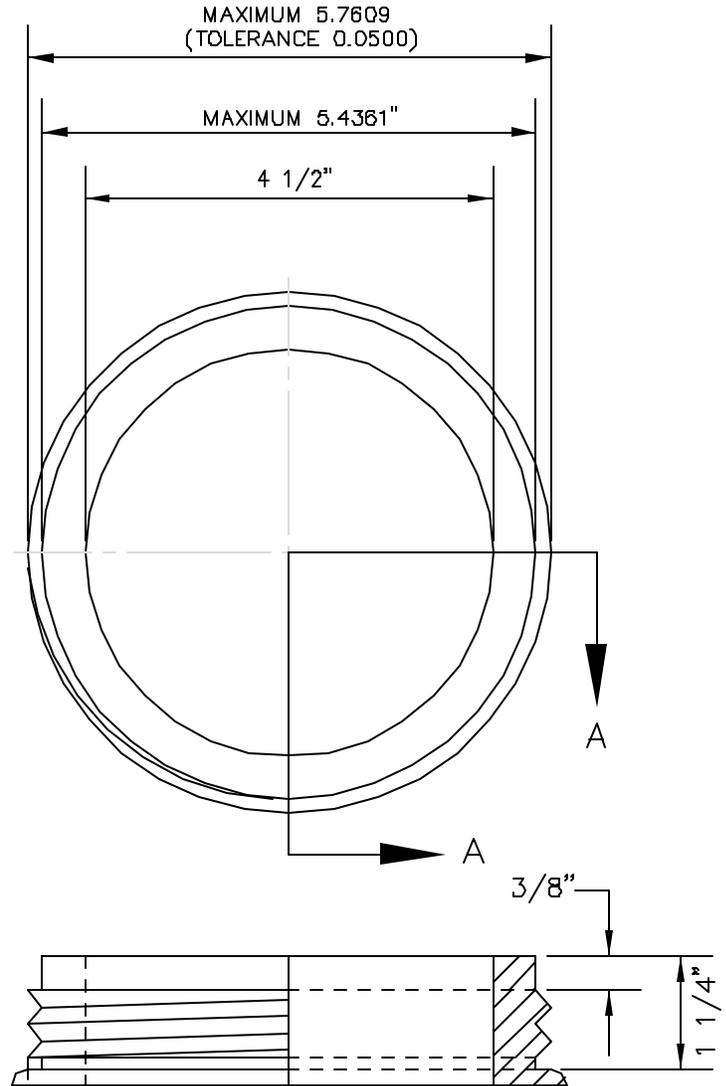


TYPICAL THREAD DETAIL



SECTION B-B  
2 1/2" NOZZLE

7 1/2 THREADS PER INCH.  
 PITCH DIA. 2.9820  
 MAXIMUM.  
 (TOLERANCE 0.016)



SECTION A-A  
4 1/2" NOZZLE

4 THREADS PER INCH.  
 PITCH DIA. 5.5985  
 MAXIMUM.  
 (TOLERANCE 0.025)

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

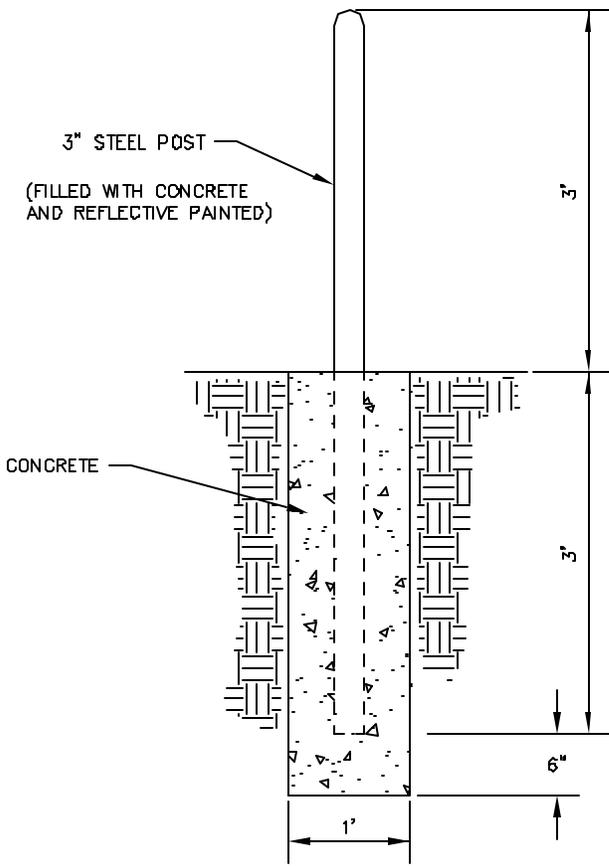
FIRE HYDRANT  
 NOZZLE THREADS

WATER

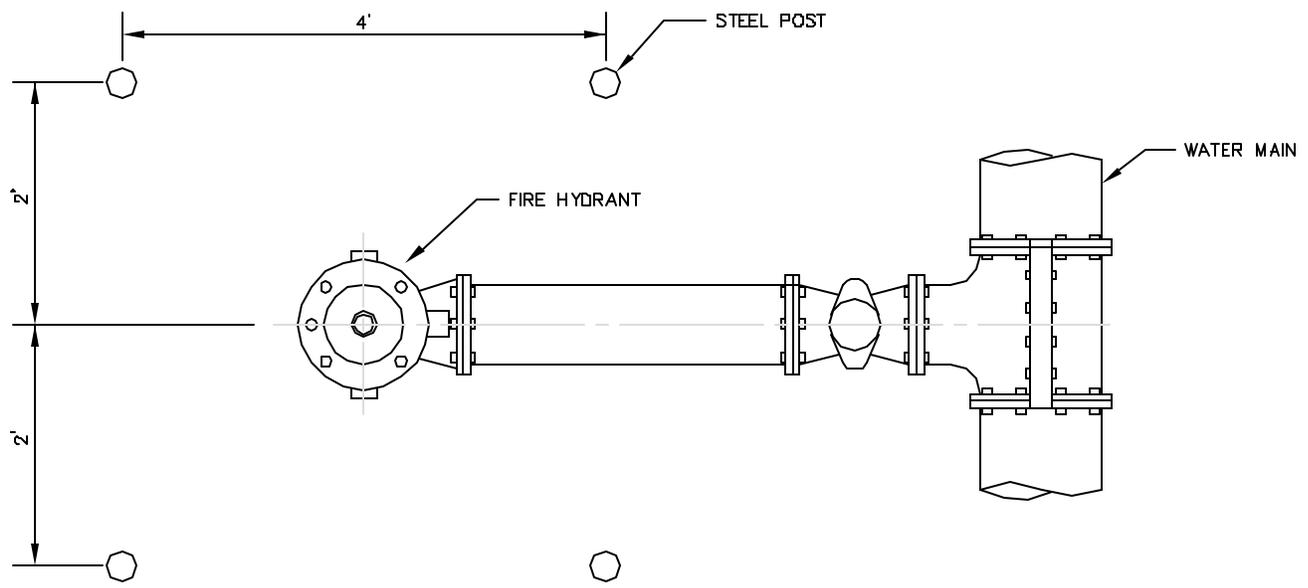
SPECIFICATION NO. 616

WL-14 PAGE 14

J:\SPRINKLER\EDMOND\REV.11.15.14\DWG  
 OCT. 1, 1989 2:30 PM BORDEN



SIDE VIEW



PLAN VIEW

(TYPICAL FOR HYDRANTS IN TRAFFIC AREAS)

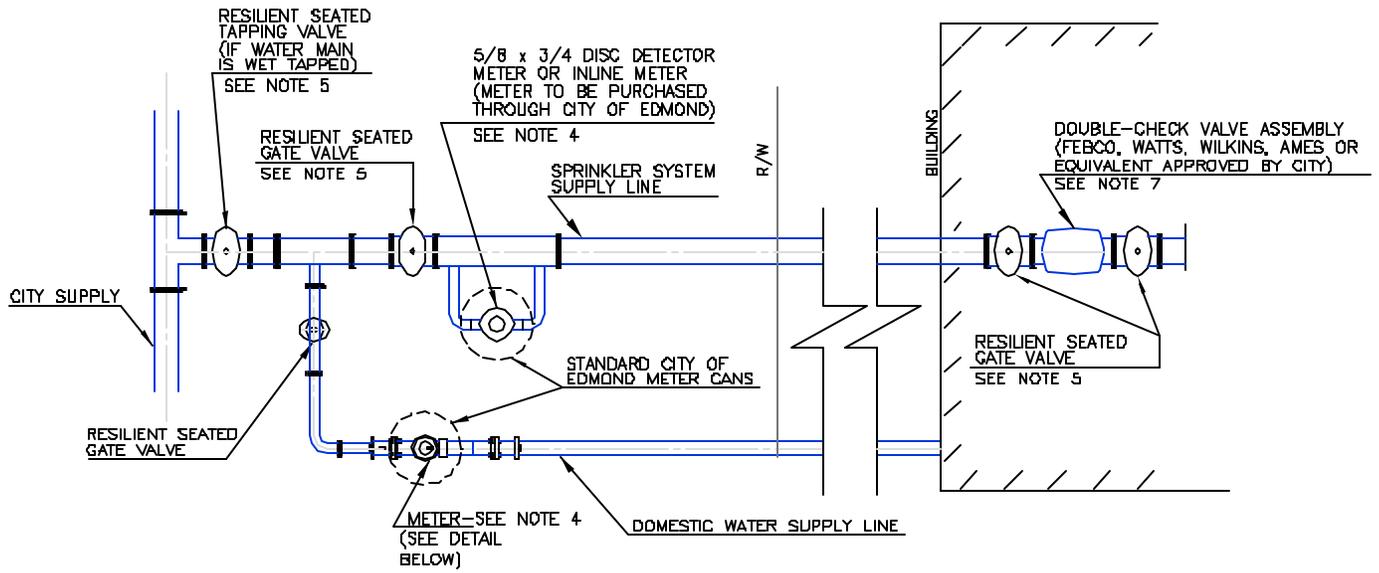
AS SHOWN ON DRAWING REV. 1, 11/15/10 - JLD/MS  
 OCT. 1, 1989 3:00 PM BORDEN

REVISIONS	NO.	DATE	ITEM CHANGED

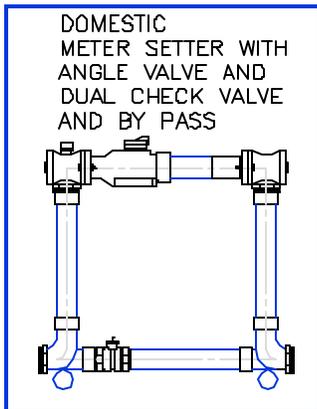
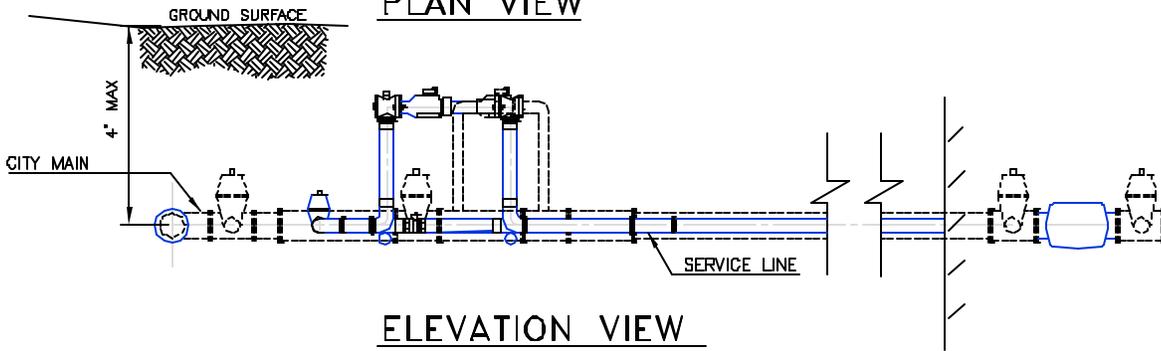
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**FIRE HYDRANT  
 GUARD POST**

WATER	
SPECIFICATION NO. 616	
WL-15	PAGE 15



**PLAN VIEW**



**NOTES**

1. VALVES & METERS SHALL BE LOCATED ON CITY PROPERTY OR DEDICATED EASEMENT.
2. ALL FIRE HYDRANTS SHALL HAVE CITY OF EDMOND THREADS.
3. METERS SHALL COMPLY WITH ALL CITY OF EDMOND STANDARDS AND SPECIFICATIONS.
4. METERS SHALL BE LOCATED 18" - 24" BELOW GROUND SURFACE. METER SHALL BE LOCATED IN STANDARD CITY OF EDMOND METER CAN.
5. VALVES SHALL BE INDICATING TYPE VALVES AS APPROVED BY CITY.
6. LOCATION OF THE FDC MUST BE APPROVED BY THE FIRE MARSHAL'S OFFICE (369-4325).
7. FOR FIRE SUPPRESSION AND IRRIGATION PURPOSES, A HIGH-DEMAND TURBINE METER MAY BE USED IN LIEU OF COMPOUND METER AS APPROVED BY THE CITY ENGINEER.
8. THE DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE MAY BE LOCATED INSIDE THE BUILDING IN AN ACCESSIBLE AREA SUFFICIENTLY LARGE ENOUGH FOR MAINTENANCE AND TESTING AND FOR INSPECTION BY CITY OFFICIALS, OR IT MAY BE LOCATED IN AN OUTSIDE CONCRETE VAULT WITH THE METER (SEE OPTION B). LOCATION OF BACKFLOW PREVENTION DEVICE IS SUBJECT TO CITY APPROVAL.

REVISIONS	ND.	DATE	ITEM CHANGED

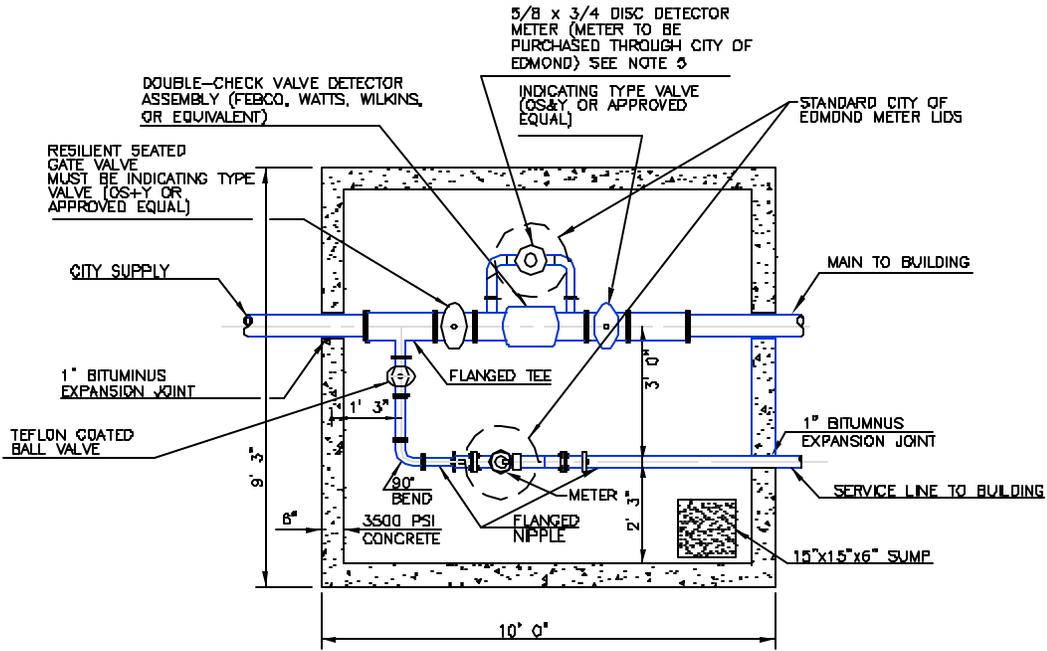
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**DETECTOR CHECK W/DOMESTIC  
 METER—BUILDING OPTION**

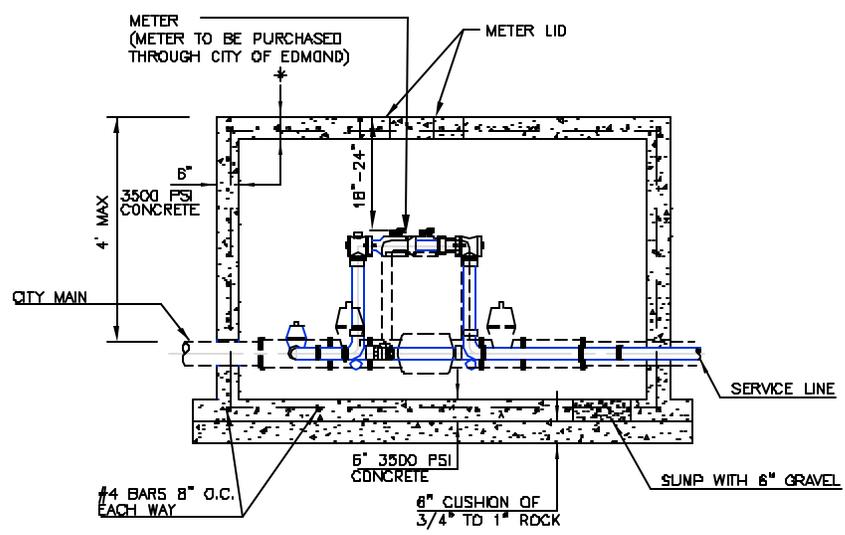
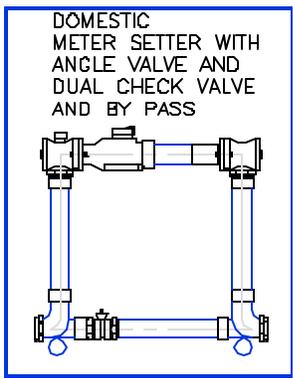
**WATER**

SPECIFICATION NO. 615

WL-16 PAGE 16



PLAN VIEW



ELEVATION VIEW

**NOTES**

1. PIT TO BE LOCATED ON CITY PROPERTY OR DEDICATED EASEMENT.
  2. ALL FIRE HYDRANTS TO HAVE CITY OF EDMOND THREADS.
  3. PIT LID SHALL BE ONE REMOVABLE SECTION, MINIMUM THICKNESS 6".
  4. METERS MUST COMPLY WITH ALL CITY OF EDMOND STANDARDS AND SPECIFICATIONS.
  5. DETECTOR METER SHALL BE LOCATED 18" - 24" BELOW TOP OF PIT.
  6. IN AREAS WHERE PIT IS SUBJECT TO FLOODING, THE DISCHARGE VENT SHALL BE VENTED ABOVE FLOOD LEVEL OR PROTECTED FROM SIPHONING, AS DIRECTED BY CITY ENGINEER.
  7. LOCATION OF THE FDC MUST BE APPROVED BY THE FIRE MARSHAL'S OFFICE (358-4325).
  8. FOR FIRE SUPPRESSION AND IRRIGATION PURPOSES, A HIGH-DEMAND TURBINE METER MAY BE USED IN LIEU OF COMPOUND METER AS APPROVED BY THE CITY ENGINEER.
- \* CONCRETE ON TOP OF PIT TO BE 6" THICK WHEN PIT IS LOCATED IN DRIVING LANE OR PARKING AREA.

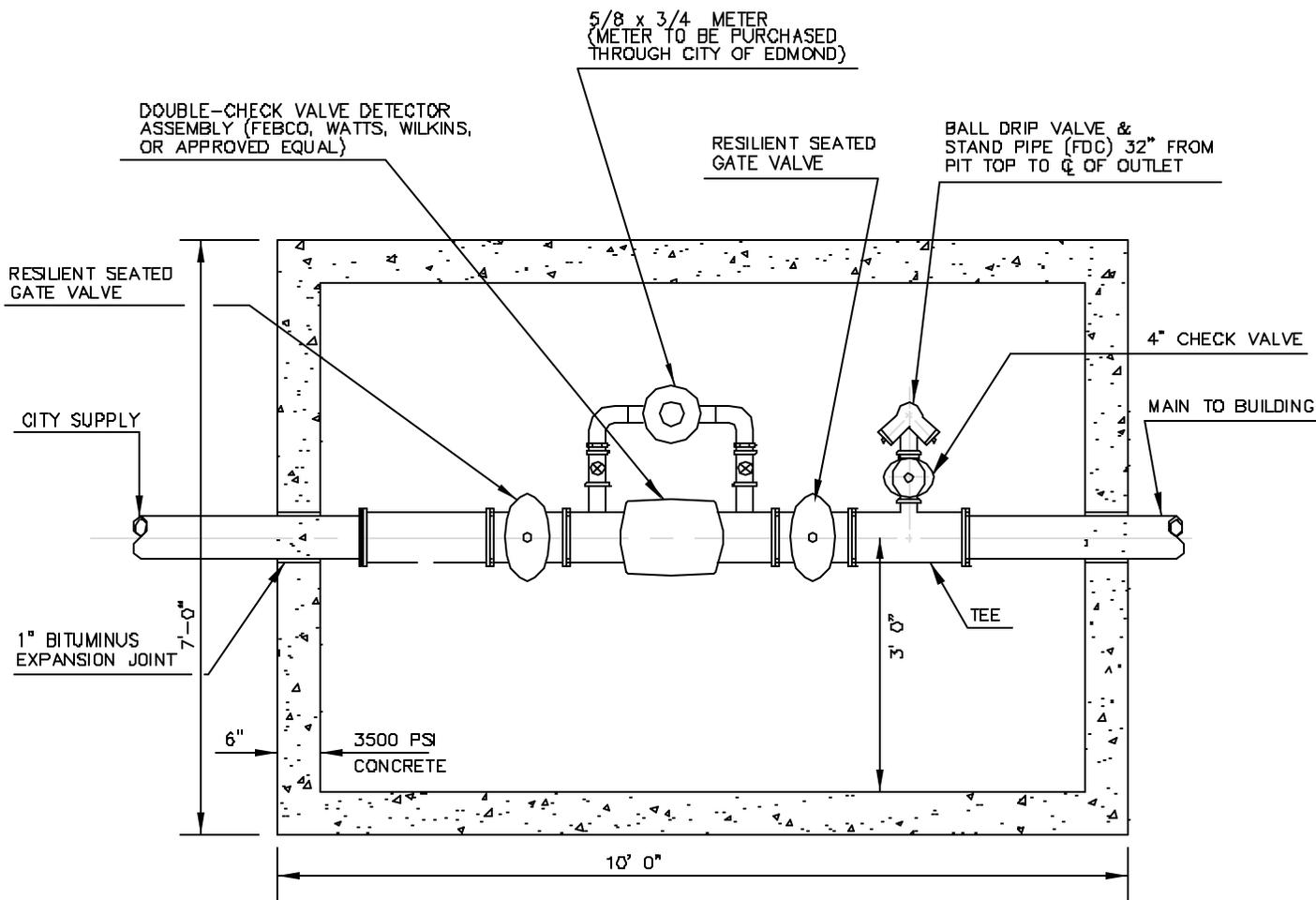
REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**DETECTOR CHECK W/  
 DOMESTIC METER-PIT OPTION**

**WATER**  
 SPECIFICATION NO. 616  
 WL-16A PAGE 16A

C:\EDMONT\EDMONT\WORK\11\WL-16A.DWG  
 OCT. 1, 1998 2:30 PM BOREN



CITY OF EDMOND, OKLA. 1516-17.010  
 OCT. 1, 1988 3:00 PM JACRE

REVISIONS	NO.	DATE	ITEM CHANGED

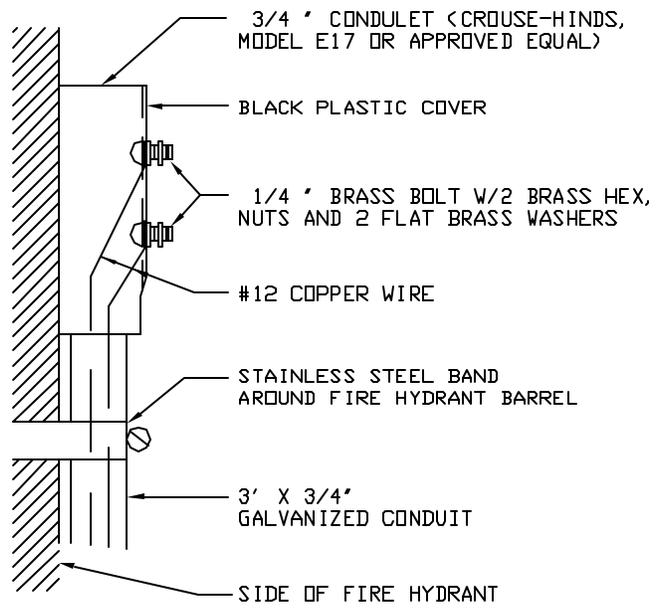
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**DETECTOR CHECK**  
**W/O DOMESTIC METER**

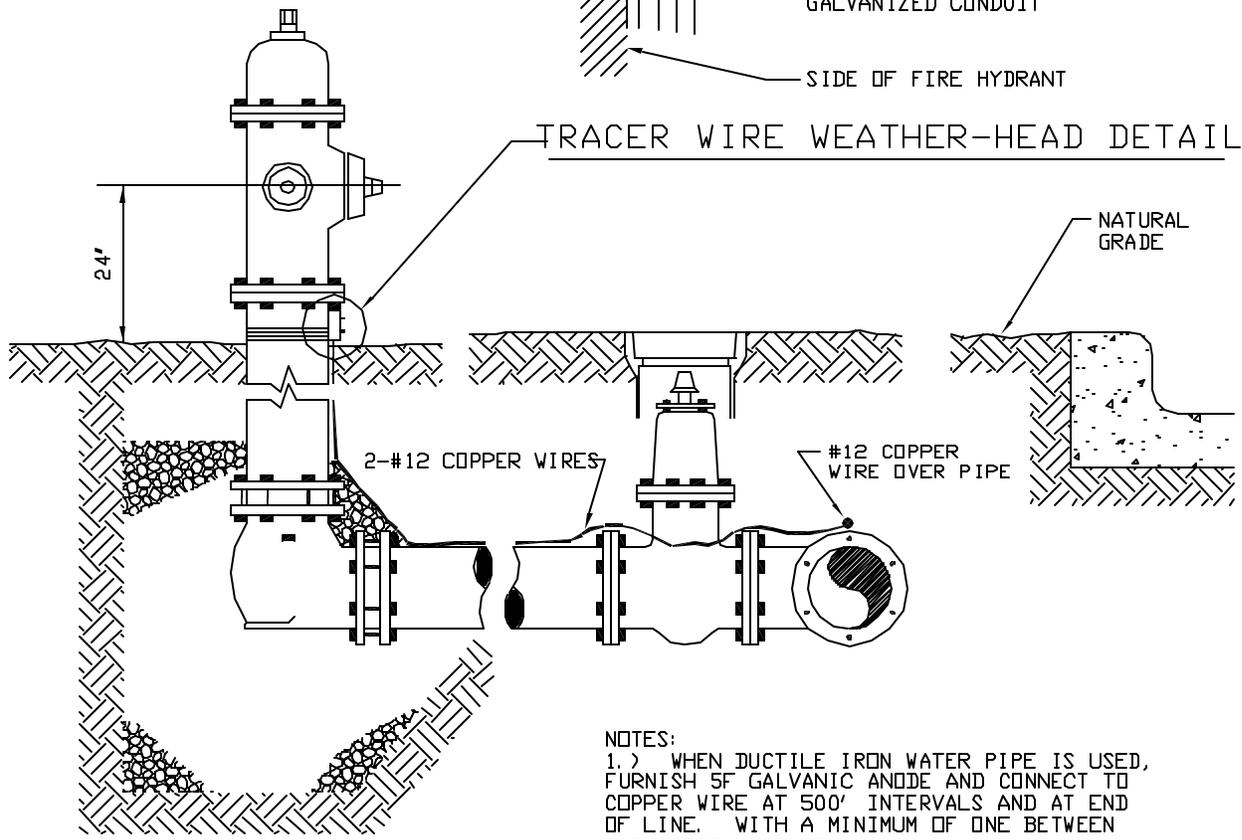
<b>WATER</b>	
SPECIFICATION NO. 615	
WL-17	PAGE 17







TRACER WIRE WEATHER-HEAD DETAIL



- NOTES:
- 1.) WHEN DUCTILE IRON WATER PIPE IS USED, FURNISH 5F GALVANIC ANODE AND CONNECT TO COPPER WIRE AT 500' INTERVALS AND AT END OF LINE. WITH A MINIMUM OF ONE BETWEEN EACH FIRE HYDRANT.
  - 2.) WHEN WATER LINE IS ENCASED IN POLYETHYLENE WRAP, TRACER WIRE SHALL BE INSTALLED OUTSIDE OF THE WRAP.
  - 3.) TRACER WIRE SHALL BE PROPERLY SECURED TO THE TOP OF THE PIPE TO PREVENT MOVEMENT WHILE BACKFILLING.
  - 4.) COPPER WIRE SHALL BE #12 AWG SOLID COPPER WITH U. S. E. INSULATION FOR DIRECT BURIAL.

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TRACER WIRE & WEATHER-  
 HEAD FOR WATER LINE**

**WATER**  
 SPECIFICATION NO. 616  
 WL-2D PAGE 19A

C:\CADD\PROJECTS\EDMOND\CONSTRUCTION STANDARDS\DRAWINGS\CONSTRUCTION DRAWINGS (JULY 2007)\NEW & REVISED\WL-20.DWG  
 JULY 24, 2008 REBER

GENERAL NOTES

1. BACKFILL WITH SUITABLE, ON SITE SOIL COMPACTED TO REQUIRED DENSITY. IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 615.03. (F&G).
2. THE COST OF MOVING, REMOVING AND REPLACING ALL FENCES, TREES, STRUCTURES OR OTHER OBSTRUCTIONS NECESSARY FOR CONSTRUCTION WILL NOT BE PAID FOR AS SUCH, BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS UNLESS OTHERWISE NOTED.
3. A WATER TIGHT PLUG SHALL BE INSTALLED IN ANY NEW LINE AT ITS ENTRANCE INTO AN EXISTING MANHOLE. UPON SATISFACTORY COMPLETION OF THE PROJECT, PERMISSION WILL BE GIVEN BY THE CITY ENGINEER TO REMOVE THE PLUG. (SEE SPECIFIC NOTES ON PLAN AND PROFILE SHEETS.)
4. DO NOT BREAK OUT THE EXISTING SEWER PIPE WITHIN ANY MANHOLE BUILT AROUND AN EXISTING SEWER UNTIL PROPER APPROVAL TO DO SO IS GIVEN BY THE CITY ENGINEER. (SEE SPECIFIC NOTES ON PLAN AND PROFILE SHEETS.)
5. ALL STUBS SHALL BE ONE LENGTH OF BELL-END PIPE EXTENDING THRU THE MANHOLE WALL AND SHALL BE TIGHTLY PLUGGED (SEE SPECIFIC NOTES ON PLAN AND PROFILE SHEET.)
6. AT ABANDONED MANHOLES AND SEWERS, PLUG ALL SEWERS AT MANHOLES, TEAR MANHOLES DOWN 3' BELOW FINISHED GROUND ELEVATION, AND FILL BALANCE OF MANHOLES WITH APPROVED BACKFILL.
7. ALL ABANDONED MANHOLE RINGS AND LIDS SHALL BE DELIVERED TO THE CITY OF EDMOND UTILITY LINE MAINTENANCE WASTEWATER DEPARTMENT.
8. PIERS AND COLLARS TO BE BUILT ACCORDING TO EDMOND CITY STANDARD SPECIFICATIONS.
9. ALL FILL AREAS SHOWN ON PROFILE SHALL BE MADE BEFORE CONSTRUCTION OF SEWER.
10. UNLESS OTHERWISE REQUIRED, DENSITY TESTING SHALL BE PERFORMED ON A AVERAGE OF EVERY 200 L.F. OF TRENCH EACH 5 FT. OF DEPTH. DENSITY REQUIREMENTS FOR TRANSVERSE CROSSINGS UNDER PAVING OR DRIVEWAYS SHALL COMPLY WITH THE SCHEDULE SHOWN ON STANDARD CONSTRUCTION PAVING DETAILS.
11. THE CONSTRUCTION OF MONOLITHICALLY CAST-IN-PLACE MANHOLES WILL BE ALLOWED ONLY AS SHOWN ON THE PLANS. THE SUBMITTAL OF PROPOSED LEG SUPPORTS SHALL BE REQUIRED AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
12. PLACEMENT OF CONCRETE STRUCTURES, MANHOLES AND ETC., SHALL COMPLY WITH THE STANDARD SPECIFICATIONS, SECTION 509.04.
13. FORM REMOVAL TIME FOR CAST-IN-PLACE MANHOLES WILL FOLLOW FORM MANUFACTURER'S RECOMMENDATION OR FORM REMOVAL TIME SHALL NOT BE SOONER THAN 4 HOURS WHICHEVER IS LONGER.
14. UPON REMOVAL OF FORMS ALL MANHOLES SHALL BE BACKFILLED WITHIN ONE (1) HOUR.
15. IN LIEU OF THE COLD WEATHER REQUIREMENTS SHOWN IN THE STANDARD SPECIFICATIONS , SECTION 509.04, PLACEMENT OF CONCRETE BELOW GRADE WILL BE ALLOWED TO TEMPERATURES AS LOW AS 25° F. HOWEVER, UNTIL SUCH TIME AS FINAL BACKFILL IS PLACED, ADDITIONAL PROTECTION, INSULATION, HEATING AND ETC. SHALL BE REQUIRED.

14 SEP 2009 11:48 AM  
 14 SEP 2009 11:48 AM  
 14 SEP 2009 11:48 AM

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GENERAL NOTES**

**SEWER**

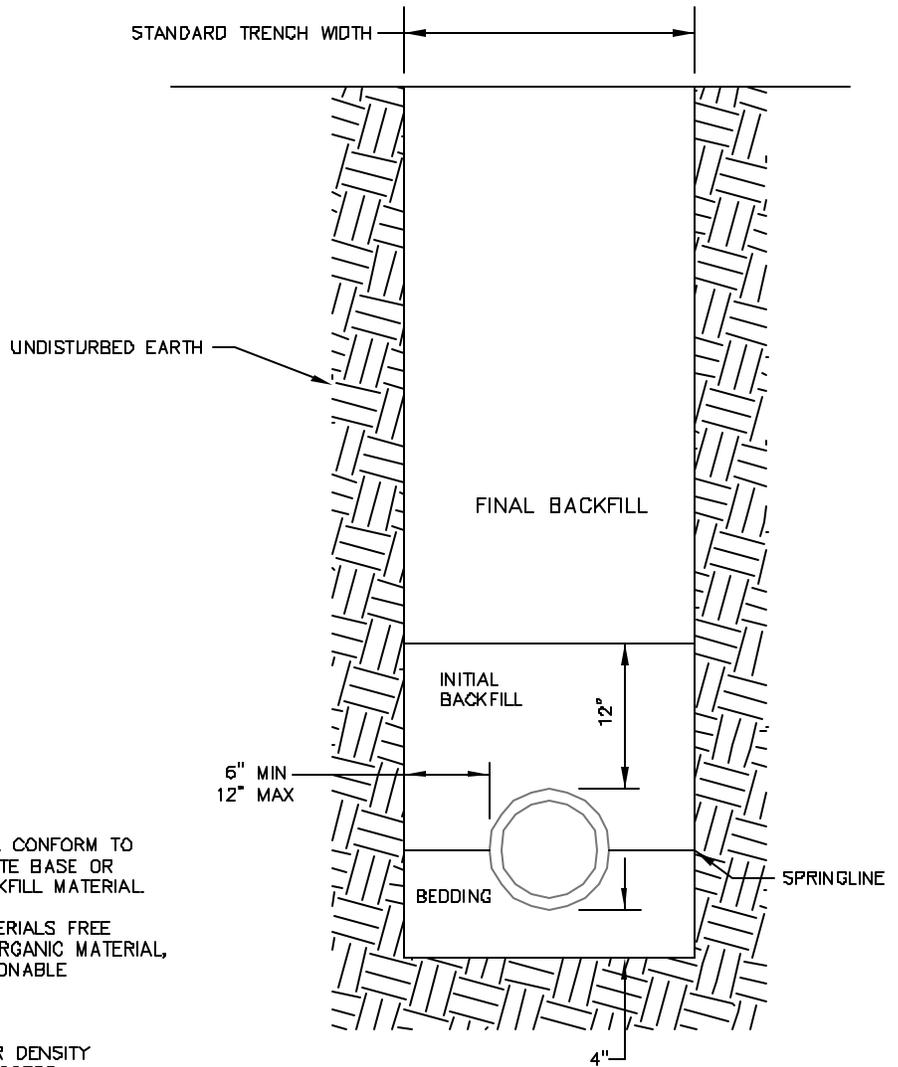
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SPECIFICATION NO. 615

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SS-01    PAGE 20

INSIDE PIPE DIAMETER (IN.)	STANDARD TRENCH WIDTH (IN.)
8	24
10	30
12	30
15	36
18	36
21	42
24	42
27	48
30	48
36	54
42	60
48	66



**NOTES:**

1. STANDARD BEDDING MATERIAL (SBM) SHALL CONFORM TO CITY OF EDMOND 703.01, TYPE A AGGREGATE BASE OR CITY OF EDMOND 529, LOW STRENGTH BACKFILL MATERIAL
2. SELECT FILL CONSISTS OF EXCAVATED MATERIALS FREE OF ROCKS LARGER THAN 2-1/2 INCHES, ORGANIC MATERIAL, RUBBISH, DEBRIS, AND ALL OTHER OBJECTIONABLE MATERIAL.
3. COMPACTION REQUIREMENTS:
  - A. PAVED AREAS: 95% STANDARD PROCTOR DENSITY
  - B. NON-PAVED AREAS: 90% STANDARD PROCTOR DENSITY IF COVER DEPTH < 10'. 95% STANDARD PROCTOR DENSITY IF COVER DEPTH > 10'.

BEDDING MATERIALS				
DESCRIPTION	PAVED AREAS		NON-PAVED AREAS	
	FLEXIBLE PIPE	RIGID PIPE	FLEXIBLE PIPE	RIGID PIPE
FINAL BACKFILL	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	EXCAVATED MATERIAL	EXCAVATED MATERIAL
INITIAL BACKFILL	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	COVER DEPTH ≤ 10' - SELECT FILL COVER DEPTH ≥ 10' - STAND. BEDDING MATERIAL	SELECT FILL
BEDDING	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)

REVISIONS	ND.	DATE	ITEM CHANGED

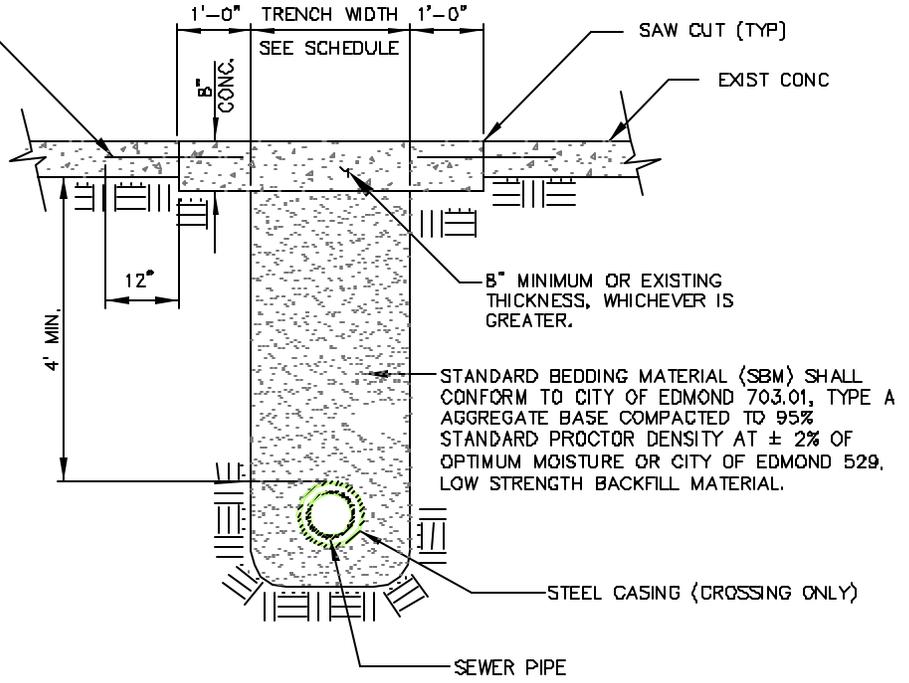
**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

**PIPE**  
**INSTALLATION**

**SEWER**  
 SPECIFICATION NO. 615  
 SS-02 PAGE 21

15 STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER PIPE INSTALLATION  
 DEC. 16, 1998  
 15 STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER PIPE INSTALLATION  
 DEC. 16, 1998

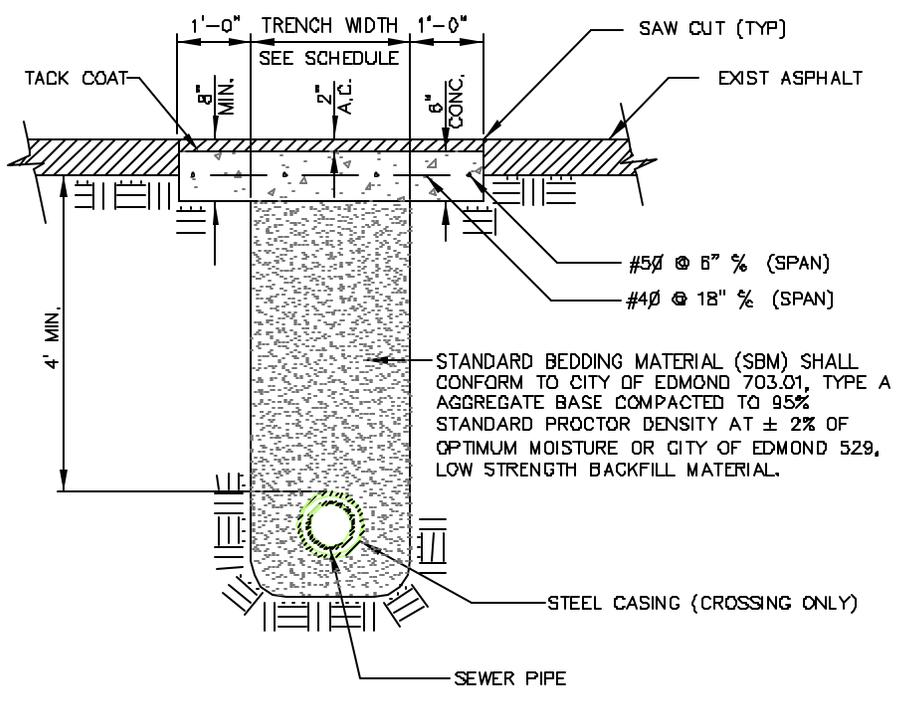
#6  $\phi$  x 2'-0" BAR 18"  $\phi$   
 DRILLED & SET 12"  
 INTO EXIST PAVEMENT.  
 DEFORMED TIE BARS.



CONCRETE

TRENCH WIDTH SCHEDULE

INSIDE PIPE DIAMETER (IN.)	STANDARD TRENCH WIDTH (IN.)
8	24
10	30
12	30
15	36
18	36
21	42
24	42
27	48
30	48
36	54
42	60
48	66



ASPHALT

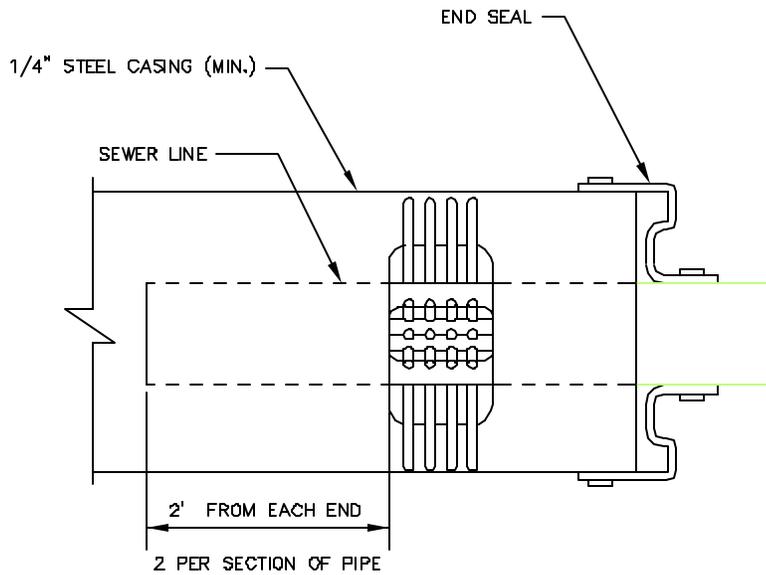
CITY OF EDMOND ENGINEERING DEPARTMENT  
 1115 460 PM BUREAU

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

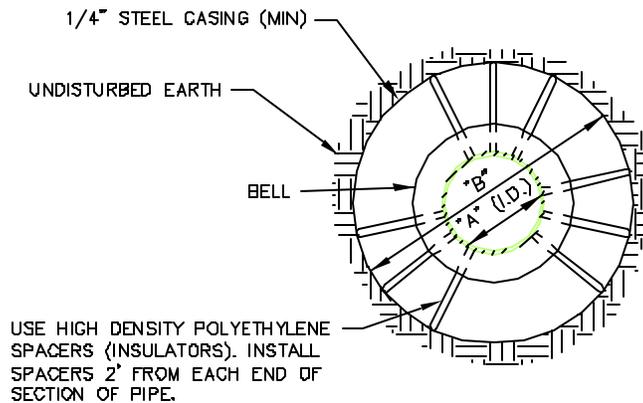
**PAVING CUTS &  
 PERMANENT REPAIRS**

**SEWER**  
 SPECIFICATION NO. 615  
 SS-03 PAGE 22



PIPE & STEEL CASING SCHEDULE	
PIPE DIAMETER "A"	CASING DIAMETER "B"
4"	10"
6"	12"
8"	14" OR 16"
10"	18"
12"	20"
16"	24"
18"	26"
20"	30"
24"	33"

NOTE: CONSTRUCT WATER TIGHT PLUG AT EACH END OF CASING.



USE HIGH DENSITY POLYETHYLENE SPACERS (INSULATORS). INSTALL SPACERS 2' FROM EACH END OF SECTION OF PIPE.

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

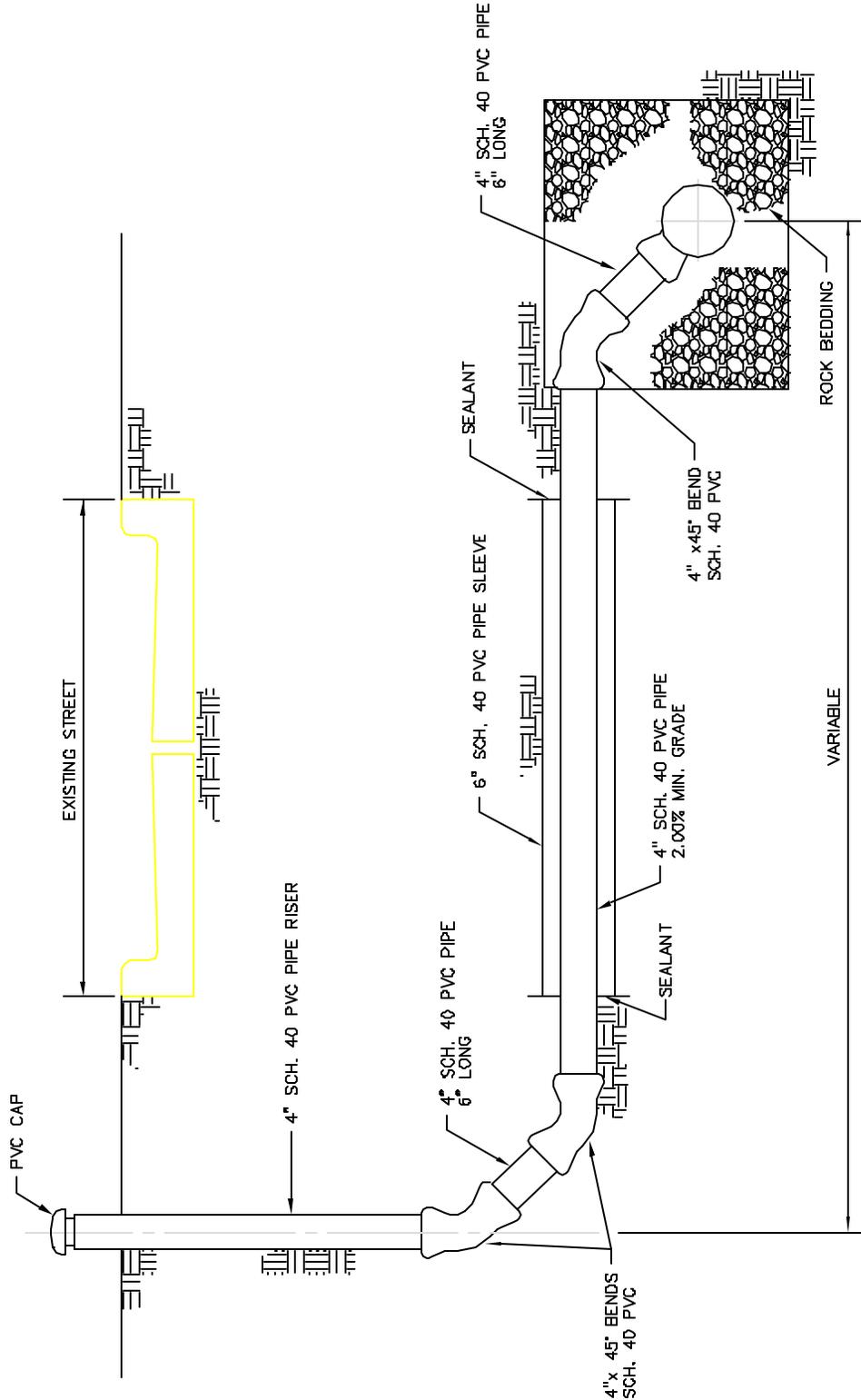
STANDARD ROAD  
CROSSING BORE

SEWER

SPECIFICATION NO. 615

SS-04 PAGE 23

NOTE:  
 BEDDING GRAVEL SHALL BE COMPOSED OF  
 CRUSHED ROCK CONFORMING TO STANDARD  
 SPECIFICATIONS, SECTION 703.01, TYPE A OR B.



REVISIONS	NO.	DATE	ITEM CHANGED

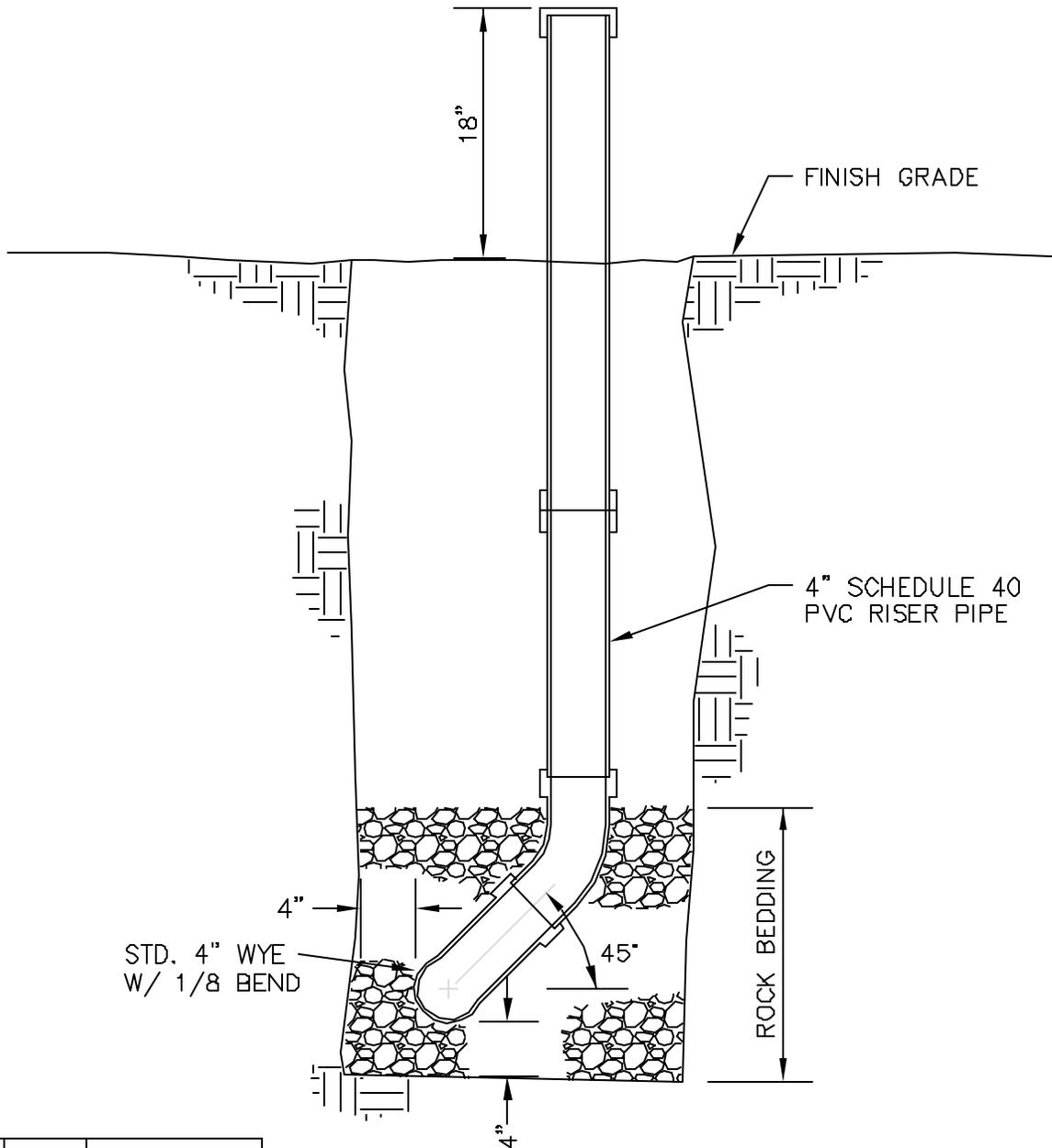
CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

LONG SERVICE  
 CONNECTION

SEWER  
 SPECIFICATION NO. 615  
 SS-05 PAGE 24

NOTE:

1. COLLAR MAY BE NEEDED BETWEEN SDR-35 WYE AND SCH. 40 RISER. ALL WYES SHALL BE SIZED TO ACCEPT SCHEDULE 40 PVC PROVIDING A WATER-TIGHT JOINT.
2. BEDDING GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B.



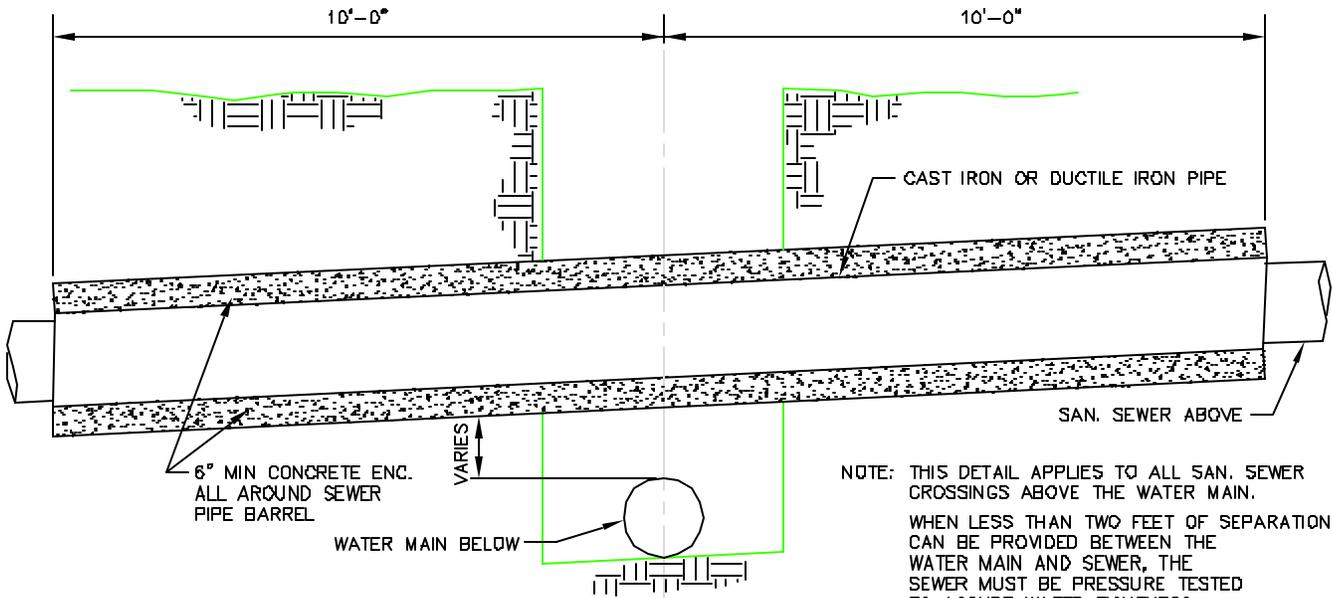
CITY OF EDMOND ENGINEERING DEPARTMENT  
 1115 25th St NW  
 EDMOND, OK 73119

REVISIONS	NO.	DATE	ITEM CHANGED

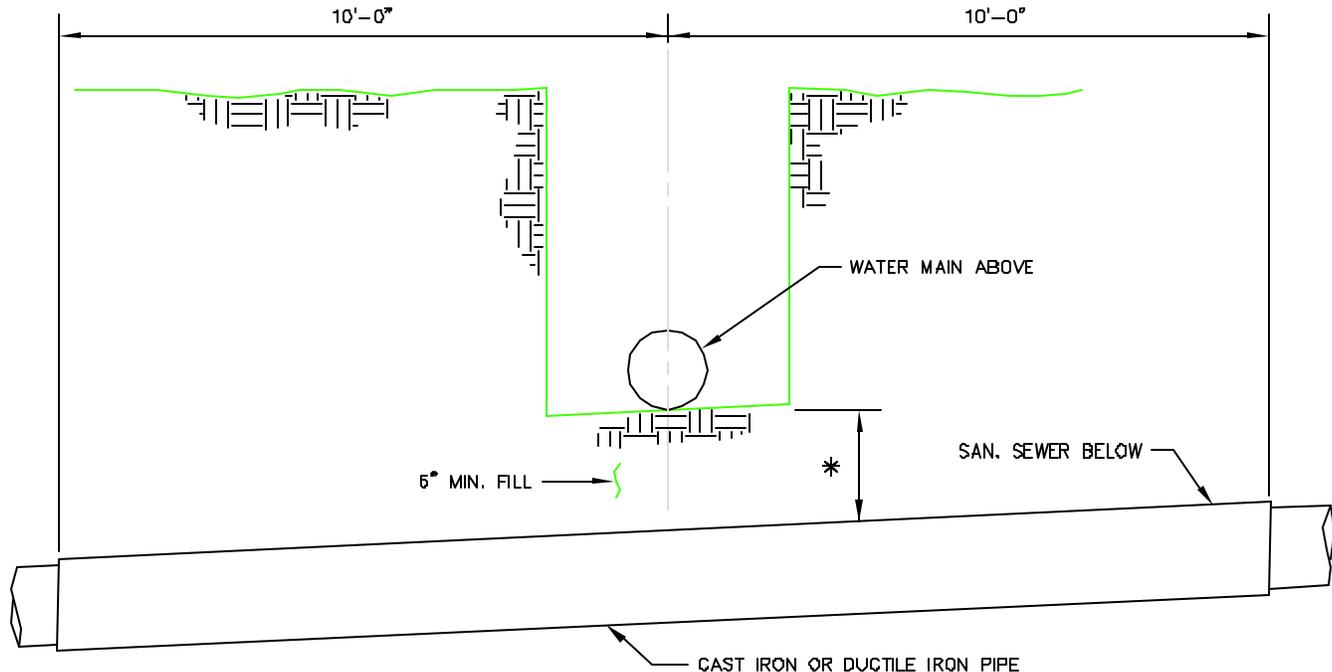
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**WYE RISER SECTION**

**SEWER**  
 SPECIFICATION NO. 615  
 SS-06 PAGE 25



NOTE: THIS DETAIL APPLIES TO ALL SAN. SEWER CROSSINGS ABOVE THE WATER MAIN. WHEN LESS THAN TWO FEET OF SEPARATION CAN BE PROVIDED BETWEEN THE WATER MAIN AND SEWER, THE SEWER MUST BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING PER OKLA. STATE DEPT. OF ENVIRONMENTAL QUALITY CHAPTER 655



\* NOTE: THIS DETAIL APPLIES TO ALL SAN. SEWER CROSSINGS WHERE VERTICAL SEPARATION OF WATER MAIN AND SEWER IS TWO FEET OR LESS AND WHEN SAN. SEWER IS BELOW WATER MAIN.

J:\STANDARD\CONSTRUCTION\REV. 11-25-07.DWG  
 OCT. 1, 1993 2:50 PM WJH/BSH

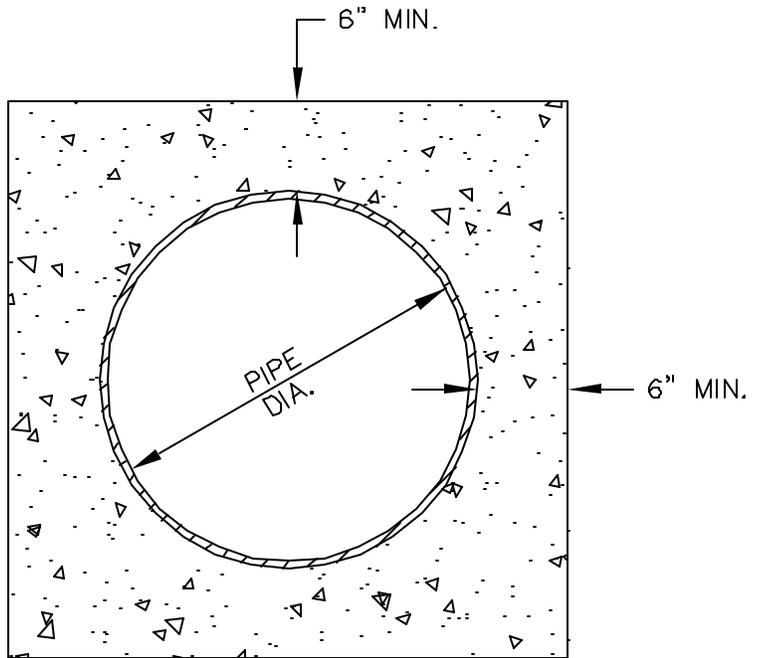
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SANITARY SEWER  
 ENCASEMENT**

<b>SEWER</b>	
SPECIFICATION NO. 615	
SS-07	PAGE 26

CONCRETE ENCASEMENT DETAIL	
PIPE SIZE	CUBIC YARD OF CONCRETE PER L.F. ENCASEMENT
8"	0.063
10"	0.075
12"	0.0875
15"	0.106
18"	0.127
21"	0.150
24"	0.175
27"	0.197
30"	0.221
33"	0.248
36"	0.271



CONCRETE STRENGTH TO BE PER PIPE MANUFACTURER RECOMMENDATIONS, OR AS APPROVED BY CITY OF EDMOND

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

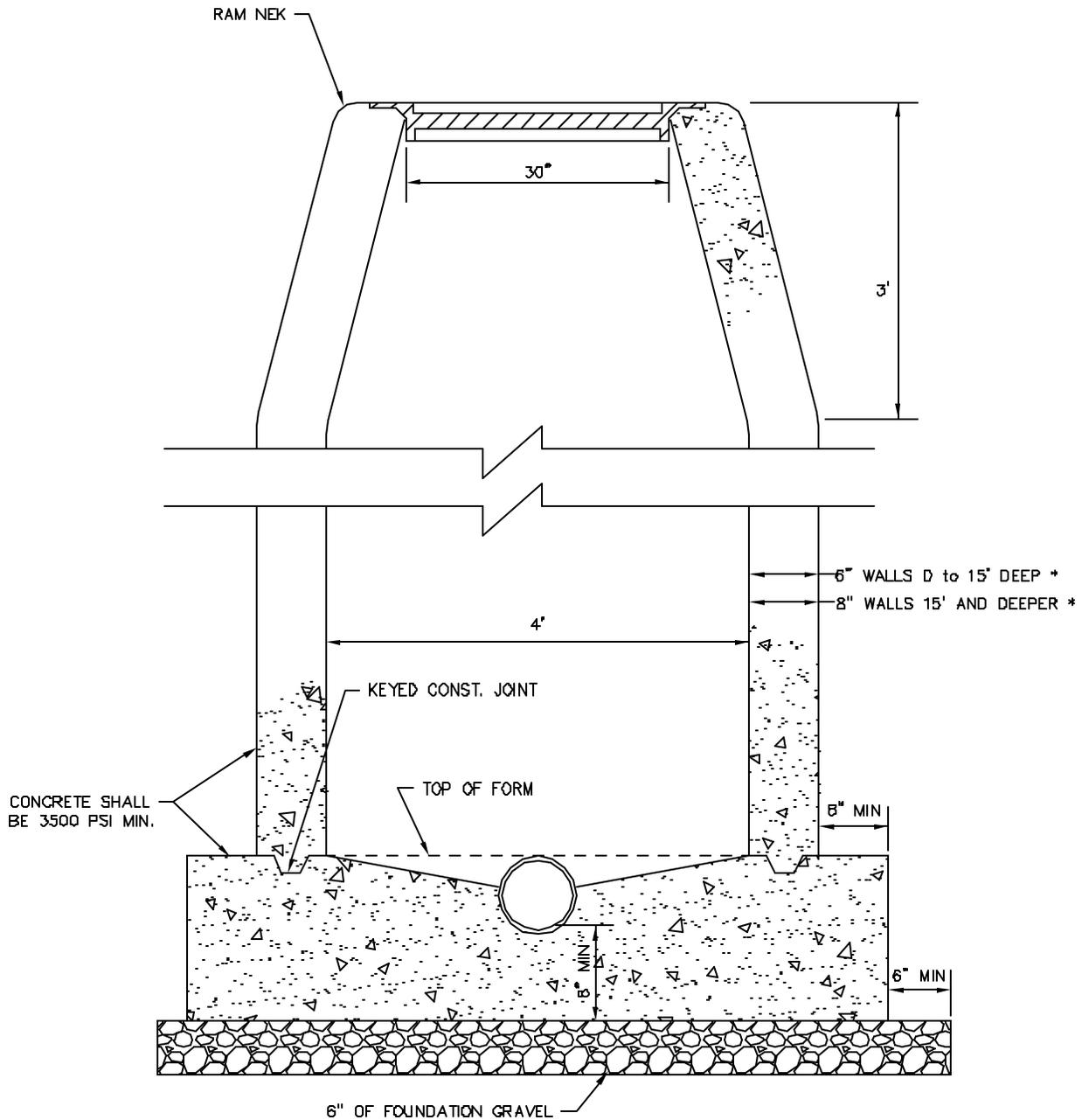
CONCRETE  
ENCASEMENT

SEWER  
SPECIFICATION NO. 615  
SS-08 PAGE 27

LAST MODIFIED: 08/11/2015 10:58 AM BY: J. S. [unreadable]  
 OCT. 1, 1989 2:50 PM [unreadable]

NOTE:

1. FOUNDATION GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B, 1-1/2" MINIMUM SIZE.
- \* MANHOLE WALL THICKNESS SHALL BE CONSTANT. NO TRANSITION SHALL BE ALLOWED



STANDARD MANHOLE SPEC. 615-09-01  
 OCT. 1, 1989 2:30 PM WJH/ESH

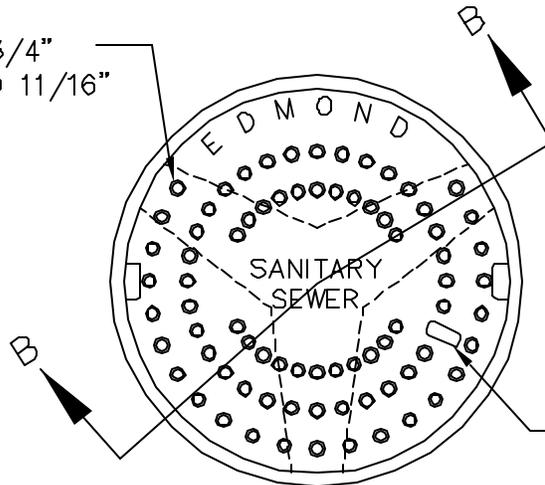
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**STANDARD  
 MANHOLE**

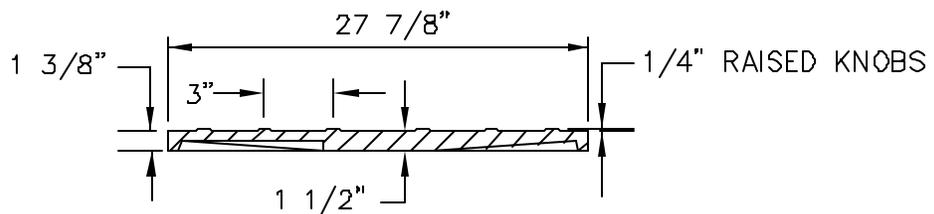
<b>SEWER</b>	
SPECIFICATION NO. 615	
SS-09	PAGE 28

BOSSES 3/4"  
TAPER TO 11/16"



OBLONG OPEN PICK HOLE  
PICK HOLE REQUIRED  
ON ALL TYPES OF LIDS

TOP VIEW



NOTE:

1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
2. ALL LETTERING ON TOP OF COVER IS 1 7/16"

SECTION B-B

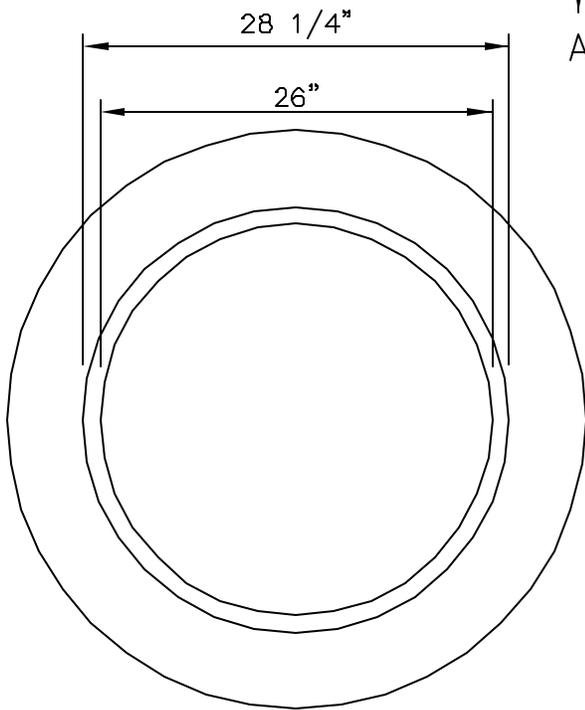
CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS  
 OCT. 1, 1918 200 PM 100000

REVISIONS	NO.	DATE	ITEM CHANGED

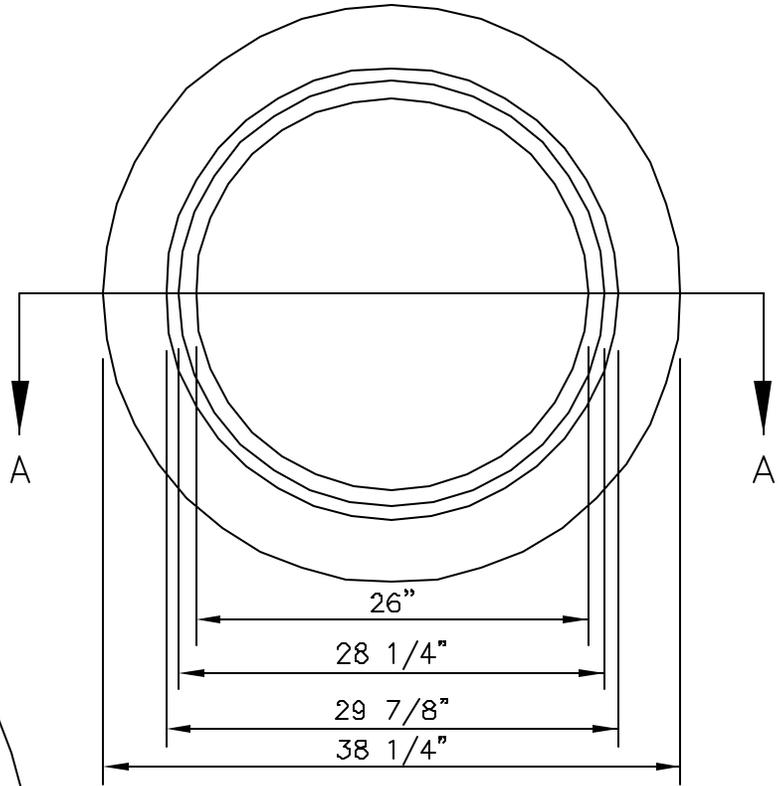
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**MANHOLE  
COVER**

<b>SEWER</b>	
SPECIFICATION NO. 615	
SS-10	PAGE 29

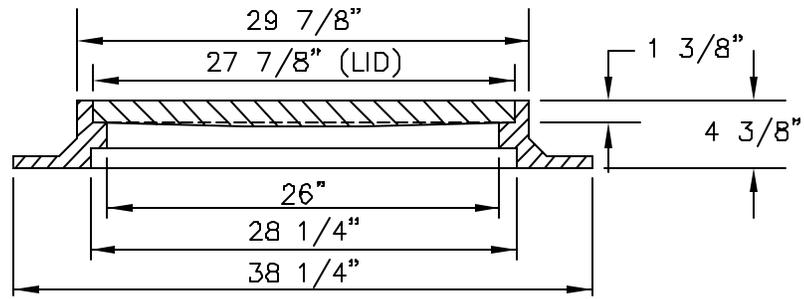


BOTTOM VIEW



TOP VIEW

TOTAL WEIGHT LID AND FRAME  
 APPROX. 430# MACHINED HORIZ.  
 BEARING SURFACES.  
 (NEENAH R-1682-1S, WESTERN IRON WORKS  
 MODEL 100-C OR APPROVED EQUAL)



SECTION A-A

REVISIONS	NO.	DATE	ITEM CHANGED

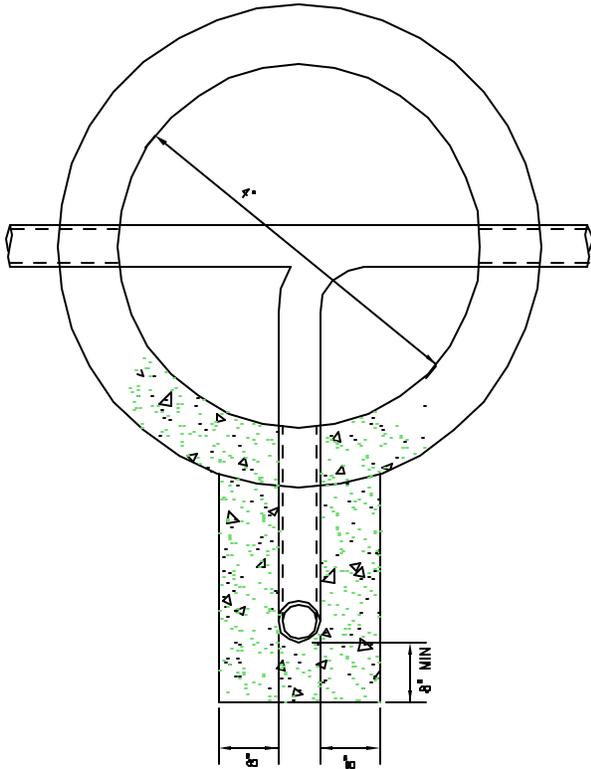
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**REVERSIBLE  
 MANHOLE FRAME**

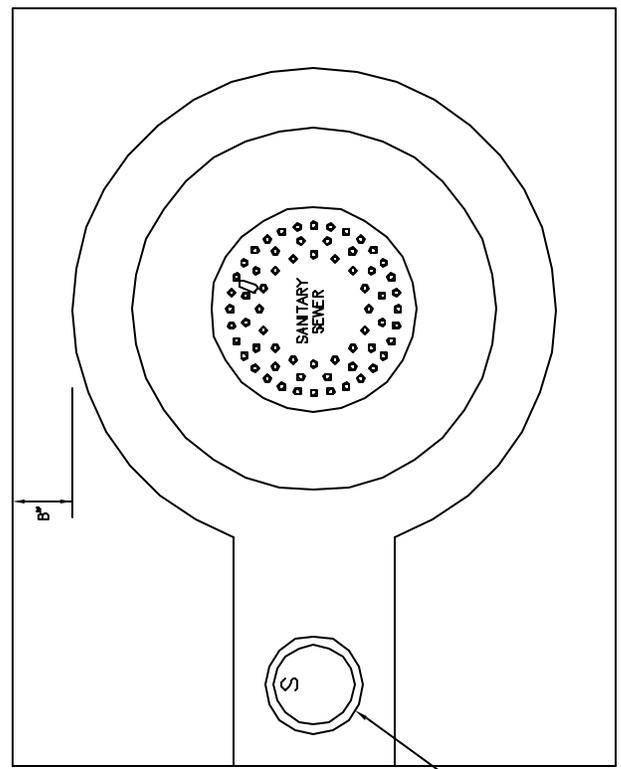
**SEWER**

SPECIFICATION NO. 615  
 SS-11 PAGE 30

11/15/11 1:48:20 PM 10/25/11

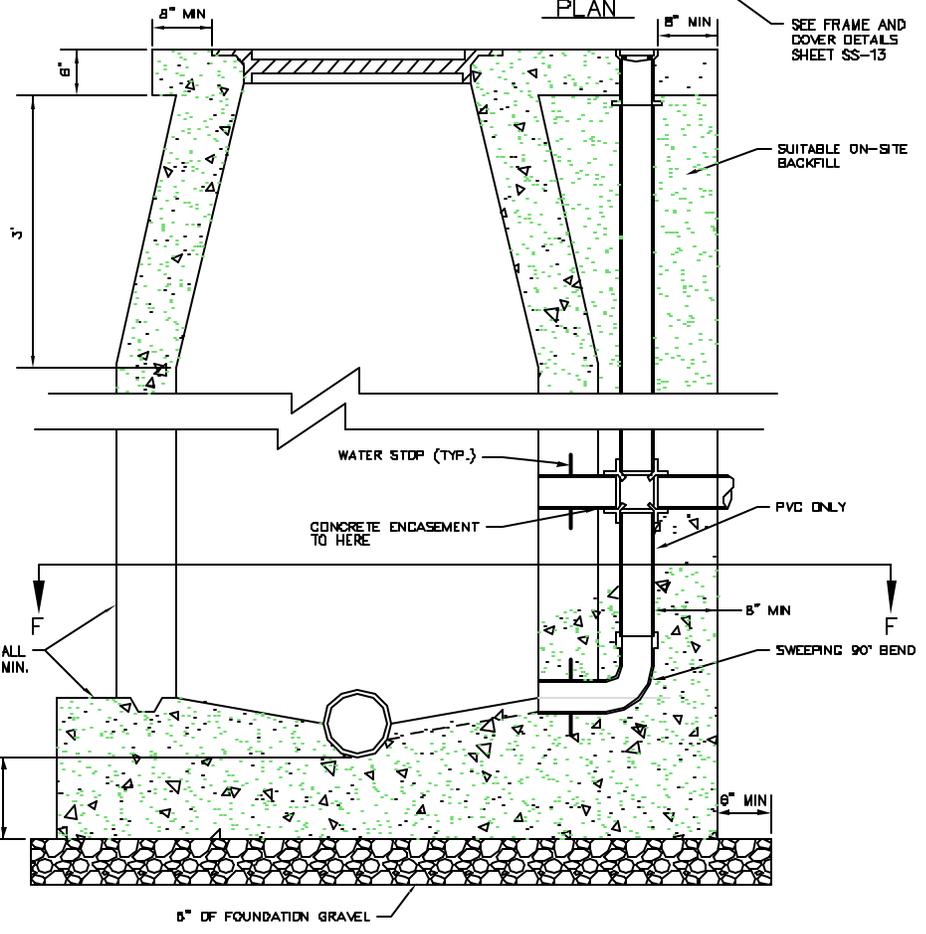


SECTION F-F



PLAN

SEE FRAME AND COVER DETAILS SHEET SS-13



- NOTE:
1. FOUNDATION GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B, 1-1/2" MINIMUM SIZE.
  2. ENCASE DROP CONNECTION WITH CONCRETE.
  3. SEE PLANS FOR ADDITIONAL NOTES AND DETAILS.
  4. REFER TO STANDARD MANHOLE FOR ADDITIONAL NOTES AND DETAILS.

CONCRETE SHALL BE 3500 PSI MIN.

WATER STOP (TYP.)  
 CONCRETE ENCASEMENT TO HERE  
 PVC ONLY  
 B" MN  
 SWEEPING 90° BEND

B" OF FOUNDATION GRAVEL

CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 DATE: 11/18/2010 11:20 AM  
 DCT: 11/18/2010 11:20 AM

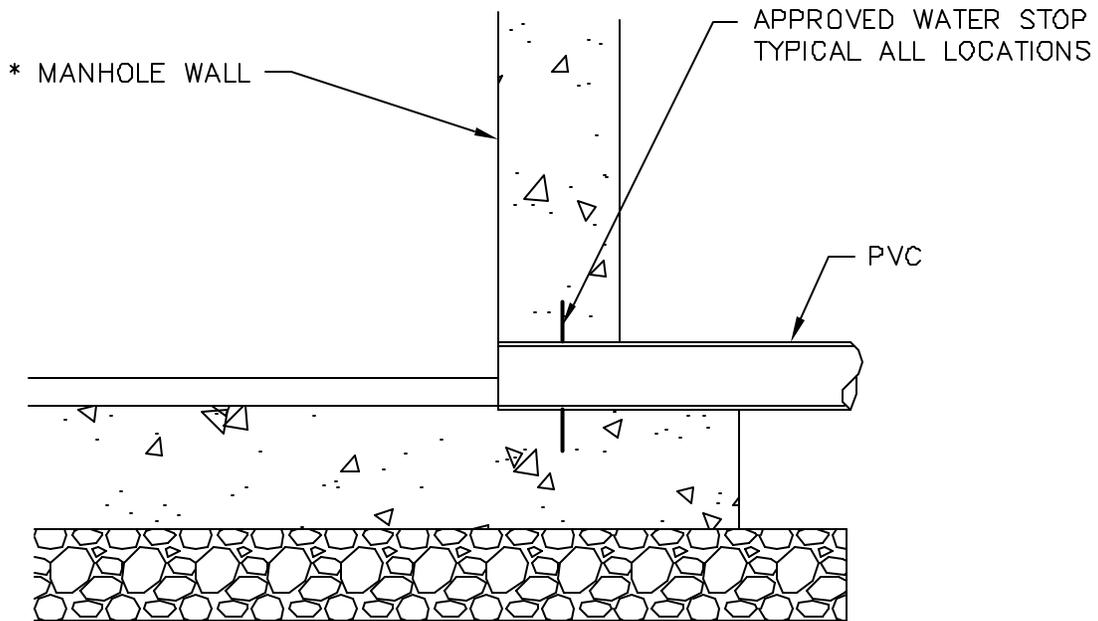
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**STANDARD DROP  
 MANHOLE**

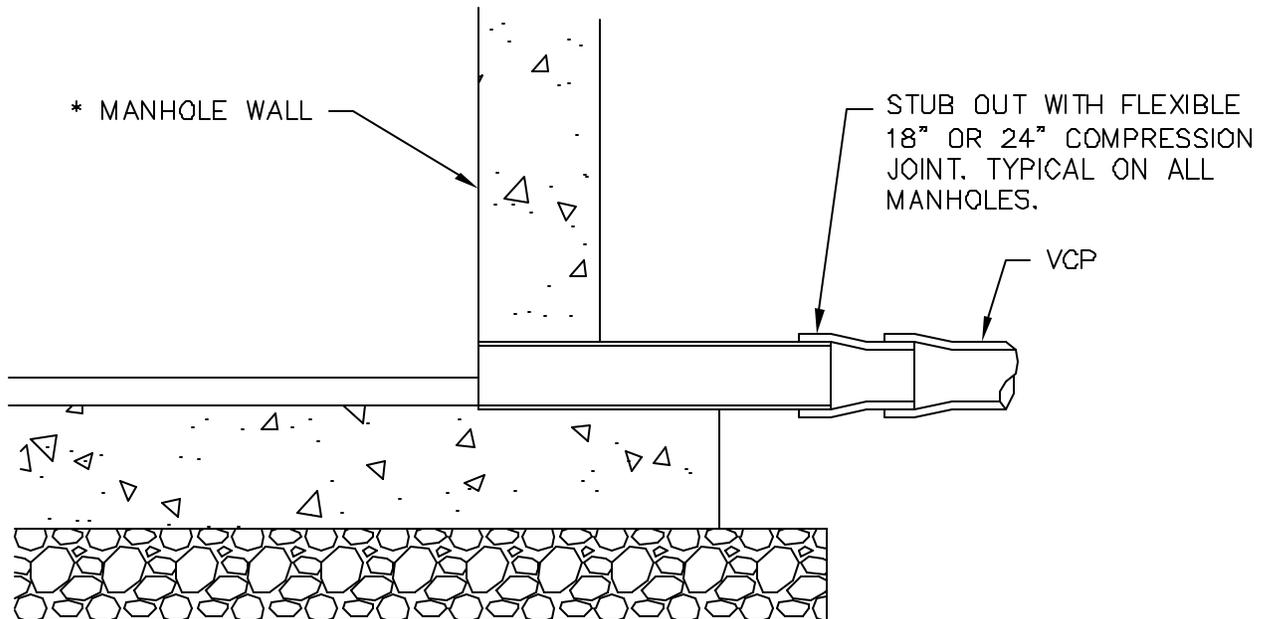
**SEWER**  
 SPECIFICATION NO. 615  
 SS-12 PAGE 31





PVC PIPE DETAILS

NOTE:  
 COMPRESSION JOINTS AND COUPLINGS SHALL BE ASSEMBLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. JOINTS AND COUPLINGS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH ASTM-C425.  
 \* MANHOLE WALL THICKNESS SHALL BE CONSTANT. NO TRANSITION SHALL BE ALLOWED.



VITRIFIED CLAY PIPE (VCP) DETAILS

STANDARD DRAWING NO. 615-1-1018  
 OCT. 1, 1989 2:50 PM BORDEN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**VITRIFIED CLAY &  
 PVC PIPE**

**SEWER**

SPECIFICATION NO. 615

SS-14 PAGE 33

## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE THE STANDARD SPECIFICATIONS.
2. UNLESS OTHERWISE REQUIRED THE FOLLOWING TESTING SCHEDULE FOR EARTHWORK AND SUBGRADE TESTING SHALL BE FOLLOWED:
  - A. SOIL CLASSIFICATION - 1200 SQ. YDS. OF MATERIAL OR AS NECESSARY TO DETERMINED UNIFORMITY OF MATERIAL.
  - B. STANDARD PROCTOR- AS NECESSARY TO PROVIDE INFORMATION FOR REQUIRED DENSITIES.
  - C. SUBGRADE DENSITY- A MAXIMUM OF EVERY 1200 SQ. YDS. OF SURFACE AREA OR AS NECESSARY TO DETERMINE UNIFORMITY OF COMPACTION.
  - D. EMBANKMENT DENSITY- EACH 8" LAYER AT A MAXIMUM OF EVERY 1200 SQ. YDS. OF SURFACE AREA, OR AS NECESSARY TO DETERMINE UNIFORMITY OF COMPACTION.
  - E. TRENCH UNDER PAVING- EVERY 200 L.F. OF TRENCH OR ANY DISTINCT TRANSVERSE CROSSING.
  - F. CALIFORNIA BEARING RATIO- AS DEEMED NECESSARY BY THE CITY ENGINEER TO ENSURE SUBGRADE MEETS SPECIFICATIONS.
3. ADVANCE NOTIFICATION (2 HOURS MINIMUM) SHALL BE REQUIRED PRIOR TO THE TAKING OF ANY DENSITY TEST. NOTIFICATION SHALL BE MADE TO THE OFFICE OF THE ENGINEER.
4. UNLESS OTHERWISE SHOWN A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY  $\pm 2\%$  OF OPTIMUM MOISTURE IS REQUIRED FOR EACH DENSITY TAKEN. 2 ADDITIONAL TEST SHALL BE PERFORMED FOR EACH FAILED TEST ON TRANSVERSE CROSSINGS UNDER PAVING.
5. THE CENTERLINE SHALL FOLLOW THE EXISTING CENTERLINE UNLESS OTHERWISE NOTED ON THE PLANS.
6. ONLY APPROVED SEALANT MEETING REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS SHALL BE ACCEPTABLE FOR USE.
7. ALL JOINTS SHALL BE BLAST CLEANED WITH WATER. THE LODSE PARTICLES SHALL BE BLOWN OUT WITH OIL-FREE COMPRESSED AIR. SURFACES MUST BE CLEAN, DRY, FROST-FREE AND DUST-FREE DURING INSTALLATION OF SEALER.
8. THE SHAPE FACTOR COMBINED WITH JOINT CLEANNESS IS THE CRITICAL COMBINATION NECESSARY TO GUARANTEE DESIRED BONDING AND FUNCTION OF SEALED JOINTS. NO TOLERANCE EXCEPT THOSE SHOWN ON DETAILS SHEETS WILL BE ALLOWED.
9. ANY DEVICE USED FOR SUPPORTING DOWELS SHALL HAVE SUFFICIENT RIGIDITY AND BE SO HELD IN PLACE DURING CONCRETE PLACEMENT THAT DOWELS WILL BE IN TRUE POSITION IN THE FINISHED PAVEMENT. ANY DEVICE NOT PRODUCING THE DESIRED RESULTS SHALL BE REJECTED.
10. PRODUCER AND CONTRACTOR SHALL AVOID PATENT INFRINGEMENT OF THE BASKET AND SHALL SAVE THE CITY HARMLESS IN THE USE OF ANY BASKET.
11. THE CONTRACTOR MAY SELECT THE TYPE OF BASKET TO BE USED. AFTER THE SELECTION IS MADE, THE SAME TYPE BASKET SHALL BE USED THROUGH THE PROJECT.
12. COLD-DRAWN STEEL WIRE FOR CONCRETE REINFORCEMENT MEETING THE REQUIREMENTS OF AASHTO M 32 SHALL BE USED FOR ALL BASKETS, SPACERS, AND STAKES.
13. DOWEL BARS SHALL CONFORM TO MATERIAL REQUIREMENTS OF AASHTO SECTION M31, M42 OR M53 GRADE B0. DOWEL BARS SHALL BE CENTERED ON THE BASKET REGARDLESS OF THE WIDTH OF THE BASKET OR THE LENGTH OF THE DOWEL BAR. SEE TABLE THIS SECTION.
14. THE HEIGHT OF THE LOAD TRANSFER UNIT (MEASURED TO THE CENTER OF THE DOWEL BAR) SHALL BE 1/2 THE THICKNESS OF THE PAVEMENT.
15. DOWEL BARS SHALL HAVE A SHOP OR FIELD COAT OF LEAD OR ZINC CHROMATE PRIMER FOR FULL LENGTH OF BARS, AND ALTERNATE ENDS SHALL HAVE A FIELD COAT OF MC-70 (OR OTHER HEAVY LUBRICANT ADEQUATE FOR BREAKING THE BOND BETWEEN THE STEEL AND CONCRETE) FOR A MINIMUM OF 1/2 THE LENGTH OF THE BARS.
16. THE LUBRICATED ENDS OF THE DOWEL BARS SHALL HAVE EXPANSION CAPS WITH A MINIMUM 1" AND A MAXIMUM 2" AIR SPACE IN THE END OF THE EXPANSION CAPS (EXPANSION JOINT ASSEMBLIES).
17. THE CONTRACTOR SHALL FURNISH A SUFFICIENT NUMBER OF SAND PLATES TO SUPPORT THE LOAD TRANSFER UNIT WHEN NEEDED TO PREVENT SETTLEMENT OF THE LOAD TRANSFER UNIT.
18. IN ADDITION TO THE SUPPORTS INDICATED, THE CONTRACTOR SHALL PROVIDE SUITABLE INSTALLING DEVICES AND SUCH ADDITIONAL STAKES AS MAY BE REQUIRED TO HOLD THE JOINT FILLER VERTICAL AND SECURELY IN LINE AND POSITION. THE CONTRACTOR WILL ALSO BE REQUIRED TO SATISFACTORLY FORM THE UPPER PORTION OF THE JOINT FOR RECEIVING THE SEAL.
19. COST OF JOINT FILLERS, SEALING, AND REINFORCING STEEL SHALL BE INCLUDED IN THE PRICE FOR OTHER ITEMS OF WORK.
20. ALTERNATE DOWEL BARS SHALL BE OF THE SAME SIZE COATED IN ACCORDANCE WITH AASHTO M 254. THICKNESS OF COATING SHALL BE 10 MIL+ 2 MIL. NO COATING ON WELDED END. PAINT (ALTERNATE COATING) SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION TTP-664.
21. CITY MAY REQUIRE PROOF ROLLING WITH A LOADED TRUCK MIN. 50,000 LBS TO ENSURE STABILITY OF BASE.

STANDARD SPECIFICATIONS FOR CONSTRUCTION OF STREETS  
 DECEMBER 31, 2007 REVISION

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

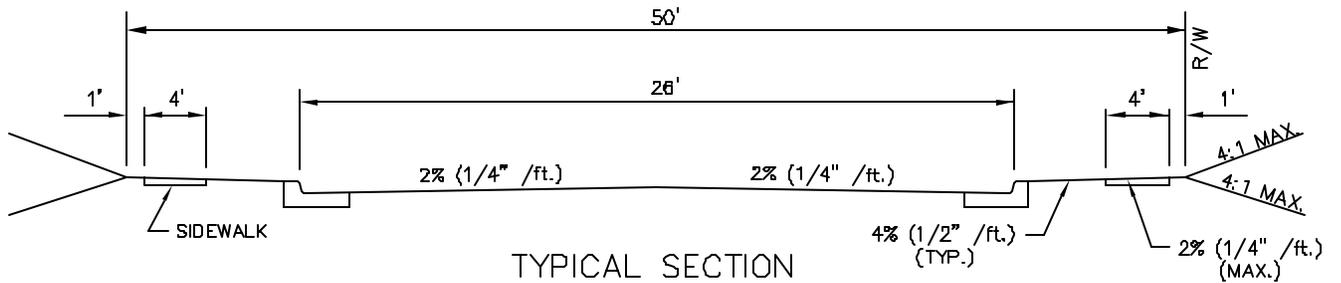
GENERAL NOTES

STREETS

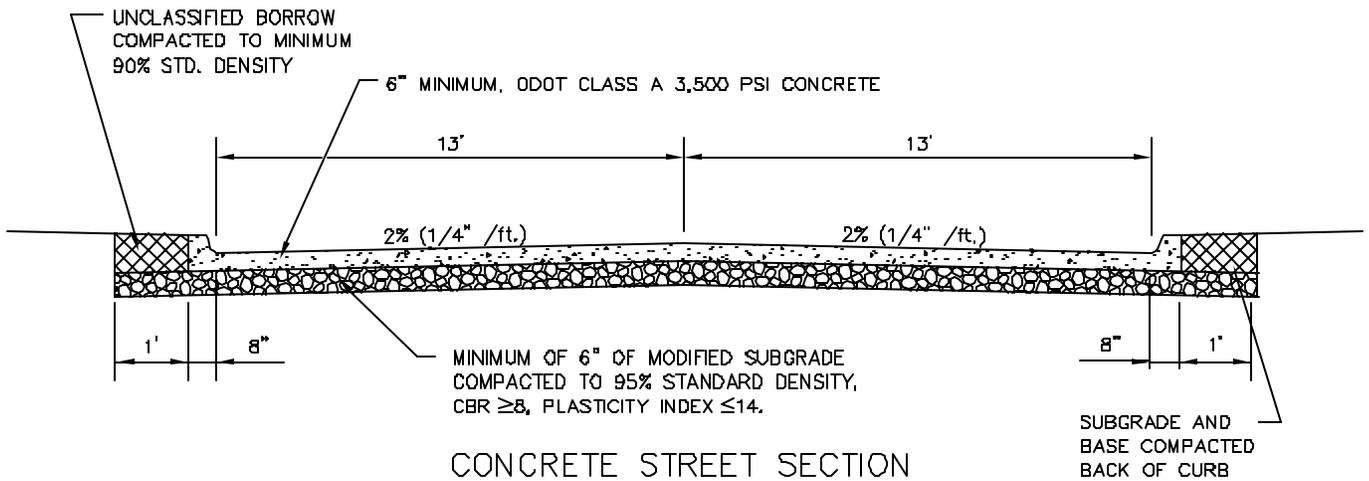
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SPECIFICATION NO. 411 & 414

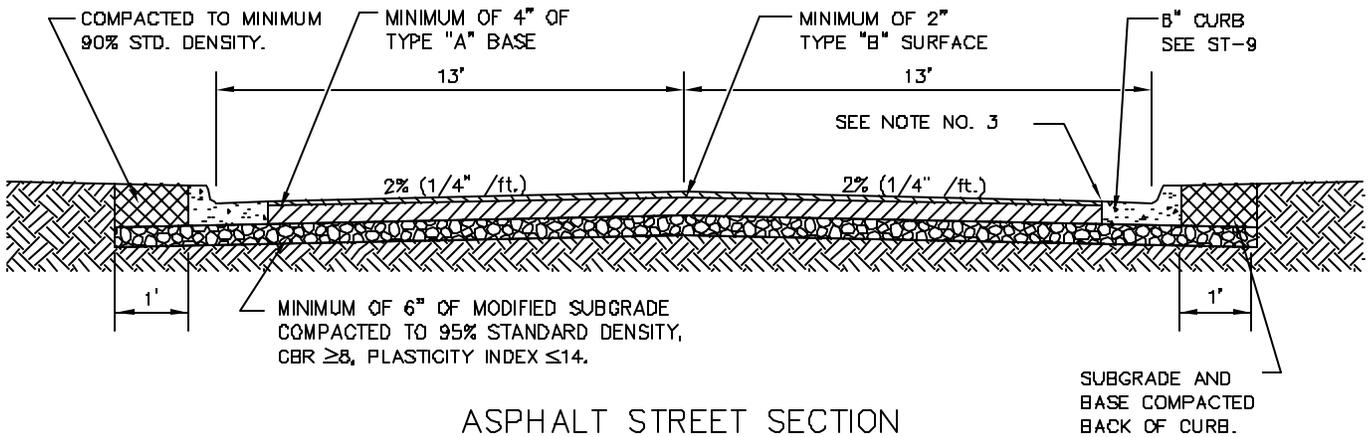
ST-01    PAGE 34



TYPICAL SECTION



CONCRETE STREET SECTION



ASPHALT STREET SECTION

NOTES:

1. PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO METHOD
2. DOWELS REQUIRED FOR PCC PAVING 8" THICK, OR GREATER.
3. ASPHALT SURFACE SHALL BE 1/4" ABOVE EDGE OF CONCRETE GUTTER.

REVISIONS	ND.	DATE	ITEM CHANGED

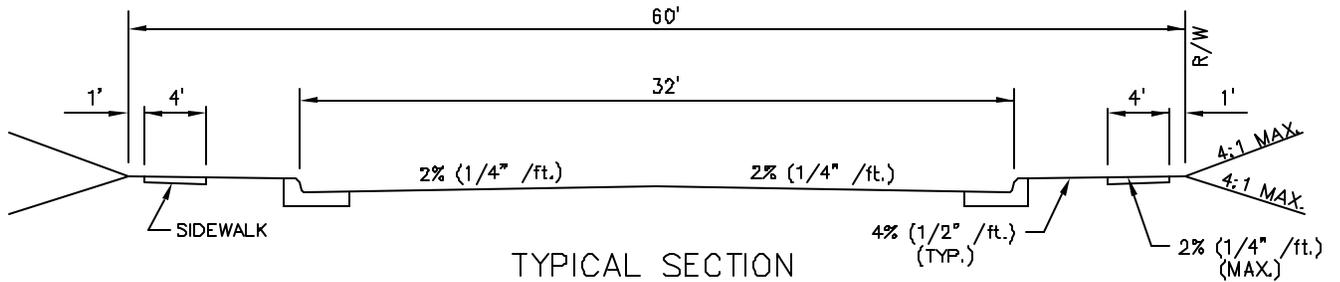
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

LOCAL STREET  
WITH CURB

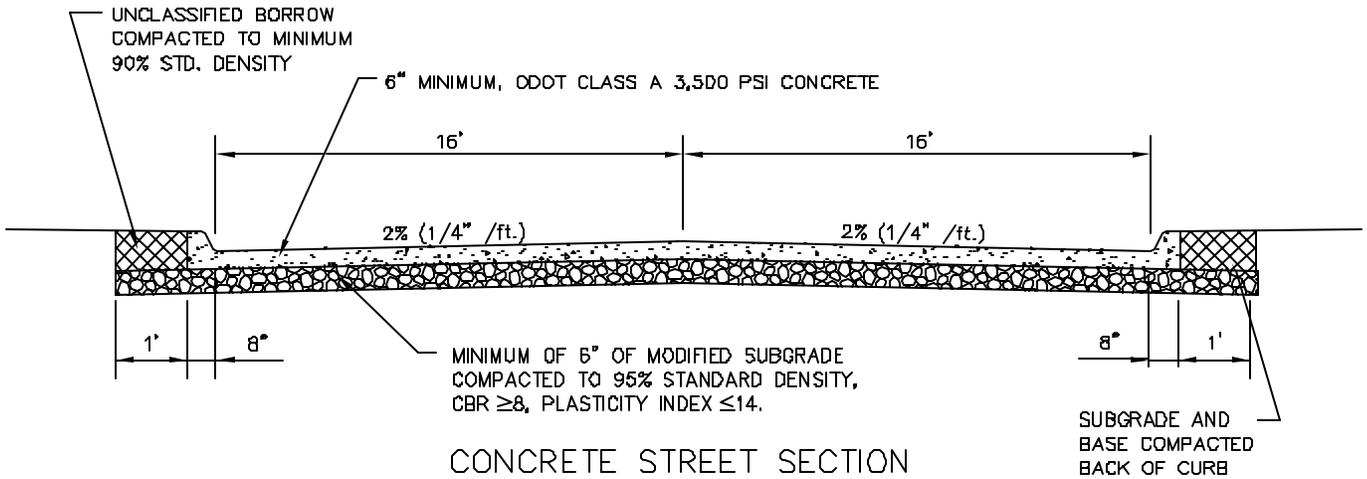
STREETS

SPECIFICATION NO. 411 & 414

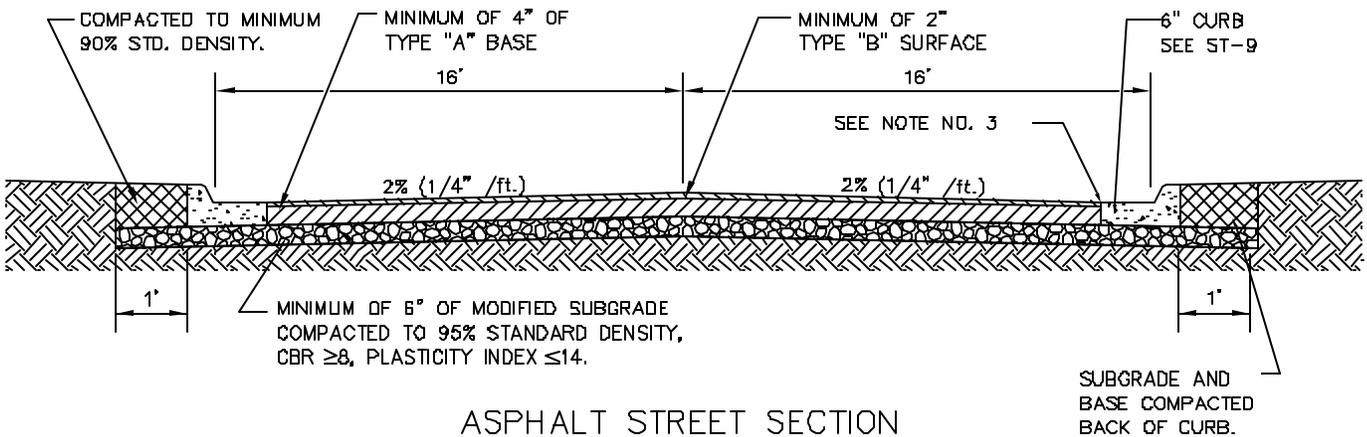
ST-02 PAGE 35



TYPICAL SECTION



CONCRETE STREET SECTION



ASPHALT STREET SECTION

NOTES:

1. PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO METHOD
2. DOWELS REQUIRED FOR PCC PAVING 8" THICK, OR GREATER.
3. ASPHALT SURFACE SHALL BE 1/4 " ABOVE EDGE OF CONCRETE GUTTER.

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

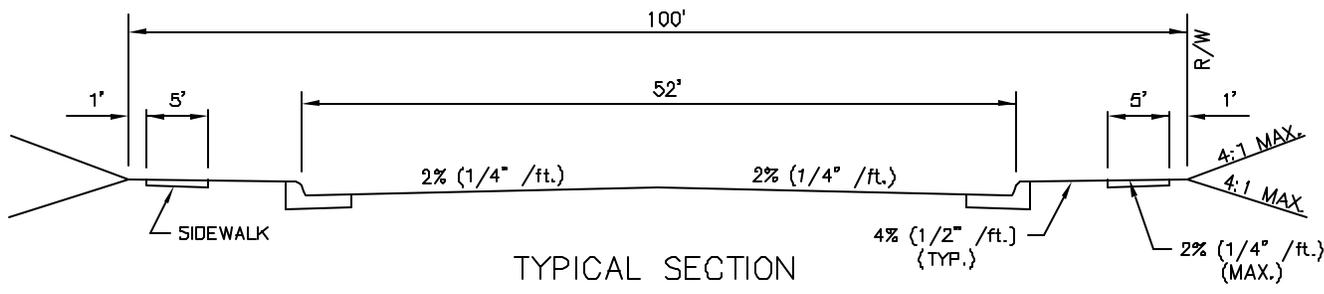
COLLECTOR STREET  
WITH CURB

STREETS

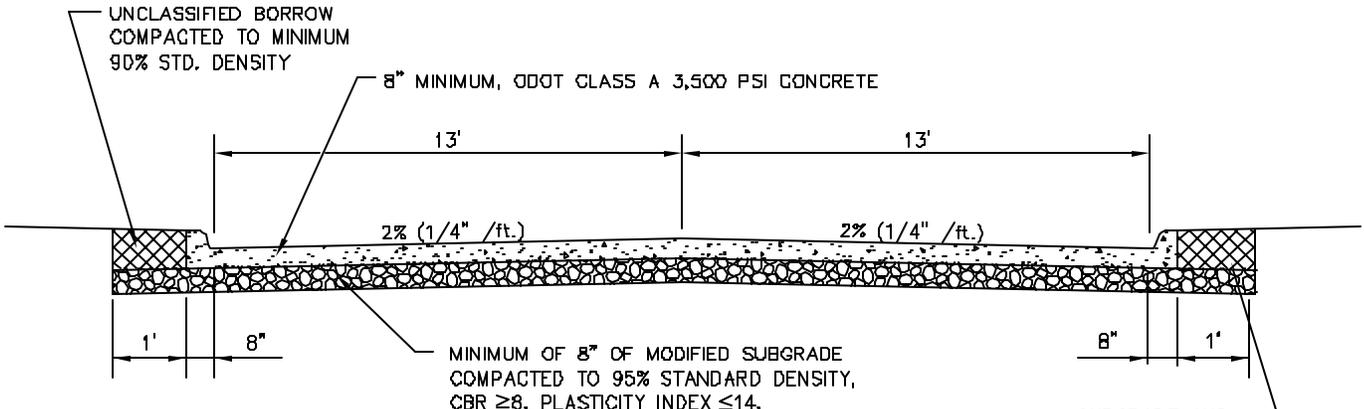
SPECIFICATION NO. 411 & 414

ST-03 PAGE 36

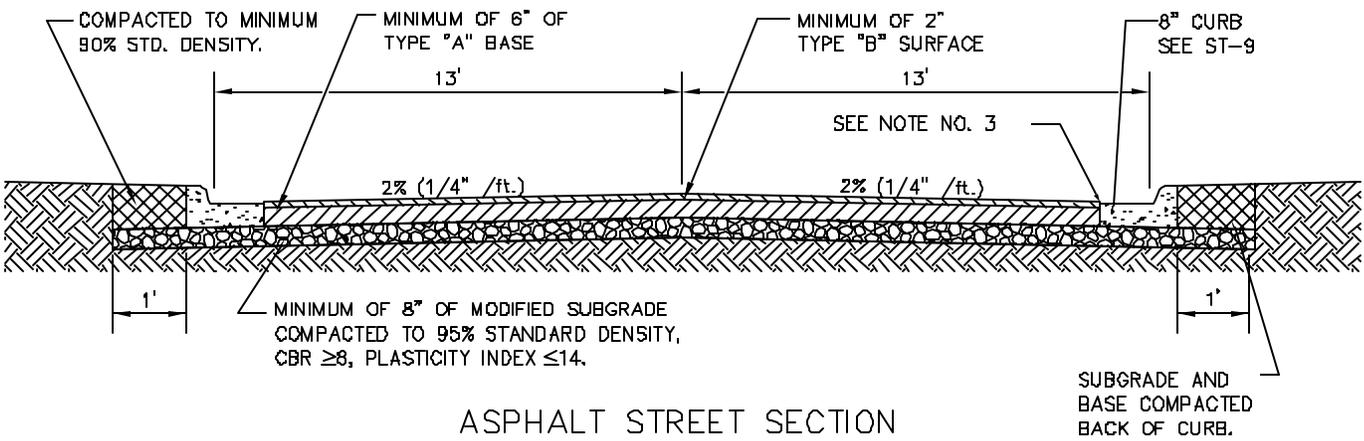
STANDARD, DIMENSIONS, WEIGHTS & ALLOWANCES  
 DECEMBER 31, 2007 REVISION



TYPICAL SECTION



CONCRETE STREET SECTION



ASPHALT STREET SECTION

NOTES:

1. PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO METHOD
2. DOWELS REQUIRED FOR PCC PAVING 8" THICK, OR GREATER.
3. ASPHALT SURFACE SHALL BE 1/4" ABOVE EDGE OF CONCRETE GUTTER.
4. A 2" THICK OVERLAY SHALL BE ADDED TO THE CENTERLINE OF THE EXISTING STREET WHEN ADDING AN OUTSIDE LANE.

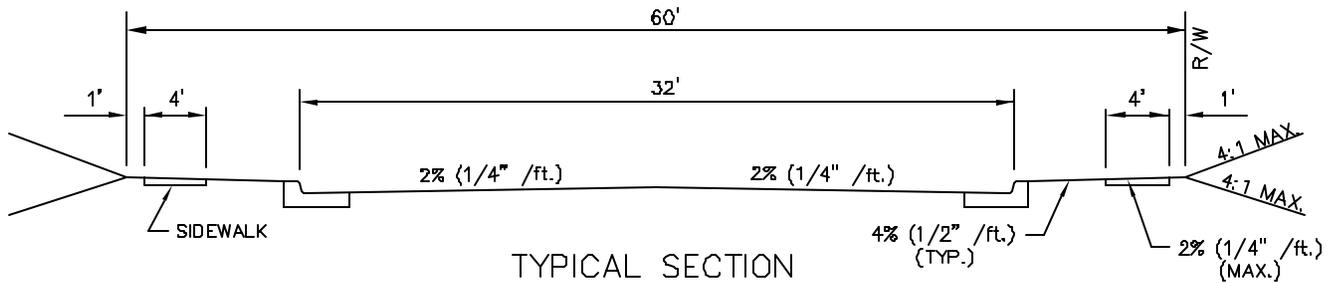
REVISIONS	ND.	DATE	ITEM CHANGED
1	7/26/2004		OVERLAY TO CL

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

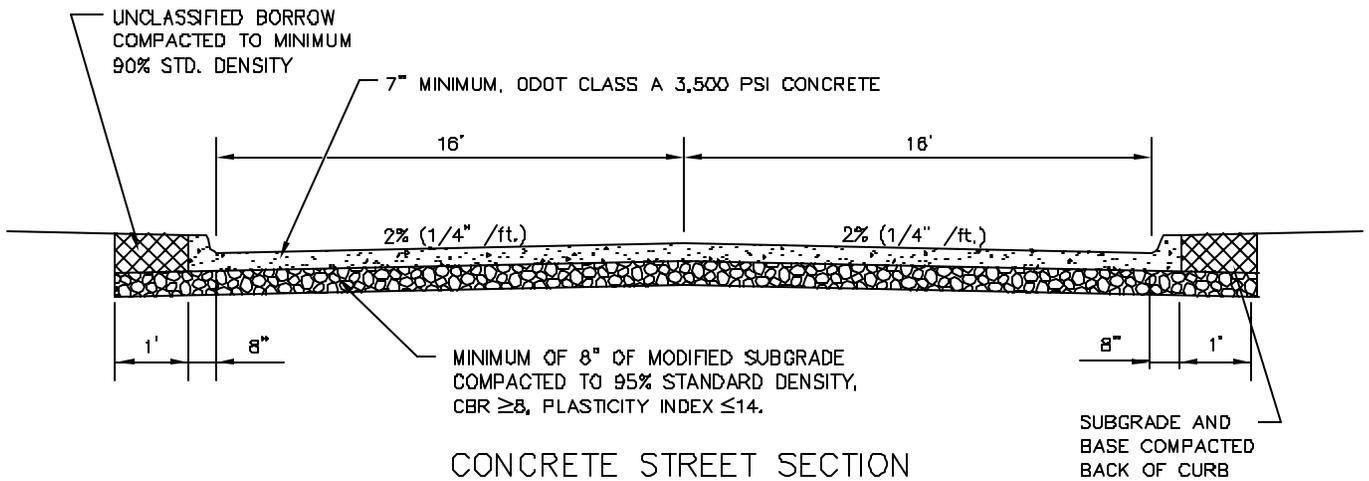
ARTERIAL STREET  
WITH CURB

STREETS  
SPECIFICATION NO. 411 & 414  
ST-04 PAGE 37

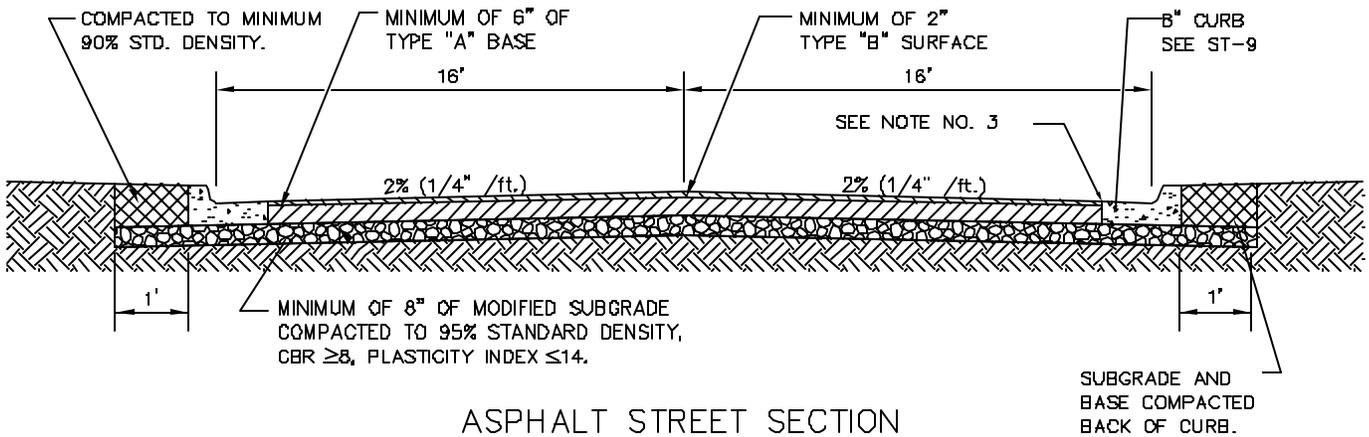
50,000 WATER FORMS APPROVED CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DRAWINGS (JULY 2003) NEW & REVISED VIT-4485/DMG  
 JULY 26, 2004 REBER



TYPICAL SECTION



CONCRETE STREET SECTION



ASPHALT STREET SECTION

NOTES:

1. PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO METHOD
2. DOWELS REQUIRED FOR PCC PAVING 8" THICK, OR GREATER.
3. ASPHALT SURFACE SHALL BE 1/4" ABOVE EDGE OF CONCRETE GUTTER.

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

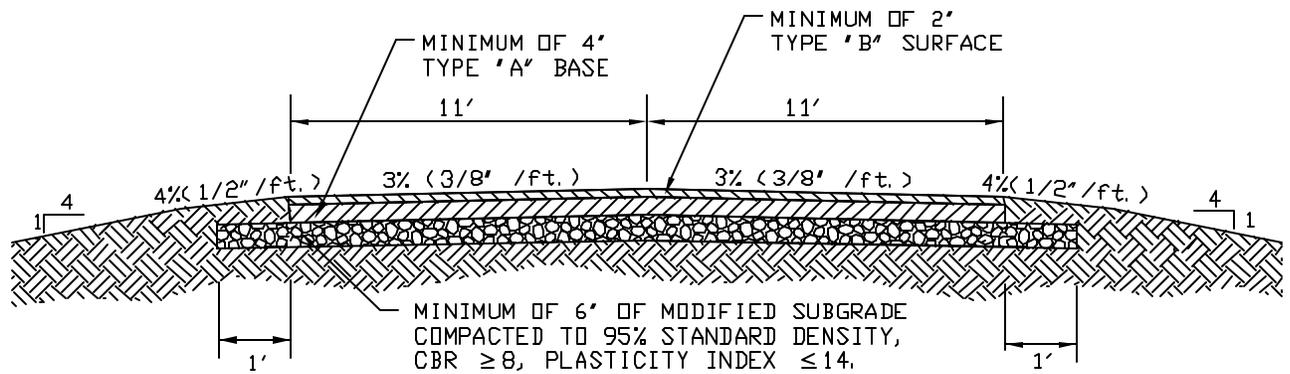
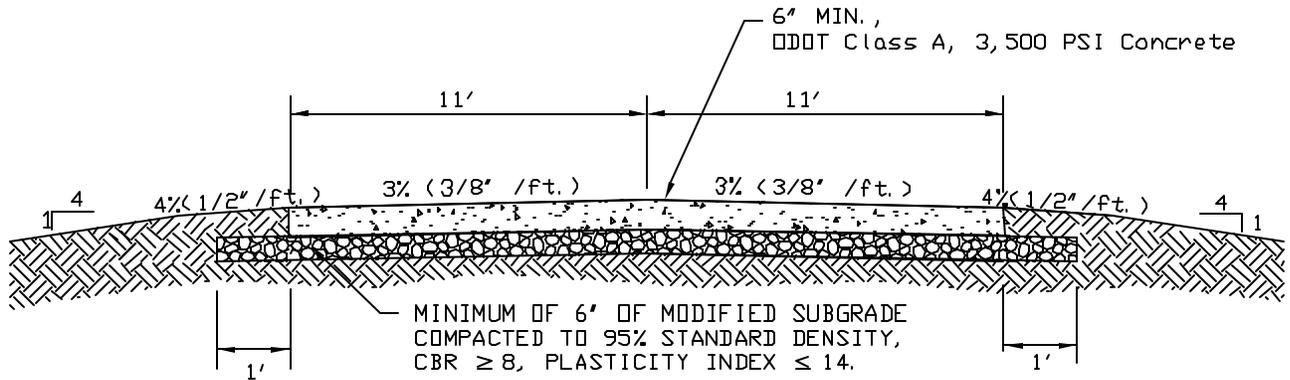
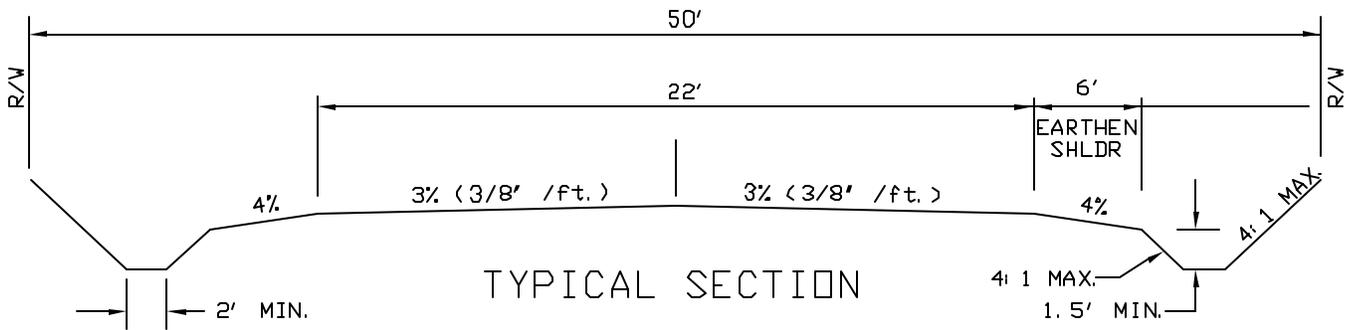
**INDUSTRIAL STREET  
 WITH CURB**

**STREETS**

SPECIFICATION NO. 411 & 414

ST-05 PAGE 38

STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC WORKS  
 CITY OF EDMOND, OKLAHOMA  
 DECEMBER 31, 2007 EDITION



NOTE:  
PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED  
IN ACCORDANCE WITH THE AASHTO METHOD.

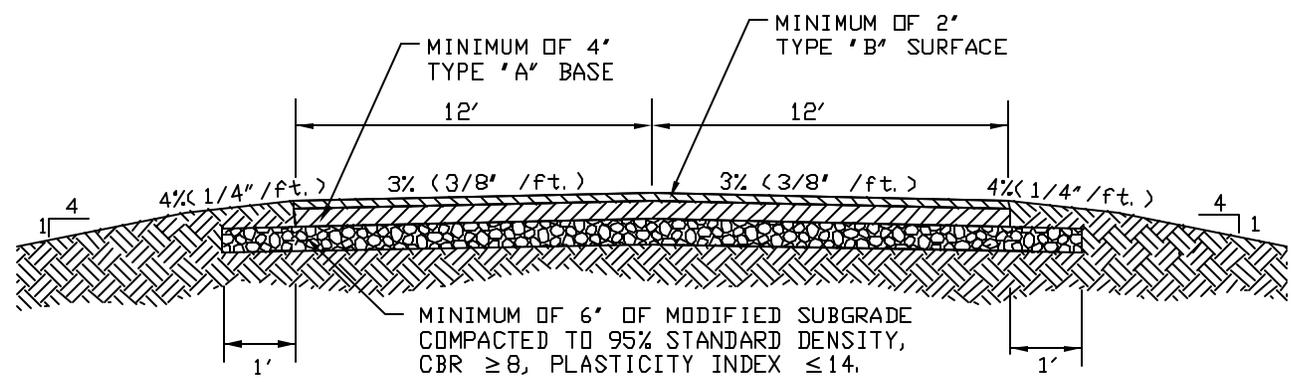
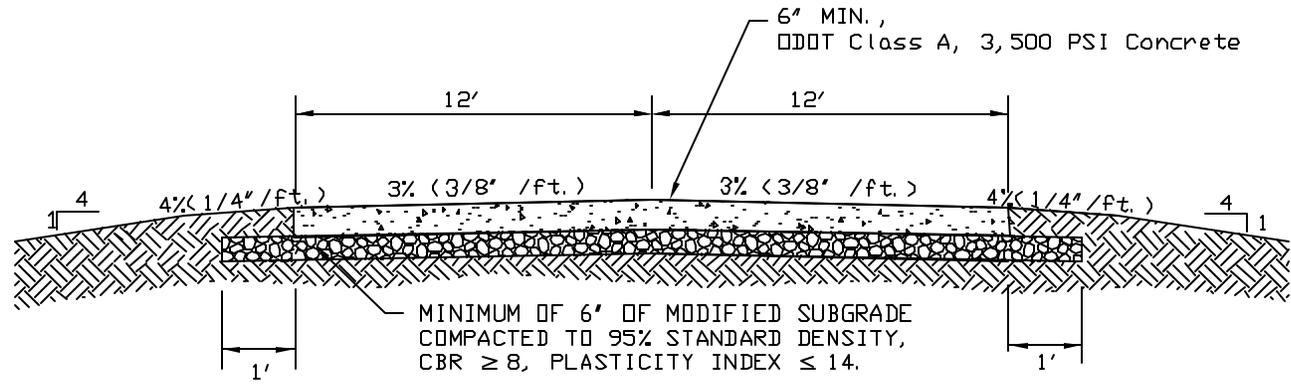
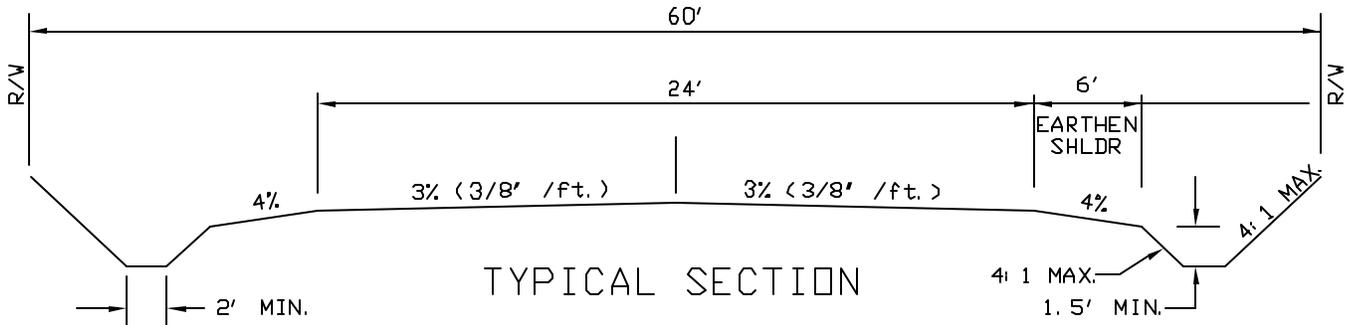
STANDARD CONSTRUCTION DRAWINGS (JULY 2004) REVISED 07-2004  
 ENGINEERING DEPARTMENT CONSTRUCTION STANDARDS  
 JULY 2004 REVISION

REVISIONS	ND.	DATE	ITEM CHANGED
1	7/26/2004		SLOPE INCH. CORRECTED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**LOCAL STREET  
WITHOUT CURB**

**STREETS**  
SPECIFICATION NO. 411 & 414  
ST-06 PAGE 39



NOTE:  
PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO METHOD.

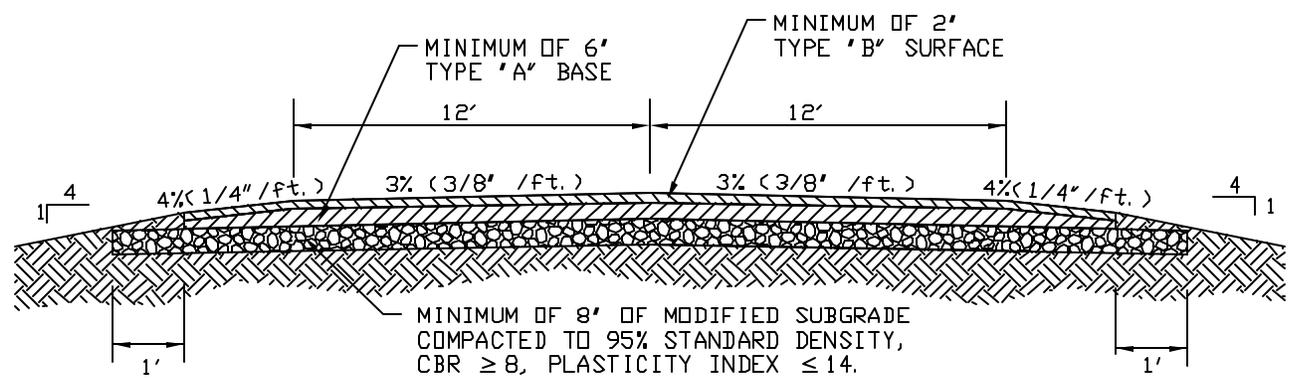
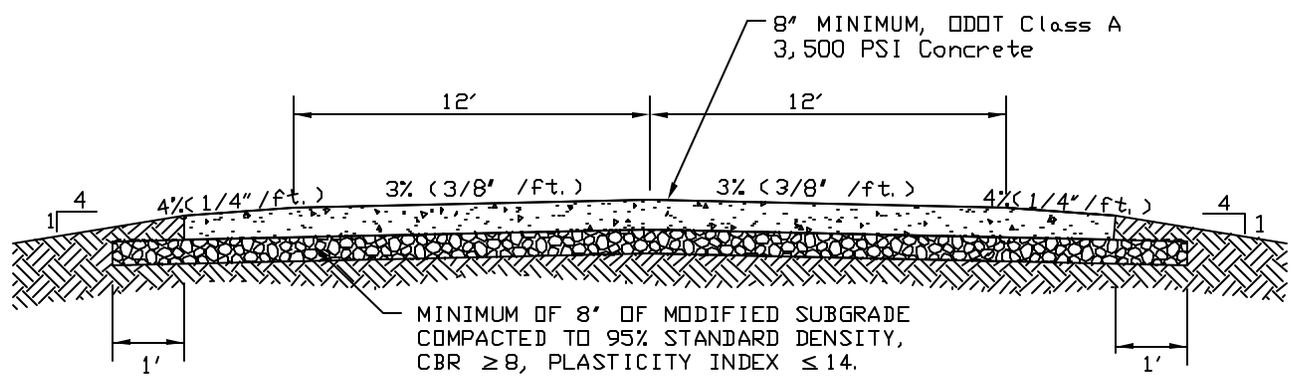
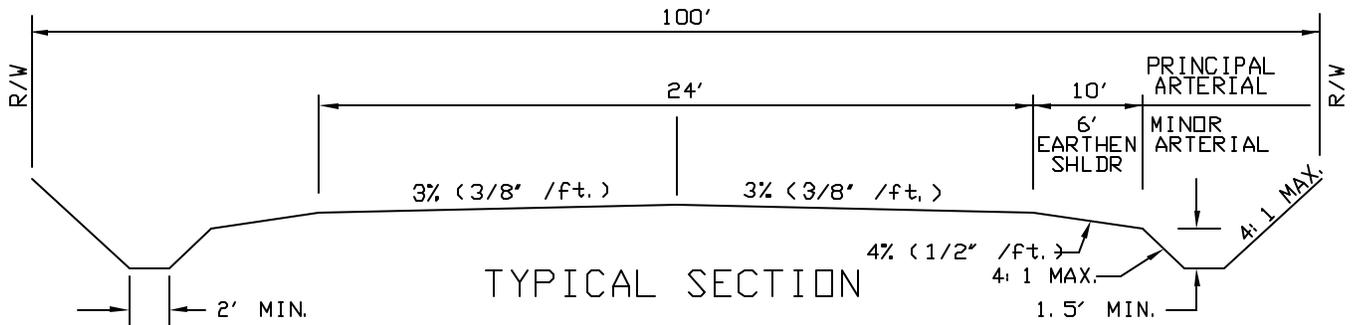
STANDARD, EDMOND, MEXICO, 11/15/07-07/09  
 DECEMBER 31, 2007 REBER

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**COLLECTOR STREET  
 WITHOUT CURB**

**STREETS**  
 SPECIFICATION NO. 411 & 414  
 ST-07 PAGE 40



NOTES:

1. PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO METHOD.
2. DOWELS REQUIRED FOR PCC PAVING 8" THICK, OR GREATER.
3. A 2" THICK OVERLAY SHALL BE ADDED TO THE CENTERLINE OF THE EXISTING STREET WHEN ADDING AN OUTSIDE LANE.

STANDARD CONSTRUCTION DRAWINGS (JULY 2007) REVISED 07-08/07/08  
 ENGINEERING DEPARTMENT CONSTRUCTION STANDARDS DIVISION  
 JULY 2004 REVISION

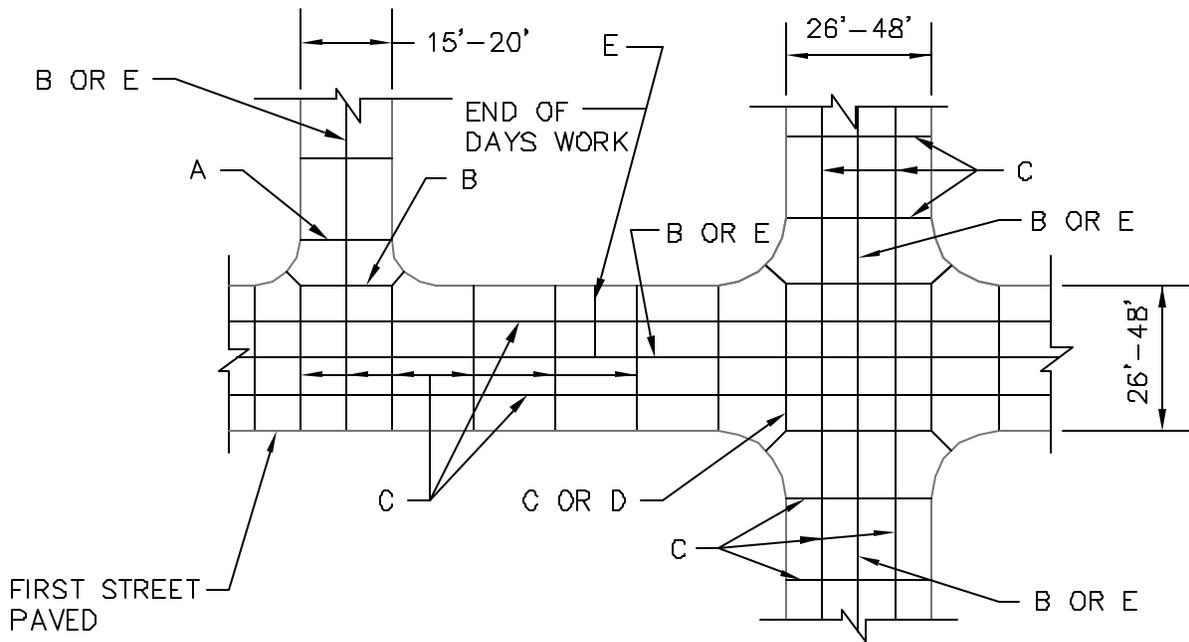
REVISIONS	NO.	DATE	ITEM CHANGED
◇		7/26/2004	OVERLAY TO CL

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

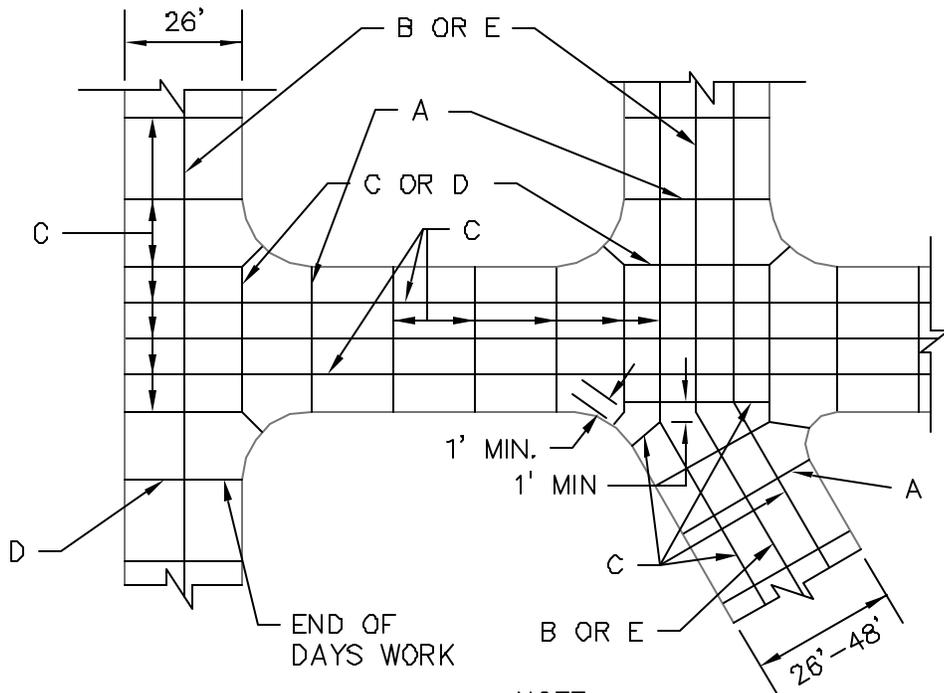
**ARTERIAL STREET  
 WITHOUT CURB**

**STREETS**  
 SPECIFICATION NO. 411 & 414  
 ST-08 PAGE 41





- A—TRANSVERSE EXPANSION JOINT
- B—LONGITUDINAL JOINT
- C—TRANSVERSE CONTRACTION JOINT OR LONGITUDINAL JOINT
- D—TONGUE & GROOVE CONSTRUCTION JOINT
- E—TIED TRANSVERSE CONSTRUCTION JOINT



NOTE:  
 MAXIMUM SPACING OF 1" EXPANSION JOINTS TO BE 100' C/C WITH 4 CONTRACTION JOINTS 18'-22' APART TO MATCH DRIVEWAY RETURNS.

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

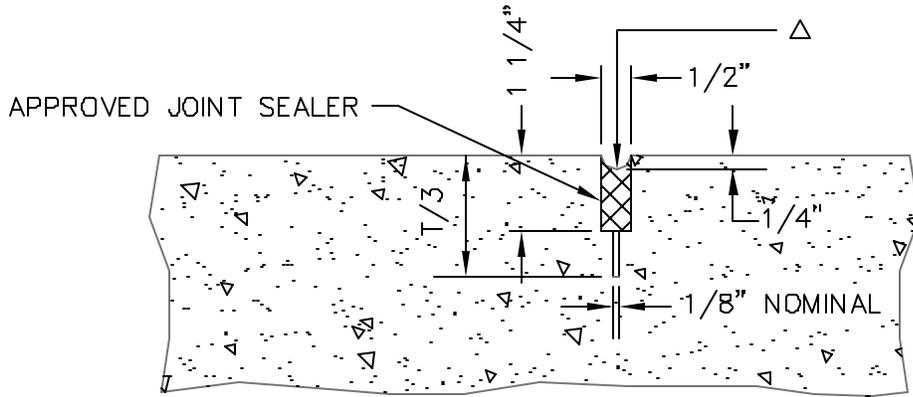
JOINT LAYOUT

STREETS

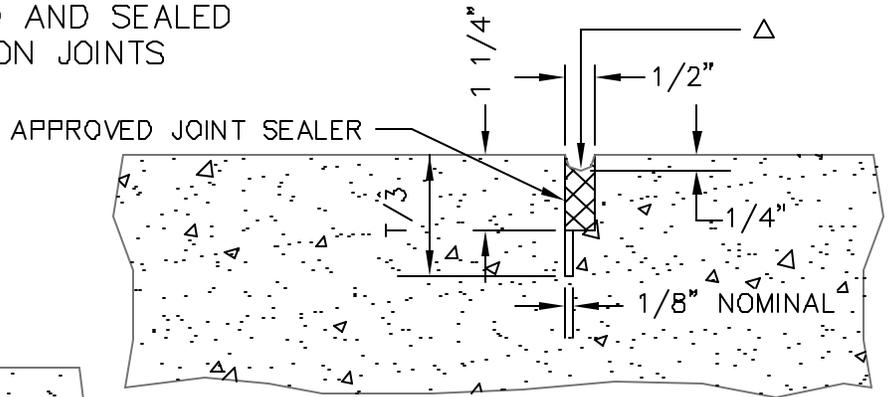
SPECIFICATION NO. 414

ST-10 PAGE 43

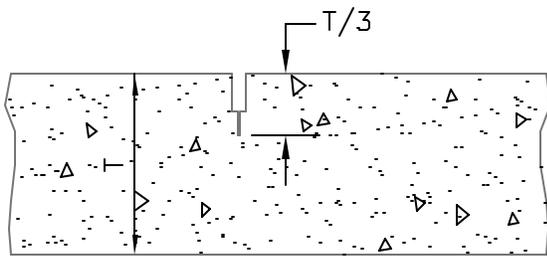
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ALTERNATE DETAILS  
FOR SAWED AND SEALED  
CONTRACTION JOINTS

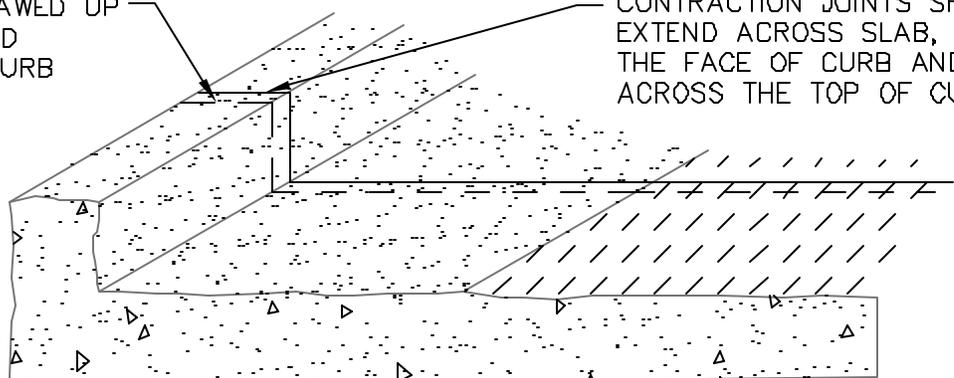


ALTERNATE DETAILS  
FOR SAWED AND SEALED  
CONTRACTION JOINTS



ALL CURB SHALL BE SAWED UP  
THE FACE OF CURB AND  
ACROSS THE TOP OF CURB

CONTRACTION JOINTS SHALL  
EXTEND ACROSS SLAB, UP  
THE FACE OF CURB AND  
ACROSS THE TOP OF CURB.



△ THE JOINT SHAPE FACTOR IS DEFINED AS THE FINAL PRESSING SHAPE OF THE SEALANT MATERIAL. THE TOOLING OPERATION WILL FIRMLY PRESS THE FRESHLY APPLIED MATERIAL INTIMATELY AGAINST THE CUT SIDES OF THE RECESS. THE ROUNDED SHAPE ON TOP OF THE MATERIAL ALLOWS THE SEALANT TO PROPERLY FLEX BUT MAINTAIN ADHERENCE TO THE PAVING.

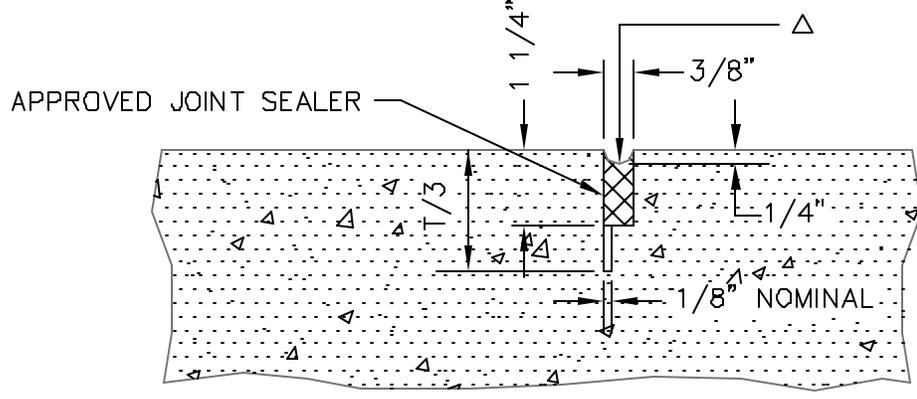
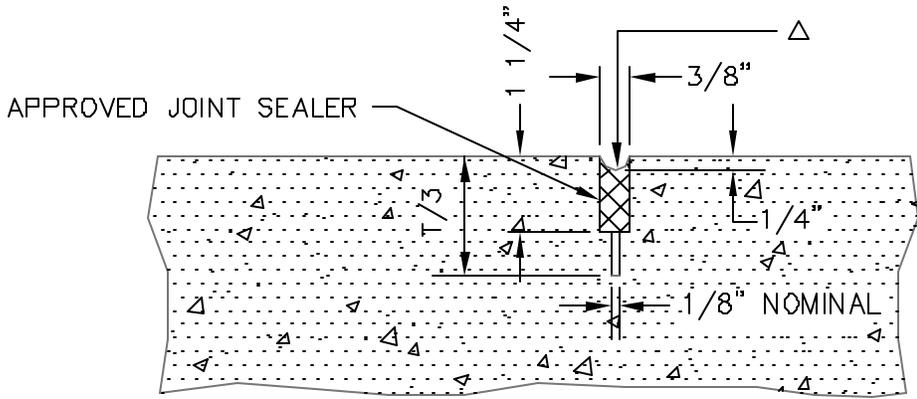
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REVISIONS	NO.	DATE	ITEM CHANGED

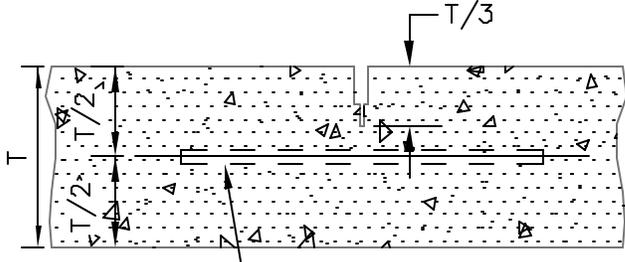
**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**CONTRACTION JOINT**

**STREETS**  
SPECIFICATION NO. 414  
ST-11 PAGE 44



ALTERNATE DETAILS  
FOR LONGITUDINAL JOINTS



NO. 4 DEF. TIE BARS: 2'-6" LG. AT 2'-6" C/C.  
TO BE SUPPORTED AT EACH END BY AN  
APPROVED BAR SUPPORT OR PLACED BY  
AN APPROVED MECHANICAL DEVICE INTO  
THE FRESH CONCRETE.

△ THE JOINT SHAPE FACTOR IS DEFINED AS THE FINAL  
PRESSING SHAPE OF THE SEALANT MATERIAL. THE TOOLING  
OPERATION WILL FIRMLY PRESS THE FRESHLY APPLIED  
MATERIAL INTIMATELY AGAINST THE CUT SIDES OF THE  
RECESS. THE ROUNDED SHAPE ON TOP OF THE MATERIAL  
ALLOWS THE SEALANT TO PROPERLY FLEX BUT MAINTAIN  
ADHERENCE TO THE PAVING.

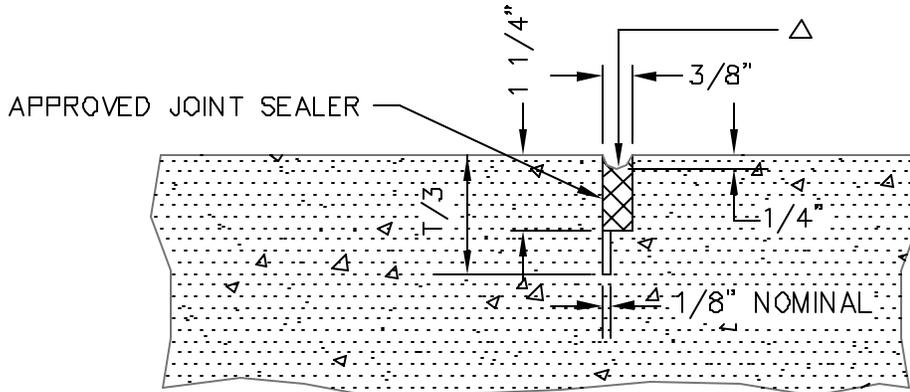
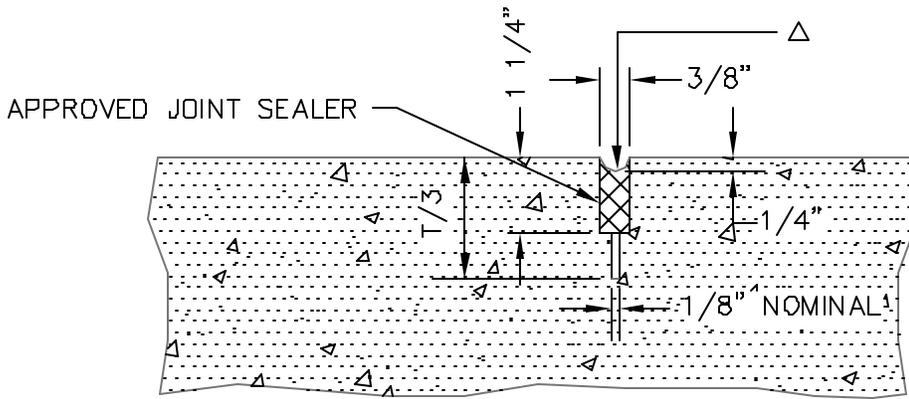
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

LONGITUDINAL JOINT

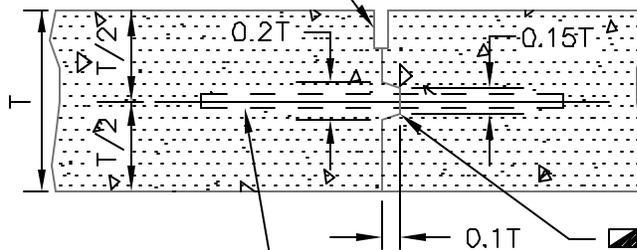
STREETS  
SPECIFICATION NO. 414  
ST-12 PAGE 45

J:\STANDARD\CONSTRUCTION\ST-12\02-03-07.DWG  
 AUGUST 26, 1998 2:00 PM MROBERT



ALTERNATE DETAILS  
FOR TONGUE AND GROOVE JOINTS

SEE JOINT REHAB DETAIL (PC-12)



NO. 4 DEF. TIE BARS: 2'-6" LG. AT 2'-6" C/C.  
TO BE OMITTED WHEN NON-TIED JOINT  
IS SPECIFIED.

△ THE JOINT SHAPE FACTOR IS DEFINED AS THE FINAL PRESSING SHAPE OF THE SEALANT MATERIAL. THE TOOLING OPERATION WILL FIRMLY PRESS THE FRESHLY APPLIED MATERIAL INTIMATELY AGAINST THE CUT SIDES OF THE RECESS. THE ROUNDED SHAPE ON TOP OF THE MATERIAL ALLOWS THE SEALANT TO PROPERLY FLEX BUT MAINTAIN ADHERENCE TO THE PAVING.

▣ FEMALE KEY (NOTCHED PORTION) SHALL BE CONSTRUCTED ON THE FIRST POUR EDGE AT ALL TIMES. ON SLIP FORM OPERATIONS, FEMALE KEYS WILL BE CONSTRUCTED ON BOTH EDGES.

REVISIONS	NO.	DATE	ITEM CHANGED

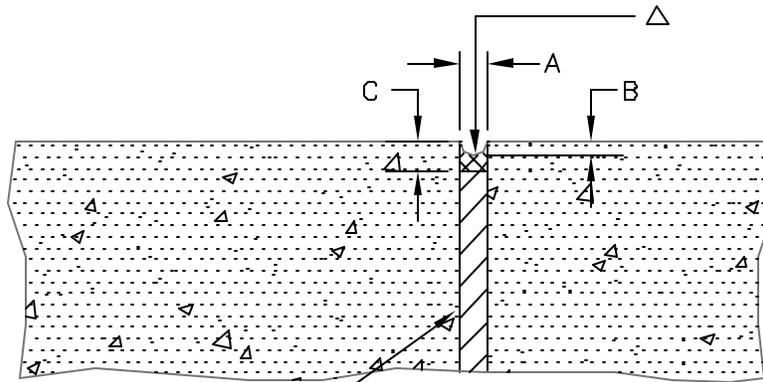
**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**TONGUE & GROOVE &/ OR  
KEYED LONGITUDINAL JOINT**

STREETS

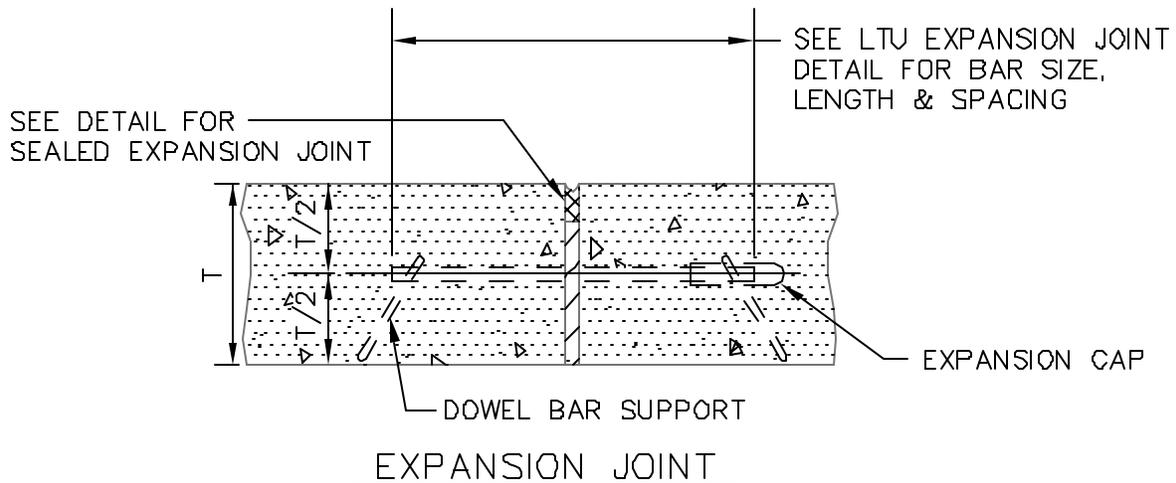
SPECIFICATION NO. 414

ST-13 PAGE 46



FILLER EXPANSION JOINT  
SEALED EXPANSION JOINT DETAIL

EXPANSION JOINT TREATMENT TABLE		
JOINT WIDTH A	SEALANT RECESS DEPTH B	SEALANT THICKNESS C
INCHES	INCHES	INCHES
1/2	1/4	1/4
3/4	1/4	3/8
1-1/2	1/2	1/2



△ THE JOINT SHAPE FACTOR IS DEFINED AS THE FINAL PRESSING SHAPE OF THE SEALANT MATERIAL. THE TOOLING OPERATION WILL FIRMLY PRESS THE FRESHLY APPLIED MATERIAL INTIMATELY AGAINST THE CUT SIDES OF THE RECESS. THE ROUNDED SHAPE ON TOP OF THE MATERIAL ALLOWS THE SEALANT TO PROPERLY FLEX BUT MAINTAIN ADHERENCE TO THE PAVING.

REVISIONS	NO.	DATE	ITEM CHANGED

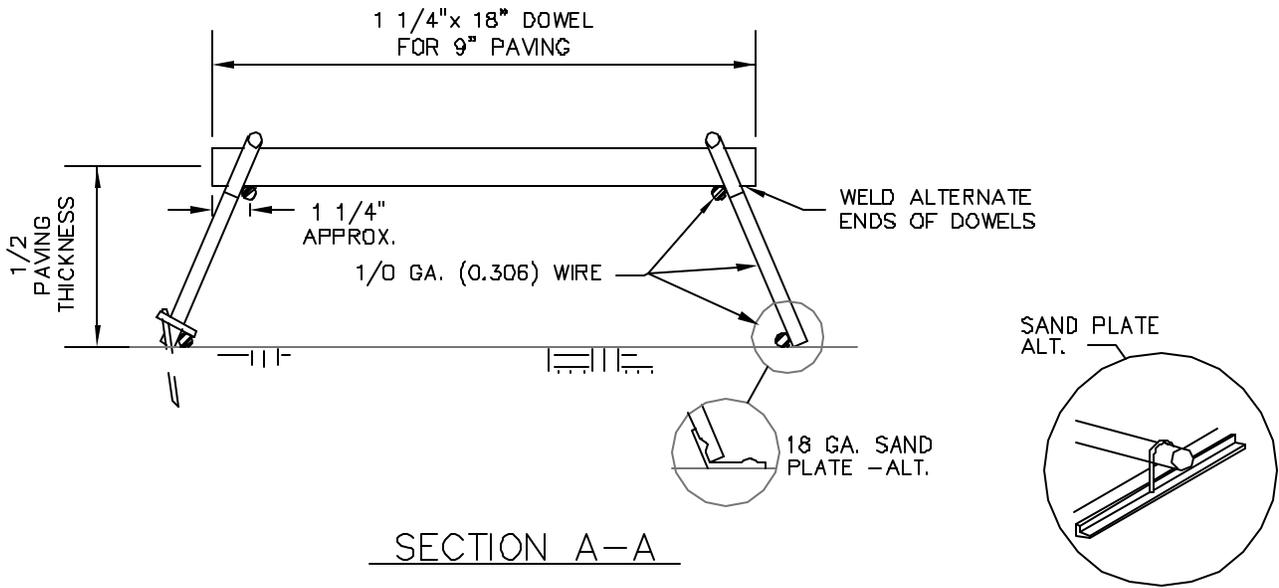
CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

EXPANSION JOINT

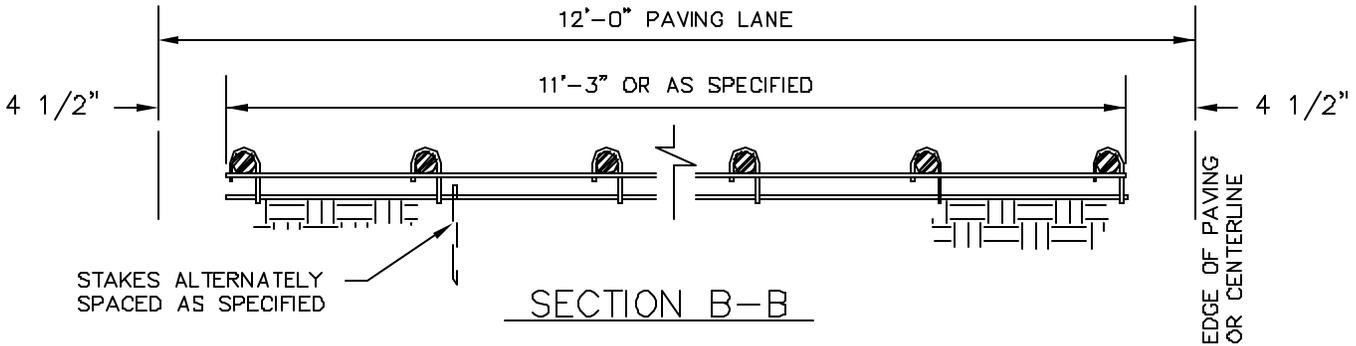
STREETS	
SPECIFICATION NO. 414	
ST-14	PAGE 47

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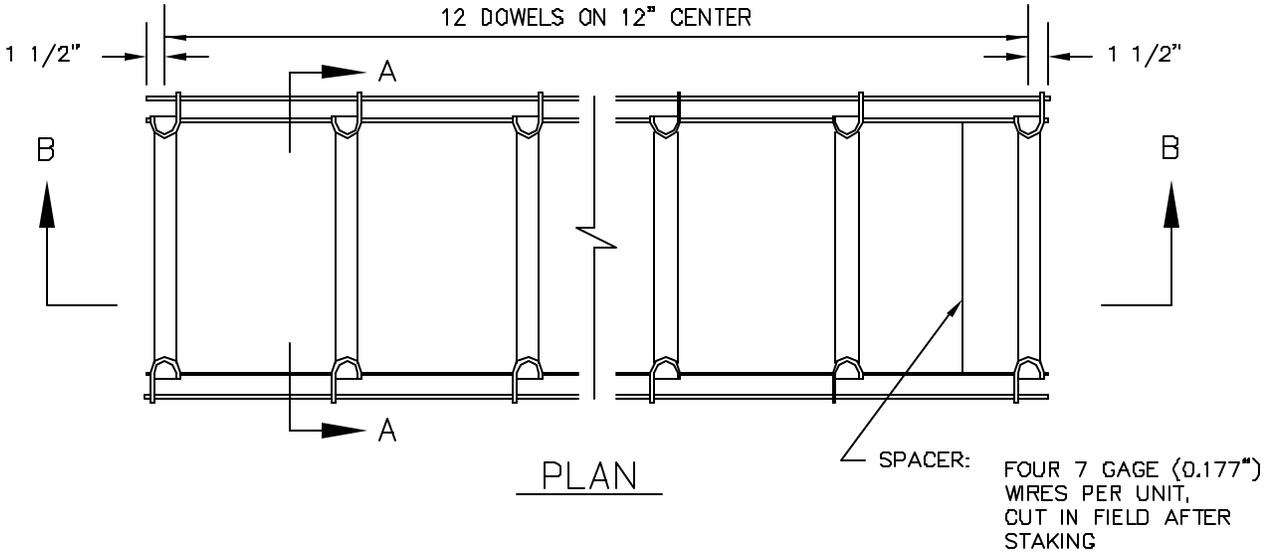




SECTION A-A



SECTION B-B



PLAN

SPACER: FOUR 7 GAGE (0.177) WIRES PER UNIT, CUT IN FIELD AFTER STAKING

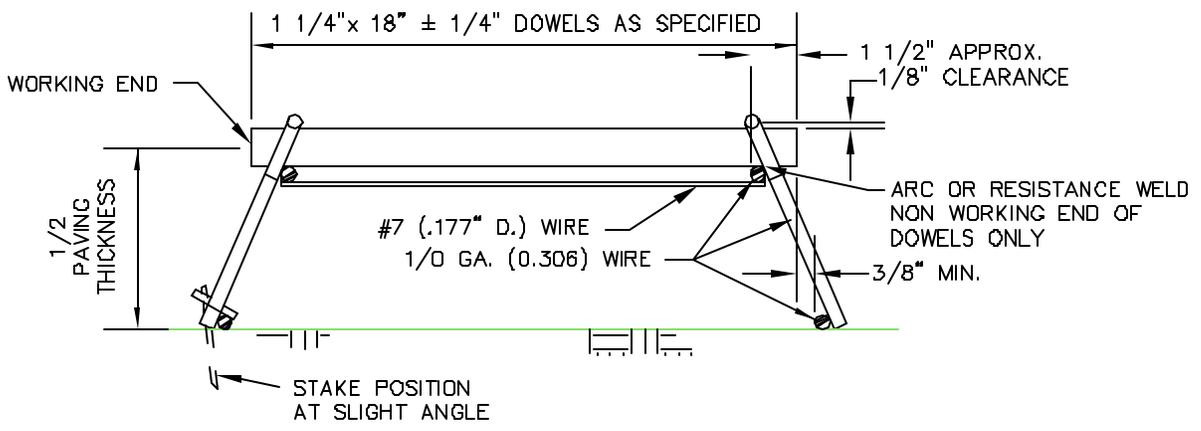
CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1000 EAST 17TH AVENUE  
 EDMOND, OKLAHOMA 73119

REVISIONS	NO.	DATE	ITEM CHANGED

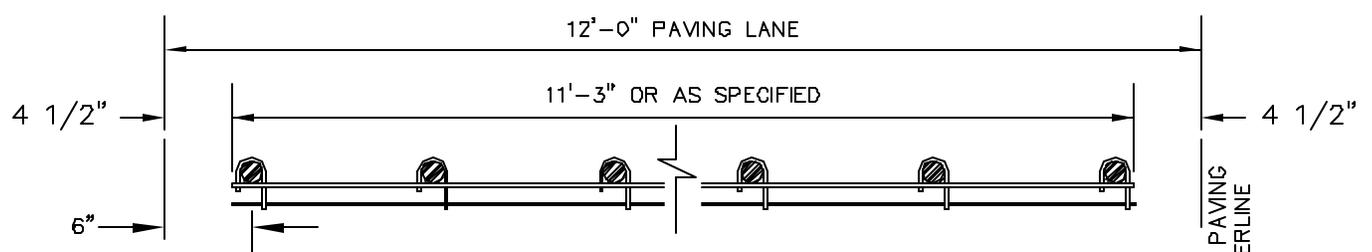
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**LTU-WELDED CONTRACTION  
 JOINT ASSEMBLY**

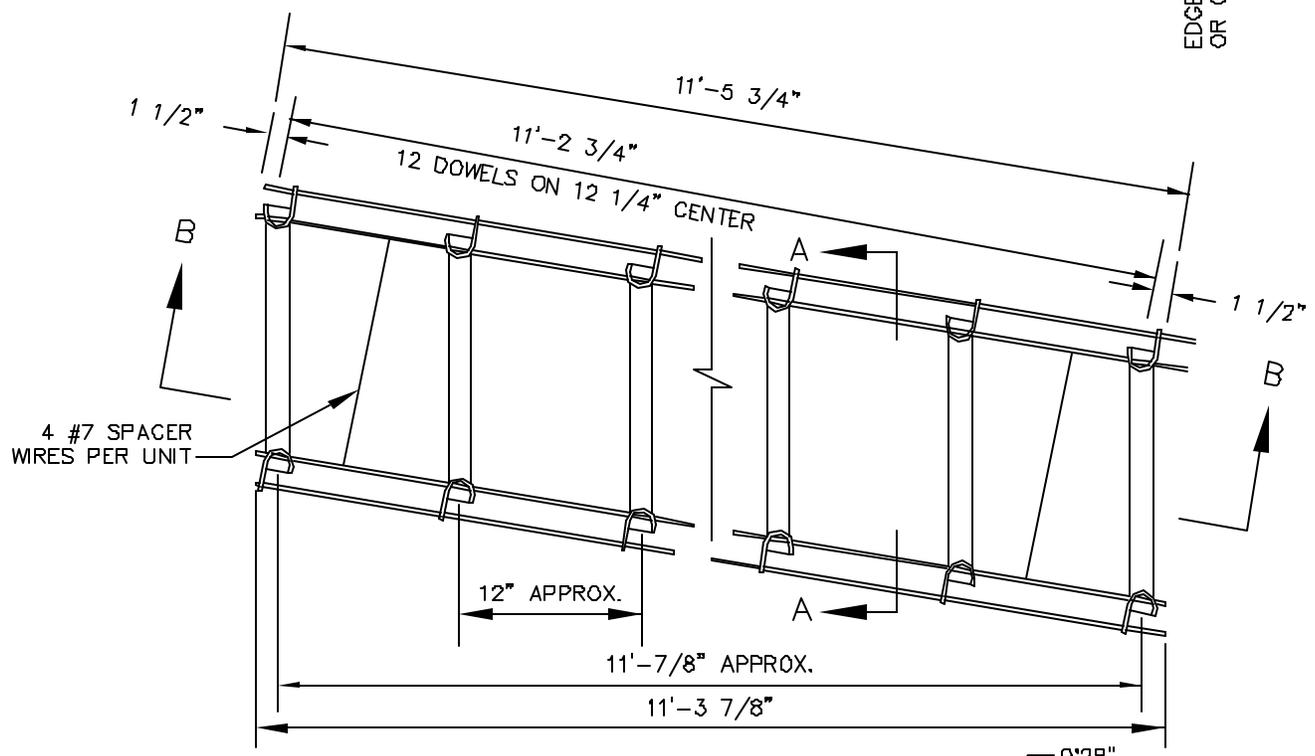
<b>STREETS</b>	
SPECIFICATION NO. 414	
ST-16	PAGE 49



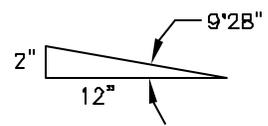
SECTION A-A



SECTION B-B



PLAN



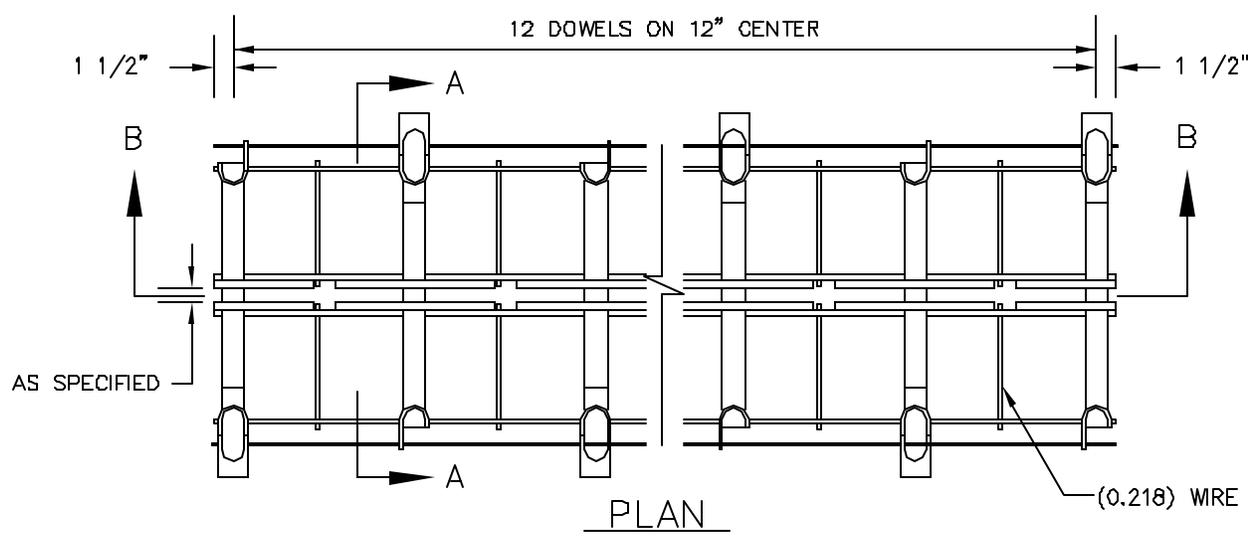
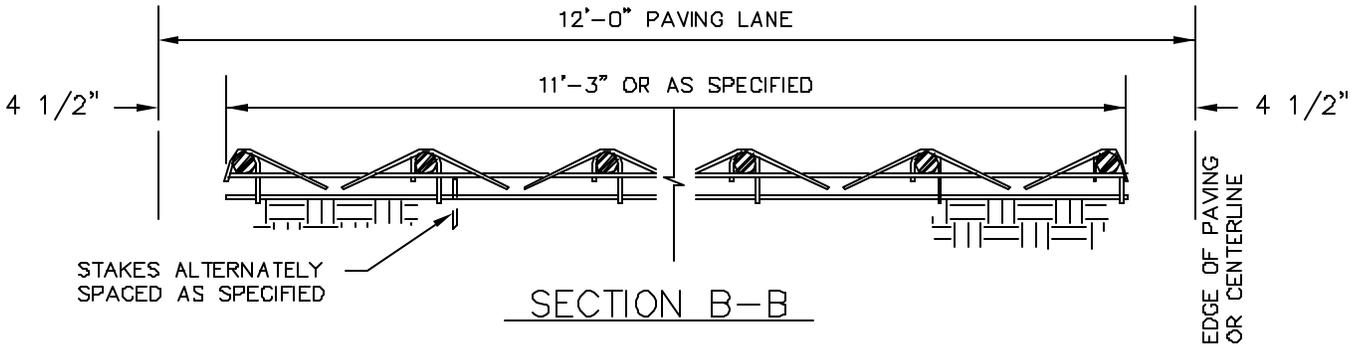
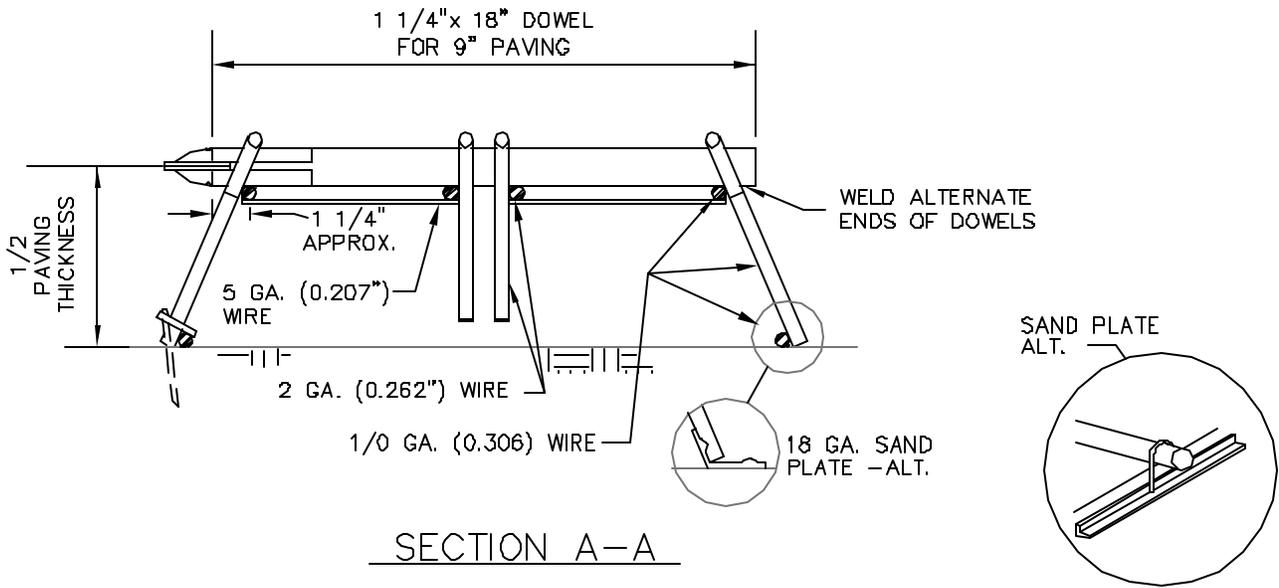
REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

LTU-DOWEL ASSEMBLY  
 SKEWED CONTRACTION JNT.

STREETS  
 SPECIFICATION NO. 414  
 ST-17 PAGE 50

15-EDMONT-CONSTR-STD-1-4-17  
 DEPT. 4, 1500 7500 PM, 10/2017



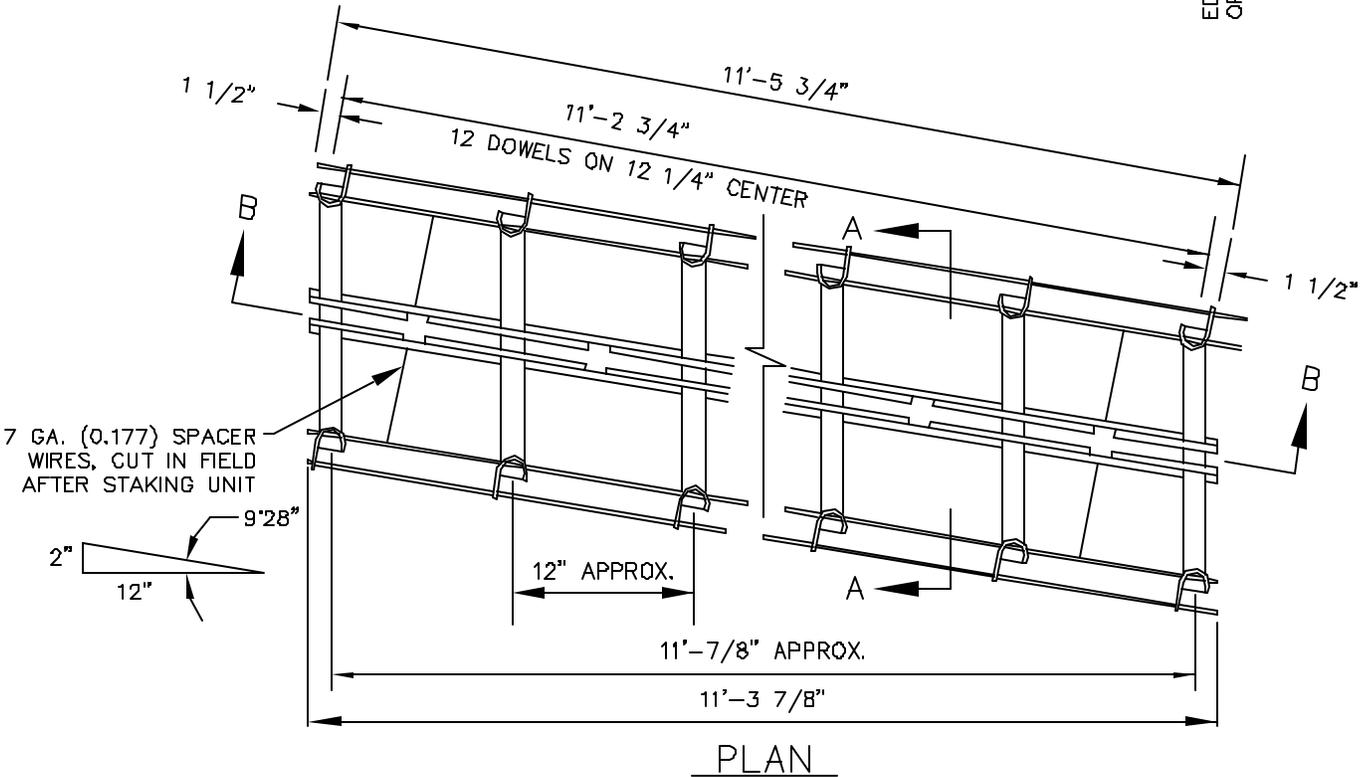
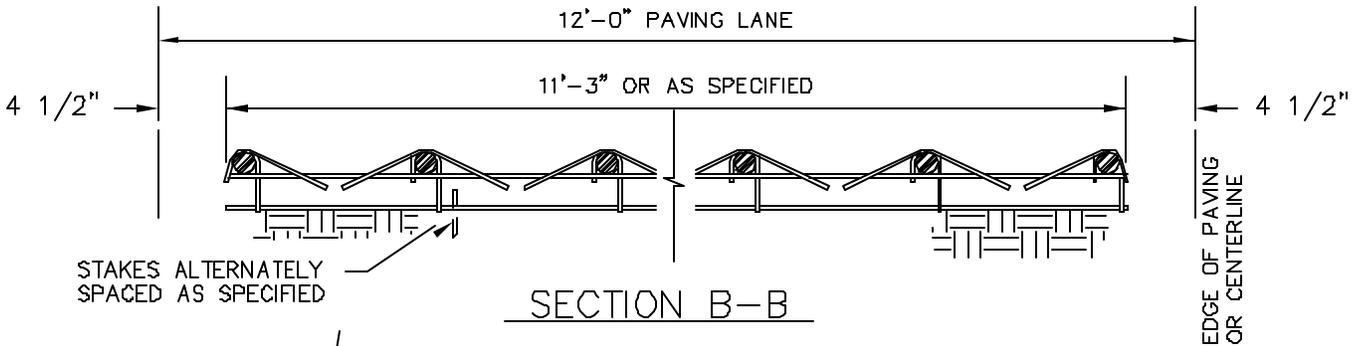
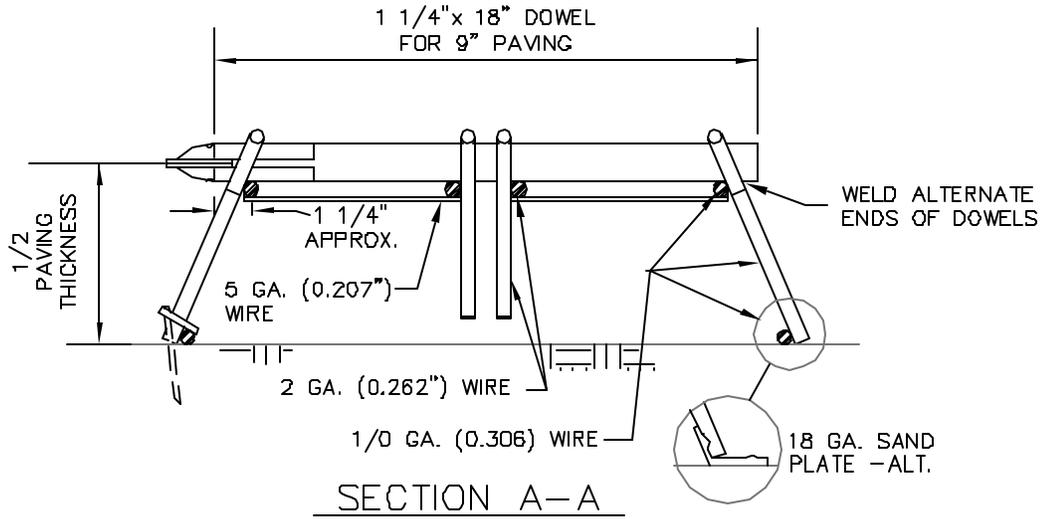
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 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 DIVISION OF CONSTRUCTION STANDARDS

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**LTU-WELDED EXPANSION  
 JOINT ASSEMBLY**

<b>STREETS</b>	
SPECIFICATION NO. 414	
ST-18	PAGE 51



REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**LTU-DOWEL ASSEMBLY**  
**SKEWED EXPANSION JOINT**

**STREETS**

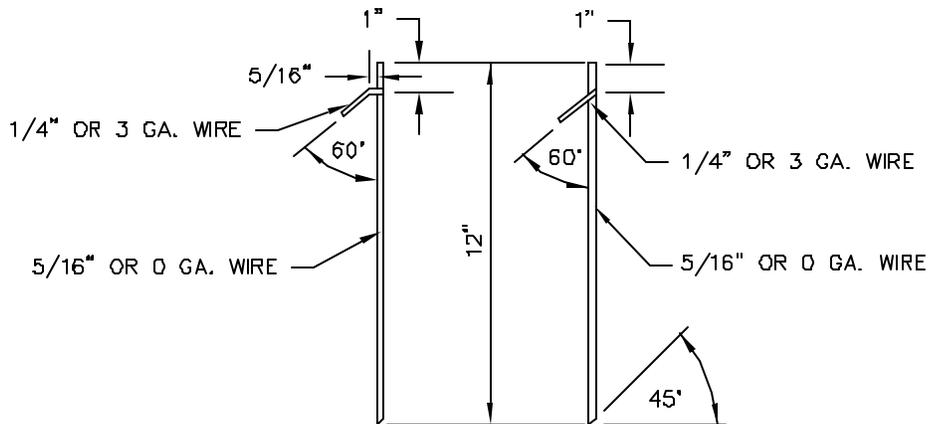
SPECIFICATION NO. 414

ST-19 PAGE 52

1-15-2008 10:00 AM 10/10/08

DOWEL BARS SPACING & SIZE DATA			
(T) SLAB DEPTH (IN.)	DOWEL DIAM. (IN.)	TOTAL DOWEL LENGTH (IN.)	C/C DOWEL SPACING (IN.)
5-6	3/4	18	12
7-8	1	18	12
9-11	1 1/4	18	12
12-16	1 1/2	18	15

TABLE OF WIRE SIZES (UNCOATED DIAMETERS)				
GAGE	DECIMAL (IN.)	FRACTION (IN.)	METRIC (MM)	AASHTO M32 REFERENCE SIZE
	.3125	5/16	7.93	W 8.
1/0	.306		7.77	W 7.
1	.283	9/32	7.19	W 6.
	.250	1/4	6.35	W 5.
3	.244		6.20	W 4.5
4	.225		5.72	W 4.
	.218		5.55	
6	.192		4.88	W 3.
7	.177		4.50	W 2.5
9	.142		3.76	W 1.5
12	.106		2.69	W 1.
16	.062		1.58	W 0.5



MINIMUM 6 PER WELDED 12' ASSEMBLY  
TYPICAL STAKES

REVISIONS	ND.	DATE	ITEM CHANGED

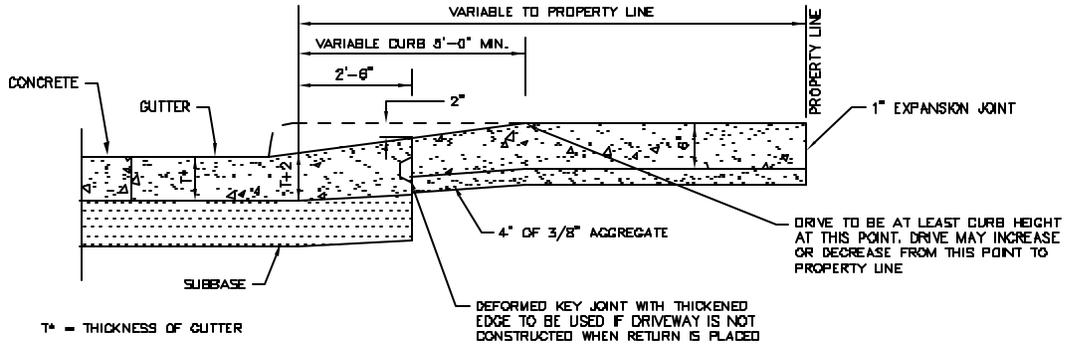
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

LTU-TYPICAL STAKES,  
WIRE & DOWEL TABLES

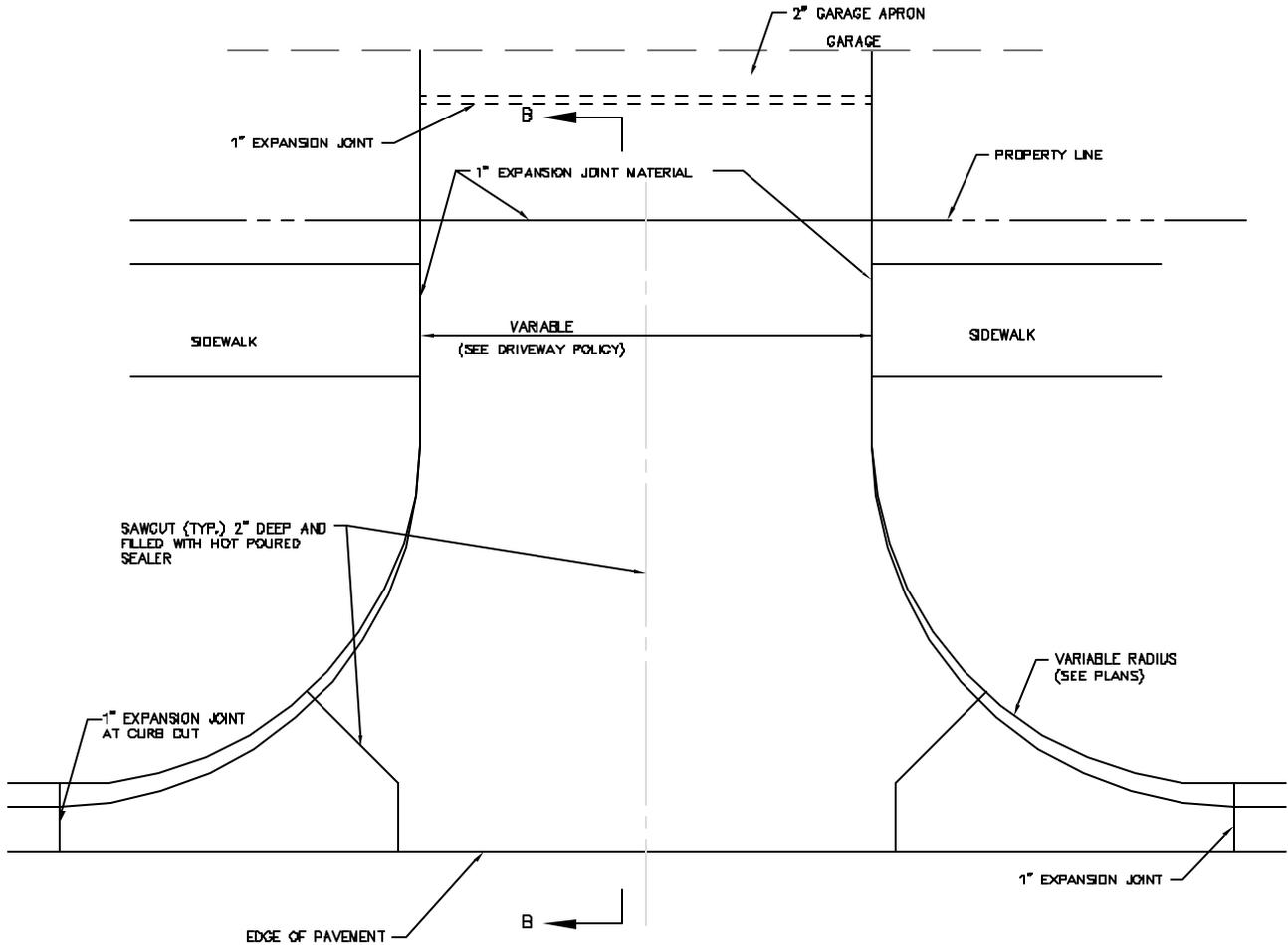
STREETS

SPECIFICATION NO. 414

ST-20 PAGE 53



SECTION B-B



NEW CONSTRUCTION

NOTES:

1. A 5'-0" MINIMUM RADIUS IS APPROVED FOR ONE & TWO FAMILY RESIDENCES NOT ABUTTING A LIMITED ACCESS OR MAJOR STREET. ALL OTHER DRIVEWAYS WILL HAVE A 10'-0" MIN. RADIUS.
2. SHOULD A DIFFERENT CURB & GUTTER SECTION BE USED (OTHER THAN SHOWN) REFER TO THE CURB & GUTTER DETAIL FOR DIMENSIONS.
3. ALL DRIVEWAYS SHALL BE A MINIMUM 6" PORTLAND CEMENT CONCRETE WITH A 28 DAY COMPRESSION STRENGTH OF 3500 PSL.
4. FOR ONE AND TWO FAMILY RESIDENCES, THE WIDTH OF DRIVEWAYS SHALL BE 30' MAXIMUM AND 20' MINIMUM. WIDTHS MAY BE 18' FOR DRIVEWAYS ON CUL-DE-SACS, FOR CIRCLE DRIVES, OR DRIVEWAYS OVER 40' IN LENGTH IF PROVISIONS ARE MADE FOR PARKING TWO CARS SIDE-BY-SIDE ON THE PRIVATE PORTION OF THE DRIVE. ALL OTHERS SHALL HAVE A 24' MINIMUM AND A 35' MAXIMUM. WIDTHS MAY BE 20' MINIMUM FOR ONE-WAY ONLY ENTRANCE OR EXIT.
5. EXPANSION JOINTS OR DRIVEWAY RETURNS SHALL BE FULL EXPANSION JOINTS EXTENDING COMPLETELY ACROSS THE STREET.

REVISIONS	NO.	DATE	ITEM CHANGED

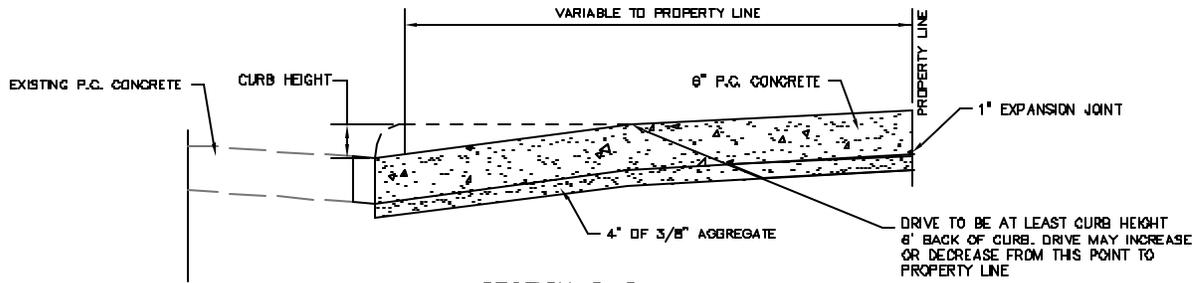
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

P.C. DRIVEWAY

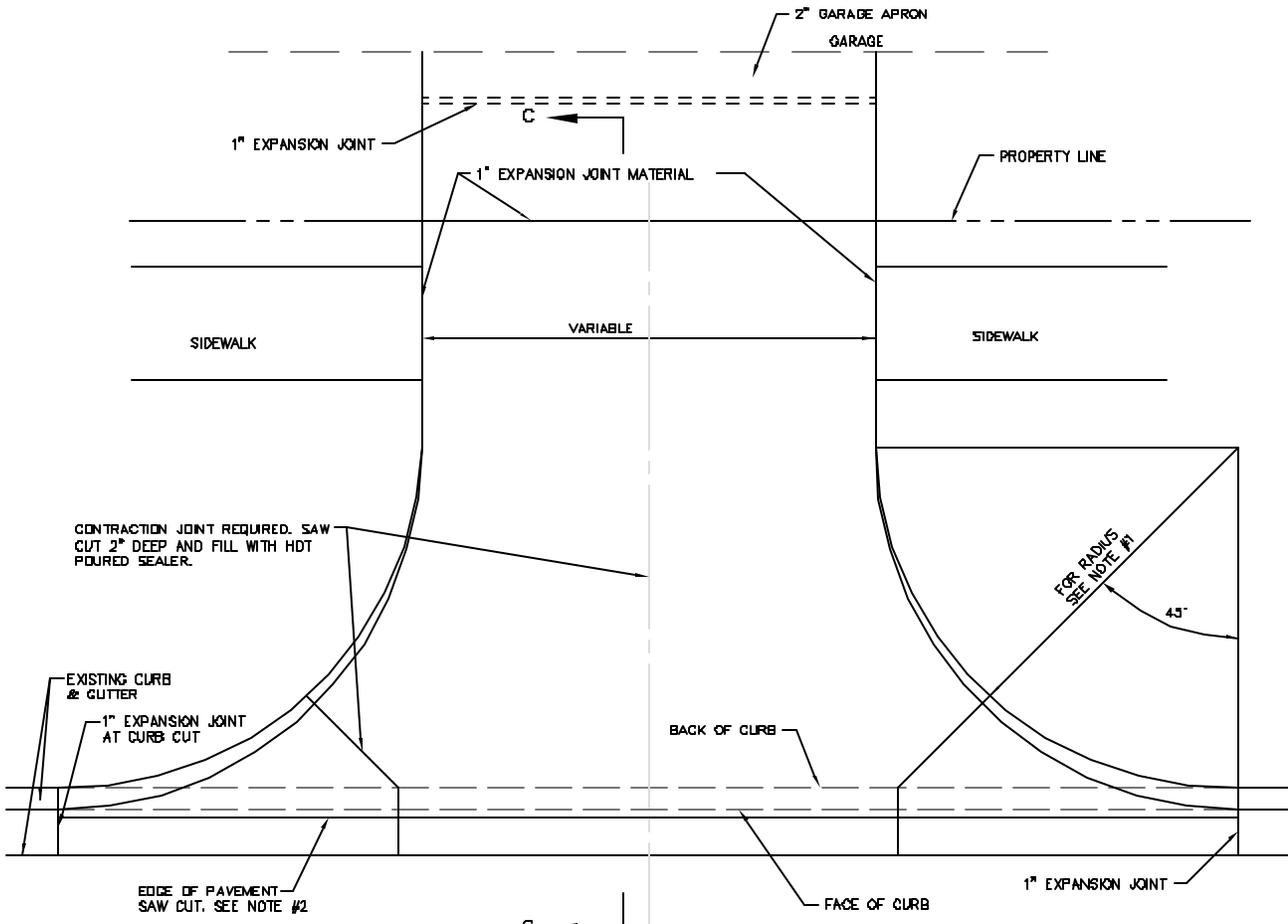
PAVING

SPECIFICATION NO. 610

DW-01 PAGE 56



SECTION C-C



EXISTING CONSTRUCTION

NOTES:

1. A 5'-0" MINIMUM RADIUS IS APPROVED FOR ONE & TWO FAMILY RESIDENCES NOT ABUTTING A LIMITED ACCESS OR MAJOR STREET. ALL OTHER DRIVEWAYS WILL HAVE A 15'-0" MIN. RADIUS.
2. THE DRIVEWAY CONTRACTORS MAY SAW CUT & REMOVE THE COMPLETE CURB & GUTTER SECTION OR THE CURB ONLY. SAW CUTS SHALL BE 2" OR 1/3 THE DEPTH OF THE GUTTER, WHICHEVER IS GREATER. SAW CUTS SHALL INCLUDE THE TOP & FACE OF CURB AS WELL AS THE GUTTER. SAW CUTS SHALL BE MADE PRIOR TO THE REMOVAL OF CONCRETE.
3. IF EXISTING GUTTER HOLDS WATER, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER BEFORE STARTING WORK. THE NEW WORK WILL NOT BE ACCEPTED IF THE GUTTER HOLDS WATER ACROSS THE DRIVE OR ON EITHER SIDE.
4. IT IS RECOGNIZED THAT THIS DRIVEWAY DETAIL WILL NOT COVER EVERY POSSIBLE SITUATION ENCOUNTERED IN CONSTRUCTION. ADDITIONAL EXPANSION JOINTS WILL BE REQUIRED AS NEEDED.
5. FOR ONE AND TWO FAMILY RESIDENCES, THE WIDTH OF DRIVEWAYS SHALL BE 30' MAXIMUM AND 20' MINIMUM. WIDTHS MAY BE 18' FOR DRIVEWAYS ON CUL-DE-SACS, FOR CIRCLE DRIVES, OR DRIVEWAYS OVER 40' IN LENGTH IF PROVISIONS ARE MADE FOR PARKING TWO CARS SIDE-BY-SIDE ON THE PRIVATE PORTION OF THE DRIVE. ALL OTHERS SHALL HAVE A 24' MINIMUM AND A 35' MAXIMUM. WIDTHS MAY BE 20' MINIMUM FOR ONE-WAY ONLY ENTRANCE OR EXIT.
6. ALL DRIVEWAYS SHALL BE A MINIMUM 5" PORTLAND CEMENT CONCRETE WITH A 28 DAY COMPRESSION STRENGTH OF 3500 PSL.
7. CLEAN & SEAL ALL JOINTS & SAW CUTS IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
8. CURB CUTS EXCEEDING 35' MUST BE APPROVED BY THE CITY ENGINEER.
9. IF DRIVEWAY IS TO BE CONSTRUCTED OVER A BARDITCH, A DRAINAGE PIPE SHALL BE INSTALLED WITH EITHER A SLOPING OR A WINGWALLED CONCRETE HEADWALL BOTH UP AND DOWNSTREAM. THE PIPE SHALL BE SIZED BY A REGISTERED PROFESSIONAL ENGINEER, AND SHALL CONVEY THE 100 YEAR FLOOD WATERFLOW.

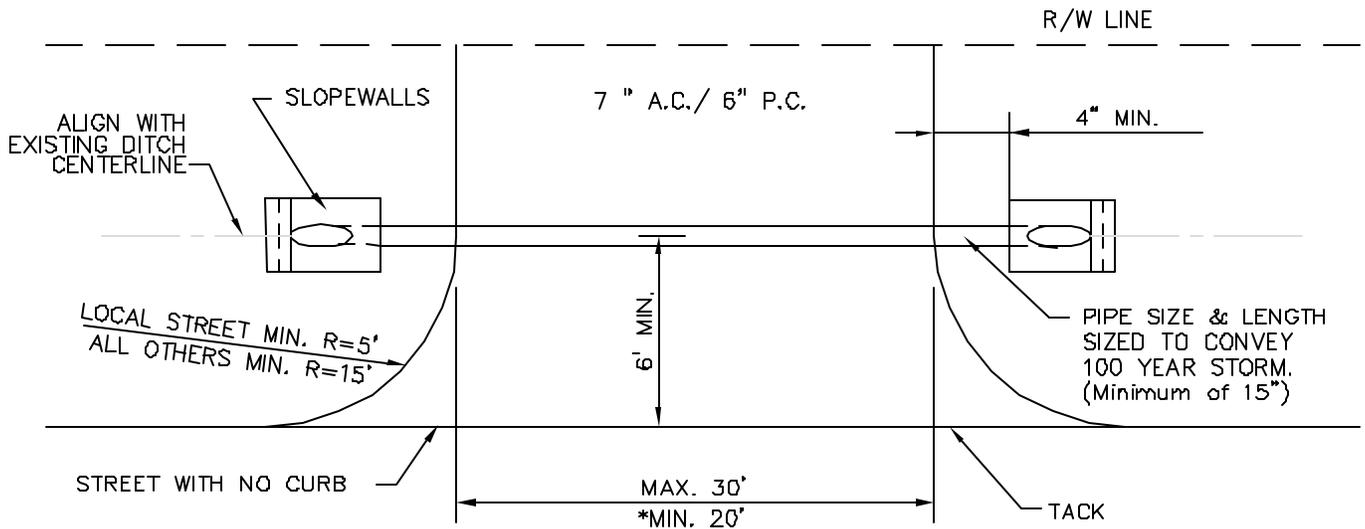
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

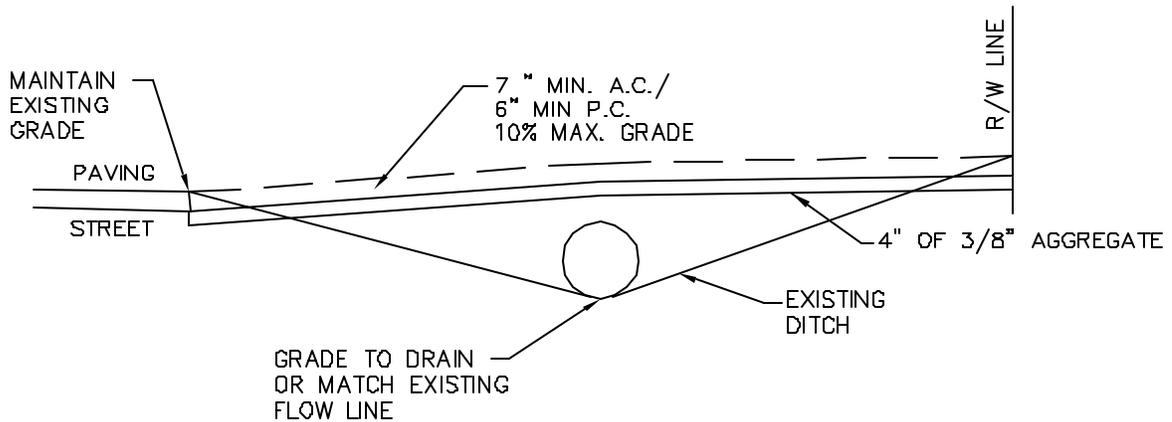
**P.C. DRIVEWAY  
 (EXIST. CURB & GUTTER)**

**PAVING**  
 SPECIFICATION NO. 610  
 DW-02 PAGE 57

STANDARD SPECIFICATIONS FOR CONSTRUCTION OF THE CITY OF EDMOND  
 DECEMBER 31, 2001 REBER

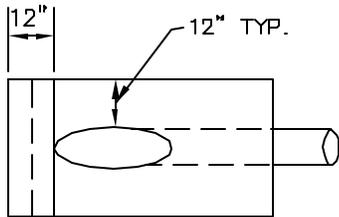


\*WIDTHS MAY BE 16' FOR DRIVEWAYS ON CUL-DE-SACS, CIRCLE DRIVES, OR DRIVEWAYS OVER 40' IN LENGTH IF PROVISIONS ARE MADE FOR PARKING TWO VEHICLES SIDE-BY-SIDE ON THE PRIVATE PORTION OF THE DRIVE.

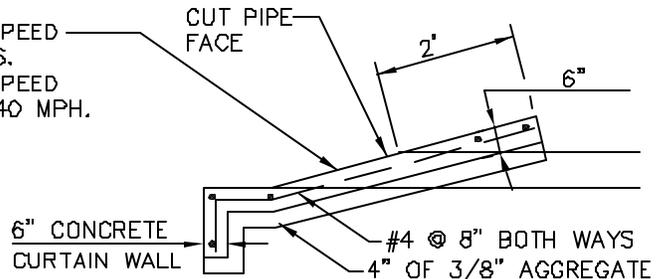


### DRIVEWAY SECTION

4:1 FOR ROADS WITH A SPEED LIMIT OF 40 MPH OR LESS.  
 6:1 FOR ROADS WITH A SPEED LIMIT OF GREATER THAN 40 MPH.



PLAN



ELEVATION

### CONCRETE SLOPEWALL

REVISIONS	NO.	DATE	ITEM CHANGED
◇	1	7/28/2004	ADDED AGGREGATE

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**RESIDENTIAL DRIVEWAY ON  
 STREET WITHOUT CURB**

**PAVING**

SPECIFICATION NOS. 411 & 610  
 DW-03 PAGE 58

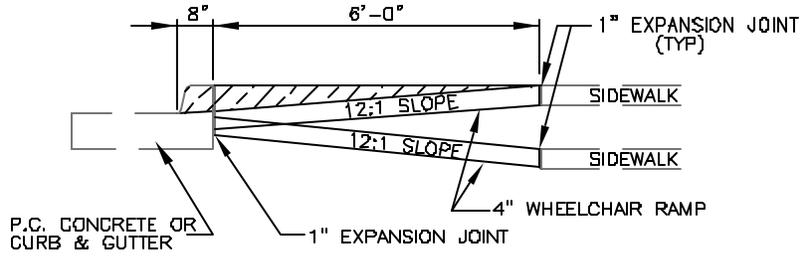
## GENERAL NOTES

1. EXCAVATION, BACKFILL, EXPANSION JOINT MATERIAL, SEALERS, AND OTHER RELATED MISCELLANEOUS ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT THE COST THEREOF SHALL BE INCLUDED IN THE COST OF 4" CONCRETE SIDEWALK.
  2. 1/2" x 4" PREMOLDED EXPANSION JOINT MATERIALS AROUND POWER POLES OR OTHER STRUCTURES IN WALK.
  3. USE 1" x 4" PREMOLDED EXPANSION JOINT AT CURB IF SIDEWALK ABUTS OBJECT ON PROPERTY LINE.
  4. EXPANSION JOINTS MAXIMUM DISTANCE = 50'-0", USE 1" x 4" PREMOLDED EXPANSION JOINT MATERIAL.
  5. CONTRACTION JOINTS MAXIMUM DISTANCE = 21'-0", SAW CUT 2" DEEP AND FILL WITH HOT POURED SEALER.
  6. SAW CUT JOINTS WITHIN 24 HOURS.
  7. AT DRIVEWAY LOCATIONS, THE SIDEWALK SHALL BE CONSTRUCTED TO BE WHEELCHAIR ACCESSIBLE.
  8. THERE WILL BE NO DEDUCTION IN PAYMENT FOR CONCRETE CURBS AND GUTTER AND/OR INTEGRAL CURB FOR THE LENGTH OF THE DEPRESSED CURB.
  9. RAMP DIMENSIONS SHOWN ARE BASED ON A CURB HEIGHT OF 6". THE DIMENSIONS SHOULD BE ADJUSTED FOR OTHER CURB HEIGHTS. THE MAXIMUM PERMISSIBLE SLOPES OF THE WHEELCHAIR RAMPS ARE 12:1.
  10. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING TRANSVERSE TO THE SLOPES OF THE RAMP.
  11. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH THE RAMPS.
  12. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
  13. WHEELCHAIR RAMPS SHOULD BE LOCATED SO THAT THE RAMP WILL BE ON THE TRAFFIC APPROACH SIDE OF ANY OBSTACLE.
  14. WHEELCHAIR RAMPS SHOULD BE BUILT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE TYPE OF RAMP WILL BE DESIGNATED ON THE PLANS. IF A RAMP IS TO BE CONSTRUCTED AS A COMBINATION OF TWO TYPES, i.e., ONE SIDE TYPE A AND ONE SIDE TYPE B, THE RAMP SHALL BE DESIGNATED TYPE A-B.
  15. WHEELCHAIR RAMPS REQUIRED ON ALL NEW CONSTRUCTION AND AT LOCATIONS WHERE EXISTING SIDEWALKS ARE TO BE REPLACED.
- ▲ RAMP SLOPES SHALL BE 20:1 WHENEVER RIGHT-OF-WAY ALLOWS. IN NO CASE SHALL RAMPS EXCEED THE MAXIMUM OF 12:1.

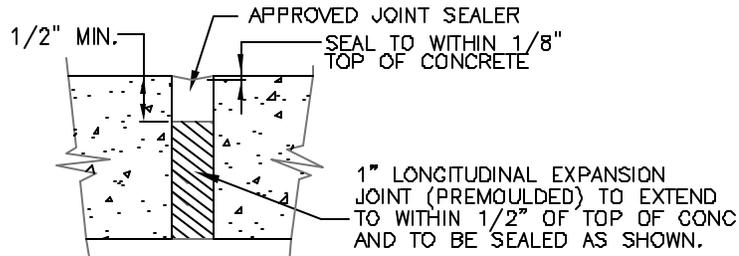
15-EDMONTON-CITY-ENGINEERING-DEPT. 11.18.18 2:55 PM MDS/REB

REVISIONS	ND.	DATE	ITEM CHANGED
<b>CITY OF EDMOND</b>			<h1 style="font-size: 2em;">GENERAL NOTES</h1>
<b>ENGINEERING DEPARTMENT</b>			
<b>CONSTRUCTION STANDARDS</b>			
<b>SIDEWALKS</b>			
SPECIFICATION NO. 610			
SW-01			PAGE 61





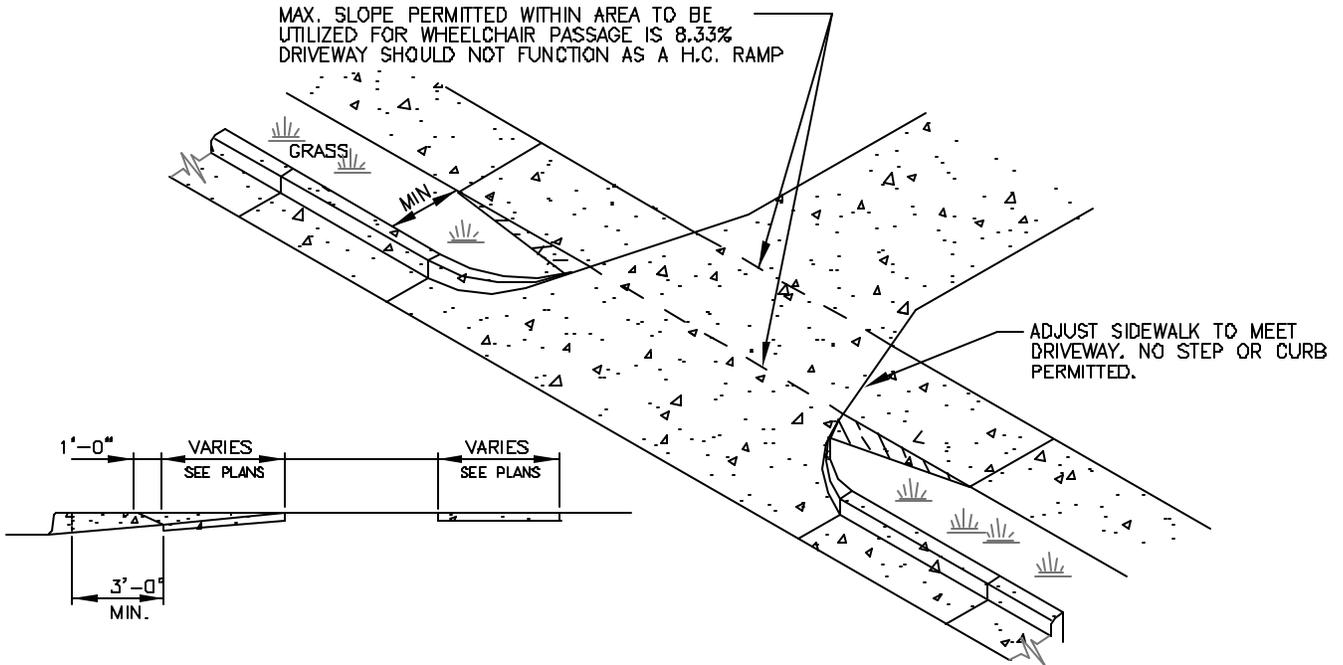
### WHEELCHAIR RAMP PROFILE



### 1" EXPANSION JOINT

JOINT FILLER AND SEALER SHALL CONFORM TO CITY OF EDMOND STANDARD SPECIFICATIONS

MAX. SLOPE PERMITTED WITHIN AREA TO BE UTILIZED FOR WHEELCHAIR PASSAGE IS 8.33% DRIVEWAY SHOULD NOT FUNCTION AS A H.C. RAMP



REVISIONS	NO.	DATE	ITEM CHANGED
◇			

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

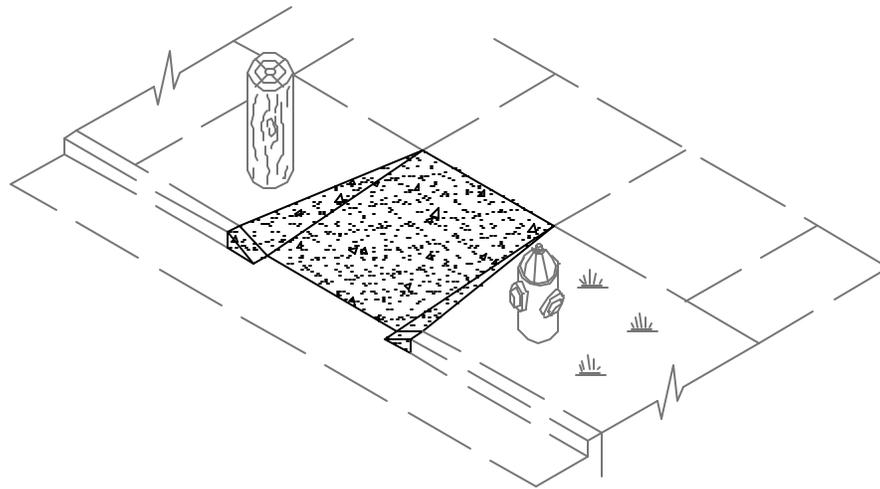
## WHEELCHAIR RAMP

SIDEWALKS

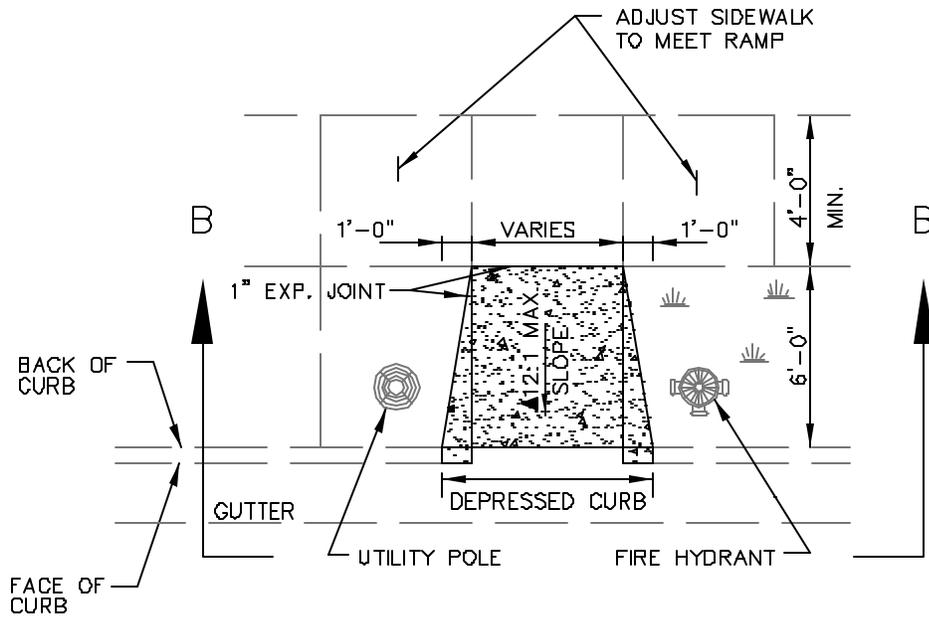
SPECIFICATION NO. 610

SW-03 PAGE 63

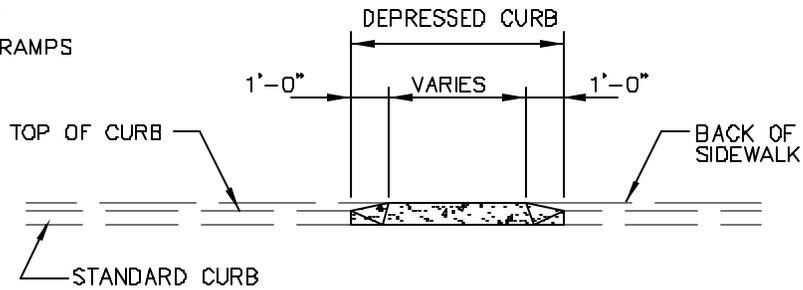




TYPE "B"



NOTE:  
4" CUSHION OF 3/8" AGGREGATE ON ALL RAMPS



SECTION B-B

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

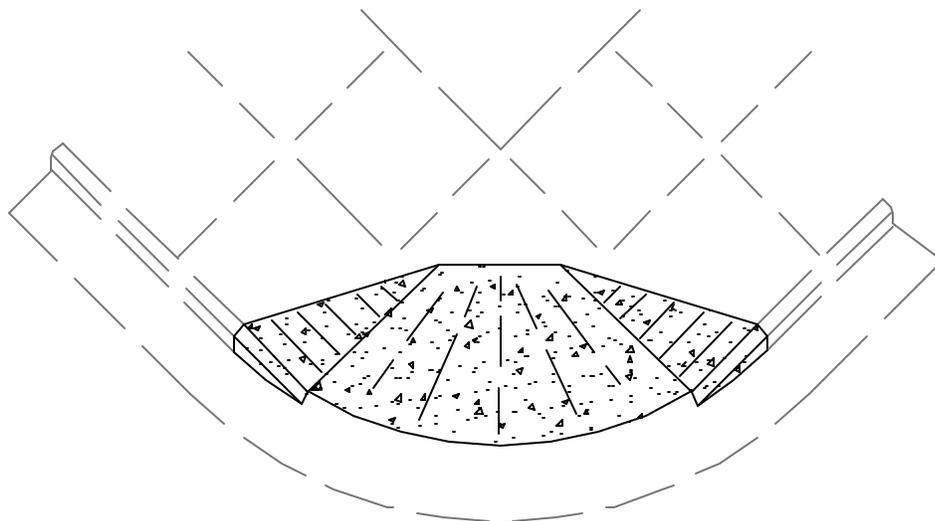
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TYPE "B"  
WHEELCHAIR RAMPS

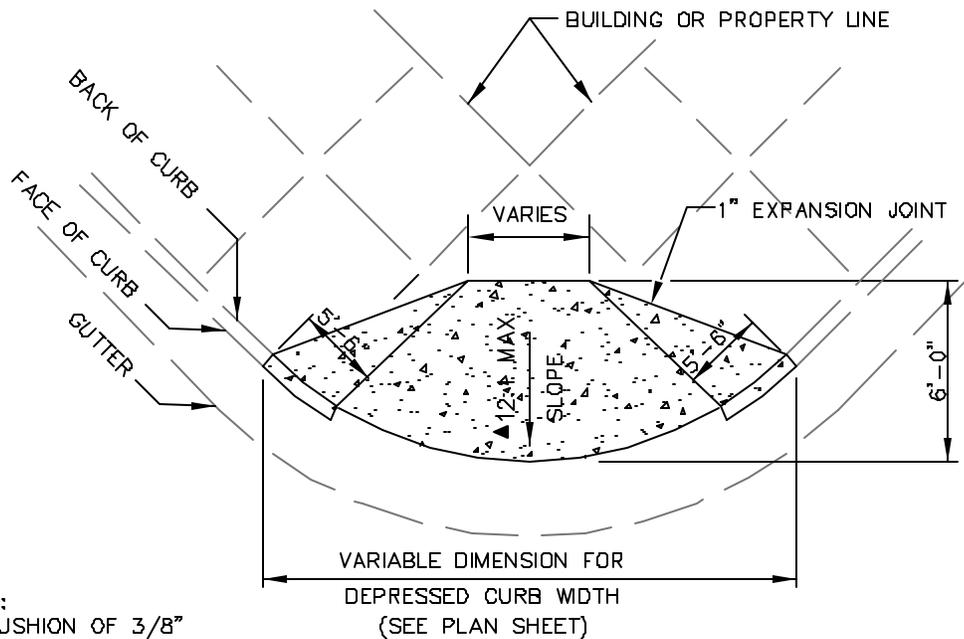
SIDEWALKS

SPECIFICATION NO. 610

SW-05 PAGE 65



ON ALL INTERSECTIONS WHERE DRAINAGE STRUCTURES DO NOT INTERFERE AND DRAINAGE IS SATISFACTORY, TYPE "C" WHEELCHAIR RAMPS SHALL BE CONSTRUCTED.



NOTE:  
4" CUSHION OF 3/8" AGGREGATE ON ALL RAMPS

TYPE "C"

CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1717 NORTH 23RD AVENUE

REVISIONS	NO.	DATE	ITEM CHANGED

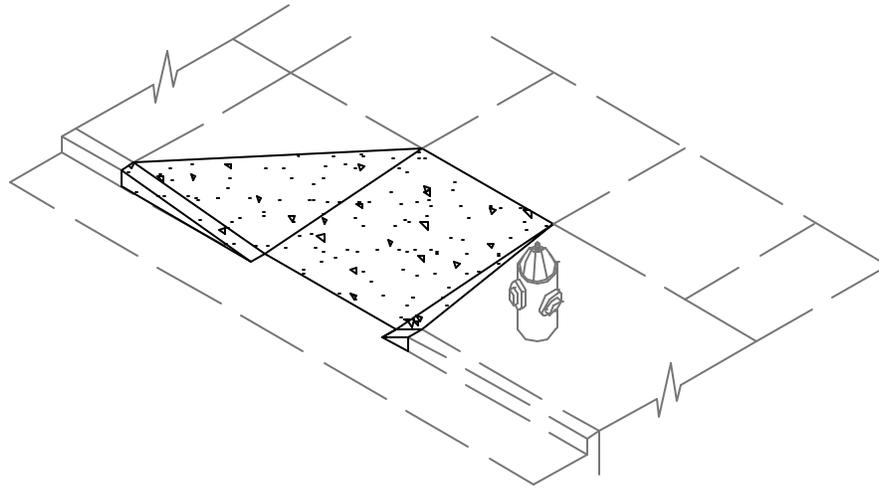
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TYPE "C"**  
**WHEELCHAIR RAMPS**

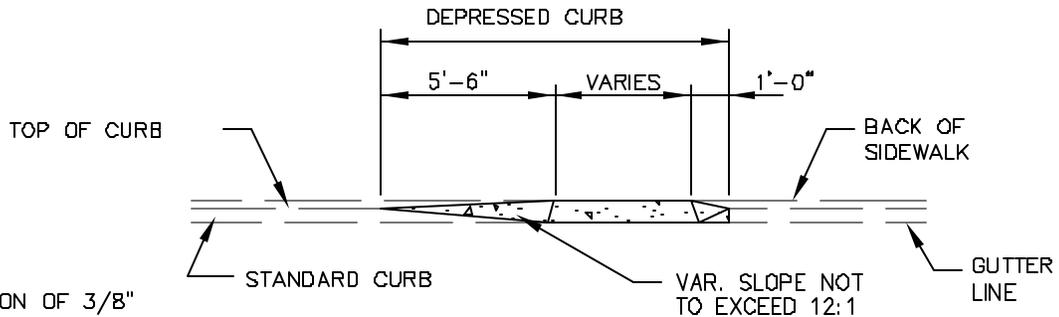
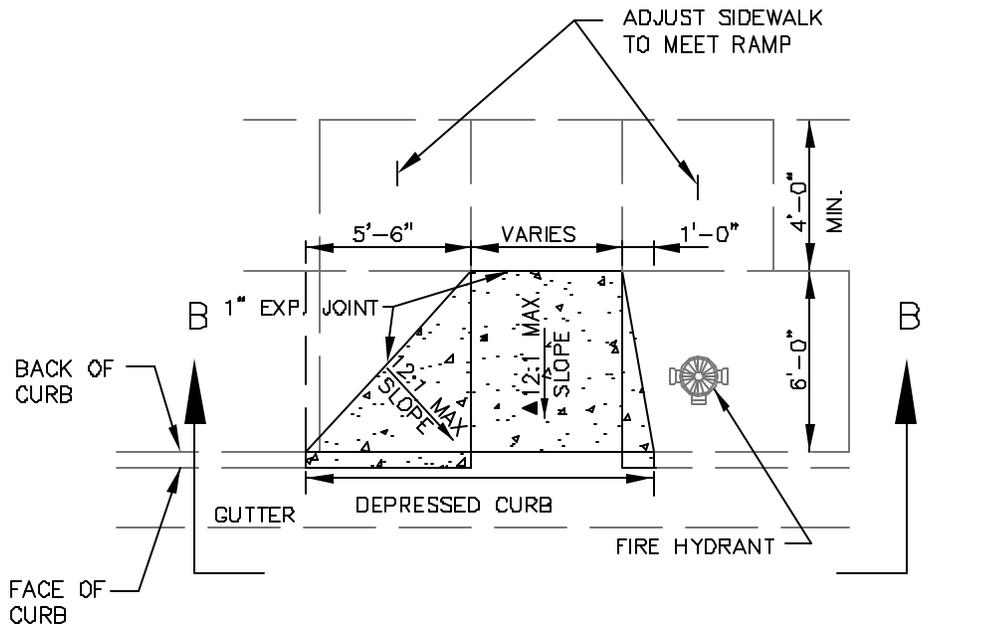
**SIDEWALKS**

SPECIFICATION NO. 610

SW-06 PAGE 66



TYPE "AB" MODIFIED  
(BASED ON 6" CURB HEIGHT)



NOTE:  
4" CUSHION OF 3/8"  
AGGREGATE ON ALL RAMPS

SECTION B-B

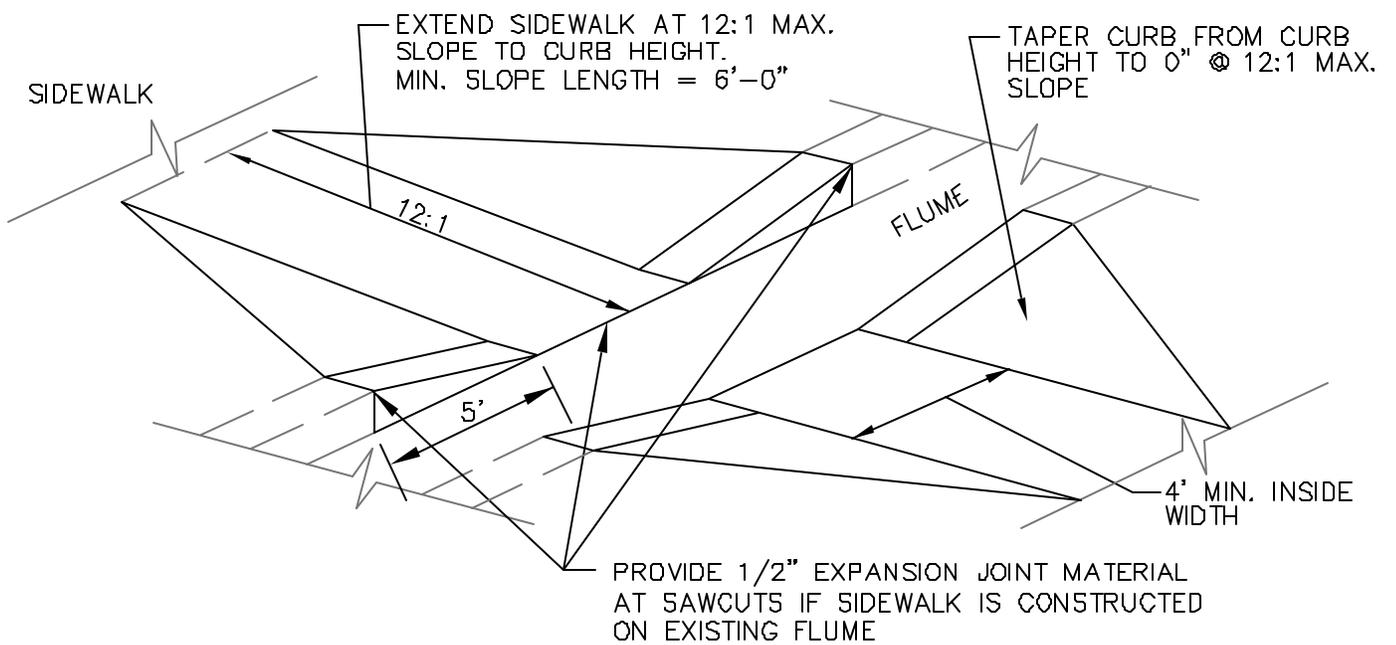
15-EDMONTON-CURB-AND-RAMP-1-10-07-2016  
 DEPT. 17, 1988 7:55 PM, MDSR

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TYPE "AB" MODIFIED  
WHEELCHAIR RAMPS

SIDEWALKS	
SPECIFICATION NO. 610	
SW-07	PAGE 67



SIDEWALK RAMP AT FLUME CROSSING

CITY OF EDMOND, 1501 15TH AVENUE, EDMOND, OKLAHOMA 73119  
 DEPT. 17, 1088 7308 PM, 405/261-1000

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**THROUGH FLUME  
 WHEELCHAIR RAMPS**

<b>SIDEWALKS</b>	
SPECIFICATION NO. 610	
SW-08	PAGE 67A

## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
  2. ALL BRICK CURB INLETS TO BE BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL, SEE STANDARD SPECIFICATIONS SECTION 529.
  3. WHEN THE INLET IS BUILT IN NEW CONCRETE PAVEMENT, THE APRON AROUND THE INLET MAY BE BUILT INTEGRAL WITH THE PAVEMENT, OR MAY BE SEPERATE AND OF THE SIZE SHOWN IN THE PLAN OF INLETS ON THIS SHEET. THE THICKNESS SHALL BE THE SAME AS THE CONCRETE PAVEMENT OR CURB AND GUTTER. IF CONSTRUCTED IN ANY OTHER AREA OR IN EXISTING PAVEMENT, THE APRON AROUND THE INLET SHALL BE OF THE SIZE SHOWN IN THESE DETAIL SHEETS AND BUILT OF P.C. CONCRETE TO A MINIMUM 8 INCH THICKNESS.
  4. THERE WILL BE NO DEDUCTION OF PAYMENT FOR CONCRETE CURB AND GUTTER OR P.C. CONCRETE THRU THE EXTENTS OF THE CAST IRON CURB INLETS.
  5. ALL LETTERING TO BE RECESSED 1/16 INCH AND SHALL NOT EXCEED 1 INCH IN HEIGHT. INFORMATION REQUIRED SHALL BE AS STATED IN THE SPECIFICATIONS. LOCATION OF LETTERING TO BE AS SHOWN WITH ADDITIONAL IDENTIFICATION LETTERING AT OTHER LDCATIONS ACCEPTABLE.
  6. WALLS OF STORM SEWER INLETS MAY BE OF BRICK MASONRY AS SHOWN OR OF POURED CLASS A CONCRETE TO THE SAME DIMENSIONS.
  7. THE STANDARD DRAWING, DESIGN NO., DESIGNATION NO., AND NUMBER OF ADDITIONAL OPENINGS SHALL BE INDICATED ON THE PLANS.
  8. TYPE B & C FRAMES TO BE USED FOR MULTIPLE DOUBLE GRATES.
  9. BOLT(S) WITH EXPANSION DEVICES OR EPOXY TYPE PUTTY TO BE USED TO INSTALL SINGLE CURB INLET INTO CONCRETE INLET CURB. COST OF INSTALLATION TO BE INCLUDED IN PRICE BID FOR CAST IRON CURB INLET.
  10. CASTINGS AS SHOWN HERE SHALL BE CAST STEEL, DUCTILE IRON, OR GRAY IRON CONFORMING TO SECTION 725 OF THE STANDARD SPECIFICATIONS.
- ▲ RADIUS OF 2 INCHES MAY BE USED IF APPROVED BY THE ENGINEER.

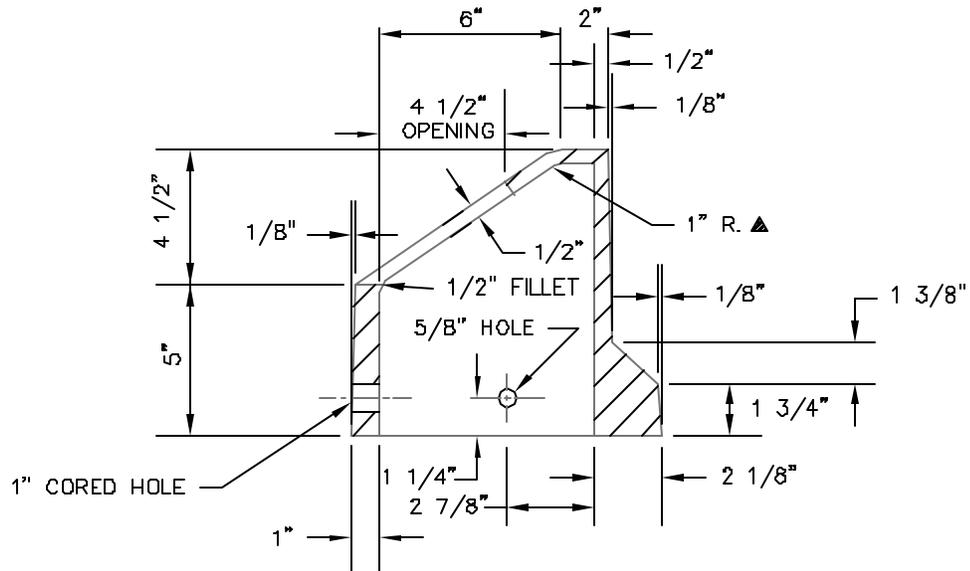
14 STANDARD DRAWING REVISED 11-10-11  
 1100 201 1110 1020 PM 11/10/11

REVISIONS	NO.	DATE	ITEM CHANGED

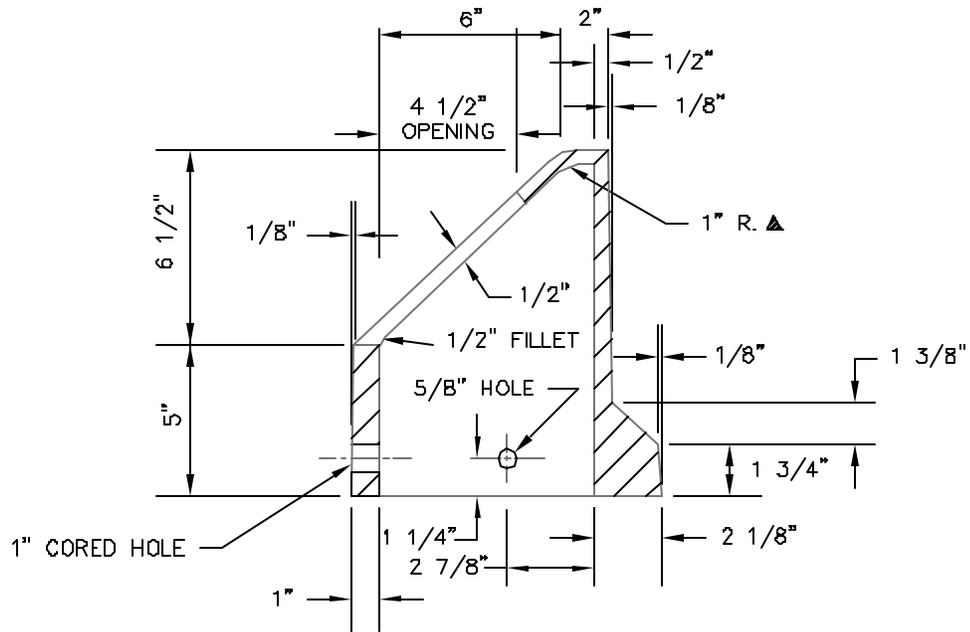
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# GENERAL NOTES

<b>STORM SEWER</b>	
SPECIFICATION NO. 611	
CI-01	PAGE 68



4" MOUNTABLE CURB



6" MOUNTABLE CURB

MOUNTABLE CURBS

REVISIONS	NO.	DATE	ITEM CHANGED

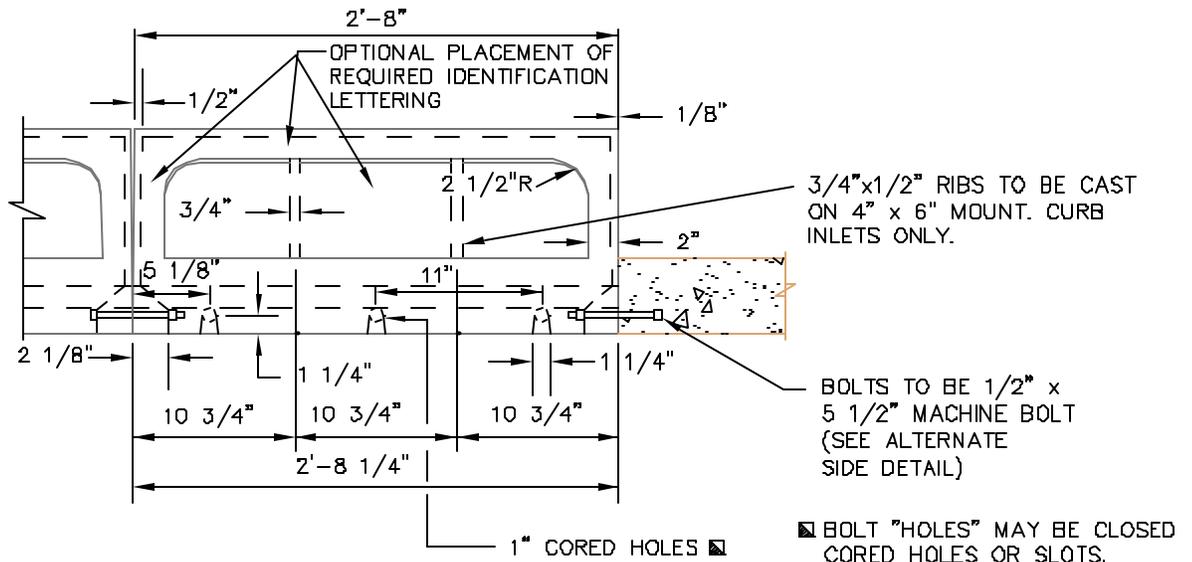
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

CAST IRON  
CURB INLET

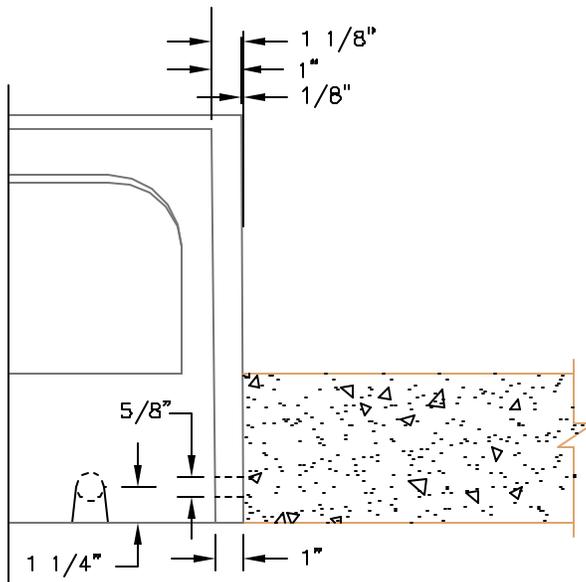
STORM SEWER	
SPECIFICATION NO. 611	
CI-02	PAGE 69

A STANDARD CURB AND GUTTER MANHOLE COVER AND RAIN INLET  
 NOV 25, 1918 5:30 PM WOODRUM

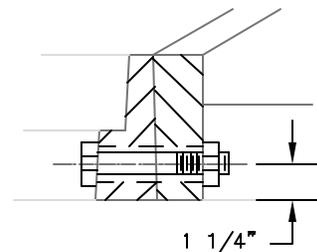




CAST IRON STORM SEWER CURB INLET



ALTERNATE SIDE DETAIL



DETAIL OF CONNECTION  
FRAME & CAST IRON CURB

NOTE: FRAME TO BE BOLTED TO THE CURB WITH  
3 EA. 3/4" x 4 1/2" MACHINE BOLTS

CITY OF EDMOND ENGINEERING DEPARTMENT  
 1001 2ND TERR. 5TH FL. EDMOND, OK 73119

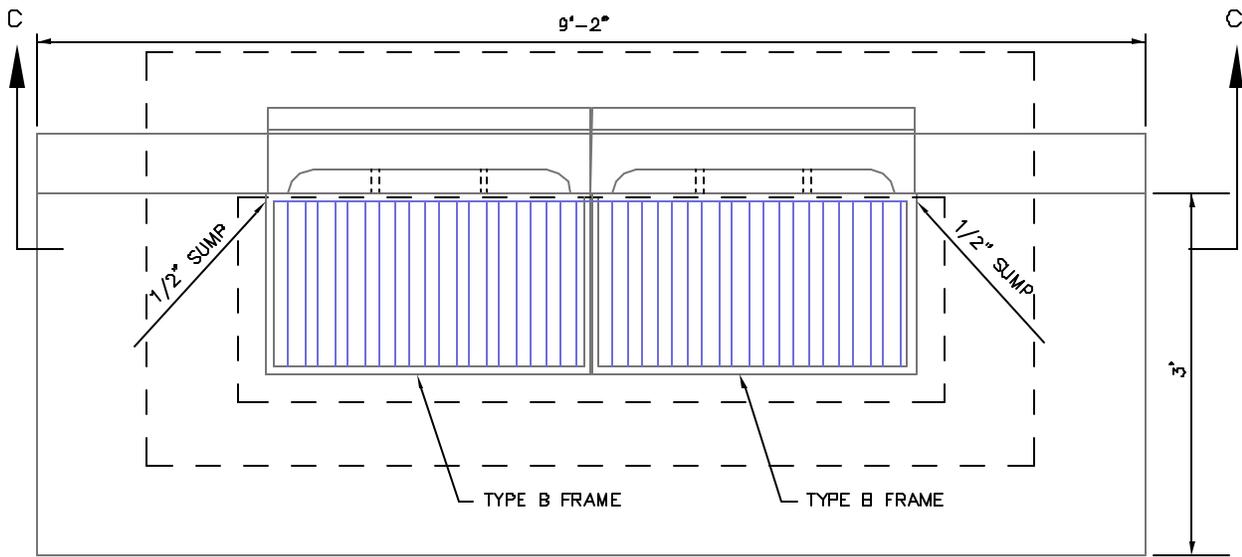
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

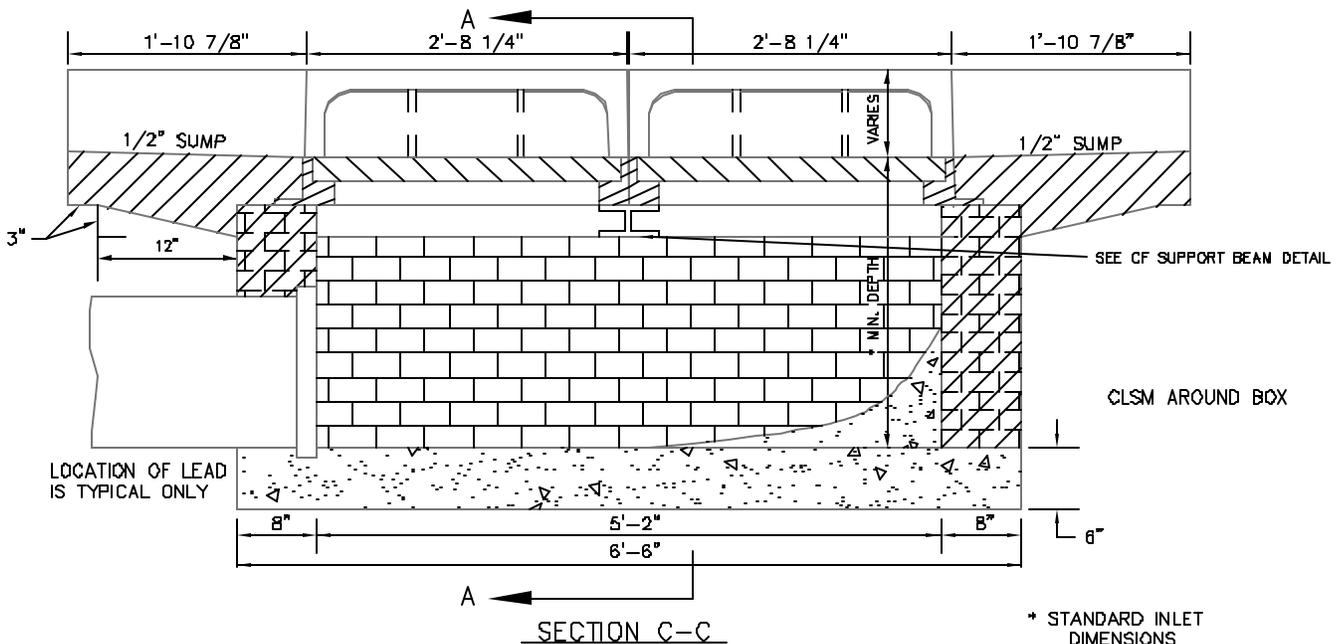
**CAST IRON  
 CURB INLET**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CI-04 PAGE 71





CAST IRON STORM SEWER CURB INLET



\* STANDARD INLET DIMENSIONS (FOR DETAILING)  
 2'-4" FOR 15" RCP  
 2'-8" FOR 18" RCP  
 3'-2" FOR 24" RCP  
 3'-8" FOR 30" RCP  
 4'-2" FOR 36" RCP

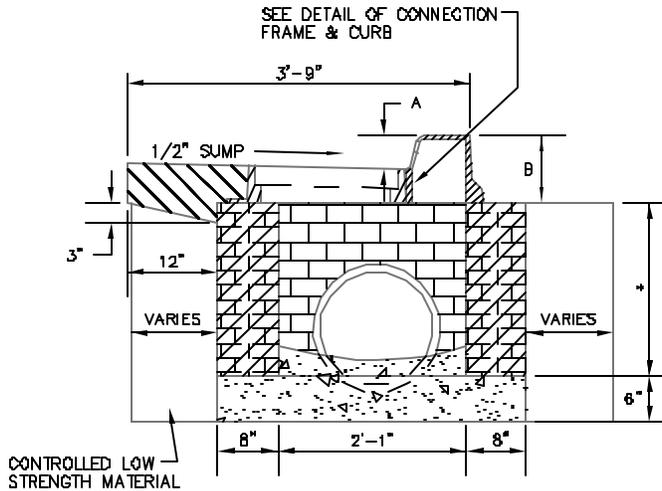
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

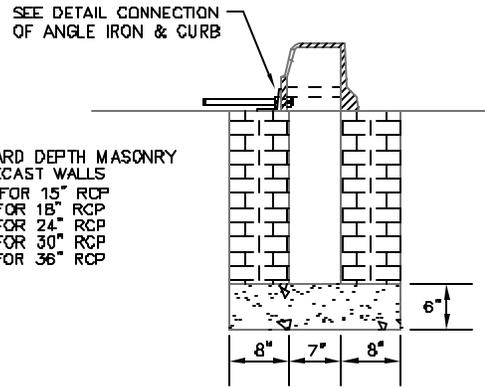
DESIGN 2 & 3  
 DOUBLE & MULTIPLE GRATE

STORM SEWER  
 SPECIFICATION NO. 611  
 CI-06 PAGE 73

AS STAMENED COUNTY, DISTRICT 1, 11-15-2018  
 11/15/2018 11:00 AM 11/15/2018



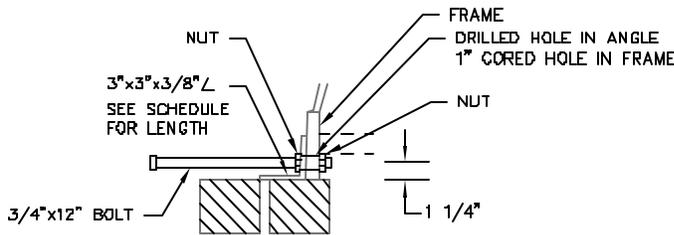
SECTION A-A



SECTION B-B

\* STANDARD DEPTH MASONRY OR PRECAST WALLS  
 1'-11" FOR 15" RCP  
 2'-3" FOR 18" RCP  
 2'-9" FOR 24" RCP  
 3'-3" FOR 30" RCP  
 3'-9" FOR 36" RCP

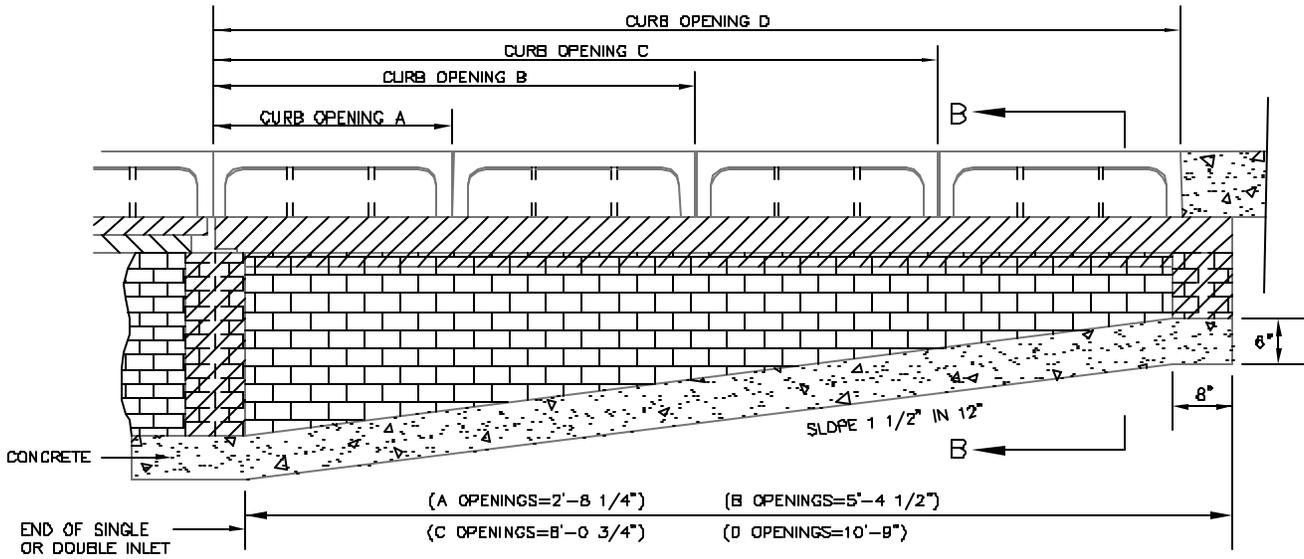
CONTROLLED LOW STRENGTH MATERIAL



DETAIL OF CONNECTION  
 ANGLE IRON & CAST IRON CURB

NOTE: ANGLE IRON TO BE BOLTED TO CURB WITH 3-3/4"x12" MACHINE BOLTS IN EACH CURB SECTION.

DESIGN NO.	TYPE OF CURB	DIMENSIONS	
		A	B
1	4" MOUNTABLE	4 1/2"	9 1/2"
	6" MOUNTABLE	6 1/2"	11 1/2"
	6" BARRIER	6 1/2"	11 1/2"
	8" BARRIER	8 1/2"	13 1/2"
2	4" MOUNTABLE	4 1/2"	9 1/2"
	6" MOUNTABLE	6 1/2"	11 1/2"
	6" BARRIER	6 1/2"	11 1/2"
	8" BARRIER	8 1/2"	13 1/2"
3	4" MOUNTABLE	4 1/2"	9 1/2"
	6" MOUNTABLE	6 1/2"	11 1/2"
	8" BARRIER	8 1/2"	13 1/2"



SECTION C-C

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

DESIGN 1 & 2  
 ADDITIONAL OPENINGS

STORM SEWER  
 SPECIFICATION NO. 611  
 CI-07 PAGE 74

C:\STANDARD\CONSTR\STAND\13-05-07.DWG  
 10/23/08 10:50 AM MDR/EE

QUANTITIES (FOR 18" RCSP MIN. DEPTH)

INLET	CURB OPENING	CLASS A CONCRETE	INLET		INLET FRAME & GRATE	CAST IRON CURB INLET	ANGLE IRON		
			BASE AM'T	ADD'L C.F. PER VERT. FT.			EACH	EACH	NO.
DESIGN	DESIGNATION	CU. YD.							
1		.24	18.00	8.00	1	1			
	A	.34	25.02	11.59	1	2	1	2'-5 3/8"	
	B	.44	30.81	15.16	1	3	1	5'-1 5/8"	
	C	.54	35.43	18.75	1	4	1	7'-9 7/8"	
	2A	.44	32.03	15.16	1	3	2	2'-5 3/8"	2'-5 3/8"
	A-B	.54	37.84	18.75	1	4	2	2'-5 3/8"	5'-1 5/8"
	A-C	.64	42.44	22.33	1	5	2	2'-5 3/8"	7'-9 7/8"
	2B	.64	43.66	22.33	1	5	2	5'-1 5/8"	5'-1 5/8"
	B-C	.74	48.24	25.92	1	6	2	5'-1 5/8"	7'-9 7/8"
2C	.84	52.86	29.50	1	7	2	7'-9 7/8"	7'-9 7/8"	
2		.41	26.00	11.56	2	2			
	B	.61	38.82	18.72	2	4	1	5'-1 5/8"	
	D	.81	46.83	25.89	2	6	1	10'-6 1/8"	
	2B	.81	51.66	25.89	2	6	2	5'-1 5/8"	5'-1 5/8"
	B-D	1.01	59.69	33.05	2	8	2	5'-1 5/8"	10'-6 1/8"
2D	1.21	67.72	40.23	2	10	2	10'-6 1/8"	10'-6 1/8"	
3 <input checked="" type="checkbox"/>		.74	41.50	18.45	4	4			
	B	.94	54.32	25.61	4	6	1	5'-1 5/8"	
	D	1.14	62.32	32.78	4	8	1	10'-6 1/8"	
	2B	1.14	67.14	32.78	4	8	1	5'-1 5/8"	5'-1 5/8"
	B-D	1.34	74.25	39.95	4	10	2	5'-1 5/8"	10'-6 1/8"
2D	1.54	83.22	47.11	4	12	2	10'-6 1/8"	10'-6 1/8"	

QUANTITIES SHOWN ARE FOR 2 DOUBLE GRATE INLETS.

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

QUANTITIES

STORM SEWER  
SPECIFICATION NO. 611  
CI-08 PAGE 75

AS STATIONED, CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF EDMOND CONSTRUCTION STANDARDS

## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. INLET DESIGN NO. 1 REQUIRES ONE TYPE A FRAME.
3. INLET DESIGN NO. 2 REQUIRES TWO TYPE B FRAMES AND 2-3/4"x5" BOLTS WITH NUTS AND ONE S 4x7. 7x3'-4" SUPPORT BEAM. IF BUILT ON CURVED CURB, THE INLET REQUIRES 1-3/4"x5" BOLT WITH NUT AND 1 3/4"x6-1/2" BOLT WITH NUT AND ONE S 4x7. 7x3'-4" SUPPORT BEAM WITH 3/8"x5"x24" PLATE SPOT WELDED TO TOP (BEARING SIDE).
4. INLET DESIGN NO. 3 REQUIRES THE SAME APPURTENANCES AS DESIGN NO. 2 WITH TWO OR MORE TYPE C FRAMES LOCATED BETWEEN THE TWO TYPE B FRAMES AND ONE ADDITIONAL SUPPORT BEAM OR SUPPORT BEAM WITH PLATE AND A PAIR OF BOLTS WITH NUTS FOR EACH TYPE C FRAME ADDED, PLUS ONE ADDITIONAL PAIR OF BOLTS AND SUPPORT BEAM.
5. ALL LETTERING TO BE RECESSED 1/16" AND SHALL NOT EXCEED 1" IN HEIGHT. INFORMATION REQUIRED SHALL BE STATED IN THE SPECIFICATION. LOCATION OF LETTERING TO BE AS SHOWN WITH ADDITIONAL IDENTIFICATION LETTERING AT OTHER LOCATIONS ACCEPTABLE.
6. FRAMES SHALL BE CAST STEEL, DUCTILE IRON, OR GRAY IRON CONFORMING TO THE CURRENT SPECIFICATIONS.

A:\STANDARD CONSTRUCTION\STANDARD SPECIFICATIONS\CF-01.DWG  
 10/17/2018 10:00 AM WJH/STN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**

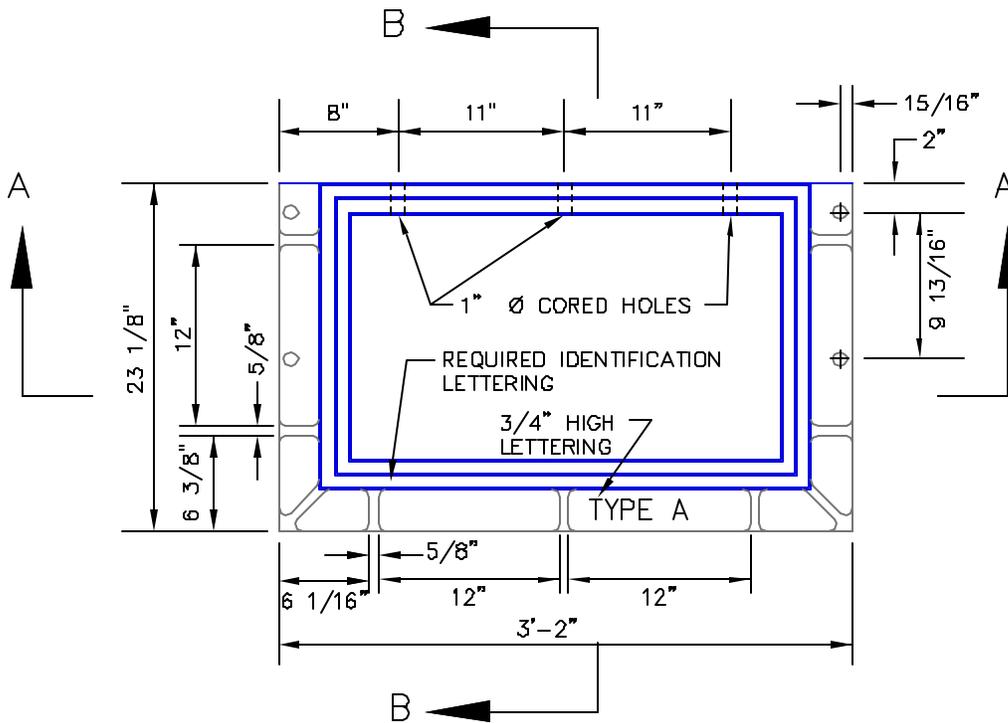
**ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS**

**GENERAL NOTES**

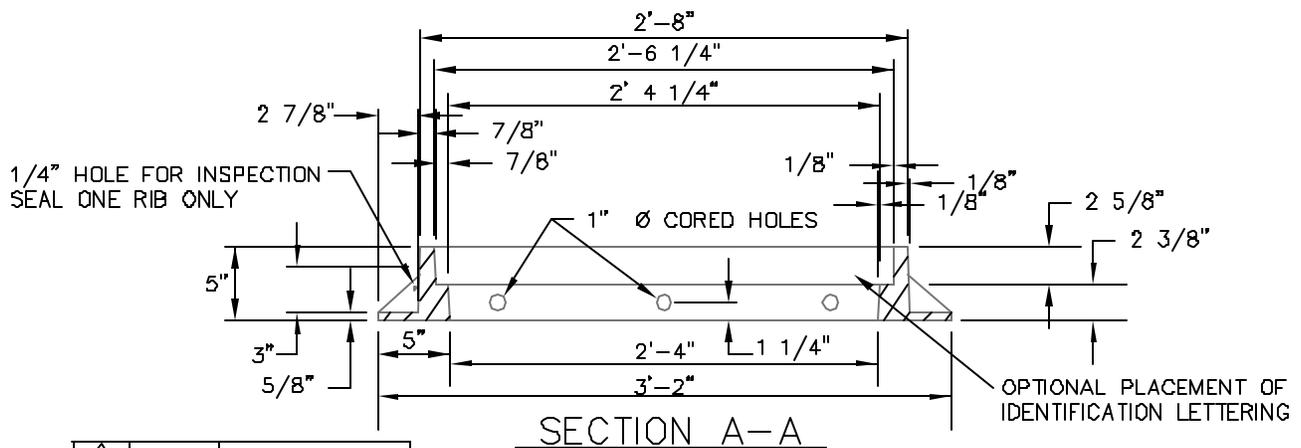
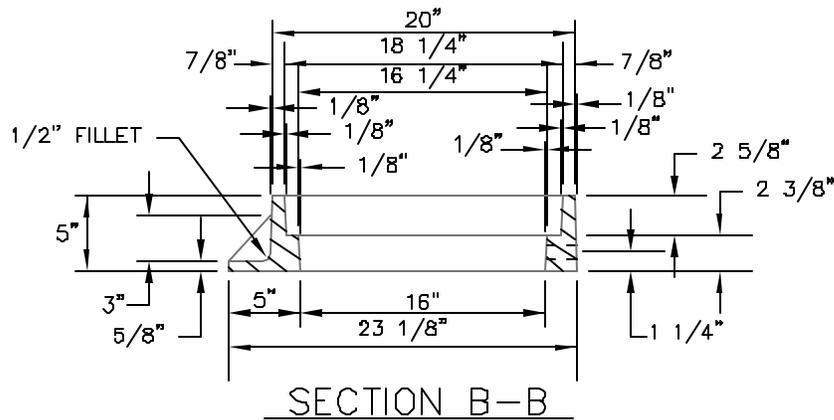
**STORM SEWER**

SPECIFICATION NO. 611

CF-01 PAGE 76



CAST IRON STORM SEWER INLET FRAME



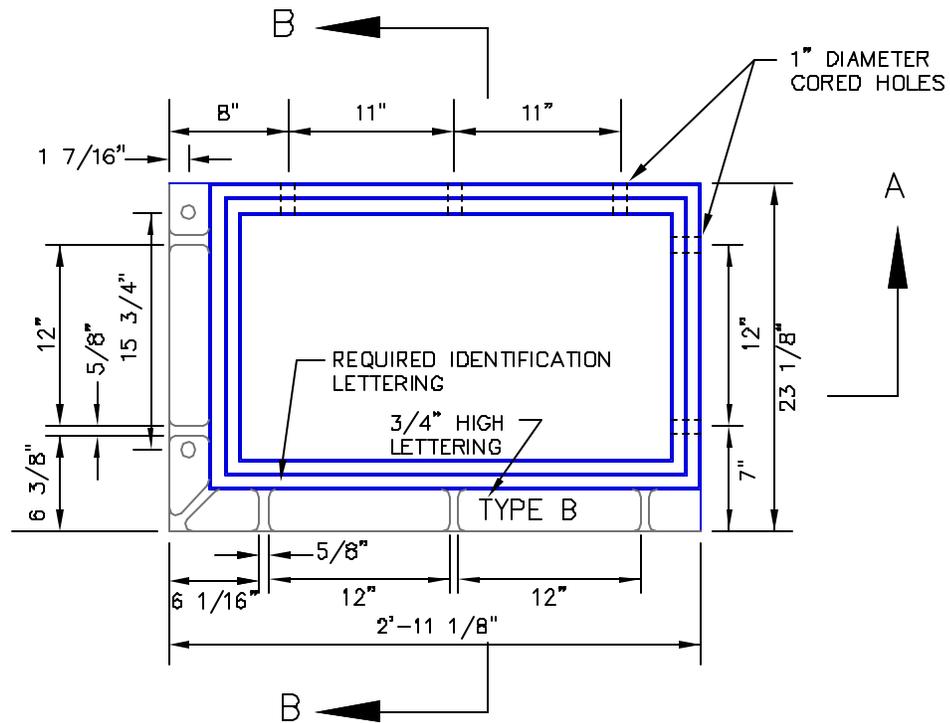
CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1501 W. 26th STREET, SUITE 100, EDMOND, OKLA. 73120

REVISIONS	NO.	DATE	ITEM CHANGED

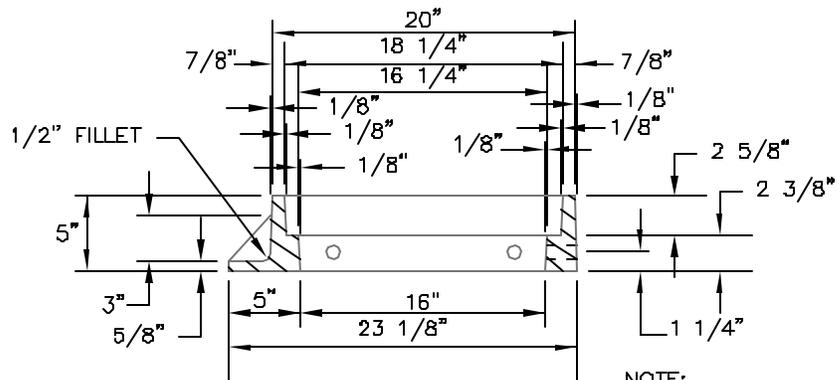
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**DESIGN 1 TYPE  
 "A" INLET FRAME**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CF-02 PAGE 77

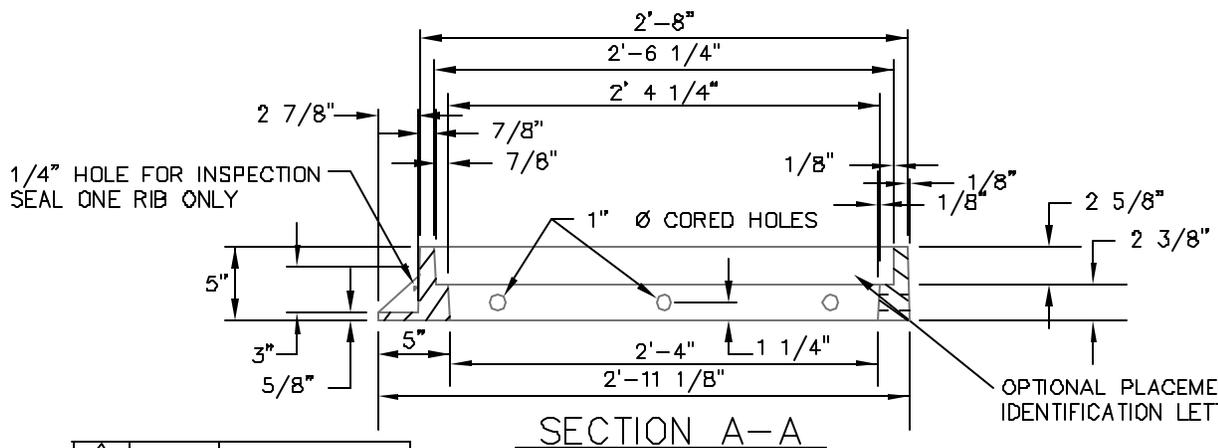


CAST IRON STORM SEWER INLET FRAME



SECTION B-B

NOTE:  
MAKE ONE FRAME AS SHOWN AND  
ONE REVERSED FOR DOUBLE FRAMES.



SECTION A-A

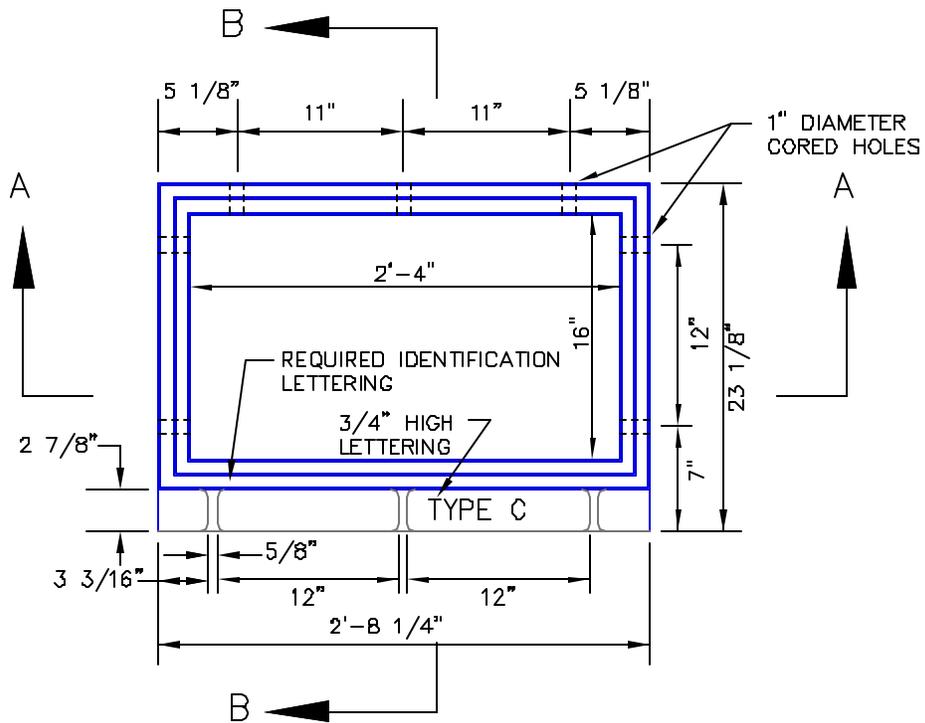
OPTIONAL PLACEMENT OF  
IDENTIFICATION LETTERING

REVISIONS	NO.	DATE	ITEM CHANGED

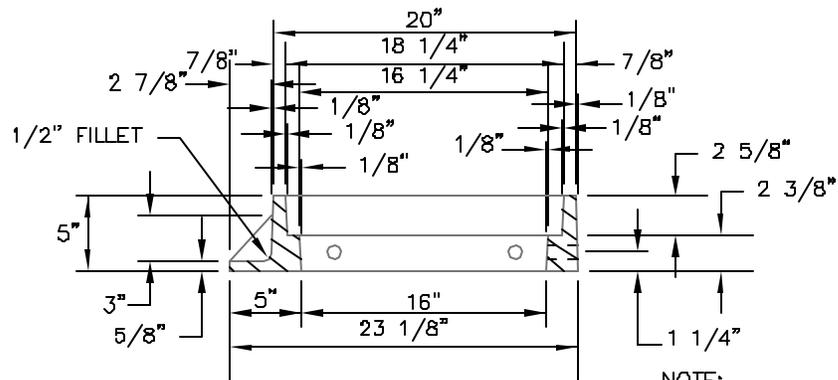
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

DESIGN 2 & 3 TYPE  
"B" INLET FRAME

STORM SEWER  
SPECIFICATION NO. 611  
CF-03 PAGE 78

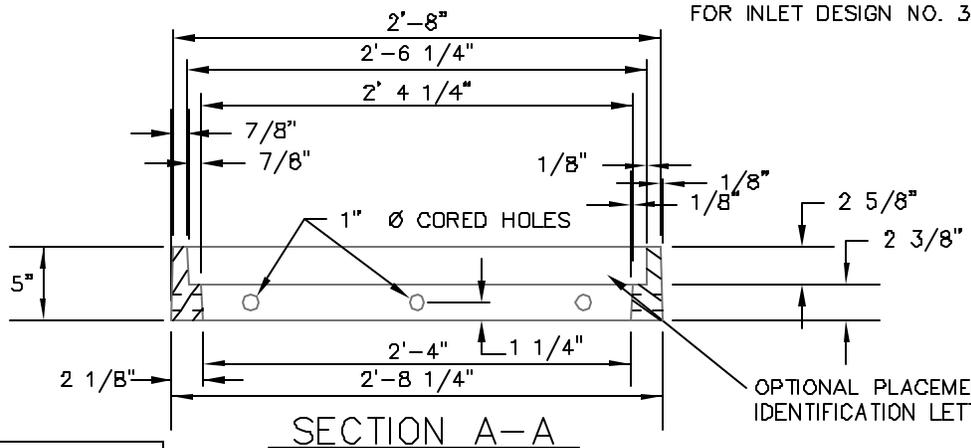


CAST IRON STORM SEWER INLET FRAME



SECTION B-B

NOTE:  
TWO TYPE B FRAMES AND TWO  
TYPE C FRAMES ARE REQUIRED  
FOR INLET DESIGN NO. 3.



SECTION A-A

OPTIONAL PLACEMENT OF  
IDENTIFICATION LETTERING

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

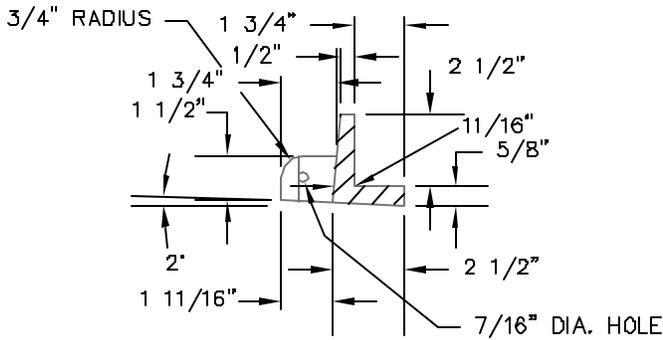
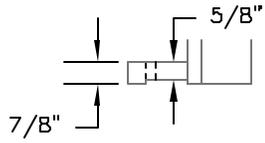
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

DESIGN 3 TYPE  
"C" INLET FRAME

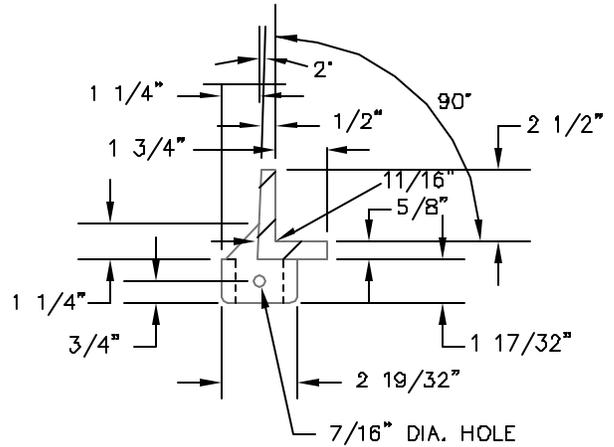
STORM SEWER

SPECIFICATION NO. 611

CF-04 PAGE 79



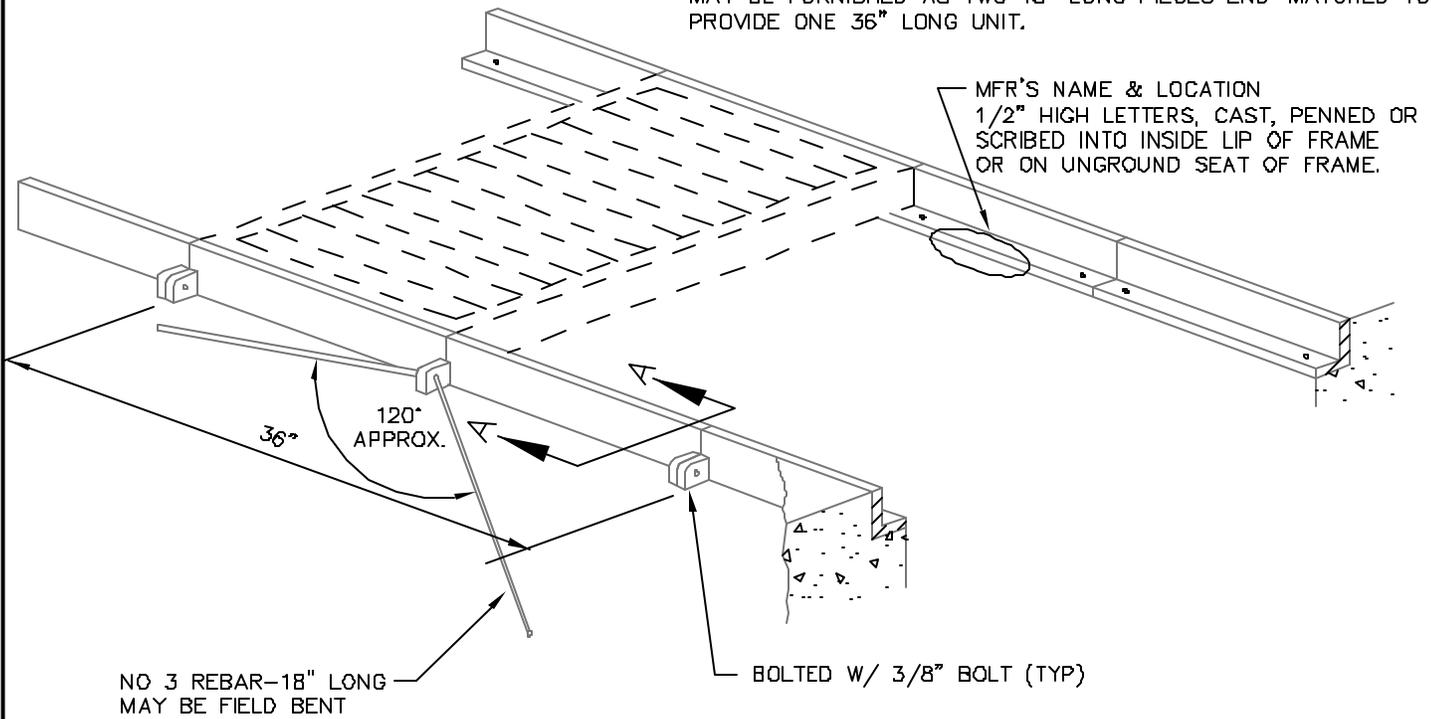
SECTION A-A  
ALTERNATE 1



SECTION A-A  
ALTERNATE 2

NOTE:

ONE PAY UNIT OF TYPE TR FRAME IS COMPOSED OF TWO 36" LONG SECTIONS OF FRAME. ONE TYPE TR FRAME REQUIRES TWO TRENCH TYPE GRATES. DO NOT USE FRAME TYPE GRATES IN A TRENCH INSTALLATION. COST OF BOLTS AND REBARS TO BE INCLUDED IN PRICE BID FOR INLET FRAME. FRAME MEMBERS MAY BE FURNISHED AS TWO 18" LONG PIECES END-MATCHED TO PROVIDE ONE 36" LONG UNIT.



STORM SEWER INLET FRAME

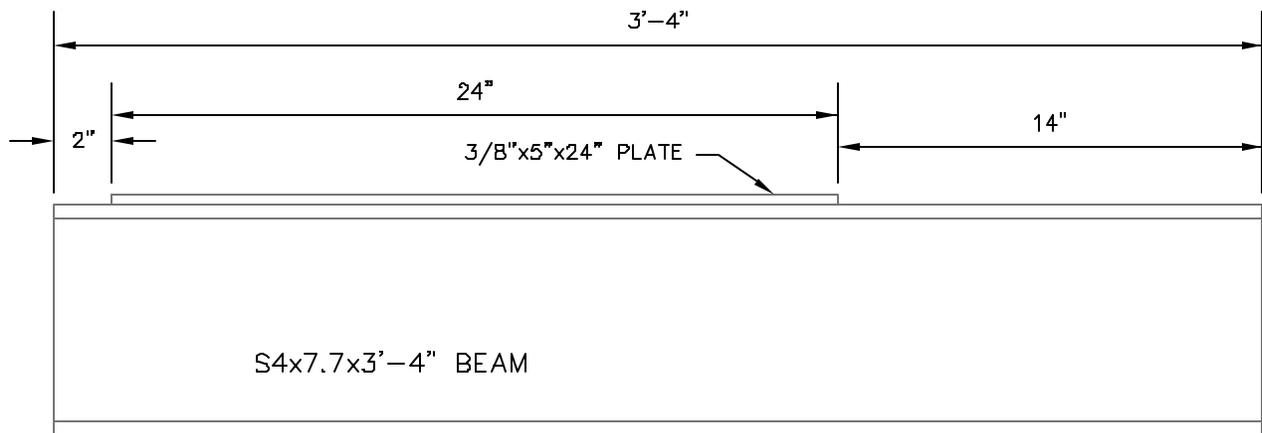
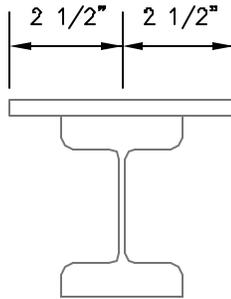
INLET FOR USE WITH INLET FRAME TR WILL NORMALLY BE A SPECIAL DESIGN REINFORCED CONCRETE BOX WITH PART(S) OF THE TOP REMOVED.

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TRENCH INLET TYPE  
"TR" INLET FRAME

STORM SEWER  
SPECIFICATION NO. 611  
CF-05 PAGE 80



SUPPORT BEAM  
 TO BE USED WHEN STRUCTURE  
 IS BUILT ON CURVED CURB

REVISIONS	NO.	DATE	ITEM CHANGED
◇			

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

SUPPORT BEAM

STORM SEWER  
 SPECIFICATION NO. 611  
 CF-06 PAGE 81

AS STAMPED FOR APPROVAL BY THE CITY OF EDMOND  
 NOV. 28 10:58 AM 2006

## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. FRAME TYPE GRATES, VANE OR RIBBED VANE, ARE NOT TO BE USED IN TRENCH INSTALLATIONS.
3. GRATES SHALL BE INSTALLED IN THE FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN THE SUMP.
4. ALL LETTERING TO BE RECESSED 1/16 INCH AND SHALL NOT EXCEED 1 INCH IN HEIGHT. INFORMATION REQUIRED SHALL BE AS STATED IN THE SPECIFICATIONS. LOCATION OF LETTERING TO BE AS SHOWN WITH ADDITIONAL IDENTIFICATION LETTERING AT OTHER LOCATIONS ACCEPTABLE.
5. GRATES AS SHOWN HERE SHALL BE CAST STEEL, DUCTILE IRON, OR GRAY IRON CONFORMING TO SECTION 725 OF THE STANDARD SPECIFICATIONS.
6. ALL GRATES INSTALLED IN A TRENCH FRAME SHALL HAVE A BOLTED HOLD-DOWN FEATURE. IF INSTALLED IN AN ANGLE IRON FRAME OR RESTING ON A CONCRETE SHOULDER, A POSITIVE HOLD-DOWN FEATURE, APPROVED BY THE ENGINEER, SHALL BE USED.
7. MACHINING (SYMBOL ^) MAY BE ACCOMPLISHED BY MILLING OR BY LEVEL GRINDING.

A STANDARD CONSTRUCTION SPECIFICATION FOR STORM SEWER  
 NO. 201 1000 JAN 1998

REVISIONS	ND.	DATE	ITEM CHANGED
	◇		

**CITY OF EDMOND**

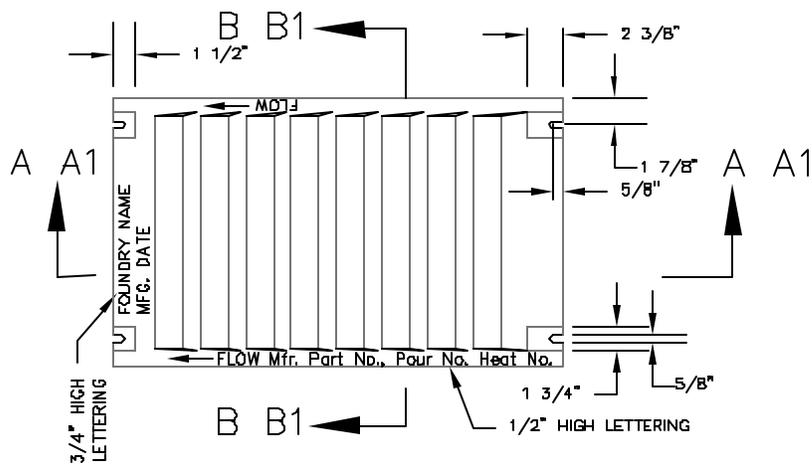
**ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS**

**GENERAL NOTES**

**STORM SEWER**

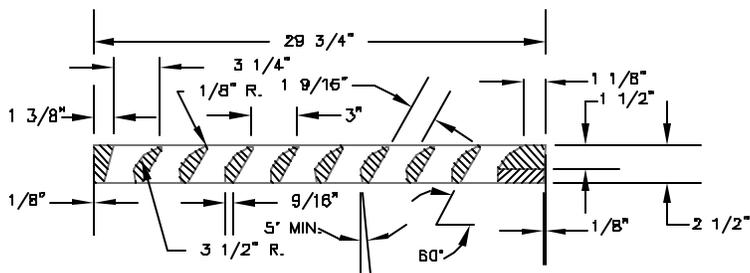
SPECIFICATION NO. 611

CG-01 PAGE 82

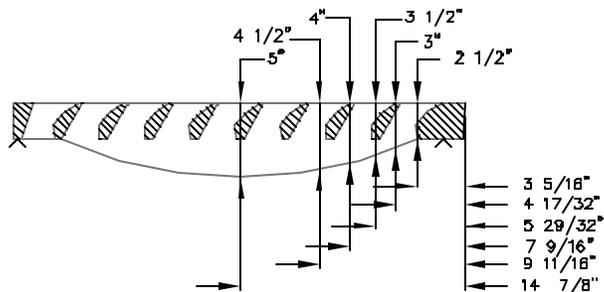


**VANE GRATE**

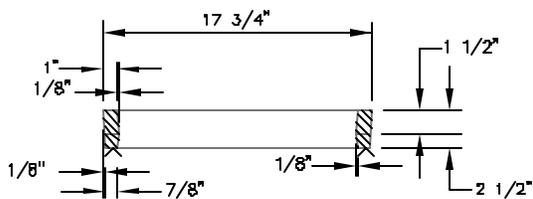
TYPE VG-F (FRAME INSTALLATION)  
 TYPE VG-T (TRENCH INSTALLATION)



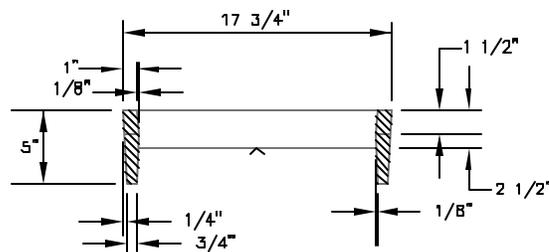
**SECTION A-A**  
 TYPE VG-F



**SECTION A1-A1**  
 TYPE VG-T



**SECTION B-B**  
 TYPE VG-F



**SECTION B1-B1**  
 TYPE VG-T

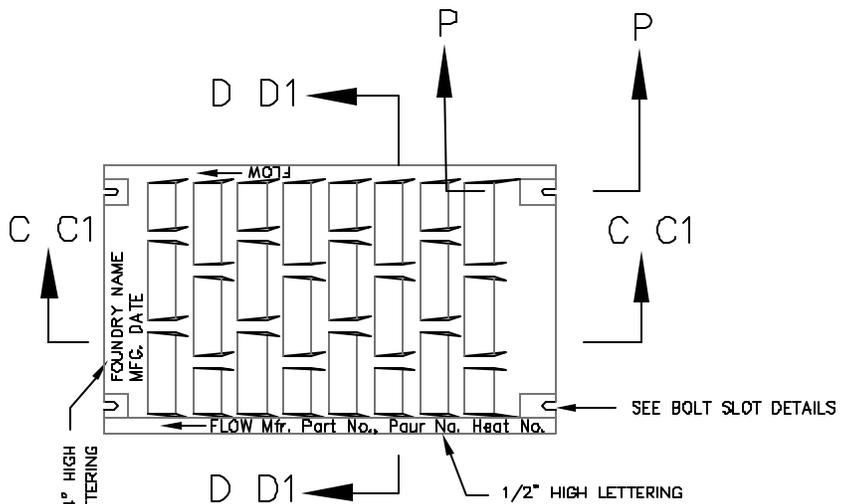
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

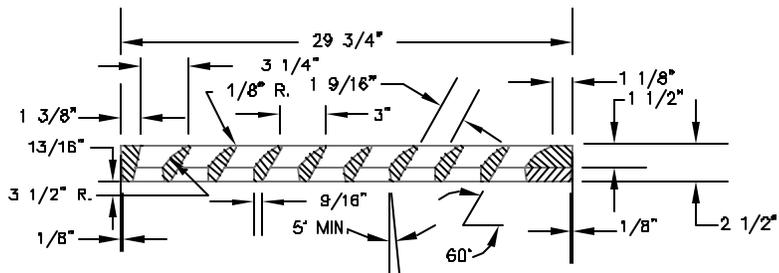
**CAST IRON GRATE**  
 TYPE "VG-F" & "T"

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CG-02 PAGE 83

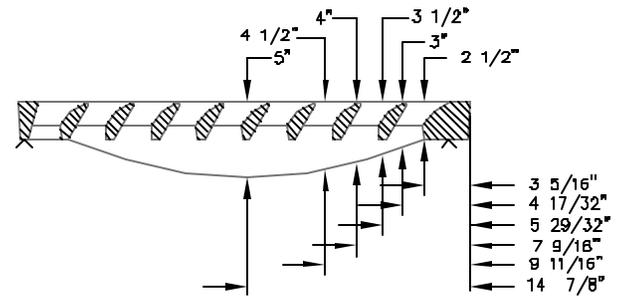
STANDARD SPECIFICATIONS FOR CAST IRON GRATES  
 CITY OF EDMOND, OKLAHOMA  
 REVISED 9/1988



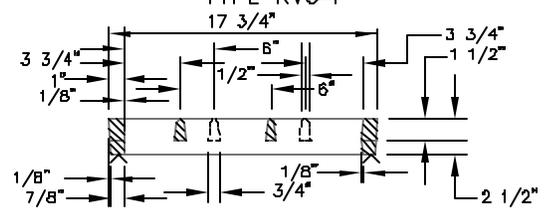
**RIBBED VANE GRATE**  
 TYPE RVG-F (FRAME INSTALLATION)  
 TYPE RVG-T (TRENCH INSTALLATION)



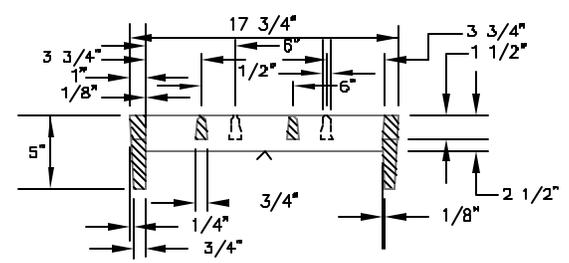
**SECTION C-C**  
 TYPE RVG-F



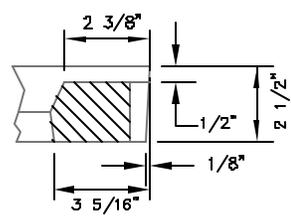
**SECTION C1-C1**  
 TYPE RVG-T



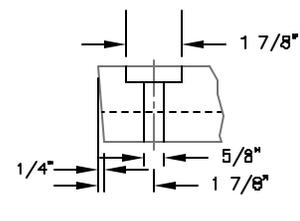
**SECTION D-D**  
 TYPE RVG-F



**SECTION D1-D1**  
 TYPE RVG-T



**SECTION P-P**



**END VIEW**

**BOLT SLOT DETAIL**

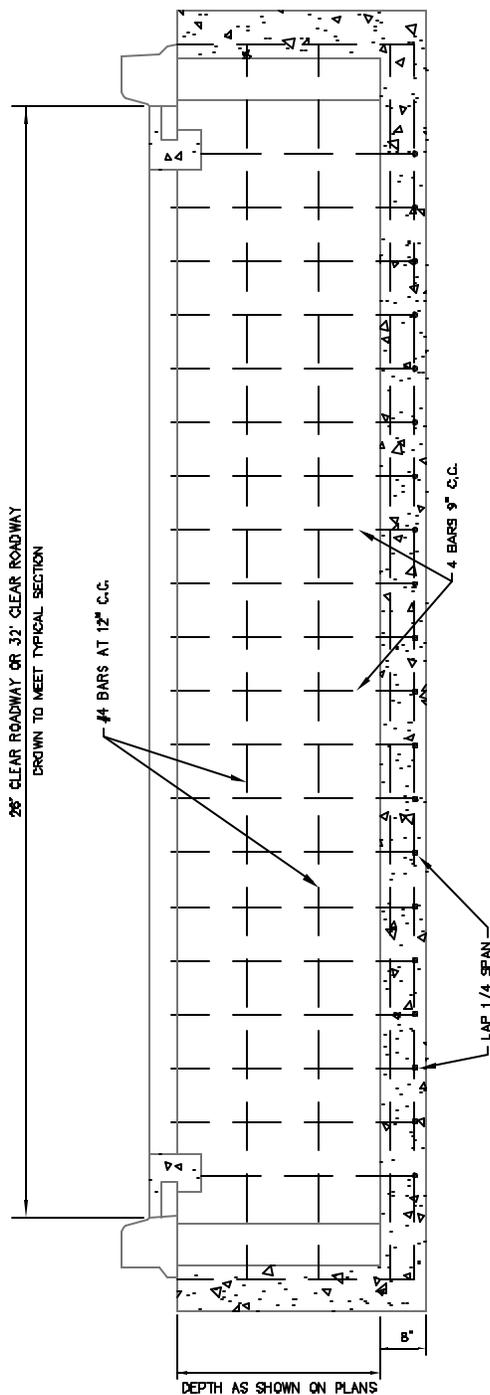
REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

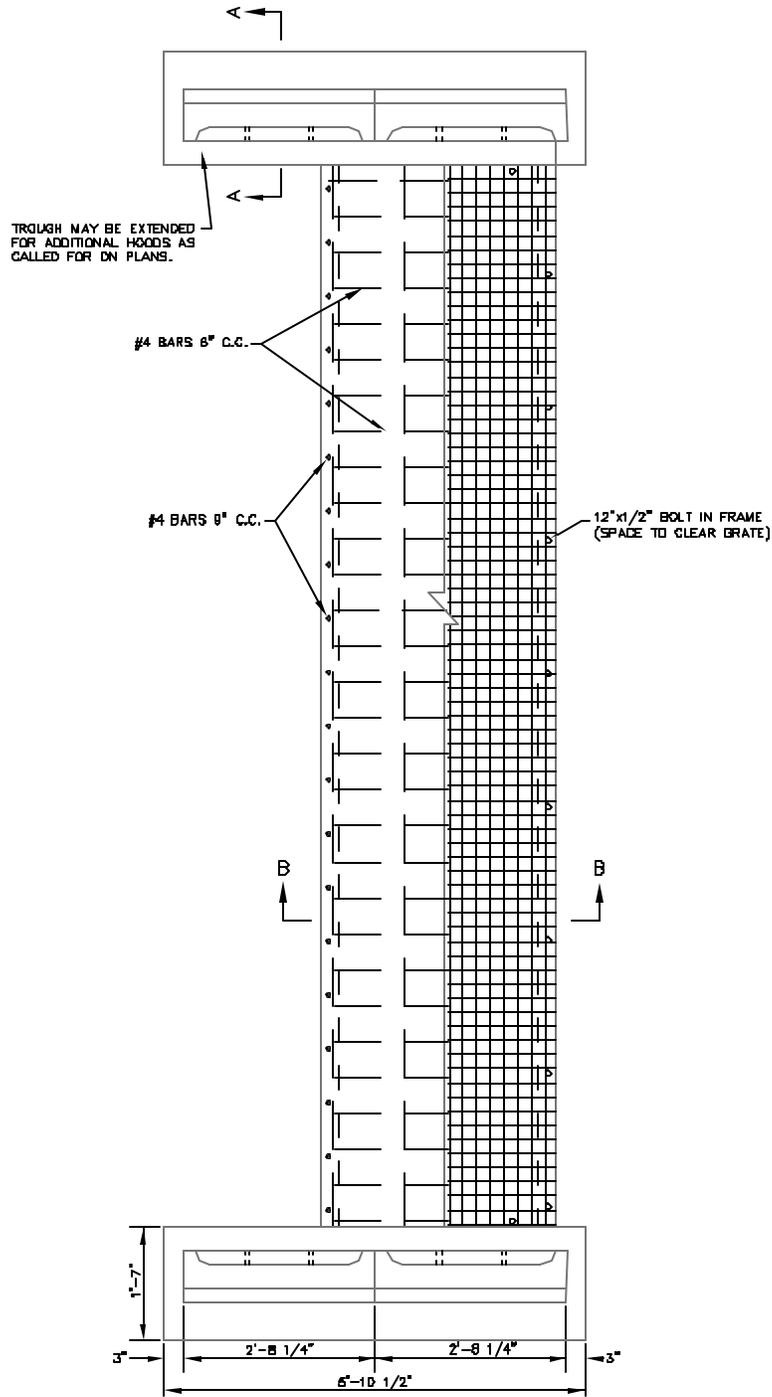
**CAST IRON GRATE**  
 TYPE "RVG-F" & "T"

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CG-03 PAGE 84

3-15-2009 CITY OF EDMOND, OKLA. 15-00-04-000  
 DATE: 8/19/08 8:50 AM WJH/STW



QUARTER LONGITUDINAL SECTION



HALF PLAN SECTION

C:\STANDARD\CONSTRUCTION\STANDARD\611-01.rwg  
 DEC 6, 1985 11:40 AM TORRES

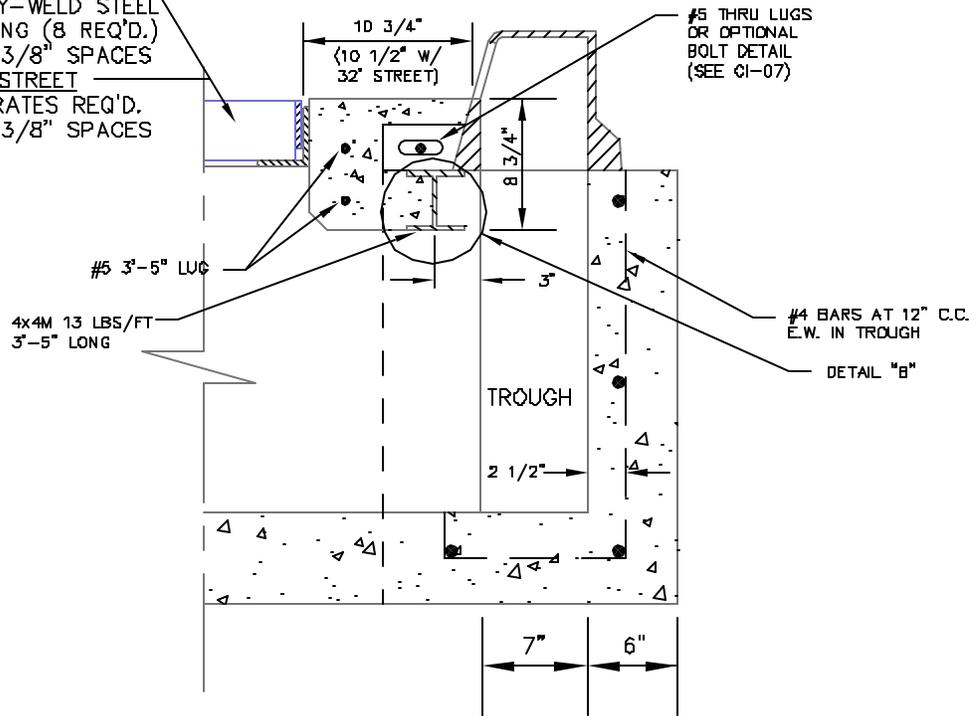
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

PLAN SECTION

**STORM SEWER**  
 SPECIFICATION NO. 611  
 G1-01 PAGE 85

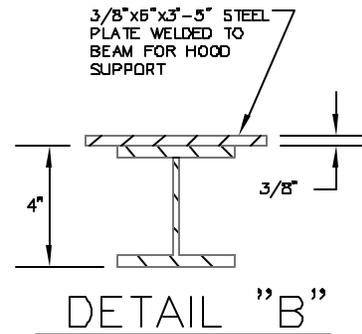
26' STREET  
HEAVY-WELD STEEL  
GRATING (8 REQ'D.)  
WITH 3/8" SPACES  
32' STREET  
10 GRATES REQ'D.  
WITH 3/8" SPACES



SECTION A-A

NOTE:  
FOR CURB INLET DETAILS SEE "CI" SHEETS

INLET CAPACITIES (CFS)		
STREET WIDTH	1 KG GRATE	
	SUMP	ON GRADE (NOT IN SUMP)
26'	112	67
32'	140	84



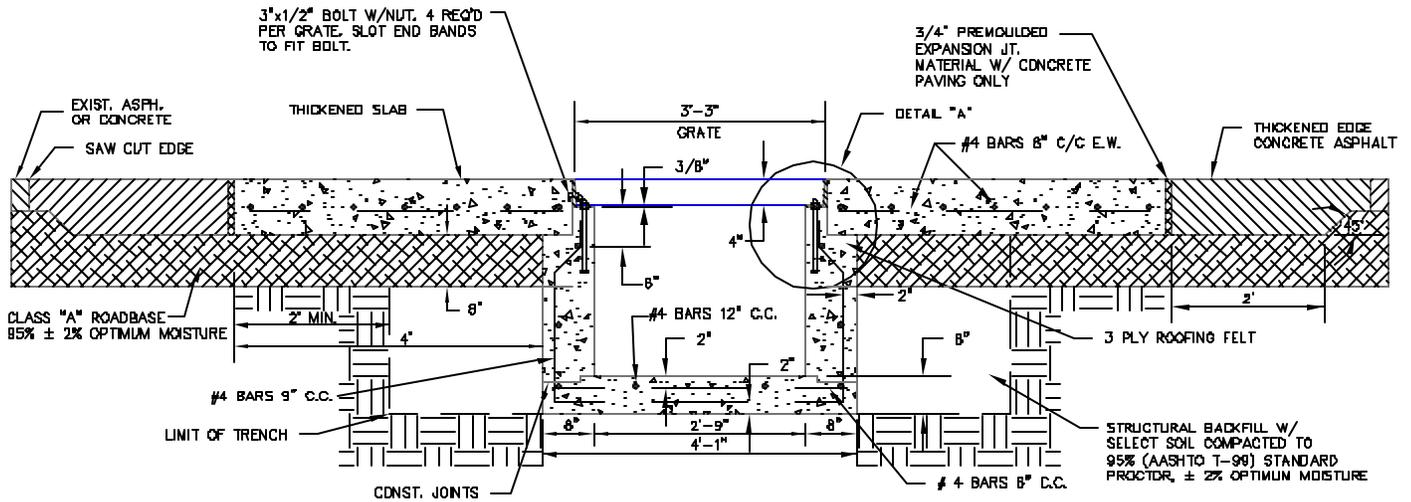
REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

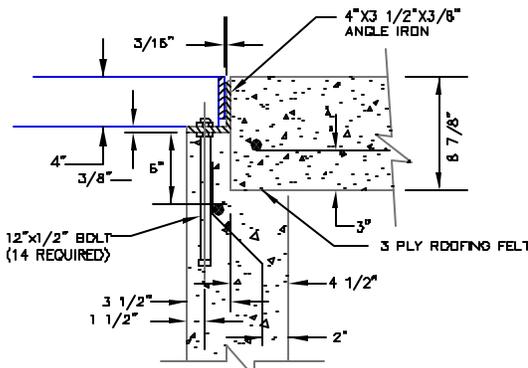
SECTIONS &  
DETAILS

STORM SEWER  
SPECIFICATION NO. 611  
G1-02 PAGE 86

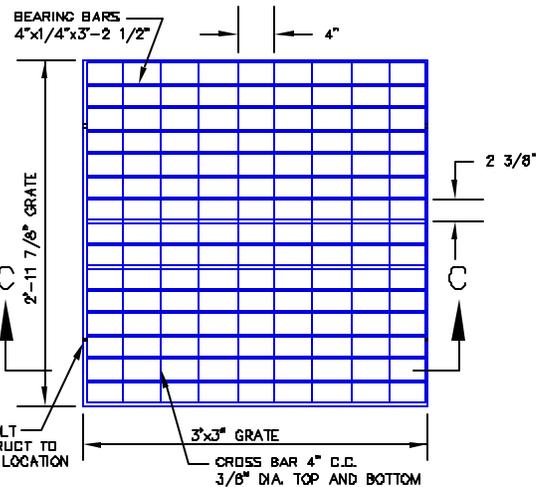
15-11-2010 11:50 AM  
 15-11-2010 11:50 AM  
 15-11-2010 11:50 AM



SECTION B-B



DETAIL A



SECTION C-C

NOTE:  
 1. SUBGRADE TO BE RIPPED TO 8" DEPTH AND COMPACTED TO 95% (AASHTO T-99) STANDARD PROCTOR ± 2% OPTIMUM MOISTURE.  
 2. CLASS "A" ROADBASE SHALL EXTEND TO EDGE OF EXISTING PAVEMENT.

1 KG INDUSTRIES IRVING HEAVY-WELD STEEL GRATING TYPE HE

16 BEARING BARS 4"x1/4"x3'-2 1/2" LONG SPACED AT 2 3/8" O.C. OVERALL DIMENSIONS 3'-3"x2'-11 7/8" ARRANGED WITH 4"x1/4" BEARING BARS 3'-2 1/2" LONG WITH END BANDING 3 1/2"x1/4" END BANDS 2'-11 7/8" LONG & 3/8" CROSS BARS TOP AND BOTTOM, 4" C/C SPACED AS SHOWN.

REVISIONS	NO.	DATE	ITEM CHANGED

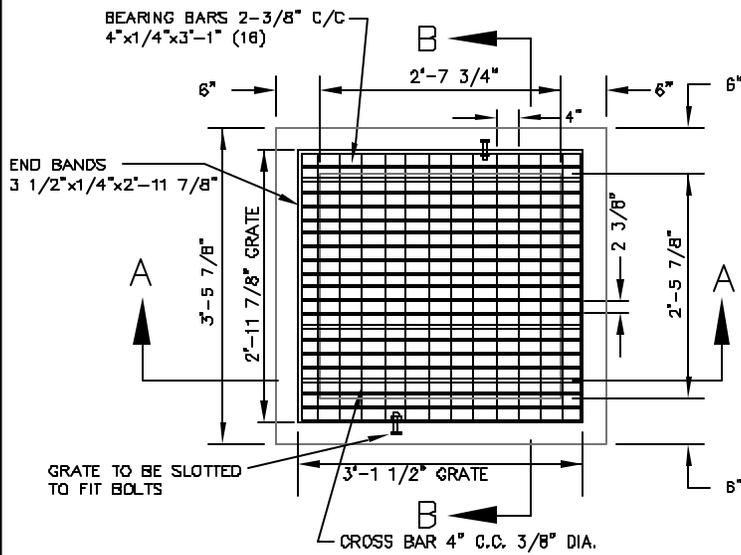
CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

SECTIONS &  
 DETAILS

STORM SEWER  
 SPECIFICATION NO. 611  
 GI-03 PAGE 87

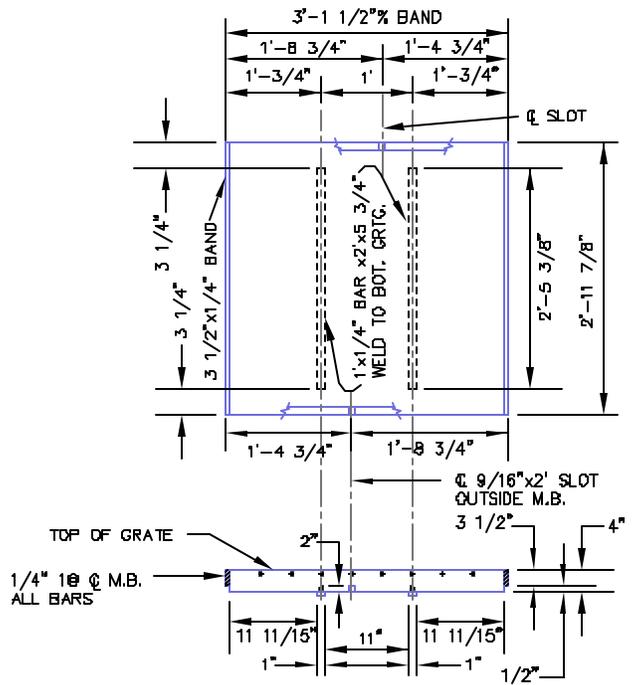
15 STANDARD CONSTRUCTION SPECIFICATIONS FOR STORM SEWER  
 DEC 6, 1983 11:30 AM 10000





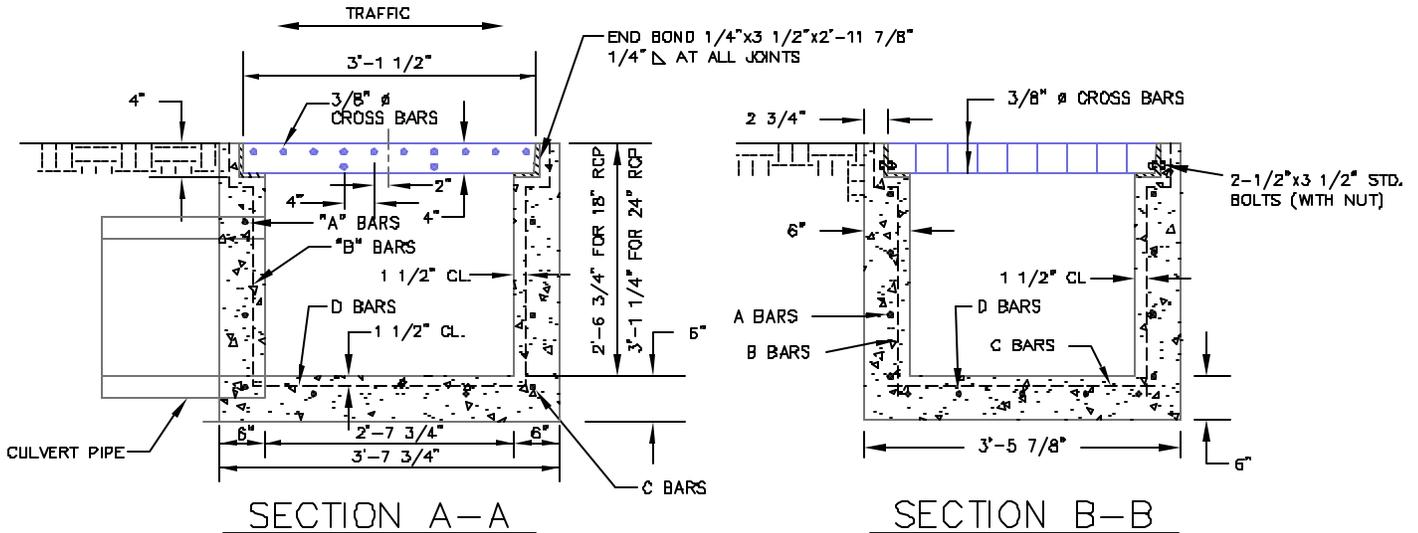
PLAN

HD-1-E-400 KERRIGAN WELDFORGED GRATING OR EQUAL  
16 BEARING BARS @ 2 3/8" C/C-4"x1/4"x3'-1" LONG WITH  
OVERALL DIMENSIONS 3'-1 1/2"x2'-11 7/8" ARRANGED WITH  
4"x1/4" BEARING BARS 3'-1" LONG WITH END BANDING 3 1/2"  
x1/4" END BANDS 2'-11 7/8" LONG AND 3/8" CROSS BARS  
SPACED 4" C/C AND CROSS BARS IN BOTTOM SPACED AS SHOWN.



ALTERNATE STIFFENER  
TYPE 1

DIMENSIONS FOR OTHER TYPE GRATES SHALL CONFORM TO DIMENSIONS AS SHOWN ON THE PLANS.

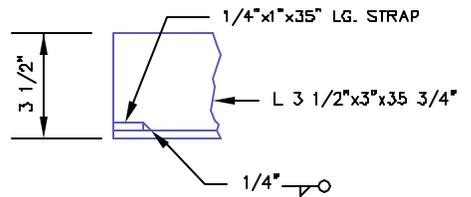


REVISIONS	NO.	DATE	ITEM CHANGED

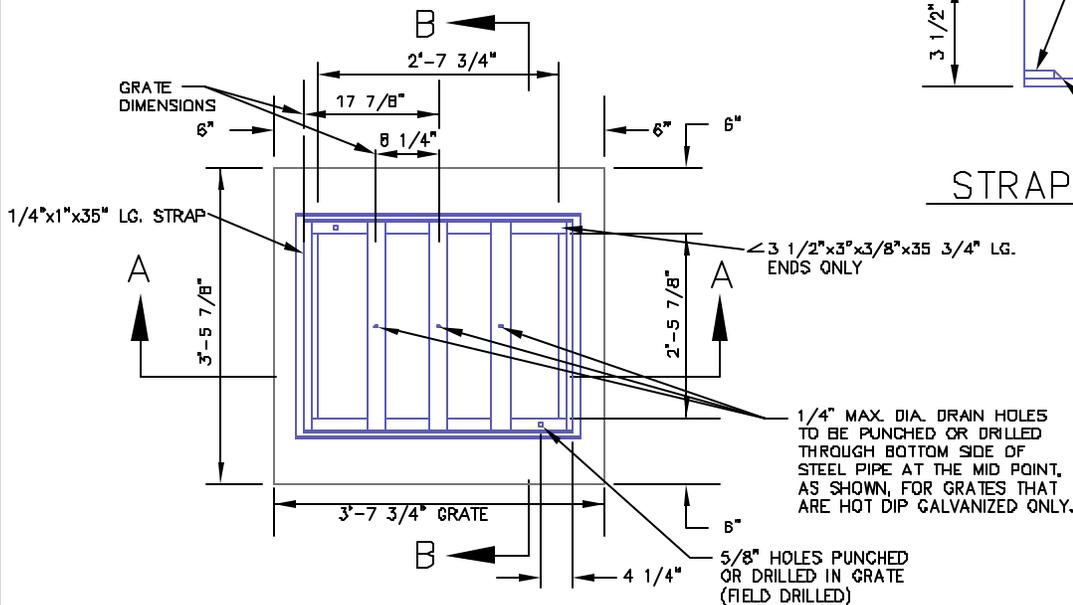
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TYPE "1" GRATE

STORM SEWER  
SPECIFICATION NO. 611  
GD-02 PAGE 89

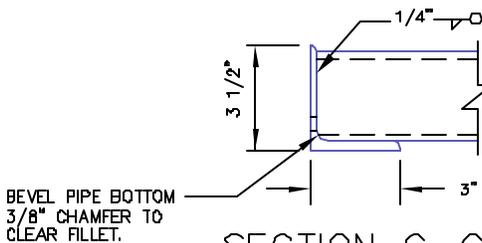


STRAP DETAIL

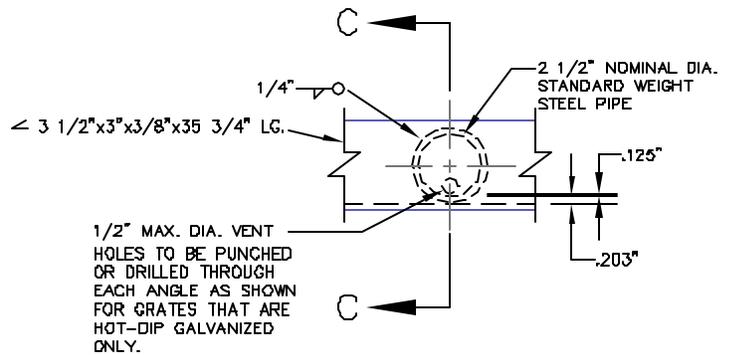


GRATE 2'-11 3/4"x2'-11 3/4" OVERALL

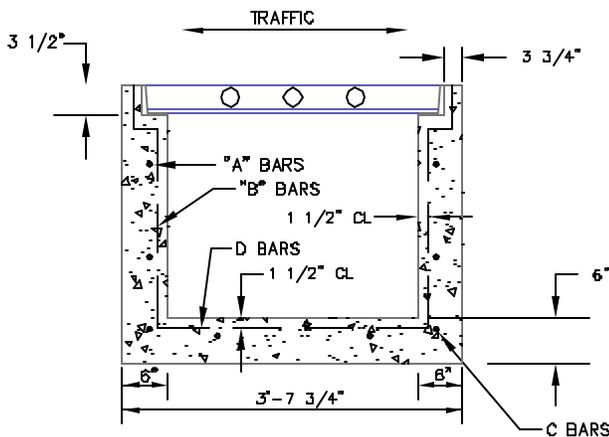
PLAN



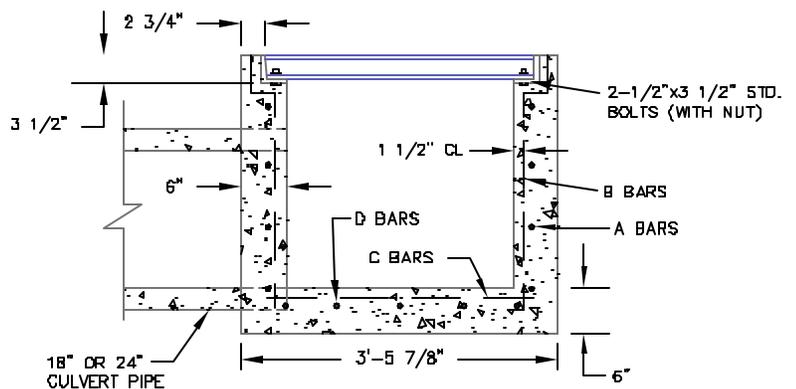
SECTION C-C



VENT HOLE DETAIL



SECTION A-A



SECTION B-B

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TYPE "2" GRATE

STORM SEWER  
SPECIFICATION NO. 611  
GD-03 PAGE 00



## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. ALL EXPOSED CONCRETE SHALL HAVE A 3/4 INCH CHAMFER.
3. ALL REINFORCING STEEL SHALL BE 1/2". ALL HORIZONTAL BARS SHALL BE SPACED 6" CTS. EXCEPT AS SHOWN FOR 48" TO 72" R.C.P. VERTICAL BARS ARE TIE BARS SPACED AS SHOWN.
4. MAXIMUM DEPTHS OF DROP INLET FOR 48" TO 72" R.C.P. SHALL BE AS FOLLOWS: 48"-18' : 54"-16' : 66"-12' : 72"-10'.
5. PIPE HANDRAIL SHALL BE PLACED ON DROP INLETS.
6. STANDARD STEEL PIPE PAINTED WITH TWO COATS OF ALUMINUM PAINT MAY BE USED IN PLACE OF GALVANIZED STEEL PIPE.
7. WELDED CONNECTIONS MAY BE USED FOR PIPE HANDRAIL.
8. WELDED CONNECTIONS SHALL BE THOROUGHLY CLEANED OF ALL LOOSE SCALE, GROUND SMOOTH AND SPOT PAINTED WITH TWO COATS OF ALUMINUM PAINT.
9. SHOP DETAILS FOR ALL PIPE HANDRAIL SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER BEFORE FABRICATION.
10. TOTAL QUANTITIES AS SHOWN IN TABLE ARE COMPUTED TO TOP OF PIPE AND INCLUDE CURB. FOR DROP INLETS OF GREATER DEPTH, MULTIPLY THE FIGURE IN PER FOOT COLUMN BY THE HEIGHT FROM TOP OF PIPE TO TOP OF DROP INLET AND ADD THE RESULT TO THE QUANTITY IN THE PRECEDING COLUMN.
11. UNLESS OTHERWISE SPECIFIED, ALL EXPOSED CONCRETE SURFACES SHALL HAVE A FINISH IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

DIMENSIONS REINFORCING STEEL & QUANTITIES																			
DIMENSIONS			REINFORCING STEEL								CLASS A CONCRETE CU. YDS.		REINFORCING STEEL LBS		PIPE RAILING				
D. - Dia. OF PIPE	AREA OF PIPE SQ. FT.	THICKNESS OF SHELL	H1-BARS BENT		H2-BARS BENT		H3-BARS BENT		V1-BARS STRAIGHT		V2-BARS BENT		TOTAL TO TOP OF PIPE INCLUDING CURB	PER FOOT OF ADDITIONAL HEIGHT	TOTAL TO TOP OF PIPE INCLUDING CURB	PER FOOT OF ADDITIONAL HEIGHT	LIN FT. OF PIPE RAILING INCLUDING FITTINGS		
			NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.						NO.	LGTH.
15"	1.23	2 1/4"	2	5'-5"	10	5'-1"	6	2'-7"	6	4'-2"	1	10"	5	3'-0"	.77	.289	79	28.7	10
18"	1.77	2 1/2"	2	5'-8"	11	5'-4"	7	2'-10"	8	4'-5"	1	10"	7	3'-3"	.93	.318	100	31.4	11
24"	3.14	3"	2	6'-2"	13	5'-10"	8	3'-4"	10	4'-11"	2	10"	8	3'-10"	1.29	.375	131	35.4	13
30"	4.91	3 1/2"	2	6'-8"	15	6'-4"	9	3'-10"	12	5'-5"	2	10"	8	4'-4"	1.71	.432	163	38.1	15
36"	7.07	4"	2	7'-2"	17	6'-10"	10	4'-4"	14	5'-11"	2	10"	8	4'-11"	2.19	.489	199	40.8	17
42"	9.62	4 1/2"	2	7'-8"	19	7'-4"	11	4'-11"	15	6'-5"	3	10"	11	5'-6"	2.74	.546	251	46.1	19
48"	12.57	5"	2	8'-8"	23	8'-4"	13	5'-5"	22	6'-11"	3	10"	11	6'-0"	3.69	.633	334	50.1	22
54"	15.90	5 1/2"	2	9'-2"	25	8'-10"	14	5'-11"	24	7'-5"	4	10"	11	6'-6"	4.41	.690	384	53.4	24
60"	19.63	6"	2	9'-8"	27	9'-4"	15	6'-5"	26	7'-11"	4	10"	14	7'-1"	5.18	.747	452	58.1	26
66"	23.78	6 1/2"	2	10'-2"	29	9'-10"	16	7'-0"	28	8'-5"	4	10"	14	7'-7"	6.02	.804	510	60.8	28
72"	28.27	7"	2	10'-8"	31	10'-4"	17	7'-6"	30	8'-11"	5	10"	14	8'-2"	6.92	.861	572	64.1	30

◇					
REVISIONS	NO.	DATE	ITEM CHANGED		

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

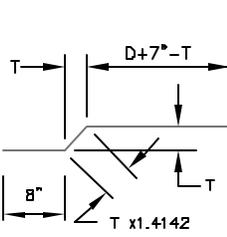
GENERAL NOTES &  
BAR BENDING

STORM SEWER

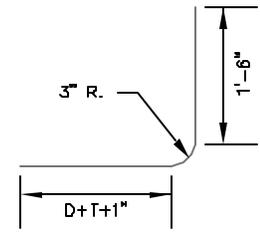
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SPECIFICATION NO. 611

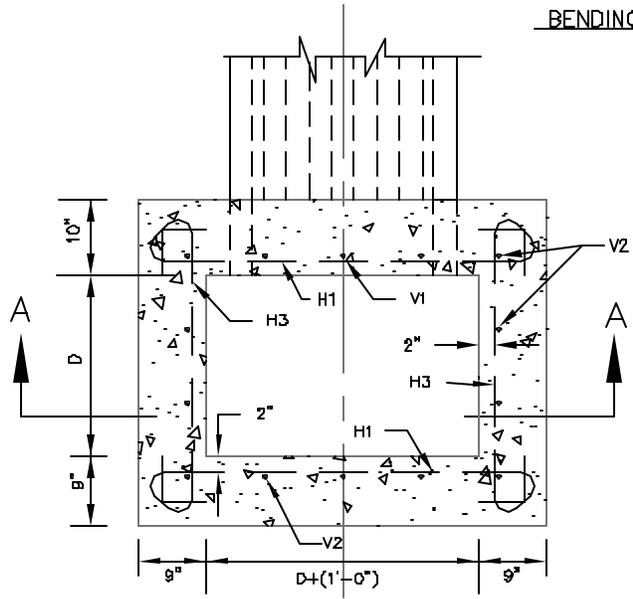
DR-01    PAGE 02



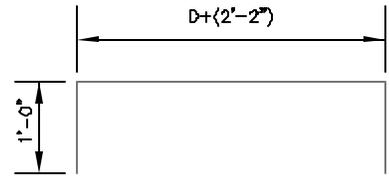
BENDING FOR H2-BARS



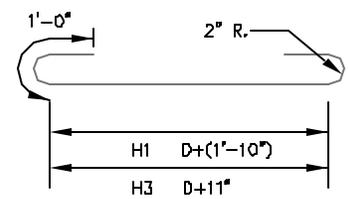
BENDING FOR V2-BARS



PLAN

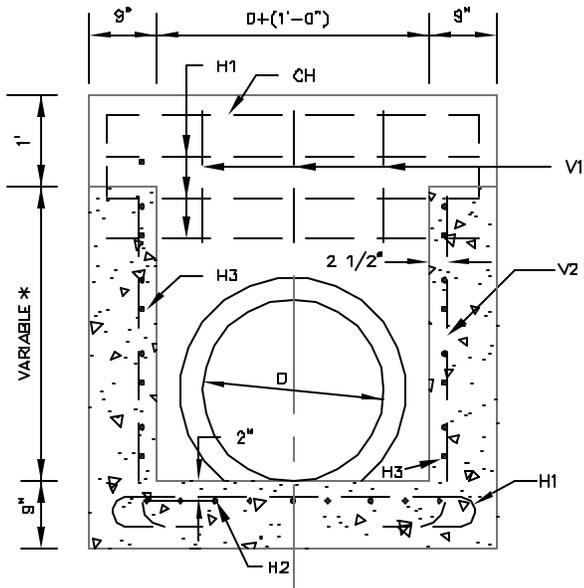


BENDING FOR CH-BARS

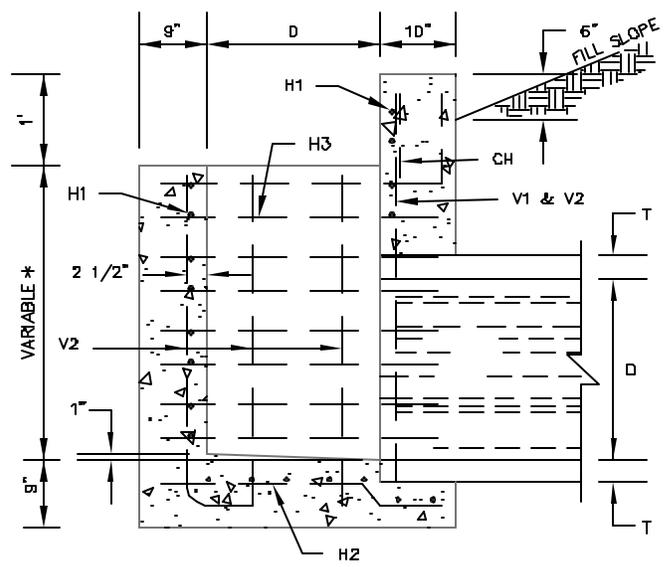


BENDING FOR H1 & H3-BARS

BAR BENDING DIAGRAMS



SECTION A-A



SECTION ON Q

\* DIMENSION FOR STD. HEIGHT DROP INLET TO BE D+T  
ALL RCP UNDER PAVEMENT SHALL BE O-RINGED

REVISIONS	NO.	DATE	ITEM CHANGED

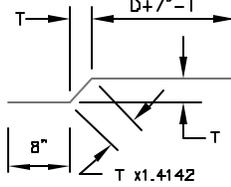
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

15" TO 42"  
REINF. CONC. PIPE

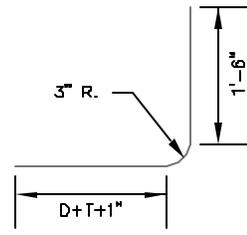
STORM SEWER  
SPECIFICATION NO. 611  
DR-02 PAGE 03

JUNE 2, 1987 10:57 AM  
 15" TO 42" REINF. CONC. PIPE

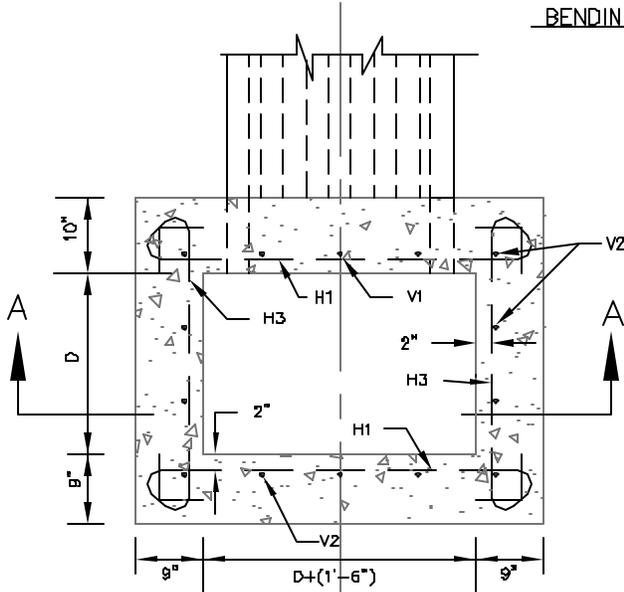
ALL RCP UNDER PAVEMENT SHALL BE Q-RINGED



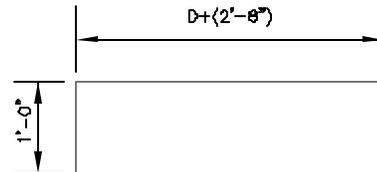
BENDING FOR H2-BARS



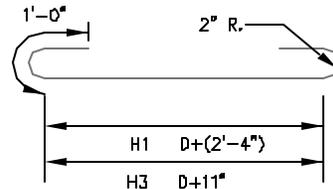
BENDING FOR V2-BARS



PLAN

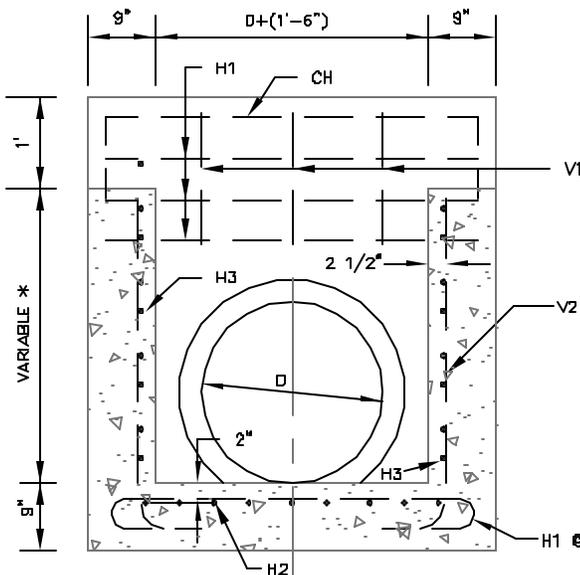


BENDING FOR CH-BARS



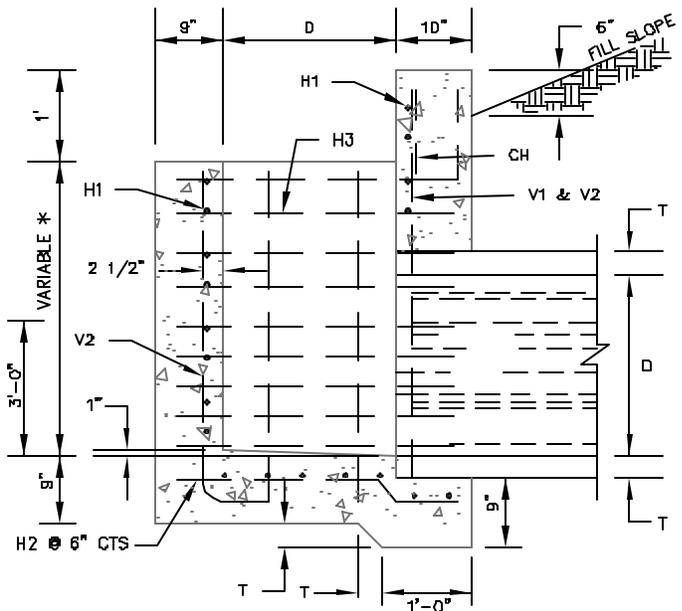
BENDING FOR H1 & H3-BARS

BAR BENDING DIAGRAMS



SECTION A-A

H1 & H3 BARS  
1/2" @ 4"  
CLS 48" TO  
72" RCP



SECTION ON Q

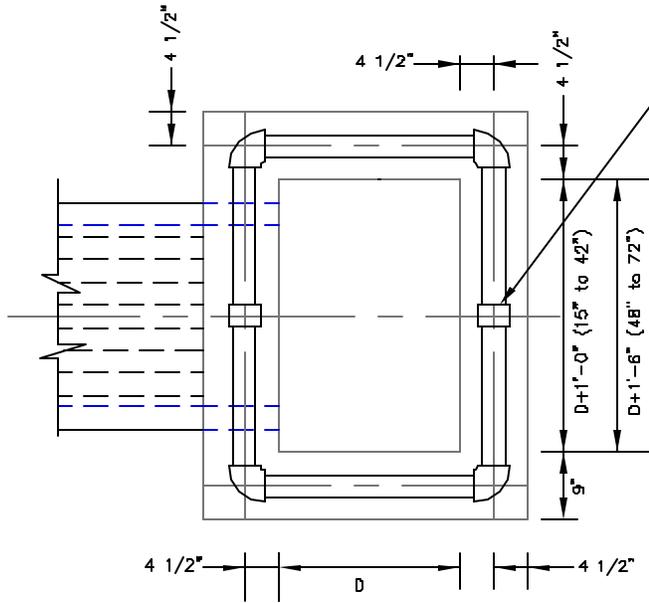
\* DIMENSION FOR STD. HEIGHT DROP INLET TO BE "D" + "T"

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

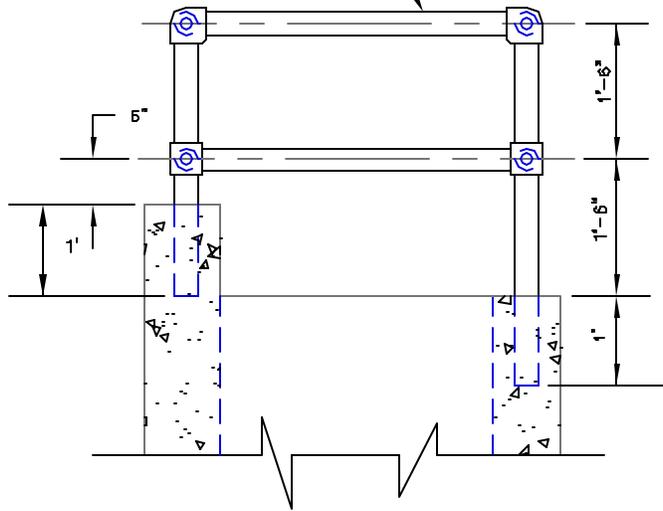
48" TO 72"  
REINF. CONC PIPE

STORM SEWER  
SPECIFICATION NO. 611  
DR-03 PAGE 04



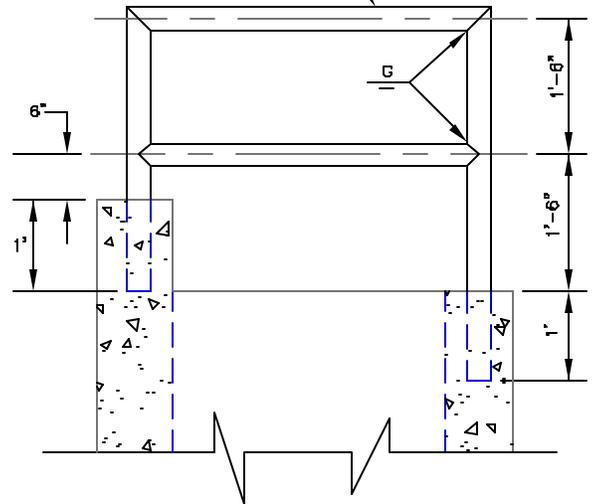
PLAN

1 1/2" I.D. GALV. STEEL PIPE WITH PLAIN GALV. FITTINGS USE STANDARD & SPECIAL FITTINGS AS NECESSARY



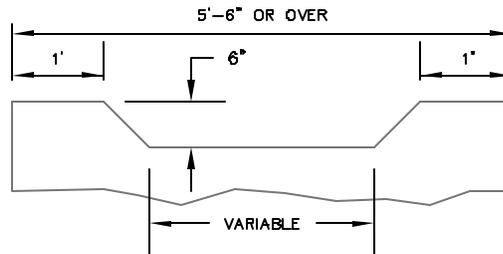
PART SECTION ON CL

1 1/2" I.D. GALV. STEEL PIPE



ALTERNATE DETAIL

(USING WELDED CONNECTIONS ON PIPE HANDRAIL)



BUILD NOTCH AS SHOWN ON ALL DROP INLETS WHERE STRUCTURE SPAN IS 4'-0" OR MORE, NOTCHES TO BE PLACED IN LINE OF FLOW ONLY AS DIRECTED BY THE ENGINEER

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

PIPE HANDRAIL

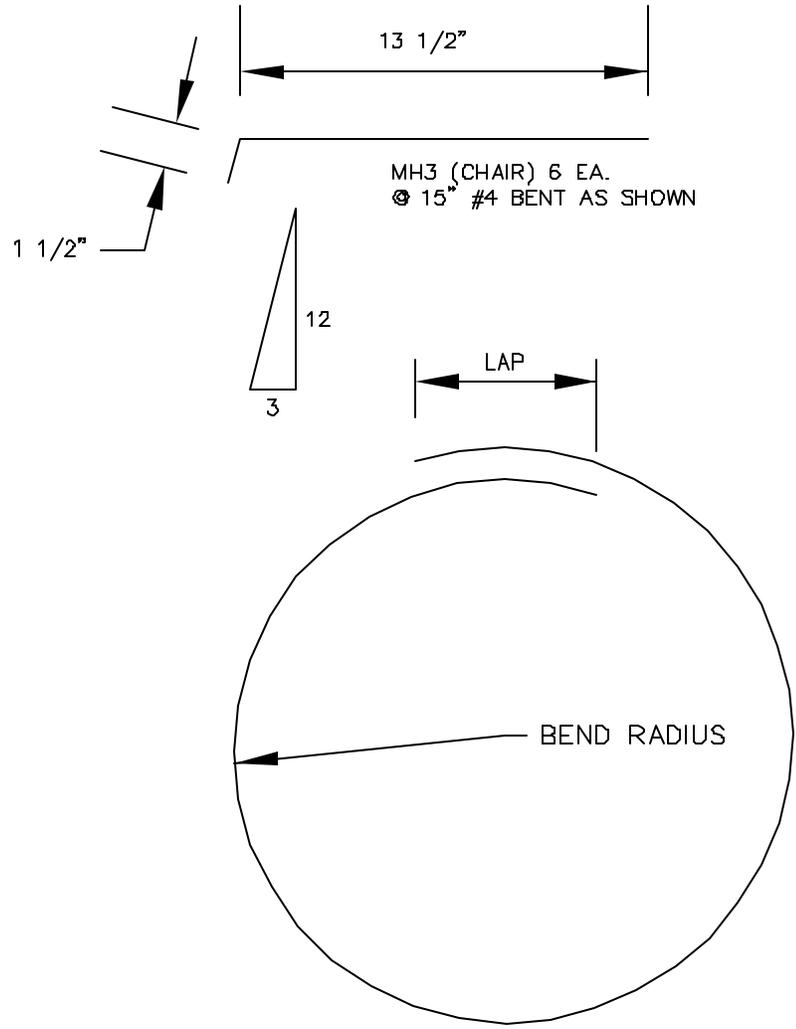
STORM SEWER

SPECIFICATION NO. 611

DR-04 PAGE 05

GENERAL NOTES

1. ALL CONSTRUCTION METHODS AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. FOR PRE-CAST STRUCTURES, REFER TO SECTION 611 IN SPECIFICATION BOOK.
- ▲ JUNCTION BOXES UNDER SURFACING SHALL BE BACKFILLED WITH LOW STRENGTH BACKFILL MATERIAL, SEE STANDARD SPECIFICATIONS SECTIONS 529.



BAR BENDING DIAGRAM  
 (FOR MANHOLE AND JUNCTION  
 BOX RISERS IN PAVEMENT)

BAR MH1 #4 18" RADIUS 12" LAP  
 BAR MH2 #4 27" RADIUS 16" LAP

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

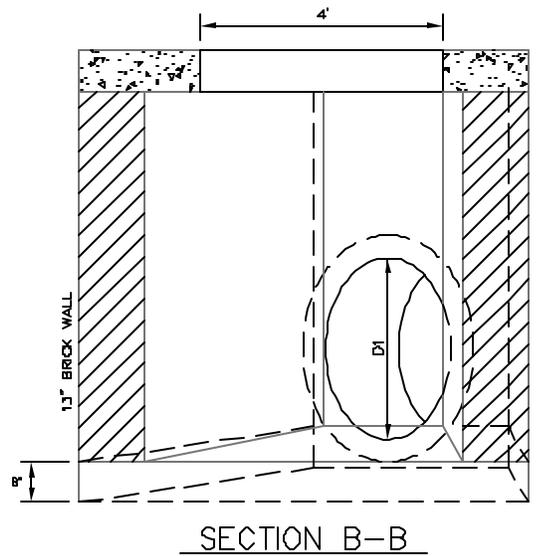
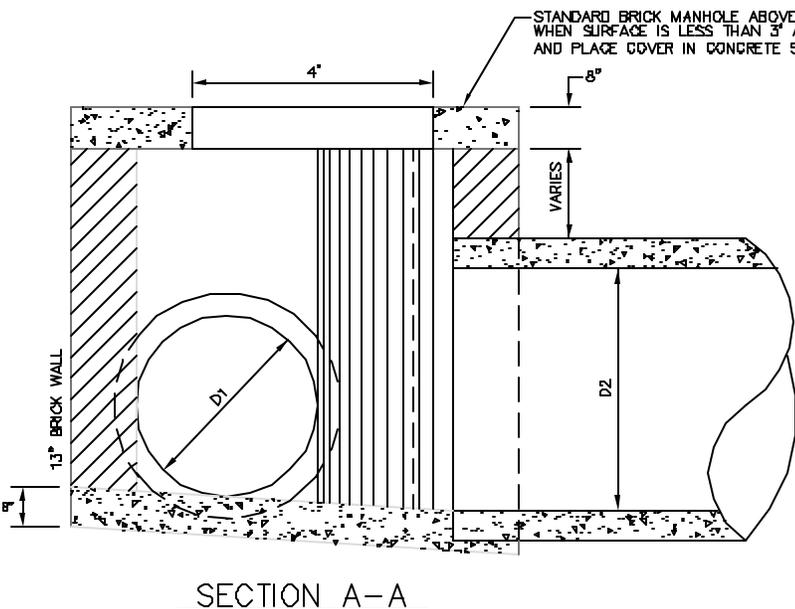
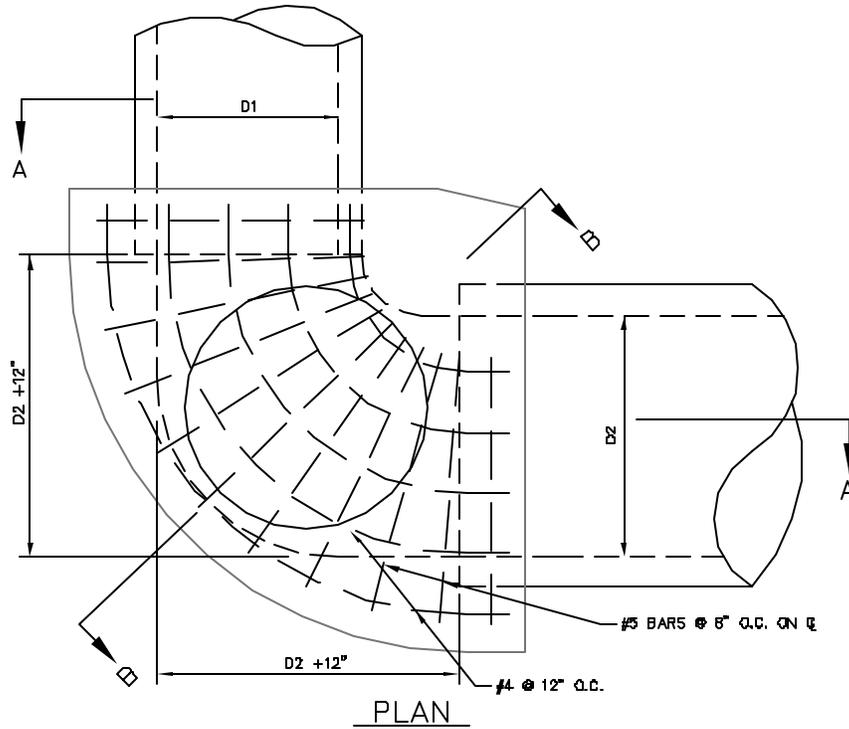
**GENERAL NOTES &  
 BAR BENDING DIAGRAM**

**STORM SEWER**

SPECIFICATION NO. 611

JB-01 PAGE 06

J:\STANDARD DRAWINGS\611\18-05-01.DWG  
 JULY 24, 1987 11:00 AM BOREN



CITY OF EDMOND, BRISTOL, ALA. 36002  
 JUNE 15, 1987 10:07 PM WADREN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**RADIUS TYPE**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 JB-02 PAGE 07

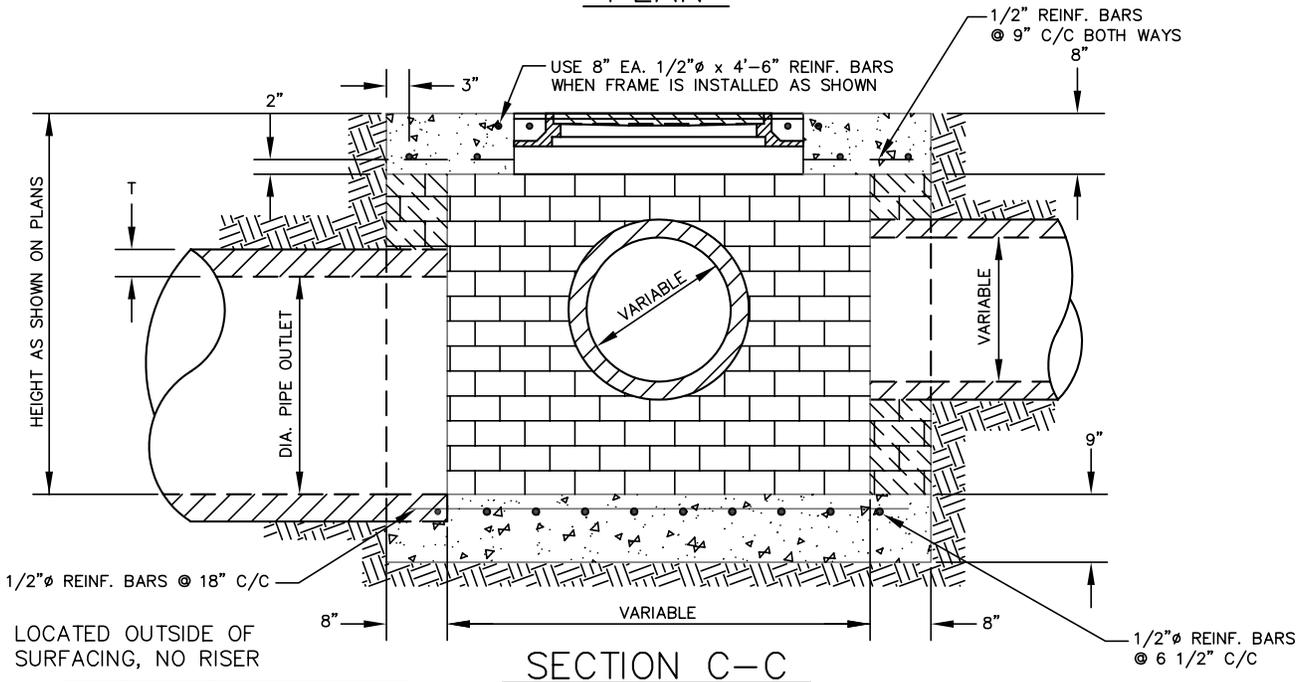
8- 1/2"φ x 4'-6"  
BARS UNDER RIM

LOCATION OF FRAME & COVER  
TO BE DETERMINED BY ENGINEER

STD. MANHOLE FRAME & COVER,  
FRAME & COVER TO BE USED  
ONLY WHEN SPECIFIED ON PLANS

JUNCTION BOX HAS INSIDE DIMENSIONS &  
HEIGHT AS SHOWN ON PLANS.

PLAN



SECTION C-C

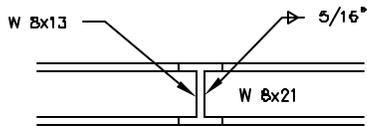
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**STANDARD TYPE**

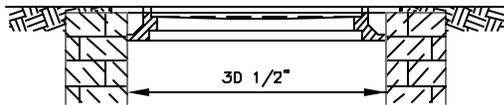
**STORM SEWER**  
SPECIFICATION NO. 611  
JB-03 PAGE 98

J:\STANDARD\EDMOND\85X11\JB-03.DWG  
JULY 28, 1997 10:30 AM MOOREM



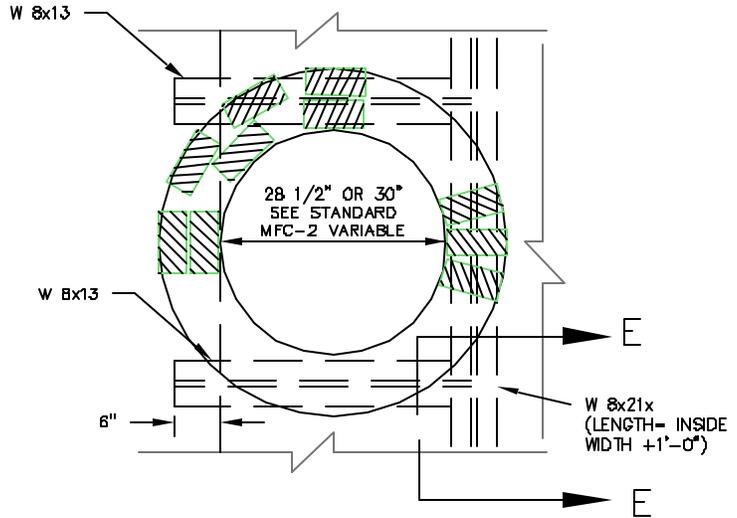
SECTION E-E

COST OF STRUCTURAL STEEL TO BE INCLUDED IN PRICE BID FOR CLASS A CONCRETE

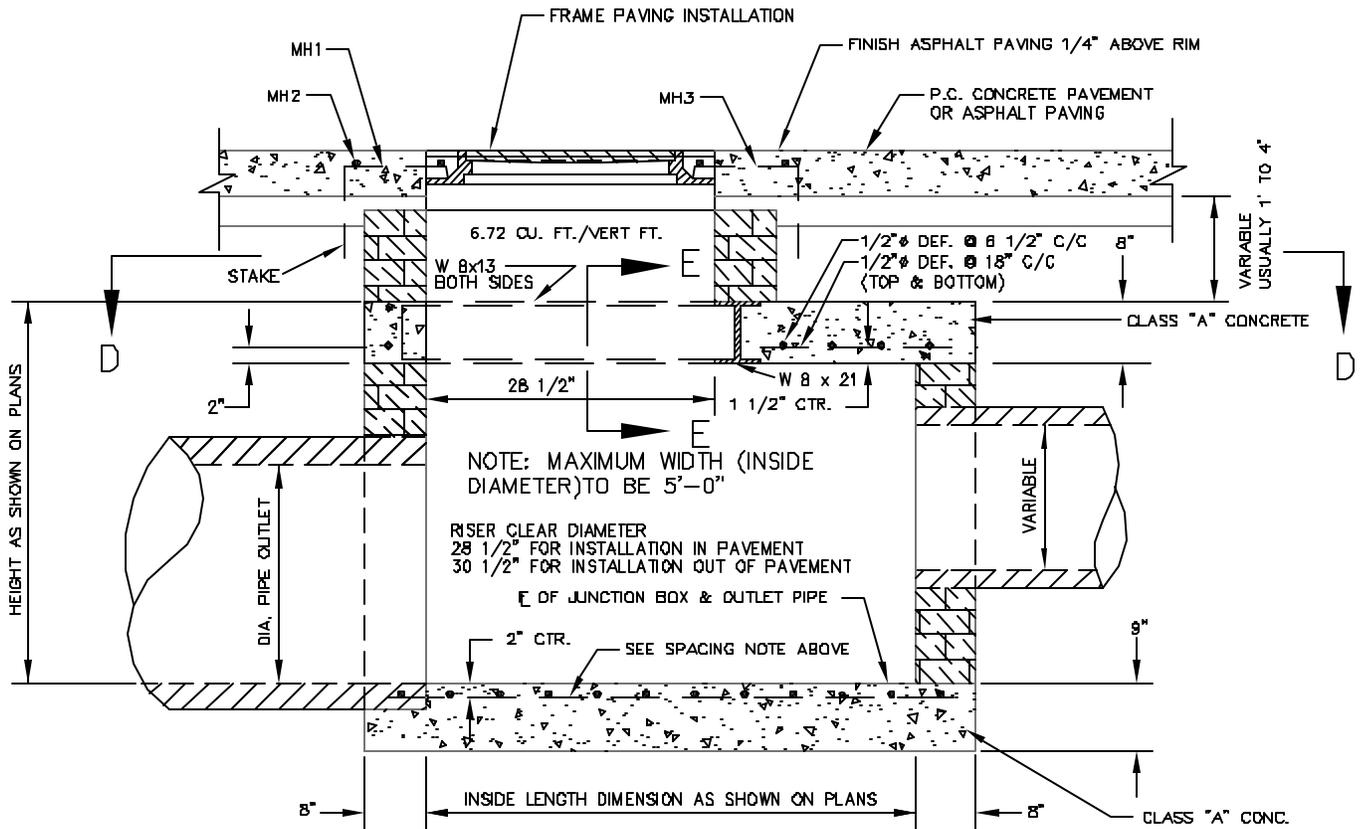


SECTION

JUNCTION BOX RISER OUTSIDE OF SURFACING



SECTION D-D



SECTION

JUNCTION BOX UNDER SURFACING WITH RISER

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

STANDARD TYPE

STORM SEWER

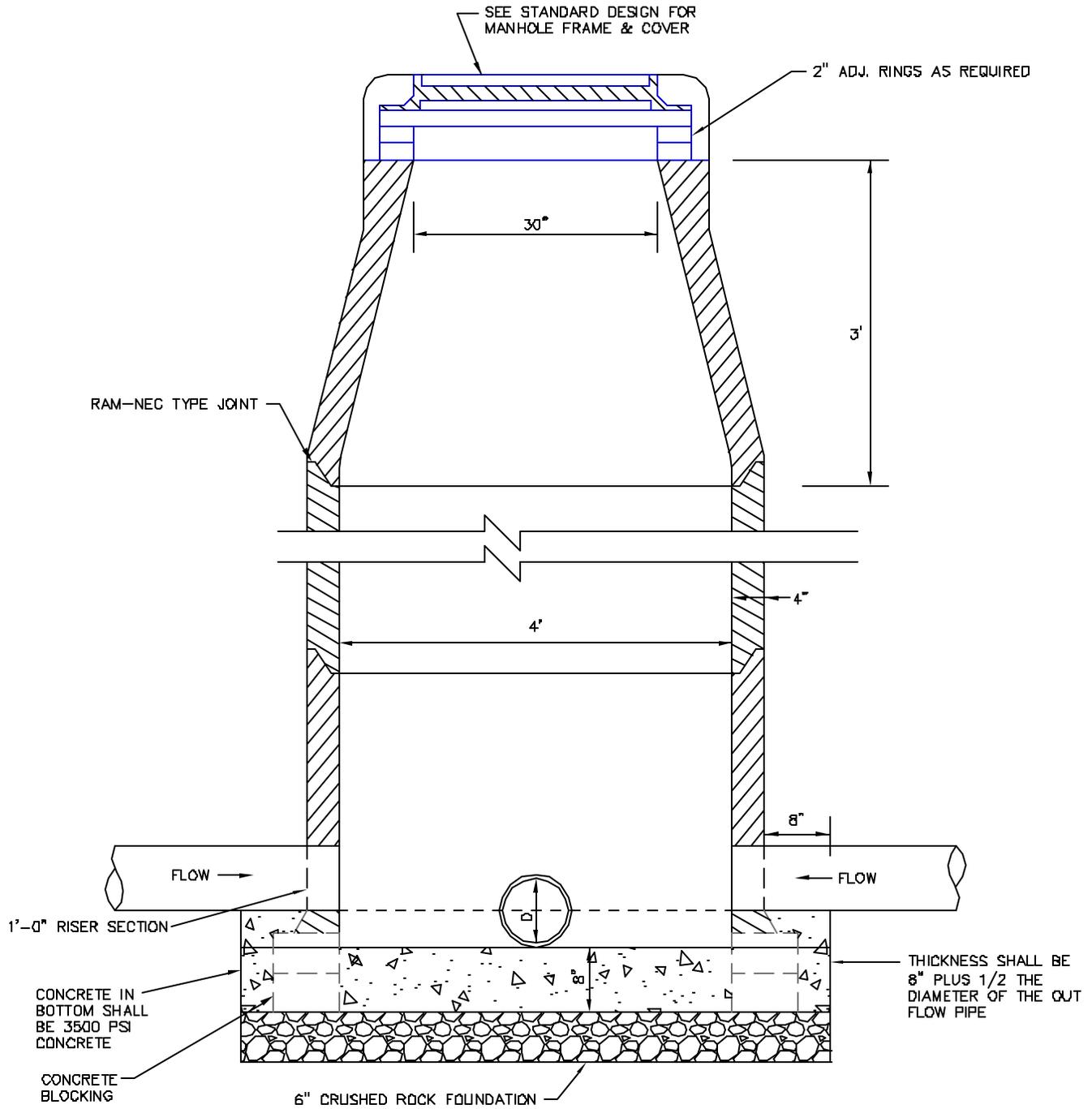
SPECIFICATION NO. 611

JB-04 PAGE 09

CITY OF EDMOND, OKLA. 1500-54-0100  
 JULY 20, 1987 10:00 AM BOREN

NOTE:

1. FOUNDATION GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B, 1-1/2" MINIMUM SIZE.
2. MAXIMUM DEPTH 16'-0", RISER LENGTHS 1'-0", ALL LIFTING HOLES TO BE REPAIRED WITH A MIXTURE OF CEMENT AND SAND GROUT FIRMLY PACKED.
3. THESE MANHOLE STANDARDS ARE ONLY FOR STORM SEWERS 24" DIAMETER OR LESS. SEE JUNCTION BOX DETAILS FOR ALTERNATE DETAILS AND PIPE SIZES LARGER THAN 24".



CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1500 S. W. 10TH ST., SUITE 100  
 EDMOND, OKLA. 73116

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**STANDARD PRECAST  
 CONCRETE MANHOLE**

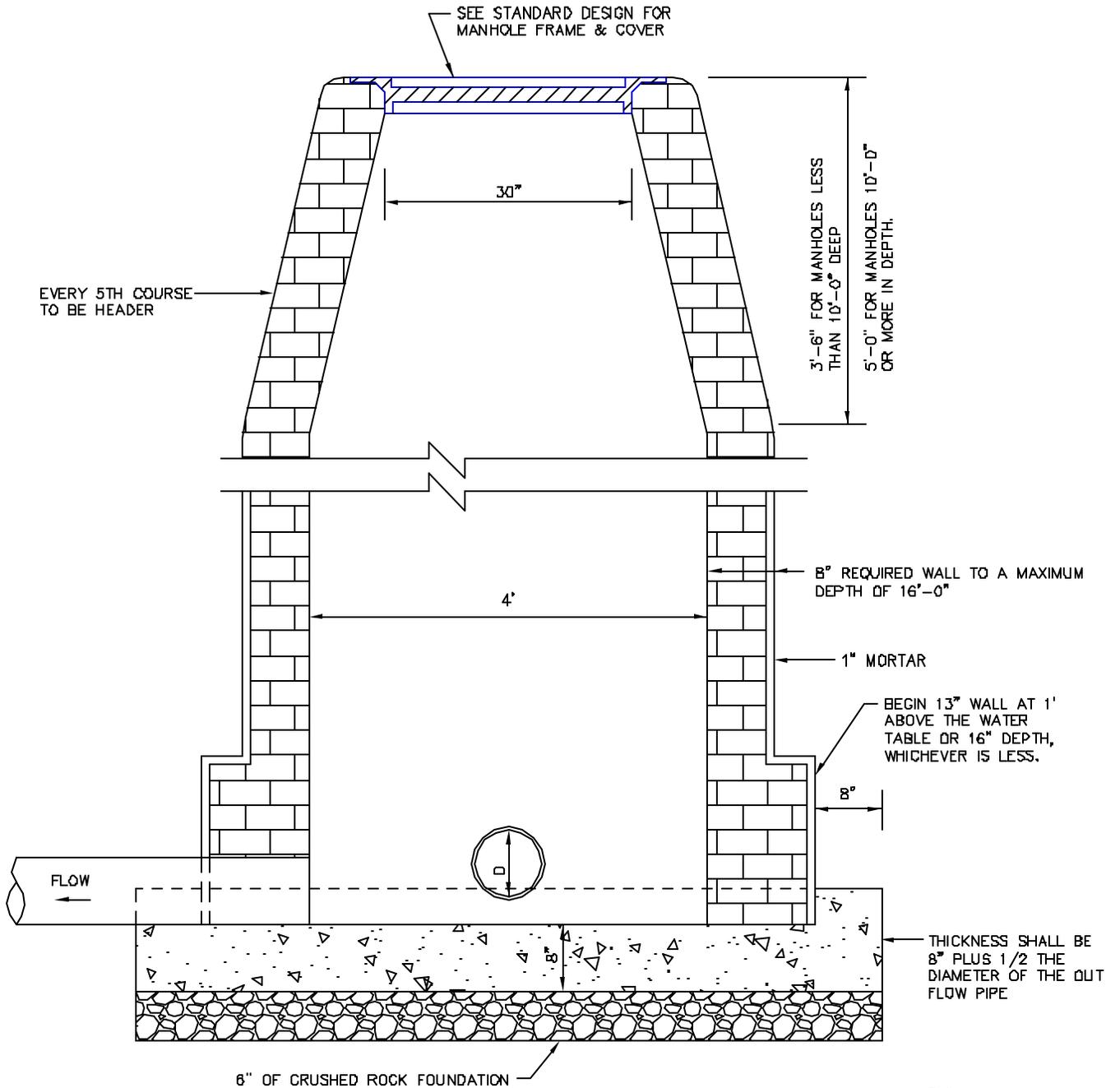
**STORM SEWER**

SPECIFICATION NO. 611

SM-01 PAGE 100

NOTE:

1. FOUNDATION GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B, 1-1/2" MINIMUM SIZE.
2. THESE MANHOLE STANDARDS ARE ONLY FOR STORM SEWERS 24" DIAMETER OR LESS. SEE JUNCTION BOX DETAILS FOR ALTERNATE DETAILS AND PIPE SIZES LARGER THAN 24".



MORTAR SHALL BE CLASS "C". CONCRETE IN BOTTOM SHALL BE 3500 P.S.I. CONCRETE. BRICK SHALL BE CLASS "HARD SEWER BRICK"

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

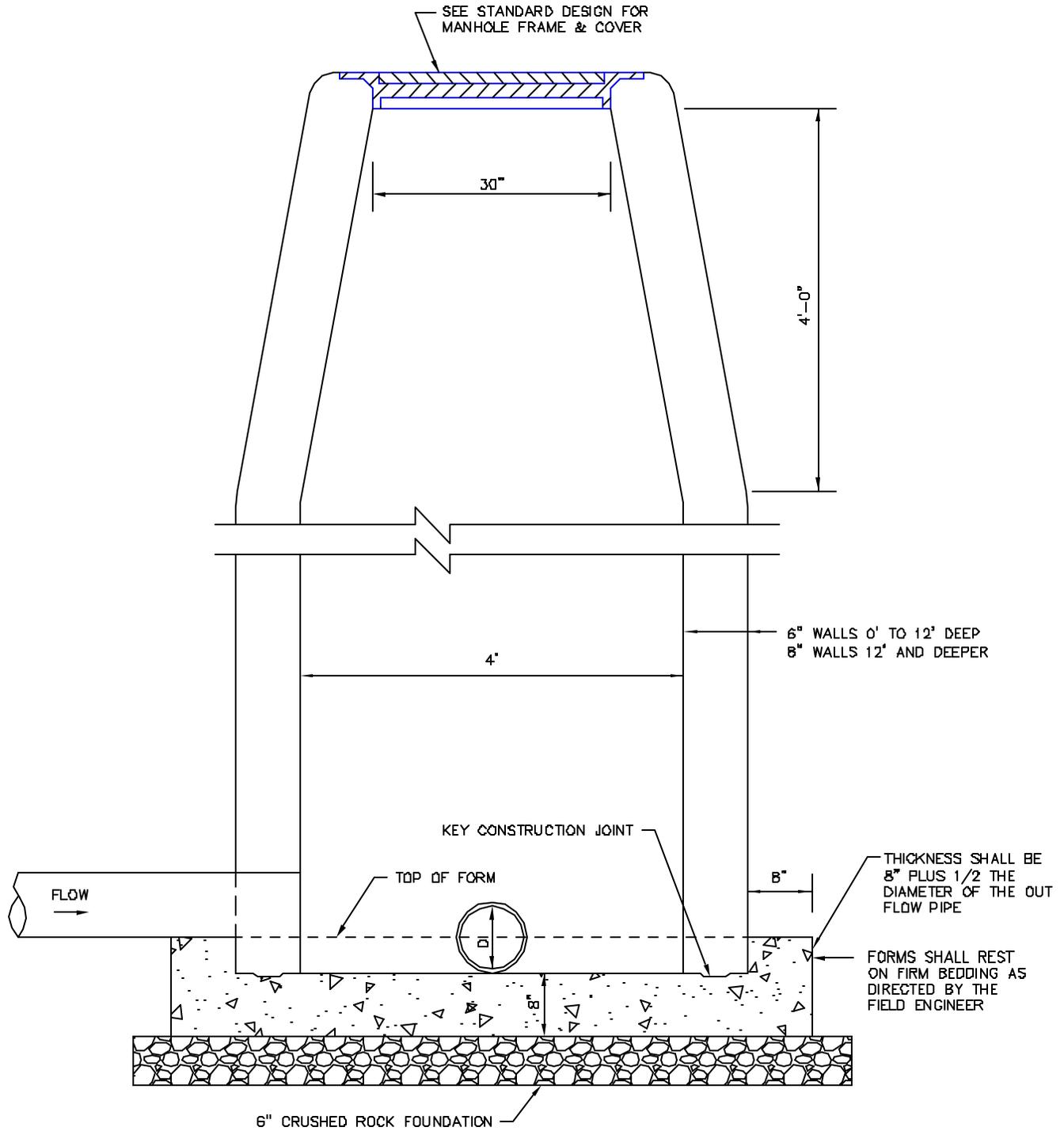
**STANDARD BRICK  
 MANHOLE**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 SM-02 PAGE 101

J:\STANDARD CONSTRUCTION\REVISED\1501-02.DWG  
 DATE: 05/19/97 3:50 PM R00000

NOTE:

1. FOUNDATION GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B, 1-1/2" MINIMUM SIZE.
2. THESE MANHOLE STANDARDS ARE ONLY FOR STORM SEWERS 24" DIAMETER OR LESS. SEE JUNCTION BOX DETAILS FOR ALTERNATE DETAILS AND PIPE SIZES LARGER THAN 24".



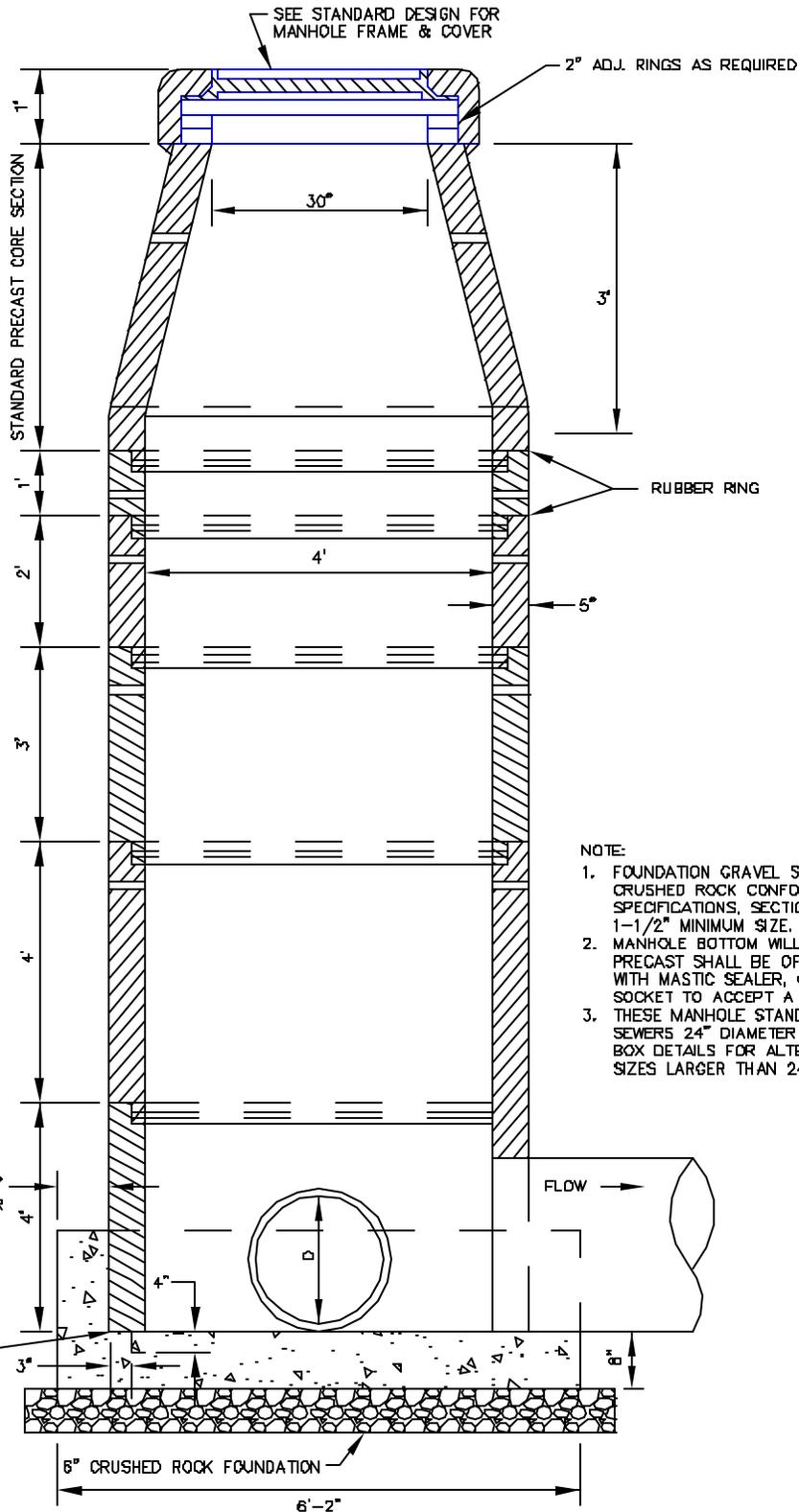
CONCRETE IN BOTTOM SHALL BE 3500 P.S.I. CONCRETE

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

STANDARD CAST-IN-PLACE  
CONCRETE MANHOLE

STORM SEWER  
SPECIFICATION NO. 611  
SM-03 PAGE 102



- NOTE:
1. FOUNDATION GRAVEL SHALL BE COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B, 1-1/2" MINIMUM SIZE.
  2. MANHOLE BOTTOM WILL BE POURED OR PRECAST. PRECAST SHALL BE OF TWO TYPES; FLAT PRECAST WITH MASTIC SEALER, OR BOTTOM WITH PREFORMED SOCKET TO ACCEPT A RUBBER RING.
  3. THESE MANHOLE STANDARDS ARE ONLY FOR STORM SEWERS 24" DIAMETER OR LESS. SEE JUNCTION BOX DETAILS FOR ALTERNATE DETAILS AND PIPE SIZES LARGER THAN 24".

THICKNESS SHALL BE 8" PLUS 1/2" THE DIAMETER OF THE OUTLET PIPE

PREFORMED SOCKET WITH A RUBBER RING

6" CRUSHED ROCK FOUNDATION

FLOW →

J:\STANDARD\CONCRETE\REV. 5.15.03 - 03.10.03  
 JUL 11 1997 3:50 PM HODGEE

REVISIONS	NO.	DATE	ITEM CHANGED

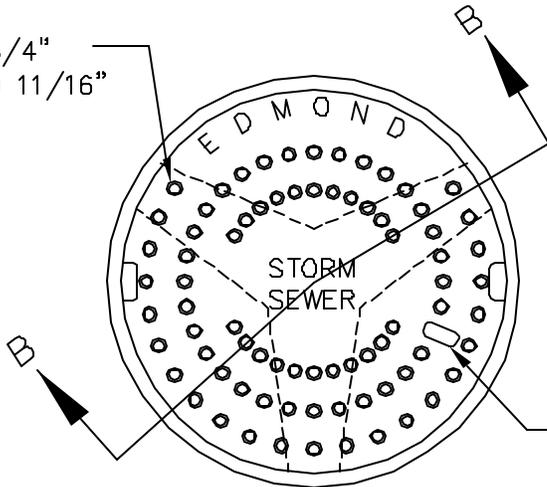
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**ALTERNATE PRECAST  
 CONCRETE MANHOLE**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 SM-04 PAGE 103

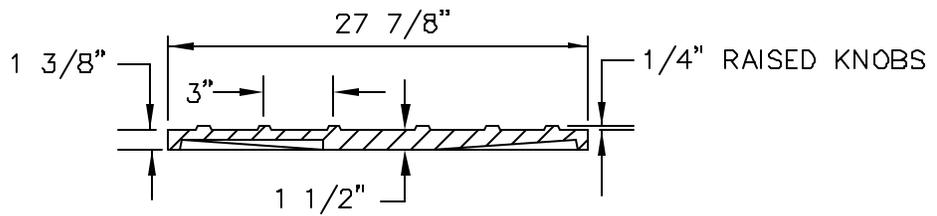


BOSSES 3/4"  
TAPER TO 11/16"



OBLONG OPEN PICK HOLE  
PICK HOLE REQUIRED  
ON ALL TYPES OF LIDS

TOP VIEW



NOTE:  
1. FURNISHED WITH MACHINED  
HORIZONTAL BEARING SURFACE.  
2. ALL LETTERING ON TOP  
OF COVER IS 1 7/16"

SECTION B-B

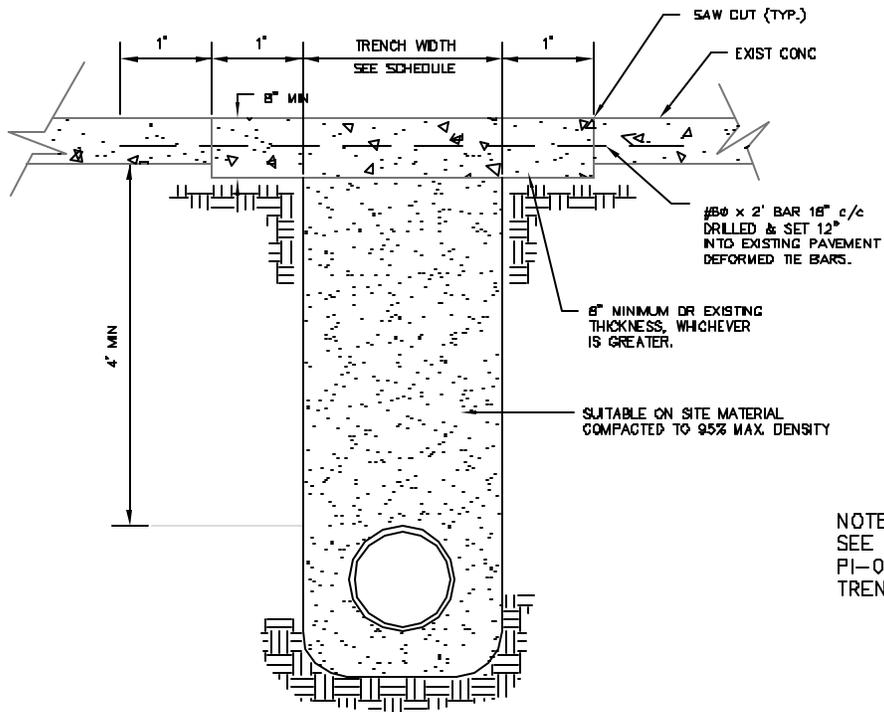
CITY OF EDMOND, 1987 800 AM, 10/20/88

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

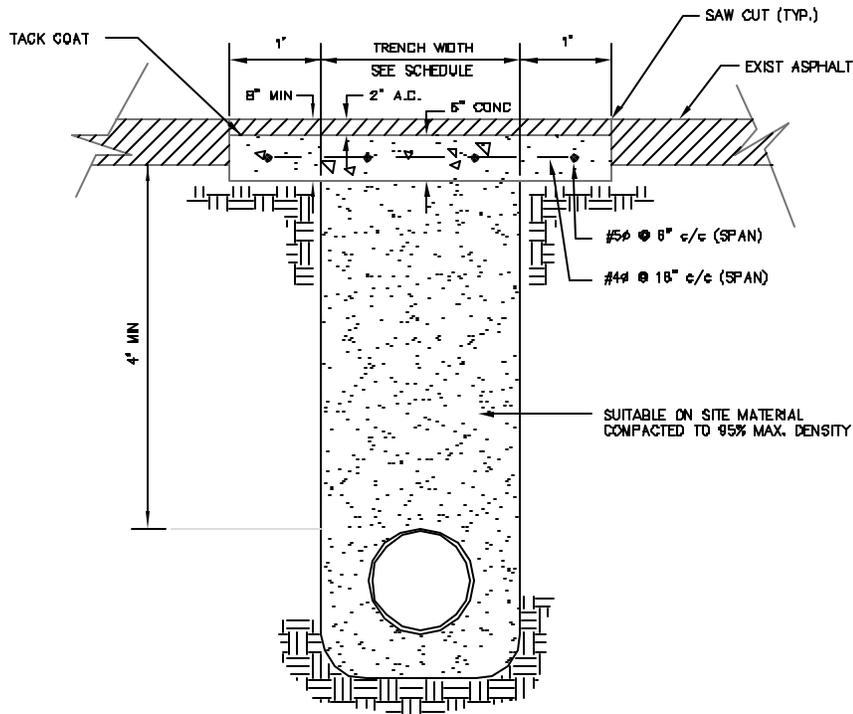
**MANHOLE  
COVER**

<b>STORM SEWER</b>	
SPECIFICATION NO. 611	
SM-06	PAGE 105



NOTE:  
SEE PIPE INSTALLATION TABLES,  
PI-03, PAGE 109 FOR STANDARD  
TRENCH WIDTH.

CONCRETE



ASPHALT

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

PAVING CUTS &  
PERMANENT REPAIRS

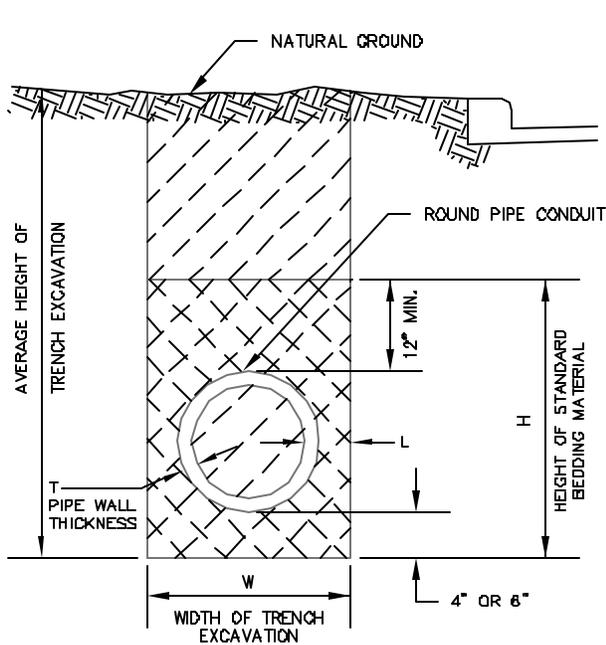
STORM SEWER  
SPECIFICATION NO. 611  
SM-07 PAGE 106

## GENERAL NOTES

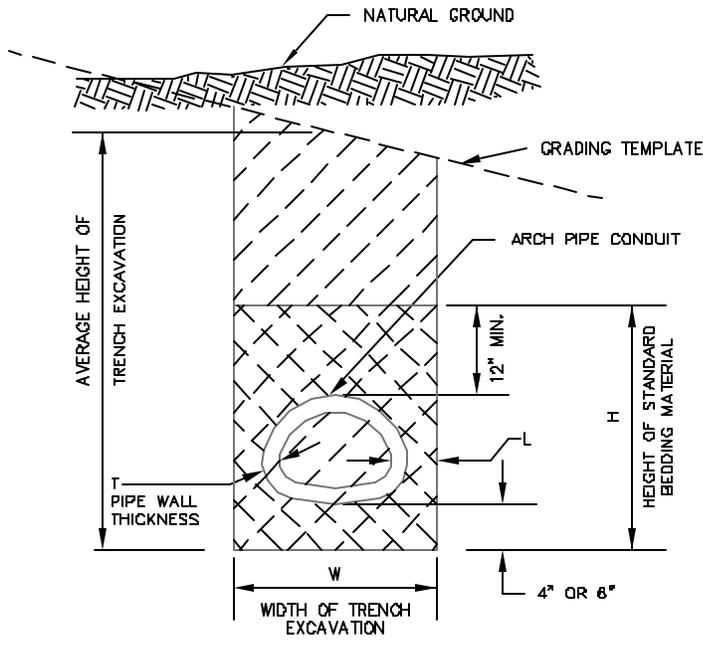
1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. TRENCH EXCAVATION AND BEDDING MATERIAL WILL NOT BE REQUIRED FOR PIPE INSTALLATION OF SIDE DRAINS UNLESS OTHERWISE NOTED ON PLANS.
3. TRENCH EXCAVATION MAY BE PAID FOR ON PIPE UNDERDRAIN. SEE STANDARD DRAWING PUD, AND PLANS
4. SPECIAL TRENCHING CONDITIONS AS DEFINED BY O.S.H.A. REGULATIONS WILL APPLY WITH STANDARD CURRENT SPECIFICATIONS.
5. NORMAL BACKFILLING OPERATIONS SHALL FOLLOW BEDDING AND PIPE INSTALLATION AS CLOSELY AS PRACTICAL. IN NO CASE SHALL A PIPE INSTALLATION SUBJECT TO SUDDEN FLOW DEVELOPMENT BE LEFT WITHOUT SUFFICIENT BACKFILL TO RESTRAIN THE CONDUIT AND PREVENT JOINT SEPARATION AND/OR PIPING SCOUR. PHYSICALLY RESTRAINING THE CONDUIT MAY BE USED TO AUGMENT OR REPLACE THIS IMMEDIATE BACKFILL REQUIREMENT.
6. ANY EXCESS EXCAVATION NOT USED FOR BACKFILL WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF, BY HIM, IN A MANNER APPROVED BY THE ENGINEER.
7. THIS METHOD PRODUCES A GUARANTEED NEGATIVE PROJECTION CONDITION AND IS TO BE ADHERED TO IN ALL EMBANKMENT CULVERT INSTALLATIONS. THE ONLY EXCEPTION ALLOWED IS FOR INSTALLATION OF SHALLOWLY COVERED SIDE DRAINS OF LESS THAN 10 FEET OF COVER, INCLUDING SURFACING.
8. EQUIVALENT PIPE SIZES 66 INCHES AND LARGER REQUIRE 6 INCHES OF BEDDING MATERIAL BELOW PIPE CONDUIT.
9. ALL PIPE INSTALLATIONS, CONCRETE OR METAL, WITH A FLOW LINE GRADE OF 6% AND GREATER SHALL INCLUDE CURTAIN WALLS SPACED NO GREATER THAN 100 FEET OR ONE CURTAIN WALL PER 100 FEET OF PIPE. CURTAIN WALLS SHALL BE CONSTRUCTED OF CONCRETE OR OTHER APPROVED MATERIAL TO PREVENT SLIPPAGE OF THE PIPE.
10. ALL RCP UNDER PAVEMENT SHALL BE O-RINGED.

J:\STORMWATER\CONSTRUCTION\PI-01-01.dwg  
 DATE: 08/18/00 10:50 AM B00824

REVISIONS	NO.	DATE	ITEM CHANGED
<b>CITY OF EDMOND</b>			<b>GENERAL NOTES</b>
<b>ENGINEERING DEPARTMENT</b>			<b>STORM SEWER</b>
<b>CONSTRUCTION STANDARDS</b>			SPECIFICATION NO. 611
			PI-01 PAGE 107

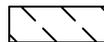


ROUND PIPE

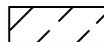


ARCH PIPE

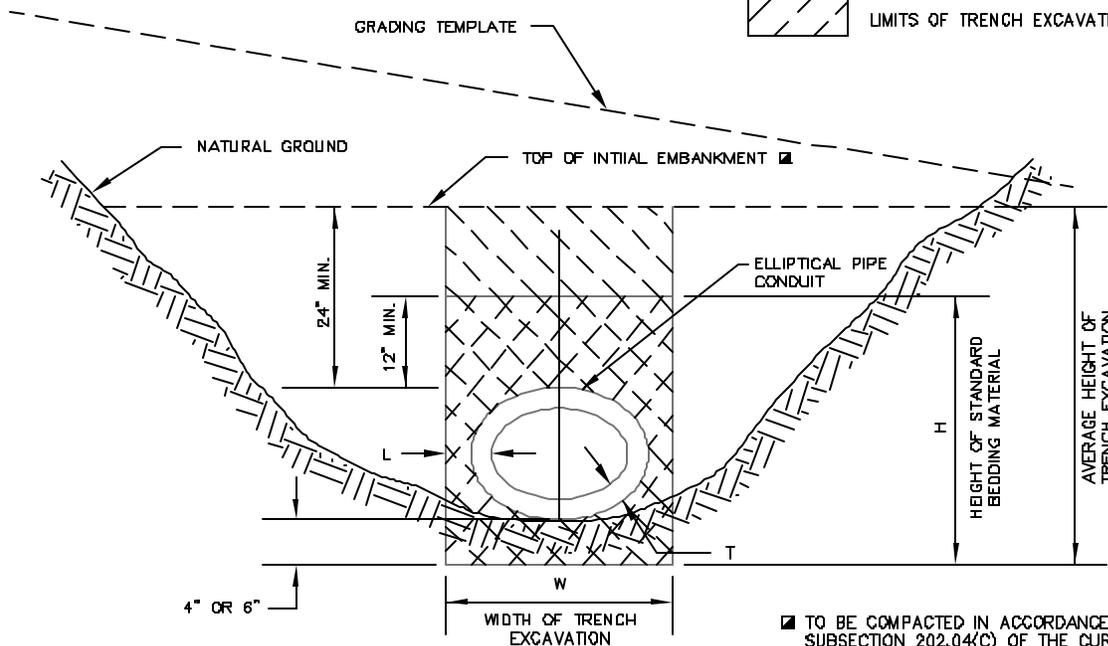
TRENCH EXCAVATION IN CUT SECTIONS



LIMITS OF STANDARD BEDDING MATERIAL. BEDDING MATERIALS DOES NOT INCLUDE THE AREA BOUNDED BY THE OUTSIDE DIAMETER OR OUTSIDE LIMITS OF THE PIPE CONDUIT.



LIMITS OF TRENCH EXCAVATION.



ELLIPTICAL PIPE

TRENCH EXCAVATION IN EMBANKMENT SECTIONS

☑ TO BE COMPACTED IN ACCORDANCE WITH SUBSECTION 202.04(C) OF THE CURRENT STANDARD SPECIFICATIONS.

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TRENCH EXCAVATION  
CUT SECTIONS

STORM SEWER  
SPECIFICATION NO. 611  
PI-02 PAGE 108



GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. REINFORCING STEEL IN APRON SHALL BE SUPPORTED ON BAR CHAIRS.
3. CHAIRS SHALL BE SUPPORTED ON TIMBER PLANK OR CLASS "C" CONCRETE STRIPS PLACED AT 4' C/C.
4. THE TOP OF CHAIR SUPPORTS, SHALL BE AT THE ELEVATION OF THE BOTTOM OF FOOTING. REINFORCING STEEL IN THE WINGS SHALL BE HELD IN PLACE BY METAL CHAIRS.
5. MAX. SPACING OF CHAIRS SHALL BE 6' C/C. COST OF METAL CHAIRS, WOOD PLANK OR CONCRETE STRIPS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
6. FOR DETAILS OF ONE CELL BARRELS TO CORRESPOND TO THE HDWLS. SHOWN ON THIS STANDARD. SEE BC STANDARDS.

DESIGN DATA

CLASS "A" CONCRETE	f <sub>c</sub> = 3,000 PSI
REINFORCING STEEL	f <sub>s</sub> = 20,000 PSI
LOADING—H20—S16 AND PPM 20—4	

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

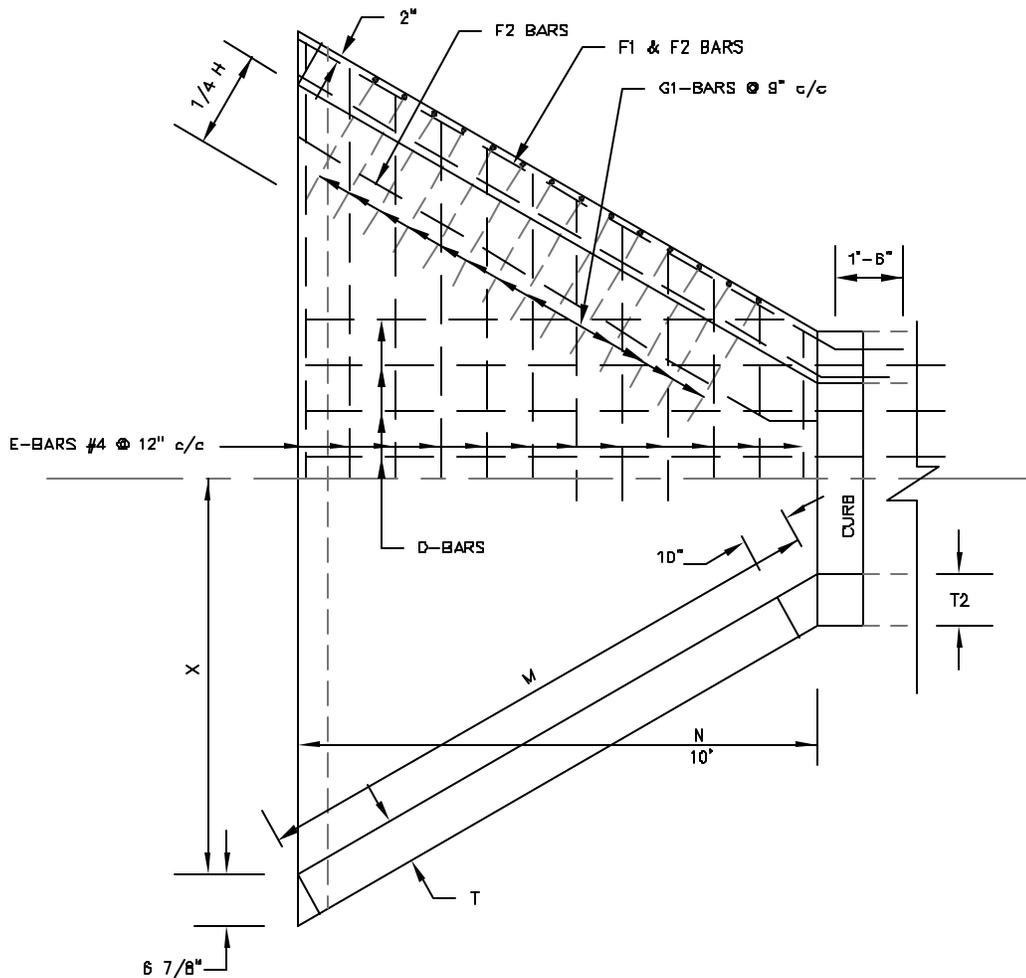
CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

GENERAL NOTES

STORM SEWER	
SPECIFICATION NO. 611	
HC-01	PAGE 110





PLAN  
FOR CLEAR HEIGHT OF 5'-0" & UNDER

J:\STANDARD DRAWINGS\BENTON, S. H. C. - 03/20/06  
 AUG 18, 1997 4:50 PM HADREN

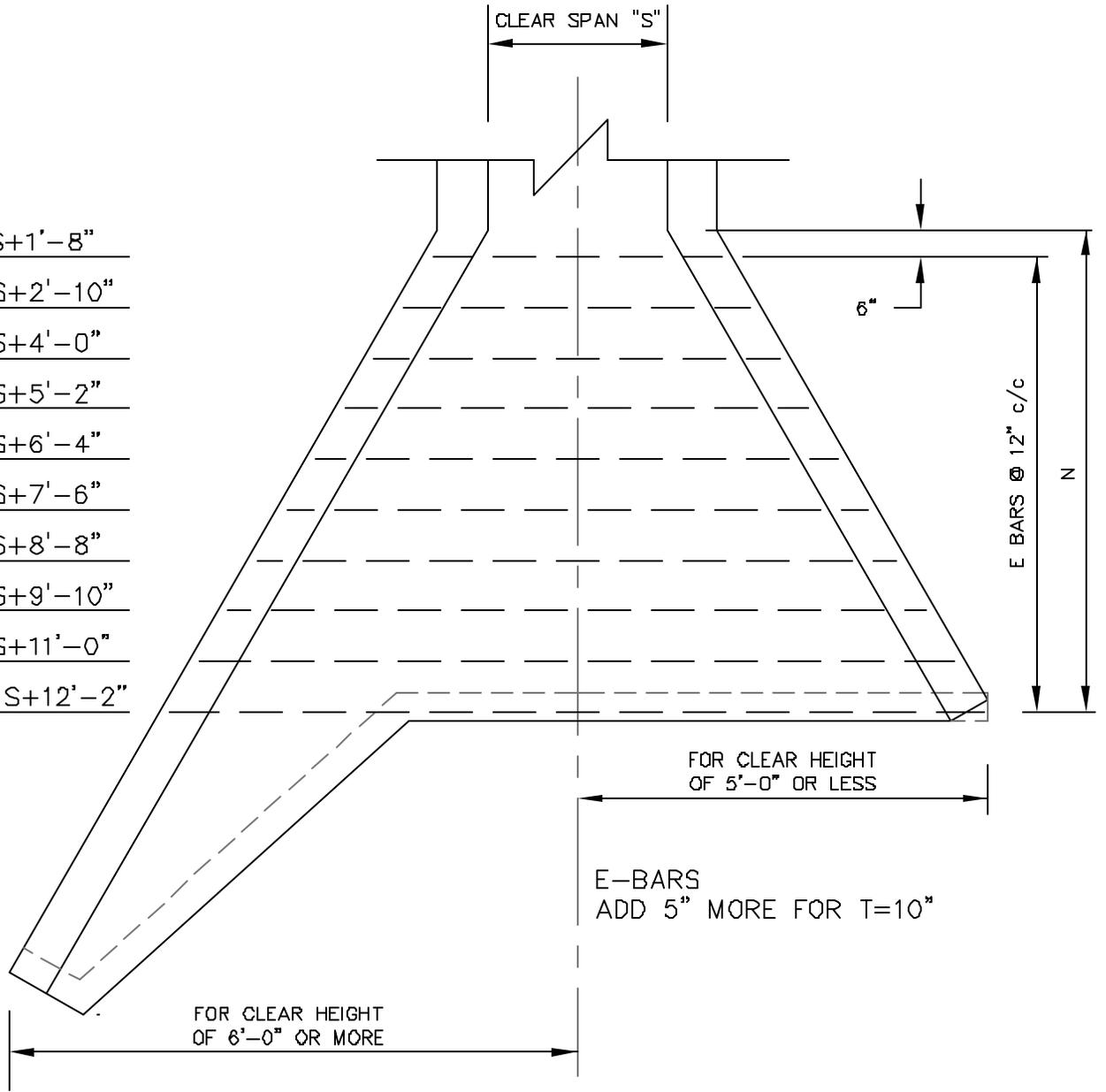
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**HEADWALL 5' &  
 UNDER, PLAN VIEW**

<b>STORM SEWER</b>	
SPECIFICATION NO. 611	
HC-03	PAGE 112

- 1. S+1'-8"
- 2. S+2'-10"
- 3. S+4'-0"
- 4. S+5'-2"
- 5. S+6'-4"
- 6. S+7'-6"
- 7. S+8'-8"
- 8. S+9'-10"
- 9. S+11'-0"
- 10. S+12'-2"



PLAN

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 SUBJECT: 1103 4507 PL - HOBEN

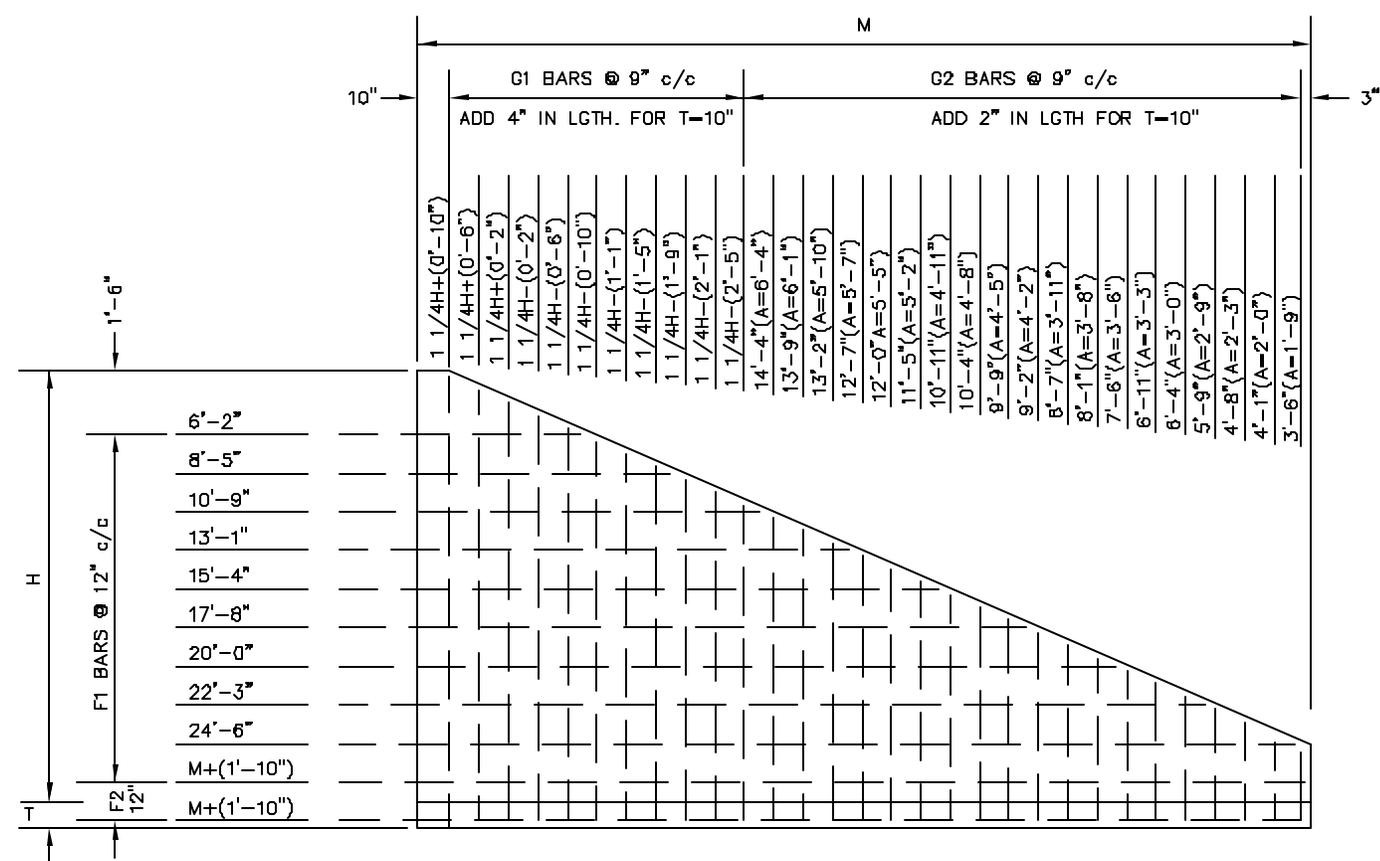
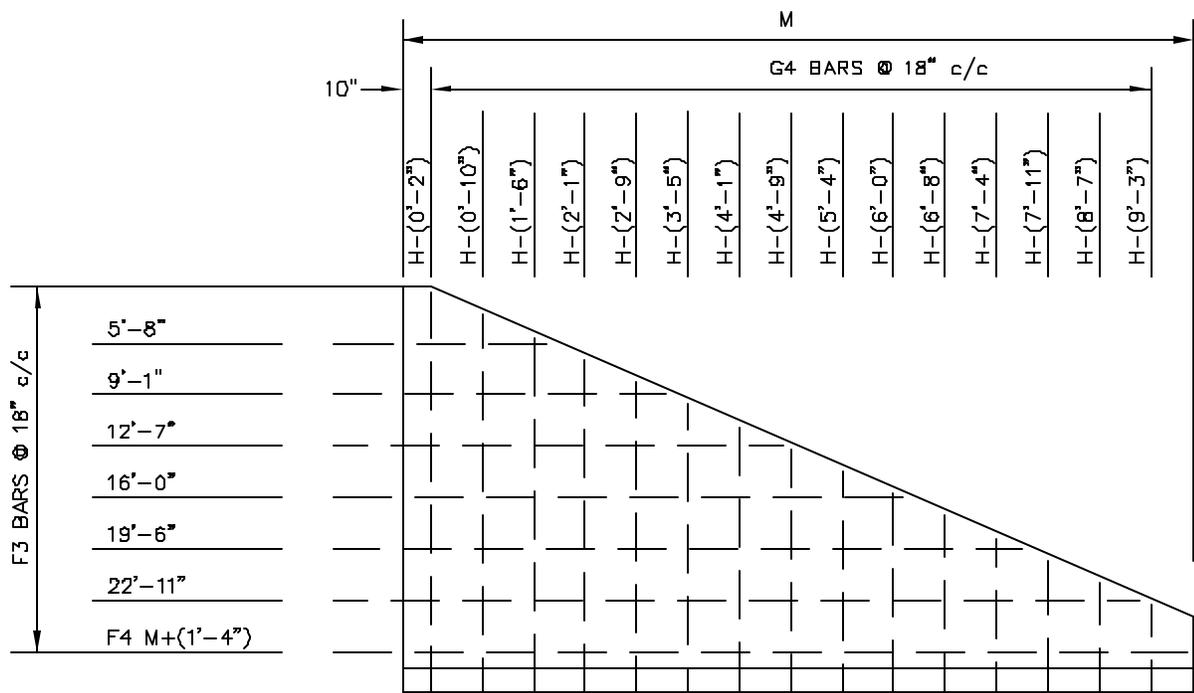
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**HEADWALL E-BARS**  
**PLAN VIEW**

<b>STORM SEWER</b>	
SPECIFICATION NO. 611	
HC-04	PAGE 113





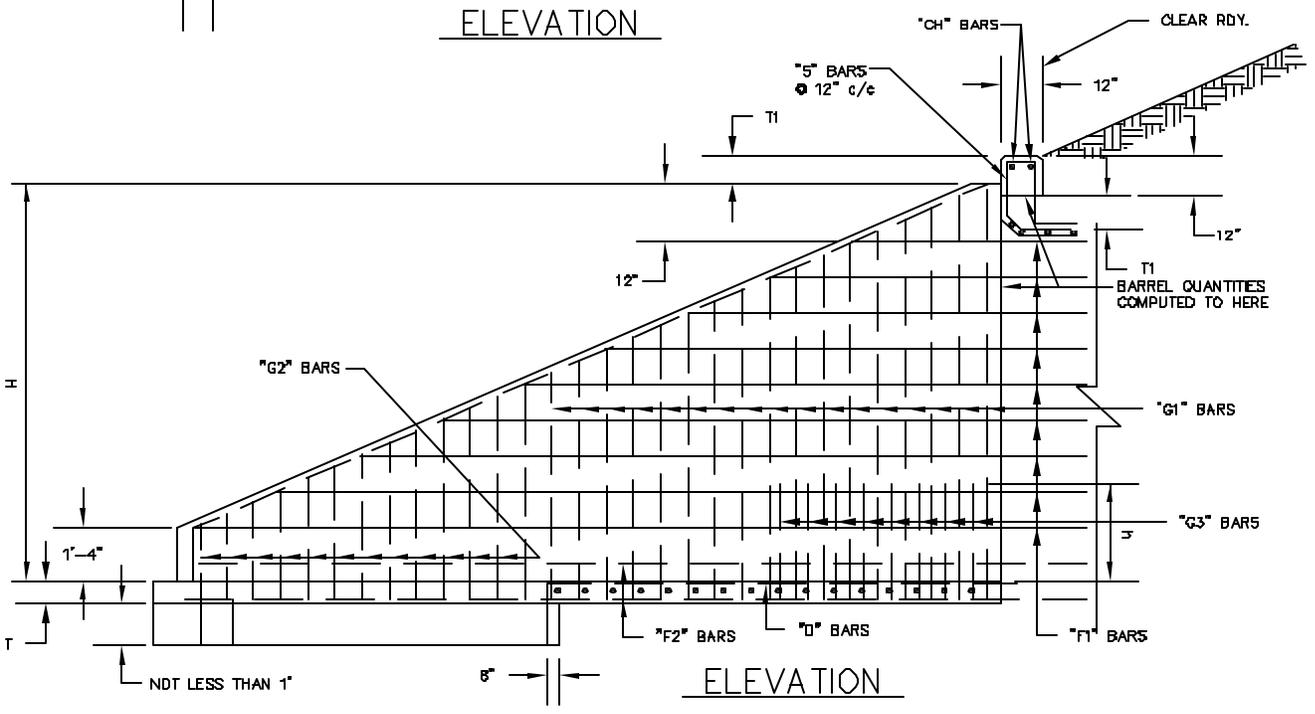
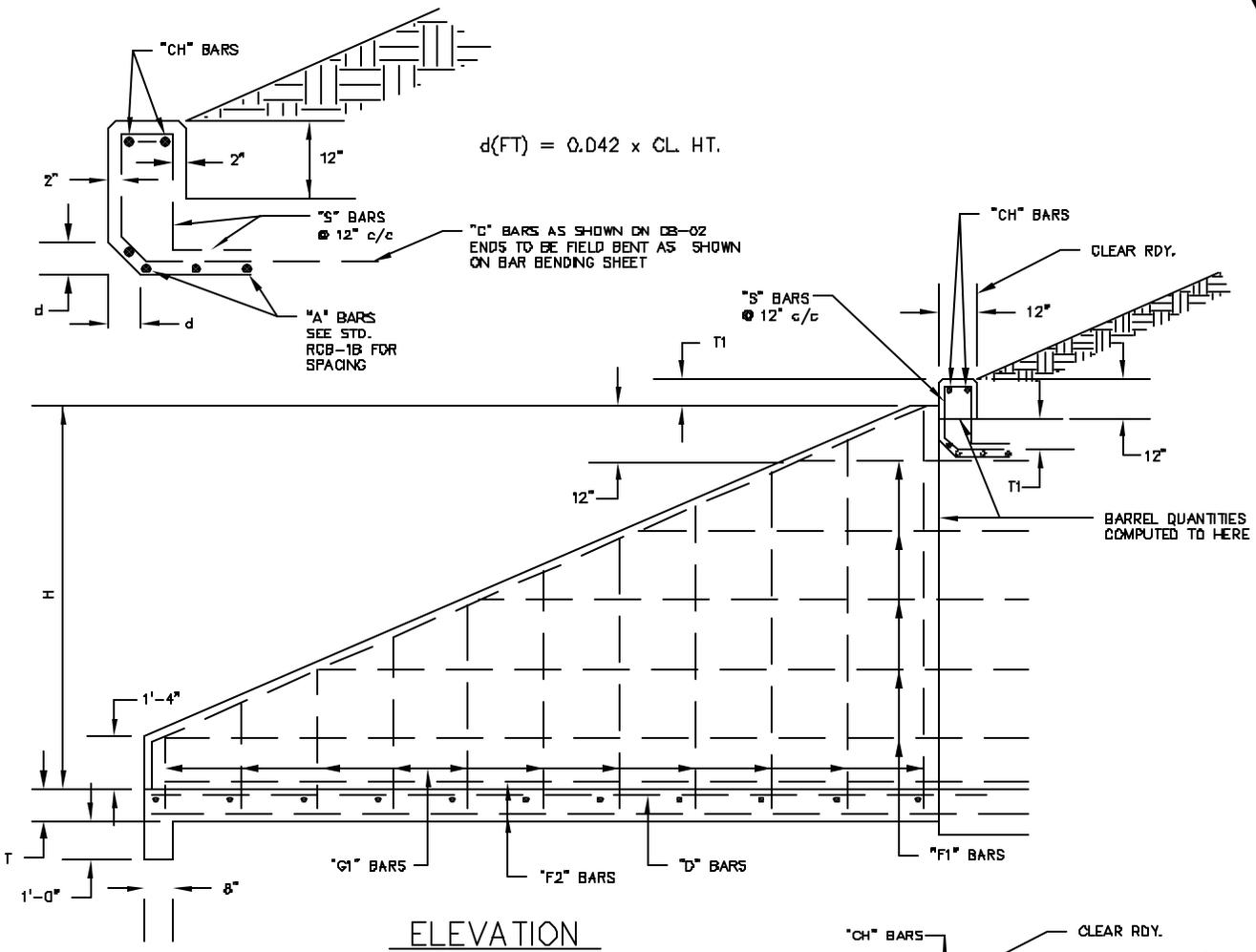
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

SECTION

STORM SEWER  
 SPECIFICATION NO. 611  
 HC-06 PAGE 115

AS STAMPED, CHANGES, REVISIONS, AND CORRECTIONS SUBJECT TO THE "MAY" MODIFIER



REVISIONS	NO.	DATE	ITEM CHANGED

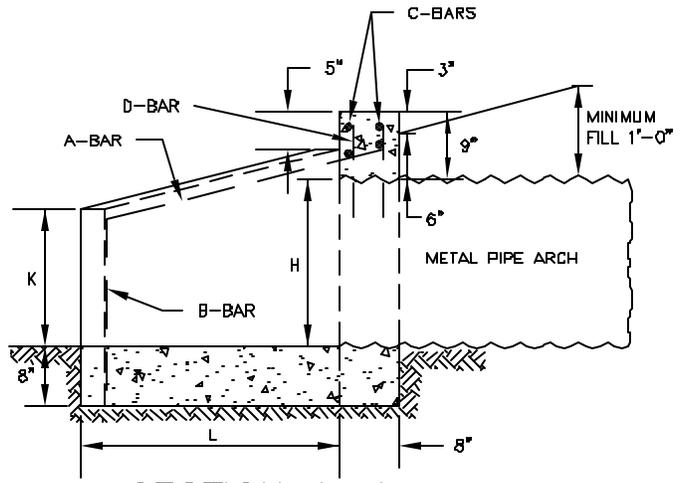
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SECTION**

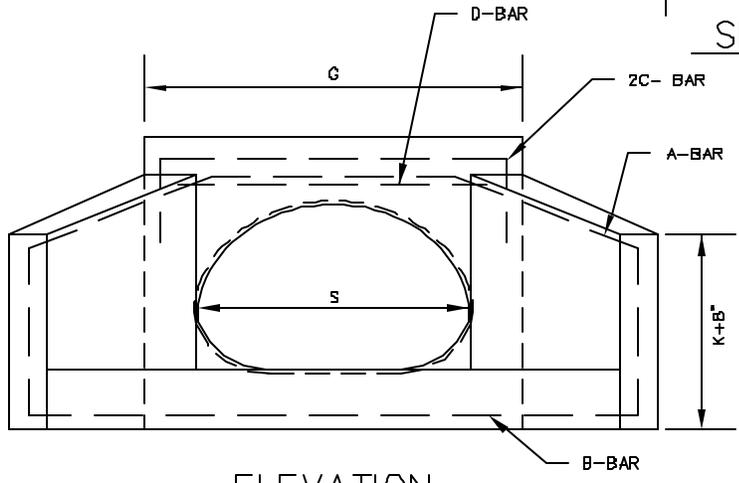
**STORM SEWER**  
 SPECIFICATION NO. 611  
 HC-07 PAGE 116

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 SUBJECT: 116-07001.DWG

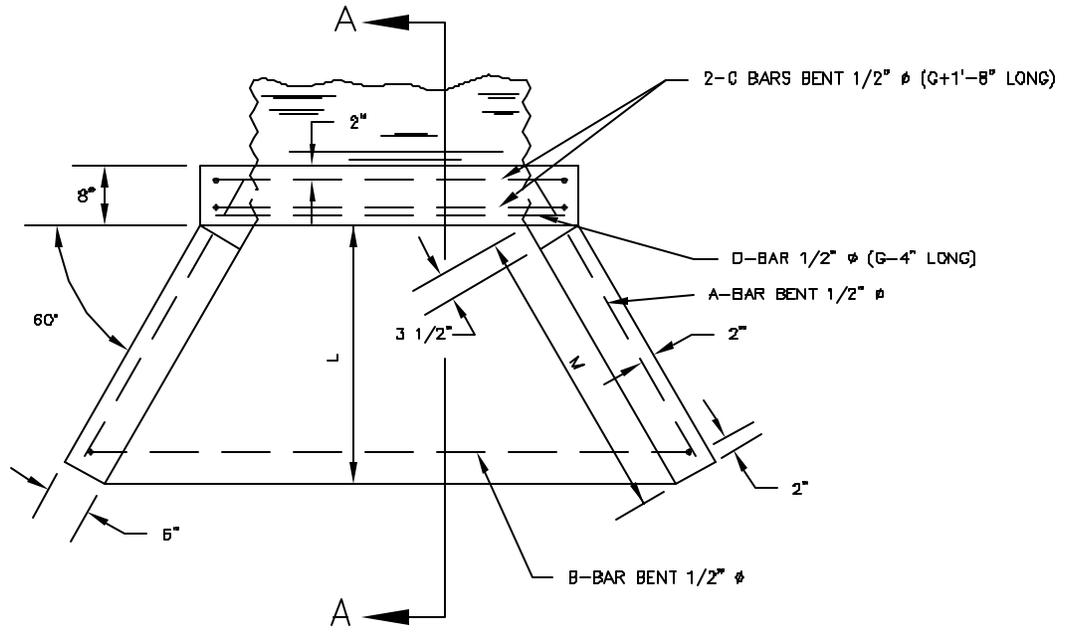




SECTION A-A



ELEVATION



PLAN

CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1100 WEST 15TH AVENUE, SUITE 100  
 EDMOND, OKLA. 73119

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**ARCHED PIPE**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 HP-01 PAGE 11&

## GENERAL NOTES

1. ALL CONSTRUCTION METHODS AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER, OR AN APPROVED ROUNDED EDGING. ALL EXPOSED SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 509.

TABLE OF DIMENSIONS FOR STEEL

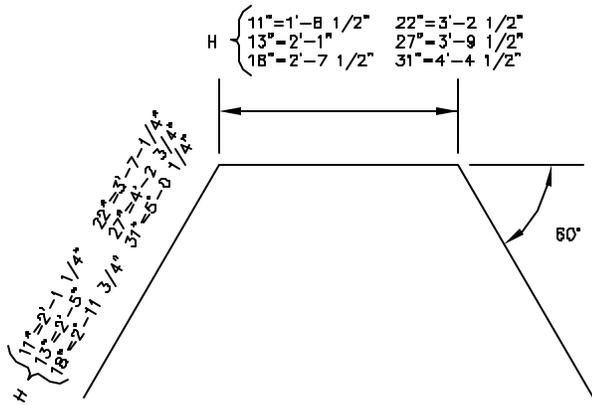
S	H	A BARS				B BARS				C BARS				D BARS			
		FORM	NO	SIZE	LENGTH												
18"	11"	BENT	1	1/2φ	5'-11"	BENT	1	1/2φ	6'-2"	BENT	2	1/2φ	4'-4"	STR.	1	1/2φ	2'-4"
22"	13"	BENT	1	1/2φ	6'-11"	BENT	1	1/2φ	7'-0"	BENT	2	1/2φ	4'-8"	STR.	1	1/2φ	2'-8"
29"	18"	BENT	1	1/2φ	8'-7"	BENT	1	1/2φ	8'-10"	BENT	2	1/2φ	5'-3"	STR.	1	1/2φ	3'-3"
36"	22"	BENT	1	1/2φ	10'-5"	BENT	1	1/2φ	10'-4"	BENT	2	1/2φ	5'-10"	STR.	1	1/2φ	3'-10"
43"	27"	BENT	1	1/2φ	12'-3"	BENT	1	1/2φ	12'-1"	BENT	2	1/2φ	6'-5"	STR.	1	1/2φ	4'-5"
50"	31"	BENT	1	1/2φ	14'-5"	BENT	1	1/2φ	13'-9"	BENT	2	1/2φ	7'-0"	STR.	1	1/2φ	5'-0"

TABLE OF DIMENSIONS FOR CONCRETE

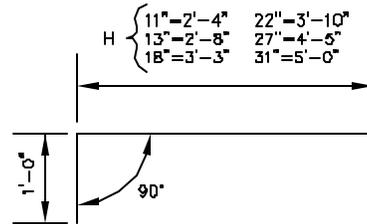
S	H	AREA IN SQ. FT.	K	G	L	M
18"	11"	1.2	11"	2'-8"	1'-7"	1'-10"
22"	13"	1.8	1'-0"	3'-0"	1'-10"	2'-1 1/2"
29"	18"	3.1	1'-4"	3'-7"	2'-4"	2'-8 1/2"
36"	22"	4.9	1'-6"	4'-2"	2'-10"	3'-3 1/2"
43"	27"	7.1	1'-9 1/2"	4'-9"	3'-4 1/2"	3'-11"
50"	31"	9.6	1'-11 1/2"	5'-4"	4'-0 1/2"	4'-8"

TABLE OF QUANTITIES FOR TWO END WALLS

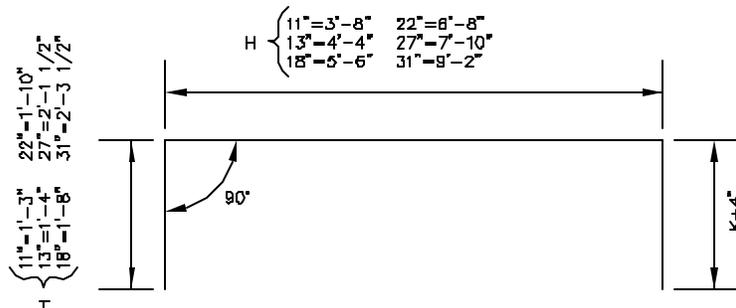
H	CLASS A CONCRETE C.Y.	REINFORCING STEEL LBS.
11"	0.66	31
13"	0.82	35
18"	1.23	42
22"	1.66	49
27"	2.23	56
31"	2.92	63



A-BAR BENDING DIAGRAM



C-BAR BENDING DIAGRAM



B-BAR BENDING DIAGRAM

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND

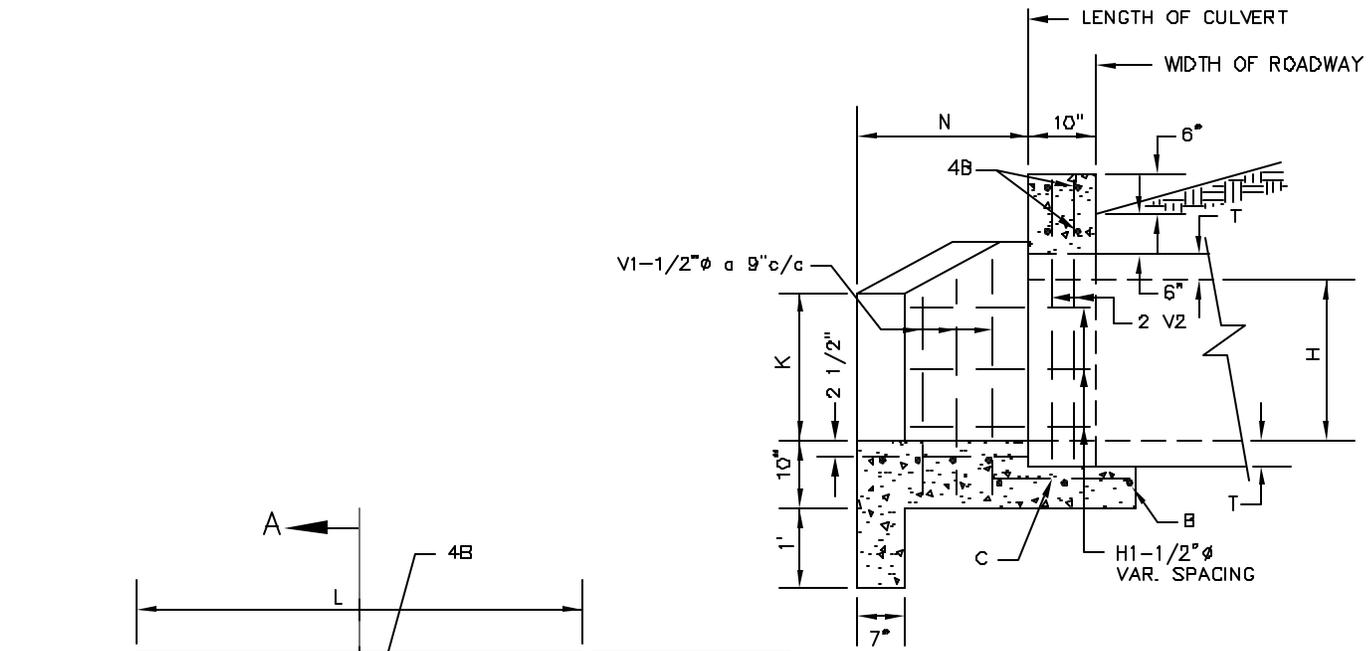
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

ARCHED PIPE

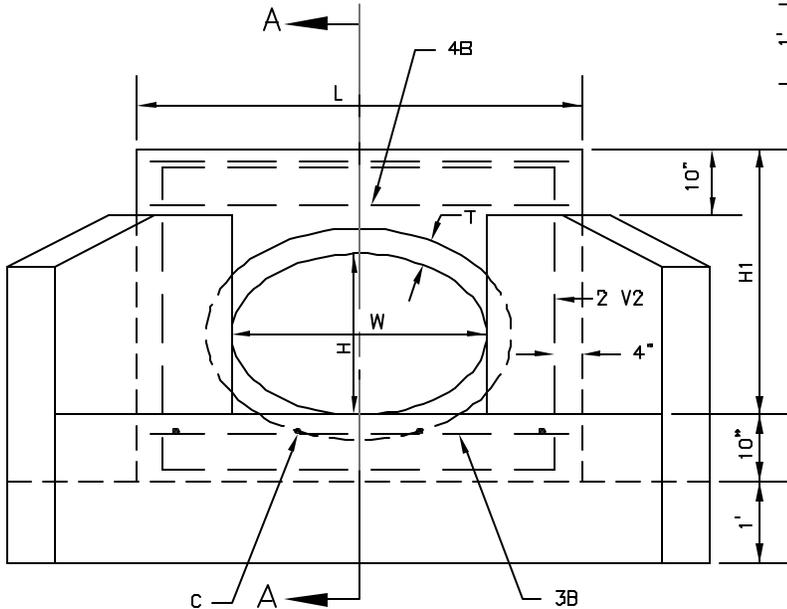
STORM SEWER

SPECIFICATION NO. 611

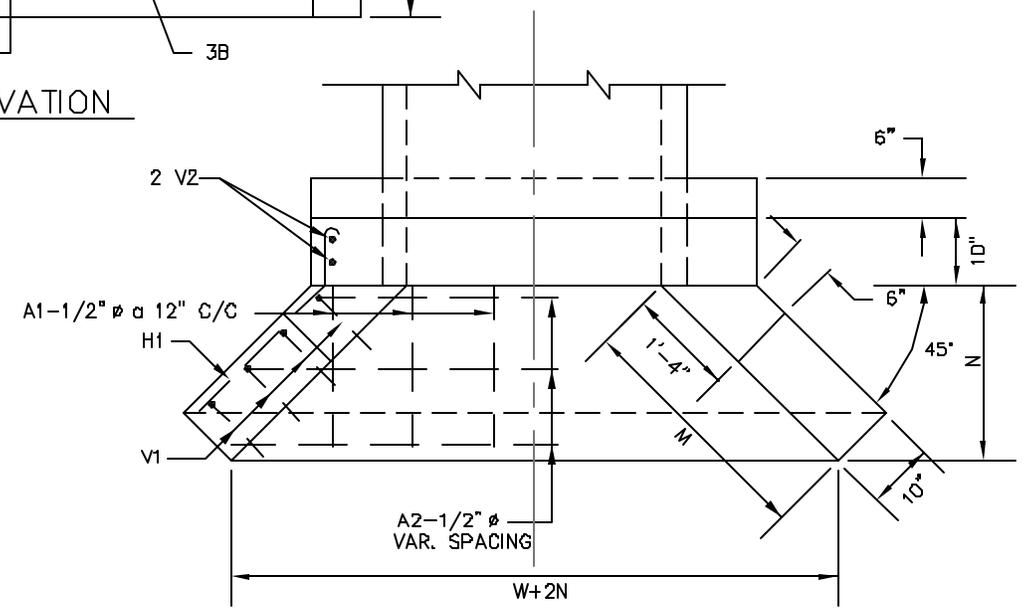
HP-02 PAGE 119



SECTION A-A



ELEVATION



PLAN

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

CONCRETE  
 ELLIPTICAL PIPE

STORM SEWER  
 SPECIFICATION NO. 611  
 HP-03 PAGE 120

AS STATIONED, CHANGES MUST BE MADE TO THE ORIGINAL DRAWING. NO. 14, 1187, 7/30/01, 10/08/01

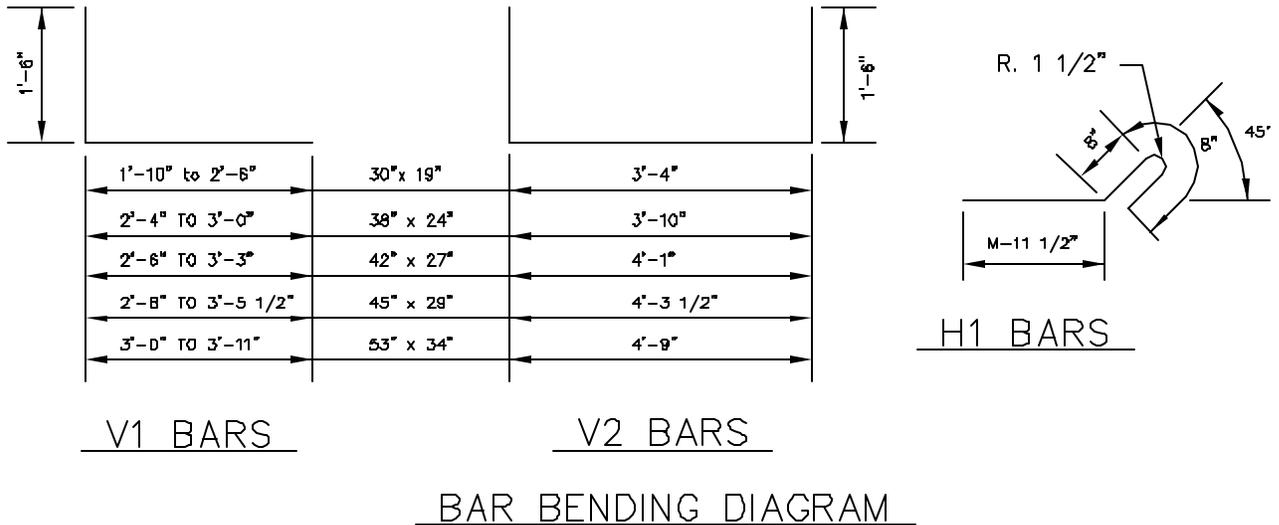
### GENERAL NOTES

1. ALL CONSTRUCTION METHODS AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER, OR AN APPROVED ROUNDED EDGING. ALL EXPOSED SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 509.

DIMENSIONS & QUANTITIES FOR HEADWALL WITH 45° WINGS								
DIMENSIONS								
W	H	AREA SQ. FT.	T	H1	K	L	M	N
30"	19"	3.3	3 1/4"	2'-10 1/4"	1'-4"	4'-10 1/4"	2'-6"	1'-9"
38"	24"	5.1	3 3/4"	3'-3 3/4"	1'-10"	5'-6 1/4"	3'-1"	2'-1 1/2"
42"	27"	6.3	3 3/4"	3'-6 3/4"	2'-0"	5'-10 1/4"	3'-5"	2'-4 1/4"
45"	29"	7.4	4 1/2"	3'-9 1/2"	2'-2"	6'-1 1/4"	3'-8"	2'-7 1/8"
53"	34"	10.2	5"	4'-3"	2'-6"	6'-9 1/4"	4'-3"	3'-0"

DIMENSIONS & QUANTITIES FOR HEADWALL WITH 45° WINGS																	
REINFORCING STEEL																	
W	H	A1-1/2"Ø		A2-1/2"Ø		B-1/2"Ø		C-1/2"Ø		H1-1/2"Ø		V1-1/2"Ø		V2-1/2"Ø		CLASS A CONC. (CU. YD.)	REINF. STEEL (LBS)
		NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.		
30"	19"	5	1'-5"	3	5'-8" AVG	7	4'-5 1/4"	4	1'-6"	8	2'-10 1/2"	12	3'-8" AVG	4	6'-4"	1.27	104
38"	24"	6	1'-10"	3	6'-9" AVG	7	5'-2 1/4"	4	1'-6"	12	3'-5 1/2"	16	4'-2" AVG	4	6'-10"	1.87	140
42"	27"	6	2'-1"	3	7'-1" AVG	7	5'-6 1/4"	4	1'-6"	12	3'-9 1/2"	16	4'-4 1/2" AVG	4	7'-1"	2.09	149
45"	29"	7	2'-3"	4	7'-9" AVG	7	5'-9 1/4"	4	1'-6"	12	4'-0 1/2"	16	4'-6 1/2" AVG	4	7'-3"	2.38	16.3
53"	34"	7	2'-8"	4	8'-8" AVG	7	6'-5 1/4"	5	1'-6"	12	4'-7 1/2"	20	4'-11 1/2" AVG	4	7'-9"	3.01	195

▲ FOR ONE HEADWALL  
▲ FOR QUANTITIES OF CLASS A CONC. LESS THAN 10.0 C.Y.



REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**CONCRETE  
ELLIPTICAL PIPE**

**STORM SEWER**

SPECIFICATION NO. 611  
HP-04 PAGE 121

GENERAL NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL EXPOSED CONCRETE SURFACES SHALL HAVE A FINISH IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
2. CHAMFER ALL EXPOSED EDGES 3/4".
3. ALL CONSTRUCTION AND MATERIALS REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
4. MINIMUM DEPTH OF FILL OVER CULVERTS SHALL BE 1'-0"
5. ALL REINFORCED CONCRETE PIPE TO BE INSTALLED UNDER PAVING SHALL BE "O" RING TYPE JOINT.

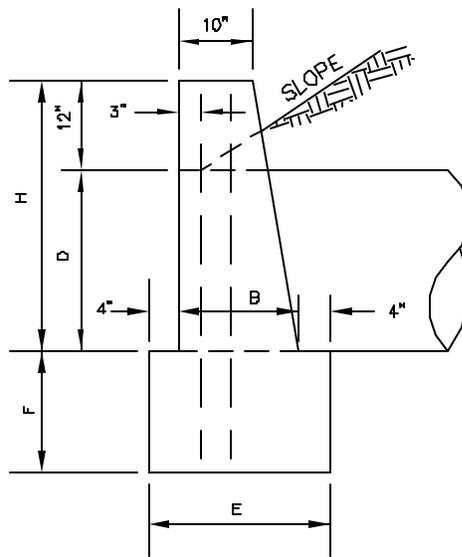
STANDARD DRAWING, REVISED 07/2016  
 SEE THE 1975 AND ALL SUBSEQUENT

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

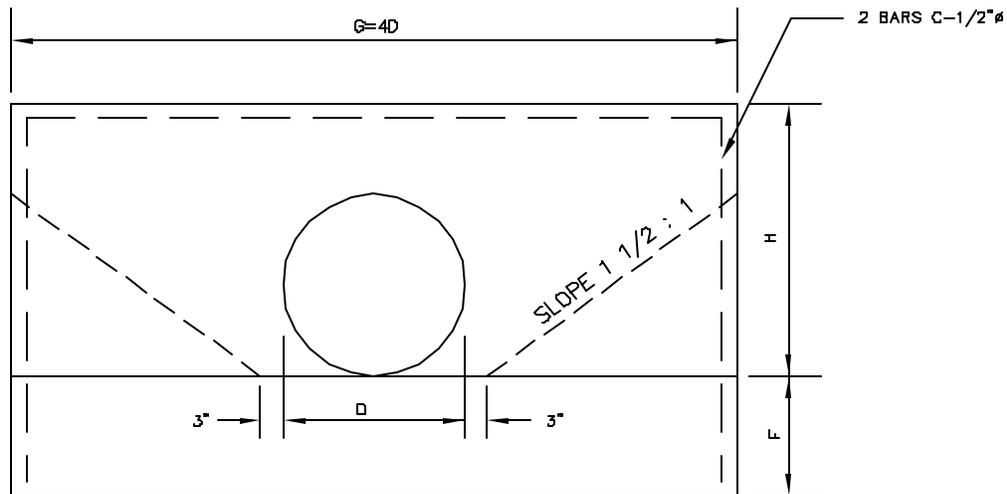
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

GENERAL NOTES

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CP-01 PAGE 122

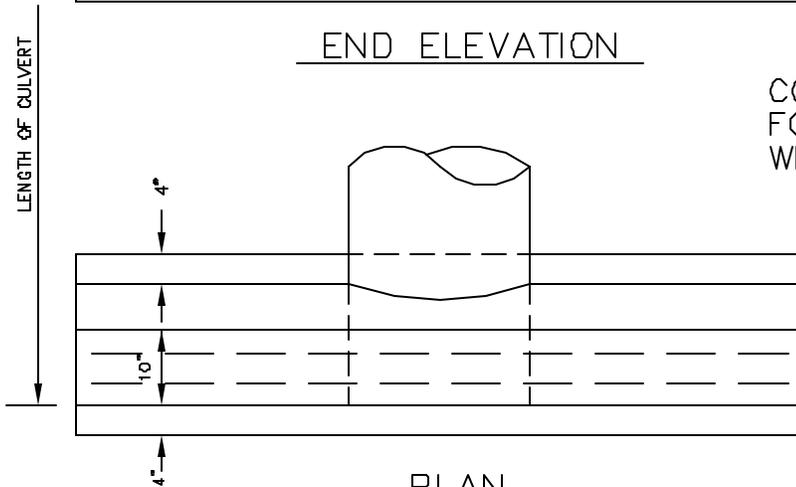


SIDE ELEVATION



END ELEVATION

CONCRETE ENDWALL  
FOR PIPE CULVERT  
WITH STRAIGHT WINGS



PLAN

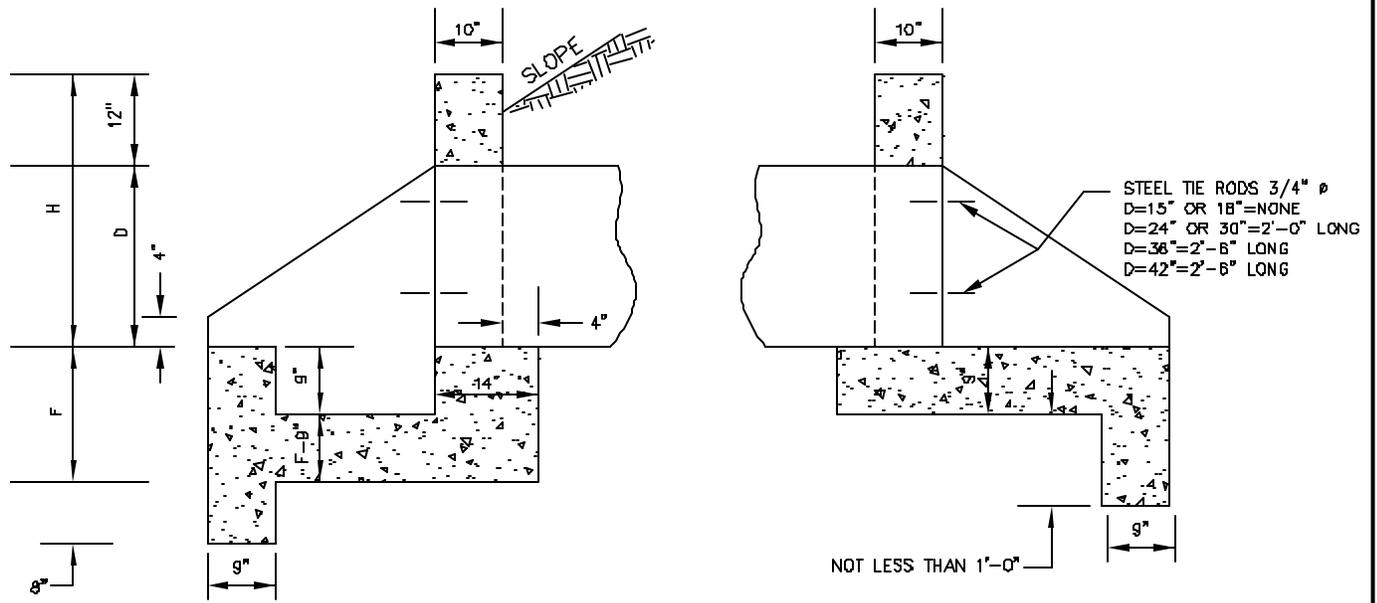
CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1501 N. 15TH AVENUE, SUITE 100, EDMOND, OKLA. 73112

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

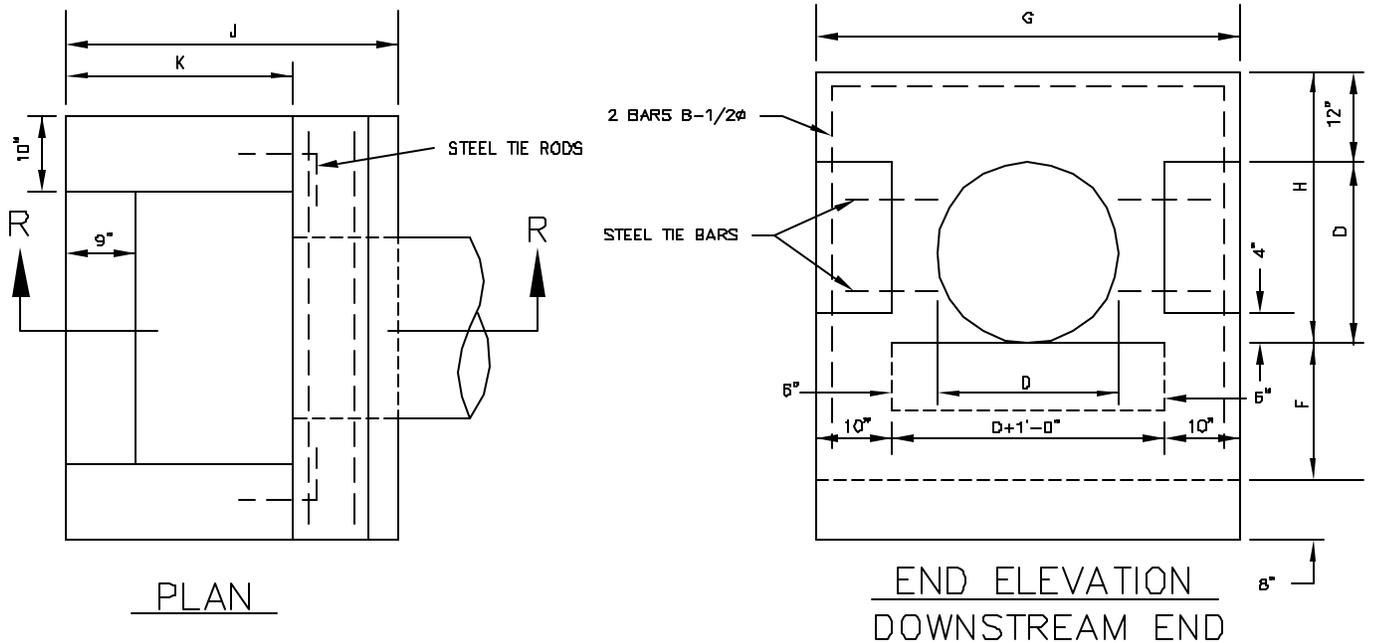
**STRAIGHT WINGS**

<b>STORM SEWER</b>	
SPECIFICATION NO. 611	
CP-02	PAGE 123



SECTION R-R

CONCRETE ENDWALL FOR PIPE CULVERT WITH U-TYPE WINGS



PLAN

END ELEVATION  
DOWNSTREAM END

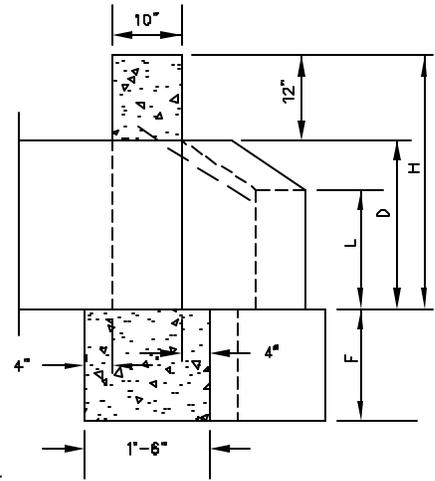
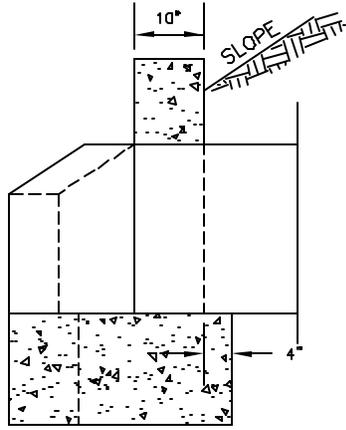
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

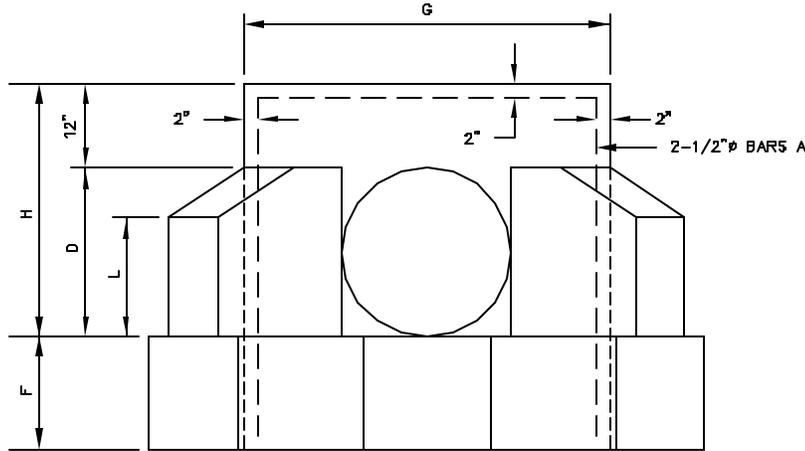
U-TYPE WINGS

STORM SEWER	
SPECIFICATION NO. 611	
CP-03	PAGE 124

15-EDMONT-CONSTR-611-1-CP-03-124-AM  
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 W0087

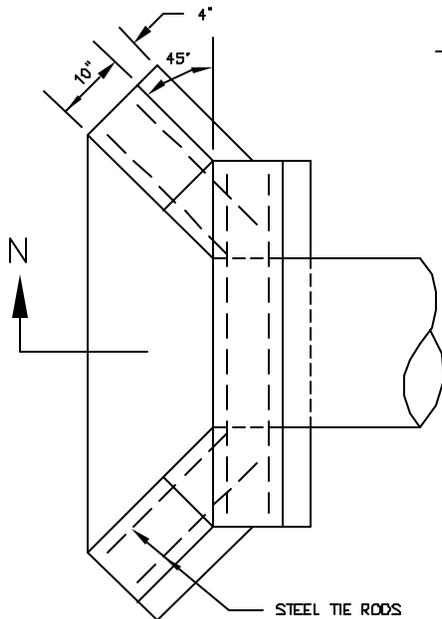


SECTION N-N

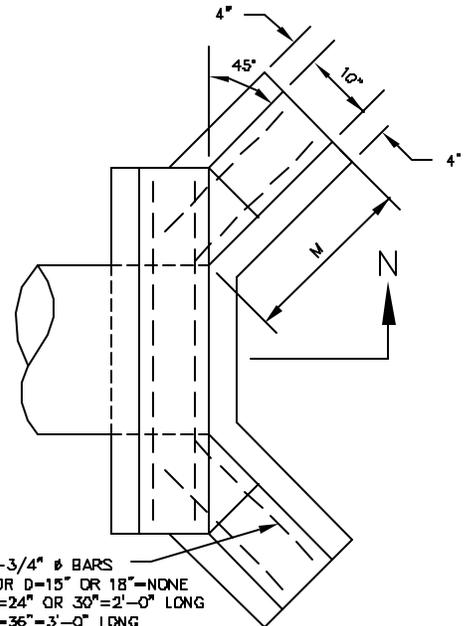


CONCRETE ENDWALL  
FOR PIPE CULVERT  
WITH 45° WINGS

END ELEVATION  
UPSTREAM END



PLAN



2-3/4"  $\phi$  BARS  
FOR D=15" OR 18"=NONE  
D=24" OR 30"=2'-0" LONG  
D=36"=3'-0" LONG  
D=42"=3'-6" LONG

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

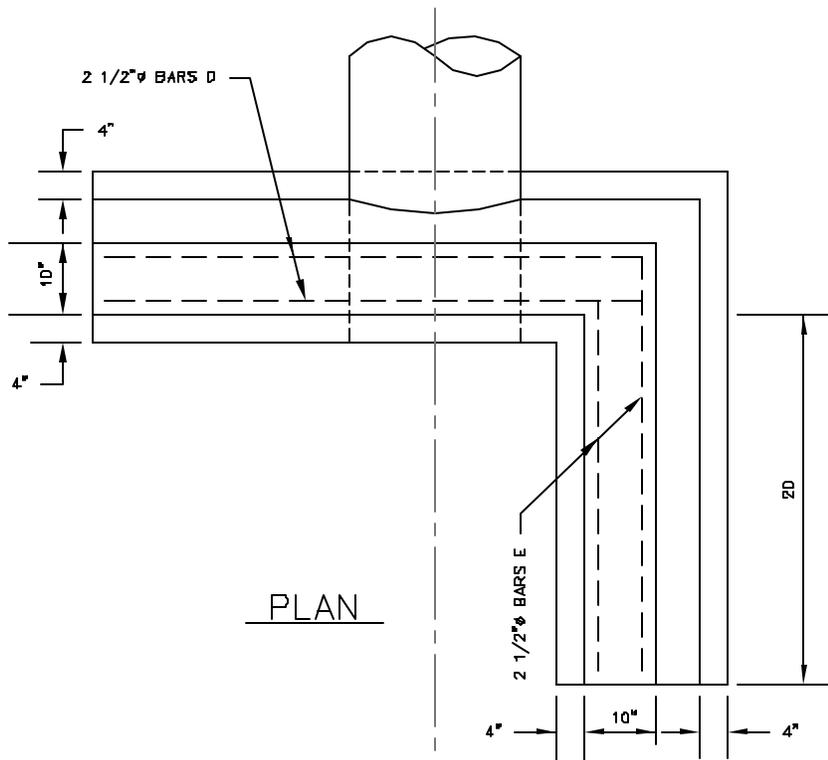
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

45° WINGS

STORM SEWER

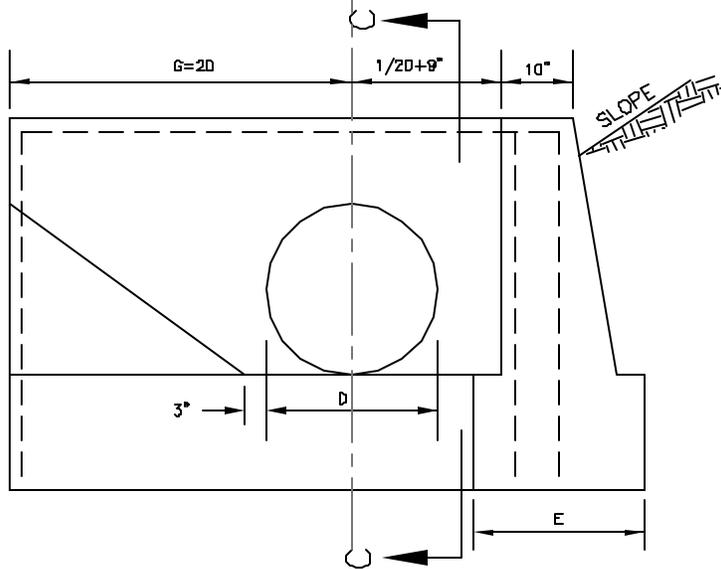
SPECIFICATION NO. 611

CP-04 PAGE 125

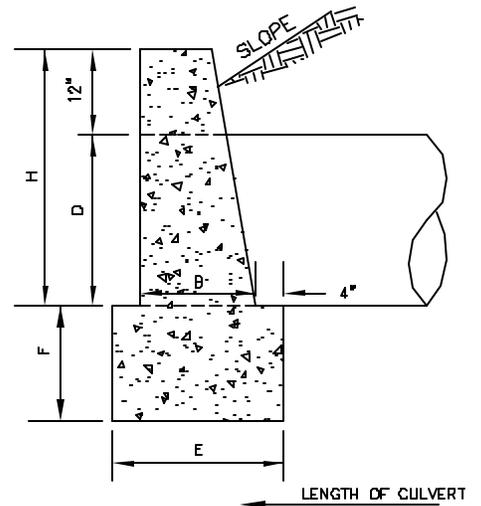


PLAN

CONCRETE ENDWALL  
FOR PIPE CULVERT  
USED AS SIDE DRAINS  
& FARM ENTRANCES



END ELEVATION



SECTION C-C

CITY OF EDMOND, OKLA. 1505-04-0106  
 DEC. 12, 1987 4:00 PM 100824

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SIDE DRAINS &  
 FARM ENTRANCES**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CP-05 PAGE 126

DIMENSIONS & QUANTITIES FOR STRAIGHT ENDWALL											
DIMENSIONS							CONCRETE IN ONE ENDWALL				REINF. STEEL ONE ENDWALL LBS.
OPENING		WALL			FOOTING		CLASS A				
D	AREA SQ. FT.	G	H	B	E	F	WALL CU. FT.	FOOTING CU. FT.	TOTAL		
							CU. FT.	CU. FT.	CU. FT.	CU. YD.	
15"	1.2	5'-0"	2'-3"	1'-2"	1'-10"	1'-2"	9.0	10.7	19.7	.73	15
18"	1.8	6'-0"	2'-6"	1'-3"	1'-11"	1'-3"	12.3	14.4	26.7	.99	17
24"	3.1	8'-0"	3'-0"	1'-4"	2'-0"	1'-4"	20.3	21.3	41.6	1.54	21
30"	4.9	10'-0"	3'-6"	1'-6"	2'-2"	1'-6"	31.4	32.5	63.9	2.37	25
36"	7.1	12'-0"	4'-0"	1'-8"	2'-4"	1'-8"	45.7	46.7	92.4	3.42	29
42"	9.6	14'-0"	4'-6"	1'-10"	2'-6"	1'-10"	63.5	64.2	127.7	4.73	35

DIMENSIONS & QUANTITIES FOR ENDWALL WITH U-TYPE WINGS											REINF. STEEL LBS.	ADDITIONAL MATERIAL REQUIRED FOR CATCH BASIN
DIMENSIONS							QUANTITIES IN ONE ENDWALL					
OPENING		WALL			FOOTING		CLASS A CONCRETE					
D	AREA SQ. FT.	G	H	K	F	J	WALL CU. FT.	FOOTING CU. FT.	TOTAL			
							CU. FT.	CU. FT.	CU. FT.	CU. YD.		
15"	1.2	3'-11"	2'-3"	1'-6"	1'-3"	2'-8"	7.6	10.8	18.4	.68	12	NONE
18"	1.8	4'-2"	2'-6"	1'-9"	1'-3"	2'-11"	8.5	12.3	21.2	.78	13	NONE
24"	3.1	4'-8"	3'-0"	2'-6"	1'-6"	3'-8"	12.4	16.3	28.7	1.06	27	.29 CU. YD.
30"	4.9	5'-2"	3'-6"	3'-3"	1'-6"	4'-5"	16.5	21.0	37.5	1.39	29	.34 CU. YD.
36"	7.1	5'-8"	4'-0"	4'-0"	1'-9"	5'-2"	21.2	26.2	47.4	1.76	34	.67 CU. YD.
42"	9.6	6'-2"	4'-6"	4'-9"	1'-9"	5'-11"	26.5	32.0	58.5	2.17	36	.79 CU. YD.

DIMENSIONS & QUANTITIES FOR ENDWALL WITH 45° WINGS											REINF. STEEL LBS.	ADDITIONAL MATERIAL REQUIRED FOR APRON
DIMENSIONS							QUANTITIES IN ONE ENDWALL					
OPENING		WALL				FOOTING	CLASS A CONCRETE					
D	AREA SQ. FT.	H	G	L	M	F	WALL CU. FT.	FOOTING CU. FT.	TOTAL			
							CU. FT.	CU. FT.	CU. FT.	CU. YD.		
15"	1.2	2'-3"	3'-7"	1'-0"	1'-1"	1'-2"	6.3	7.7	14.0	.52	13	.02 CU. YD.
18"	1.8	2'-6"	3'-10"	1'-2"	1'-7"	1'-3"	8.3	10.6	18.9	.70	14	.07 CU. YD.
24"	3.1	3'-0"	4'-4"	1'-5"	2'-1"	1'-4"	11.7	14.3	26.0	.96	28	.16 CU. YD.
30"	4.9	3'-6"	4'-10"	1'-9"	2'-5"	1'-6"	15.2	18.7	33.9	1.25	30	.27 CU. YD.
36"	7.1	4'-0"	5'-4"	2'-0"	2'-11"	1'-8"	19.7	24.6	44.3	1.64	38	.47 CU. YD.
42"	9.6	4'-6"	5'-10"	2'-3"	3'-6"	1'-10"	25.3	31.6	56.9	2.11	45	.77 CU. YD.

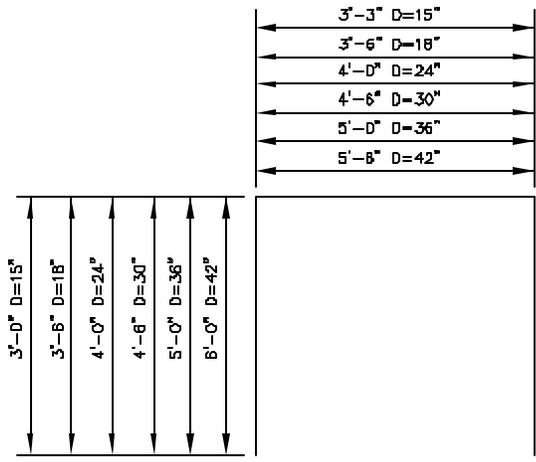
DIMENSIONS & QUANTITIES FOR SIDE DRAIN & FARM ENDWALLS											
DIMENSIONS							CONCRETE IN ONE ENDWALL				REINF. STEEL ONE ENDWALL LBS.
OPENING		WALL			FOOTING		CLASS A				
D	AREA SQ. FT.	G	H	B	E	F	WALL CU. FT.	FOOTING CU. FT.	TOTAL		
							CU. FT.	CU. FT.	CU. FT.	CU. YD.	
15"	1.29	2'-6"	2'-3"	1'-2"	1'-10"	1'-2"	14.4	16.2	30.6	1.13	18
18"	1.80	3'-0"	2'-6"	1'-3"	1'-11"	1'-3"	19.1	21.0	40.1	1.49	21
24"	3.10	4'-0"	3'-0"	1'-4"	2'-0"	1'-4"	29.6	29.5	59.1	2.19	25
30"	4.90	5'-0"	3'-6"	1'-5"	2'-1"	1'-5"	42.7	39.6	82.3	3.05	30
36"	7.07	6'-0"	4'-0"	1'-6"	2'-2"	1'-6"	59.1	51.3	110.4	4.09	34
42"	9.62	7'-0"	4'-6"	1'-7"	2'-3"	1'-7"	78.2	64.4	142.6	5.28	39

REVISIONS	ND.	DATE	ITEM CHANGED

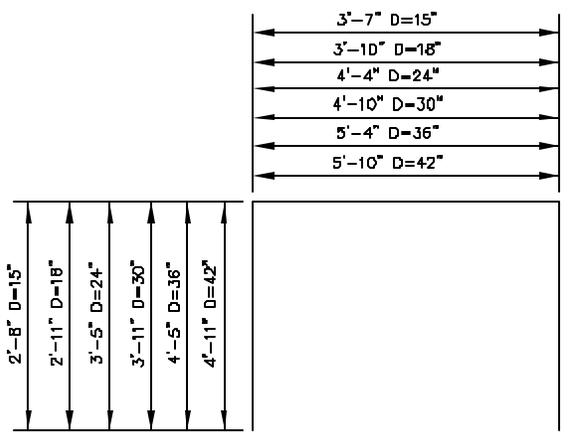
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

# DIMENSIONS & QUANTITIES TABLE

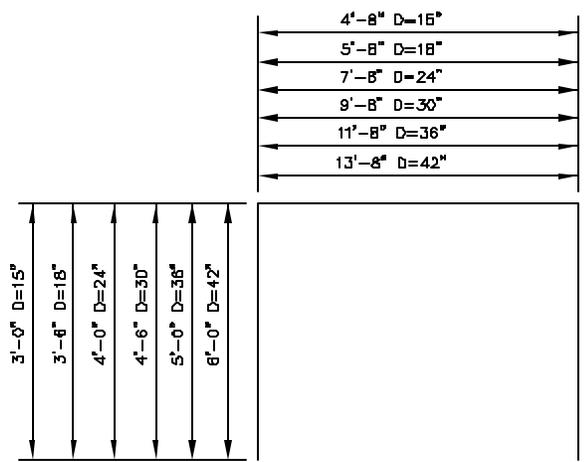
STORM SEWER  
SPECIFICATION NO. 611  
CP-06 PAGE 127



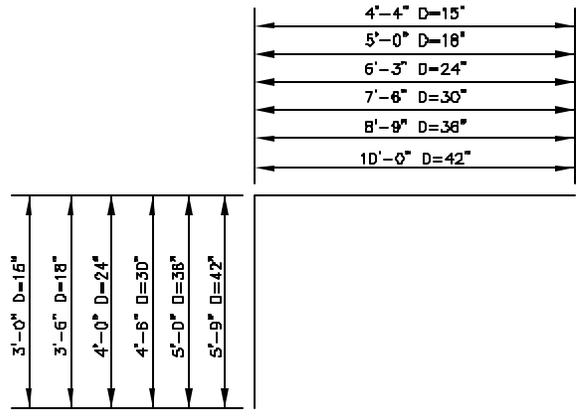
BENDING OF BARS "A"



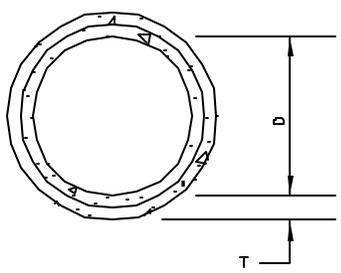
BENDING OF BARS "B"



BENDING OF BARS "C"

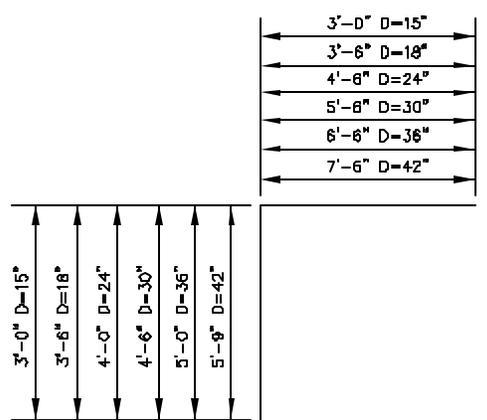


BENDING OF BARS "D"



DIMENSIONS	
D	T
15"	2 1/4"
18"	2 1/2"
24"	3"
30"	3 1/2"
36"	4"
42"	4 1/2"

REINFORCED CONCRETE PIPE



BENDING OF BARS "E"

CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1500 W. 10TH STREET  
 OKLAHOMA CITY, OKLAHOMA 73101

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**BENDING BARS**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CP-07 PAGE 128

GENERAL NOTES

1. WHEN CULVERT END SECTIONS ARE OPTIONAL, THEY SHALL BE OF THE SAME MATERIAL AS THE PIPE ON WHICH THEY ARE INSTALLED.
2. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
3. WHEN CULVERT PIPE IS SPECIFIED, THE END SECTION PAID FOR SHALL BE OF THE SAME TYPE (STEEL, ALUMINUM, OR CONCRETE) AND SHAPE (ROUND, ARCH, OR ELLIPTICAL). IF ELLIPTICAL CONCRETE PIPE IS USED, THE ELLIPTICAL END SECTION SHALL BE USED AND PAID FOR AS PREFAB. CULV. END SEC., ARCH.
4. TRENCH EXCAVATION REQUIRED FOR INSTALLATION OF CULVERT END SECTIONS SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.
5. DIMENSIONS SHOWN FOR END SECTIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES.
6. TOE PLATE WILL BE REQUIRED ON ALL METAL END SECTIONS UNLESS SOLID ROCK IS ENCOUNTERED. HOLES IN TOE PLATE TO BE PUNCHED TO MATCH HOLES IN SKIRT LIP, 3/8" BOLTS TO BE FURNISHED. LENGTH OF TOE PLATES FOR ROUND PIPE END SECTIONS SHALL BE W=10" FOR 15" TO 30" DIA. PIPE, W=20" FOR 36" TO 84" DIA. PIPE. LENGTH OF TOE PLATES FOR ARCH PIPE END SECTIONS SHALL BE W=10" FOR A RISE OF 13" TO 29" AND W=20" FOR A RISE OF 33" TO 57".
7. CONNECTOR SECTION, CORNER PLATE, AND TOE PLATE ON METAL END SECTIONS SHALL BE THE SAME GAGE AND MATERIAL AS THE SKIRT AND SHALL BE INCLUDED IN PRICE BID FOR END SECTION.

REPORT NO. 191  
 DATE 12/15/10  
 CITY OF EDMOND  
 ENGINEERING DEPARTMENT

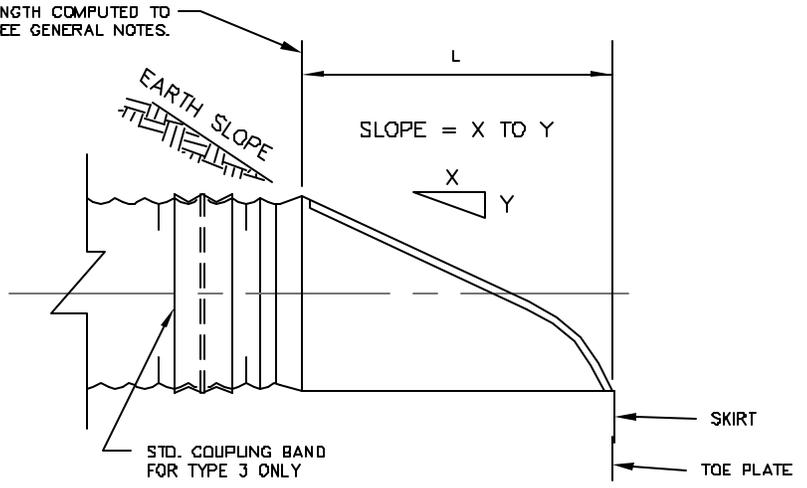
REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

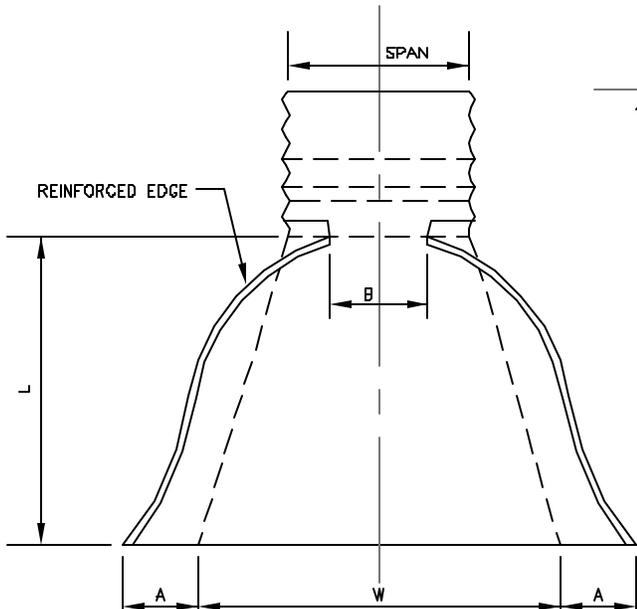
**GENERAL NOTES**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 PE-01 PAGE 12B

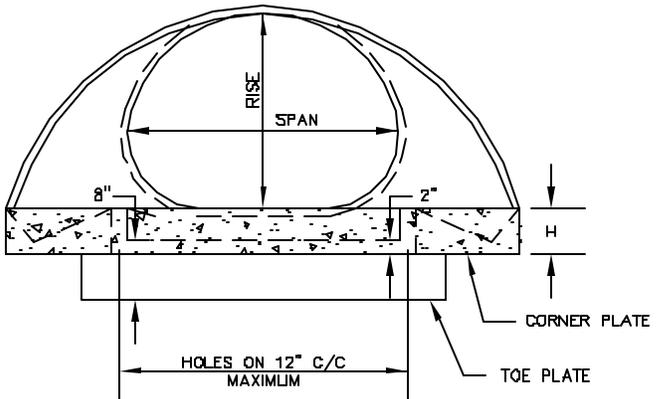
PIPE LENGTH COMPUTED TO  
HERE. SEE GENERAL NOTES.



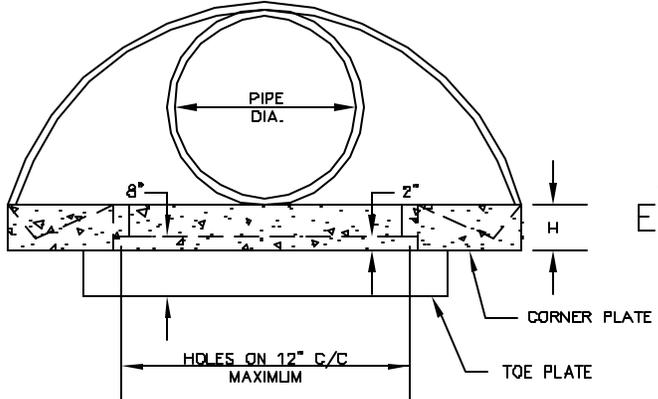
METAL END SECTION  
SIDE VIEW



METAL END SECTION  
PLAN VIEW



ARCH METAL PIPE  
END SECTION END VIEW



ROUND METAL PIPE  
END SECTION END VIEW

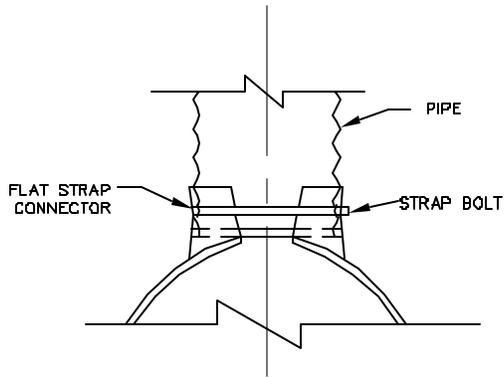
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

METAL PIPES

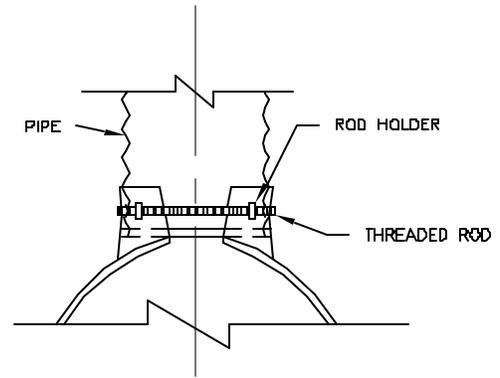
STORM SEWER  
SPECIFICATION NO. 611  
PE-02 PAGE 130

15-EDMONT-CONSTR-METAL PIPE-COLLING  
 DEC. 16 1987 7:50 AM BOREK



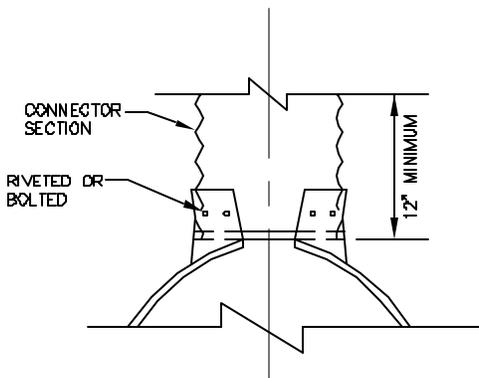
TYPE 1

FOR 15" THRU 24" ROUND AND EQUIVALENT ROUND PIPE ARCH SIZES



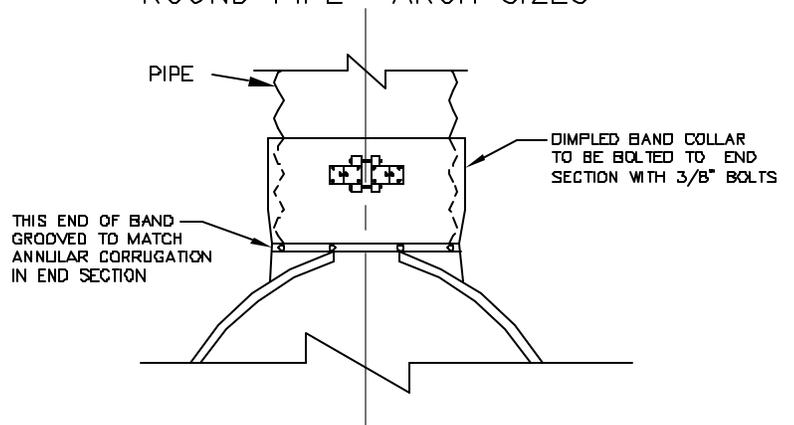
TYPE 2

FOR 30" THRU 36" ROUND AND 30" THRU 48" EQUIVALENT ROUND PIPE- ARCH SIZES



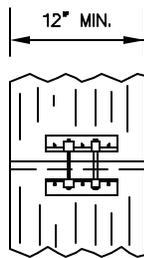
TYPE 3

FOR 42" THRU 84" ROUND AND 54" THRU 72" EQUIVALENT ROUND PIPE- ARCH SIZES

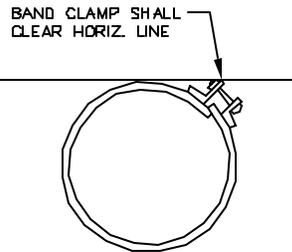


TYPE 5

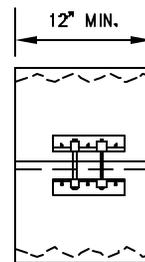
FOR USE WITH ALL ROUND AND PIPE ARCH SIZES



STANDARD COUPLING BAND



BAND CLAMP SHALL CLEAR HORIZ. LINE



DIMPLED COUPLING BAND

TYPICAL METAL END SECTION CONNECTIONS

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

METAL END SECTION CONNECTIONS

STORM SEWER  
SPECIFICATION NO. 611  
PE-03 PAGE 131

REVISION: 01/15/10  
 DATE: 01/15/10  
 BY: J. H. HARRIS  
 CHECKED: J. H. HARRIS  
 APPROVED: J. H. HARRIS



DIMENSIONS OF END SECTIONS FOR ROUND METAL PIPES									
PIPE DIA.	CA. DIA.	A IN.	B IN.	H IN.	L IN.	W IN.	APPROX. SLOPE	BODY	
15	16	7	8	6	26	30	2 1/2	1 PC.	
18	18	8	10	6	31	38	2 1/2	1 PC.	
21	16	9	12	6	36	42	2 1/2	1 PC.	
24	18	10	13	6	41	48	2 1/2	1 PC.	
30	14	12	16	8	51	60	2 1/2	1 PC.	
36	14	14	19	9	60	72	2 1/2	2 PC.	
42	12	16	22	11	69	84	2 1/2	2 PC.	
48	12	18	27	12	78	90	2 1/4	2 PC.	
54	12	18	30	12	84	102	2	2 PC.	
60	12	18	33	12	87	114	1 3/4	3 PC.	
66	12	18	36	12	87	120	1 1/2	3 PC.	
72	12	18	39	12	87	126	1 1/3	3 PC.	
78	12	18	42	12	87	132	1 1/4	3 PC.	
84	12	18	45	12	87	138	1 1/6	3 PC.	

DIMENSIONS OF END SECTIONS FOR ARCH METAL PIPES									
SPAN/RISE	PIPE DIA.	GA. DIA.	A IN.	B IN.	H IN.	L IN.	W IN.	APPROX. SLOPE	BODY
17x13	18	18	7	9	6	19	30	2 1/2	1 PC.
21x15	18	18	7	10	6	23	36	2 1/2	1 PC.
24x18	21	18	8	12	6	26	42	2 1/2	1 PC.
28x20	24	18#	9	14	6	32	48	2 1/2	1 PC.
35x24	30	14	10	16	8	39	60	2 1/2	1 PC.
42x29	36	14#	12	18	8	46	75	2 1/2	1 PC.
49x33	42	12	13	21	9	53	85	2 1/2	2 PC.
57x38	48	12	18	26	12	63	90	2 1/2	2 PC.
64x43	54	12	18	30	12	70	102	2 1/4	2 PC.
71x47	60	12	18	33	12	77	114	2 1/4	3 PC.
77x52	66	12	18	36	12	77	126	2	3 PC.
83x57	72	12	18	39	12	77	138	2	3 PC.

# FOR ALUMINUM END SECTIONS THE 28x20 SHALL BE 14 GAGE AND THE 42x29 SHALL BE 12 GAGE

DIMENSIONS OF PRECAST END SECTIONS FOR ROUND PIPE										
DIAMETER IN.	R3 IN.	R4 IN.	R5 IN.	T IN.	K IN.	J FT.	C FT.	D FT.	E FT.	SLOPE
18	3	3	6	2 1/2	9	2.25	3.83	6.08	3.00	3 TO 1
24	3	3	7	3	9 1/2	3.63	2.50	6.12	4.00	3 TO 1
30	3	3	8	3 1/2	12	4.00	1.65	6.16	3.00	3 TO 1
36	3	3	10 1/2	4	15	5.25	2.80	6.15	6.00	3 TO 1
42	3	3	10 1/2	4 1/2	21	5.25	2.92	6.17	6.50	3 TO 1
48	6	6	14	5	24	6.00	2.17	6.17	7.00	3 TO 1
54	6	6	9	5 1/2	27	5.42	2.92	6.33	7.50	2.4 TO 1
60	6	6	9	6	30	5.00	3.25	6.25	8.00	2 TO 1
66	6	6	9	6 1/2	24	6.50	1.75	6.25	6.50	2 TO 1
72	6	6	9	7	24	6.50	1.75	6.25	9.00	2 TO 1

APPROX. EQUIV. DIAMETER IN.	DIMENSIONS OF PRECAST END SECTIONS FOR ELLIPTICAL PIPE														
	RISE IN.	SPAN IN.	R1 IN.	R2 IN.	R3 IN.	R4 IN.	R5 IN.	T IN.	K IN.	J FT.	C FT.	D FT.	E FT.	SLOPE	
24	19	30	8 9/32	28 1/32	3	3	7	3 1/4	8 1/2	3.25	2.75	6.00	4.00	3 TO 1	
30	24	38	10 11/32	32 9/16	3	3	9	3 3/4	9 1/2	4.00	1.50	6.00	5.00	3 TO 1	
36	29	45	12 7/16	39 1/16	3	3	12	4 1/2	11 1/4	5.00	3.00	6.00	6.00	3 TO 1	
42	34	53	14 1/2	45 9/16	6	6	13	5	15 3/4	6.00	3.00	6.00	6.50	3 TO 1	
48	38	60	16 9/16	52 3/32	6	6	14	5 1/2	21	5.00	3.00	6.00	7.00	3 TO 1	
54	43	68	18 5/8	58 19/32	6	6	16	6	25 1/2	5.00	3.00	6.00	7.50	3 TO 1	
60	48	76	20 11/16	65 3/32	6	6	36 11/16	6 1/2	30	5.00	3.25	6.25	8.00	2 TO 1	
66	53	83	22 3/4	71 5/8	6	6	36 1/8	7	24	6.50	1.75	6.25	8.50	2 TO 1	
72	58	91	24 27/32	78 1/8	6	6	38	7 1/2	24	6.50	1.75	6.25	9.00	2 TO 1	

APPROX. EQUIV. DIAMETER IN.	DIMENSIONS OF PRECAST END SECTIONS FOR ARCH PIPE																
	RISE IN.	SPAN IN.	A IN.	B IN.	R IN.	R1 IN.	R2 IN.	R3 IN.	R4 IN.	R5 IN.	T IN.	K IN.	J FT.	C FT.	D FT.	E FT.	SLOPE
24	18	28 1/2	3 7/16	9 21/32	3	40 11/16	14 9/16	4 19/22	3	16 13/16	3	9 1/2	3.58	2.50	6.08	4.00	3 TO 1
30	22 1/2	36 1/4	3 3/4	12 3/32	3	51	18 3/4	6 1/32	3	18 1/2	3 1/2	12	4.50	1.58	6.08	5.00	3 TO 1
36	26 5/8	43 3/4	4 1/8	17 1/2	6	62	22 1/2	6 3/8	3	24 5/16	4	15	5.25	2.90	6.15	6.00	3 TO 1
42	31 5/16	51 1/8	5 1/16	18	6	73	28 1/4	7 3/16	3	27 1/2	4 1/2	21	5.25	2.92	6.17	6.50	3 TO 1
48	36	58 1/2	6	20 1/2	6	84	30	8 3/4	3	28 1/2	5	24	6.00	2.17	6.17	7.00	3 TO 1
54	40	65	6 1/2	22 11/16	6	92 1/2	33 3/8	9 13/16	6	33 1/8	5 1/2	27	5.42	2.92	6.34	7.50	2.4 TO 1
60	45	73	7 1/2	25 9/32	6	105	37 1/2	11 7/32	6	33 11/16	6	30	5.00	3.25	6.25	8.00	2 TO 1
72	54	88	9	31 7/16	6	128	45	12 9/16	6	38 15/16	7	24	6.50	1.75	6.25	9.00	2 TO 1

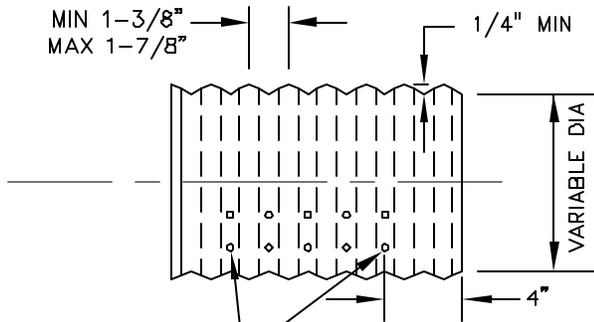
REVISIONS	ND.	DATE	ITEM CHANGED
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CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

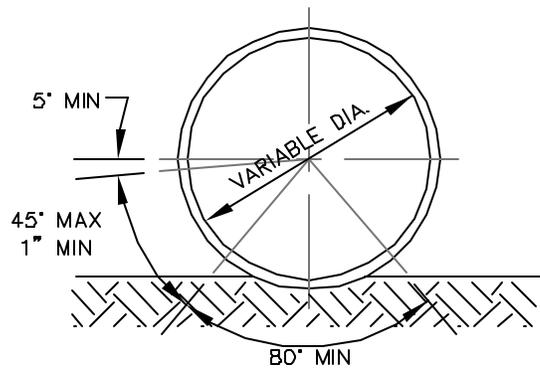
# DIMENSION TABLES

STORM SEWER  
SPECIFICATION NO. 611  
PE-05 PAGE 133

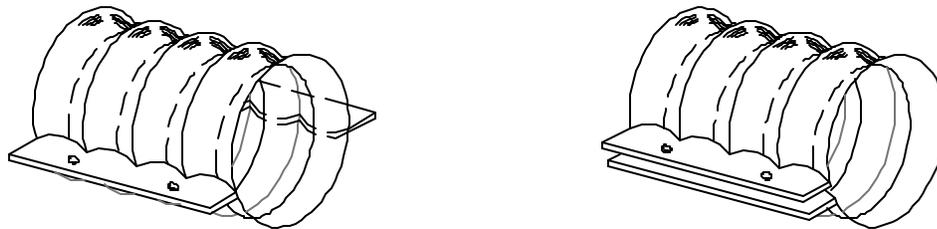




NOTE: PERFORATIONS (MIN. 3/16" - MAX. 3/8") TO BE LOCATED IN THE INSIDE CREST OF CORRUGATIONS, OR HALF WAY BETWEEN CORRUGATIONS



CORRUGATED GALVANIZED STEEL OR ALUMINUM ALLOY PIPE UNDERDRAIN



TYPICAL CORRUGATED COUPLING OR AN APPROVED EQUAL

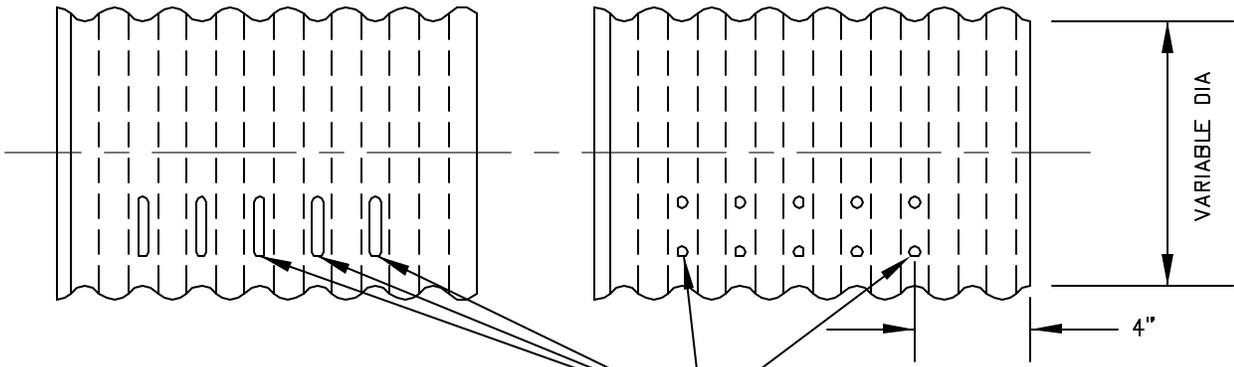
CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1500 WEST 15TH AVENUE, SUITE 100  
 EDMOND, OKLA. 73112

REVISIONS	NO.	DATE	ITEM CHANGED

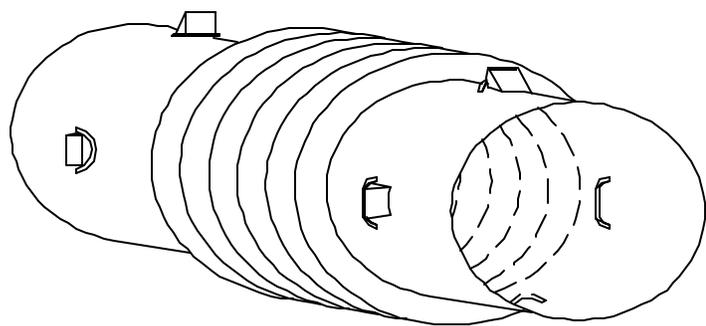
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GALVANIZED STEEL**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 PU-02 PAGE 135



NOTE: PERFORATIONS SHALL BE SPACED EVENLY ALONG THE LENGTH WITH MIN. OPENING AREA OF 1.0 SQ. IN. PER. LIN. FT.



TYPICAL CORRUGATED COUPLING OR AN APPROVED EQUAL

CORRUGATED POLYETHYLENE  
PIPE UNDERDRAIN

CORRUGATED POLYETHYLENE PIPE UNDERDRAIN SHALL CONFORM TO AASHTO M252 SPECIFICATIONS

REVISIONS	NO.	DATE	ITEM CHANGED

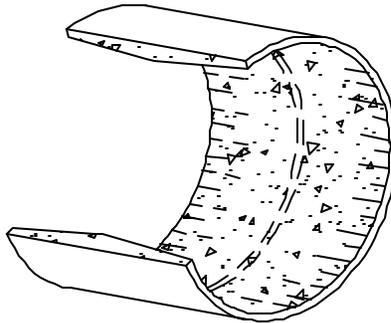
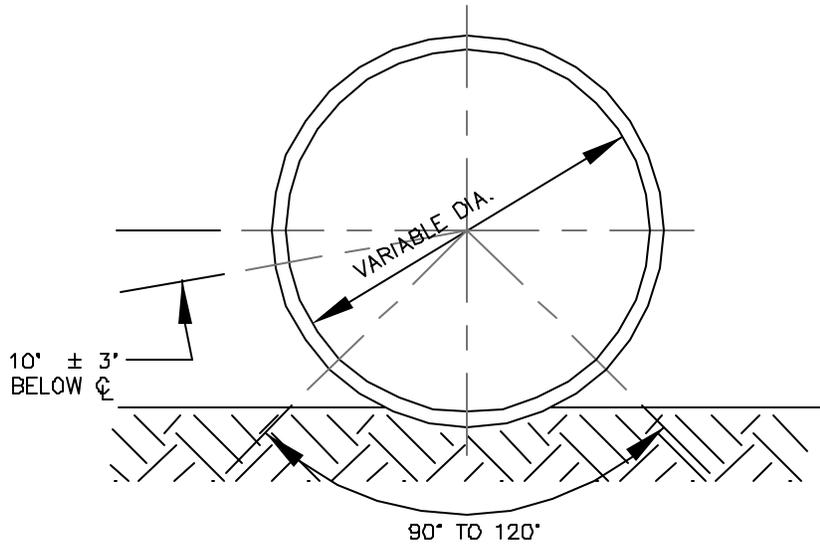
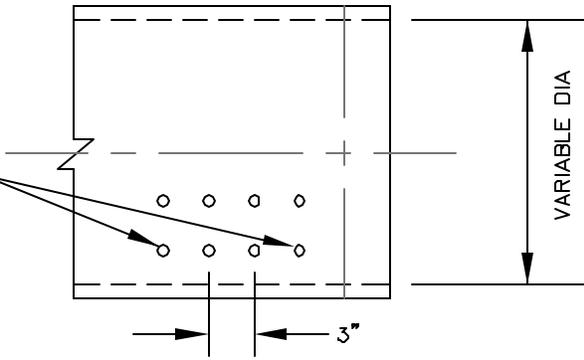
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

CORRUGATED  
POLYETHYLENE

STORM SEWER  
SPECIFICATION NO. 611  
PU-03 PAGE 136

REVISION: 01/15/11  
 DATE: 01/15/11  
 BY: J. B. BROWN  
 CHECKED: J. B. BROWN  
 APPROVED: J. B. BROWN

NOTE: PERFORATIONS  
(MIN. 3/16" - MAX. 3/8")  
TO BE PLACED AT 3" C/C



TYPICAL COUPLING FOR  
PVC PIPE UNDERDRAIN  
1/4 SECTION REMOVED

POLYVINYL (PVC)  
PIPE UNDERDRAIN

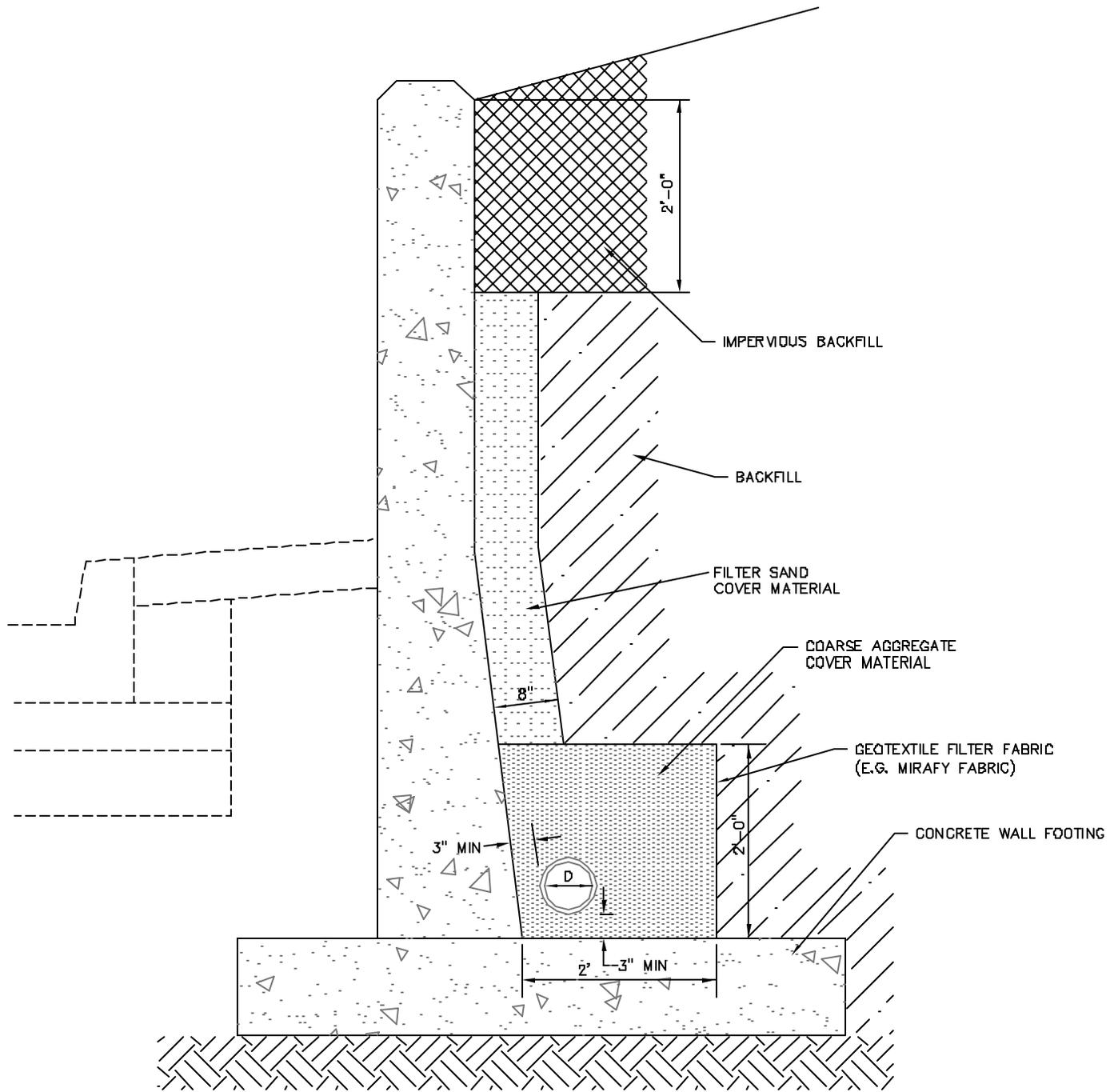
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

POLYVINYL (PVC)

STORM SEWER  
SPECIFICATION NO. 611  
PU-04 PAGE 137

15" STORM SEWER UNDERDRAIN PER PLAN 15" STORM SEWER UNDERDRAIN PER PLAN  
 REV. 28 11/87 2:00 PM 11/87



PLACEMENT OF UNDERDRAIN  
BACK OF RETAINING WALL

CITY OF EDMOND ENGINEERING DEPARTMENT  
 1515 15TH AVENUE, SUITE 100  
 EDMOND, OKLAHOMA 73119  
 TEL: 405.740.1100

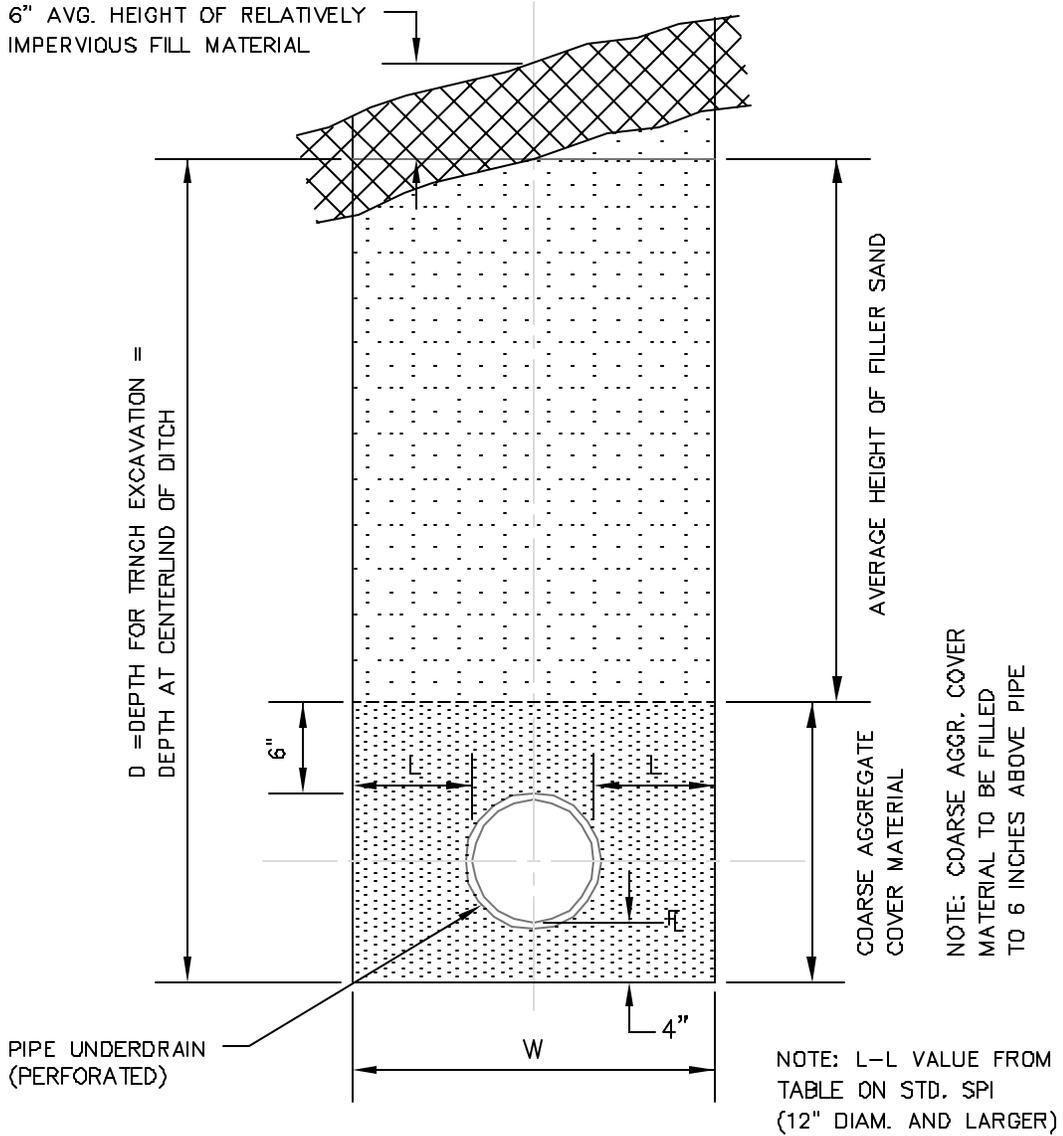
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**RETAINING WALL  
 PLACEMENT**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 PU-05 PAGE 138

6" AVG. HEIGHT OF RELATIVELY IMPERVIOUS FILL MATERIAL



TRENCH EXCAVATION  
 DETAILS OF PIPE  
 UNDERDRAIN INSTALLATIONS

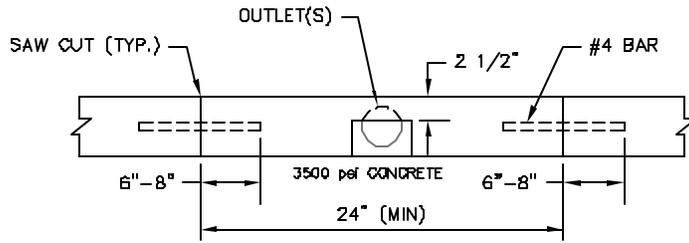
REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

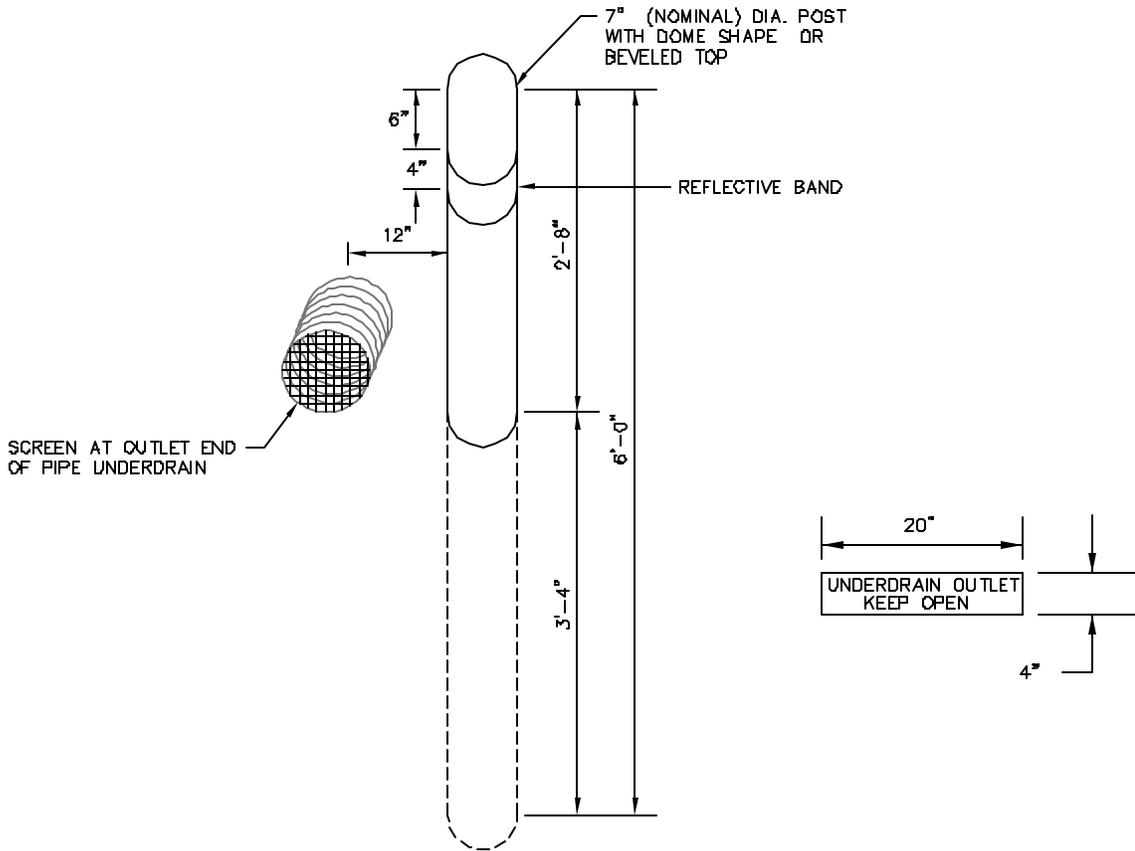
TRENCH  
 EXCAVATION

STORM SEWER  
 SPECIFICATION NO. 611  
 PU-06 PAGE 139

CITY OF EDMOND ENGINEERING DEPARTMENT  
 1500 15TH AVENUE, SUITE 200  
 EDMOND, OKLAHOMA 73119  
 TEL. 405.343.2000 FAX 405.343.2001



FRENCH DRAIN THROUGH CURB



MARKER POST PLACEMENT AT UNDERDRAIN OUTLETS

NOTE:

A REFLECTIVE BAND TO BE FASTENED TO THE MARKER POST IN AN APPROVED MANNER SHALL BE SILVER-WHITE REFLECTIVE SHEETING. THE SHEETING SHALL BE MOUNTED ON A METAL BAND. THE METAL BANDS SHALL BE FULLY CLEANED AND DEGREASED TO INSURE BOND WITH REFLECTIVE SHEETING. WORKING PRODUCED BY PHOTOGRAPHIC PROCESSES, SILK SCREENING OR HAND LETTERING AS SHOWN ABOVE SHALL BE IN OR ON THE REFLECTIVE SHEETING.

MARKER POST SHALL BE TREATED WOOD. EXPOSED PORTION OF MARKER POST TO BE PAINTED YELLOW.

MARKER POST TO BE SET AT DRAIN OUTLETS BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE ENGINEER. (COST TO BE INCLUDED IN PRICE BID PER LINEAR FOOT OF PIPE UNDERDRAIN.)

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

MARKER POST PLACEMENT

STORM SEWER  
SPECIFICATION NO. 611  
PU-07 PAGE 140

## QUANTITIES

QUANTITIES OF CLASS C CONCRETE PER L.F. OF PAVED DITCH CU. YD.											
DESIGN NO.1						DESIGN NO.1					
WIDTH AT BOTTOM	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	
K1	.0522	.0645	.0769	.0892	.1016	.1274	.1397	.1521	.1644	.1768	DES. DES. 2A
K2	.0586	.0709	.0832	.0955	.1078	.1790	.1913	.2036	.2159	.2282	
					K1	.1045	.1168	.1292	.1415	.1539	DES. DES. 2B
					K2	.1357	.1480	.1603	.1726	.1850	
					K1	.0923	.1048	.1172	.1295	.1479	DES. DES. 2C
					K2	.1105	.1228	.1352	.1476	.1600	

K1= CU. YDS. OF CONCRETE PER LINEAR FOOT  
 K2=CU. YDS CONCRETE PER CURTAIN WALL  
 TOTAL CLASS C CONCRETE=  
 (LENGTH OF PAVED DITCH) (K1)+(NO. OF CURT. WALLS) (K2)  
 VARIABLE AS SHOWN ON PLANS  
 DESIGN 2A = 3:1 SLOPES  
 DESIGN 2B = 2:1 SLOPES  
 DESIGN 2C = 1:1 SLOPES

## GENERAL NOTES

1. DESIGN NO. 1—A PAVED PILOT DITCH TO BE PLACED 6" BELOW THE NORMAL FLOWLINE AND IN THE CENTER OF A STANDARD DITCH.  
DESIGN NO 2—A DITCH THAT IS PAVED AND HAVING THE SAME FLOWLINE AS A STANDARD UNPAVED DITCH.
2. COST OF EXCAVATION TO BE INCLUDED IN THE BID FOR CONCRETE.
3. THE BEGINNING AND END DETAILS OF BURIED ENDS DOES NOT APPLY WHERE THE PAVED DITCH TIES TO A STRUCTURE.
4. DITCH SHALL BE WATERED AND COMPACTED BEFORE PLACING CONCRETE.
5. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

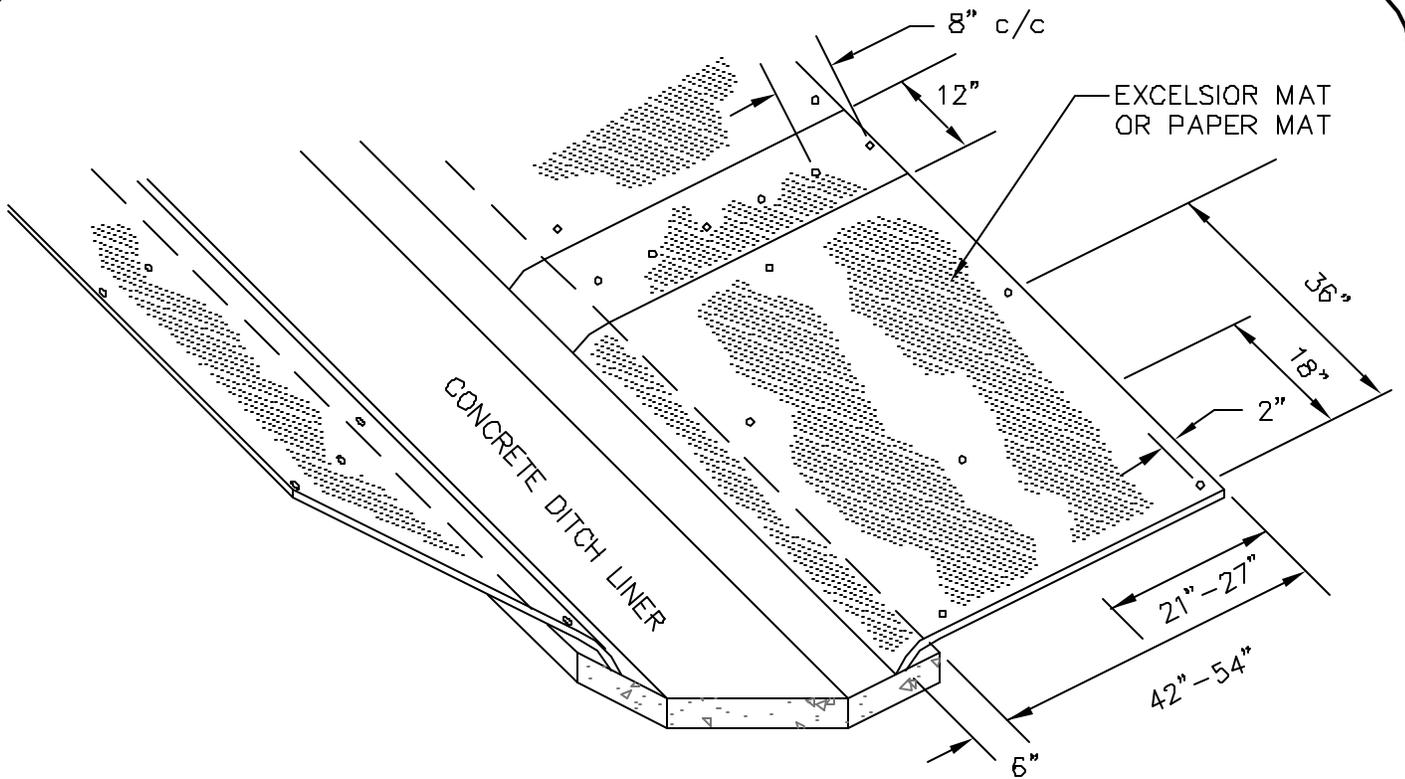
CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 JULY 15, 1988 FOR ALL WORK

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

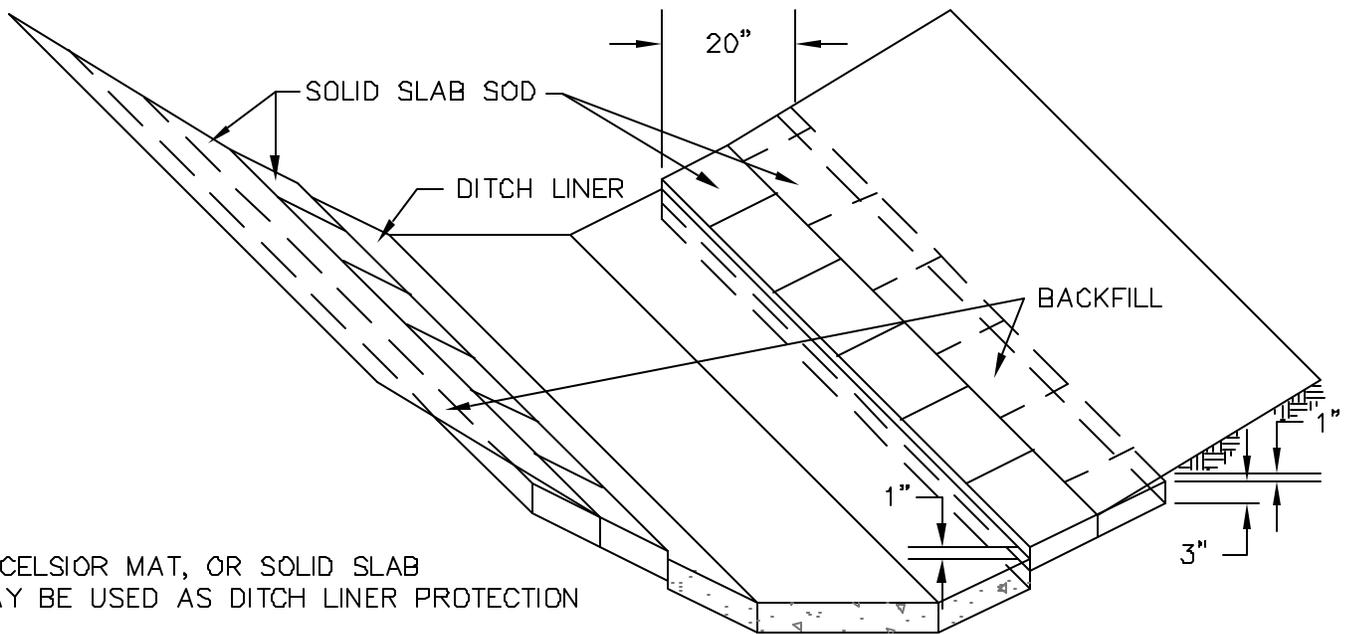
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GENERAL NOTES**  
**& QUANTITIES**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 PD-01 PAGE 141



DETAIL OF EXCELSIOR MAT  
OR PAPER MAT PLACEMENT  
ALONG CONCRETE DITCH LINER



DITCH LINER PROTECTION  
DETAIL OF SOLID SLAB  
SOD PLACEMENT ALONG  
CONCRETE DITCH LINER

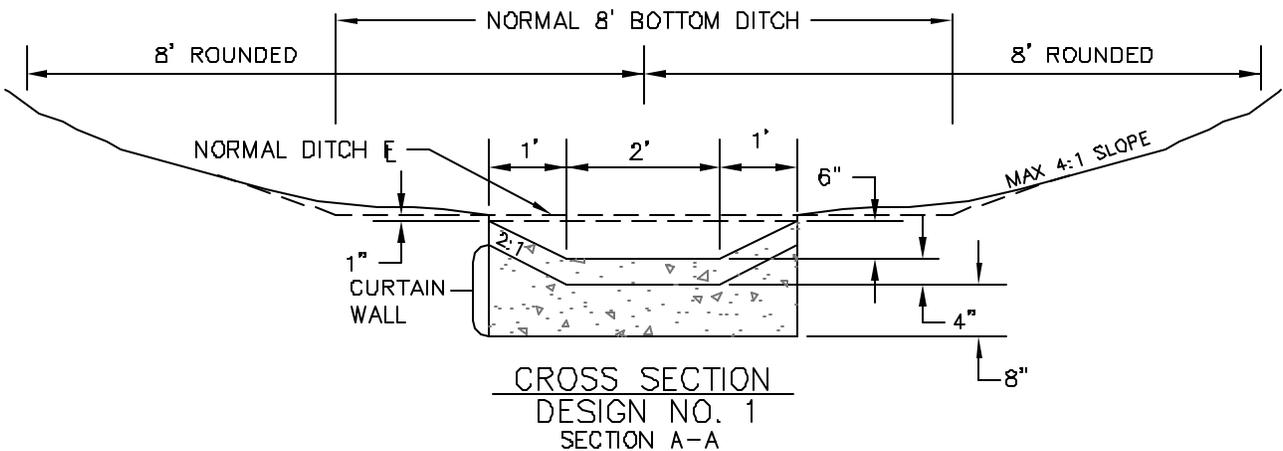
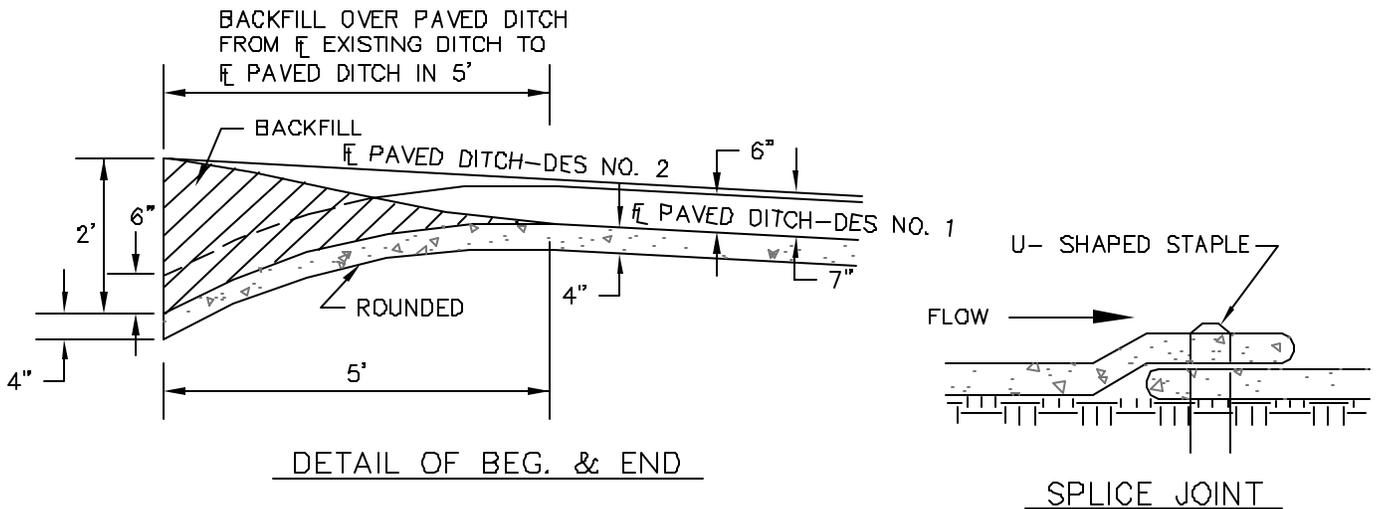
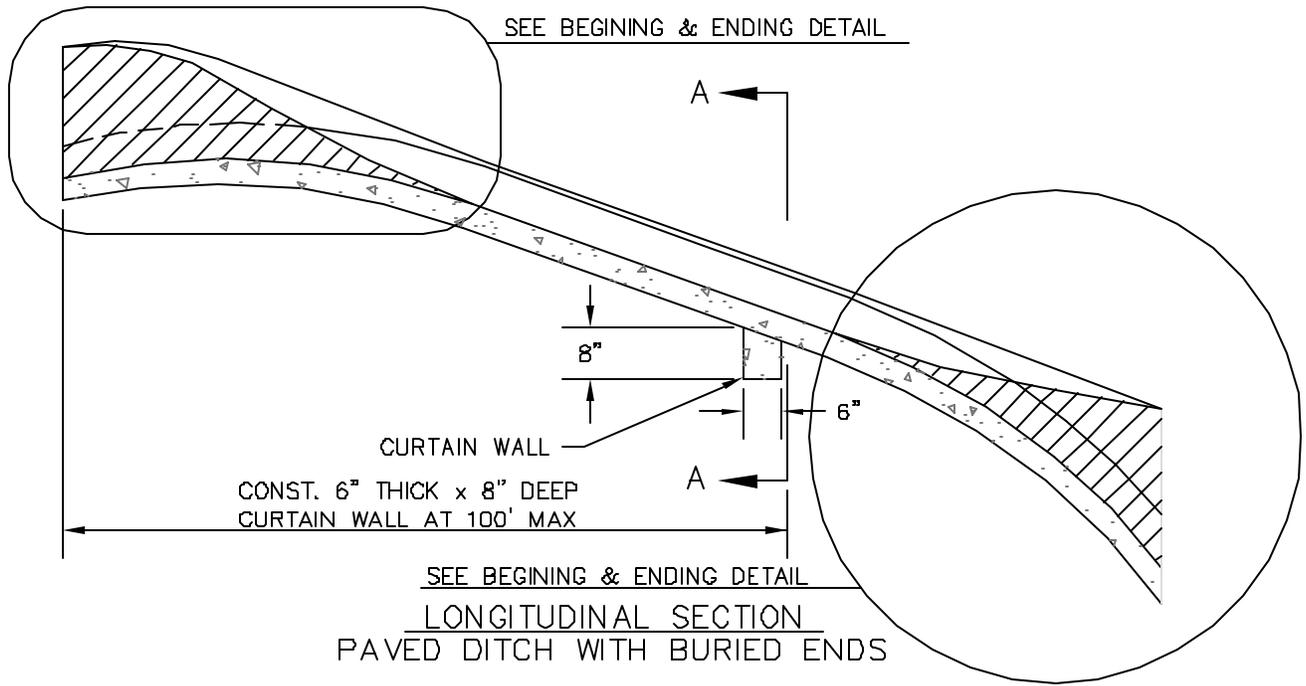
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

EXCELSIOR MAT &  
DITCH LINER

STORM SEWER  
SPECIFICATION NO. 611  
PD-02 PAGE 142





J:\STANDARD\CONSTRUCTION\REV. 5.00-04.DWG  
 JAN. 6, 1988 4:00 PM WJH/REB

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SECTION WITH  
 BURIED ENDS**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 PD-04 PAGE 144



## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS
  
2. REINFORCING STEEL IN BOTTOM SLAB SHALL BE SUPPORTED ON BAR CHAIRS. CHAIRS SHALL BE SUPPORTED ON TIMBER PLANKS OR CLASS C CONCRETE. STRIPS SPACED AT 4 FOOT CENTERS. THE TOP CHAIR SUPPORTS SHALL BE AT THE ELEVATION OF THE BOTTOM OF THE FOOTING.
  
3. REINFORCING STEEL IN THE TOP SLAB SHALL BE SUPPORTED ON SLAB SPACERS.
  
4. REINFORCING STEEL IN THE WALLS SHALL BE HELD IN PLACE BY METAL CHAIRS. MAXIMUM SPACING OF CHAIRS SHALL BE ON 6 FOOT CENTERS.
  
5. COST OF METAL CHAIRS, WOOD PLANKS OR CONCRETE STRIPS SHALL BE INCLUDED ON OTHER ITEMS OF WORK.

J:\STANDARD DRAWINGS\CB-01\146  
 JAN. 12, 1988 11:05 AM  
 MDR:EM

REVISIONS	NO.	DATE	ITEM CHANGED
◇			

**CITY OF EDMOND**

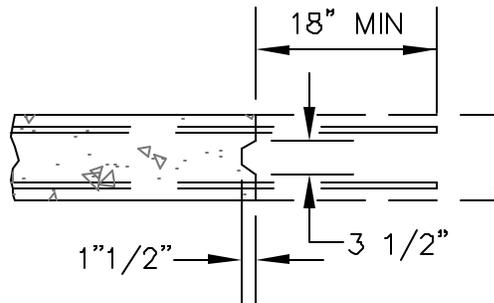
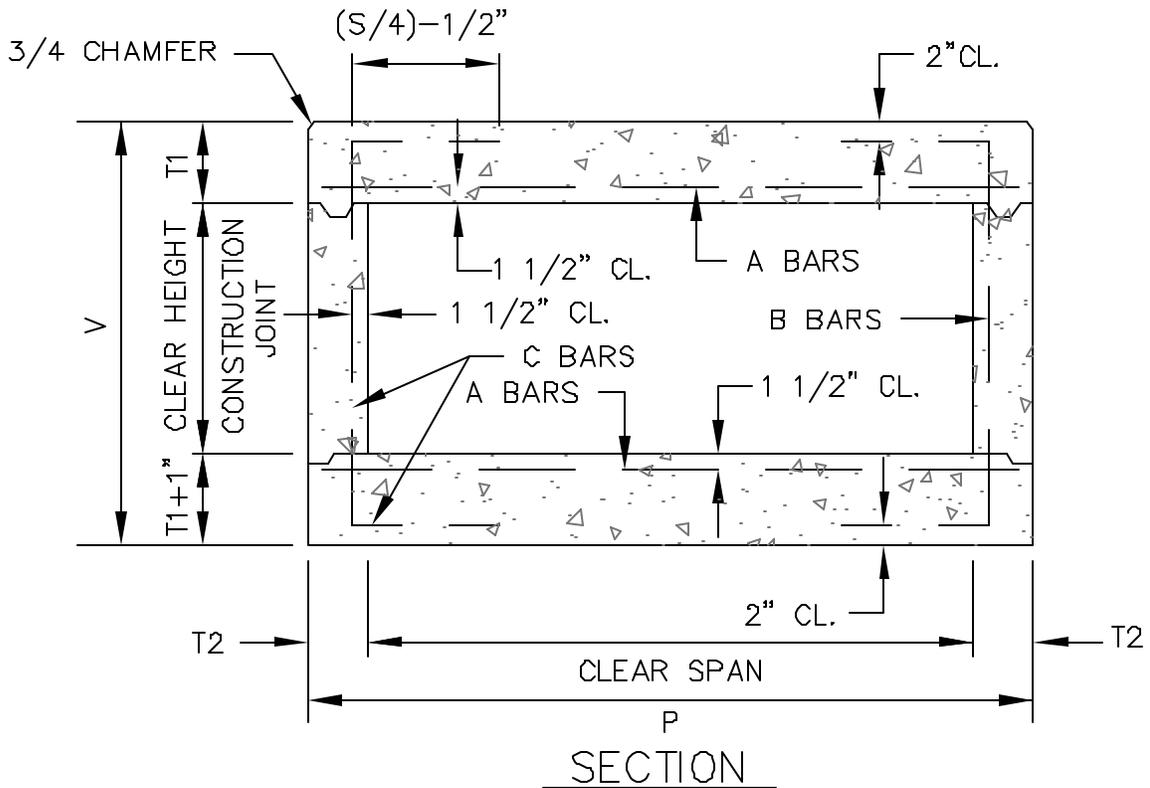
**ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS**

**GENERAL NOTES**

**STORM SEWER**

SPECIFICATION NO. 611

CB-01 PAGE 146



### CONSTRUCTION JOINT—R.C. BOX

THE MAXIMUM SPACING OF THE CONSTRUCTION JOINT SHALL BE 100 FT. LONGITUDINAL REINFORCING STEEL SHALL EXTEND THRU THE JOINT A MINIMUM OF 18 INCHES AND THE LONGITUDINAL STEEL IN THE ADJOINING SECTION SHALL BE LAPPED 18 INCHES WITH THIS STEEL. WHEN NO CONSTRUCTION JOINTS ARE INDICATED ON THE PLANS, THE CONSTRUCTION JOINT MAY BE USED WHEN THE BARREL LENGTH EXCEEDS 60 FEET AND SHALL BE USED WHEN LENGTH EXCEEDS 100 FEET. EXTEND LONGITUDINAL REINFORCING STEEL 18 INCHES MINIMUM THROUGH THE JOINT. STEEL SHALL BE LAPPED 18 INCHES WITH LONGITUDINAL STEEL OF ADJOINING SECTION.

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**CONSTRUCTION JOINTS  
& SECTION**

**STORM SEWER**  
SPECIFICATION NO. 611  
CB-02 PAGE 147

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# DESIGN DATA TABLE

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CB-03 PAGE 148

DES. NO.	FILL	SPAN	HEIGHT	AREA SQ. FT.	DIMENSIONS					REINFORCING STEEL										QUANTITIES PER LINEAR FOOT OF BARREL	
					T1	T1+1'	T2	V	P	A BARS		B BARS		C BARS		STEEL LBS.	CONC. CU. YD.				
										SIZE	SPAC.	LGTH	SPAC.	SIZE	LGTH	SPAC.	SIZE	LGTH	NO.		
1	2'-20'	2'	2'	4	6"	7"	6"	3'-1"	3'-0"	#4	9"	2'-8"	#4	9"	3'-8"	18"	12	19,298	0.184		
2	2'-20'	3'	3'	6	6"	7"	6"	3'-1"	4'-0"	#4	9"	3'-8"	#4	9"	4'-2"	18"	12	26,128	0.235		
3			3'	8	6"	7"	6"	4'-1"	4'-0"	#4	9"	3'-8"	#4	9"	5'-2"	18"	12	27,910	0.272		
4			2'	8	7"	8"	6"	3'-3"	5'-0"	#5	6 1/2"	4'-8"	#4	9"	4'-10"	18"	14	35,931	0.308		
5	2'-20'	4'	3'	12	7"	8"	6"	4'-3"	5'-0"	#5	6 1/2"	4'-8"	#4	9"	5'-10"	18"	14	37,713	0.343		
6			2'	16	7"	8"	6"	3'-5"	5'-0"	#5	6 1/2"	4'-8"	#4	9"	6'-10"	18"	16	40,830	0.360		
7			2'	10	8"	9"	6"	3'-5"	6'-0"	#5	6 1/2"	5'-8"	#4	9"	5'-6"	18"	16	46,279	0.369		
8			3'	15	8"	9"	6"	4'-5"	6'-0"	#5	6 1/2"	5'-8"	#4	9"	6'-6"	18"	16	48,061	0.426		
9			4'	20	8"	9"	6"	5'-5"	6'-0"	#5	6 1/2"	5'-8"	#4	9"	7'-6"	18"	18	51,178	0.463		
10	2'-18"	5'	5'	25	8"	9"	6"	6'-5"	6'-2"	#5	6 1/2"	5'-10"	#4	9"	8'-6"	18"	20	55,052	0.540		
11			6'	30	8"	9"	6"	7'-5"	6'-4"	#5	6 1/2"	6'-0"	#5	9"	9'-6"	18"	20	67,091	0.628		
12			7'	35	8"	9"	6"	8'-5"	6'-6"	#5	6 1/2"	6'-2"	#5	9"	10'-6"	18"	22	71,971	0.730		
13			2'	10	8 1/2"	9 1/2"	6"	3'-6"	6'-0"	#5	5 1/2"	5'-8"	#4	9"	5'-7"	18"	16	46,427	0.407		
14			3'	15	8 1/2"	9 1/2"	6"	4'-6"	6'-0"	#5	5 1/2"	5'-8"	#4	9"	6'-7"	18"	16	48,208	0.444		
15	20'	5'	4'	20	8 1/2"	9 1/2"	6"	5'-6"	6'-0"	#5	5 1/2"	5'-8"	#4	9"	7'-7"	18"	18	51,326	0.482		
16			5'	25	8 1/2"	9 1/2"	6"	6'-6"	6'-2"	#5	5 1/2"	5'-10"	#5	9"	8'-7"	18"	20	63,783	0.568		
17			6'	30	8 1/2"	9 1/2"	6"	7'-6"	6'-4"	#5	5 1/2"	6'-0"	#5	9"	9'-7"	18"	20	67,322	0.548		
18			7'	35	8 1/2"	9 1/2"	6"	8'-6"	6'-6"	#5	5 1/2"	6'-2"	#5	9"	10'-7"	18"	22	72,202	0.750		
19			3'	18	9"	10"	6"	4'-7"	7'-0"	#6	7"	6'-8"	#4	9"	7'-2"	18"	16	57,787	0.522		
20			4'	24	9"	10"	6"	5'-7"	7'-0"	#6	7"	6'-8"	#4	9"	8'-2"	18"	18	60,904	0.558		
21	2'-16'	6'	5'	30	9"	10"	6"	6'-7"	7'-2"	#6	7"	6'-10"	#4	9"	9'-2"	18"	20	64,878	0.636		
22			6'	36	9"	10"	6"	7'-7"	7'-4"	#6	7"	7'-0"	#5	9"	10'-2"	18"	20	77,686	0.726		
23			7'	42	9"	10"	6"	8'-7"	7'-6"	#6	7"	7'-2"	#5	9"	11'-2"	18"	22	82,661	0.828		
24			3'	18	9"	10"	6"	9'-7"	7'-8"	#6	7"	7'-4"	#5	9"	11'-2"	18"	24	89,627	0.943		
25			4'	24	9 1/2"	10 1/2"	6"	4'-8"	7'-0"	#6	6 1/2"	6'-8"	#4	9"	7'-3"	18"	16	60,576	0.543		
26			5'	24	9 1/2"	10 1/2"	6"	5'-8"	7'-0"	#6	6 1/2"	6'-8"	#4	9"	8'-3"	18"	18	63,693	0.580		
27			6'	30	9 1/2"	10 1/2"	6"	6'-8"	7'-2"	#6	6 1/2"	6'-10"	#4	9"	9'-3"	18"	20	67,733	0.658		
28	18'	6'	7'	36	9 1/2"	10 1/2"	6"	7'-8"	7'-4"	#6	6 1/2"	7'-0"	#5	9"	10'-3"	18"	20	80,688	0.748		
29			8'	42	9 1/2"	10 1/2"	6"	8'-8"	7'-6"	#6	6 1/2"	7'-2"	#5	9"	11'-3"	18"	22	85,731	0.852		
30			9'	48	9 1/2"	10 1/2"	6"	9'-8"	7'-8"	#6	6 1/2"	7'-4"	#5	9"	12'-3"	18"	24	99,627	0.943		
31			3'	18	10"	11"	6"	4'-9"	7'-0"	#6	6 1/2"	6'-8"	#4	9"	7'-4"	18"	16	60,721	0.565		
32			4'	24	10"	11"	6"	5'-9"	7'-2"	#6	6 1/2"	6'-8"	#4	9"	8'-4"	18"	18	63,838	0.602		
33	20'	6'	5'	30	10"	11"	6"	6'-9"	7'-2"	#6	6 1/2"	6'-10"	#5	9"	9'-4"	18"	20	77,213	0.681		
34			6'	36	10"	11"	6"	7'-9"	7'-4"	#6	6 1/2"	7'-0"	#5	9"	10'-4"	18"	20	80,923	0.772		
35			7'	42	10"	11"	6"	8'-9"	7'-6"	#6	6 1/2"	7'-2"	#5	9"	11'-4"	18"	22	85,963	0.875		
36			8'	48	10"	11"	6"	9'-9"	7'-8"	#6	6 1/2"	7'-5"	#5	9"	12'-4"	18"	24	99,183	1.021		
37			3'	24	11"	12"	6"	4'-11"	8'-0"	#7	7 1/2"	8'-8"	#4	9"	8'-6"	18"	20	85,189	0.750		
38			4'	32	11"	12"	6"	5'-11"	8'-0"	#7	7 1/2"	8'-8"	#4	9"	9'-6"	18"	22	88,307	0.787		
39			5'	40	11"	12"	6"	6'-11"	8'-2"	#7	7 1/2"	8'-10"	#4	9"	10'-6"	18"	24	92,512	0.867		
40	2'-14'	8'	6'	48	11"	12"	6"	7'-11"	8'-4"	#7	7 1/2"	9'-0"	#4	9"	11'-6"	18"	24	95,385	0.959		
41			7'	56	11"	12"	6"	8'-11"	8'-6"	#7	7 1/2"	9'-2"	#5	9"	12'-6"	18"	26	112,094	1.063		
42			8'	64	11"	12"	6"	9'-11"	8'-8"	#7	7 1/2"	9'-4"	#5	9"	13'-6"	18"	26	115,963	1.180		
43			3'	24	11 1/2"	12 1/2"	6"	5'-0"	9'-0"	#7	7"	8'-8"	#4	9"	8'-7"	18"	20	89,384	0.778		
44			4'	32	11 1/2"	12 1/2"	6"	6'-0"	9'-0"	#7	7"	8'-8"	#4	9"	9'-7"	18"	22	92,502	0.815		
45			5'	40	11 1/2"	12 1/2"	6"	7'-0"	9'-2"	#7	7"	8'-10"	#5	9"	10'-7"	18"	24	107,371	0.895		
46	16'	8'	6'	48	11 1/2"	12 1/2"	6"	8'-0"	9'-4"	#7	7"	9'-0"	#5	9"	11'-7"	18"	24	111,318	0.988		
47			7'	56	11 1/2"	12 1/2"	6"	9'-0"	9'-6"	#7	7"	9'-2"	#5	9"	12'-7"	18"	26	126,806	1.210		
48			8'	64	11 1/2"	12 1/2"	6"	10'-0"	9'-8"	#7	7"	9'-4"	#5	9"	13'-0"	18"	26	120,553	1.210		
49			3'	24	12"	13"	6"	5'-1"	9'-0"	#7	7"	8'-8"	#4	9"	8'-8"	18"	20	89,524	0.808		
50	18'	8'	4'	32	12"	13"	6"	6'-1"	9'-2"	#7	7"	8'-10"	#4	9"	9'-8"	18"	22	93,619	0.869		
51			5'	40	12"	13"	6"	7'-1"	9'-4"	#7	7"	9'-0"	#4	9"	10'-8"	18"	24	98,106	0.967		

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# DESIGN DATA TABLE

**STORM SEWER**  
 SPECIFICATION NO. 611  
 CB-04 PAGE 149

DES. NO.	FILL	SPAN	HEIGHT	AREA SQ. FT.	DIMENSIONS					REINFORCING STEEL						QUANTITIES PER LINEAR FOOT OF BARREL				
					T1	T1+1'	T2	V	P	A BARS		B BARS		C BARS		STEEL	CONC.			
					SIZE	LGTH	SPAC	SIZE	LGTH	SPAC	SIZE	LGTH	SPAC	SIZE	LGTH	SPAC	NO.	NO.	NO.	NO.
52			6'	48	12"	13"	9"	8'-1"	9'-6"	#7	7"	9'-2"	#5	9"	9'-2"	#4	18"	24	112,720	1,066
53	18'	8'	7'	56	12"	13"	10"	9'-1"	9'-8"	#7	7"	9'-4"	#5	9"	9'-4"	#4	18"	26	118,006	1,178
54			8'	64	12"	13"	11"	10'-1"	9'-10"	#7	7"	9'-6"	#5	9"	9'-6"	#4	18"	26	121,856	1,502
55			3'	24	12 1/2"	13 1/2"	6"	5'-2"	9'-0"	#7	6 1/2"	8'-8"	#5	9"	8'-9"	#4	18"	20	103,105	0,833
56	20'	8'	4'	32	12 1/2"	13 1/2"	7"	6'-2"	9'-2"	#7	6 1/2"	8'-10"	#5	9"	9'-9"	#4	18"	22	108,480	0,908
57			5'	40	12 1/2"	13 1/2"	8"	7'-2"	9'-4"	#7	6 1/2"	9'-0"	#5	9"	10'-9"	#4	18"	24	113,856	0,998
58			6'	48	12 1/2"	13 1/2"	9"	8'-2"	9'-8"	#7	6 1/2"	9'-2"	#5	9"	11'-9"	#4	18"	24	117,895	1,096
59			7'	56	12 1/2"	13 1/2"	10"	9'-2"	9'-8"	#7	6 1/2"	9'-4"	#5	9"	12'-2 1/2"	#4	18"	26	123,271	1,208
60			8'	64	12 1/2"	13 1/2"	11"	10'-2"	9'-10"	#7	6 1/2"	9'-8"	#5	9"	13'-9"	#4	18"	28	127,308	1,332
61			4'	40	12"	13"	8"	6'-1"	11'-4"	#7	6 1/2"	11'-0"	#4	9"	10'-8"	#4	18"	24	118,031	1,072
62			5'	50	12"	13"	8"	7'-1"	11'-4"	#7	6 1/2"	11'-0"	#4	9"	11'-8"	#4	18"	26	121,168	1,121
63			6'	60	12"	13"	8"	8'-1"	11'-4"	#7	6 1/2"	11'-0"	#4	9"	12'-8"	#4	18"	28	122,951	1,171
64	2'-10"	10'	7'	70	12"	13"	8"	9'-1"	11'-6"	#7	6 1/2"	11'-2"	#4	9"	13'-8"	#4	18"	28	127,323	1,276
65			8'	80	12"	13"	10"	10'-1"	11'-8"	#7	6 1/2"	11'-4"	#4	9"	14'-8"	#4	18"	30	131,898	1,384
66			9'	90	12"	13"	10"	11'-1"	11'-8"	#7	6 1/2"	11'-4"	#5	9"	15'-8"	#4	18"	30	149,146	1,456
67			10'	100	12"	13"	12"	12'-1"	12'-0"	#7	6 1/2"	11'-8"	#5	9"	16'-8"	#4	18"	32	155,778	1,667
68			4'	40	12 1/2"	13 1/2"	8"	6'-2"	11'-4"	#7	6 1/2"	11'-0"	#4	9"	10'-8"	#4	18"	24	118,198	1,107
69			5'	50	12 1/2"	13 1/2"	8"	7'-2"	11'-4"	#7	6 1/2"	11'-0"	#4	9"	11'-9"	#4	18"	26	121,317	1,156
70			6'	60	12 1/2"	13 1/2"	8"	8'-2"	11'-4"	#7	6 1/2"	11'-0"	#4	9"	12'-9"	#4	18"	28	123,089	1,206
71	12'	10'	7'	70	12 1/2"	13 1/2"	9"	9'-2"	11'-6"	#7	6 1/2"	11'-2"	#4	9"	13'-9"	#4	18"	28	127,471	1,312
72			8'	80	12 1/2"	13 1/2"	10"	10'-2"	11'-8"	#7	6 1/2"	11'-4"	#5	9"	14'-9"	#4	18"	30	146,598	1,430
73			9'	90	12 1/2"	13 1/2"	10"	11'-2"	11'-8"	#7	6 1/2"	11'-4"	#5	9"	15'-9"	#4	18"	30	149,377	1,492
74			10'	100	12 1/2"	13 1/2"	12"	12'-2"	12'-0"	#7	6 1/2"	11'-8"	#6	9"	16'-9"	#4	18"	32	176,511	1,704
75			4'	40	13 1/2"	14 1/2"	8"	6'-4"	11'-4"	#7	6"	11'-0"	#4	9"	10'-11"	#4	18"	24	125,415	1,177
76			5'	50	13 1/2"	14 1/2"	8"	7'-4"	11'-4"	#7	6"	11'-0"	#4	9"	11'-11"	#4	18"	26	128,532	1,226
77			6'	60	13 1/2"	14 1/2"	8"	8'-4"	11'-4"	#7	6"	11'-0"	#4	9"	12'-11"	#4	18"	28	130,313	1,276
78	14'	10'	7'	70	13 1/2"	14 1/2"	9"	9'-4"	11'-6"	#7	6"	11'-2"	#4	9"	13'-11"	#4	18"	28	134,792	1,383
79			8'	80	13 1/2"	14 1/2"	10"	10'-4"	11'-8"	#7	6"	11'-4"	#5	9"	14'-11"	#4	18"	30	154,191	1,502
80			9'	90	13 1/2"	14 1/2"	11"	11'-4"	11'-10"	#7	6"	11'-6"	#5	9"	15'-11"	#4	18"	30	158,334	1,634
81			10'	100	13 1/2"	14 1/2"	12"	12'-4"	12'-0"	#7	6"	11'-8"	#6	9"	16'-11"	#4	18"	32	184,520	1,778
82			4'	40	14"	15"	8"	6'-5"	11'-4"	#8	7 1/2"	11'-0"	#4	9"	11'-0"	#4	18"	24	129,611	1,212
83			5'	50	14"	15"	8"	7'-5"	11'-4"	#8	7 1/2"	11'-0"	#4	9"	12'-0"	#4	18"	26	132,728	1,261
84			6'	60	14"	15"	8"	8'-5"	11'-4"	#8	7 1/2"	11'-0"	#4	9"	13'-0"	#4	18"	28	134,509	1,311
85	16'	10'	7'	70	14"	15"	10"	9'-5"	11'-8"	#8	7 1/2"	11'-4"	#5	9"	14'-0"	#4	18"	28	154,474	1,476
86			8'	80	14"	15"	10"	10'-5"	11'-8"	#8	7 1/2"	11'-4"	#5	9"	15'-0"	#4	18"	30	158,590	1,538
87			9'	90	14"	15"	11"	10'-5"	11'-10"	#8	7 1/2"	11'-6"	#6	9"	16'-0"	#4	18"	30	182,361	1,870
88			10'	100	14"	15"	12"	12'-5"	12'-0"	#8	7 1/2"	11'-8"	#6	9"	17'-0"	#4	18"	32	189,150	1,815
89			4'	40	15"	16"	8"	6'-7"	11'-4"	#8	7 1/2"	11'-0"	#4	9"	11'-2"	#4	18"	24	129,908	1,282
90			5'	50	15"	16"	8"	7'-7"	11'-4"	#8	7 1/2"	11'-0"	#4	9"	12'-2"	#4	18"	26	133,025	1,331
91			6'	60	15"	16"	8"	8'-7"	11'-4"	#8	7 1/2"	11'-0"	#5	9"	13'-2"	#4	18"	28	147,974	1,381
92	18'	10'	7'	70	15"	16"	10"	9'-7"	11'-8"	#8	7 1/2"	11'-4"	#5	9"	14'-2"	#4	18"	28	154,938	1,548
93			8'	80	15"	16"	11"	10'-7"	11'-10"	#8	7 1/2"	11'-6"	#5	9"	15'-2"	#4	18"	30	160,479	1,675
94			9'	90	15"	16"	11"	11'-7"	11'-10"	#8	7 1/2"	11'-6"	#6	9"	16'-2"	#4	18"	30	183,050	1,743
95			10'	100	15"	16"	12"	12'-7"	12'-0"	#8	7 1/2"	11'-8"	#6	9"	17'-2"	#4	18"	32	198,411	1,889
96			4'	40	15 1/2"	16 1/2"	8"	6'-8"	11'-4"	#8	7"	11'-0"	#4	9"	11'-3"	#4	18"	24	136,759	1,317
97			5'	50	15 1/2"	16 1/2"	8"	7'-8"	11'-4"	#8	7"	11'-0"	#5	9"	12'-3"	#4	18"	26	152,156	1,366
98			6'	60	15 1/2"	16 1/2"	8"	8'-8"	11'-4"	#8	7"	11'-0"	#5	9"	13'-3"	#4	18"	28	154,918	1,416
99	20'	10'	7'	70	15 1/2"	16 1/2"	10"	9'-9"	11'-8"	#8	7"	11'-4"	#6	9"	14'-3"	#4	18"	28	179,528	1,584
100			8'	80	15 1/2"	16 1/2"	11"	10'-8"	11'-10"	#8	7"	11'-6"	#6	9"	15'-3"	#4	18"	30	186,395	1,712
101			9'	90	15 1/2"	16 1/2"	11"	11'-8"	11'-10"	#8	7"	11'-6"	#6	9"	16'-3"	#4	18"	30	222,944	1,780
102			10'	100	15 1/2"	16 1/2"	12"	12'-8"	12'-0"	#8	7"	11'-8"	#6	9"	17'-3"	#4	18"	32	231,814	1,926

DESIGN DATA  
 CONCRETE f<sub>c</sub>=1000 PSI  
 REINFORCING STEEL f<sub>s</sub>=20000 PSI  
 LOADING H2O - 516 AND PPM 20-4

## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
  2. TRENCH EXCAVATION WILL NOT BE REQUIRED FOR PIPE INSTALLATIONS ON SIDE DRAINS UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  3. TRENCH EXCAVATION WILL BE PAID FOR ON PIPE UNDERDRAIN.
  4. TRENCHING REQUIREMENTS FOR DEPTHS OVER 5 FEET SHALL BE IN ACCORDANCE WITH, AND DEFINED BY, O.S.H.A. REGULATIONS, TITLE 29 CFR CHAPTER XVII, PART 1926, SUBPART P.
  5. NORMAL BACKFILLING OPERATIONS SHALL FOLLOW BEDDING AND PIPE INSTALLATION AS CLOSELY AS PRACTICAL. IN NO CASE SHALL A PIPE INSTALLATION SUBJECT TO SUDDEN FLOW DEVELOPMENT BE LEFT WITHOUT SUFFICIENT BACKFILL TO RESTRAIN THE CONDUIT AND PREVENT JOINT SEPARATION AND/OR PIPING SCOUR. PHYSICALLY RESTRAINING THE CONDUIT MAY BE USED TO AUGMENT OR REPLACE THIS IMMEDIATE BACKFILL REQUIREMENT.
  6. ANY EXCESS EXCAVATION NOT USED FOR BACKFILL WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF, BY HIM, IN A MANNER APPROVED BY THE ENGINEER.
  7. BEDDING MATERIAL SHALL BE PLACED IN 6" LAYERS AND COMPACTED TO THE SPECIFIED DENSITY USING HAND OPERATED EQUIPMENT ONLY.
  8. INSTALLATION OF FLEXIBLE PIPE SHALL CONFORM TO SECTION 26.4.2.4 OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
  9. JOINTS IN METAL PIPES SHALL CONFORM TO SECTION 26.4.2.4 OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. SHALL USE A COUPLING BANDS (NOT LESS THAN 12" WIDE), MADE FROM THE SAME MATERIAL AS THE PIPE AND DRAWN TOGETHER BY A 1/2" DIAMETER GALVANIZED BOLT TYPE FASTENER. COUPLING BANDS SHALL BE FORMED WITH TWO CORRUGATIONS THAT ARE SPACED FOR SEATING IN SECOND CORRUGATION OF EACH RE-ROLLED PIPE END WHILE LIMITING THE SPACE BETWEEN PIPE ENDS TO 1/2" OR LESS. THE COUPLING SYSTEM SHALL UTILIZE TWO NEOPRENE O-RING GASKETS TO BE PLACED IN THE FIRST CORRUGATION OF EACH PIPE END, MAKING THE SYSTEM SOILTIGHT. O-RING GASKETS ARE NOT REQUIRED FOR SIDE DRAIN APPLICATIONS UNLESS OTHERWISE SPECIFIED ON THE PLANS. IF A WATERTIGHT JOINT IS SPECIFIED ON ON THE PLANS, A 12" WIDE BY 3/4" THICK NEOPRENE SLEEVE GASKET MEETING ASTM D-1056 REQUIREMENTS SHALL BE USED.
  10. JOINTS IN CORRUGATED POLETHYLENE PIPES SHALL CONSIST OF A GASKETED SYSTEM WHICH CAN PASS MINIMUM OF 2 PSI HYDROSTATIC TEST WITHOUT LEAKAGE AND CONFORM TO AASHTO M294 ▲ & SECTION 26.4.2.4 OF AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES. GASKET MATERIAL SHALL CONFORM TO EITHER ASTM D1056 OR ASTM F477 REQUIREMENTS. SIDE DRAINS ARE EXCLUDED FROM THE LEAKAGE RESISTANCE REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
  11. TYPE C POLYETHYLENE PIPE SHALL BE USED ONLY IN SIDE-DRAIN & SLIPLINING APPLICATIONS.
  12. ALUMINIZED TYPE II & POLYMER COATED METAL PIPE ARE INTERCHANGEABLE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  13. UNCOATED GALVANIZED STEEL PIPE SHALL BE USED ONLY IN SIDE DRAIN AND TEMPORARY APPLICATIONS.
- ▲ SPLIT COLLAR COUPLERS ARE NOT APPROVED FOR USE IN ALL CORRUGATED POLYETHYLENE PIPE INSTALLATIONS.

CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 JULY 23, 1988 FOR ALL WORK

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GENERAL NOTES**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 FP-01 PAGE 150

**TABLE OF TRENCHING AND  
STANDARD BEDDING MATERIAL QUANTITIES**

	PIPE DIAM. OR DESIGN EQUIV.	SINGLE PIPE INSTALLATION			DOUBLE PIPE INSTALLATION		TRIPLE PIPE INSTALLATION		CLEAR SPACE BETWEEN PIPES
		H	W	STANDARD BEDDING MATERIAL	W	STANDARD BEDDING MATERIAL	W	STANDARD BEDDING MATERIAL	
		IN.	FT.	FT.	C.Y./L.F.	FT.	C.Y./L.F.	FT.	
ROUND PIPE	18	3.10	3.20	0.28	6.10	0.52	9.00	1.00	14
	24	3.60	4.00	0.39	7.70	0.73	11.40	1.50	17
	30	4.20	4.80	0.51	9.30	0.97	13.80	2.15	20
	36	4.75	5.50	0.63	10.80	1.23	16.20	2.85	23
	42	5.30	7.00	0.92	13.20	1.67	19.30	3.80	26
	48	6.20	7.50	1.03	14.75	2.00	21.70	4.70	29
	54	6.20	8.00	1.20	15.30	2.20	22.70	5.10	32
	60	6.75	9.50	1.60	17.60	2.75	25.90	6.30	35
	66	7.20	10.00	1.70	18.80	3.10	27.70	7.35	38
METAL ARCH PIPE	18	2.80	3.20	0.27	6.20	0.52	9.20	0.77	14
	24	3.25	4.00	0.38	7.83	0.74	11.67	1.09	17
	30	3.60	5.50	0.57	10.20	1.03	14.87	1.49	20
	36	4.00	6.25	0.69	11.75	1.27	17.25	1.84	23
	42	4.40	7.00	0.82	13.33	1.53	19.66	2.24	26
	48	4.80	8.10	1.02	15.35	1.88	22.60	2.75	29
	54	5.25	9.50	1.32	17.58	2.36	25.66	3.40	32
	60	5.60	10.00	1.40	18.92	2.62	27.84	3.82	35
66	6.00	10.90	1.63	20.65	3.00	30.40	4.39	38	

**TABLE OF FILL HEIGHTS**

	PIPE SIZE (IN.)		MINIMUM COVER OVER TOP OF PIPE (BUOYANCY) ( IN. )	MAXIMUM COVER (FT.)		MINIMUM METAL PIPE GAGE REQUIREMENTS	
	ROUND	ARCH		POLYETHYLENE	METAL	UNDER PAVEMENT	ALL OTHERS
	ROUND PIPE	18		21 X 15	15	10	REFER TO RDY. STANDARD FHTMP-3 ODOT
24		28 X 20	20	10	14		
30		35 X 24	25	10	14		
36		42 X 29	30	10	14		
42		49 X 33	35	10	12		
48		57 X 38	40	10	12		
54		64 X 43	45	N/A	12		
60		71 X 47	50	N/A	10		
66		77 X 52	55	N/A	10		

● UNDER PAVEMENT IS DEFINED TO INCLUDE ALL P.C. OR A.C. SURFACING UNDER MAILINE TRAFFIC AND MAJOR STREET RETURNS. A MINIMUM PIPE GAGE OF 16 MAY BE USED FOR INSTALLATION REQUIRING 30 INCH EQUIVALENT ROUND CONDUITS (MAX.) AND LIMITED TO LOW VOLUME COUNTY OR OFF-SYSTEM ROADS, MINOR STREET RETURNS, DRIVEWAYS OR TEMPORARY DETOURS AS APPROVED BY THE ENGINEER.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
613.06	DRAINAGE PIPE	L. F.
613.06(S)	TRENCH EXCAVATION	C. Y.
613.06(T)	STANDARD BEDDING MATERIAL	C. Y.

☐ SEE AVAILABLE PIPE OPTIONS IN SECTION 611 OF STANDARD SPECIFICATIONS.

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**DESIGN DATA TABLES**

**STORM SEWER**  
SPECIFICATION NO. 611  
FP-02 PAGE 151

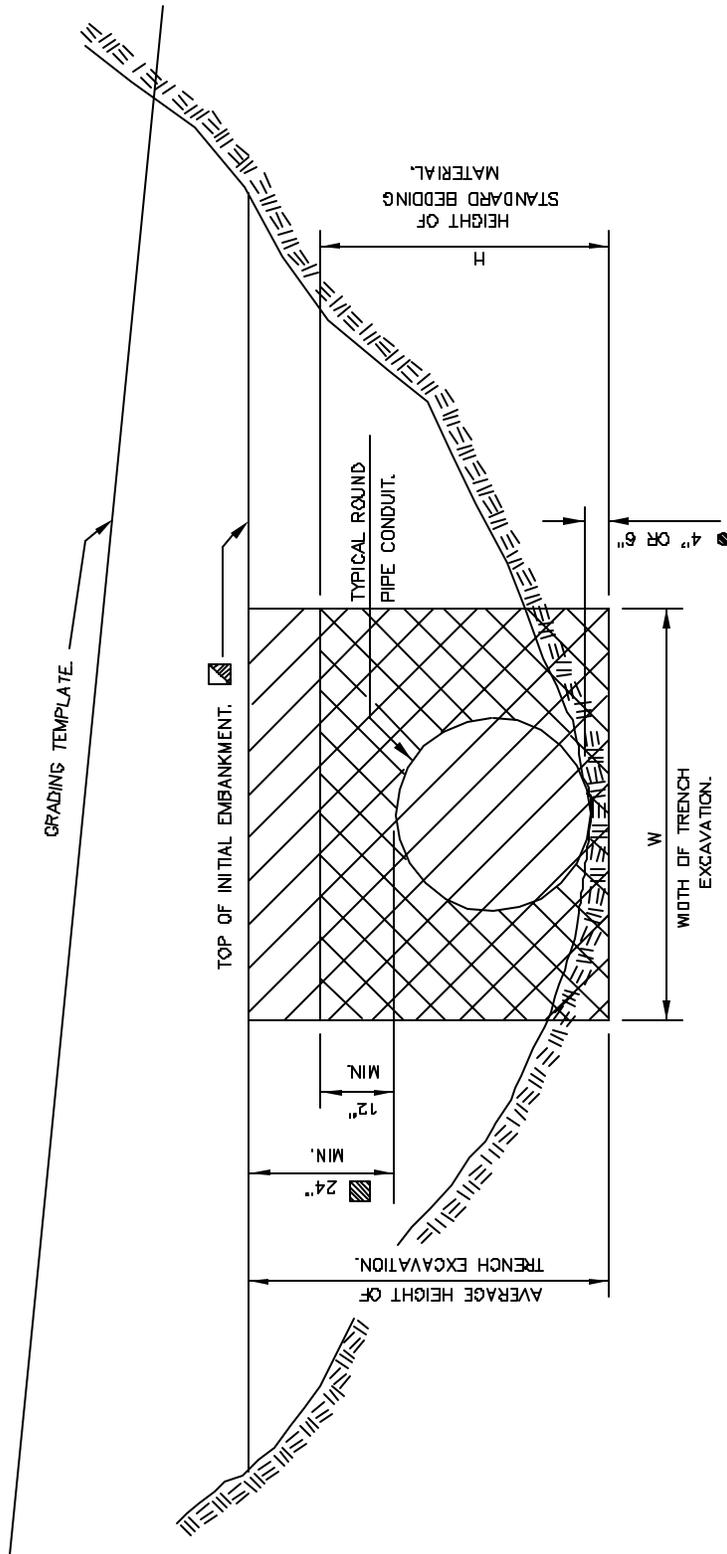
STANDARD SPECIFICATIONS FOR CONSTRUCTION  
 JULY 23, 1988 5:00 PM WDR:ER

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

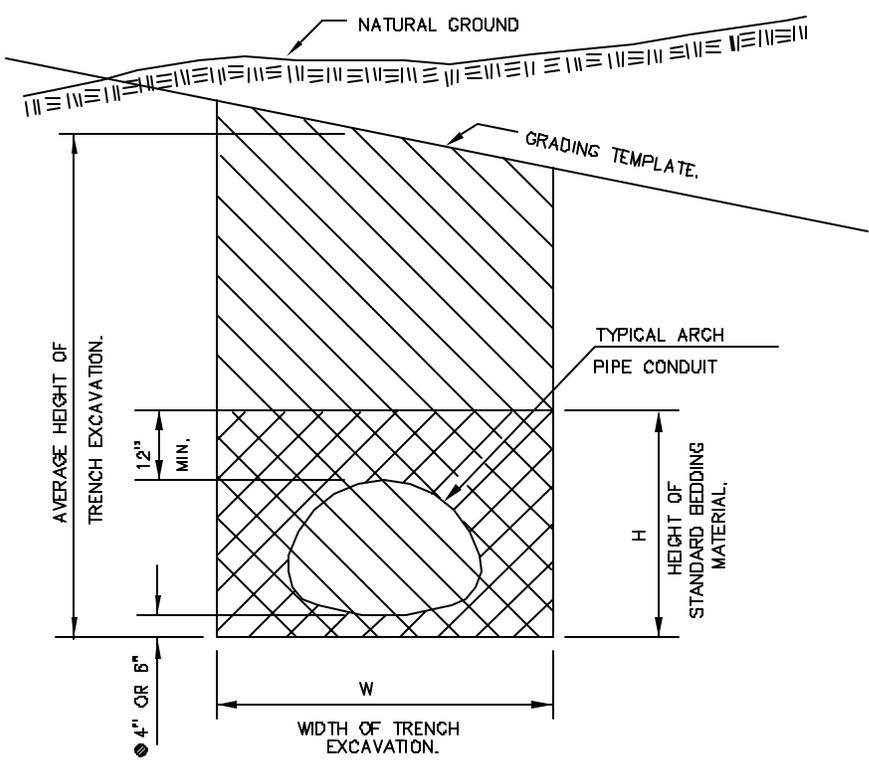
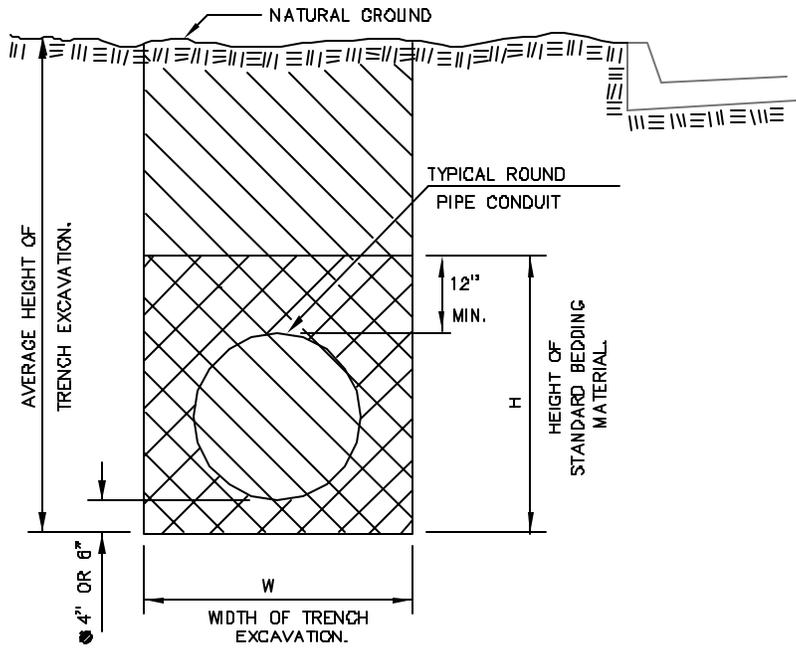
**EMBANKMENT  
 SECTIONS**

**STORM SEWER**  
 SPECIFICATION NO. 611  
 FP-03 PAGE 152



TRENCH EXCAVATION IN EMBANKMENT SECTIONS

-  TO BE COMPACTED IN ACCORDANCE WITH SUBSECTION 202.04(C) OF THE CURRENT STANDARD SPECIFICATIONS.
-  LIMITS OF STANDARD BEDDING MATERIAL. QUANTITIES FOR BEDDING MATERIAL DO NOT INCLUDE THE SPACE WITHIN AND BOUNDED BY THE OUTER SURFACE OF THE PIPE CONDUIT.
-  LIMITS OF TRENCH EXCAVATION.



TRENCH EXCAVATION IN CUT SECTIONS

CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 JULY 26, 1988 FOR ALL WORKS

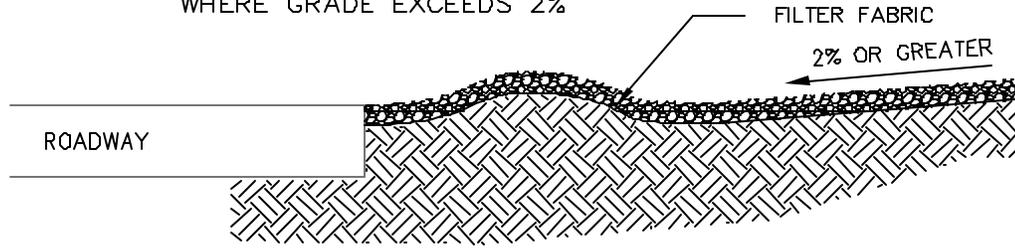
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

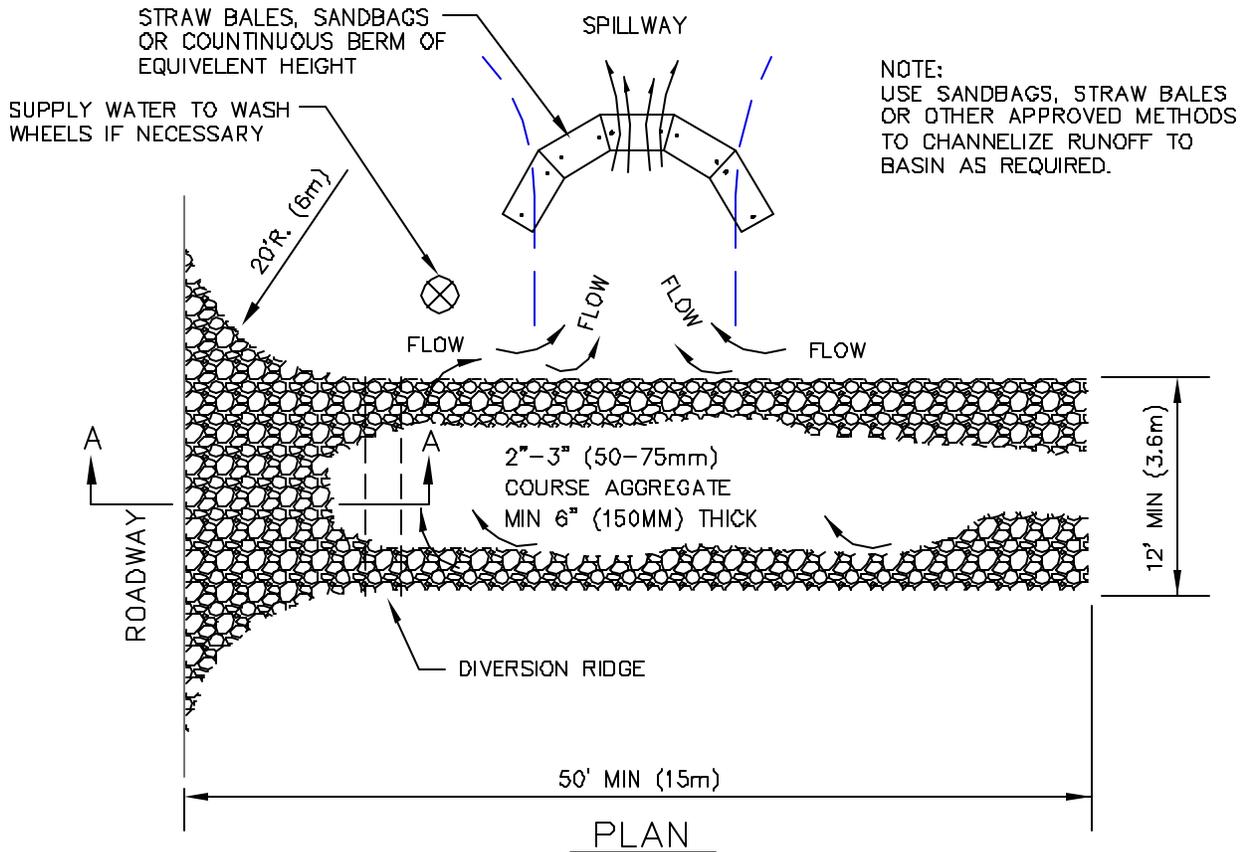
CUT SECTIONS

**STORM SEWER**  
 SPECIFICATION NO. 611  
 FP-04 PAGE 153

DIVERSION RIDGE REQUIRED  
WHERE GRADE EXCEEDS 2%



SECTION A-A



NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

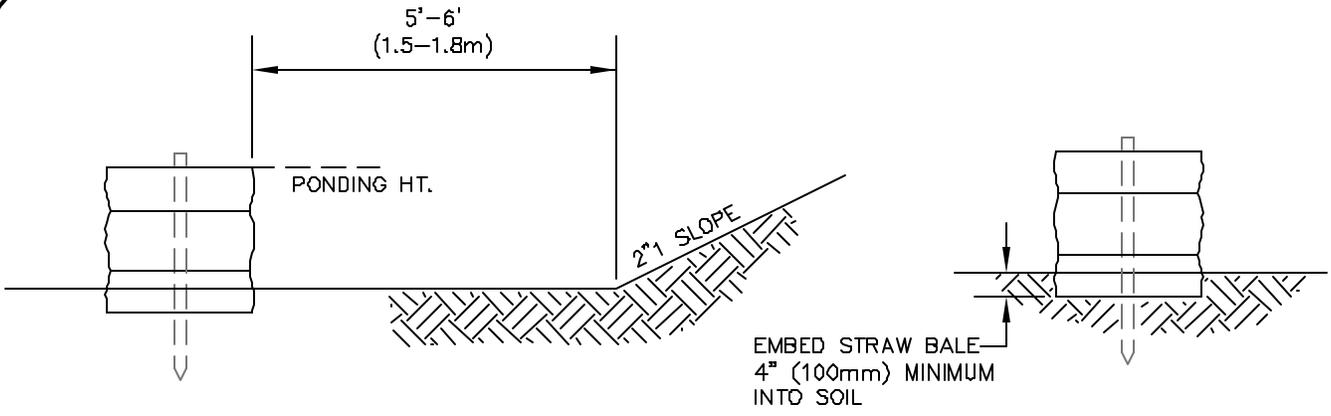
CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS  
 JAN. 26, 1988 FOR ALL WORK

REVISIONS	NO.	DATE	ITEM CHANGED

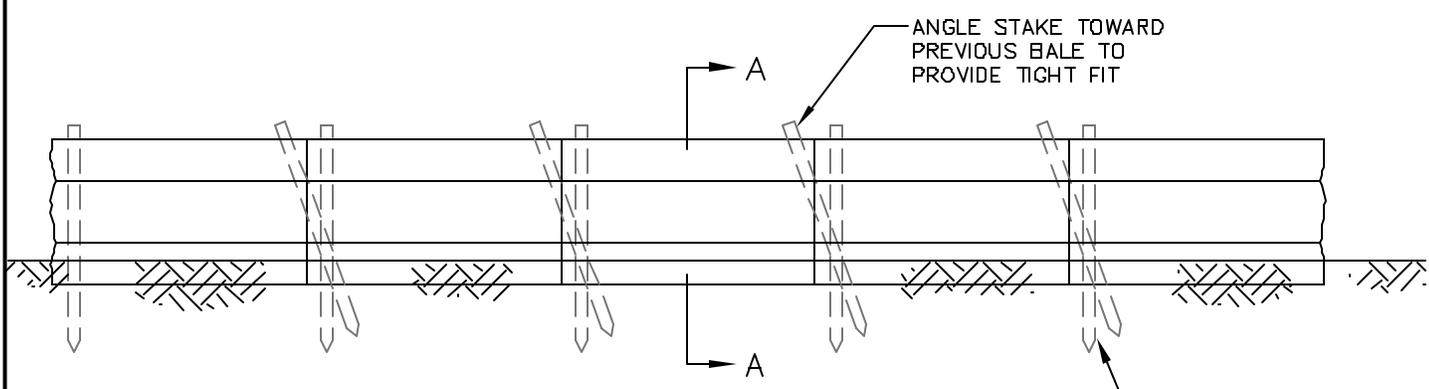
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TEMP. GRAVEL  
 CONSTRUCTION ENTRANCE**

**STORM SEWER**  
 SPECIFICATION NO.  
 EC-01 PAGE 154

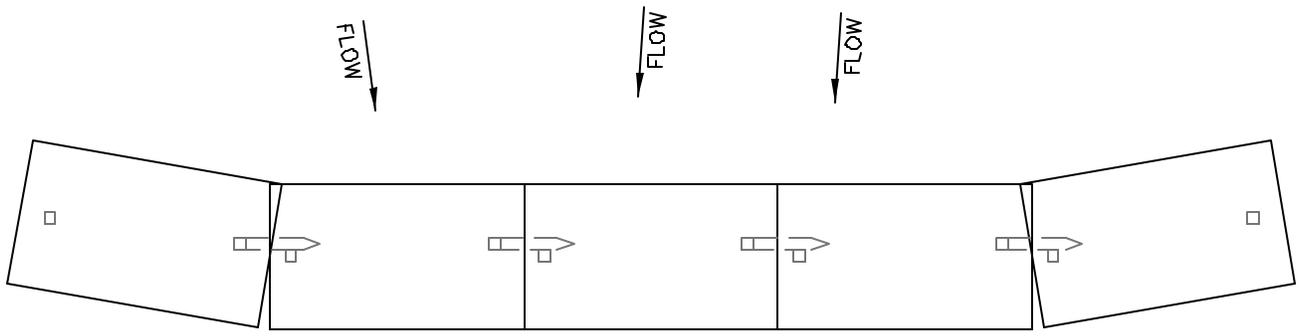


SECTION A-A



SECTION B-B

WOODEN STAKE OR REBAR DRIVEN THROUGH BALE



PLAN

- NOTE
1. THE STRAW BALES SHALL BE PLACED ON SLOPE CONTOUR.
  2. BALES TO BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING.
  3. KEY IN BALES TO PREVENT EROSION OR FLOW UNDER BALES.

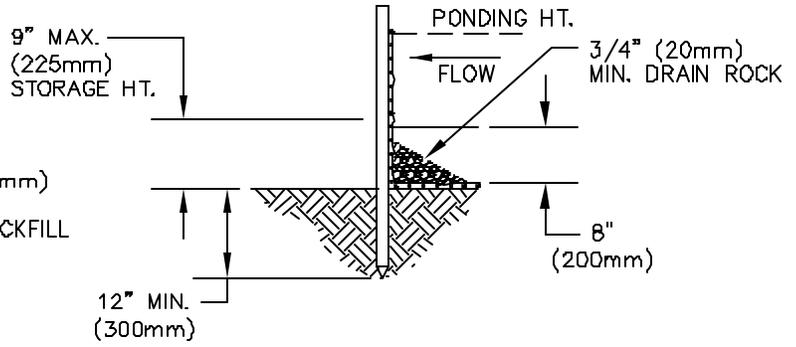
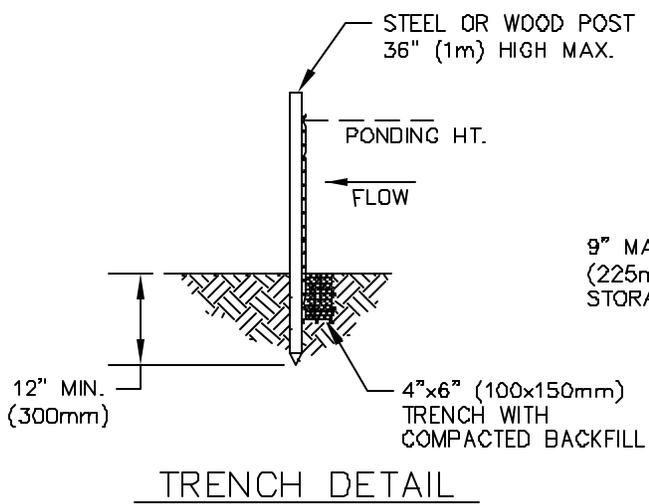
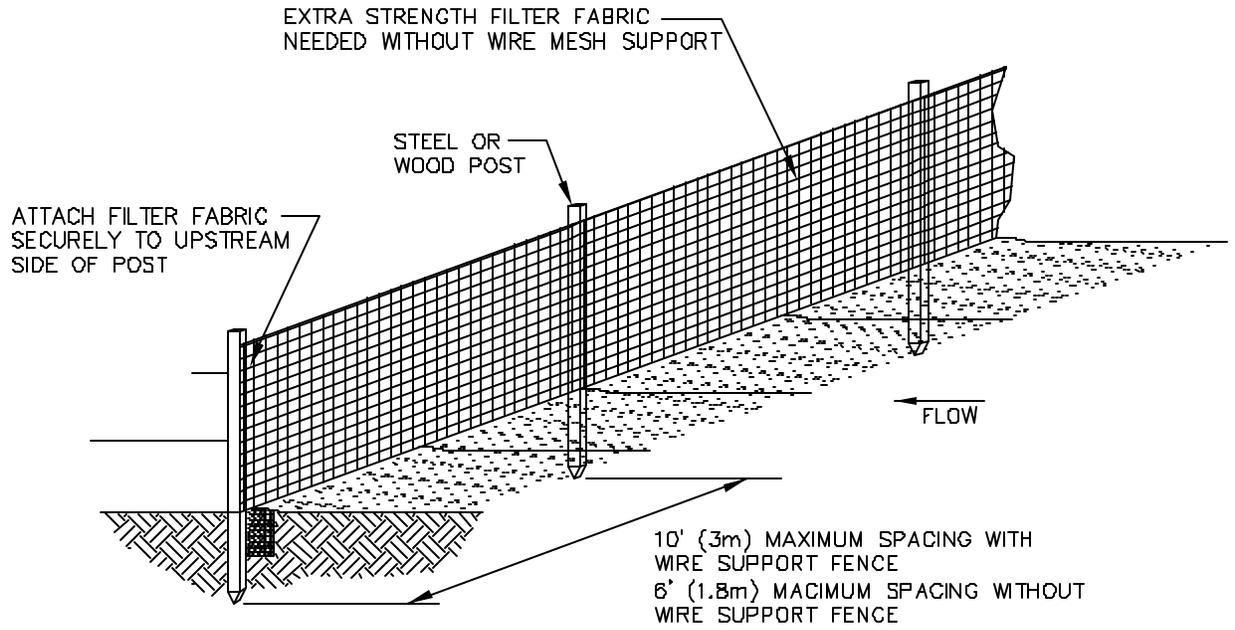
15-STRWBALE DIKE EC-02-02-15  
 FEB. 15, 2015 4:00 PM 10/15/15

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**STRAW BALE  
 DIKE**

**STORM SEWER**  
 SPECIFICATION NO.  
 EC-02 PAGE 155



**NOTE**

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

**SILT FENCE**

**STORM SEWER**  
 SPECIFICATION NO.  
 EC-03 PAGE 156

15/STORMWATER CONSTRUCTION DEPARTMENT, 1500 S. GARDEN AVENUE, SUITE 100, EDMOND, OKLAHOMA 73116  
 FEB. 17, 2010 2:00 PM WORKING

## GENERAL NOTES

1. PAVEMENT MARKINGS SHALL BE WHITE REFLECTORIZED PLASTIC UNLESS OTHERWISE SPECIFIED. WHEN THE MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD READ "UP" i.e. THE FIRST WORD SHOULD BE NEAREST THE DRIVER. THE SPACE BETWEEN LINES SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS.
2. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST REVISION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. ON TWO LANE ROADWAYS, ONE EACH RAILROAD SYMBOL SHALL INCLUDE THE "X", "R's", TRANSVERSE LINES, STOP LINE, AND NO PASSING STRIPE.
4. ON MULTI-LANE ROADWAYS, ONE EACH RAILROAD SYMBOL SHALL INCLUDE THE "X", "R's", TRANSVERSE LINES AND STOP LINE FOR EACH APPROACH LANE, AND THE SOLID AND DASHED WHITE LANE LINES AND DOUBLE YELLOW CENTER LINE WITHIN THE PRESCRIBED RAILROAD SYMBOL LIMITS.
5. FOR VARIABLE DIMENSIONS, SEE PLAN SHEET.
6. STOP LINES ARE TO BE PLACED ONLY AT SIGNALIZED INTERSECTIONS AND STOP CONTROLLED APPROACHES.
7. SIGNS R3-9A AND/OR R3-9B SHALL BE USED FOR FIFTH LANE ROADWAY IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST REVISION.
8. MINIMUM AREA OF MARKERS SHALL BE NOT LESS THAN 12.5 SQUARE INCHES.
9. MARKER SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS NOT INTENDED TO SPECIFY ANY PARTICULAR PRODUCT.
10. ALL PAVEMENT MARKERS SHALL BE A NOMINAL SIZE OF 4" WITH A TOLERANCE OF + 1/8".
11. MARKERS SHALL NOT BE PLACED WITHIN 2" OF PAVEMENT JOINTS OR PAVEMENT EDGE.
12. ALL MARKERS SHALL HAVE A THIN UNTEMPERED GLASS COATING BONDED TO THE REFLECTOR FACE TO PROVIDE A DURABLE ABRASION RESISTANT SURFACE.
13. TRADEMARK AND MODEL NO. SHALL BE AN INTEGRAL PART OF THE CASTING.
14. PLACEMENT AND TYPE OF REFLECTOR UNITS SHALL BE AS SHOWN ON O.D.O.T. PM-8.
15. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO MINOR MANUFACTURERS TOLERANCES.

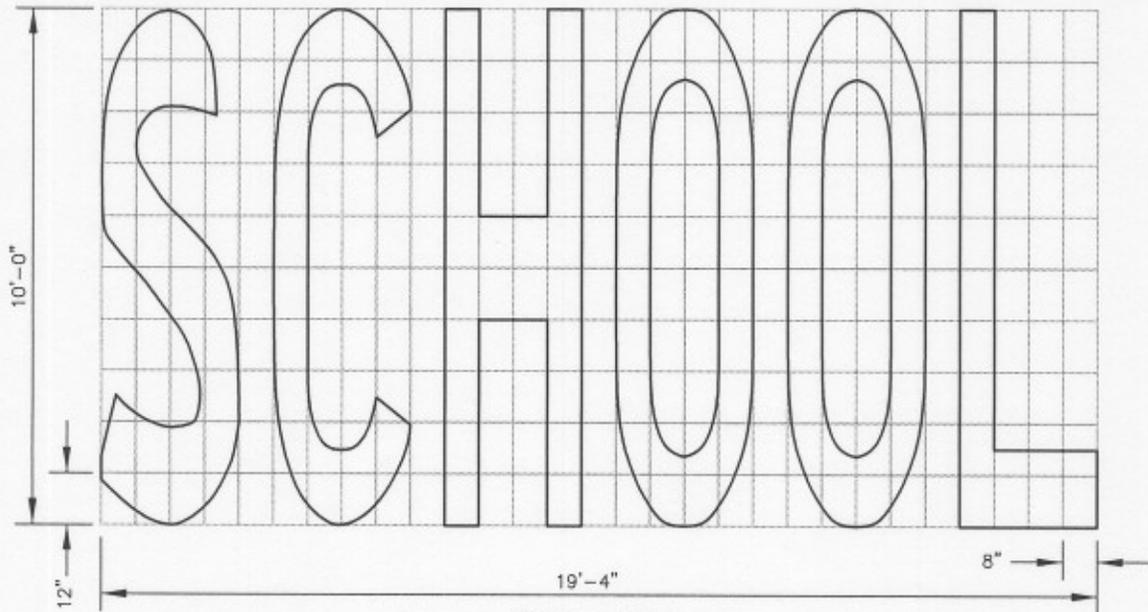
IN SPECIFIED DIMENSIONS UNLESS OTHERWISE NOTED  
 JULY 21, 1988 8:50 AM BROWN

REVISIONS	ND.	DATE	ITEM CHANGED

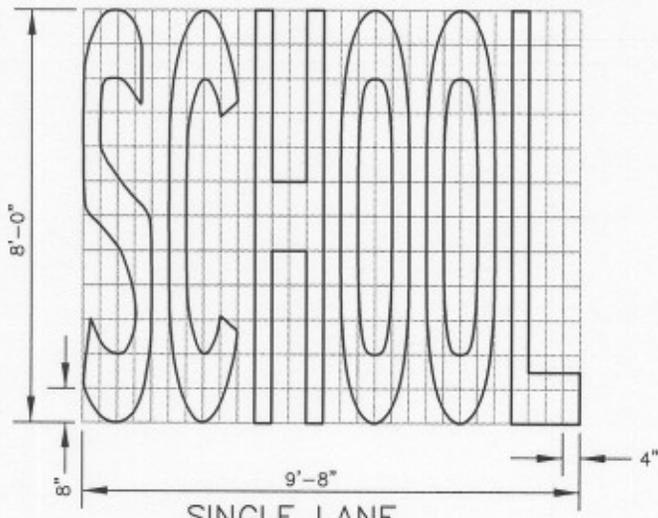
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

GENERAL NOTES

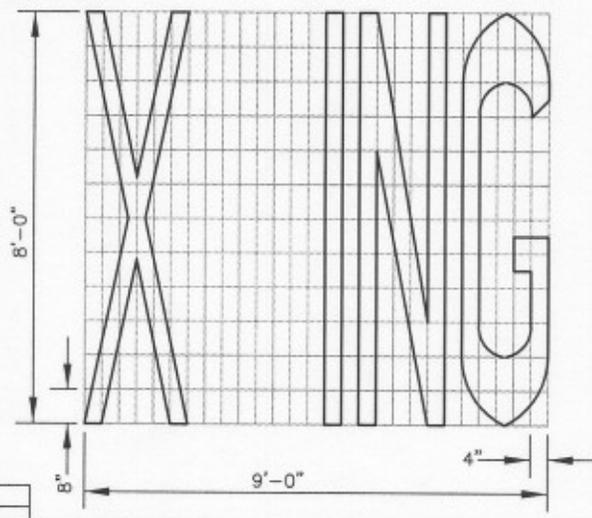
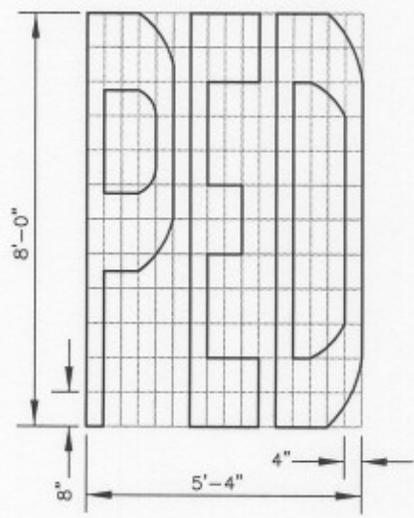
**TRAFFIC**  
 SPECIFICATION NO. B57  
 PM-01 PAGE 166



TWO LANE



SINGLE LANE



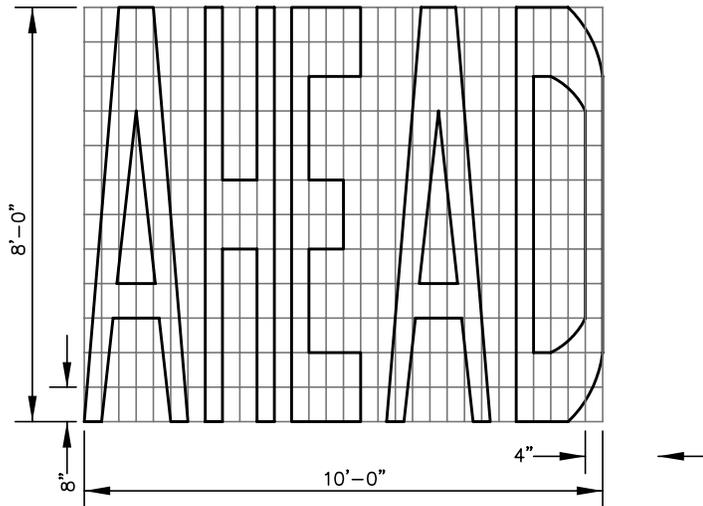
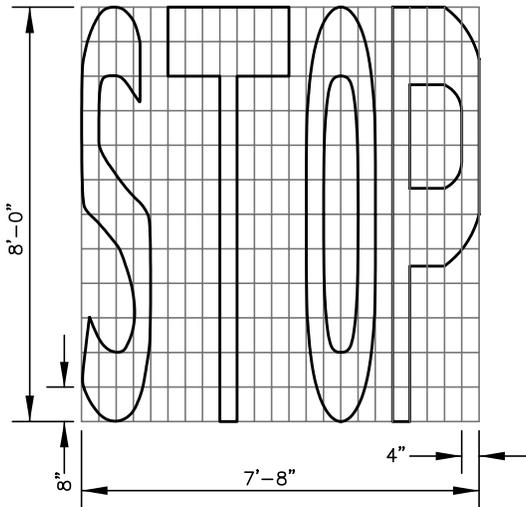
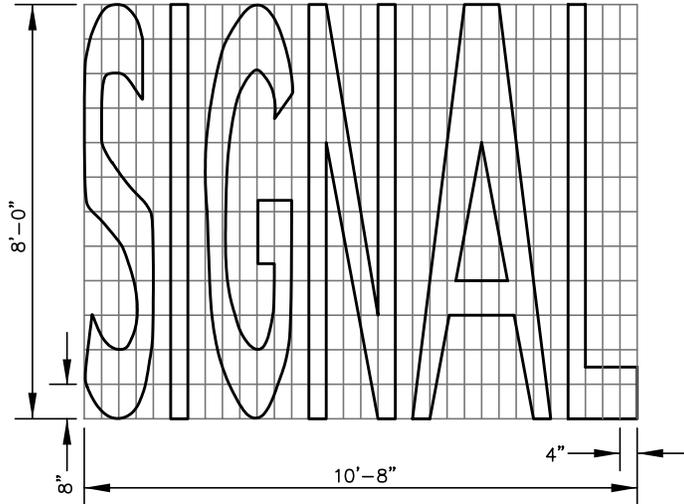
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REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SCHOOL CROSSING**

**TRAFFIC**  
 SPECIFICATION NO. 857  
 PM-02 PAGE 167



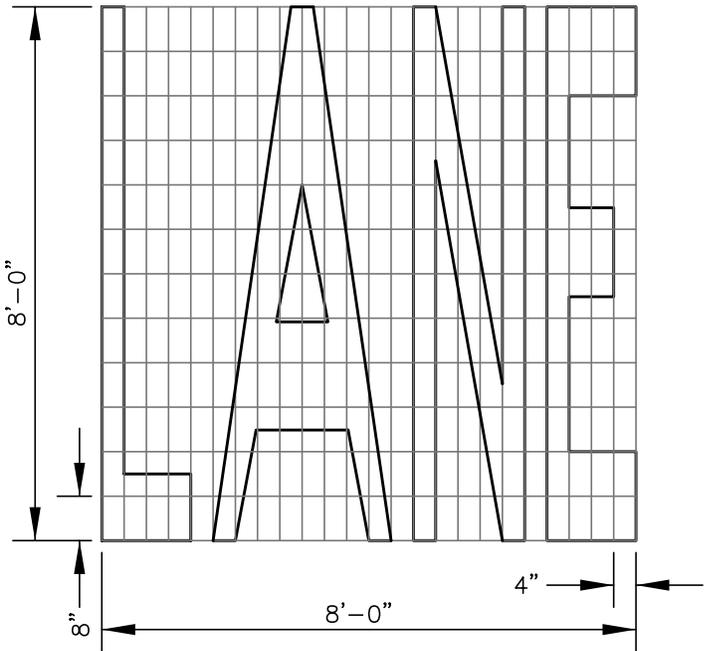
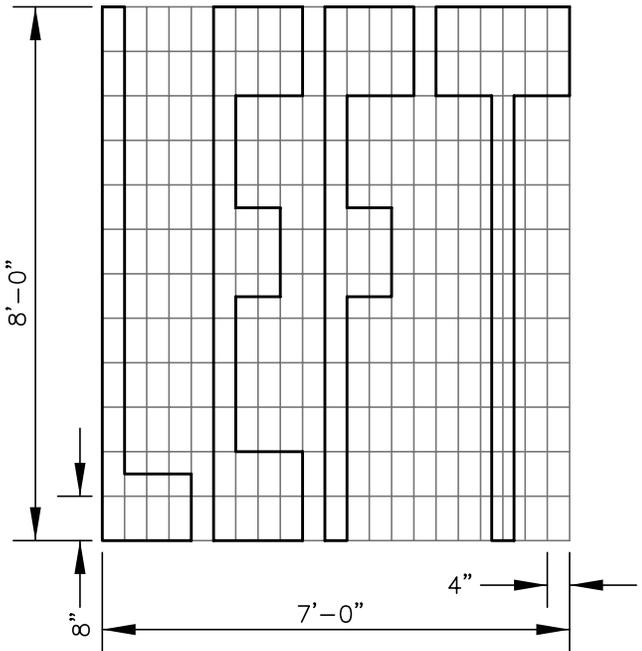
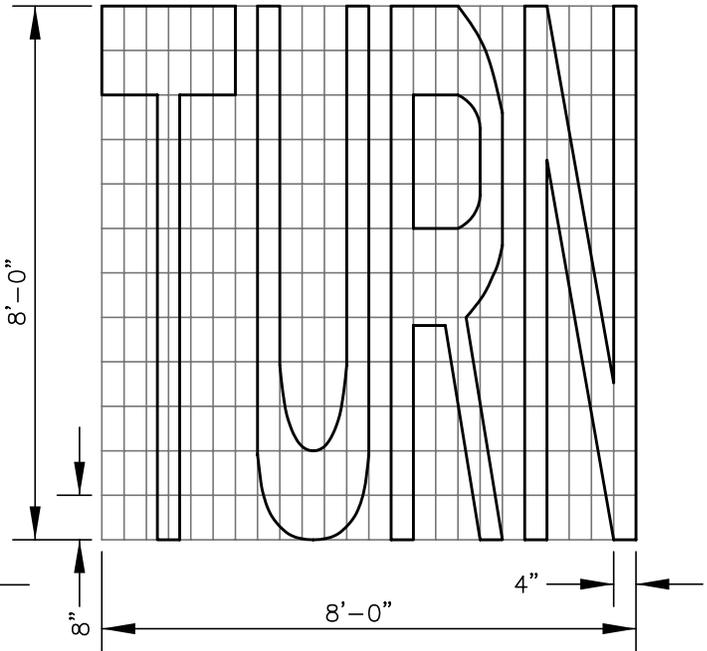
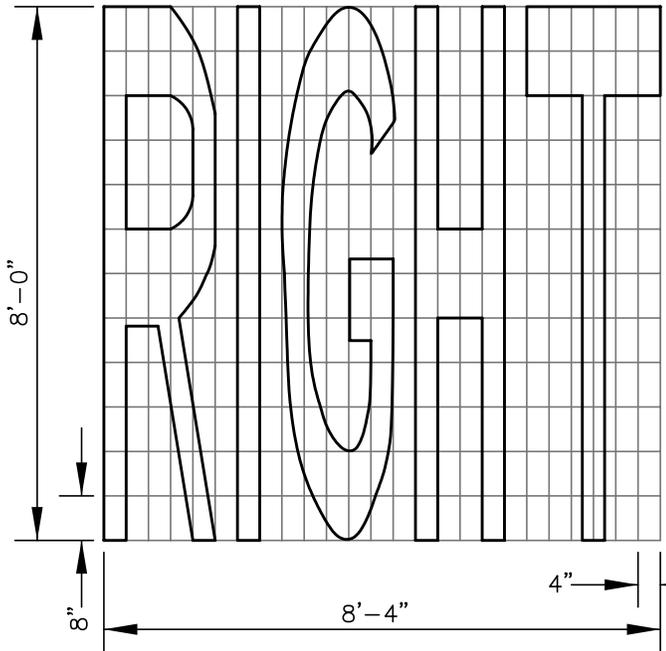
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REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SIGNAL STOP AHEAD**

<b>TRAFFIC</b>	
SPECIFICATION NO. 857	
PM-03	PAGE 168



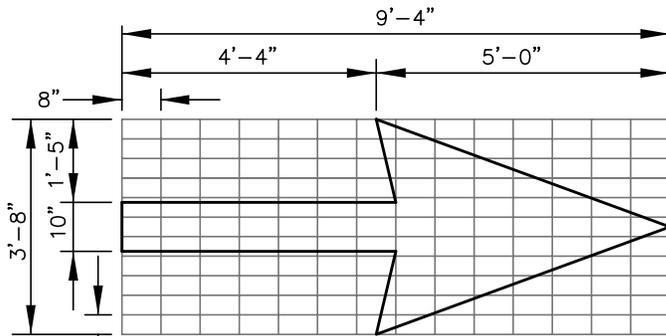
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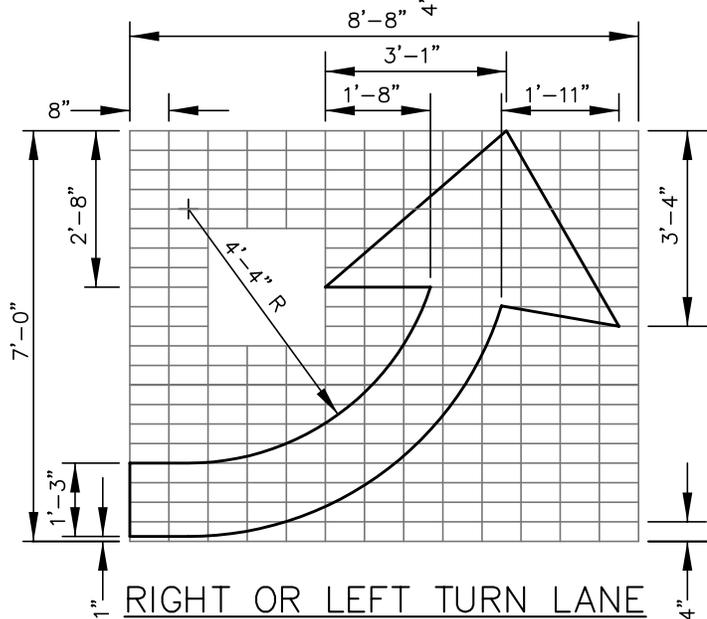
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**RIGHT TURN &  
 LEFT TURN LANE**

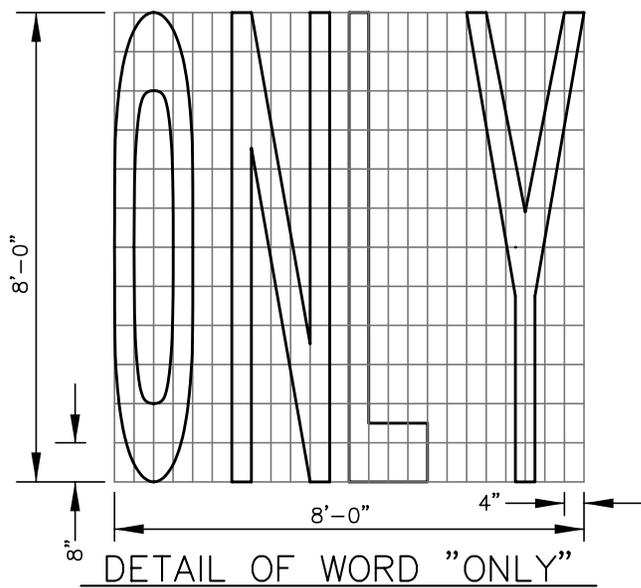
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 SPECIFICATION NO. 857  
 PM-04 PAGE 169



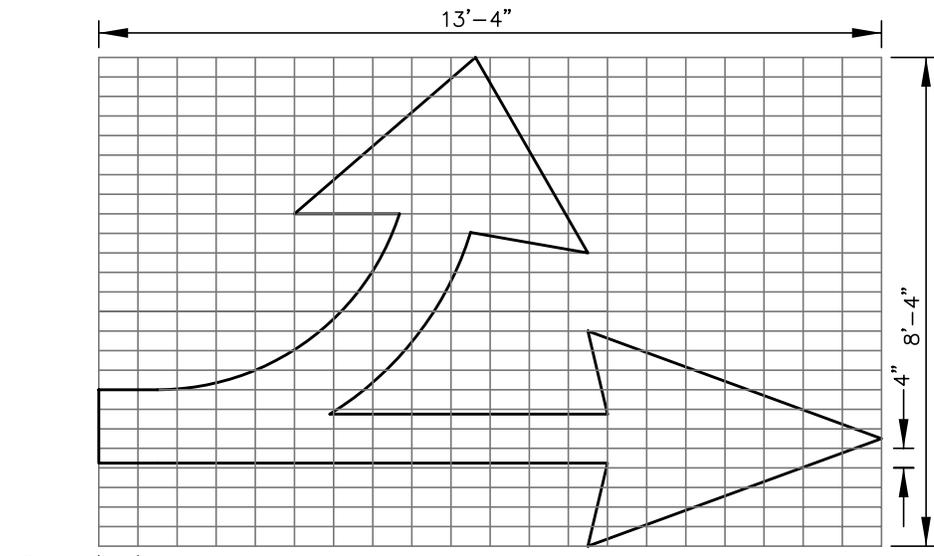
THROUGH LANE



RIGHT OR LEFT TURN LANE



DETAIL OF WORD "ONLY"



RIGHT OR LEFT TURN LANE  
WITH THROUGH LANE

G:\STANDARD\EDMOND\850X11.PM-05.DWG  
 JULY 9, 1998 8:30 AM STONEN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**ARROWS & ONLY**

**TRAFFIC**  
 SPECIFICATION NO. 857  
 PM-05 PAGE 170

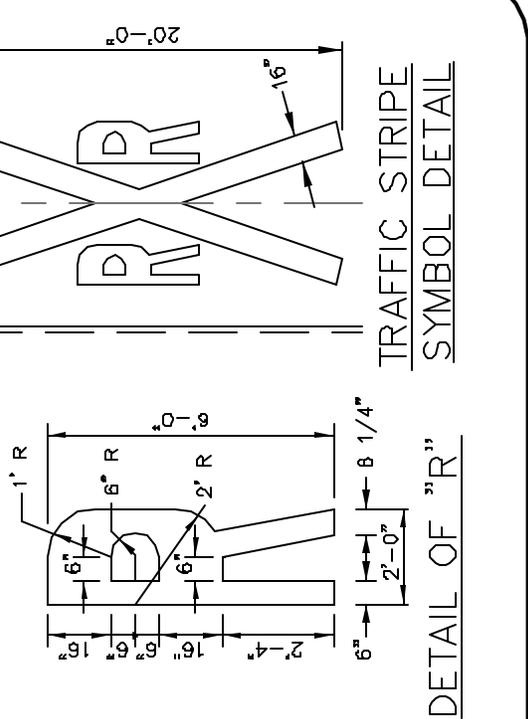
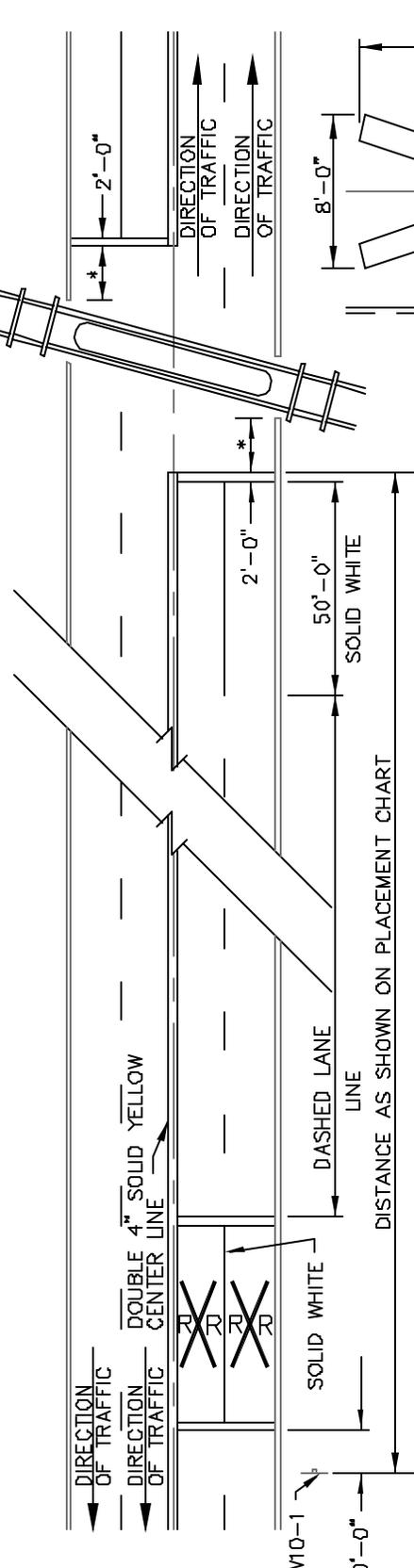
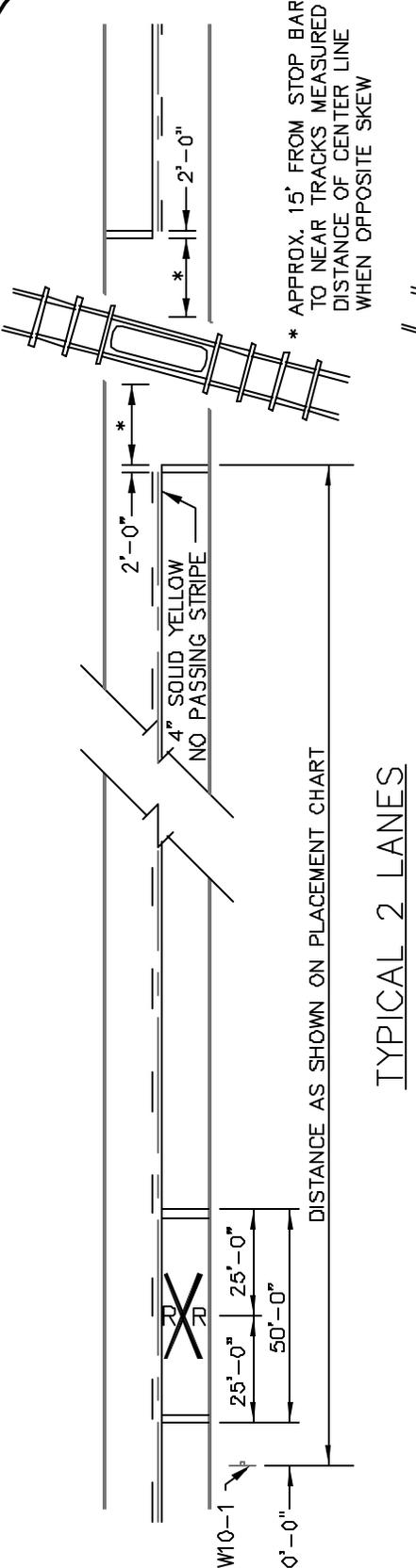
50' STANDARD DIMENSIONS, REVISION 15-08-04  
 JULY 26, 1988 BY JAM/BRE

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# RAILROAD MARKING

**TRAFFIC**  
 SPECIFICATION NO. B57  
 PM-06 PAGE 171



PLACEMENT OF W10-1	POSTED SPEED "D"
BELOW 35 MPH	250'
36-45 MPH	500'
45-55 MPH	750'

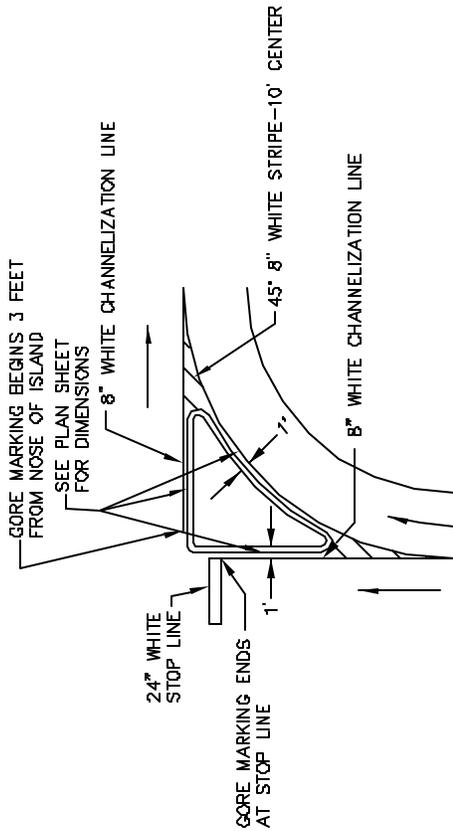
IN STANDARD POSITION, SEE PLAN SHEET  
 JULY 8, 1988 8:50 AM BROS

REVISIONS	NO.	DATE	ITEM CHANGED

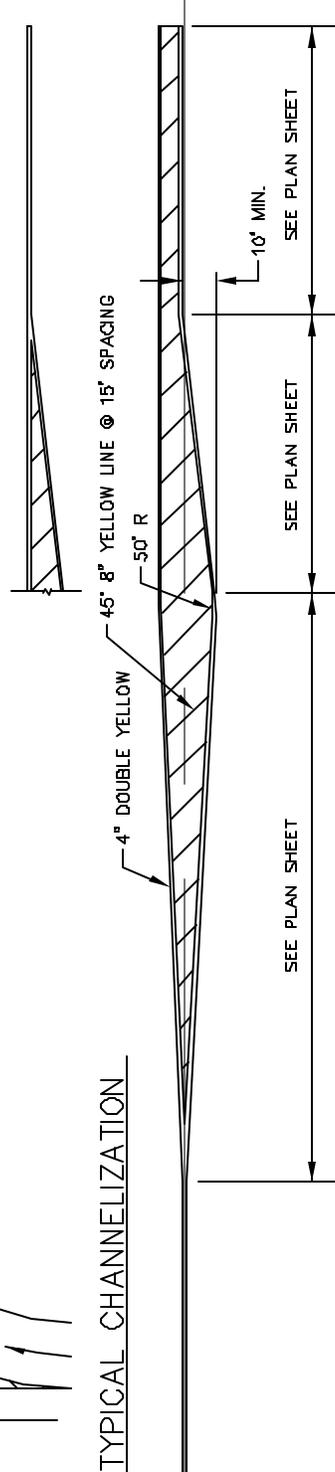
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**MEDIAN/PLACEMENT  
 OF WORDS**

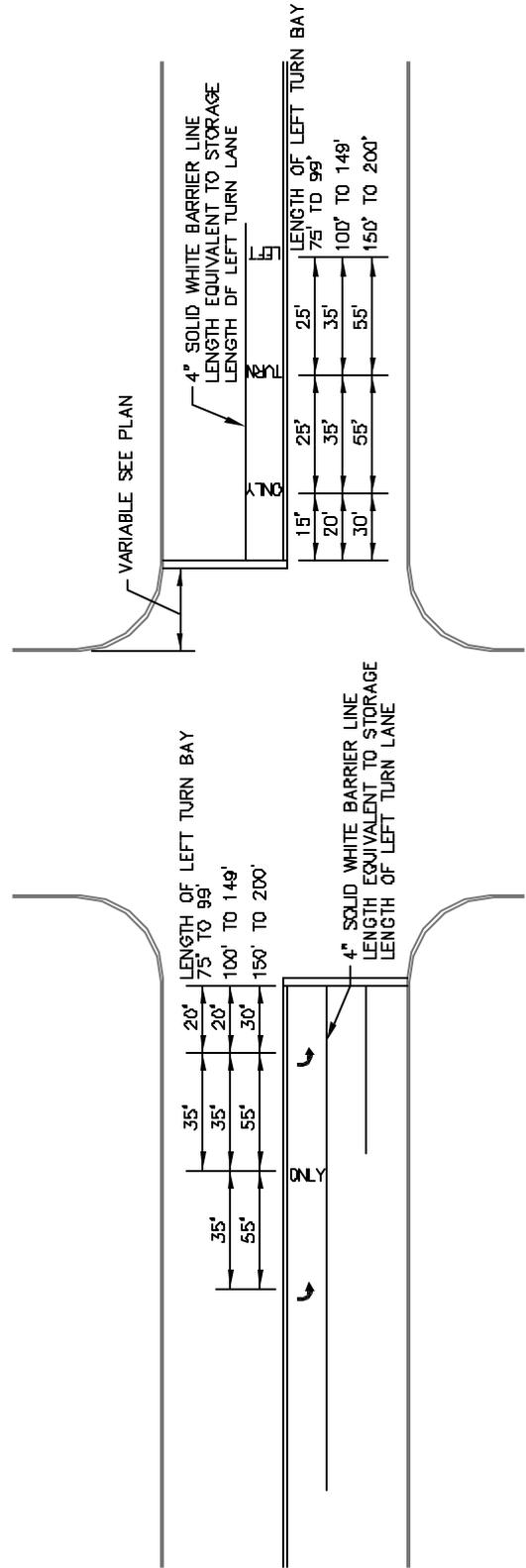
**TRAFFIC**  
 SPECIFICATION NO. B57  
 PM-07 PAGE 172



TYPICAL CHANNELIZATION



TYPICAL STRIPED MEDIAN



TYPICAL PLACEMENT OF ARROWS & WORDS

IN STANDARD POSITION, SEE LINES 15-16 OR 16-17  
 JULY 21, 1989 8:50 AM BROWN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

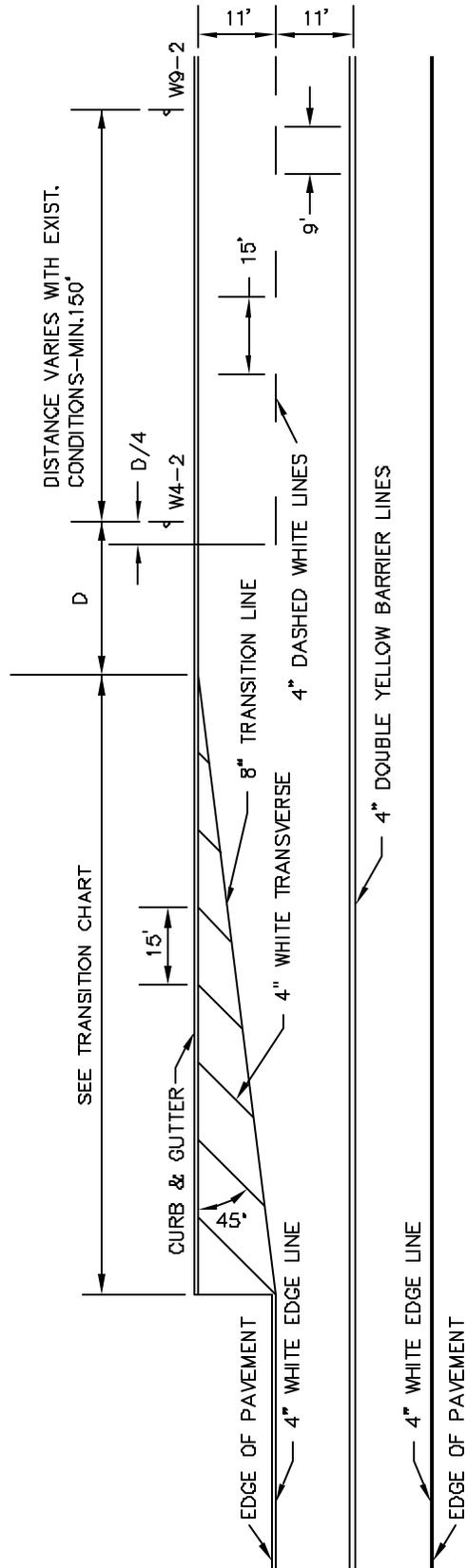
**SIGN & MARKINGS**  
**FOR ROAD NARROWING**

**TRAFFIC**  
 SPECIFICATION NO. B57  
 PM-08 PAGE 173

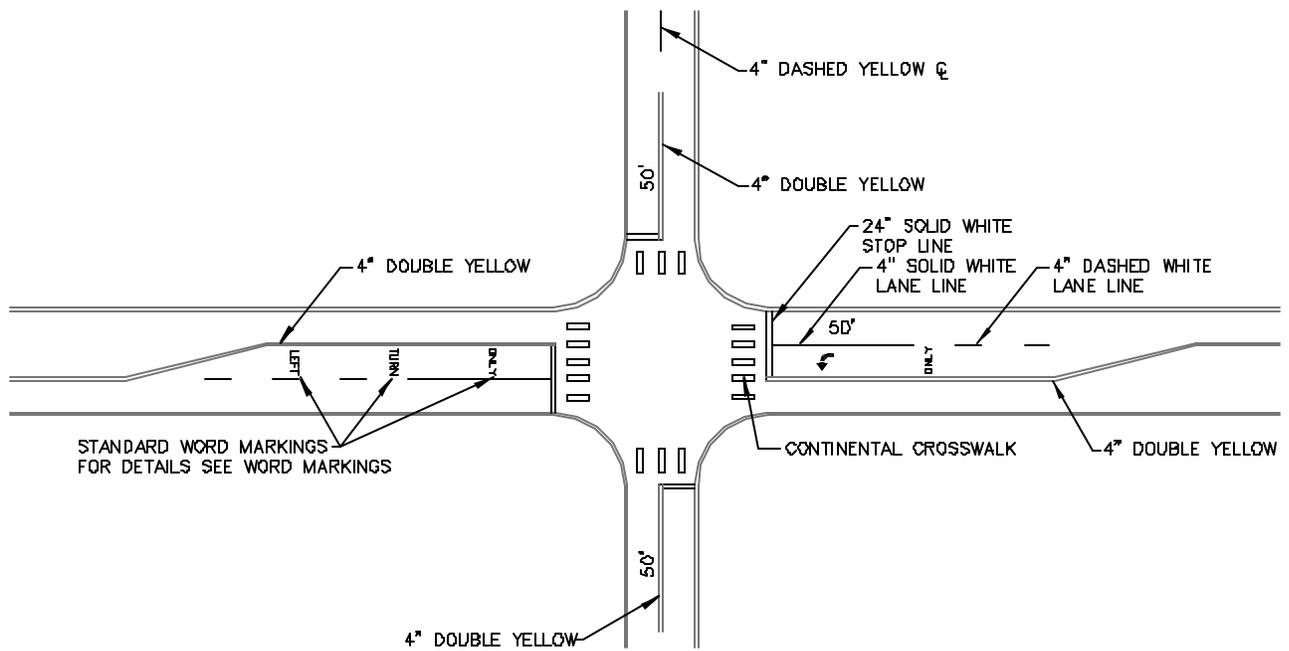
MPH	TRANSITION LENGTH
25	114'
30	165'
35	224'
40	293'
45	495'

MPH	D = DISTANCE
25	250'
30	325'
35	400'
40	415'
45	550'

TRANSITION CHART FOR 11' LANES

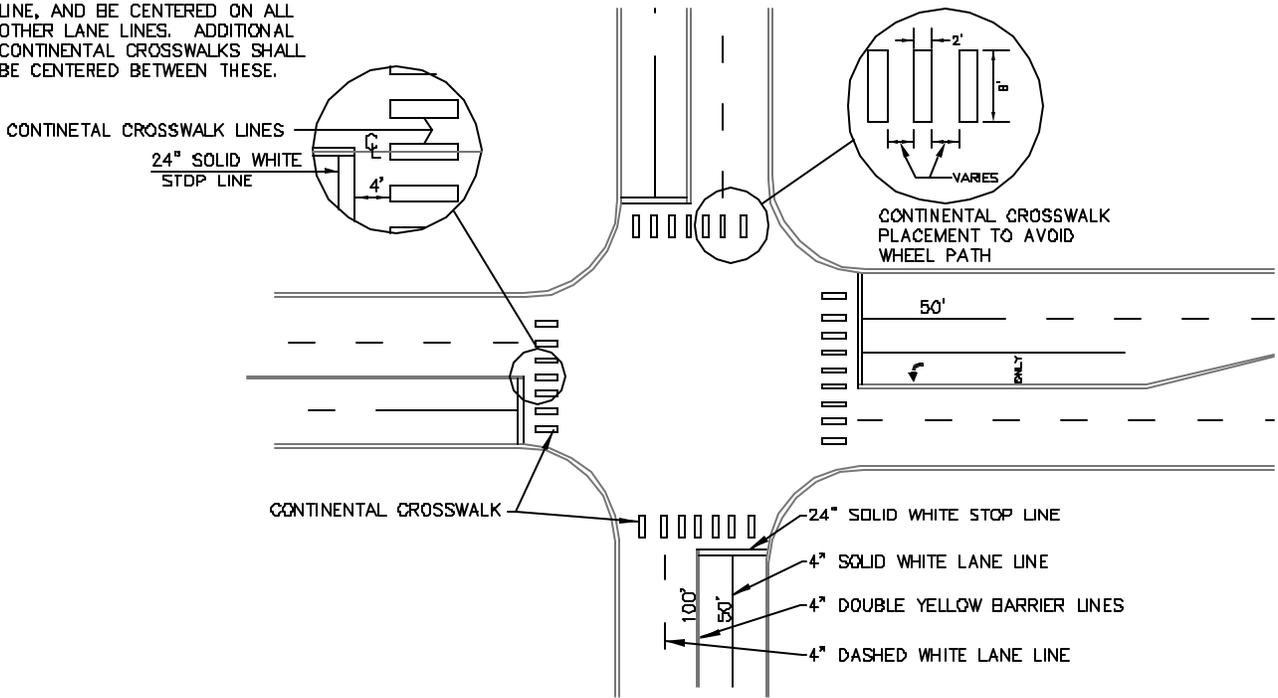


NOTE:  
 FOR LANES OF 10'-12'-13' USE TRANSITION FORMULA:  
 45 M.P.H. OR MORE -  $D = WxS$   
 40 M.P.H. OR LESS -  $D = \frac{S^2 \times W}{60}$   
 FOR ADDITIONAL INFORMATION SEE  
 CURRENT M.U.T.C.D. MANUAL.



TYPICAL PAVEMENT MARKING OF TWO LANE ROADWAY  
(WITH AND WITHOUT LEFT TURN LANES)

CONTINENTAL CROSSWALK LINE SPACING SHALL START FROM THE CENTER OF THE MARKED CENTER LINE, AND BE CENTERED ON ALL OTHER LANE LINES. ADDITIONAL CONTINENTAL CROSSWALKS SHALL BE CENTERED BETWEEN THESE.



TYPICAL PAVEMENT MARKING OF FOUR LANE ROADWAY  
(WITH AND WITHOUT LEFT TURN LANES)

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

MARKINGS 2/4  
LANE ROADS

TRAFFIC

SPECIFICATION NO. BS7

PM-09 PAGE 174

50' STANDARD DIMENSIONS, SEE PLAN SHEET 104-04-010  
JULY 21, 1988 8:50 AM BROWN

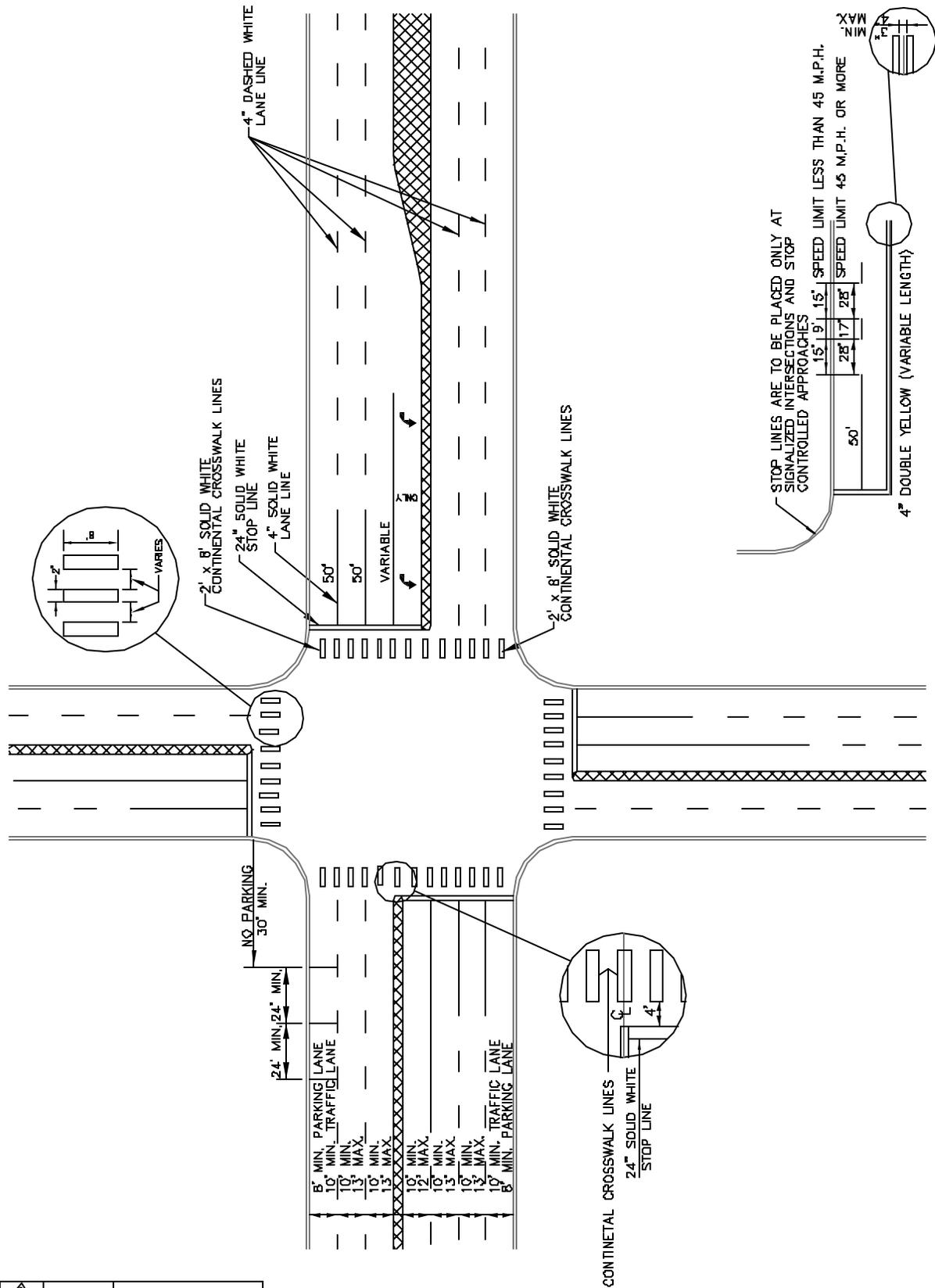
50' STANDARD DIMENSIONS, WESTLAND, ENR-10, DWG  
 JULY 26, 1989 8:50 AM BROWN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

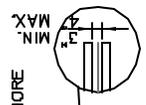
**MARKINGS 4/6  
 LANE ROADS**

**TRAFFIC**  
 SPECIFICATION NO. B57  
 PM-10 PAGE 175



TYPICAL PAVEMENT MARKING OF FOUR & SIX LANE ROADWAY  
 (WITH AND WITHOUT LEFT TURN LANES)  
 TYPICAL DASHED LINE

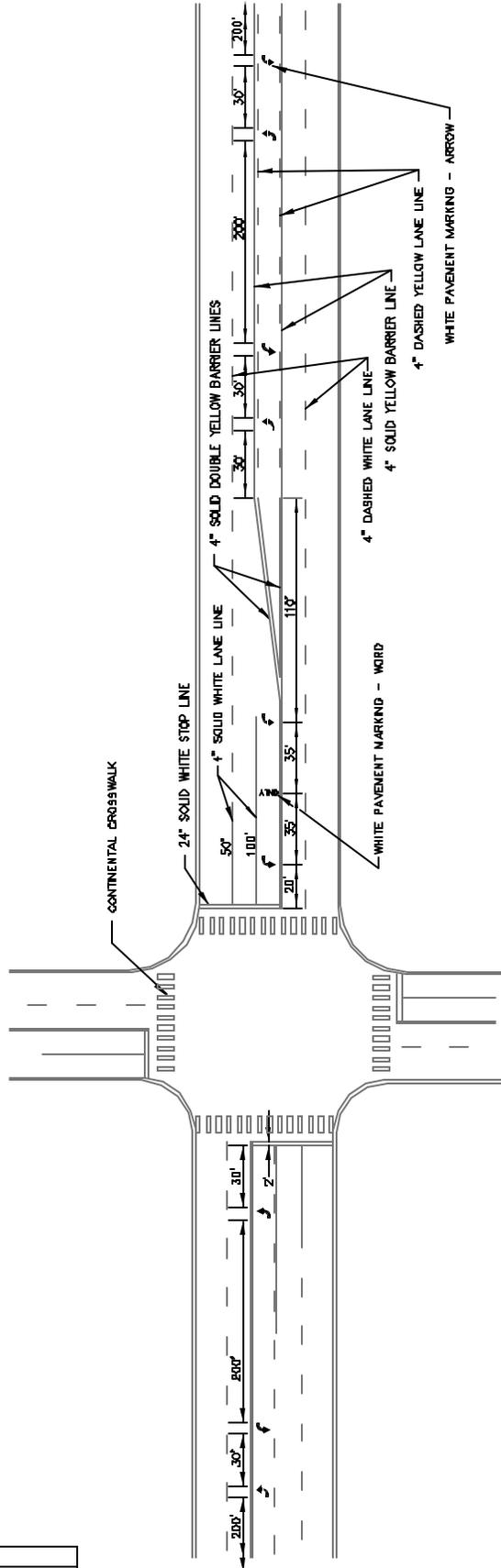
STOP LINES ARE TO BE PLACED ONLY AT  
 SIGNALIZED INTERSECTIONS AND STOP  
 CONTROLLED APPROACHES



50' STANDARD DIMENSIONS, BELLINGHAM-11, DWG  
 JULY 26, 1989 8:50 AM BROWN

REVISIONS	NO.	DATE	ITEM CHANGED

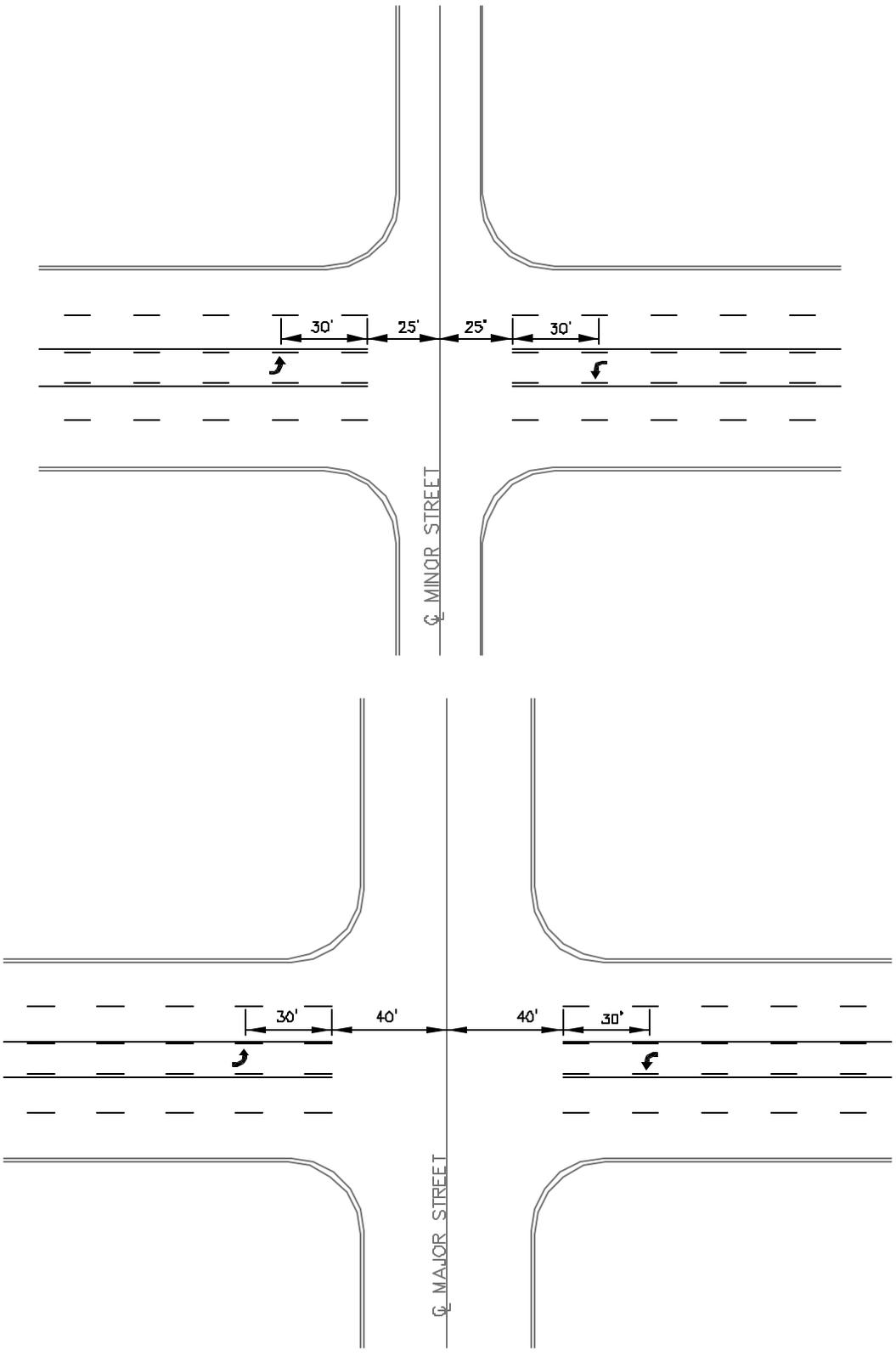
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS



TYPICAL PAVEMENT MARKING OF FIFTH LANE ROADWAY  
 (WITH AND WITHOUT LEFT TURN LANES)

**MARKINGS 5TH**  
**LANE ROAD**

**TRAFFIC**  
 SPECIFICATION NO. B57  
 PM-11 PAGE 176



TYPICAL PAVEMENT MARKING FOR FIFTH LANE

CITY OF EDMOND, OKLAHOMA  
 JULY 21, 1989 8:50 AM BROWN

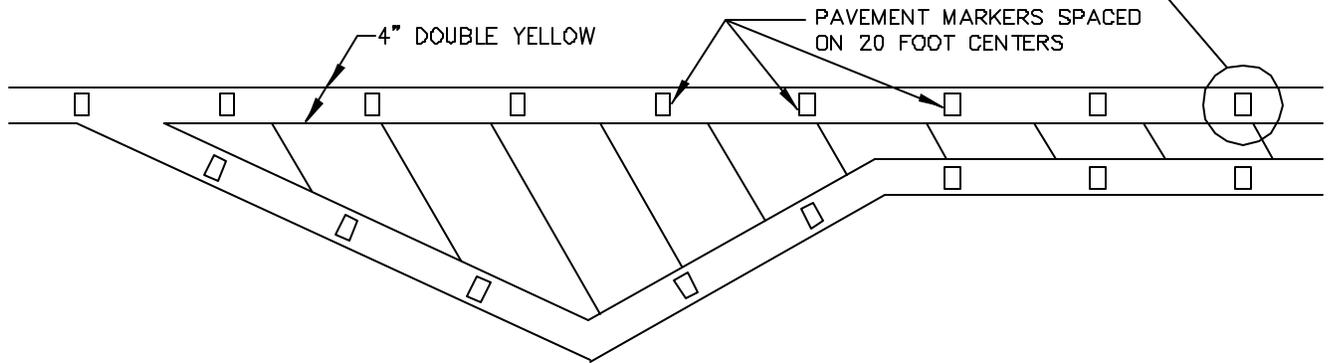
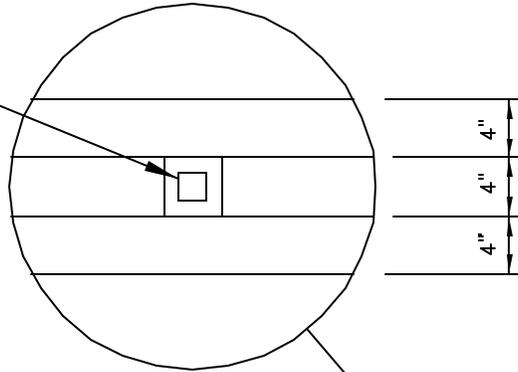
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**MARKING 5TH  
 LANE**

<b>TRAFFIC</b>	
SPECIFICATION NO. B57	
PM-12	PAGE 177

PAVEMENT MARKERS SHALL BE PLACED BETWEEN THE TWO 4" YELLOW LINES



TYPICAL PLACEMENT OF PAVEMENT MARKERS ON PAINTED ISLAND

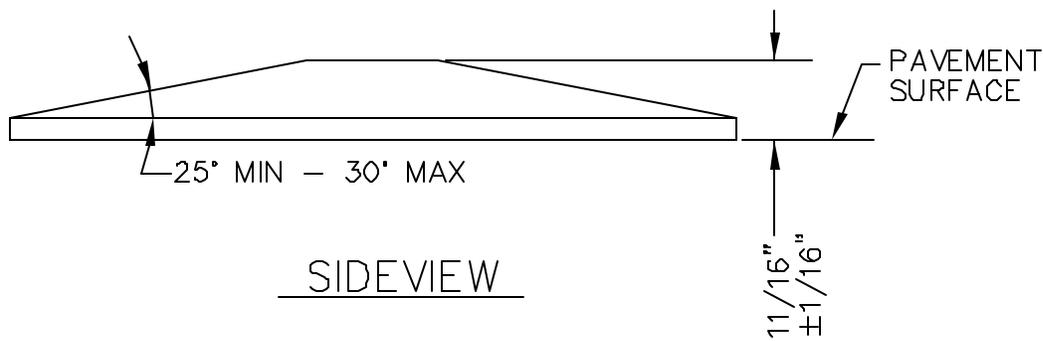
REVISIONS	ND.	DATE	ITEM CHANGED
◇			

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

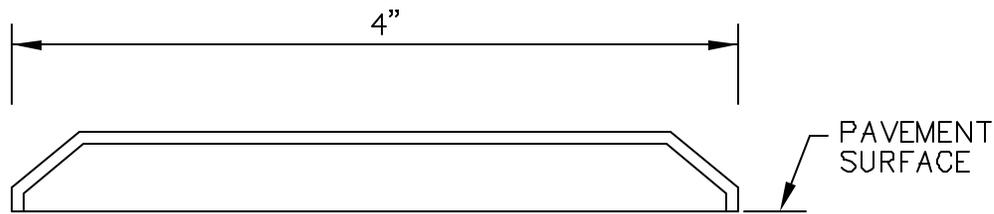
PAINTED  
ISLAND MARKERS

TRAFFIC  
SPECIFICATION NO. 857  
PM-13 PAGE 17B

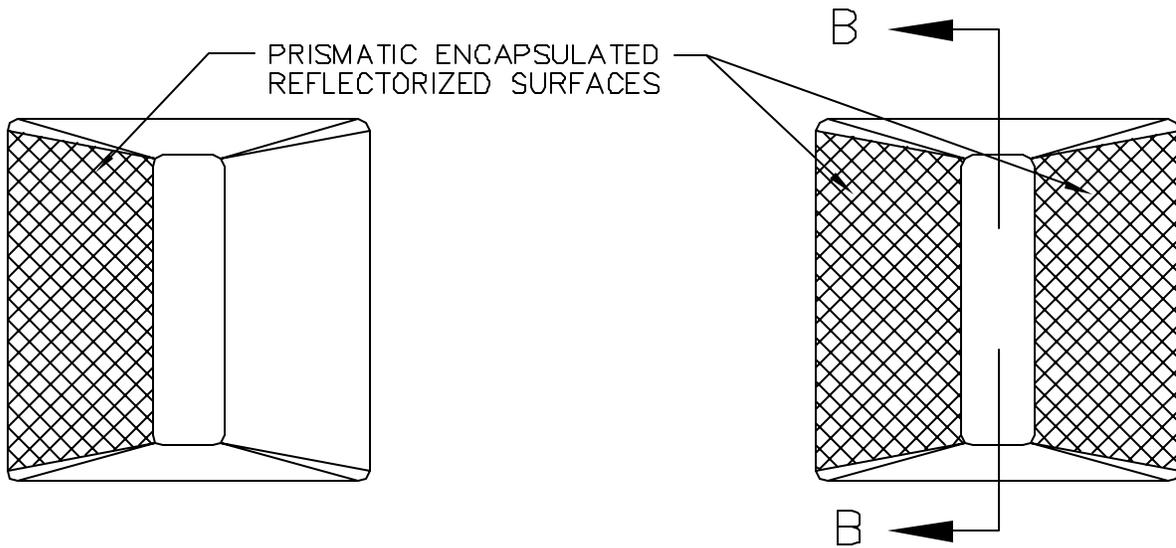
IN STANDARD DRAWING BOOK 15-11.5, DWG  
 JULY 2, 1989 8:50 AM BROWN



SIDEVIEW



SECTION B-B



TYPE I

PLANVIEW

TYPE II

TYPICAL PAVEMENT MARKERS  
CLASS A (REFLECTIVE)

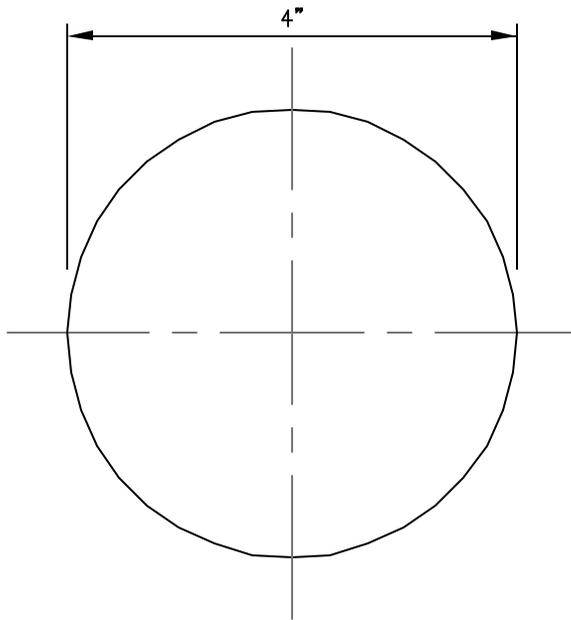
CITY OF EDMOND, OKLAHOMA  
 JULY 21, 1989 8:50 AM BROWN

REVISIONS	NO.	DATE	ITEM CHANGED

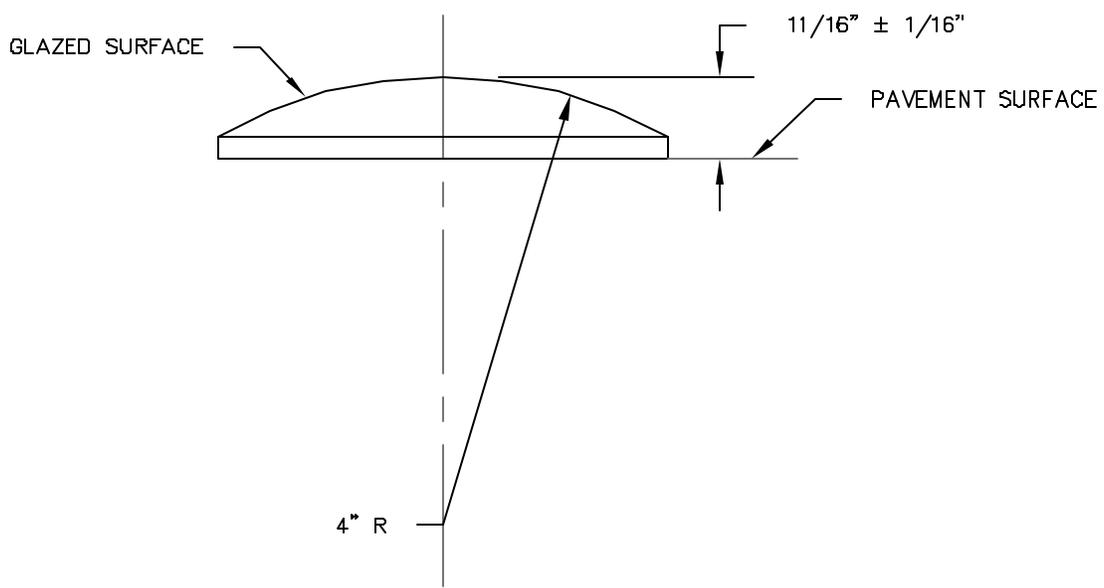
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PAVEMENT MARKERS**

**TRAFFIC**  
 SPECIFICATION NO. BS7  
 PM-14 PAGE 17B



PLAN VIEW



TYPICAL PAVEMENT MARKERS  
 TYPE I (CERAMIC)  
 CLASS B (NON-REFLECTIVE)

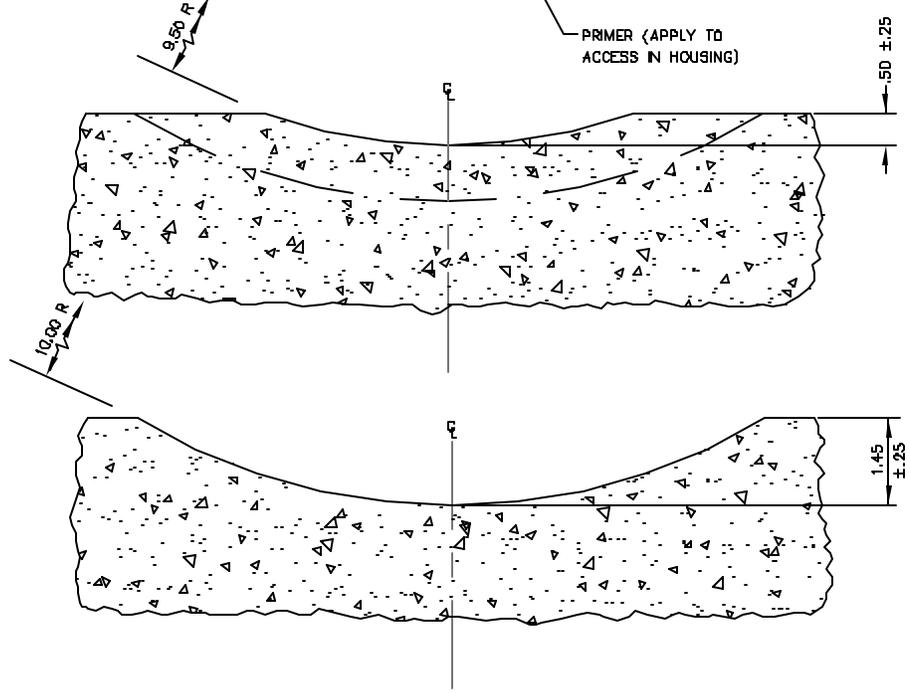
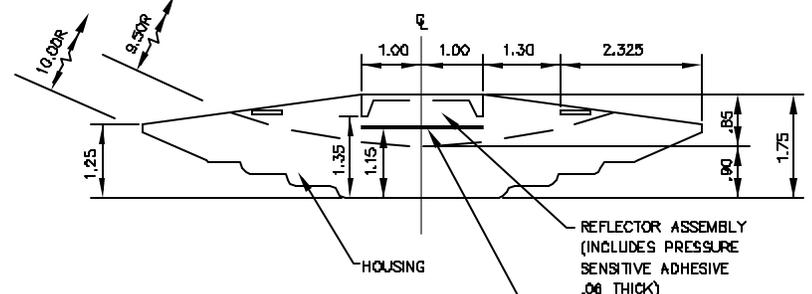
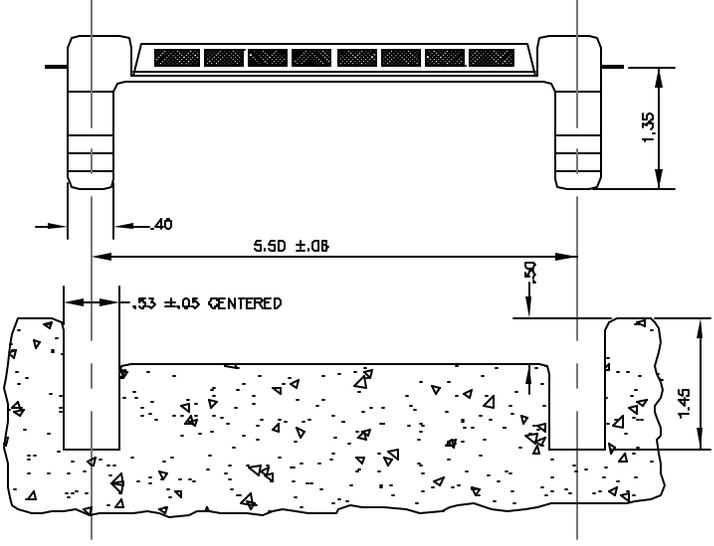
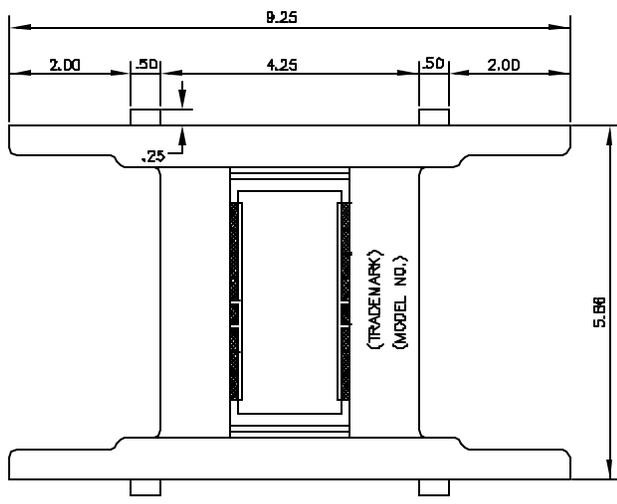
CITY OF EDMOND, OKLAHOMA  
 JULY 21, 1988 8:50 AM BROWN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PAVEMENT MARKERS**

<b>TRAFFIC</b>	
SPECIFICATION NO. B57	
PM-15	PAGE 180



REFLECTIVE ALL WEATHER DOUBLE RAMP CASTING  
 CLASS "C" PAVEMENT MARKER  
 ALL DIMENSIONS ARE IN INCHES

IN STANDARD DIMENSIONS, REFLECTIVE 18.0MG  
 JULY 2, 1989 8:50 AM BROWN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**RAMP CASTING**

**TRAFFIC**

SPECIFICATION NO. B57  
 PM-16 PAGE 181

## GENERAL NOTES

1. COLOR OF THE REFLECTORS SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST REVISION.
2. THE CONTRACTOR MAY USE EITHER TYPE OF POST, BUT ONLY ONE TYPE SHALL BE USED THROUGHOUT THE PROJECT. THE CONTRACTOR SHALL FURNISH THE CORRECT SIZE FASTENING DEVICES AND NECESSARY SPACERS.
3. WHEN BOLTS AND NUTS ARE USED FOR DELINEATOR ASSEMBLIES, THE BOLT ENDS ARE TO BE SUFFICIENTLY DEFORMED TO RESIST VANDALISM.
4. BOLTS, NUTS, AND WASHERS MAY BE ALUMINUM OR STEEL. BOLTS, NUTS, AND WASHERS \*OR\* ALUMINUM OR STEEL FASTENERS UTILIZING A SWEDGED COLLAR \*OR\* ALUMINUM OR STEEL "BLIND" OR "PULL" RIVETS OF THE SELF-PLUGGING TYPE (PULL PIN, CLIPPED FLUSH, REMAINS IN RIVET WHEN FINISHED). ALL NUTS SHALL BE SELF-LOCKING.

IN STANDARD TEMPLATE: B57-01.DWG  
 JULY 26, 1989 8:50 AM BROWN

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

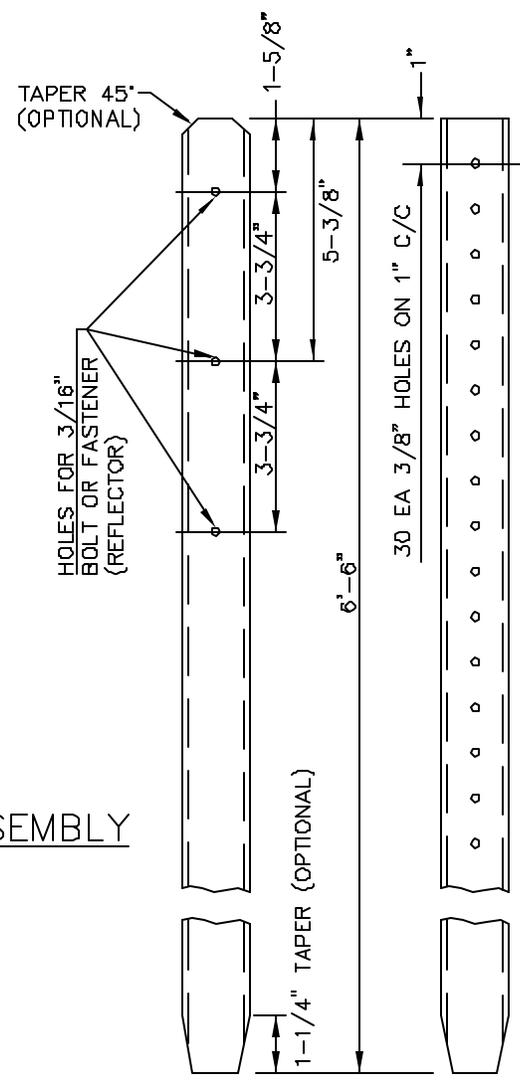
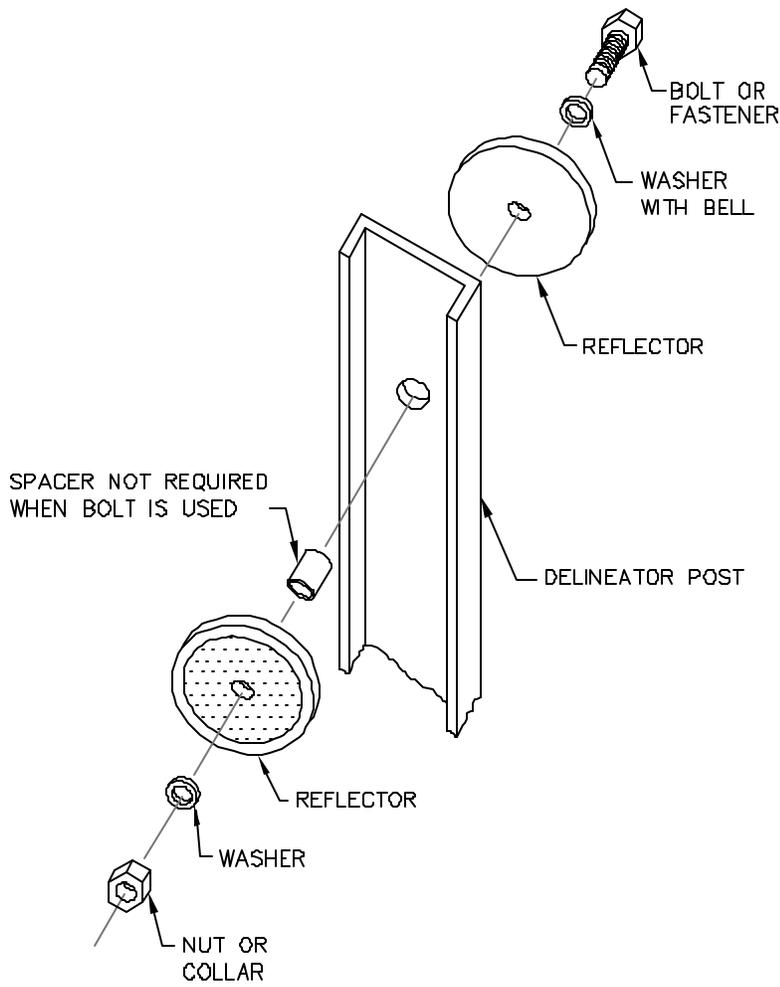
GENERAL NOTES

TRAFFIC

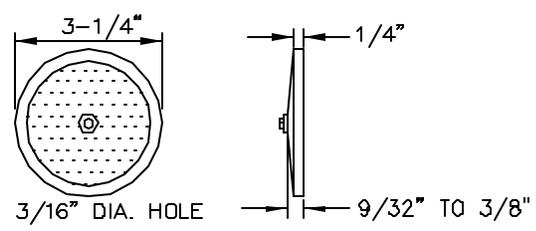
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SPECIFICATION NO. B57

DU-01 PAGE 182

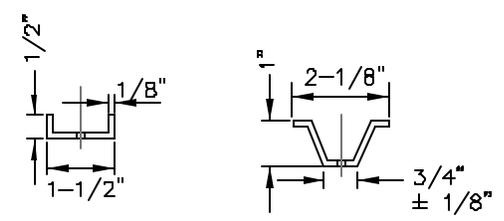
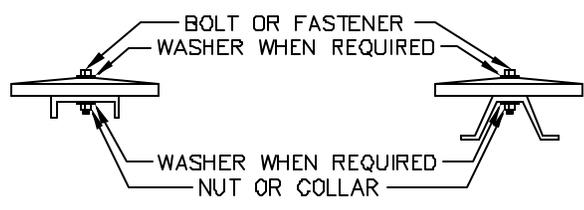


TYPICAL BI-DIRECTIONAL DELINEATOR ASSEMBLY



CENTER MOUNT REFLECTOR

DELINEATOR POST



ALTERNATE POST SECTIONS

IN STANDARD DRAWING BOOK 11-11-01-010  
 JULY 25, 1989 8:50 AM BOREN

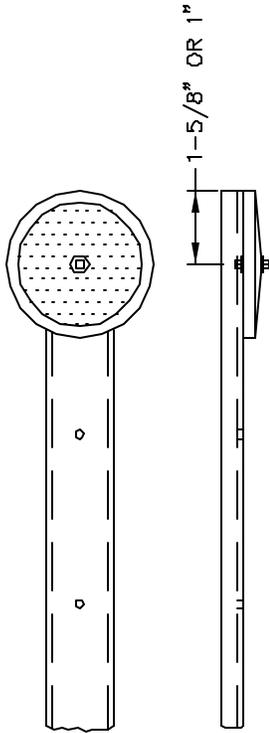
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

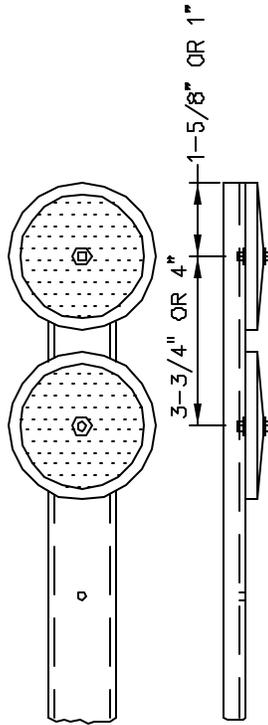
ASSEMBLY / POST

**TRAFFIC**

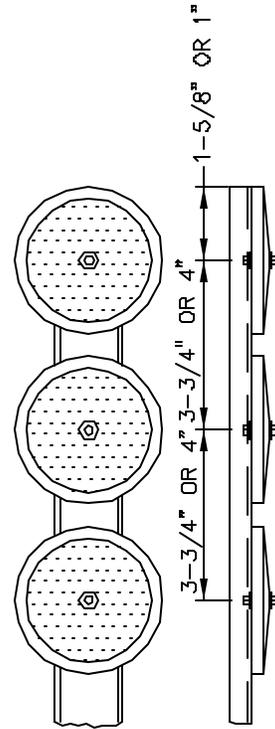
SPECIFICATION NO. BS7  
 DU-02 PAGE 183



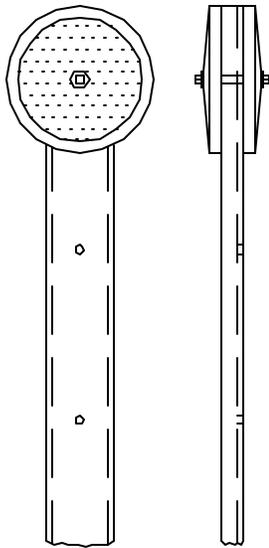
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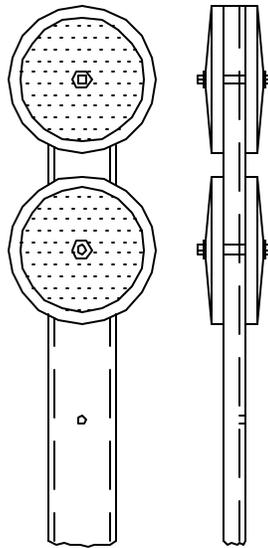
CODE 2  
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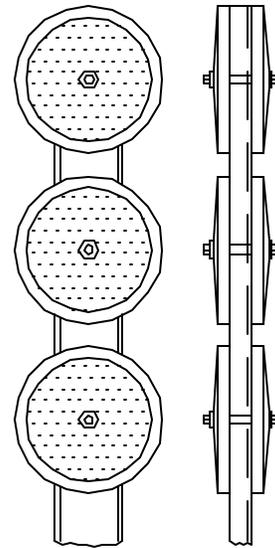
CODE 3  
TYPE 1



CODE 1  
TYPE 2



CODE 2  
TYPE 2



CODE 3  
TYPE 2

REVISIONS	NO.	DATE	ITEM CHANGED

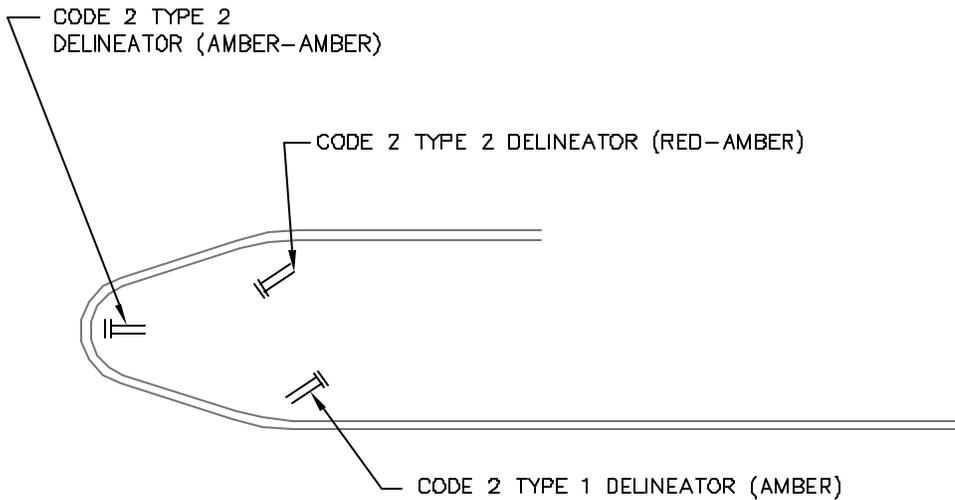
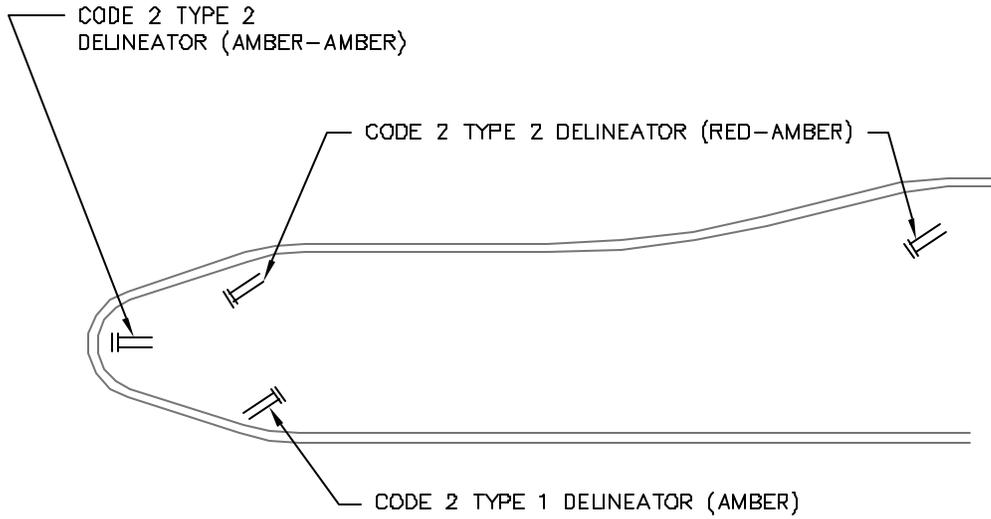
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

# CODES/ TYPES

TRAFFIC

SPECIFICATION NO. B57  
DU-03 PAGE 184

IN STANDARD FORMATS, SEE ILLUSTRATIONS  
 JULY 26, 1989 8:50 AM BROWN



TYPICAL DELINEATOR PLACEMENT AT MEDIAN OPENING

15. APPROVED: [Signature] 11/15/04-DWG  
 16. 25. 11/28/04 11:50 AM 10/28/04

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PLACEMENT AT  
 MEDIAN**

<b>TRAFFIC</b>	
SPECIFICATION NO. B57	
DU-04	PAGE 185

RADIUS IN FEET UP TO AND INCLUDING	SPACING ON CURVE	SPACING IN ADVANCE AND BEYOND CURVES		
		1ST	2ND	3RD
2500	100	200	200	200
1000	90	150	200	200
900	85	150	200	200
800	80	150	200	200
700	75	100	200	200
600	70	100	150	200
500	65	75	125	200
400	55	50	100	200
300	50	50	100	175
250	40	50	100	150
200	35	30	50	125
150	30	20	50	90
100	20	20	50	90

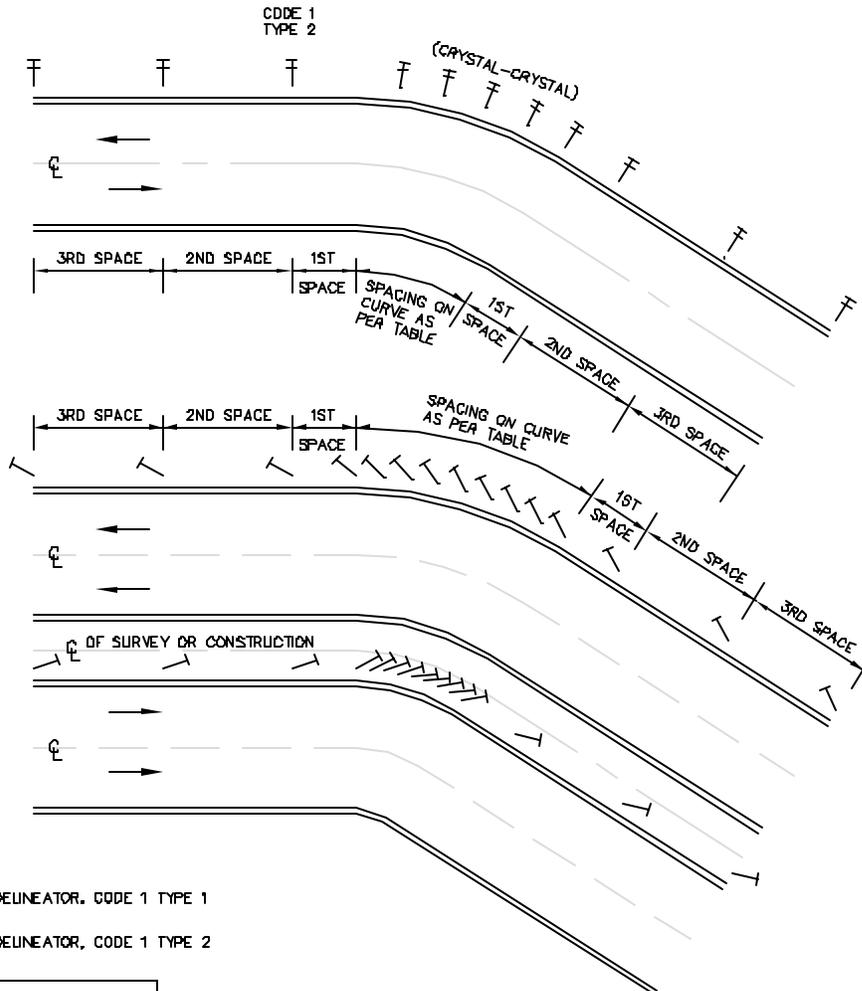
ELIMINATE NORMAL DELINEATOR WHEN CODE 3 WITHIN 1/4 SPACING DISTANCE.

ON ONE WAY ROADWAY (NON-FREEWAYS), CONSTRUCT MONO-DIRECTIONAL CODE 1 DELINEATORS ON OUTSIDE OF CURVES HAVING A RADIUS OF 2,500' OR LESS.

ON TWO-WAY ROADWAYS, CONSTRUCT BI-DIRECTIONAL CODE 1 DELINEATORS ON OUTSIDE OF CURVES HAVING A RADIUS 2,500' OR LESS.

ON FREEWAYS, CONSTRUCT MONO-DIRECTIONAL CODE 1 DELINEATORS ON RIGHT SIDE OF ROADWAYS AT 526' SPACING ON THROUGH LANE.

EXCEPT ON FREEWAYS, DELINEATOR SPACING ON THRU LANE CURVES SHALL BE BASED ON CL SURVEY OR CONSTRUCTION BASE LINE. PLACEMENT SHALL BE EVENLY SPACED AS REQUIRED IN TABLE.



REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

DIVIDED MULTI LANE  
& TWO LANE ROAD

TRAFFIC

SPECIFICATION NO. BS7

DU-05 PAGE 186

## GENERAL NOTES

1. ON CONSTRUCTION PROJECTS IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE NECESSARY SIGNS BEFORE CONSTRUCTION BEGINS.
2. ALL SIGN BLANK MATERIALS USED SHALL BE THE OPTION OF THE CONTRACTOR BUT SHALL BE OF SUCH MATERIAL THAT WILL RETAIN A SATISFACTORY APPEARANCE THROUGHOUT THE LIFE OF THE CONTRACT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SIGNS TO ASSURE A HIGH DEGREE OF BOTH DAY AND NIGHT VISIBILITY, WHICH WILL INCLUDE ANY WASHING, REPLACEMENT AND/OR REPOSITIONING WHERE DEEMED NECESSARY BY THE CITY ENGINEER.
4. REFLECTORIZATION OF TRAFFIC CONTROL DEVICES SHALL BE BY MEANS OF WIDE ANGLE FLAT TOP REFLECTIVE SHEETING MEETING THE REQUIREMENTS OF OKLAHOMA DOT STANDARD SPECIFICATIONS EDITIONS 1988, SECTION 719.04.
5. ALL SIGNS SHALL BE SECURELY PLACED OR WEIGHTED TO PREVENT BLOWING OVER. ROCKS, BROKEN CONCRETE OR OTHER SUCH OBJECTS SHALL NOT BE CONSIDERED AN ACCEPTABLE SUBSTITUTE FOR SAND BAGS WHEN USED TO OBTAIN ADDED STABILITY FOR MOVABLE SIGNS AND BARRICADES.
6. SPACING OF SIGNING, ON THE PLANS OR T.D.C. STANDARDS, SHALL BE NO LESS THAN THE DISTANCES SHOWN. THE DISTANCE BETWEEN SIGNS SHOULD BE INCREASED ON HIGH SPEED, OR MORE HEAVILY TRAVELED HIGHWAYS, OR WHERE SIGHT DISTANCES IS RESTRICTED.
7. ALL SIGNS, FLASHERS, FLAGS, ETC. SHALL CONFORM IN SIZE, SHAPE, COLOR, LEGEND AND APPLICATION TO THE STANDARDS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND/OR OKLAHOMA STATE STANDARD DRAWINGS FOR SIGNS. STANDARD DRAWINGS ARE AVAILABLE FROM THE DEPARTMENT OF TRANSPORTATION. INTERPRETATIONS THAT MAY BE NECESSARY SHALL BE REFERRED TO THE CITY ENGINEER.
8. IN ALL CONSTRUCTION ZONES THE FIRST THREE ADVANCE WARNING SIGNS IN SEQUENCE SHALL HAVE ATTACHED THERETO FLUORESCENT FLAGS AND TYPE "A" FLASHING BARRICADE WARNING LIGHTS. THIS SHALL ALSO APPLY WHEN SIGNS ARE USED ON BOTH SIDES OF THE ROADWAY, ADDITIONAL FLASHING BEACONS MAY BE REQUIRED WHEN SO DESIRED BY THE ENGINEER.
9. TYPE "A" WARNING LIGHTS SHALL BE USED ON BARRICADES (AS REQUIRED) AND ON ADVANCE WARNING SIGNING. SEE NOTE 8, THIS SHEET.
10. TYPE "C" WARNING LIGHTS SHALL BE USED ON CHANNELIZING DEVICES AND VERTICAL PANEL SIGNS. (AS REQUIRED)
12. ALL CONES, WHEN USED AT NIGHT, SHALL BE REFLECTORIZED WITH A 6" WIDE RELECTORIZED BAND NO MORE THAN 3" FROM THE TOP.
13. TWENTY-EIGHT INCH (28") CONES SHOULD BE USED ON ROADWAYS WHERE SPEEDS ARE RELATIVELY HIGH OR WHEREVER MORE CONSPICUOUS GUIDANCE IS NEEDED.

IN STANDARD DRAWINGS, SEE TDC-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**

**ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS**

# GENERAL NOTES

**TRAFFIC**

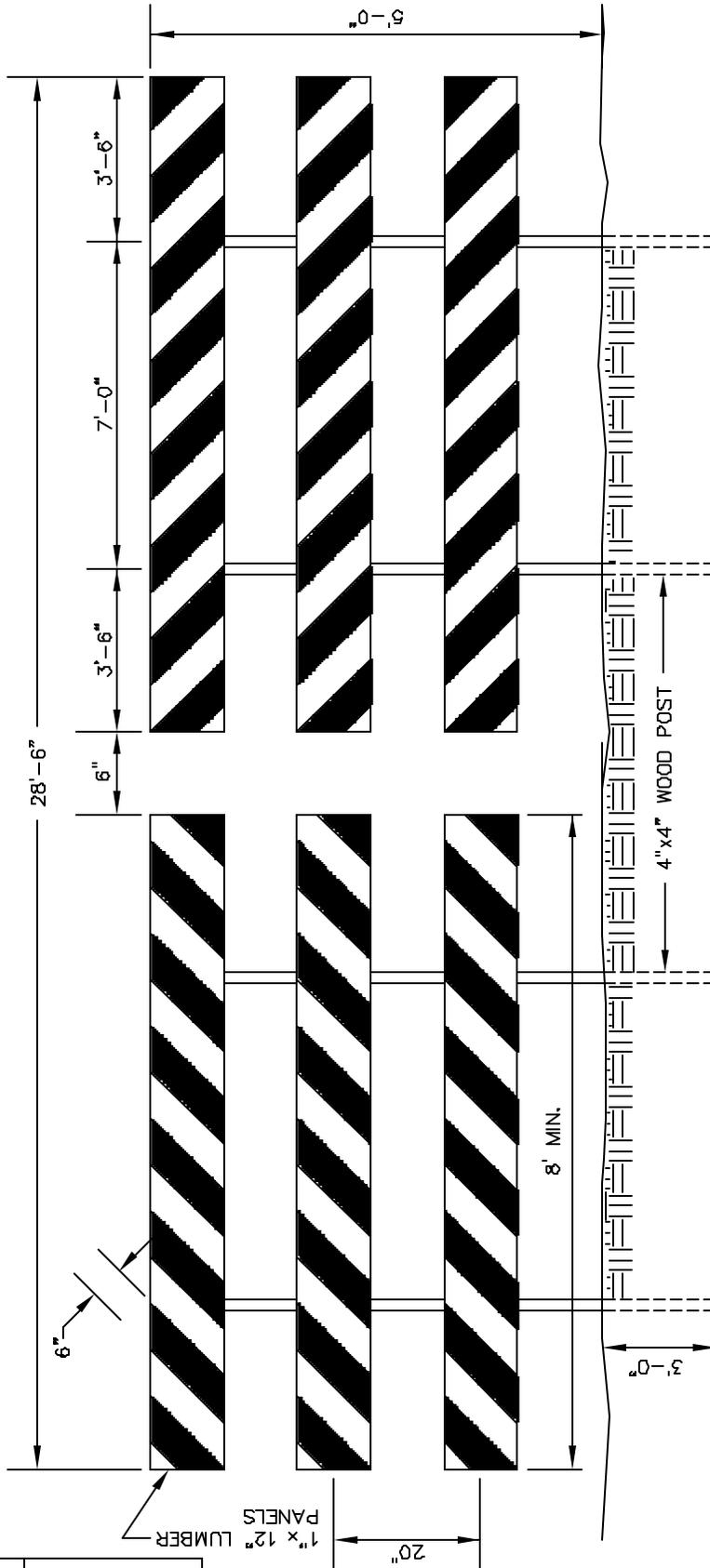
SPECIFICATION NO. 880

TDC-01 PAGE 187









PERMANENT TYPE III (A/B) BARRICADE

COLOR: BACKGROUND - WHITE (REFLECTORIZED)  
 DIAGONAL STRIPES - RED (REFLECTORIZED)

NOTE: PERMANENT BARRICADE TYPE II-B WILL BE IDENTICAL TO TYPE III-A WITH SIX (6) ADDITIONAL REFLECTORIZED 1" X 12" LUMBER PANELS ATTACHED TO THE BACK SIDE OF THE BARRICADE.

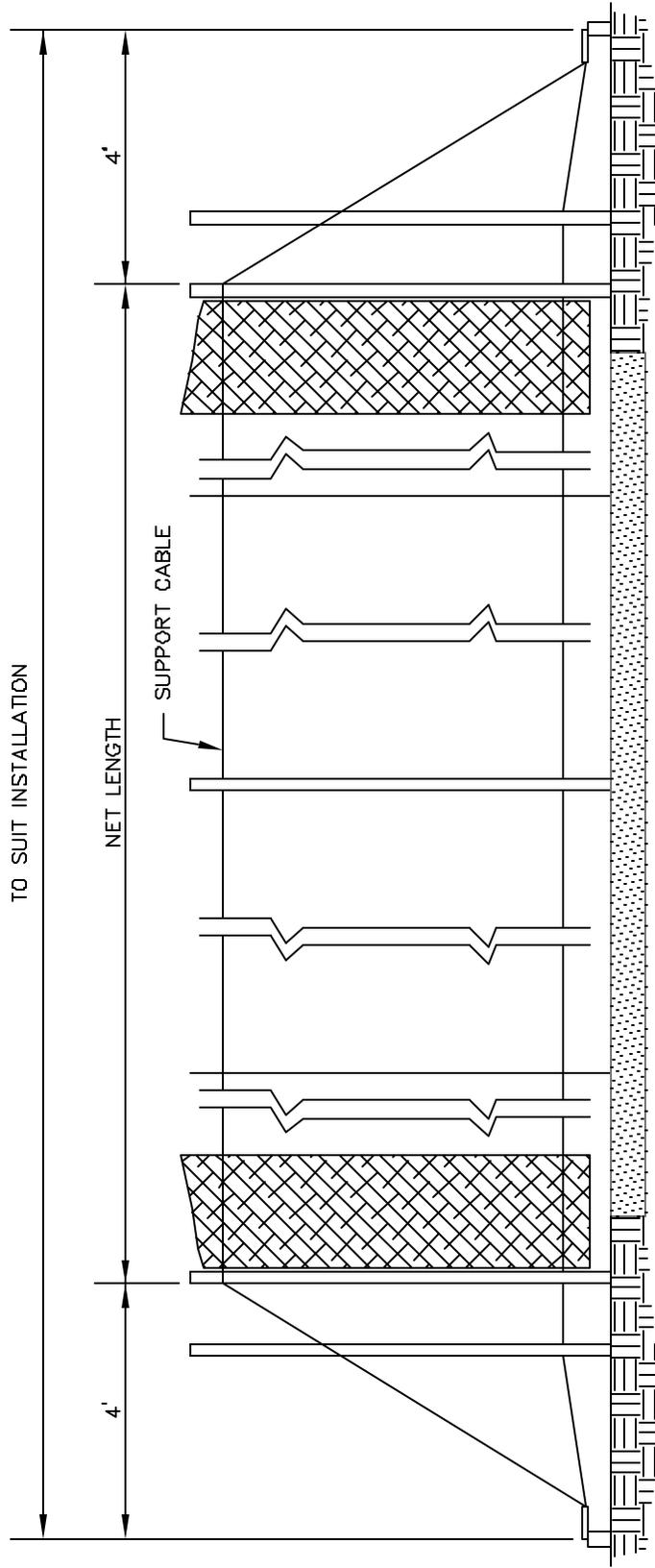
CITY OF EDMOND, OKLAHOMA, PROJECT TDC-05, B80  
 REVISED 1986 100 PM - BORDEN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PERMANENT TYPE III  
 BARRICADE**

<b>TRAFFIC</b>	
SPECIFICATION NO. B80	
TDC-05	PAGE 191



VEHICLE ARRESTING BARRICADE

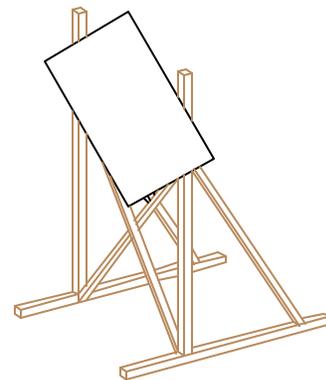
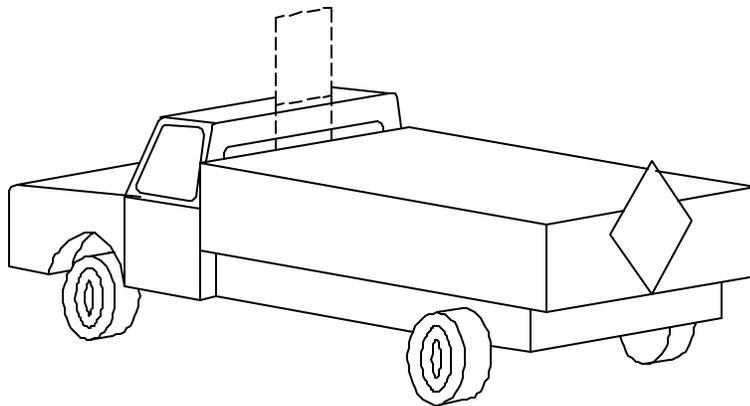
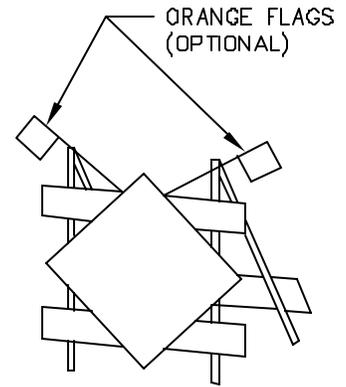
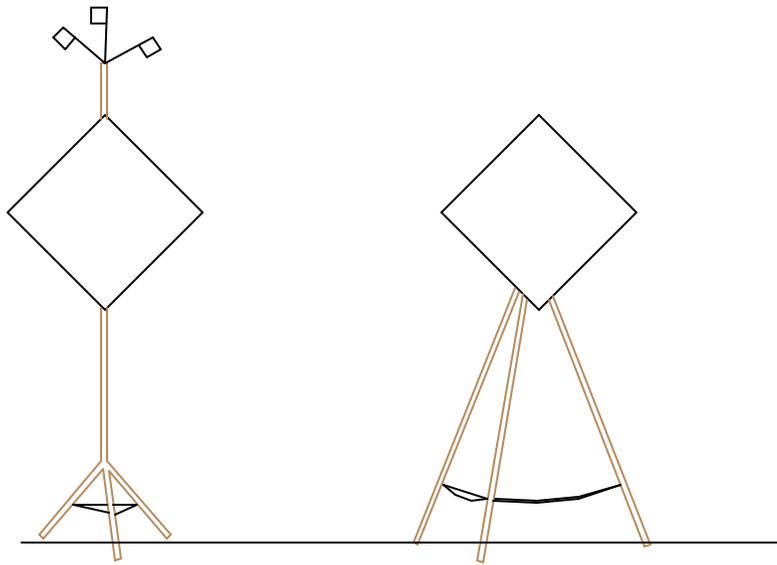
CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1982 200 PM  
 BORDEN

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**VEHICLE ARRESTING  
 BARRICADE**

<b>TRAFFIC</b>	
SPECIFICATION NO. B80	
TDC-06	PAGE 192



PORTABLE AND TEMPORARY MOUNTINGS  
METHODS OF MOUNTING SIGNS OTHER THAN ON POST

DESIGNED BY: J. L. TDC-07, DWG  
 CHECKED BY: M. J. TDC-07, DWG  
 DATE: 1988 100 PM HOBBS

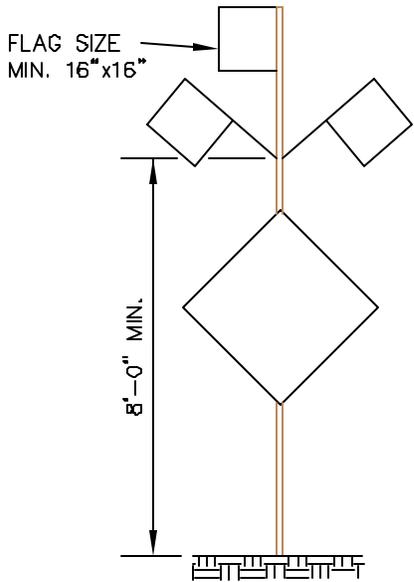
REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

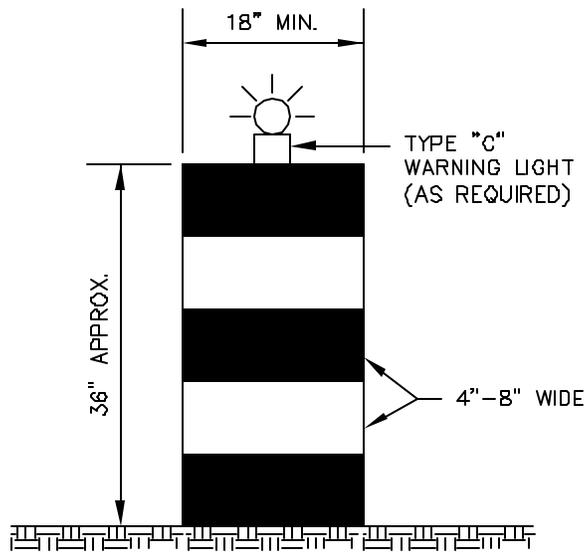
PORTABLE TEMP.  
 MOUNTING SIGNS

TRAFFIC  
 SPECIFICATION NO. 880  
 TDC-07 PAGE 193

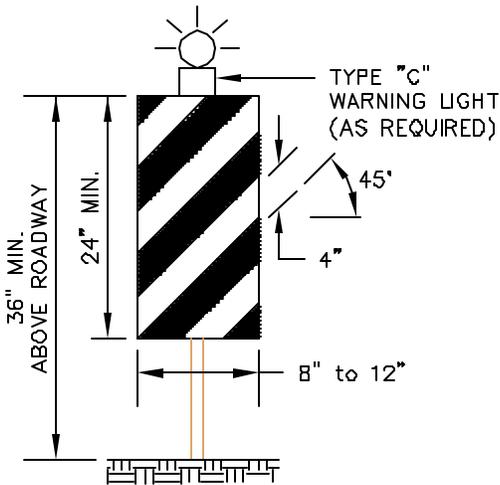




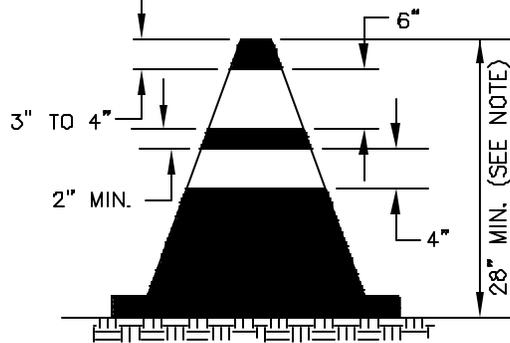
HIGH LEVEL WARNING DEVICE



DRUM



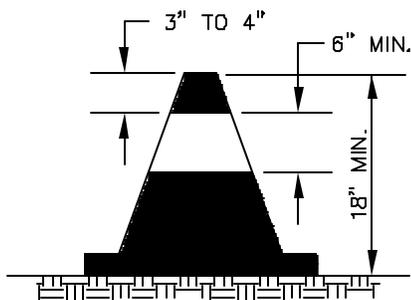
VERTICAL PANEL



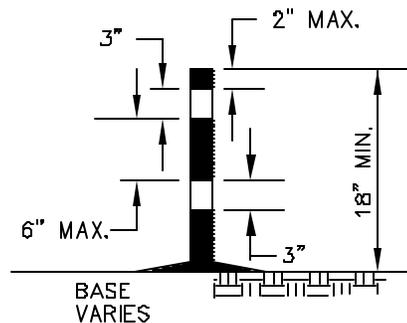
CONES

NOTE:

TWENTY-EIGHT INCHES SHOULD BE THE MINIMUM HEIGHT OF CONES USED ON FREEWAYS AND OTHER HIGH SPEED ROADWAYS AND ON ALL FACILITIES DURING HOURS OF DARKNESS OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED.



CONES



TUBE CHANNELIZER

CHANNELIZING DEVICES AND HIGH LEVEL WARNING DEVICE

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

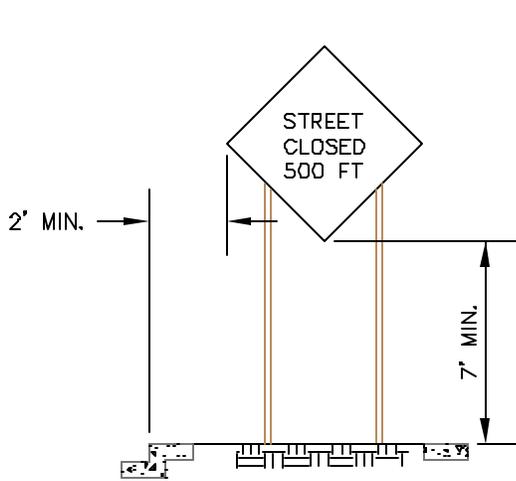
CHANNELIZING /  
WARNING DEVICES

TRAFFIC

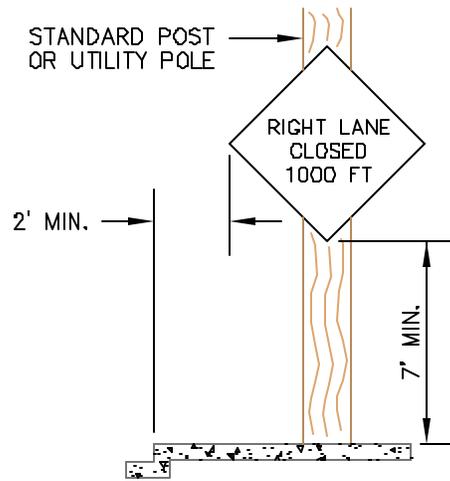
SPECIFICATION NO. B80

TDC-09 PAGE 195

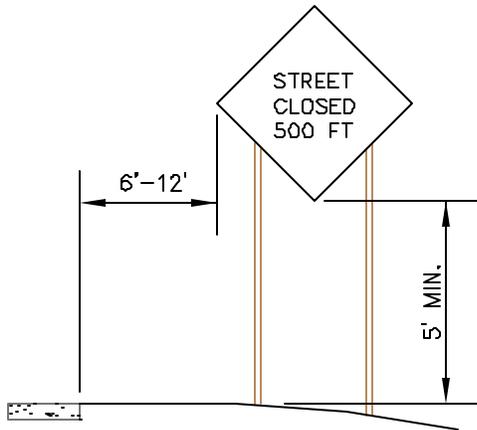
DESIGNED BY: J. L. TDC-09, BMS  
REVISED: 1988, 1990, 1991, 1992



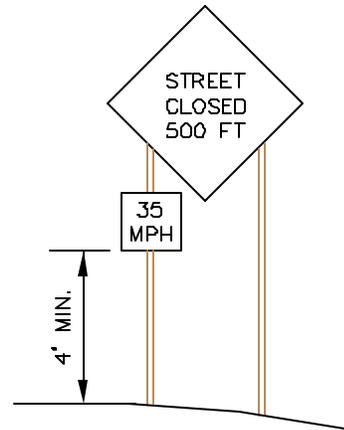
URBAN DISTRICT



URBAN DISTRICT



RURAL DISTRICT



RURAL DISTRICT WITH  
ADVISORY SPEED PLATE

HEIGHT AND LATERAL LOCATIONS OF SIGNS- TYPICAL INSTALLATIONS

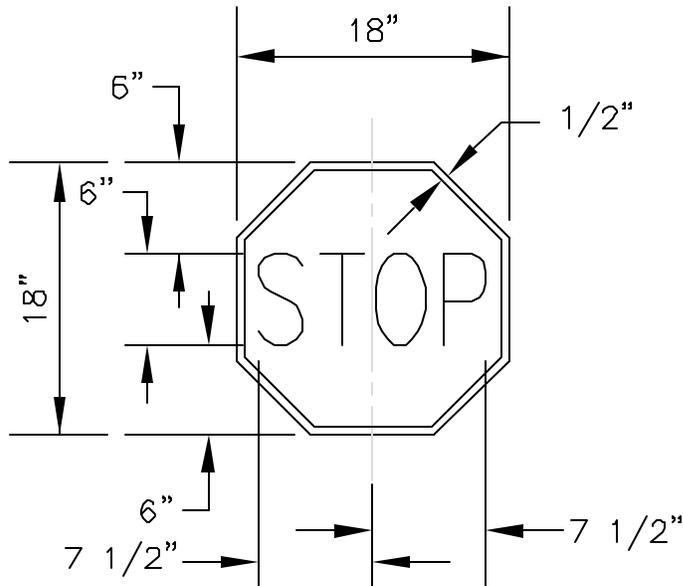
CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1988 100 PM BORDEN

REVISIONS	NO.	DATE	ITEM CHANGED

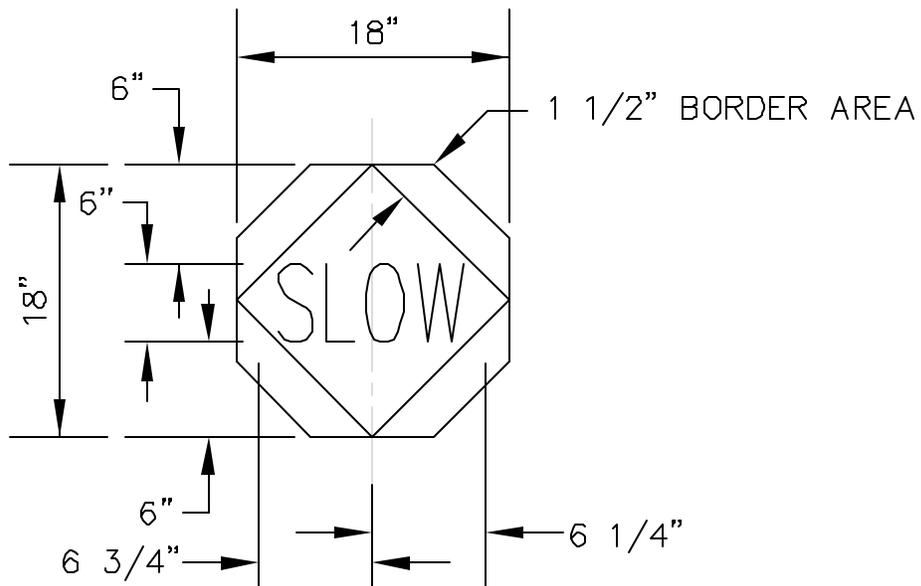
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TYPICAL SIGN  
 INSTALLATION**

<b>TRAFFIC</b>	
SPECIFICATION NO. 880	
TDC-10	PAGE 196



STOP:  
 LEGEND AND BORDER: WHITE (REFLECTORIZED)  
 BACKGROUND: RED (REFLECTORIZED)



SLOW:  
 LEGEND AND BORDER: BLACK (NON-REFLECTORIZED)  
 BACKGROUND: ORANGE (REFLECTORIZED)

STOP-SLOW PADDLE

DESIGNED BY: J. L. TDC-11, DWG  
 DATE: 1988, 1:00 PM, HOBEN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**STOP-SLOW  
PADDLE**

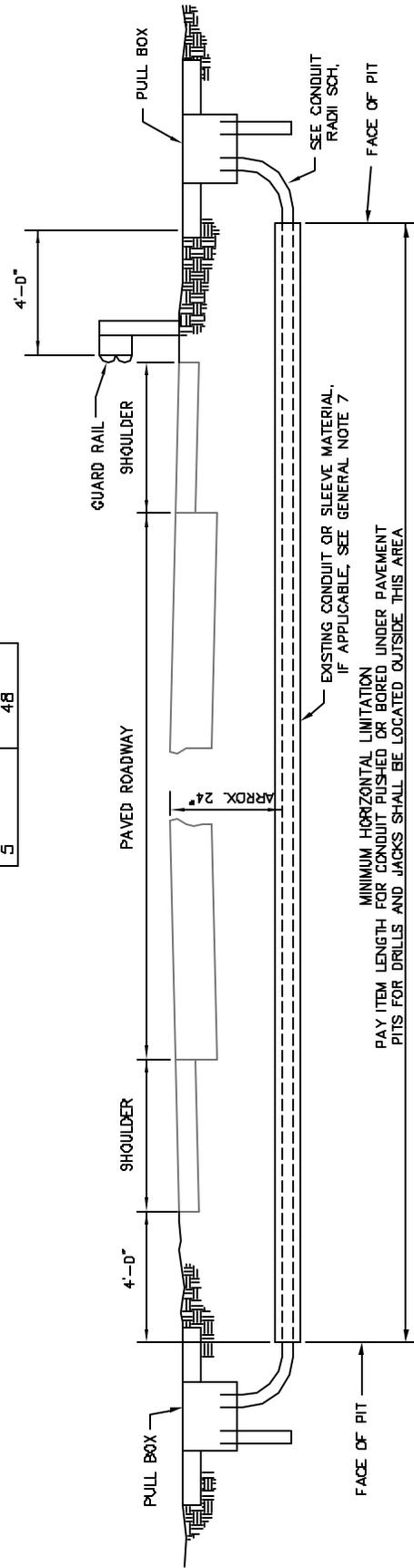
**TRAFFIC**

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SPECIFICATION NO. 880  
 TDC-11 PAGE 197



CONDUIT RADII SCHEDULE	
NOMINAL CONDUIT OR SLEEVE DIAMETER (INCHES)	MINIMUM RADIUS (INCHES)
1/2, 3/4	12
1, 1-1/4	18
1-1/2	24
2	30
2-1/2, 3	36
4	48
5	48



TYPICAL CONDUIT CROSSING UNDER PAVEMENT

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

CROSSING UNDER  
 PAVEMENT

TRAFFIC	
SPECIFICATION NO. B02	
TCC-02	PAGE 199

25A STANDARD SPECIFICATIONS FOR CONSTRUCTION, 11th EDITION, 2007, SECTION 1100



## GENERAL NOTES

1. IF SPECIFIED IN THE PLANS, A GROUND ROD SHALL BE INSTALLED AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE "PULL BOX".
2. EACH PULL BOX SHALL BE INSTALLED WITH THE APPROPRIATE SIZED CONCRETE APRON. UNLESS IT IS INSTALLED IN A SIDEWALK OR OTHER PAVED AREA OR OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER, AND SHALL BE BUILT TO FIT THE EXISTING FIELD CONDITION AND PRESENT A NEAT WORKMAN LIKE APPEARANCE.
3. THE PULL BOX COVER SHALL HAVE THE APPROPRIATE LEGEND. WHEN A PULL BOX IS INSTALLED BY THE GRADING OR SURFACING CONTRACTOR THE LEGEND FOR THE COVER SHALL READ "TRAFFIC SIGNALS", UNLESS OTHERWISE SPECIFIED IN THE PLANS. OTHER APPROPRIATE LEGENDS ARE: "HIGHWAY LIGHTING", "STREET LIGHTING", "DANGER", ETC... NO ADVERTISING OTHER THAN THE MANUFACTURERS LOGO WILL BE ALLOWED ON THE PULL BOX COVER.
4. THE DIMENSIONS FOR THE PULL BOXES ARE NOMINAL AND MAY VARY SLIGHTLY BY THE MANUFACTURER'S DESIGN.
5. PULL BOX BODY EXTENSIONS SHALL BE INSTALLED BELOW THE PULL BOX BODY AT THE LOCATIONS SHOWN IN THE PLANS.
6. THE COST OF THE CONCRETE APRON AND GRAVEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PULL BOX, UNLESS OTHERWISE SPECIFIED.
7. A CIRCULAR CONCRETE APRON MAY BE USED IN LIEU OF THE SQUARE APRON SHOWN PROVIDING THE 1'-0" MIN. CLEARANCE IS MAINTAINED.
8. THE CONCRETE APRON THICKENSS AND SIZE MAY BE ALTERED AT THE DIRECTION OF THE ENGINEER. IF ALTERED, THE ADDITIONAL CONCRETE WILL BE PAID FOR AS "STRUCTURAL CONC." (C.Y.)
9. THE NUMBER, SIZE, TYPE, AND LOCATION OF CONDUIT STUBS FOR FUTURE CONDUIT RUNS SHALL BE AS SHOWN ON THE PLANS. SEE CCD STD.
10. CONDUCTOR'S HAVING UNLIKE VOLTAGES SHALL HAVE SEPARATE PULL BOXES.

## MATERIAL SPECIFICATIONS

- A. THE PRE-CAST CONCRETE BODY AND THE PRE-CAST REINFORCED PLASTIC PULL BOX BODY AND COVER SHALL CONFORM TO SECTION 739 OF THE STANDARD SPECIFICATIONS OR SPECIAL PROVISIONS.
- B. THE GRAY IRON CAST COVER SHALL CONFORM TO SECTION 725 OF THE STANDARD SPECIFICATIONS.
- C. THE CONCRETE APRON SHALL BE CLASS "A" CONCRETE.
- D. THE GRAVEL OR CRUSHED ROCK BASE SHALL BE CLEAN, TOUGH, DURABLE, PRACTICALLY FREE FROM CLAY OR OTHER FOREIGN SUBSTANCES AND SHALL PASS A 5/8" SIEVE 100%.
- E. THE ELECTRICAL CONDUITS SHALL CONFORM TO SECTION 709 OF THE STANDARD SPECIFICATIONS.
- F. THE WIRE REINFORCEMENT SHALL BE 9 GAUGE WELDED WIRE FABRIC.

CITY OF EDMOND, OKLAHOMA  
 DEPARTMENT OF PUBLIC WORKS  
 1111 EAST 17TH AVENUE  
 OKLAHOMA CITY, OKLAHOMA 73102  
 OCT. 7, 1988 8:00 AM

REVISIONS	ND.	DATE	ITEM CHANGED

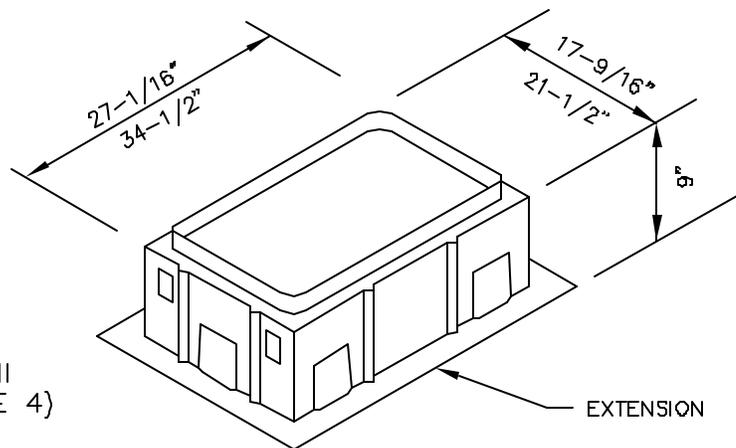
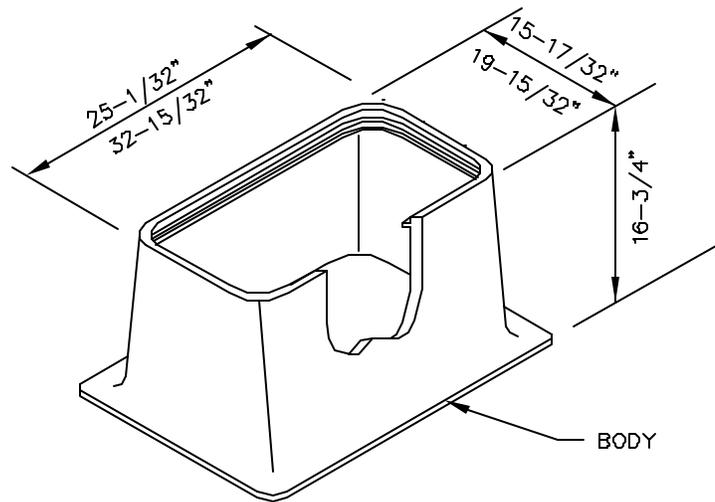
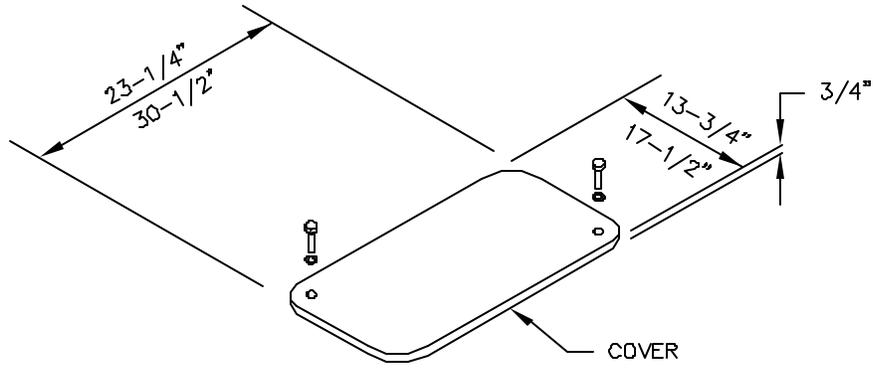
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# GENERAL NOTES

TRAFFIC

SPECIFICATION NO. B03

PBD-01 PAGE 201



TOP DIM. - SIZE I  
 BOTTOM DIM. - SIZE II  
 (SEE GENERAL NOTE 4)

## PLASTIC PULL BOX SIZE I & II

DESIGNED BY: [ ] DRAWN BY: [ ] CHECKED BY: [ ]  
 DATE: 11/19/88 PBD: JAM/10/88

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PLASTIC PULL  
 BOX**

<b>TRAFFIC</b>	
SPECIFICATION NO. B03	
PBD-02	PAGE 202







## GENERAL NOTES

1. A TEMPLATE SHALL BE PROVIDED TO FIX THE LOCATION OF THE ANCHOR BOLTS AND CONDUITS THAT PROJECT OUT OF THE CONCRETE FOOTING.
2. EACH FOOTING SHALL BE CONSTRUCTED WITH AT LEAST (2) TWO ELECTRICAL SERVICE ENTRY CONDUITS, SOME MAY REQUIRE MORE. SEE THE PLANS FOR LOCATIONS AND NUMBER OF CONDUITS REQUIRED, ANY UNSUED CONDUIT SHALL BE CAPPED ON BOTH ENDS.
3. IF A BREAKAWAY DEVICE IS TO BE INSTALLED THE FOOTING SHALL BE INSTALLED AS CLOSE TO GROUND LEVEL AS POSSIBLE TO ASSURE THE PROPER ACTION OF THE BREAKAWAY DEVICE AND TO PREVENT DAMAGE TO THE FOOTING OR UNDERSIDE OF AN IMPACTING VEHICLE.
4. IF SO SPECIFIED, THE FOOTING MAY BE EXTENDED EXTRA LENGTH EITHER ABOVE OR BELOW GRADE, SEE THE PLANS FOR LOCATION AND LENGTH. ALSO THE V-BAR LENGTH AND THE NUMBER OF H-BARS AND CONDUIT LENGTHS SHALL BE ADJUSTED ACCORDINGLY.
5. FOR INFORMATION ON INSTALLATION OF UNDERGROUND/ TRENCHED CONDUIT SEE CCD STANDARDS.
6. THE FOOTING SHALL BE FORMED A MIN. OF 6" FROM TOP OF FOOTING OR TO BELOW GRADE, WHICH EVER IS GREATER. ALL REINFORCING STEEL SHALL HAVE A TYPICAL 3" CLEARANCE FROM THE OUTSIDE EDGE OF THE FOOTING.
7. IF ANCHOR BOLT DATA IS NOT SPECIFIED IN THE PLANS, THE ANCHOR BOLT SIZE AND PLACEMENT FOR NEW POLES SHALL BE IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS. ANCHOR BOLTS FOR USED LIGHT POLES SHALL BE INSTALLED TO FIT THE RESET POLE ASSEMBLY.
8. IF THE FOOTING IS CONSTRUCTED BY A CONTRACTOR OTHER THAN THE LIGHTING CONTRACTOR, THE FOLLOWING ADDITIONAL REQUIREMENTS WILL APPLY:
  - (A) AN ANCHOR BOLT SPACE PLATE SHALL BE INSTALLED.
  - (B) THE CONDUIT SLEEVES FOR THE POWER CONDUCTORS SHALL BE 2" RIGID GALV. STEEL AND EXTEND APPROXIMATELY 6" FROM THE EDGE OF THE FOOTING AND BE CAPPED ON BOTH ENDS, UNLESS THE CONDUIT SYSTEM IS DESIGNED TO EXTEND TO ANOTHER POINT OF TERMINATION.
  - (C) THE SIZE OF THE ANCHOR BOLT AND THE BOLT CIRCLE DIMENSIONS SHALL BE AS SHOWN IN THE PLANS.
9. IF THE CONTRACTOR ELECTS TO INSTALL CABLE-IN-DUCT (CID) TRENCHED CONDUIT PRIOR TO CONSTRUCTING THE FOOTING, THE CID CONDUIT MAY BE PLACED IN THE CONCRETE FOOTING WITHOUT A CONDUIT SLEEVE. IF THE TRENCHED CID CONDUIT IS TO BE INSTALLED AFTER THE FOOTING IS CONSTRUCTED A CONDUIT SLEEVE WILL BE REQUIRED. THE CONDUIT SLEEVE SHALL BE SIZED TO ACCOMODATE THE CID SPECIFIED IN THE PLANS. I.E. A 2" CID REQUIRES A 3" DIAM. SLEEVE.
10. THE ANCHOR BOLTS, CONDUIT SLEEVES, SPACE PLATE, GROUND ROD, GROUND WIRE, CLAMP AND THE CONDUIT FOR THE GROUND WIRE WILL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE FOOTING MATERIALS. THE ELECT. CONDUIT SHALL BE MEASURED FOR PAYMENT AND PAID FOR AT THE UNIT PRICE BID FOR THE ELECTRICAL CONDUIT OF THE SIZE AND TYPE SPECIFIED IN THE PLANS.

15.5 SPECIFIED DIMENSIONS SHALL BE IN UNLESS OTHERWISE NOTED  
 15.6 SEE THE CITY OF EDMOND STANDARD SPECIFICATIONS

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

GENERAL NOTES

**TRAFFIC**  
 SPECIFICATION NO. 806  
 GML-01 PAGE 206

## GENERAL NOTES

11. FOR DETAILS SEE APPROPRIATE STD. DRAWINGS OR DETAIL SHEETS.
12. INSTALL A CONDUIT COUPLING ADAPTOR, OR COMPRESSION COUPLING IF NECESSARY TO CONNECT CONDUITS OF DISSIMILAR MATERIALS.
13. THE ANCHOR BOLT PROJECTION SHALL BE EITHER:
  - (A) 2-1/2" MIN. 3-1/2" MAX. FOR ANCHOR BASE POLE.
  - (B) 3" MIN. 4" MAX. FOR TRANSFORMER BASE.
  - (C) AS REQ'D FOR DOUBLE NUT LEVELING.
14. FOOTING IDENTIFICATION NO. 1

TYPE OF FOOTING SEE NOTE "1"	GMF-GROUND MOUNTED FTG. HMF-HIGH MAST FTG. PCMF-PIER CAP MOUNTED FTG. BMF-BARRIER MOUNTED FTG. WMF-WALL MOUNTED FTG. SPF-SPECIAL MOUNTED FTG.	GMF-24x60/4 (1.00x40) 12.5
FOOTING DIM.: SHAFT DIAM. x TOTAL LENGTH (INCHES) OR FOOTING DESIGN: (SEE DETAILS FOR DIMENSIONS)		
ANCHOR BOLT DATA SEE NOTE "7"	QUANTITY DIAMETER "T" (INCHES) TOTAL LENGTH "L" (INCHES) BOLT CIRCLE DIAM. "BC" (INCHES)	

15. THE CONTRACTOR SHALL CONSTRUCT THE TOP OF THE LIGHT POLE FOOTINGS LEVEL, TO AVOID THE USE OF SHIMS WHEN INSTALLING THE LIGHT POLES ON THE FOOTINGS.

15. APPROVED FOR THE CITY OF EDMOND

REVISIONS	ND.	DATE	ITEM CHANGED
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**CITY OF EDMOND**

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

# GENERAL NOTES

<b>TRAFFIC</b>	
SPECIFICATION NO. B06	
GML-02	PAGE 207

## MATERIAL SPECIFICATIONS

- (A). ANCHOR BOLTS— 4 REQ'D AND SHALL BE HOT BENT AND MEET THE REQUIREMENTS OF ASTM A38-M55 AND HAVE A MINIMUM YIELD STRENGTH OF 55,000 PSI.  
 HEX NUTS— 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ASTM A-563 GRADE A, OR ANSI B18.2.2 HEX TYPE.  
 FLAT WASHERS— 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ANSI B27.2 HEAVY WASHERS. NOTE: IF BREAKAWAY BASE DESIGN A, B, OR C IS TO BE INSTALLED, ADDITIONAL EXTRA THICK FLAT WASHERS REQUIRED, SEE STD'S BBD.  
 LOCK WASHERS— 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ANSI B18.21.1 HEAVY WASHERS.
- (B). ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M-232).
- (C). ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE FURNISHED WITH EACH ANCHOR BASE AND TRANSFORMER BASE MOUNTED POLE.
- (D). ALL CONCRETE SHALL BE CLASS "A".
- (E). REINFORCING STEEL SHALL BE AASHTO M-31, GRADE 40.
- (F). ANCHOR BOLT SPACE PLATES SHALL BE AASHTO M-183 (ASTM A-36), MIN. PLATE THICKNESS OF 0.0598" (16 GAUGE).
- (G). ELECTRICAL CONDUIT OR CONDUIT SLEEVES SHALL BE IN ACCORDANCE WITH SECTION 802 OF THE STANDARD SPECIFICATIONS AND MAY BE EITHER RIGID GALV. STEEL OR SCH. 40 PVC PLASTIC.
- (H). ELECTRICAL CONDUCTORS SHALL BE IN ACCORDANCE WITH SECTION 834 OF THE STANDARD SPECIFICATIONS.

CITY OF EDMOND ENGINEERING DEPARTMENT  
 1001 11TH AVENUE N.E. EDMOND, OKLAHOMA 73116

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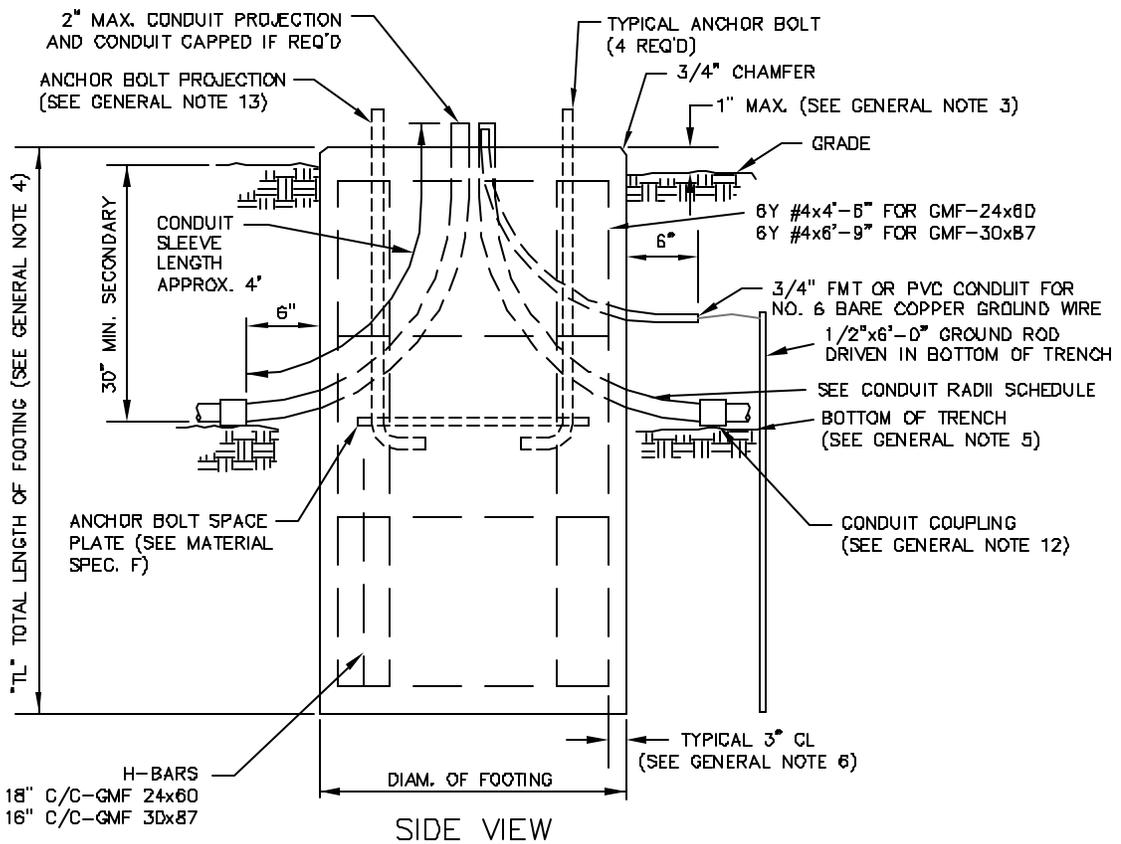
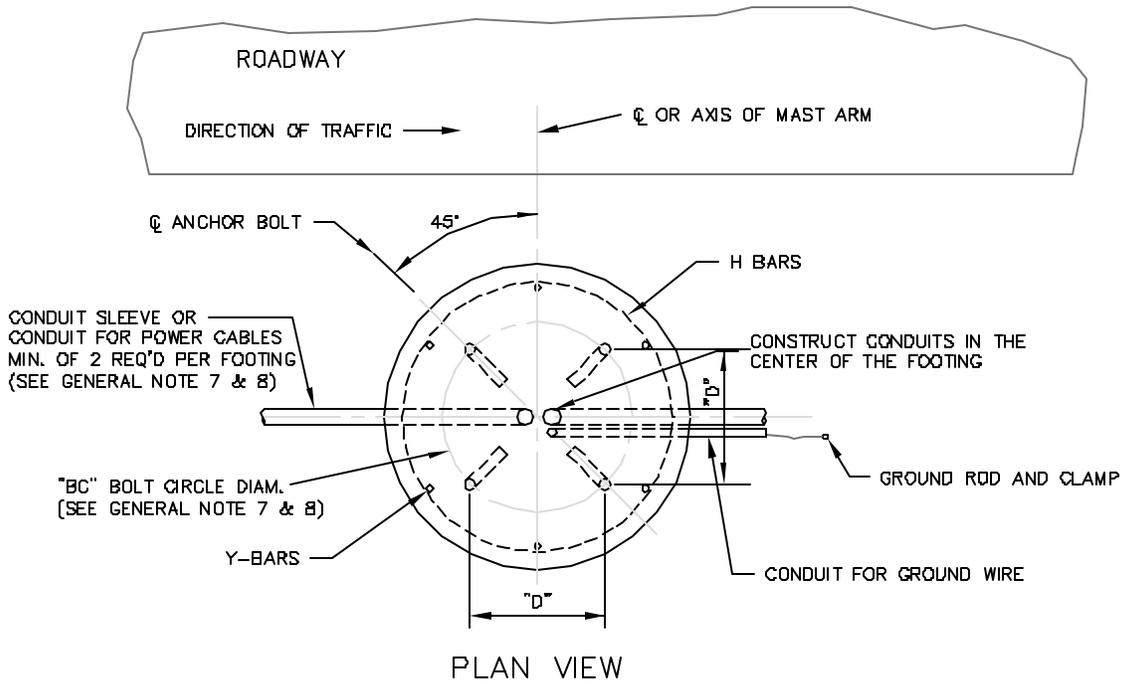
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# MATERIAL SPECIFICATIONS

**TRAFFIC**

SPECIFICATION NO. B06

GML-03 PAGE 208



TYPICAL LIGHT POLE FOOTING DETAILS

CITY OF EDMOND, OKLA. 151-04-DWG  
 REV. 24 FEBRUARY 1988

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

FOOTING

TRAFFIC

SPECIFICATION NO. B06  
GML-04 PAGE 20B







GENERAL NOTES

1. CAST ALUMINUM TRANSFORMER BASES SHALL MEET THE REQUIREMENTS OF AASHTO'S "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" DATED 1995.
2. CAST ALUMINUM TRANSFORMER BASES SHALL BE MARKED FOR EASY IDENTIFICATION AS TO COMPLIANCE WITH THE ABOVE SPECIFICATIONS.
3. ALL CONNECTING AND HOLD DOWN WASHERS SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE BASE MANUFACTURER RECOMMENDATIONS.
4. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER A TYPE "A" CERTIFICATION AS SPECIFIED IN SECTION 106.12 OF THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", FOR ALL TYPES OF BREAKAWAY BASES.
5. FOR FOOTING DETAILS SEE GMF STANDARDS.
6. ALL CONNECTING AND ANCHOR BOLTS SHALL BE TORQUED TO A MIN. OF 200 FT. LBS. OR AS SPECIFIED BY THE POLE AND BREAKAWAY BASE MANUFACTURER.
7. IF SHIMMING IS NECESSARY TO INSTALL THE LIGHT POLES STRAIGHT AND LEVEL ON ITS LONGITUDINAL AXIS, THE CONTRACTOR SHALL INSTALL "U" SHAPED SHIMS OR ROUND FLAT WASHERS. THE WASHER/SHIMS SHALL BE INSTALLED AROUND THE ANCHOR BOLTS.

MATERIAL SPECIFICATIONS

- A. CAST ALUMINUM TRANSFORMER BASES SHALL MEET THE FOLLOWING REQUIREMENTS:  
 BASE- ASTM B108 ALLOY SQ70A- T6 OR ALLOY 356-T6.  
 DOOR- THE HIGH DENSITY PLASTIC DOOR SHALL BE FABRICATED USING NORYL SE1-GFM3 RESIN, OR APPROVED EQUAL. THE VANDAL RESISTANT DOOR FASTENER SHALL BE A STAINLESS STEEL SOCKET BUTTON HEAD CAP SCREW.
- B. CONNECTING AND HOLD DOWN HARDWARE FOR CAST ALUMINUM TRANSFORMER. BASE SHALL BE: BOLTS ASTM A-325, NUTS ASTM 1-563 GRADE A, AND BOTH GALVANIZED TO ASTM A-153 (AASHTO M-252).

15% STIPENDIUM, 10% BONDING, 10% TRAVEL, 10% MEALS, 10% HOUSING, 10% UTILITY, 10% PHONE, 10% CLOTHING, 10% PERSONAL, 10% ENTERTAINMENT, 10% GROOMING, 10% EDUCATION, 10% RECREATION, 10% CULTURAL, 10% ARTS, 10% SPORTS, 10% HEALTH, 10% WELLNESS, 10% CARE, 10% INSURANCE, 10% RETIREMENT, 10% SAVINGS, 10% INVESTMENT, 10% CHARITABLE, 10% OTHER.

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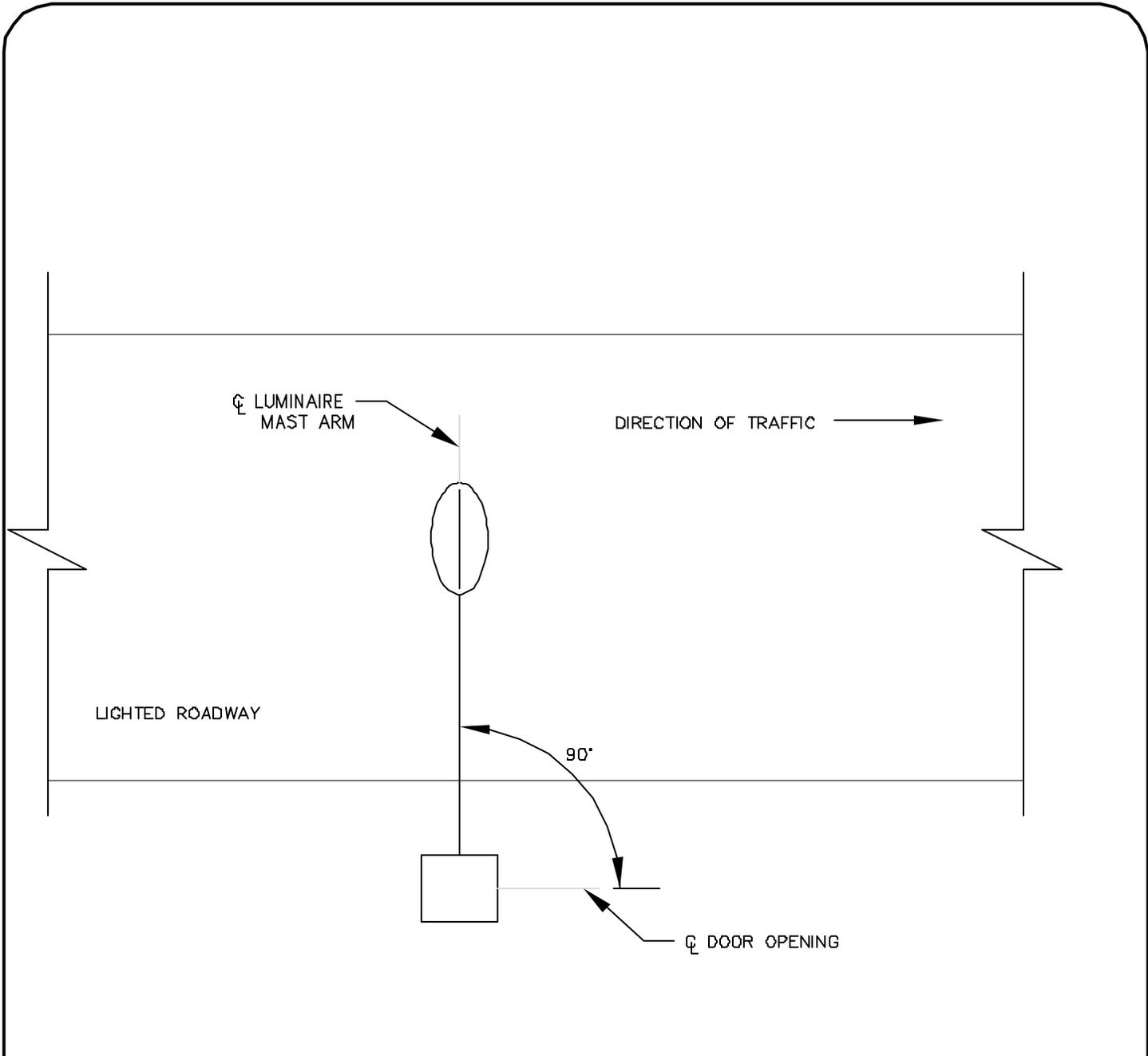
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GENERAL NOTES /  
 MATERIAL SPECS.**

**TRAFFIC**

SPECIFICATION NO. B06  
 BBD-01 PAGE 213





TYPICAL TRANSFORMER BASE  
ORIENTATION DETAIL

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**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**BASE ORIENTATION**

<b>TRAFFIC</b>	
SPECIFICATION NO. B04	
BBD-03	PAGE 215

DRAWING NUMBER: BDD-03-001

154 STENOGRAPH COMPANY, INC., 111 WEST 64th ST., NEW YORK 100 191, N.Y.

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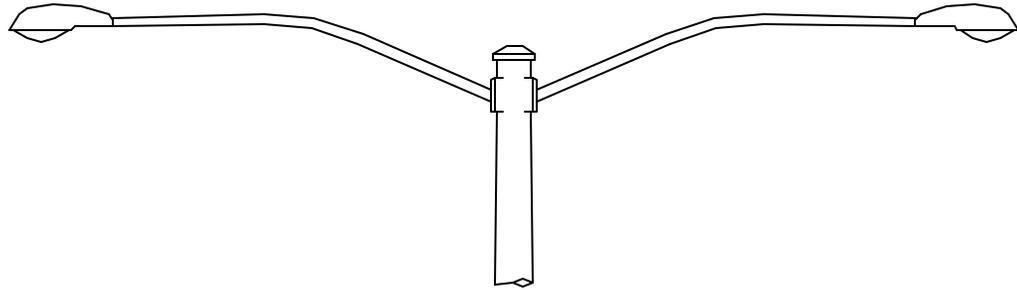
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# DIMENSION CHART

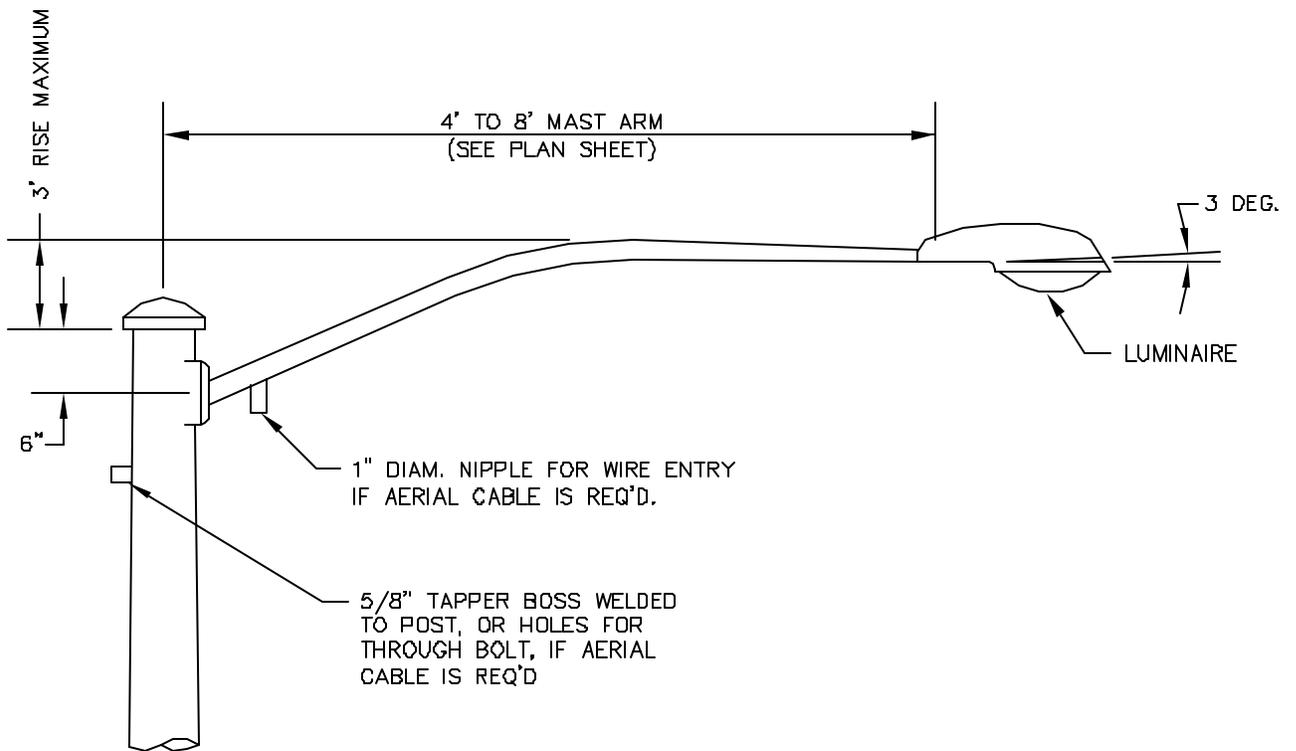
**TRAFFIC**  
 SPECIFICATION NO. B06  
 BBD-04 PAGE 216

NOMINAL TRANSFORMER BASE DIMENSIONS											
DESIGN	NOMINAL MOUNTING HEIGHT	HEIGHT OF BASE "H"	TOP OF BASE				BOTTOM OF BASE				
			WIDTH "W1"	CONNECTING BOLT DIA.	MIN. BOLT CIRCLE DIA.	MAX. BOLT CIRCLE DIA.	WIDTH "W2"	ANCHOR BOLT DIA.	MIN. BOLT CIRCLE DIA.	MAX. BOLT CIRCLE DIA.	
A	LESS THAN 40'	20"	12"	1"	10"	12"	13"	1"	10"	12"	12"
B	40'-50'	20"	13"	1"	11"	13"	15-1/2"	1"	13"	15"	15"
C	50'	20"	15"	1-1/4"	13"	15-1/8"	17-1/4"	1-1/4"	15"	17-1/4"	17-1/4"





TWIN ARMS



TYPICAL LIGHT POLE WITH  
MONO-TUBE MAST ARM

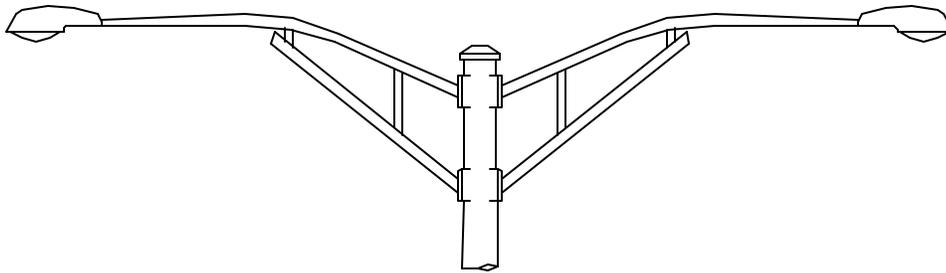
10/11/06 LPD-02.DWG  
 10/11/06 FOR ALL WORK

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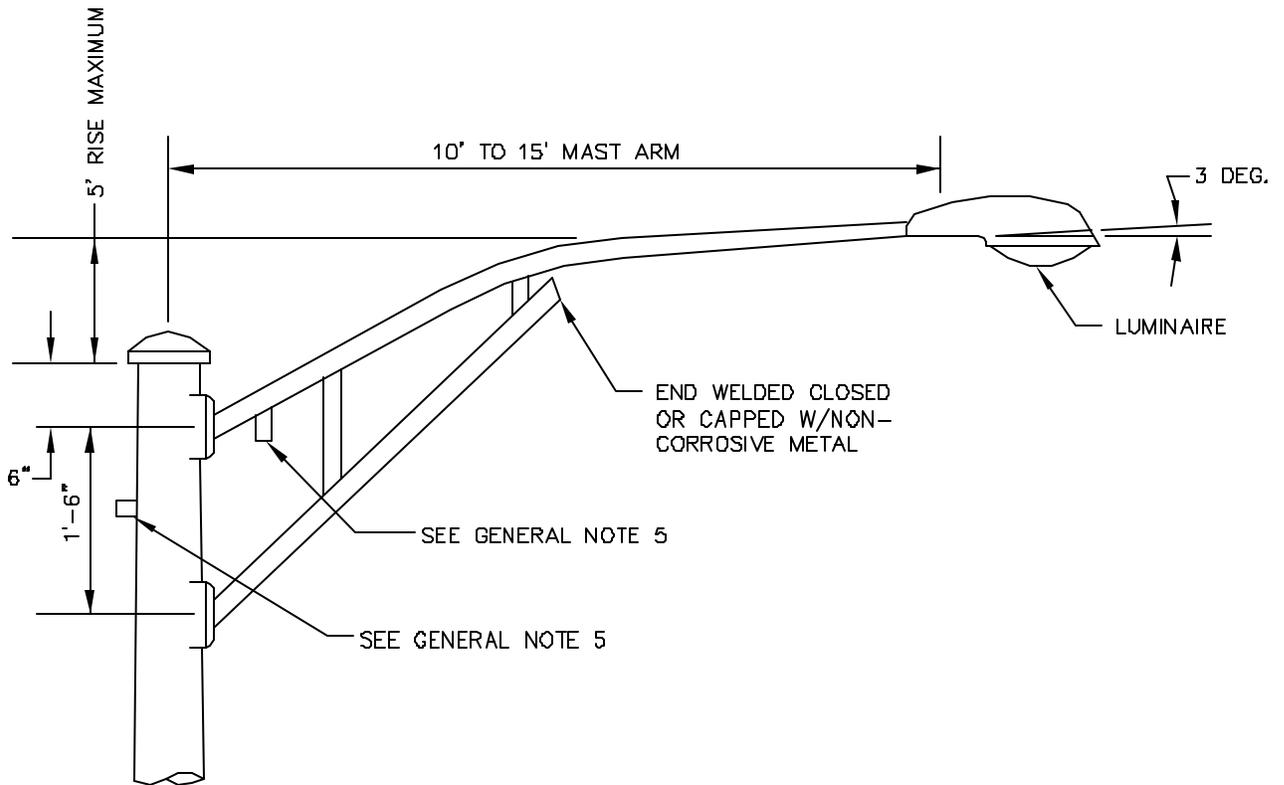
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**MONO-TUBE  
 MAST ARM**

<b>TRAFFIC</b>	
SPECIFICATION NO. B06	
LPD-02	PAGE 218



TWIN ARMS



TYPICAL LIGHT POLE WITH TRUSS TYPE MAST ARM

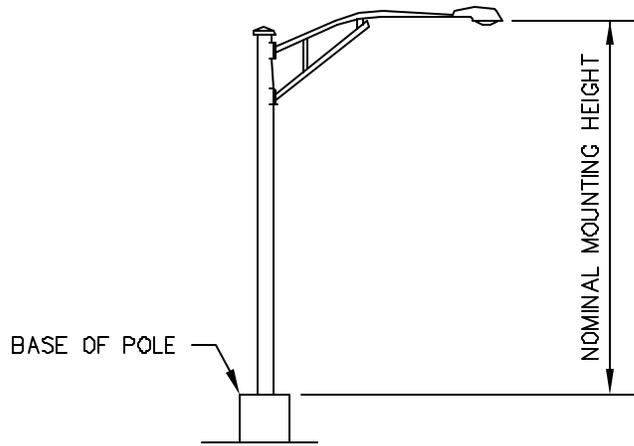
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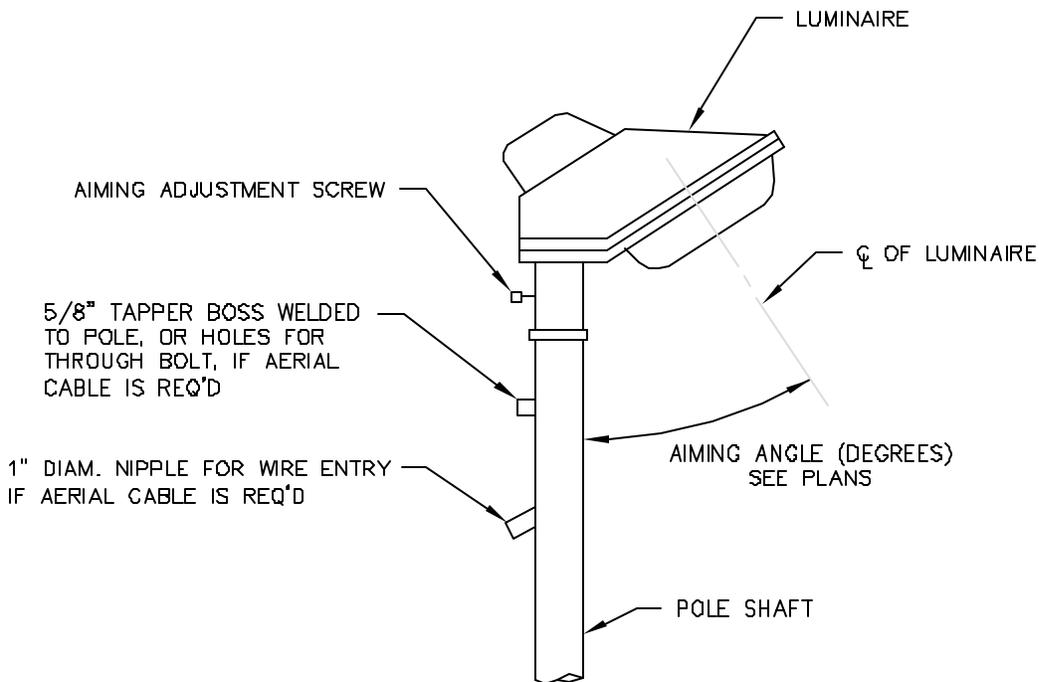
**CITY OF EDMOND**  
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 CONSTRUCTION STANDARDS

**TRUSS TYPE  
 MAST ARM**

**TRAFFIC**  
 SPECIFICATION NO. B06  
 LPD-03 PAGE 21B



TYPICAL MOUNTING HEIGHT



TYPICAL PEDESTAL LIGHT POLE  
WITH POST TOP LUMINAIRE

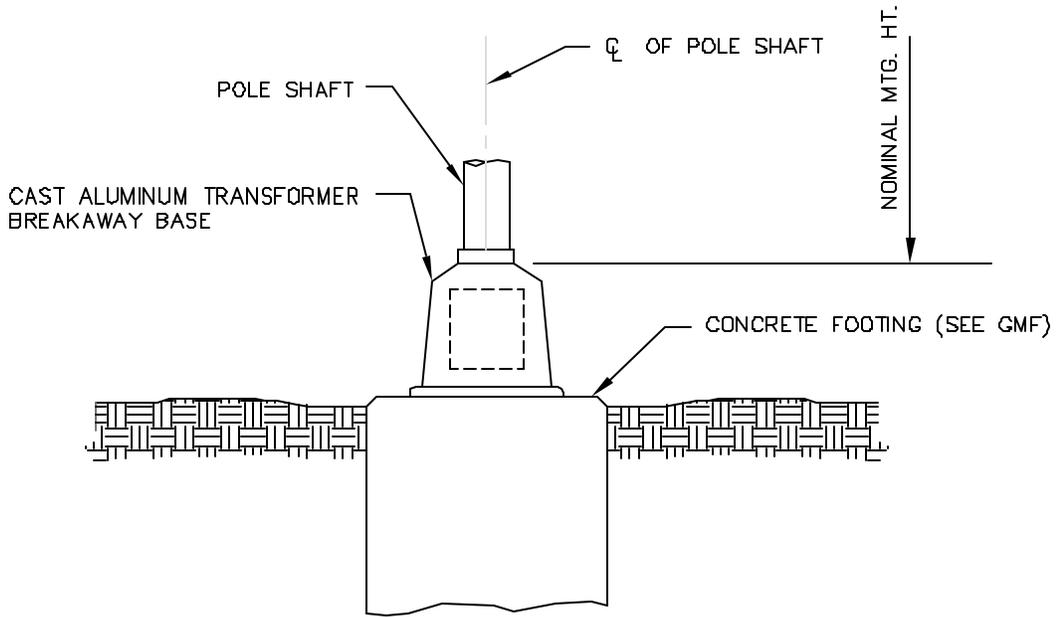
CITY OF EDMOND, TEXAS  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS  
 SPECIFICATION NO. B06  
 LPD-04  
 PAGE 220

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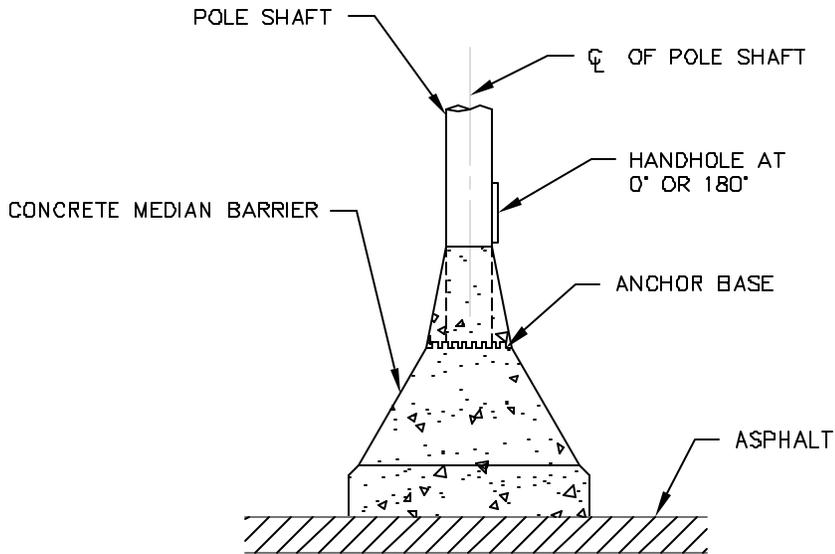
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PEDESTAL  
 LIGHT POLE**

<b>TRAFFIC</b>	
SPECIFICATION NO. B06	
LPD-04	PAGE 220



TYPICAL BREAKAWAY BASE  
MOUNTED POLE



TYPICAL MEDIAN BARRIER MOUNTED LIGHT POLE

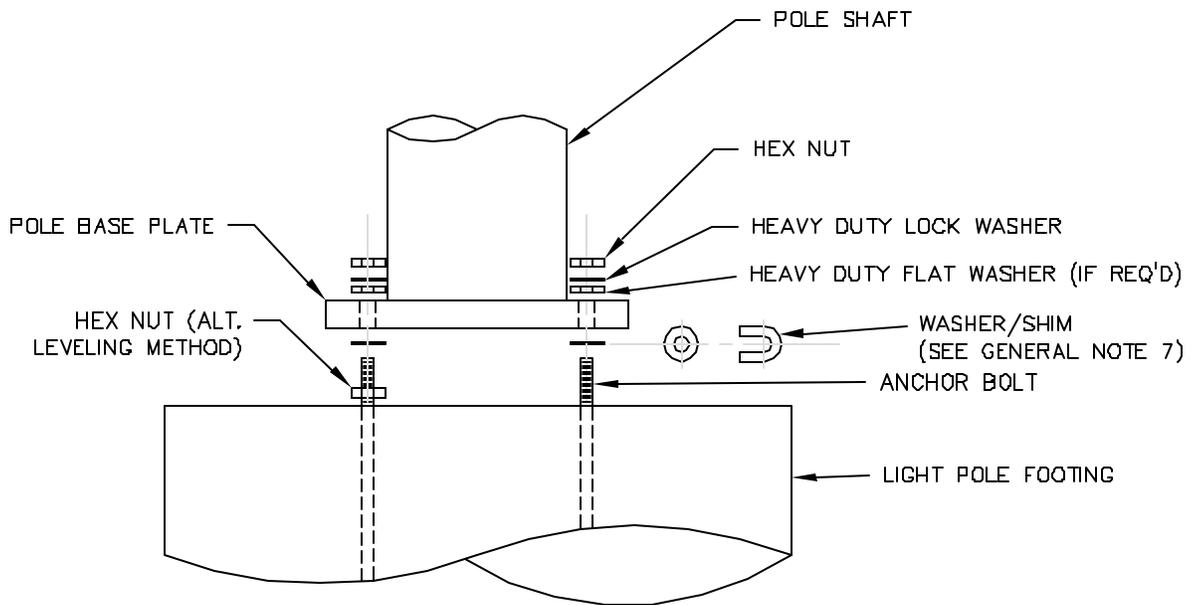
CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1500 WEST 17TH AVENUE, SUITE 1000  
 EDMOND, OKLAHOMA 73119

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**BREAKAWAY/BARRIER  
 MOUNTED POLE**

**TRAFFIC**  
 SPECIFICATION NO. 804  
 LPD-05 PAGE 221



TYPICAL POLE TO FOOTING CONNECTION DETAIL

CITY OF EDMOND, 1111 15TH AVE. S.W., EDMOND, OK 73119

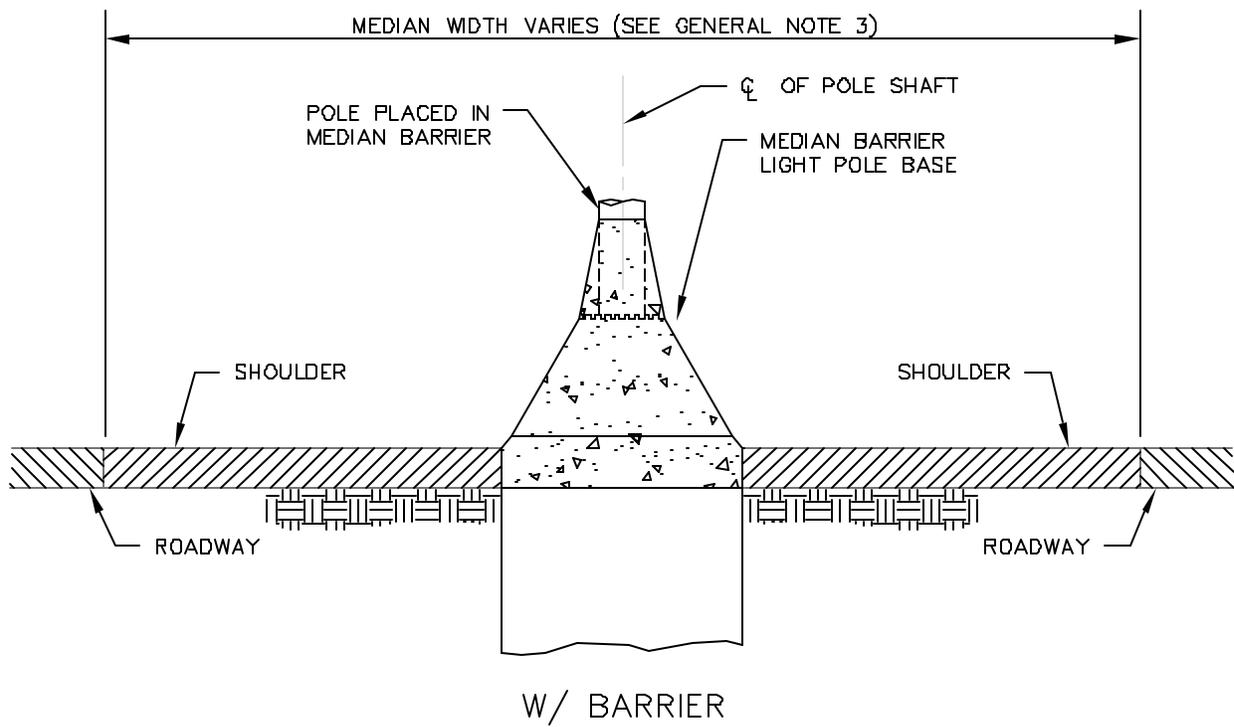
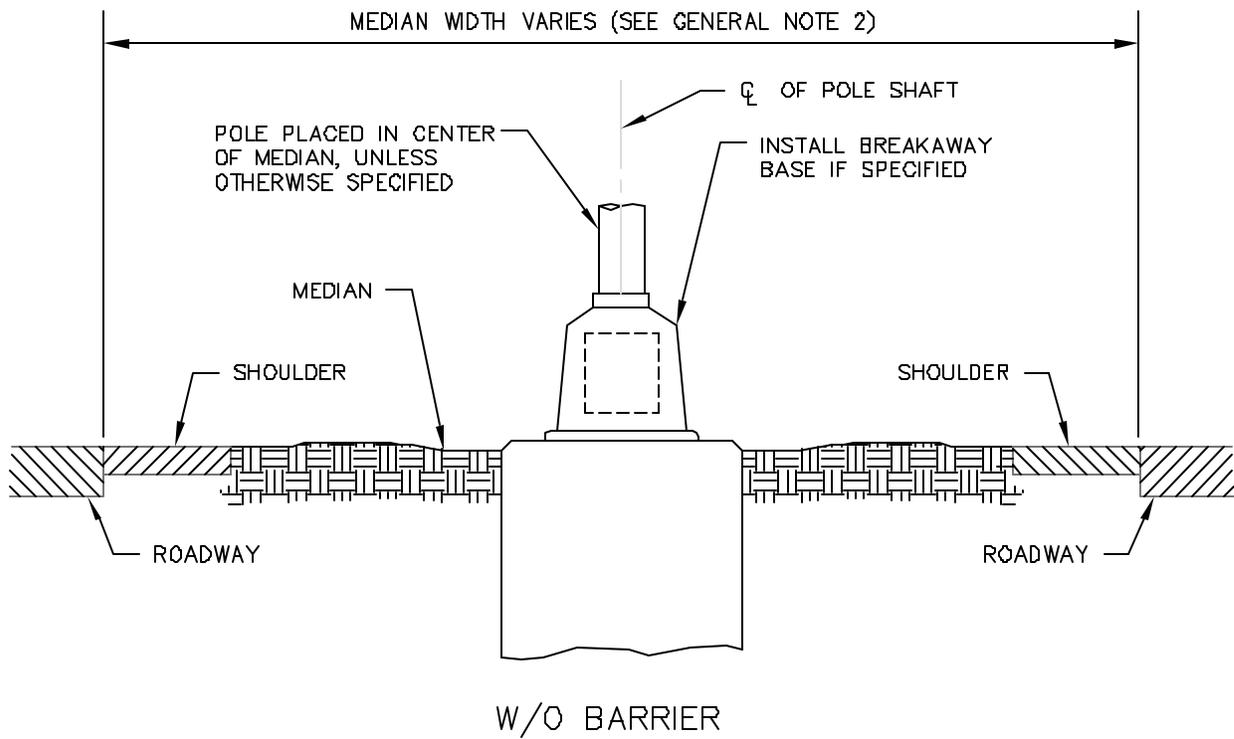
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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**FOOTING  
 CONNECTION**

<b>TRAFFIC</b>	
SPECIFICATION NO. B04	
LPD-06	PAGE 222





TYPICAL LIGHT POLE PLACEMENT IN MEDIAN AREAS

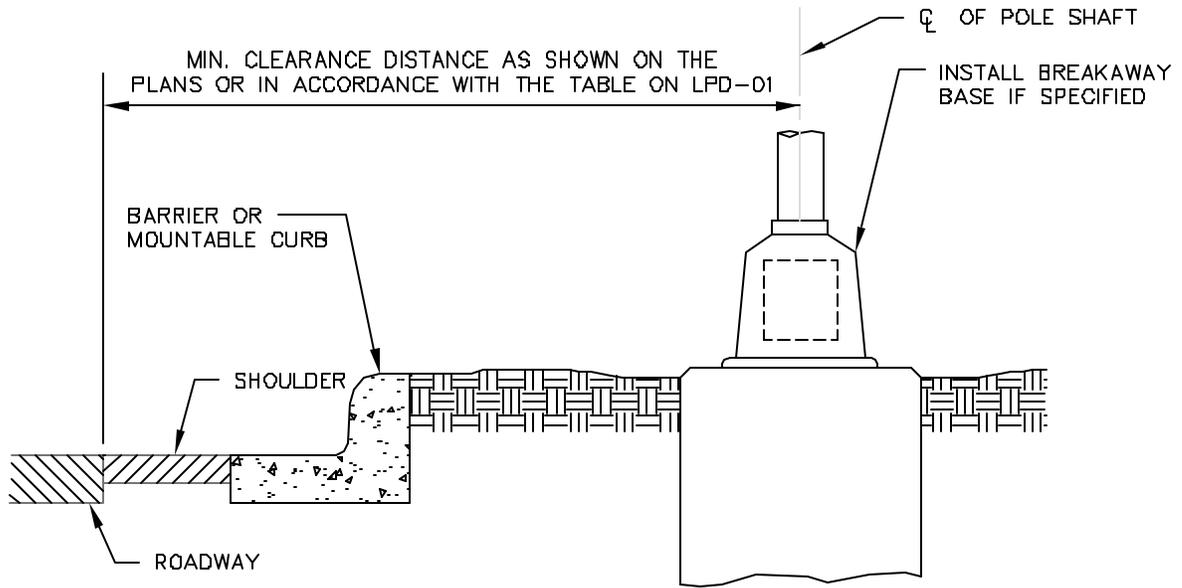
REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

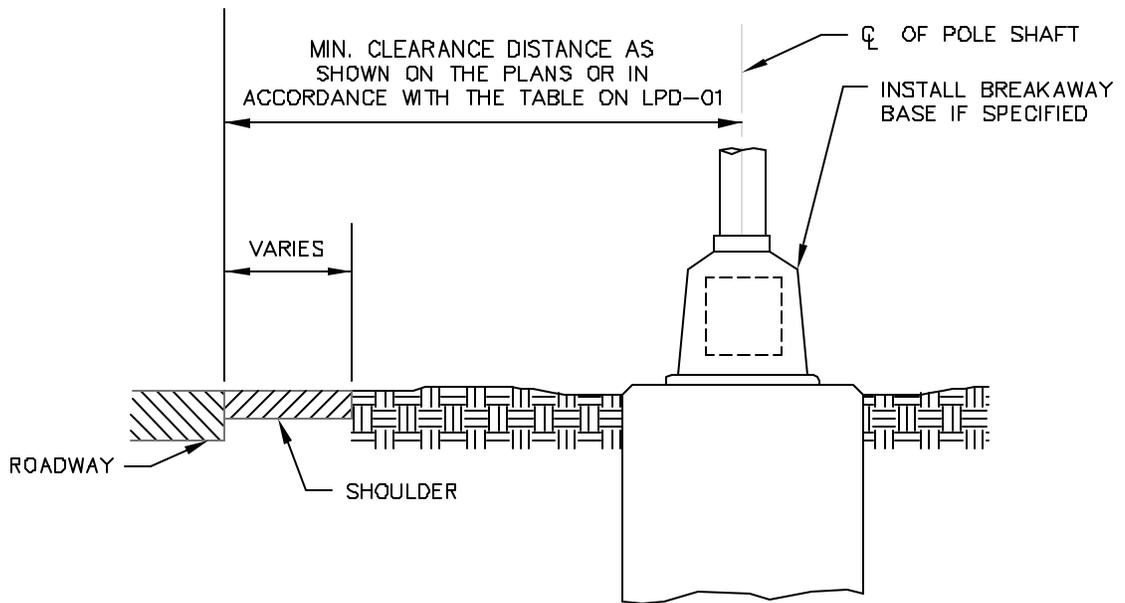
**PLACEMENT  
 IN MEDIANS**

**TRAFFIC**  
 SPECIFICATION NO. B04  
 LPP-02 PAGE 224

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 NOV, 17, 1999 4:00 PM TADREX



TYPICAL LIGHT POLE PLACEMENT  
ON ROADWAYS WITH CURB  
(BARRIER OR MOUNTABLE CURB)



TYPICAL LIGHT POLE PLACEMENT  
WITH SHOULDER ON MAINLINE

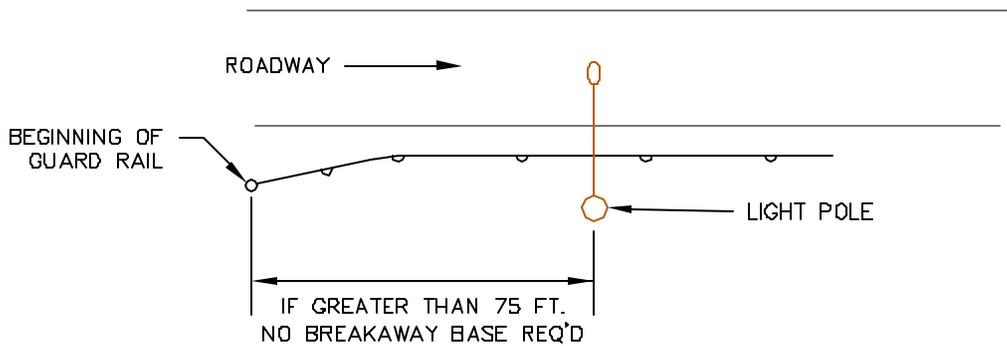
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REVISIONS	NO.	DATE	ITEM CHANGED

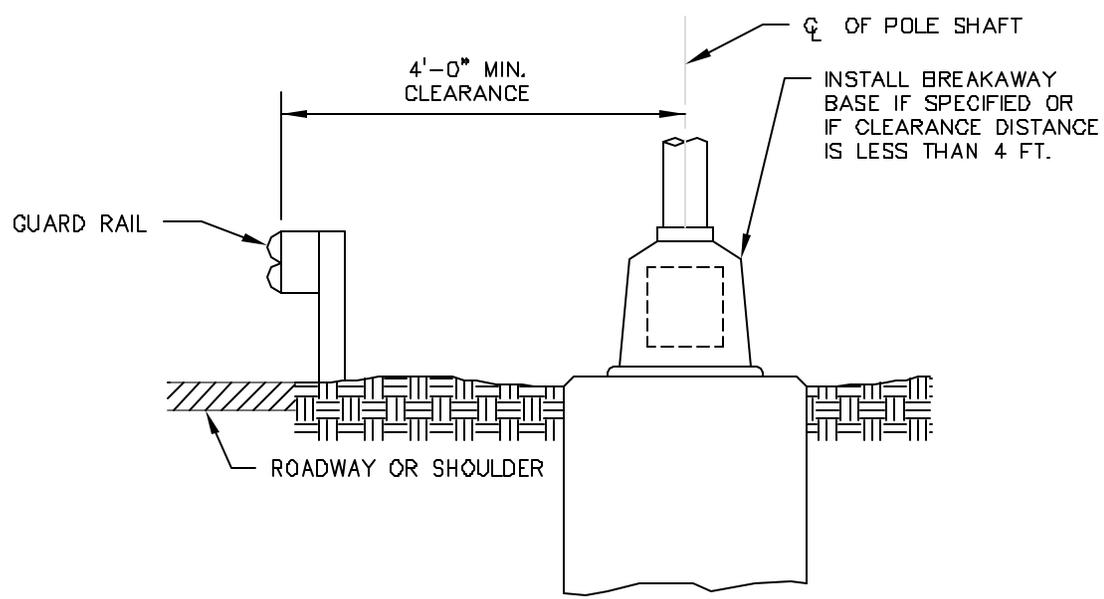
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**PLACEMENT WITH  
 CURB / SHOULDER**

<b>TRAFFIC</b>	
SPECIFICATION NO. 804	
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PLAN VIEW



TYPICAL LIGHT POLE PLACEMENT  
BEHIND GUARDRAIL

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 NOV, 16, 1999 12:00 PM MADREZ

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
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**PLACEMENT BEHIND  
 GUARD RAIL**

<b>TRAFFIC</b>	
SPECIFICATION NO. 804	
LPP-04	PAGE 226



GENERAL SPECIFICATIONS FOR  
HIGH-INTENSITY DISCHARGE LUMINAIRES

DESCRIPTION

THE LUMINAIRE SHALL BE A HORIZONTAL OR VERTICAL BURNING AS APPLICABLE, HIGH INTENSITY DISCHARGE, OUTDOOR LUMINAIRE COMPLETE WITH HOUSING, APPROPRIATE MOUNTING, BUILT IN BALLAST, MOGUL SOCKET, LAMP, GASKETED, REFLECTOR AND GLASS REFRACTOR, UNLESS OTHERWISE SPECIFIED.

MATERIALS:

1. LAMP:

- A. THE HIGH-INTENSITY DISCHARGE LAMP SHALL BE OF THE SIZE AND TYPE SPECIFIED IN THE PLANS.
- B. THE LAMP BASE SHALL BE NICKEL PLATED BRASS WITH A DATE CODING FEATURE.
- C. THE LAMP SHALL BE CAPABLE OF STARTING 90% OF THE TIME AT -20° F.

2. MOUNTING:

- A. LUMINAIRES FOR MAST ARM MOUNTING SHALL BE EQUIPPED WITH A SLIP FITTER DESIGNED TO ACCEPT 1-1/4" TO 2" SCHEDULE 40 PIPE AND PROVIDE A METHOD OF LEVELING THE LUMINAIRE AND VERTICAL ADJUSTMENTS ±5 DEGREES USING EXTERNALLY ACCESSIBLE BOLTS. THE SLIPFITTER SHALL BE EQUIPPED WITH A PIPE STOP.
- B. LUMINAIRES FOR POST TOP MOUNTING SHALL BE EQUIPPED WITH A SLIPFITTER DESIGNED TO ACCEPT A 2-3/8" TO 3" O.D. POLE OR TENON AND SHALL BE EQUIPPED WITH LEVELING SCREWS.

3. GASKETS:

THE GASKETS SHALL BE MADE OF HEAT RESISTANT NONMOISTURE ABSORBING POLYESTER, SILICON RUBBER OR DACRON FELT. THE GASKET SHALL BE CONTINUOUS ON ONE PIECE AND INSTALLED WITH NO BUTT ENDS OR GAPS.

4. LAMP SOCKET:

THE LAMP SOCKET SHALL BE A COMPLETELY PORCELAIN ENCLOSED NICKEL PLATED BRASS MOGUL TYPE SHELL WITH INTERNAL LAMP GRIPS TO ASSURE ELECTRICAL CONTACT UNDER CONDITIONS OF NORMAL VIBRATION AND RESIST THE REMOVAL OF THE LAMP. THE SOCKET SHALL HAVE WELDED INTERNAL CONNECTIONS AND BE IN COMPLIANCE WITH THE LATEST REVISION OF EEI PUBLICATION NO. TDI-147.

5. SOCKET SUPPORT:

THE SOCKET SUPPORT SHALL CONTAIN IDENTIFYING MARKS SO THE SOCKET MAY BE EASILY ADJUSTED, BOTH HORIZONTALLY AND VERTICALLY TO PROVIDE THE SPECIFIED IES LIGHT DISTRIBUTION.

6. BALLAST:

- A. BALLASTS SHALL BE BOBBIN WOUND AND HAVE A HIGH POWER FACTOR (90% OR BETTER), BE CAPABLE OF OPERATING THE HIGH INTENSITY DISCHARGE LAMP SPECIFIED FROM A SINGLE PHASE, GROUNDED, 480 VOLT NOMINAL, MULTIPLE SYSTEM, UNLESS OTHERWISE SPECIFIED. THE BALLAST, CAPACITOR AND STARTING AID, IF REQUIRED, SHALL BE PREWIRED TO THE LAMP SOCKET AND TERMINAL BOARD AND BE MODULAR CONSTRUCTED AND DESIGNED FOR EASY REMOVAL AND INSTALLATION BY USING QUICK DISCONNECT FEATURES. THE BALLAST SHALL BE DESIGNED TO START THE LAMP AT -20 DEGREES F. (MERCURY AND METAL HALIDE) OR AT -30 DEGREES F. (HIGH PRESSURE SODIUM). FOR LUMINAIRES USED IN CONJUNCTION WITH TRAFFIC SIGNALS, THE BALLAST SHALL BE DESIGNED FOR 120/240 VOLT OPERATION.
- B. MERCURY VAPOR BALLAST SHALL BE CONSTANT WATTAGE TYPE CAPABLE OF OPERATING THE LAMP WITHIN ±3% OF RATED WATTS WITH ±10% LINE VOLTAGE VARIATION.

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**CITY OF EDMOND**  
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CONSTRUCTION STANDARDS

**GENERAL NOTES /  
MATERIAL SPECS.**

**TRAFFIC**

SPECIFICATION NO. B01  
TLD-01 PAGE 22B

EDMONT, ALASKA 99561-1111 TEL: 907-255-1111 FAX: 907-255-1111

GENERAL SPECIFICATIONS FOR  
HIGH-INTENSITY DISCHARGE LUMINAIRES

6. BALLAST (CON'T):
- C. METAL HALIDE BALLAST SHALL BE A CONSTANT WATTAGE AUTO-TRANSFORMER TYPE CAPABLE OF OPERATING THE LAMP WITHIN  $\pm 10\%$  OF RATED WATTS WITH  $\pm 10\%$  LINE VOLTAGE VARIATION.
  - D. HIGH PRESSURE SODIUM BALLAST SHALL BE A CONSTANT WATTAGE OR MAGNETIC REGULATOR TYPE CAPABLE OF OPERATING THE LAMP WITHIN THE LIMITS DEFINED BY ANSI STANDARDS WITH  $\pm 10\%$  LINE VOLTAGE VARIATION. ARC TUBE VOLTAGE SHALL BE 100 VOLT DESIGN.
7. TERMINAL BOARD:  
THE TERMINAL BOARD SHALL BE OF PHENOLIC RESIN, MOLDED PLASTIC OR PORCELAIN WITH PROTECTIVE BARRIERS BETWEEN TERMINALS. THE SCREW TERMINALS SHALL BE CAPTIVE TYPE, COMPATIBLE WITH ALUMINUM OR COPPER CONDUCTORS AND CAPABLE OF ACCEPTING UP TO A NO. 6 AWG CONDUCTOR.
8. ELECTRICAL:
- A. ALL ELECTRICAL COMPONENTS SHALL BE INSULATED TO A MINIMUM OF 10 KV BIL.
  - B. TERMINATION CONNECTORS SHALL MEET OR EXCEED TWICE THE RATED CURRENT VALUE FOR EEI-TDJ162 CLASS A HEAT CYCLE TEST.
  - C. ALL WIRE SHALL BE UL APPROVED AND THE INSULATION CAPABLE OF WITHSTANDING THE DESIGNED OPERATING TEMPERATURES OF THE LUMINAIRE.
9. HARDWARE:  
ALL NUTS, BOLTS, SCREWS, CLIPS, WASHERS, SPRINGS AND ATTACHING HARDWARE SHALL BE FABRICATED FROM NON-CORROSIVE ALLOYS. CADMIUM PLATING WILL NOT BE CONSIDERED ADEQUATE WEATHER PROOFING. ALL THREADED SURFACES USED IN ALUMINUM HOUSING SHALL BE LUBRICATED WITH SILICONE GREASE.
10. FINISH:  
UNLESS OTHERWISE SPECIFIED, THE LUMINAIRE SHALL HAVE A LIGHT GREY BAKED-ON ENAMEL FINISH, SIMILAR TO THE MUNSELL #5BG-ASA#70
11. PHOTO CELL AND RECEPTACLE:  
IF SPECIFIED, THE LUMINAIRE SHALL BE EQUIPPED WITH THE FOLLOWING:
- A. THE PHOTOELECTRIC CONTROL SHALL BE A HERMETICALLY SEALED CADMIUM SULFIDE PHOTOCELL, DETACHABLE TYPE, 105-285 VOLT, 50/60 HERTZ AC, OUTDOOR CONTROL COMPLETE, IN ACCORDANCE WITH EEI-NEMA STANDARDS, RELAY LOAD CONTRACTS RATED 1000 WATTS OR 1800 VOLT-AMPERERACTIVE, SINGLE-POLE, SINGLE-THROW CONTACT, NORMALLY CLOSED FOR "FAIL SAFE" OPERATION, ENCLOSED POSITIVE LIGHTNING AND SURGE PROTECTION, HOUSED IN A HIGH IMPACT ACRYLIC HOUSING WHICH HAS A BASE PLATE GASKET AND 3-POLE POLARIZED TWIST-LOCK PLUG. TURN-ON SHALL OCCUR AT 1 FOOT-CANDLE AND TURN-OFF AT 5 FOOT-CANDLES APPROXIMATELY.
  - B. THE THREE POLE LOCKING RECEPTACLE SHALL BE IN ACCORDANCE WITH THE LATEST EEI AND NEMA STANDARDS AND BE PREWIRED TO THE TERMINAL BOARD.
12. MISCELLANEOUS:
- A. EACH LUMINAIRE SHALL BE SUPPLIED WITH A PERMANENTLY ATTACHED NAME PLATE INSIDE THE HOUSING AND/OR ON THE BALLEST. THIS LABEL SHALL INDICATE THE MANUFACTURER, CATALOG NO., LAMP TYPE, WATTAGE, LINE VOLTAGE RATING AND CONNECTION DIAGRAM.

DESIGNED BY: [REDACTED] DRAWN BY: [REDACTED] CHECKED BY: [REDACTED] DATE: [REDACTED]

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**GENERAL NOTES /  
MATERIAL SPECS.**

**TRAFFIC**

SPECIFICATION NO. B01  
TLD-02 PAGE 22B



ADDITIONAL INDIVIDUAL LUMINAIRE SPECIFICATIONS  
FOR HIGH-INTENSITY DISCHARGE LUMINAIRES

1. ROADWAY LUMINAIRES (GENERAL) (CON'T):
  - E. CUT-OFF VISOR:  
IF SPECIFIED ON THE PLANS, EACH LUMINAIRE SHALL BE EQUIPPED WITH A CUT-OFF VISOR. CUT-OFF SHALL OCCUR FULL CIRCUMFERANCE OF THE LUMINAIRE AT APPROXIMATELY 75 DEGREES FROM VERTICAL AXIS. THE VISOR SHALL BE SIMILAR IN COLOR TO THE LUMINAIRE.
  - F. BALLAST:  
THE BALLAST SHALL BE DOOR MOUNTED ON ALL LUMINAIRES 400 WATT OR LESS.
  
2. ROADWAY LUMINAIRE (CUTOFF DESIGN):
  - A. REFRACTOR:  
THE REFRACTOR SHALL BE FLAT STRIPPLED HEAT AND IMPACT RESISTANT GLASS.
  - B. DISTRIBUTION CONTROL:  
DISTRIBUTION CONTROL SHALL BE CUTOFF.
  
3. ROADWAY LUMINAIRE (SQUARE DESIGN):
  - A. HOUSING & COVER:  
THE HOUSING SIDE WALLS SHALL BE A SINGLE PIECE OF EXTRUDED ALUMINUM ALLOY 6063-T6 MITRED AND BENT TO FORM A SQUARE. THE COVER SHALL BE A PEAKED CANOPY OF FORMED SHEET ALUMINUM SPOT WELDED AND GASKETED TO THE HOUSING.
  - B. REFLECTOR:  
THE REFLECTOR SHALL BE SEMI-SPECULAR FINISHED ALUMINUM.
  - C. REFRACTOR:  
THE REFRACTOR SHALL BE PRISMED CLEAR INJECTION MOLDED ACRYLIC PLASTIC WITH ULTRAVIOLET INHIBITOR.
  - D. DOOR:  
THE REFRACTOR DOOR SHALL BE OF EXTRUDED ALUMINUM, GASKETED AND HINGED TO THE HOUSING.
  - E. FINISH:  
THE LUMINAIRE SHALL BE FINISHED WITH A BAKED ENAMEL, DURONODIC BRONZE NO 312-E.

DRAWN BY: J. H. HARRIS, DATE: 11/11/04, PROJECT: 2004-01-01

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CONSTRUCTION STANDARDS

**GENERAL NOTES /  
MATERIAL SPECS.**

**TRAFFIC**

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TLD-04 PAGE 231

## TYPICAL LAMP SCHEDULE

HIGH-INTENSITY DISCHARGE LAMP TYPES									
NOMINAL LAMP WATTAGE	MERCURY VAPOR			METAL HALIDE			HIGH PRESSURE SODIUM		
	COLOR	NOMINAL LUMENS	RATED AVG. LIFE, HRS.	COLOR	NOMINAL LUMENS	RATED AVG. LIFE, HRS.	COLOR	NOMINAL LUMENS	RATED AVG. LIFE, HRS.
70							CL	5,800	20,000
							COATED	5,400	20,000
100	DX	4,200	24,000				CL	9,500	20,000
	WDX	3,400	24,000				COATED	8,800	20,000
	CL	3,800	24,000						
150							CL	16,000	24,000
							COATED	15,000	24,000
175	DX	8,600	24,000	CL	14,000	7,500			
	WDX	7,000	24,000						
	CL	7,950	24,000	COATED	14,000	7,500			
200							CL	22,000	24,000
250	DX	12,100	24,000	CL	20,500	7,500	CL	27,500	24,000
	WDX	10,000	24,000				COATED	26,000	24,000
	CL	11,200	24,000	COATED	20,500	7,500			
310							CL	37,000	24,000
400	DX	22,500	24,000	CL	34,000	15,000	CL	50,000	24,000
	WDX	19,500	24,000				COATED	47,500	24,000
	CL	21,000	24,000	COATED	34,000	15,000			
700	DX	42,000	24,000						
	CL	39,000	24,000						
1000	DX	53,000	24,000	CL	110,000	10,000	CL	140,000	24,000
	WDX	58,000	24,000						
	CL	57,000	24,000	COATED	105,000	10,000			

### LEGEND FOR "LUMINAIRES"

( LAMP TYPE - LAMP COLOR - LUMENS - VERT. DIST. - LATERAL DIST. - CONTROL - STYLE )

**LAMP WATT** - 100, 175, 250, 400, 700, 1000, ETC.

**LAMP TYPE**

MV = MERCURY VAPOR  
 MH = METAL HALIDE  
 HPS = HIGH PRESSURE SODIUM

**LAMP COLOR**

CL = CLEAR  
 DX = DELUXE WHITE  
 WDX = WARM DELUXE WHITE  
 CI = COLOR IMPROVED

**NOMINAL LAMP LUMEN RATINGS** - 7500, 20,000, 40,000, 125,000, 140,000, ETC

**VERTICAL DISTRIBUTION**

S = SHORT  
 M = MEDIUM  
 L = LONG

**LATERAL DISTRIBUTION** - TYPE 1, 2, 3, 4, 5

**DISTRIBUTION CONTROL**

C = CUTOFF  
 S = SEMICUTOFF  
 N = NONCUTOFF

**STYLE**

A1 = STANDARD DESIGN  
 A2 = CUTOFF DESIGN  
 A3 = SQUARE DESIGN

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CITY OF EDMOND

ENGINEERING DEPARTMENT  
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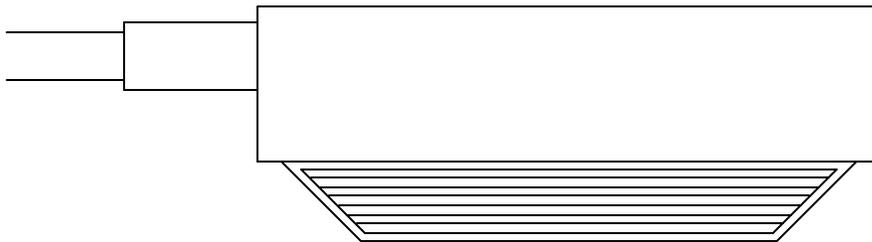
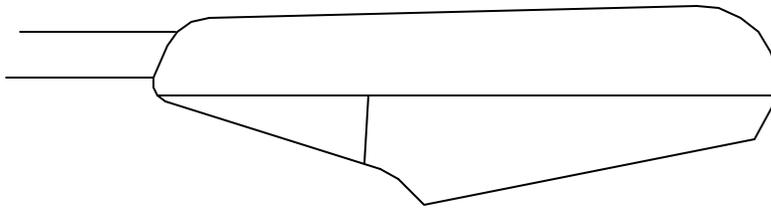
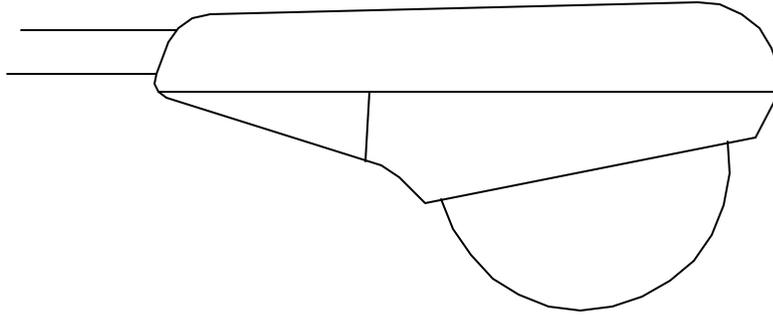
LAMP SCHEDULE /  
 LEGEND

TRAFFIC

SPECIFICATION NO. B01

TLD-05 PAGE 232

CITY OF EDMOND, MISSOURI, TLD-05, 2007, 12, 15, 15:00 PM, 15:00



TYPICAL ROADWAY LUMINAIRES

STYLE A1 STANDARD DESIGN  
 STYLE A2 CUTOFF DESIGN  
 STYLE A3 SQUARE DESIGN

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CITY OF EDMOND  
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 CONSTRUCTION STANDARDS

STYLE A1, A2 & A3

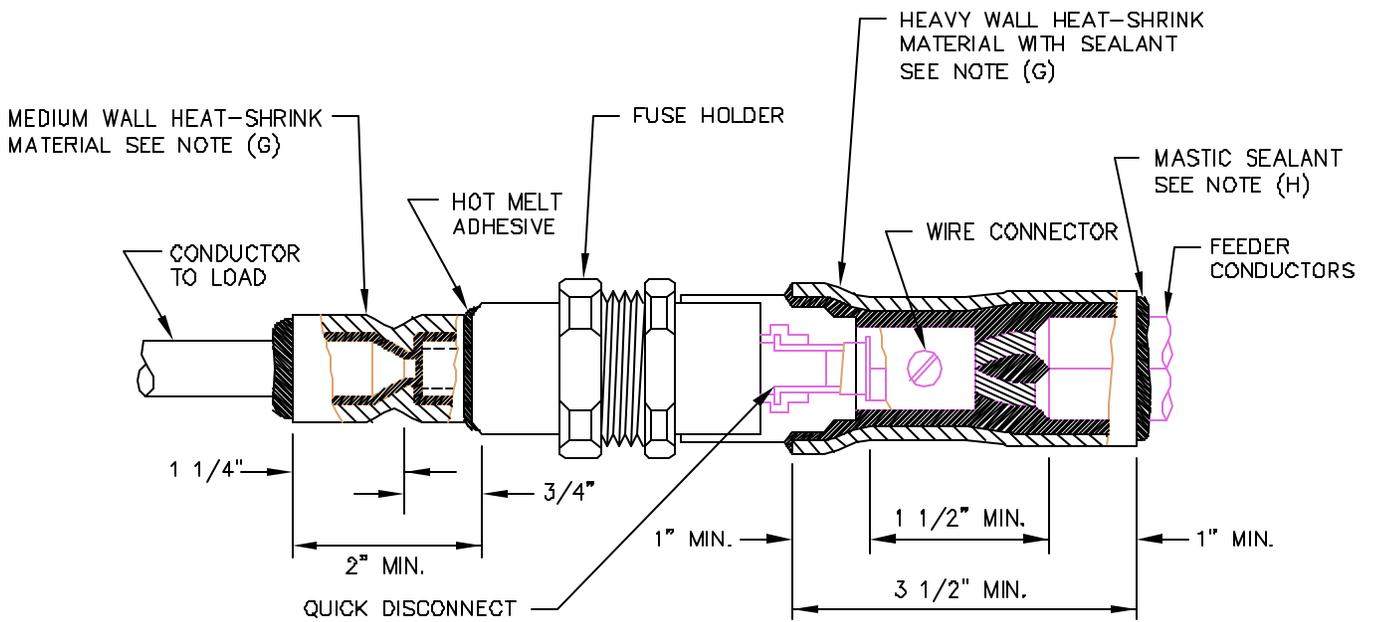
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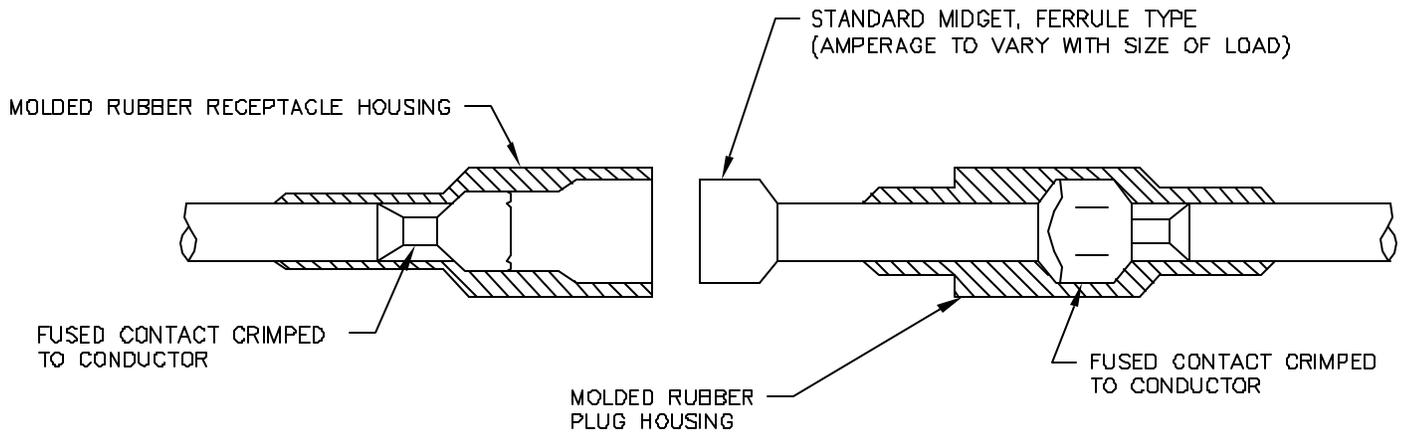
TLD-06 PAGE 233

11/11/11 10:00 AM TLD-06





TYPICAL QUICK DISCONNECT "Y" FUSED CONNECTORS



TYPICAL IN-LINE FUSED HOLDER

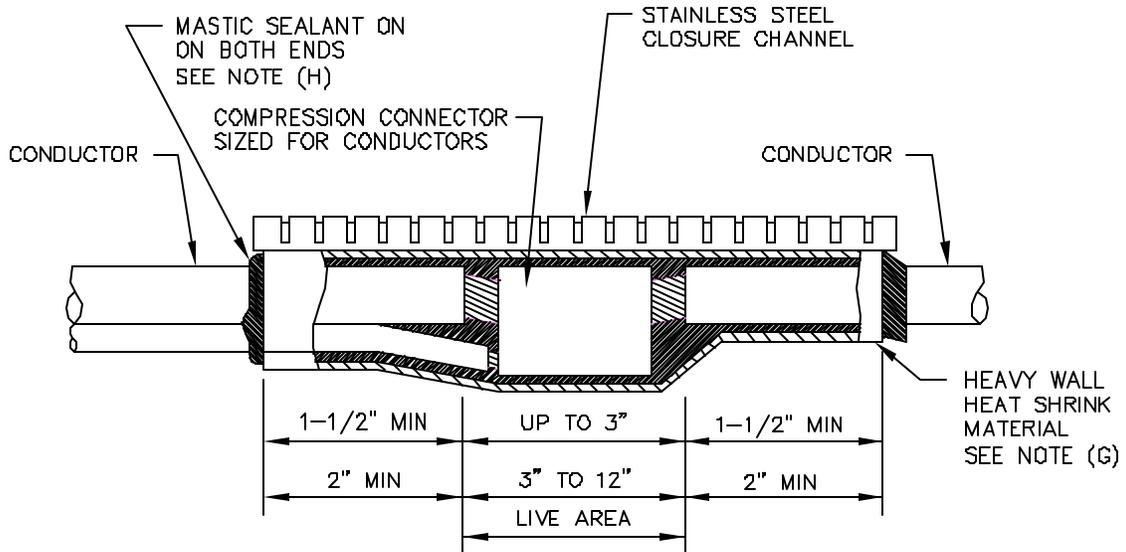
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 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

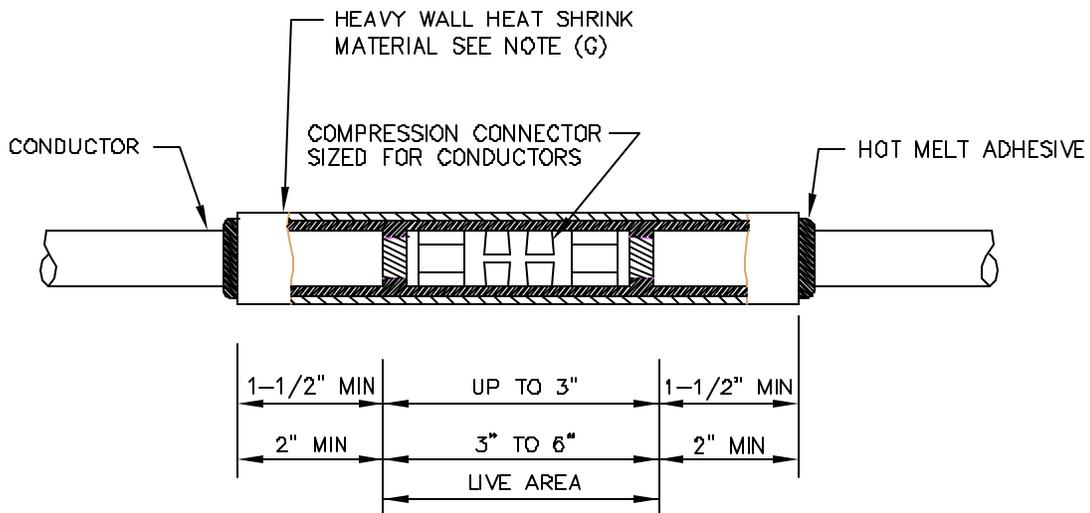
"Y" CONNECTORS /  
 INLINE HOLDER

TRAFFIC  
 SPECIFICATION NO. B01  
 DEC-02 PAGE 235

CITY OF EDMOND, 1111 11th Street, Edmond, OK 73119



TYPICAL CONDUCTOR TAP AND/OR SPLICE  
HEAT SHRINK WRAPAROUND SLEEVE  
(MIN. LENGTH 6" FOR NO. 4 AWG CONDUCTORS)



TYPICAL CONDUCTOR SPLICE WITH  
HEAT SHRINK SLIP-ON SLEEVE  
(MIN. LENGTH 6" FOR NO. 4 AWG CONDUCTORS)

CITY OF EDMOND, OKLA. ENGINEERING DEPARTMENT  
 1500 N. WILSON AVENUE, EDMOND, OKLA. 73119

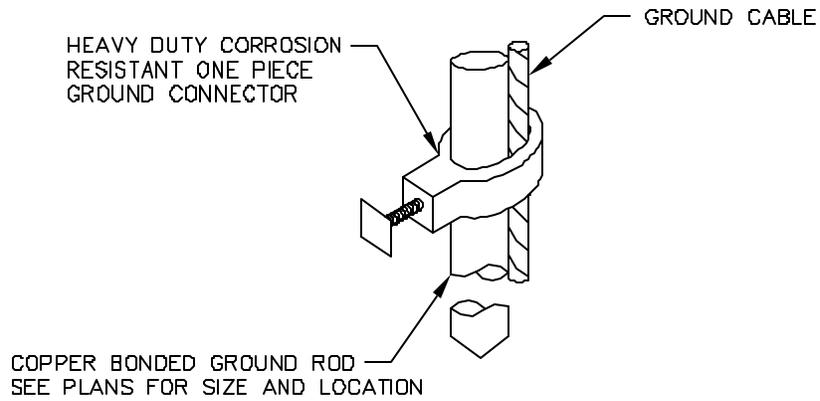
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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

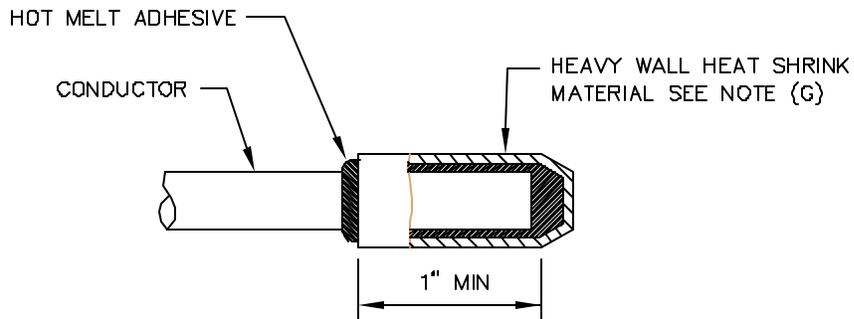
**HEAT SHRINK SLEEVES**

**TRAFFIC**

SPECIFICATION NO. B01  
 DEC-03 PAGE 236



TYPICAL GROUND ROD AND CONNECTOR



TYPICAL CONDUCTOR END TERMINATION

CITY OF EDMOND, OKLA. SPEC. NO. 111, DEC-04/05  
 REV. 01, 1988 200 PM 10/01/05

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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

GROUND ROD /  
 END TERMINATION

TRAFFIC	
SPECIFICATION NO. B01	
DEC-04	PAGE 237

## GENERAL NOTES

1. IF TWIN-LUMINAIRES ARE SPECIFIED, ONE-PAIR OF CONDUCTORS SHALL BE INSTALLED FOR EACH LUMINAIRE, STARTING FROM THE BASE OF THE POLE AND EXTENDING TO THE LUMINAIRE.
2. PROVIDE SUFFICIENT SLACK (APPROX 3' ABOVE FOOTING) IN ALL CABLES TO PERMIT BRINGING SPLICE KITS OUTSIDE OF POLE THROUGH THE HANDHOLE OF ANCHOR BASE POLE OR DOOR OF TRANSFORMER BASE POLE.
3. FUSES INSTALLED IN LIGHT POLE BASES SHALL BE 15 AMPS. FOR MORE INFORMATION ON SPLICE CONNECTORS AND GROUNDING SEE STANDARDS AND SPECIFICATIONS.
4. CONDUCTORS, GROUND RODS, ETC... SHALL BE OF THE SIZE AND TYPE SPECIFIED IN THE PLANS.
5. ALL COSTS OF SPLICES, CONNECTORS, FUSES, GROUND RODS, ETC... SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
6. LIGHTING ARRESTORS SHALL BE INSTALLED AS FOLLOWS:
  - (A) AT FIRST POLE FROM POINT OF SERVICE OF EACH CIRCUIT.
  - (B) EACH POLE ON THE END OF A CIRCUIT.
  - (C) BETWEEN (A) AND (B) AT INTERVALS NOT TO EXCEED 1000'.
  - (D) TAPE LIGHTING ARRESTOR TO THE INSULATED CABLE WITH PLASTIC TAPE.
7. ALL COST OF INSTALLING THE LIGHTING ARRESTOR SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
8. NEUTRAL CONDUCTOR SHALL BE MARKED FOR IDENTIFICATION:  
 COLOR CODE  
 3 WIRE - 240 VOLT = 1-BLACK, 1-RED, 1-WHITE OR GRAY  
 2 WIRE - 480 VOLT = 1-BLACK, 1-WHITE OR GRAY

## MATERIAL SPECIFICATION

- A. CONDUCTOR, CONNECTORS AND SPLICES SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.
- B. THE BRANCH CIRCUIT CONDUCTORS SHALL BE SOLID OR STRANDED COPPER NO. 10 OR 12 AWG. TYPE THW OR THWN 75 DEG. CELSIUS 600 VOLT UNLESS OTHERWISE SPECIFIED. AN ALTERNATE TYPE INSULATION MAY BE USED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- C. THE FEEDER CIRCUIT CONDUCTORS SHALL BE STRANDED COPPER NO. 4 AWG. TYPE XHHW, 75 DEG. CELSIUS, 600 VOLT, UNLESS OTHERWISE SPECIFIED IN THE PLANS. AN ALTERNATE TYPE INSTALLATION MAY BE USED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- D. LIGHTING ARRESTOR SHALL BE 1-POLE FOR 480 VOLT OR 2-POLE FOR 240 VOLT RATED 600 OR 650 VOLTS WITH 3/4" NPT PIPE NIPPLE, LOCKNUT, BUSHING WASHER AND 18" LONG LEADS.

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**CITY OF EDMOND**  
**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

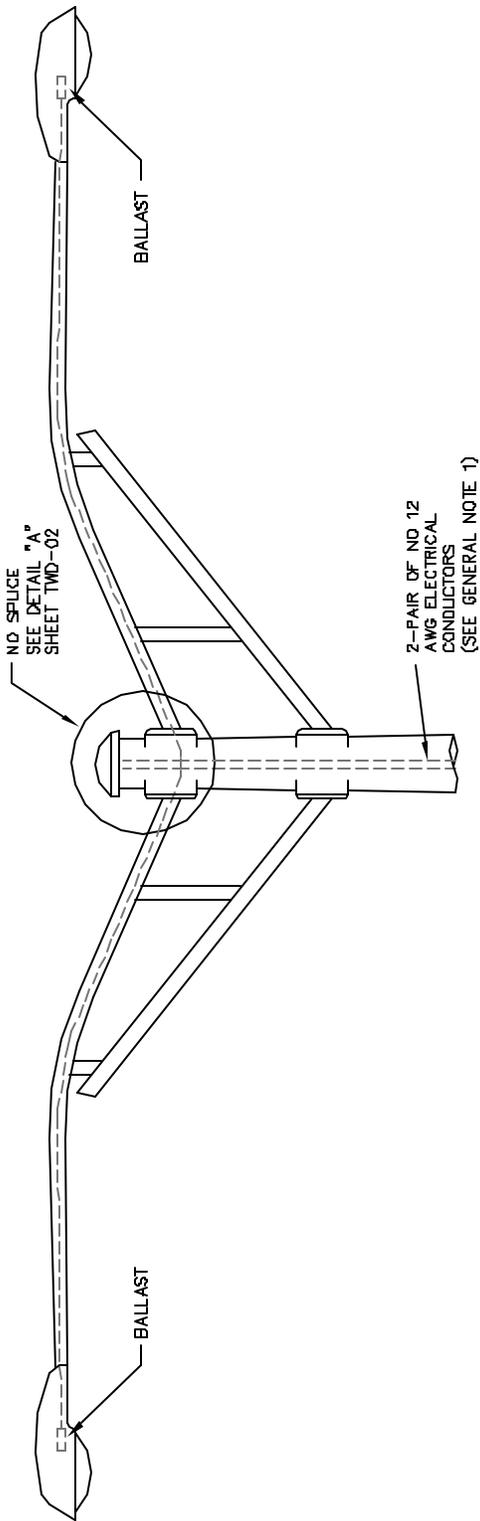
**GENERAL NOTES /**  
**MATERIAL SPECS.**

**TRAFFIC**

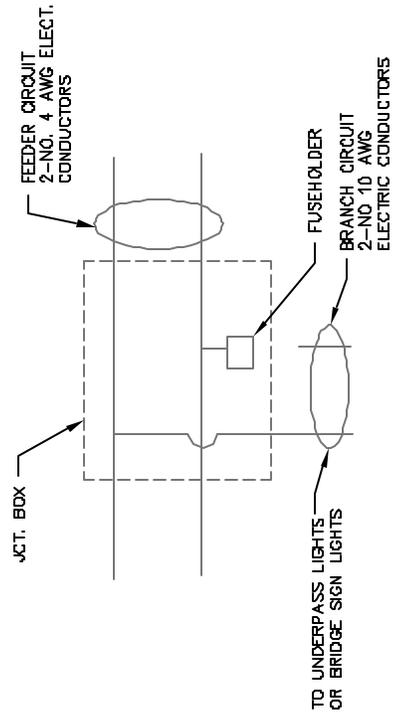
SPECIFICATION NO. 806

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TYPICAL WIRING FOR TWIN LUMINAIRE POLE



TYPICAL WIRING DIAGRAM TO UNDERPASS OR  
BRIDGE MOUNTED OVERHEAD SIGN LIGHTS

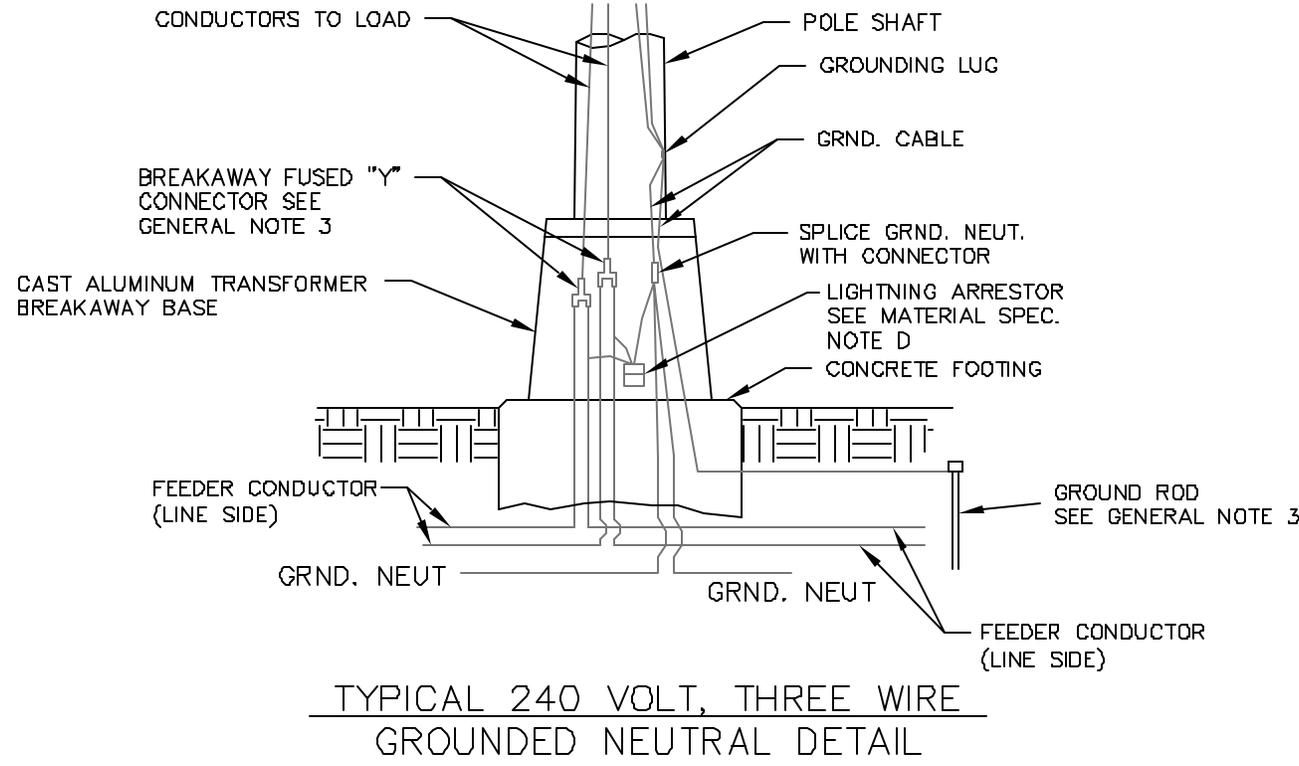
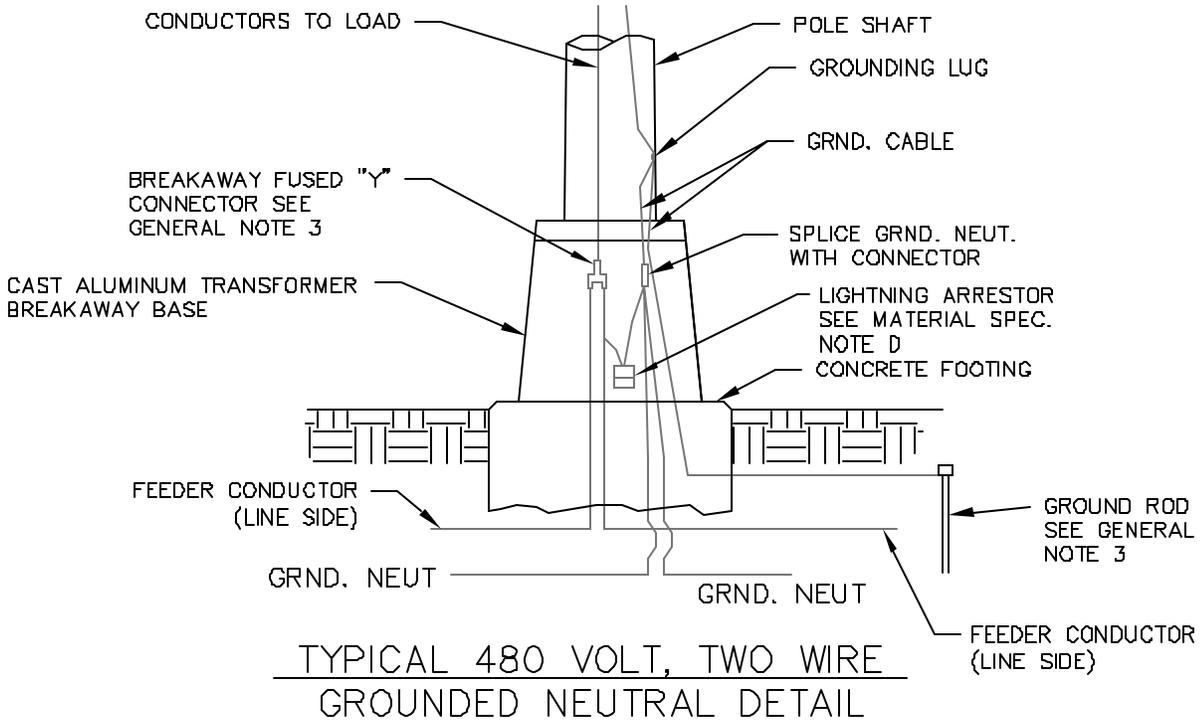
CITY OF EDMOND, ENGINEERING DEPARTMENT  
 1501 26th STREET, SUITE 1000, EDMOND, OK 73119

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 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TWIN LUMINAIRE /  
 BRIDGE SIGN**

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CITY OF EDMOND, OKLA. 11/17/04-04/06  
 REV. 2, 1988 1/00 1/01 1/02 1/03

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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**480V-240V WIRE  
 GROUNDED**

**TRAFFIC**

SPECIFICATION NO. B06  
 TWD-04 PAGE 241

GENERAL NOTES

1. LUMINAIRE SHALL BE 250 WATT HIGH PRESSURE SODIUM, WITH CLEAR LAMP OF 27,500 LUMENS, ILLUMINATION ENGINEERING SOCIETY DISTRIBUTION AS FOLLOWS:  
VERTICAL = MEDIUM; LATERAL = TYPE3; CONTROL = SEMICUTOFF;  
ODOT FIXTURE STYLE = A1.
2. POLES SHALL BE SELECTED FROM THE PREAPPROVED SHOP DRAWINGS OF POLES WHICH HAVE BEEN STANDARDIZED FOR MAXIMUM LOADING.
3. EACH TRAFFIC SIGNAL POLE SHALL BE GROUNDED TO A GROUND ROD LOCATED IN FOUNDATION. NO. 10 AWG SOLID BARE COPPER WIRE SHALL BE INSTALLED FROM GROUND ROD TO POLE GROUNDING LUG.
4. THE CONTRACTOR SHALL SUPPLY EACH LUMINAIRE WITH A PHOTO ELECTRIC CELL. A SUITABLE GROUNDING CONNECTION SHALL BE MADE AT EACH POLE BASE AND AT THE CONTROLLER CABINET. THE COST OF SUPPLYING ALL PHOTO CELLS, FUSES, ETC... SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM OF WORK.
5. ALL ELECTRICAL CONNECTIONS IN THE SIGNAL POLE BASE AND SIGNAL HEADS SHALL BE MADE WITH "BURNDY HYLUG" OF APPROVED EQUAL.
6. ACCORDING TO POLE SPECIFICATIONS 806, THE SPACE BETWEEN THE POLE BASE PLATE AND THE FOUNDATION SHALL BE FILLED WITH NONSHRINK GROUT. A 1/2" DRAIN HOLE SHALL BE PLACED IN THE GROUT AT A LOCATION TO DRAIN ANY MOISTURE THAT MAY ACCUMULATE INSIDE THE POLE.
7. IN LIEU OF THE NONSHRINK GROUT, A HEAVY GAUGE GALVANIZED SHEET STEEL FORMED TO FIT THE HOLE INSIDE THE BASE PLATE AND OF SUFFICIENT WIDTH TO ENCLOSE THE VOID BETWEEN THE BASE PLATE AND FOUNDATION TO BE INSTALLED. THE SHEET STEEL SHALL BE FASTENED IN PLACE IN SUCH A MANNER AS TO PREVENT ENTRY BY EITHER RODENTS OR VANDALS.

MATERIAL SPECIFICATION

- A. THE SQUARE PEDESTAL BASE SHALL BE AN FHWA APPROVED, CAST ALUMINUM BASE INCLUDING A PLASTIC DOOR, GROUNDING LUG AND A CAST ALUMINUM BASE COLLAR.
- B. ANCHOR BOLTS FOR PEDESTAL POLES SHALL BE ASTM A-572 OR A-36, MODIFIED TO 50,000 PSI YIELD STRENGTH WITH A HEAVY DUTY FLAT WASHER, HEAVY DUTY LOCK WASHER AND HEAVY DUTY HEX NUT, ALL GALVANIZED AS PER ATSM A-153.

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 DEC 28, 1999 1:00 PM NADREX

REVISIONS	ND.	DATE	ITEM CHANGED

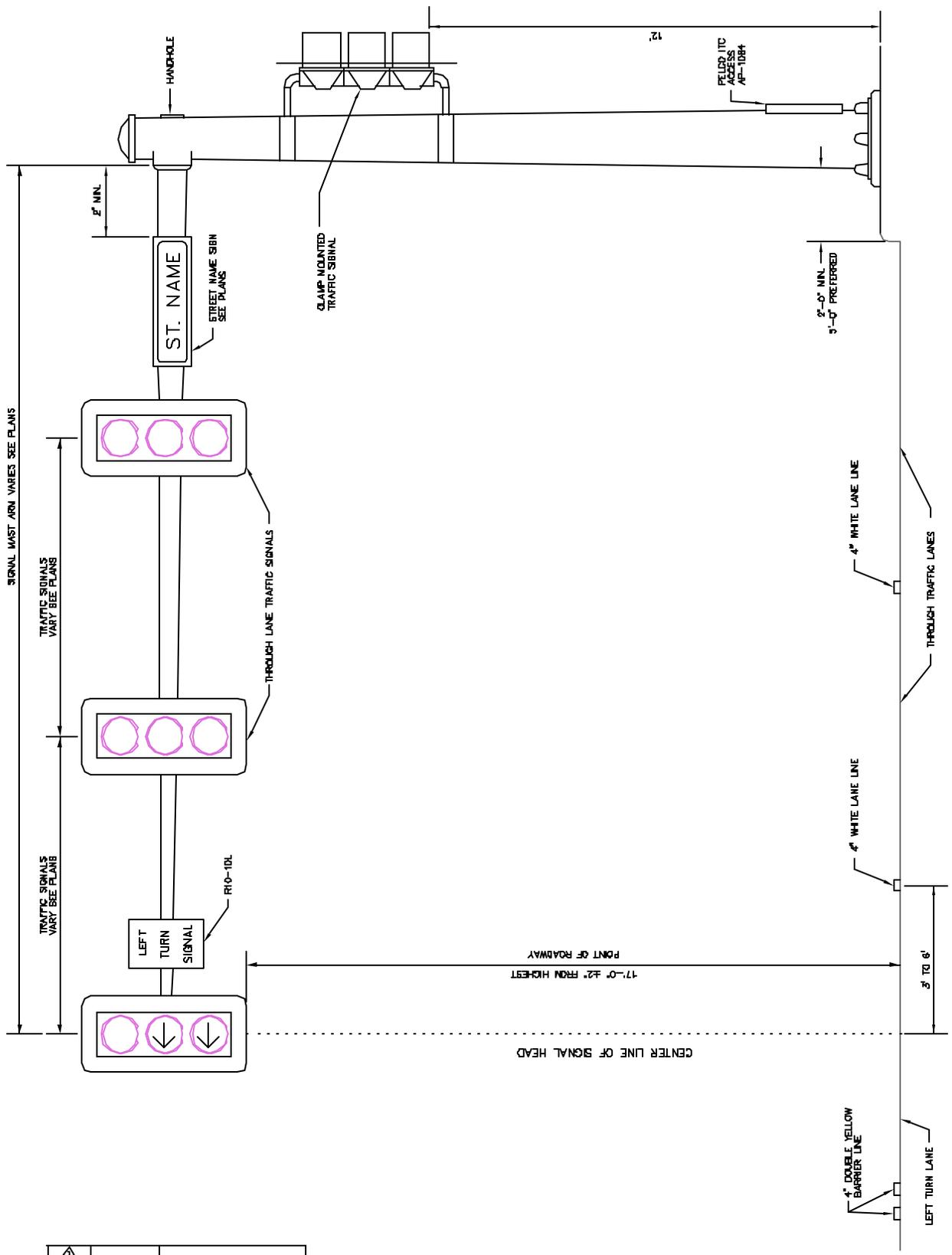
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GENERAL NOTES /  
 MATERIAL SPECS.**

**TRAFFIC**

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SPECIFICATION NO. 806  
 PMD-01 PAGE 242



TYPICAL SIGNAL EQUIPMENT PLACEMENT WITH LEFT TURN BAY

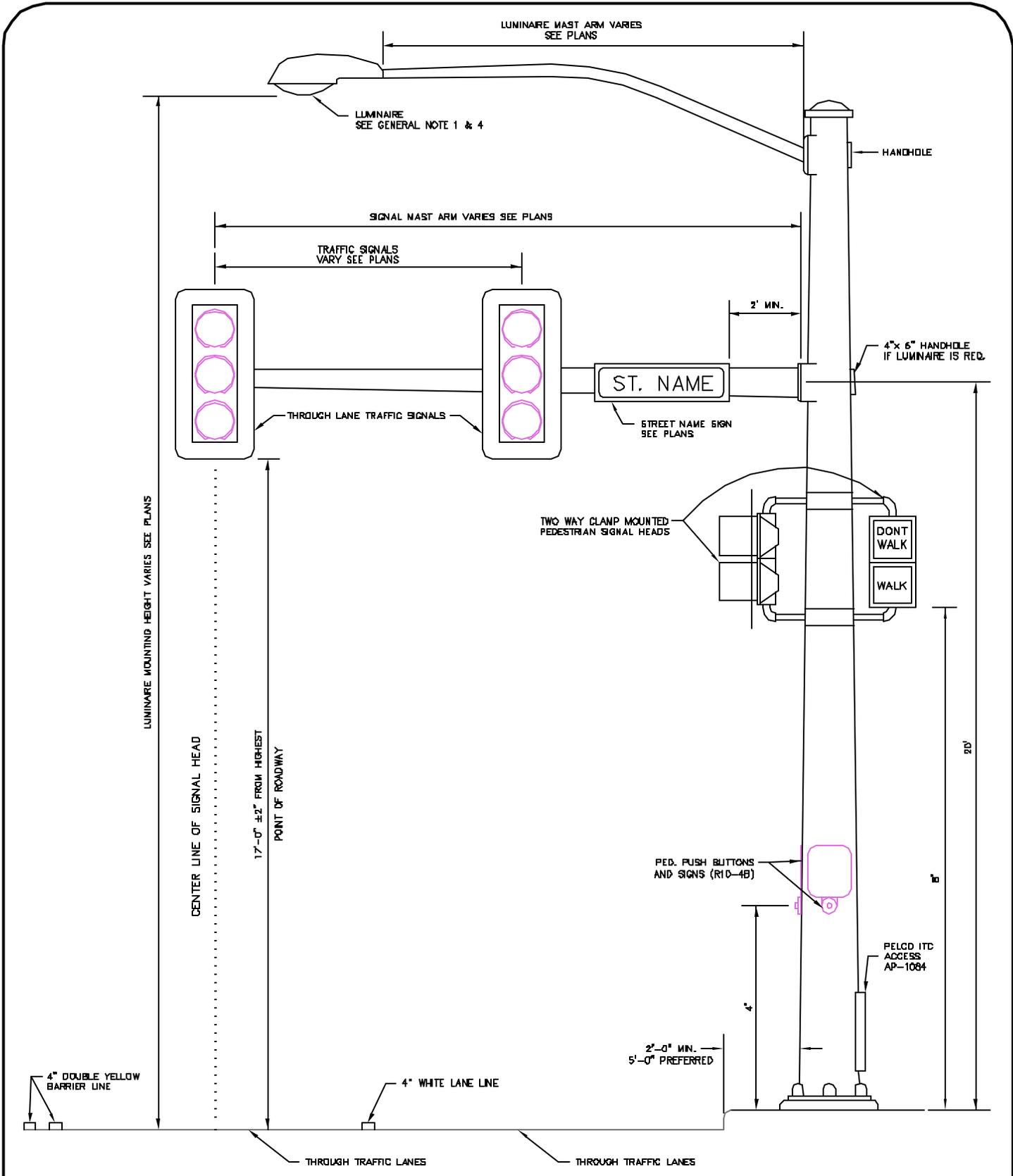
CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1100 N. WILSON  
 OKLAHOMA CITY, OKLAHOMA 73102

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SIGNAL PLACEMENT**  
**W/ LEFT TURN**

**TRAFFIC**  
 SPECIFICATION NO. B06  
 PMD-02 PAGE 243



TYPICAL SIGNAL EQUIPMENT PLACEMENT WITHOUT LEFT TURN BAY

CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 1115 EAST 15TH AVENUE  
 OKLAHOMA CITY, OKLAHOMA 73102

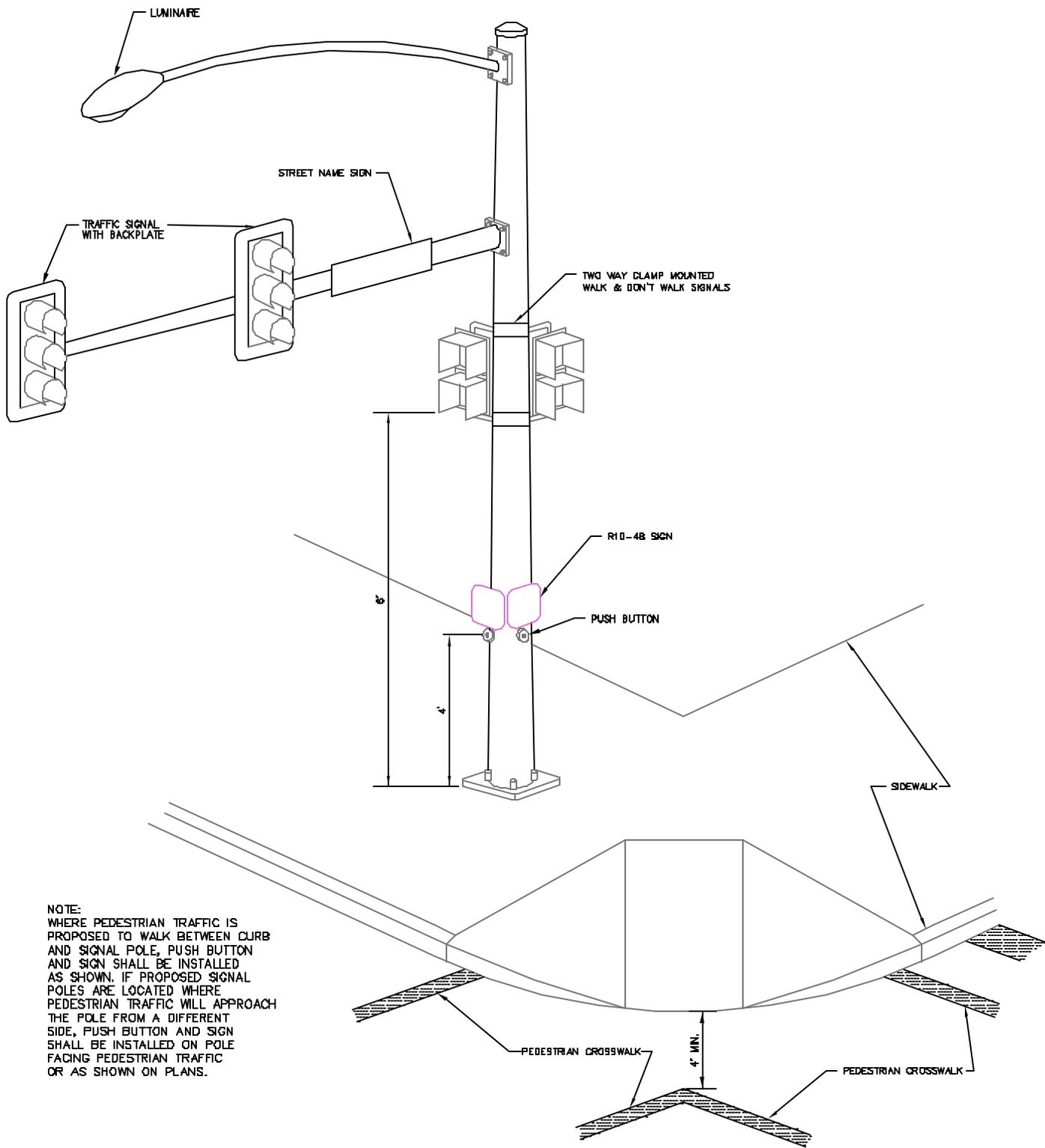
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

SIGNAL PLACEMENT  
 W/O LEFT TURN

TRAFFIC

SPECIFICATION NO. B06  
 PMD-03 PAGE 244



NOTE:  
 WHERE PEDESTRIAN TRAFFIC IS PROPOSED TO WALK BETWEEN CURB AND SIGNAL POLE, PUSH BUTTON AND SIGN SHALL BE INSTALLED AS SHOWN. IF PROPOSED SIGNAL POLES ARE LOCATED WHERE PEDESTRIAN TRAFFIC WILL APPROACH THE POLE FROM A DIFFERENT SIDE, PUSH BUTTON AND SIGN SHALL BE INSTALLED ON POLE FACING PEDESTRIAN TRAFFIC OR AS SHOWN ON PLANS.

TYPICAL SIGNAL POLE PLACEMENT FOR PEDESTRIAN CROSSWALKS

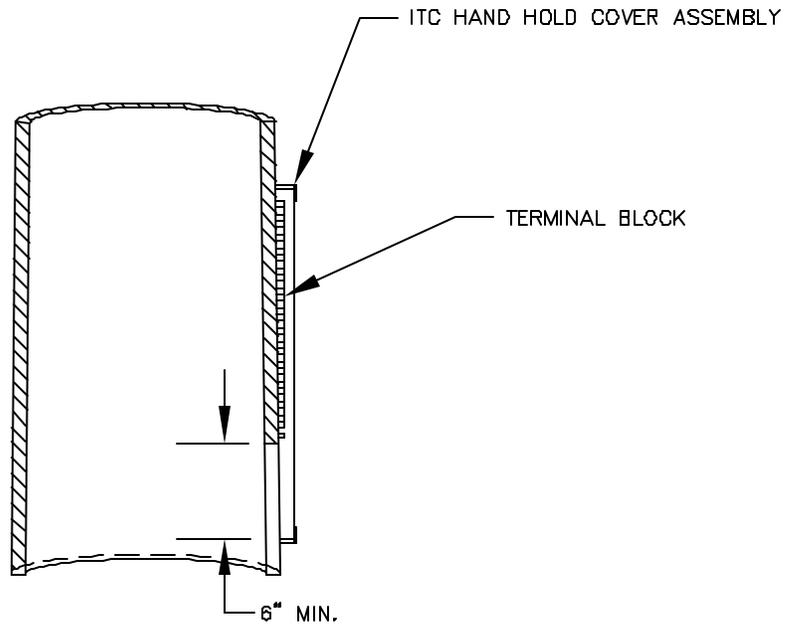
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REVISIONS	ND.	DATE	ITEM CHANGED

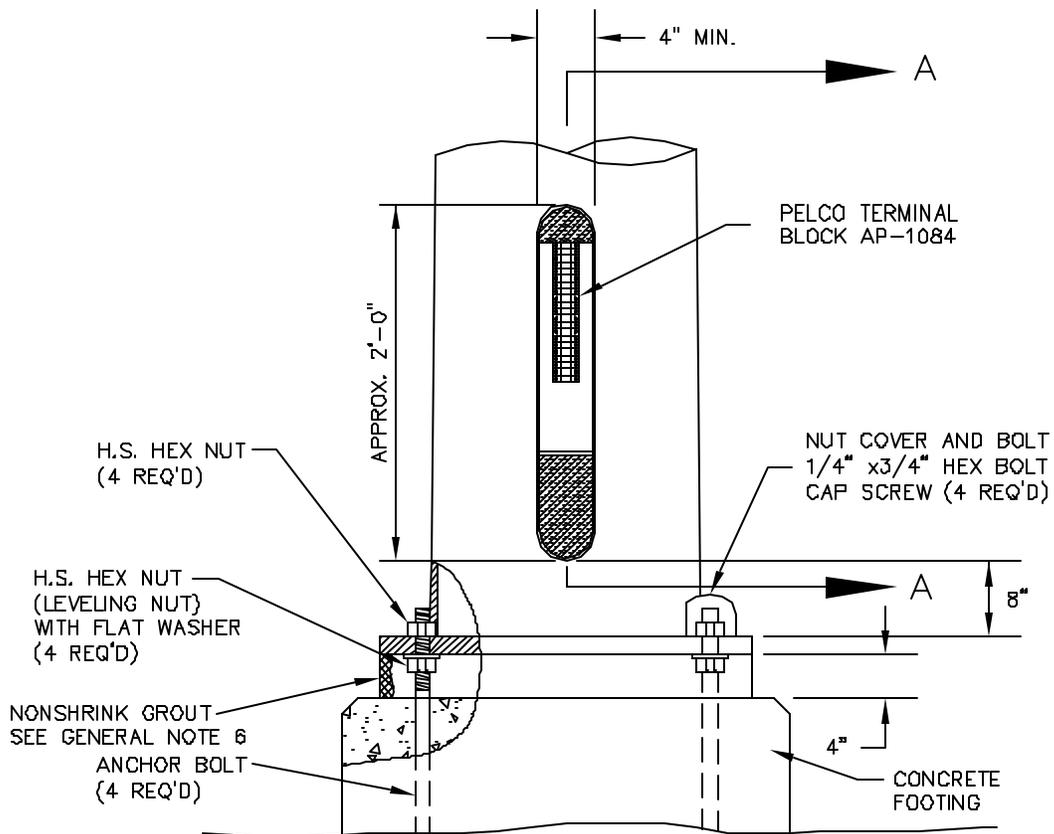
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**SIGNAL PLACEMENT  
 PED. CROSSWALKS**

**TRAFFIC**  
 SPECIFICATION NO. 806  
 PMD-04 PAGE 245



SECTION A-A



TYPICAL POLE BASE & HANDHOLE DETAILS

REVISIONS	NO.	DATE	ITEM CHANGED

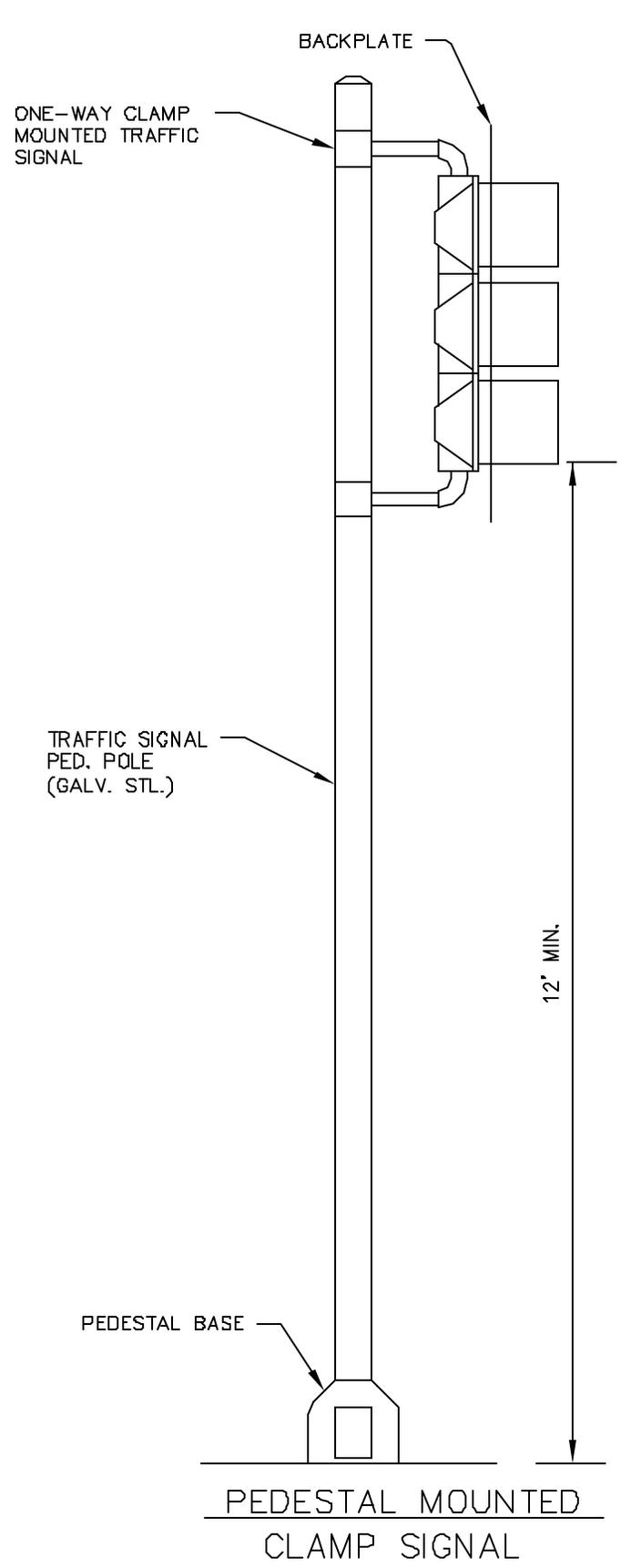
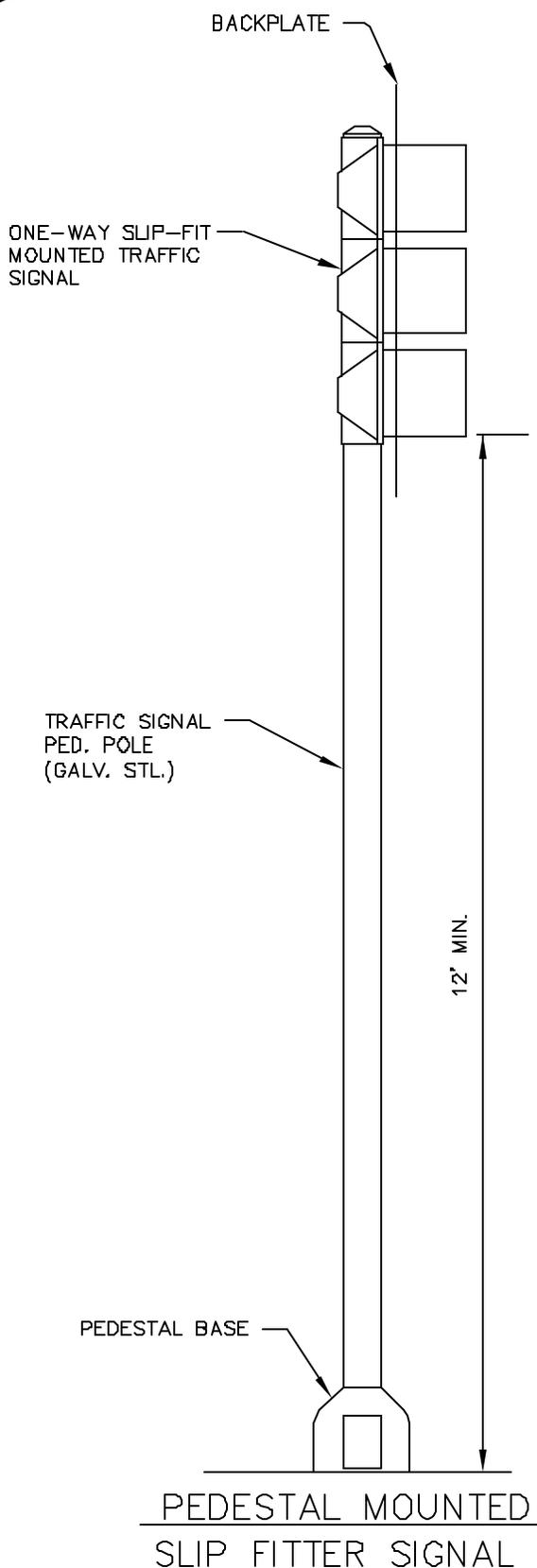
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

BASE POLE /  
HANDHOLE

TRAFFIC

SPECIFICATION NO. B06

PMD-05 PAGE 246



REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

PEDESTAL MOUNTED SIGNALS

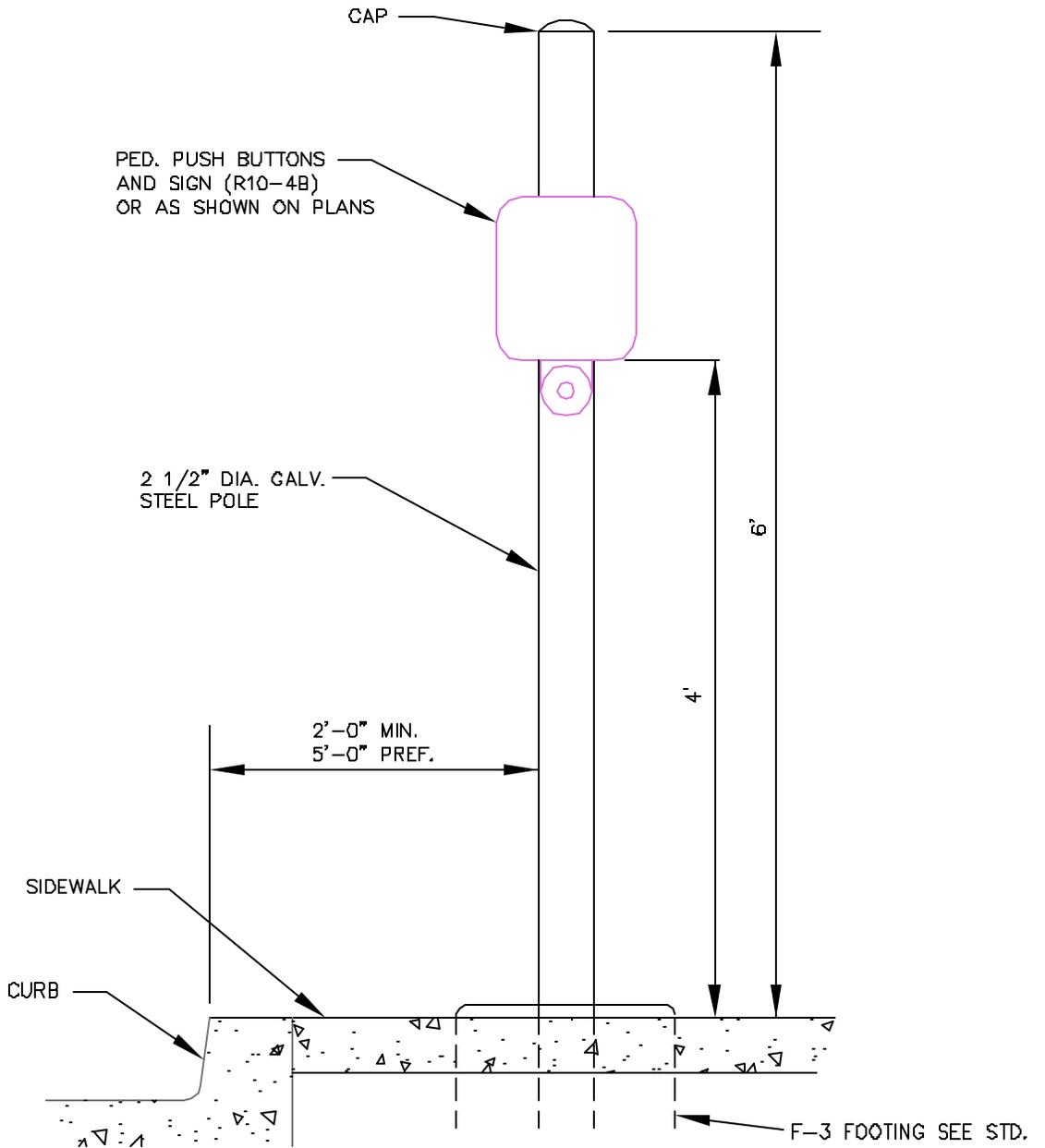
TRAFFIC  
 SPECIFICATION NO. B06  
 PMD-06 PAGE 247

CITY OF EDMOND, 1115 15th Street, Edmond, Oklahoma 73119  
 OCT. 22, 1988 8:00 AM 11/20/88

BACK CURVED  
TO FIT POLE



TYPICAL PEDESTAL  
PUSH BUTTON



PEDESTAL PUSH BUTTON POLE

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

PUSH BUTTON  
POLE

TRAFFIC

SPECIFICATION NO. B06

PMD-07 PAGE 248

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 OCT. 22 11:01 500 JM MADSEN

## GENERAL NOTES

1. ALL TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL HEADS SHALL BE FURNISHED WITH GLASS LENSES, UNLESS OTHERWISE SPECIFIED. THE LENSES SHALL CONFORM TO THE LATEST STANDARD OF INSTITUTE OF TRANSPORTATION ENGINEERS.
  
2. BACKPLATES ARE TO BE INSTALLED WITH RIVETS AND/OR SCREWS AS RECOMMENDED BY THE MANUFACTURER OR TWO PER SECTION, A MIN. OF SIX PER SIGNAL.
  
3. VACUUM FORMED BACKPLATES SHALL BE USED ON ALL STANDARD TRAFFIC SIGNAL HEADS.

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 DEC 16, 1999 5:00 PM WADSWORTH

REVISIONS	NO.	DATE	ITEM CHANGED
	1		

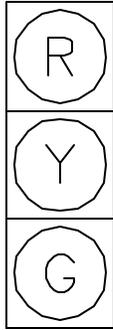
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

GENERAL NOTES

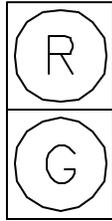
TRAFFIC

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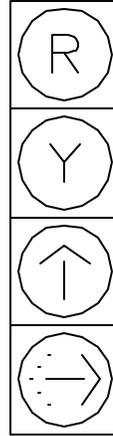
SPECIFICATION NO. B32  
 TSA-01 PAGE 24B



(S-1)  
8" LENS  
(S-6)  
12" LENS

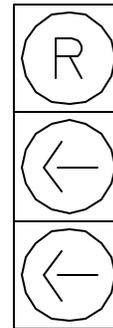


(S-2)  
12" LENS



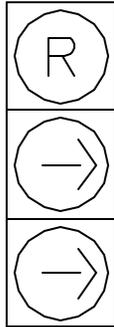
(S-7)R  
(S-7)L  
12" LENS

GREEN  
GREEN



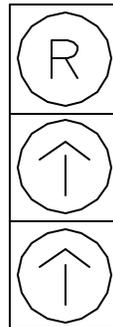
(S-9)  
12" LENS

YELLOW  
GREEN



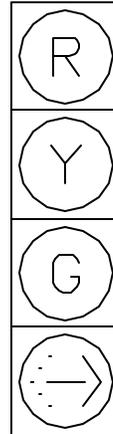
(S-10)  
12" LENS

YELLOW  
GREEN



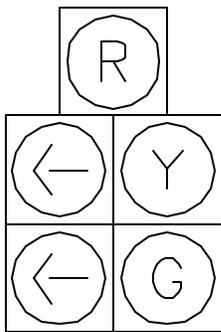
(S-11)  
12" LENS

YELLOW  
GREEN



(S-16)  
12" LENS

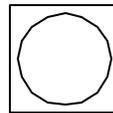
GREEN



(S-19)  
12" LENS



(S-20)  
12" LENS  
(S-21)  
9" LENS



(S-22)  
12" LENS  
(S-8)  
8" LENS



12" LENS  
(S-17)R  
(S-17)L

YELLOW  
GREEN

### SIGNAL FACE TYPES

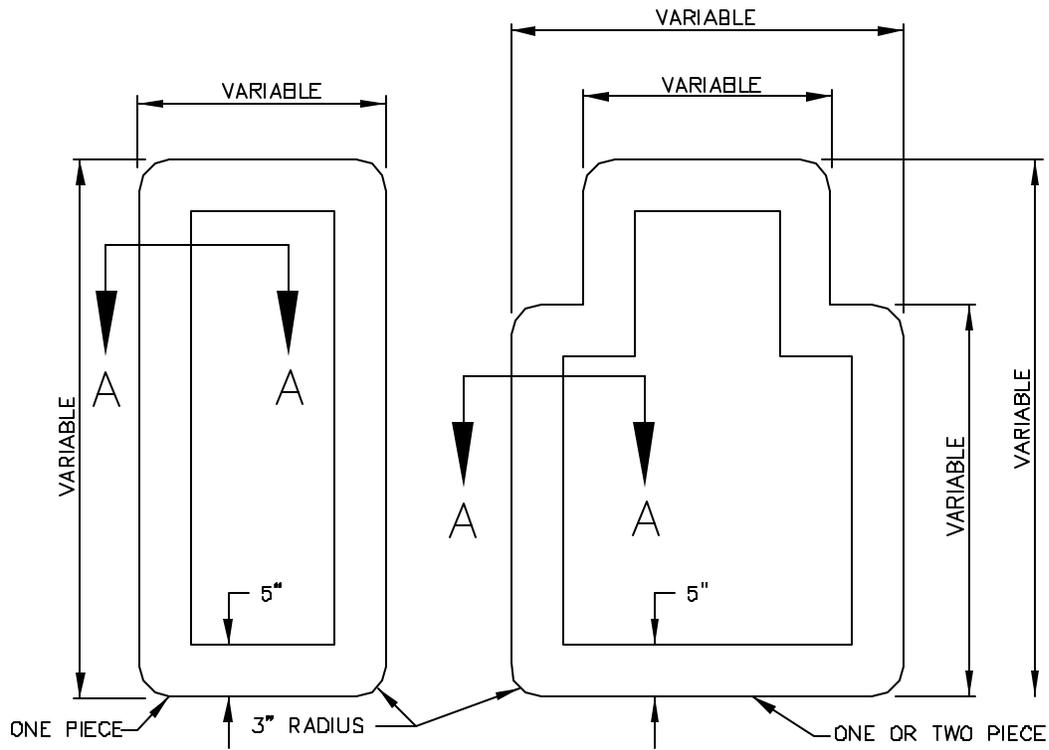
R = RED  
Y = YELLOW  
G = GREEN

REVISIONS	NO.	DATE	ITEM CHANGED

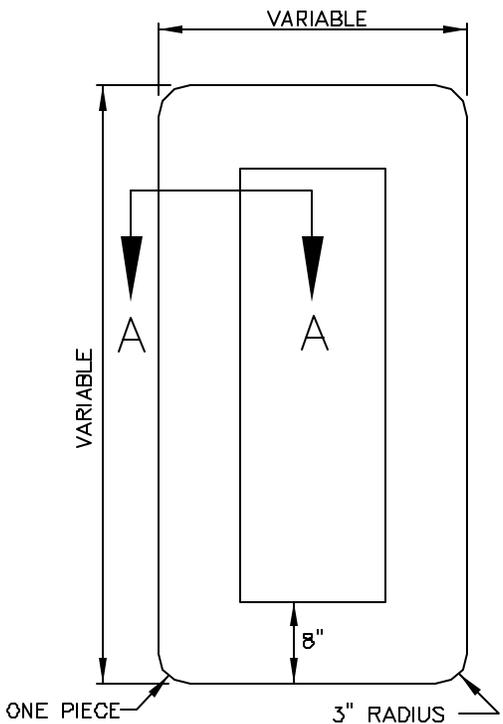
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

SIGNAL FACE  
TYPES

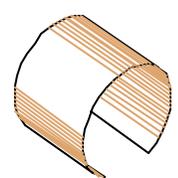
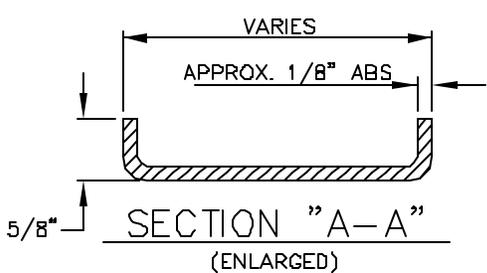
TRAFFIC  
SPECIFICATION NO. B32  
TSA-02 PAGE 250



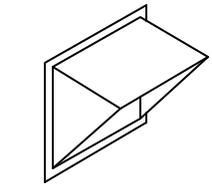
TYPE B-2 (5" BACKPLATE)



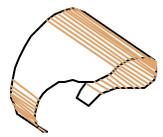
TYPE B-1 (8" BACKPLATE)



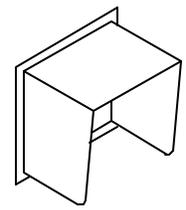
(V-1) TUNNEL



(V-4) OPTICALLY PROGRAMMED SIGNAL



(V-2) CUTAWAY



(V-3) PEDESTRIAN SIGNAL

VISOR TYPES

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 DEC 16, 1993 5:00 PM WADSWA

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

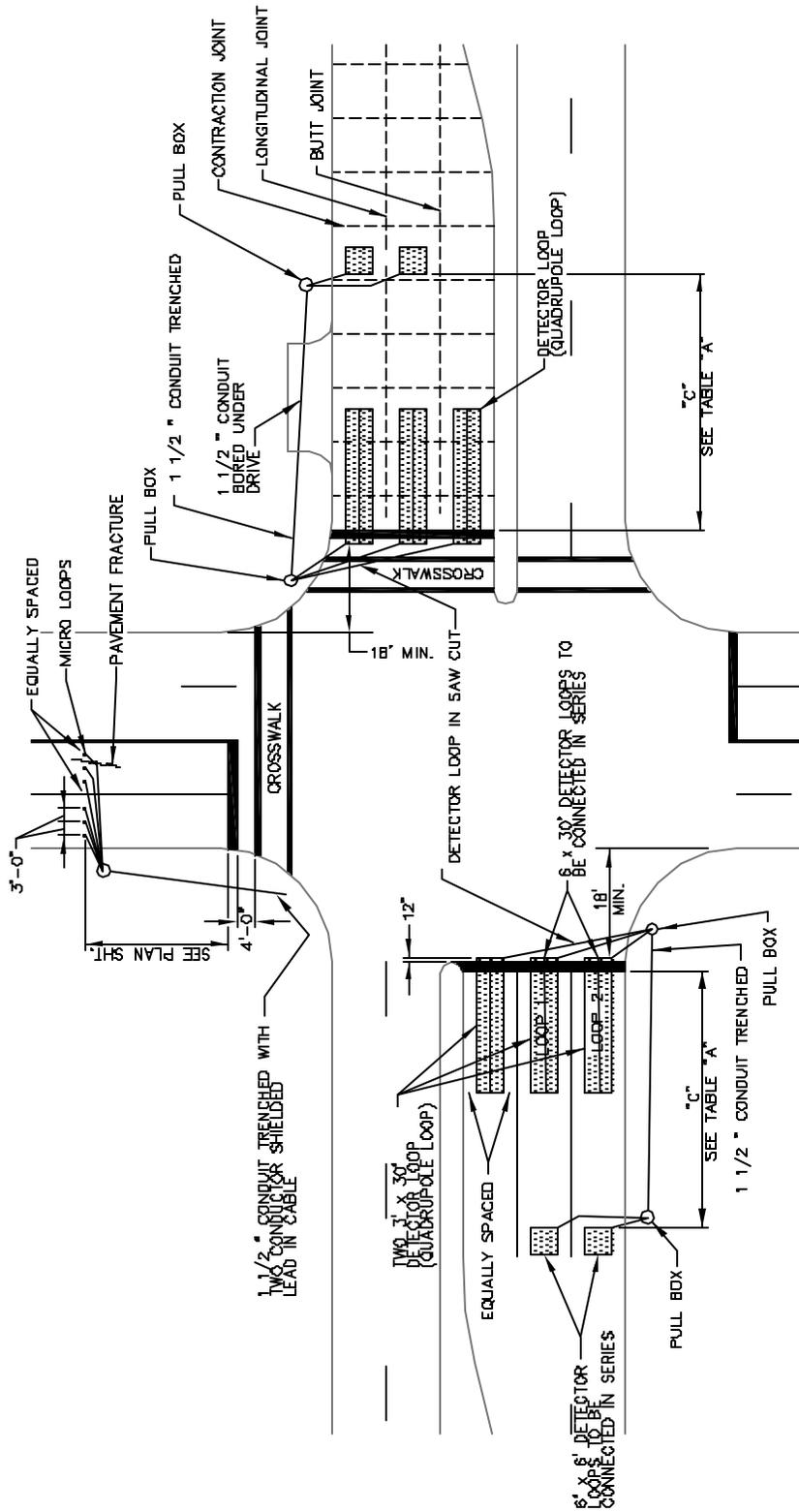
**BACKPLATE / VISORS**

**TRAFFIC**  
 SPECIFICATION NO. B32  
 TSA-03 PAGE 251

GENERAL NOTES

1. ALL SAW CUTS AND HOLES ON DETECTOR SYSTEMS SHALL BE SEALED WITH BOND-O-P-806, PRE-CO COLD LABEL FLEX 12 FLEXIBLE EMBEDDING SEALER, 3M DETECTOR LOOP SEALANT OR AN APPROVED EQUAL.
2. IMSA NO. 51-5 LOOP DETECTOR WIRE SHALL BE USED UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. ALL DETECTORS SHALL BE FURNISHED WITH DELAY QUITS, AND EXTEND QUITS ACCORDING TO SECTION 828 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
4. CARD RACK DETECTORS MAY BE FURNISHED, AS AN ALTERNATE, IF SPECIFIED ON THE PLANS.

TABLE "A"	
DESIGN SPEED mph	DISTANCE "C" ft.
30 TO 35	180
40 TO 45	273
50 TO 55	366



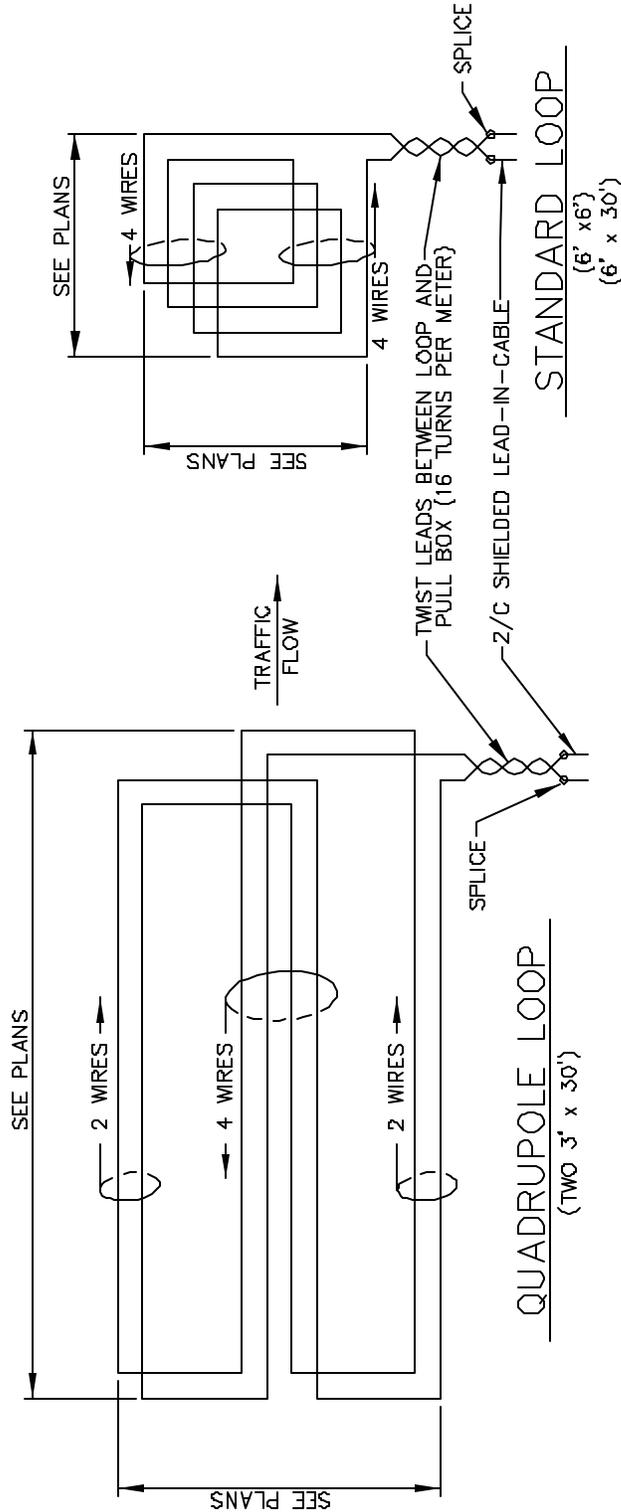
TYPICAL DETECTOR WIRE AND LOOP PLACEMENT

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

WIRE & LOOP  
PLACEMENT

TRAFFIC  
SPECIFICATION NO. B28  
ID-01 PAGE 252



DETECTOR LOOP WIRE CONFIGURATION

NOTE: NON-QUADRUPOLE LOOPS SHALL REQUIRE FOUR TURNS OF SINGLE CONDUCTOR LOOP WIRE.

REVISIONS	NO.	DATE	ITEM CHANGED

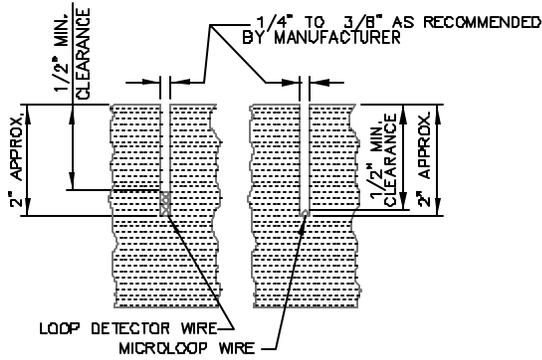
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

LOOP WIRE  
CONFIGURATION

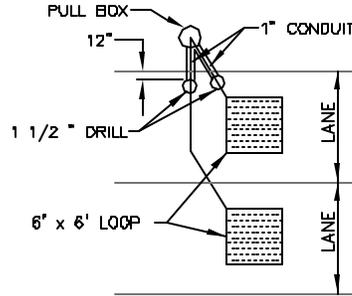
TRAFFIC

SPECIFICATION NO. B2B

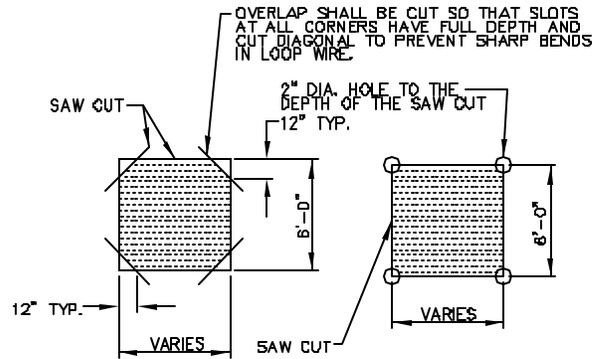
ID-02 PAGE 253



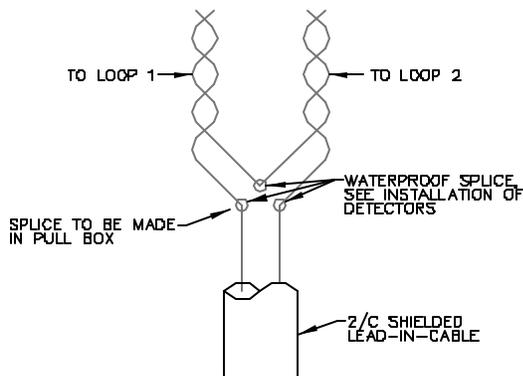
LOOP WIRE IN SAW CUT



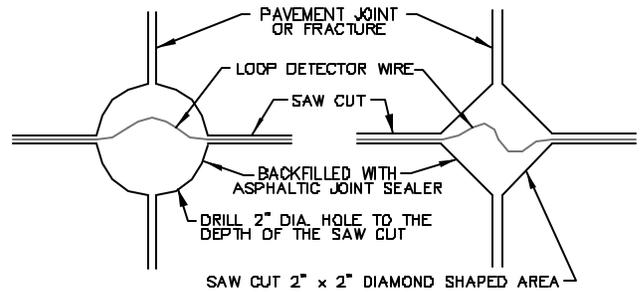
LOOP WIRE TO PULL BOX



ALT.1 ALT.2  
TYPICAL LOOP SAW CUT



TYPICAL LOOP DETECTOR WIRE CONNECTION IN SERIES



LOOP WIRE CROSSING AT EXPANSION JOINT OR FRACTURE

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

WIRE / SAWCUTS

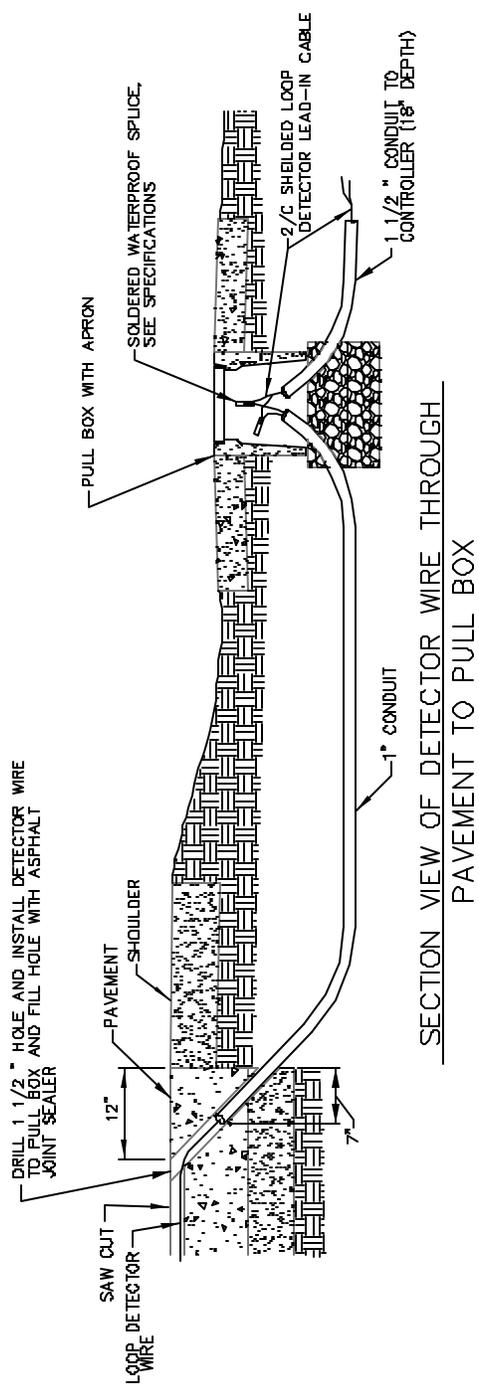
TRAFFIC

SPECIFICATION NO. B2B

ID-03 PAGE 254

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SECTION VIEW OF DETECTOR WIRE THROUGH PAVEMENT TO PULL BOX

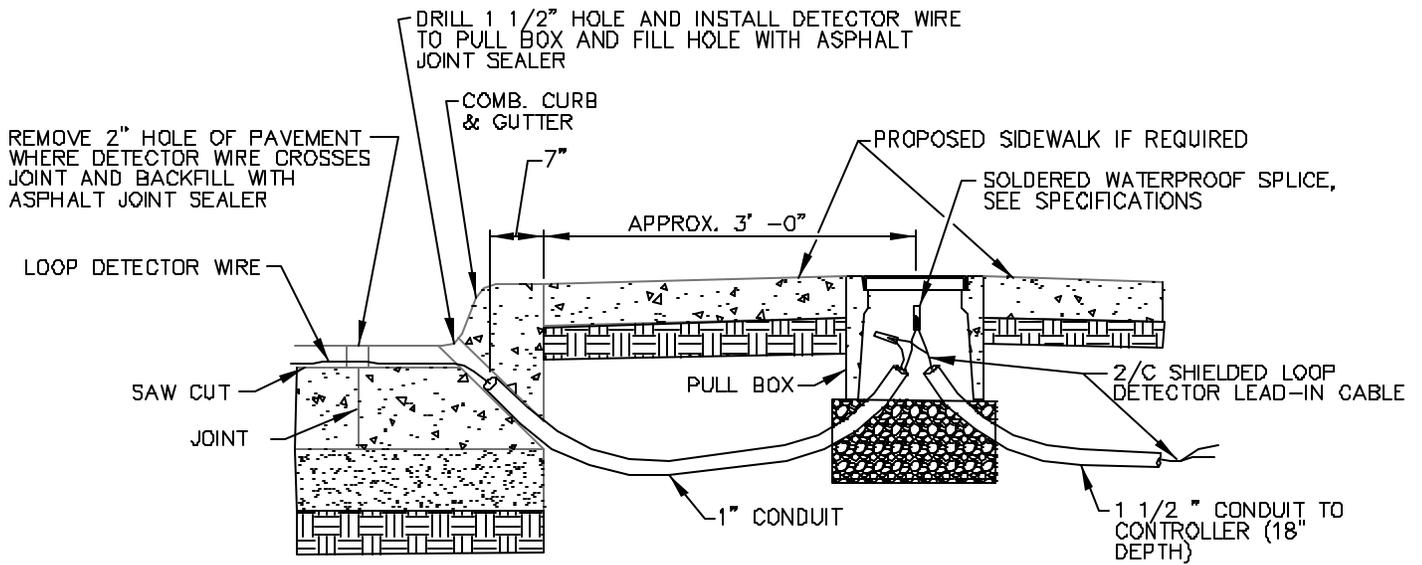
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 DEC. 16, 1990 5:00 PM MCDREX

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**WIRE THROUGH PAVEMENT TO PULL BOX**

TRAFFIC	
SPECIFICATION NO. B2B	
ID-06	PAGE 257



SECTION VIEW OF DETECTOR WIRE THROUGH EXISTING CURB TO PULL BOX

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 DEC 16, 1990 5:00 PM NADREN

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**WIRE THROUGH CURB TO PULL BOX**

**TRAFFIC**  
 SPECIFICATION NO. B2B  
 10-07 PAGE 258

## GENERAL NOTES

1. ALL ELECTRICAL CONNECTIONS IN THE SIGNAL POLE BASE, CONTROLLER CABINET AND SIGNAL HEADS SHALL BE MADE WITH "BURNDY HYLUG" OR APPROVED EQUAL.
  
2. LUMINAIRE ELECTRICAL CONDUCTORS TO BE INSTALLED IN TRAFFIC SIGNAL POLES AND FROM THE CONTROLLER TO EACH TRAFFIC SIGNAL POLE, SHALL BE SOLID COPPER TYPE THW OR THWN 75 DEGREE CELSIUS 600 VOLT. AN ALTERNATE TYPE OF INSULATION MAY BE USED IF APPROVED BY THE RESIDENT ENGINEER PRIOR TO INSTALLATION.
  
3. EACH TRAFFIC SIGNAL POLE SHALL BE GROUNDED TO THE GROUND ROD LOCATED IN THE FOOTING. NO. 10 AWG SOLID BARE COPPER WIRE SHALL BE CONNECTED FROM THE GROUND ROD TO THE GROUNDING LUG AT THE BASE OF THE POLE.

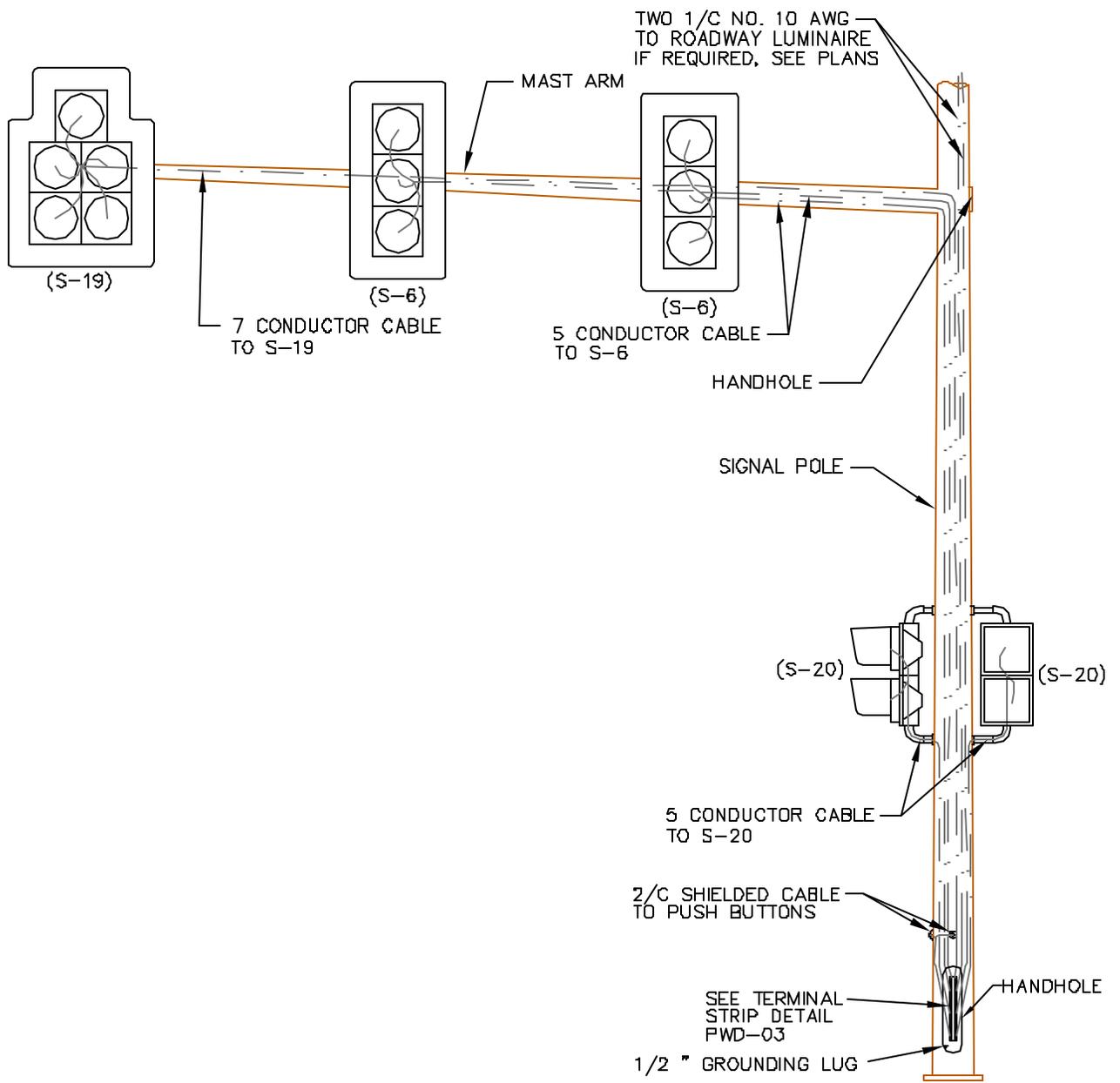
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 OCT. 2, 1988 1:00 PM BOKREB

REVISIONS	NO.	DATE	ITEM CHANGED
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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

GENERAL NOTES

TRAFFIC	
SPECIFICATION NO. 732	
PWD-01	PAGE 25B



WIRING IN SIGNAL POLE

REVISIONS	NO.	DATE	ITEM CHANGED

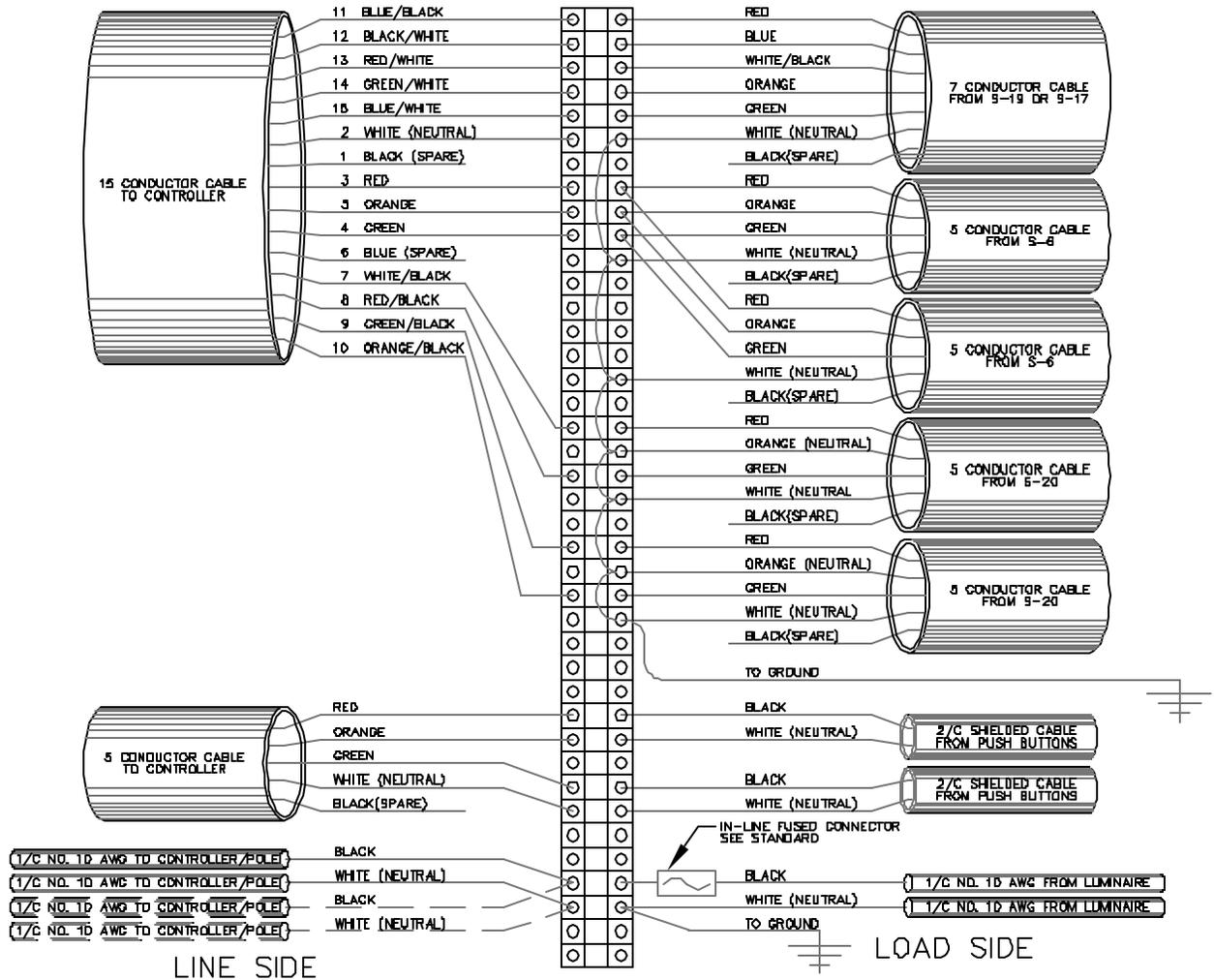
CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

WIRING IN  
 SIGNAL POLE

TRAFFIC

SPECIFICATION NO. 732  
 PWD-02 PAGE 260

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 OCT. 2, 1988 1:00 PM BORGST



WIRING AT TERMINAL STRIP IN SIGNAL POLE

TRAFFIC SIGNAL ELECTRIC CABLE SEQUENCE

CONDUCTOR NUMBER	BASE / TRACER COLOR	CABLE SIZE									
		1/2"	3/8"	7/8"	9/8"	1 1/8"	1 3/8"	1 7/8"	2 1/8"	2 3/8"	2 7/8"
1	BLACK										
2	WHITE										
3	RED										
4	GREEN										
5	ORANGE										
6	BLUE										
7	WHITE/BLACK										
8	RED/BLACK										
9	GREEN/BLACK										
10	ORANGE/BLACK										
11	BLUE/BLACK										
12	BLACK/WHITE										
13	RED/WHITE										
14	GREEN/WHITE										
15	BLUE/WHITE										
16	BLACK/RED										
17	WHITE/RED										
18	ORANGE/RED										
19	BLUE/RED										
20	RED/GREEN										
21	ORANGE/GREEN										

REVISIONS	ND.	DATE	ITEM CHANGED

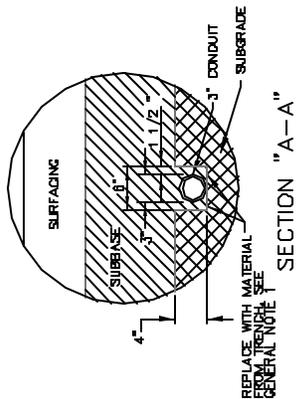
CITY OF EDMOND  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

TERMINAL STRIP  
 WIRING

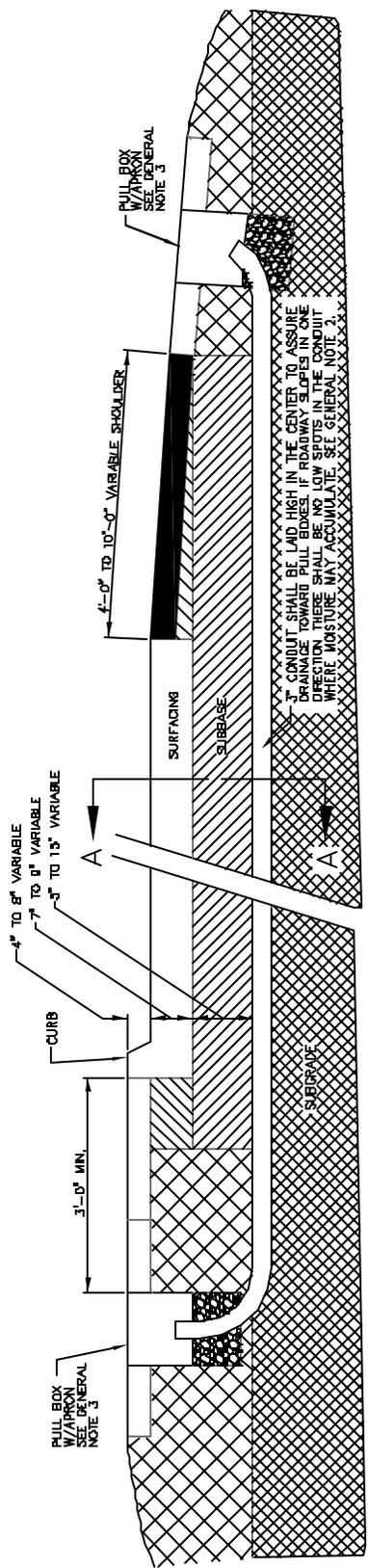
TRAFFIC  
 SPECIFICATION NO. 732  
 PWD-03 PAGE 261

CITY OF EDMOND, OKLAHOMA  
 OCT. 5, 1988 8:00 AM  
 WJH:R





SECTION "A-A"



CONDUIT PLACEMENT ON NEW ROADWAY CONSTRUCTION

CSF-02-02.DWG  
 12/18/00  
 J. MORSE

REVISIONS	NO.	DATE	ITEM CHANGED

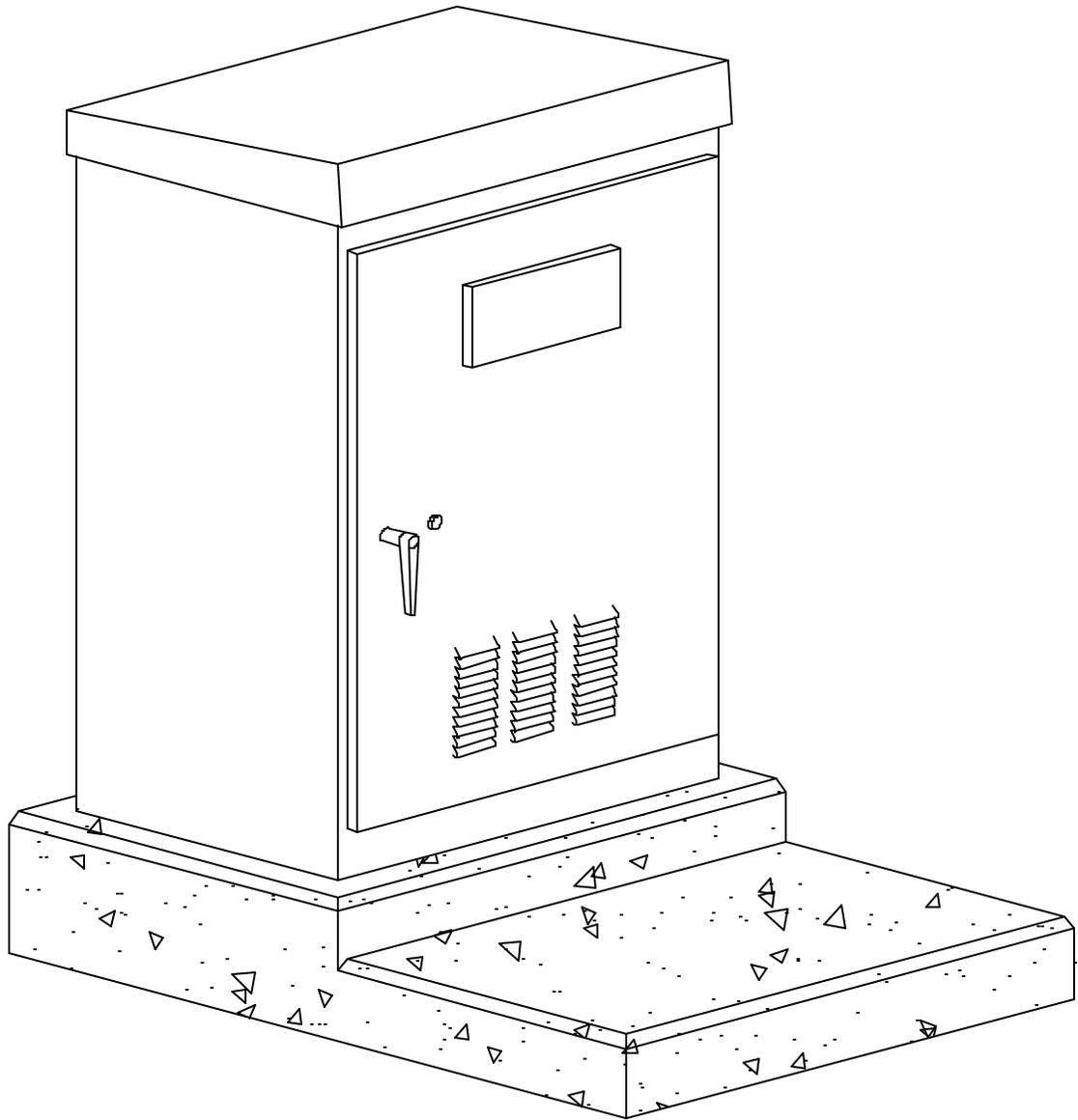
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**CONDUIT ON  
 NEW ROAD**

TRAFFIC	
SPECIFICATION NO. B04	
CSF-02	PAGE 263







TYPICAL CONTROLLER CABINET INSTALLATION  
 INCLUDES CONCRETE PAD

CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS  
 OCT. 7, 1988 8:00 AM WJH/REB

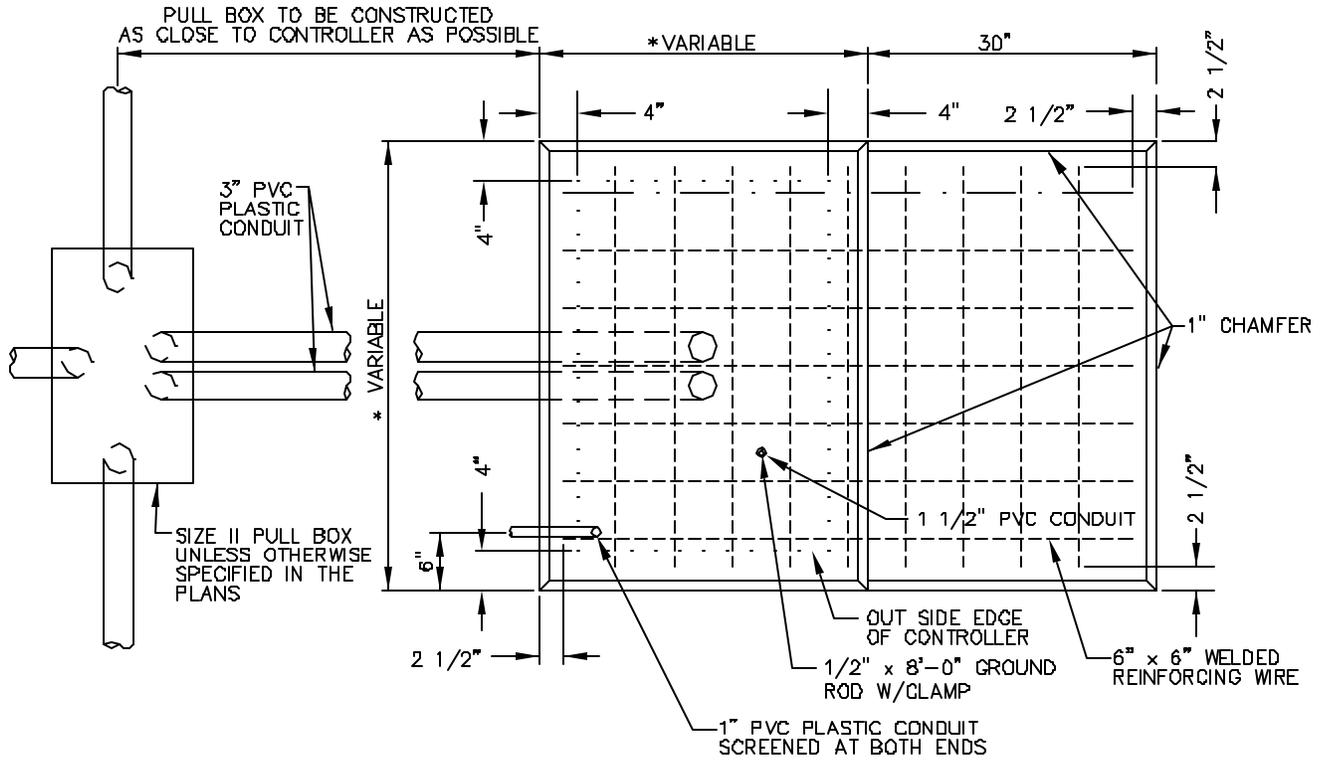
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**TYPICAL INSTALLATION**

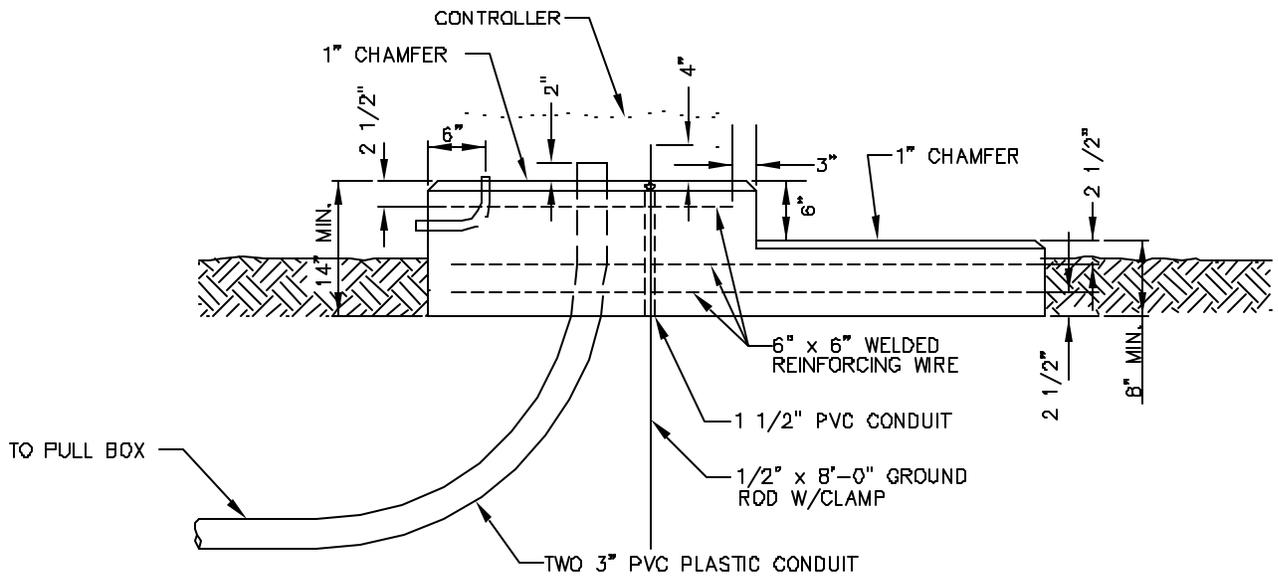
<b>TRAFFIC</b>	
SPECIFICATION NO. B25	
CCD-02	PAGE 266





TOP VIEW

\* VARIABLE DIMENSIONS WILL BE DETERMINED BY THE SIZE OF CONTROLLER REQUIRED FOR THIS PROJECT



SIDE VIEW

CONCRETE CONTROLLER PAD DETAIL

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

CONTROLLER PAD

TRAFFIC

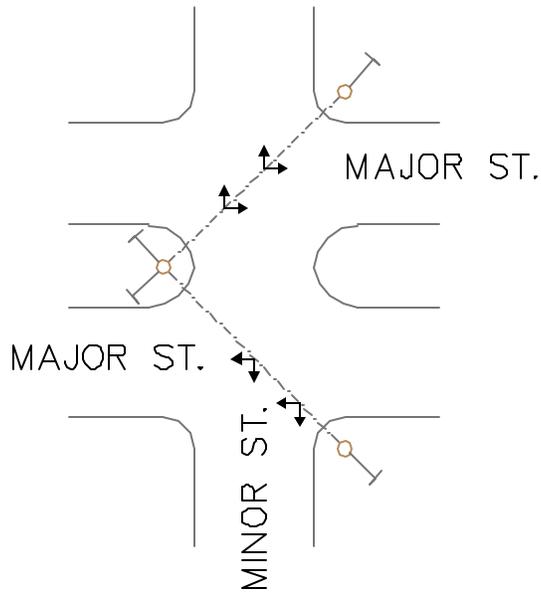
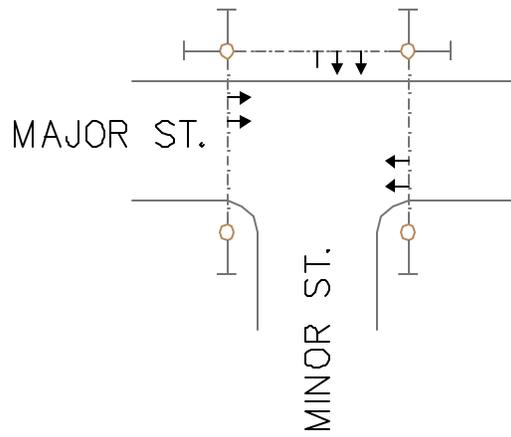
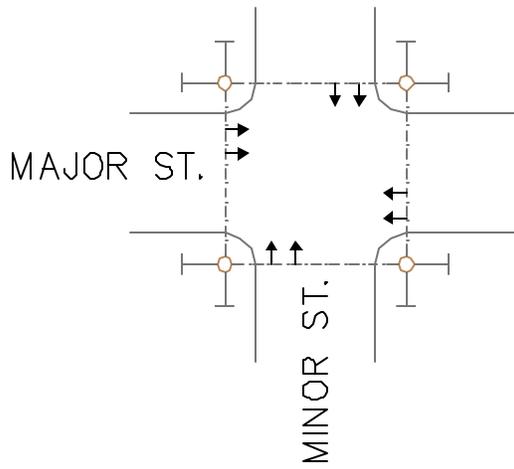
SPECIFICATION NO. B25

CCD-04 PAGE 268

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 DCL: J. WHEB BGD JM WHEB







TYPICAL SPAN WIRE INSTALLATIONS

WOOD POLE ○  
 SPAN CABLE - - - - -  
 GUY CABLE —|—  
 TRAFFIC SIGNAL →

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

CITY OF EDMOND  
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 CONSTRUCTION STANDARDS

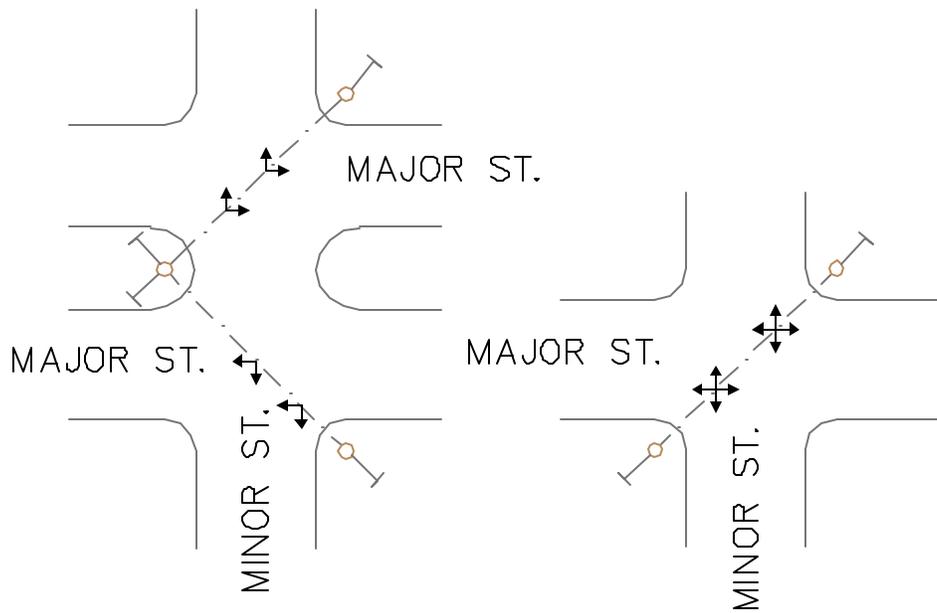
NON-FLASHING  
 INSTALLATION

TRAFFIC

SPECIFICATION NO. B01  
 SWD-03 PAGE 273

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 DESIGNED: J. MORAN  
 CHECKED: J. MORAN  
 DATE: 11/11/03





TYPICAL SPAN WIRE INSTALLATIONS

WOOD POLE                   ○  
 SPAN CABLE               - - - - -  
 GUY CABLE                 ├───┘  
 TRAFFIC SIGNAL           →

REVISIONS	ND.	DATE	ITEM CHANGED
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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**FLASHING  
 INSTALLATION**

**TRAFFIC**  
 SPECIFICATION NO. B01  
 SWD-05 PAGE 275

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 DESIGNED: J. MORSE  
 DATE: 11/11/05  
 CHECKED: J. MORSE  
 DATE: 11/11/05  
 DRAWN: J. MORSE  
 DATE: 11/11/05



## MATERIAL SPECIFICATIONS

- A. ALL REFERENCE AS SHOWN ON STANDARD SHALL CONFORM TO THE 1988 EDITION OF "OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION".
- B. ANCHOR BOLTS - 4 REQ'D AND SHALL BE NOT BENT AND MEET THE REQUIREMENTS OF ASTM A-675 GRADE 90 OR HAVE A MINIMUM YEILD STRENGTH OF 50,000 PSI.  
HEX NUTS - 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ASTM A-563 GRADE A, OR ANSI B18.2.2 HEX TYPE.  
FLAT WASHERS - 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ANSI B27.2 HEAVY WASHERS.  
LOCK WASHERS - 4 REQ'D AND SHALL MEET THE REQUIREMENTS OF ANSI B18.21.1 HEAVY WASHERS.
- C. ALL ANCHOR BOLTS, HEX NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M-232).
- D. THE SCHOOL SIGN FOOTING HAS APPROX. 0.35 C.Y. OF STRUCTURAL CONC. AND 23 LBS. OF REINFORCING STEEL. THE STEEL SHALL MEET THE SPECIFICATION REQUIREMENTS OF AASHTO H-32, GRADE 40.
- E. ELECTRICAL CONDUIT OR CONDUIT SLEEVES SHALL BE IN ACCORDANCE WITH SECTION 802 OF THE STANDARD SPECIFICATIONS AND MAY BE EITHER RIGID GALV. STEEL OR SCH. 40 PVC PLASTIC.
- F. THE MESSAGE BORDER AND BACKGROUND COLORS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". THE SIGN FACE SHALL BE NON-REFLECTORIZED.
- G. ELECTRICAL CONDUCTORS FROM THE POWER SERVICE INSULATOR TO THE CONTROLLER SHALL BE A NO. 12 AWG.  
ELECTRICAL CONDUCTORS FROM THE CONTROLLER TO THE SIGNAL HEADS SHALL BE A NO. 14 AWG CONFORMING TO SECTION 738.  
ELECTRICAL WIRING FROM THE FOOTING TO THE CONTROLLER AND TO THE SIGNAL HEADS SHALL BE INSTALLED WITHIN THE SUPPORTING SIGN POLE.
- H. ALL CONDUIT CLAMPS SHALL BE GALVANIZED MALLEABLE IRON.
- I. THE SERVICE POLE SHALL BE TREATED FULL LENGTH IN ACCORDANCE WITH AMERICAN WOOD PRESERVERS ASSOCIATION SPECIFICATIONS, TO BE AT LEAST 7.5 LBS. PER CUBIC FOOT RETENTION OF CREOSOTE OR 0.38 PENTACHLOROPHENOL MEASURED BY THE EMPTY CELL PROCESS. WOOD POLES SHALL COMPLY WITH THE LATEST REVISIONS OF ANSI STANDARD 03.1.
- J. ALL CONDUIT AND CONDUIT FITTINGS SHALL CONFORM TO THE STANDARD SPECIFICATIONS, SECTION 709.

REVISIONS  
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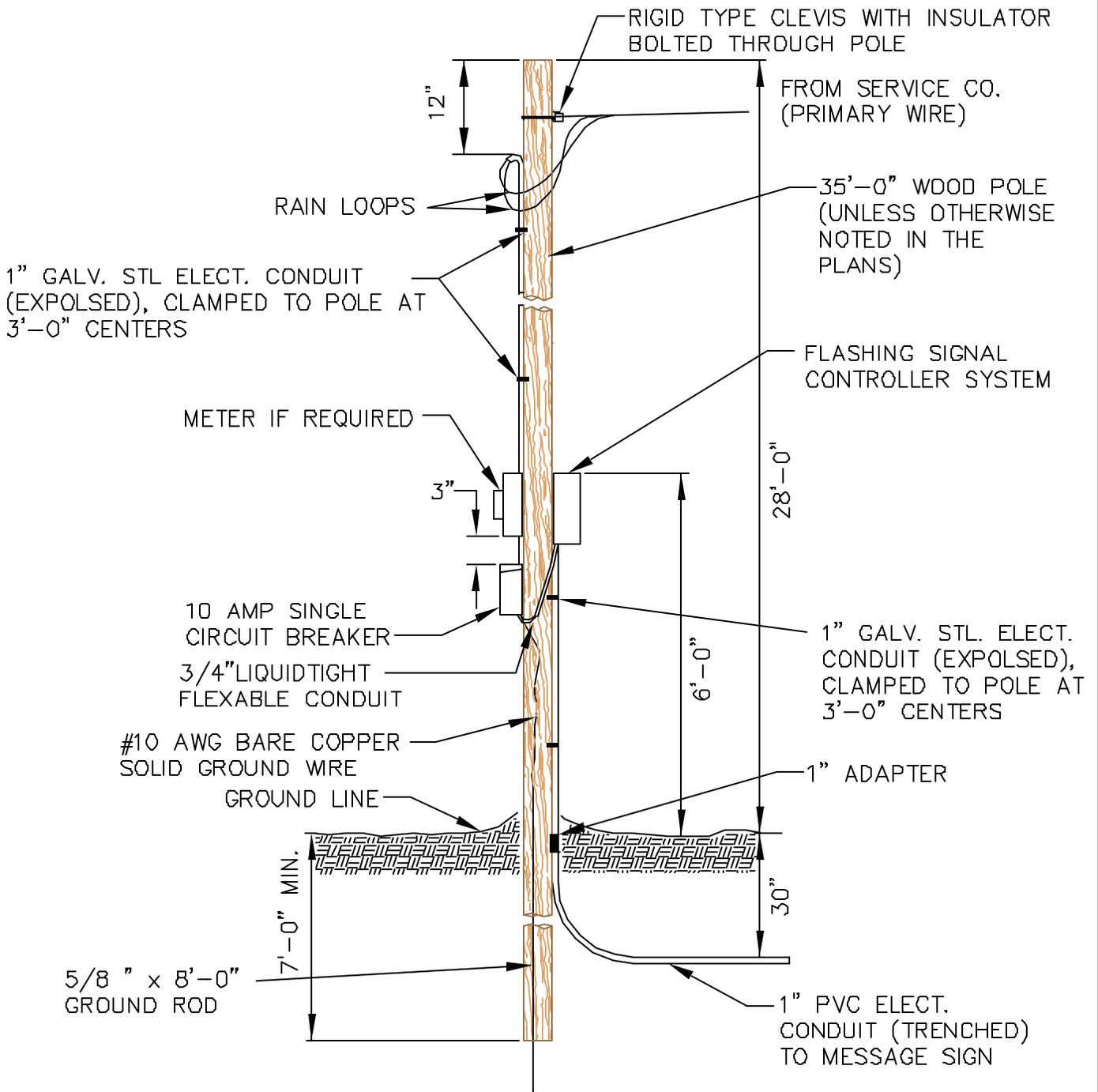
REVISIONS	NO.	DATE	ITEM CHANGED
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**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**MATERIAL  
 SPECIFICATIONS**

TRAFFIC

SPECIFICATION NO. B50  
 SZS-02 PAGE 277



SERVICE POLE FOR WARNING LIGHT

REVISIONS	NO.	DATE	ITEM CHANGED

CITY OF EDMOND

ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

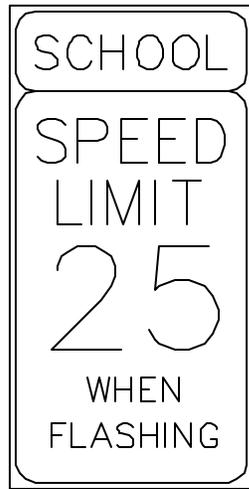
SERVICE POLE  
WARNING LIGHT

TRAFFIC

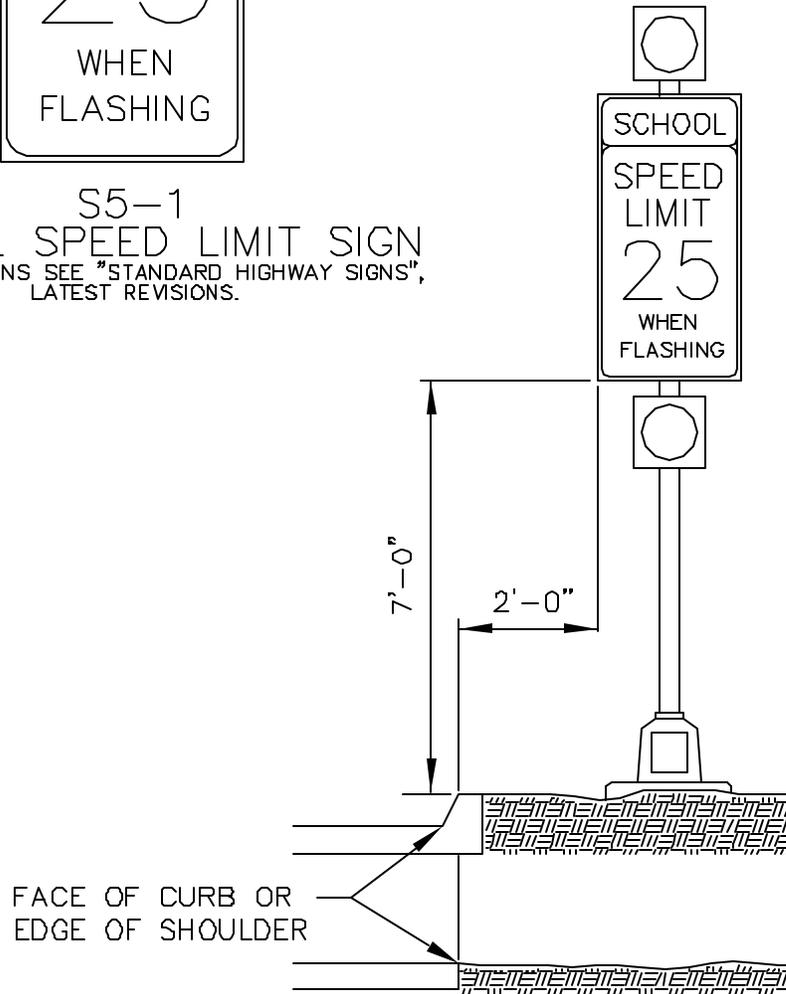
SPECIFICATION NO. B50

SZS-03 PAGE 278

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S5-1  
 SCHOOL SPEED LIMIT SIGN  
 FOR DIMENSIONS SEE "STANDARD HIGHWAY SIGNS",  
 LATEST REVISIONS.



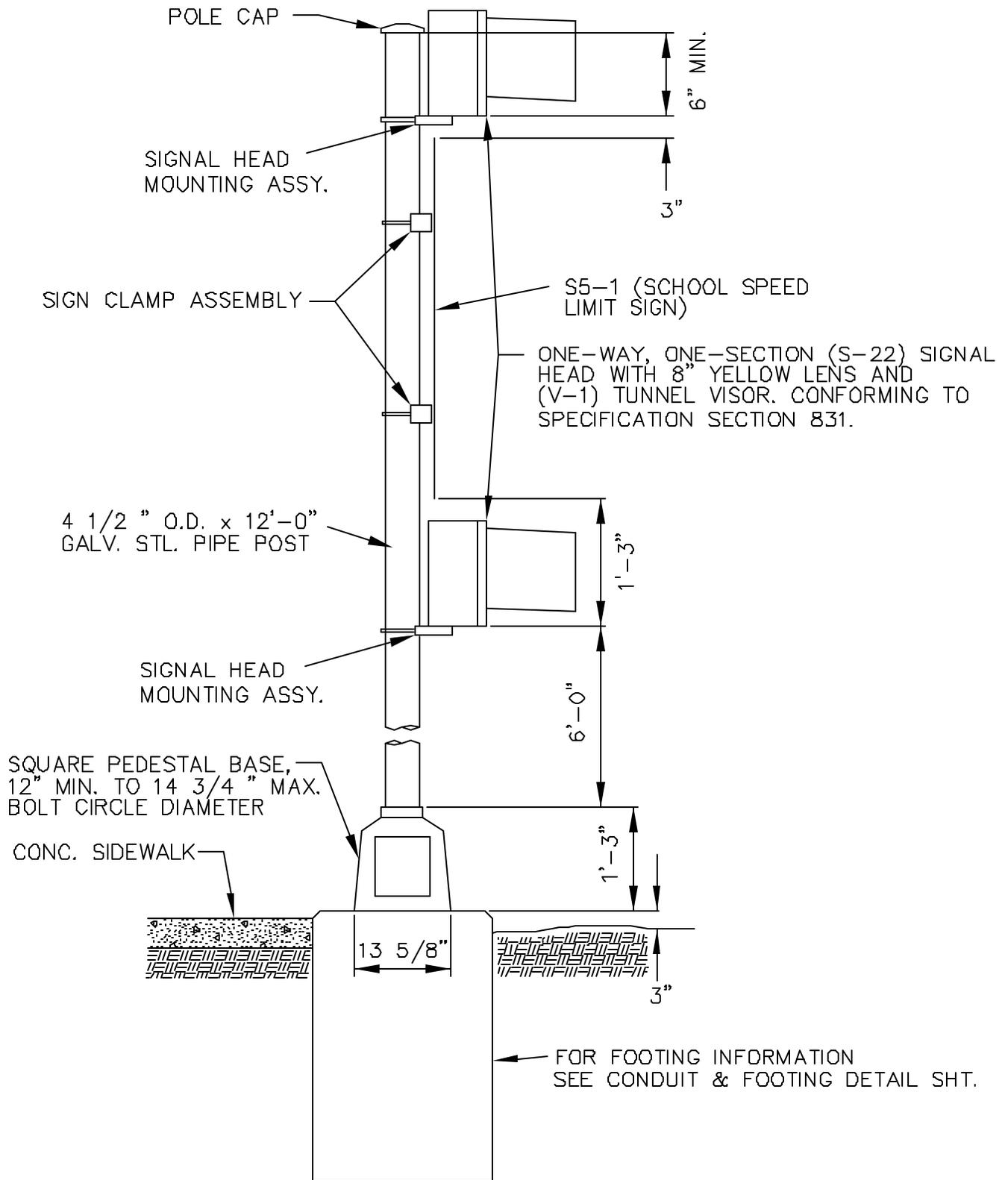
CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS DIVISION  
 REV. 12-1988 FOR ALL WORKS

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

SIGN

TRAFFIC	
SPECIFICATION NO. B50	
SZS-04	PAGE 27B



WARNING SIGNAL LIGHT DETAIL

CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS  
 REVISIONS  
 NO. DATE ITEM CHANGED

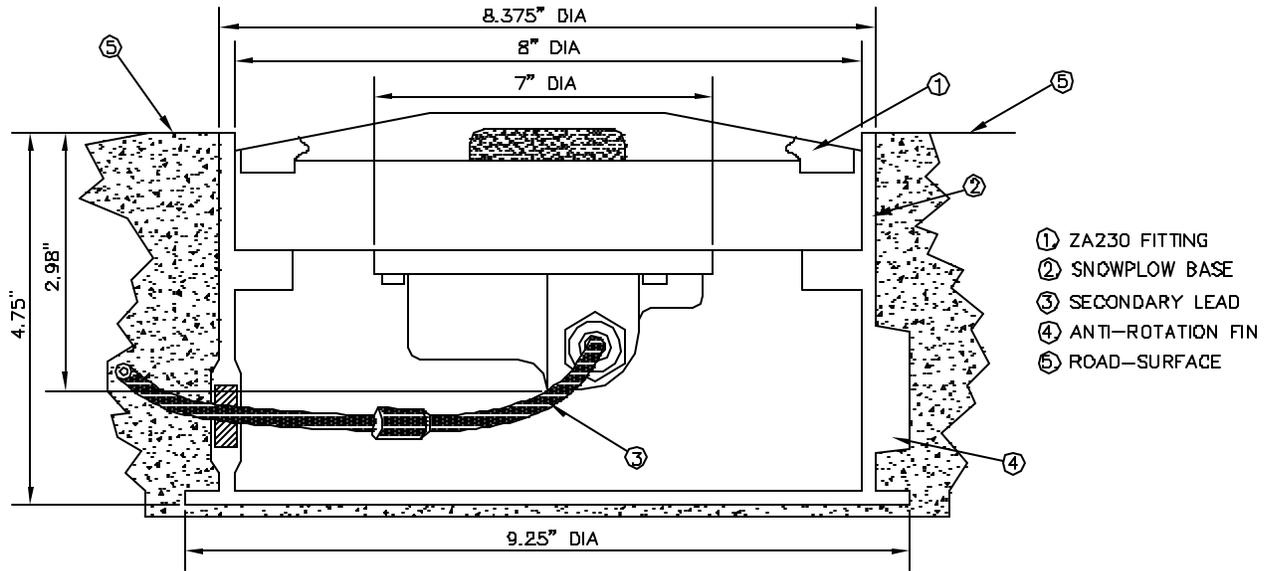
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**WARNING SIGNAL LIGHT**

**TRAFFIC**  
 SPECIFICATION NO. B50  
 SZS-05 PAGE 280

# ZA230 INSTALLED IN SNOWPLOW BASE



## ZA230 SPECIFICATIONS

### DIMENSIONS:

FIXTURE—8" DIAMETER, 3.23" DEEP  
 BASE CAN—9.25" DIAMETER, 4.75" DEEP

LAMP: 45W 50-J1/57

PRISM: BI-DIRECTIONAL IN YELLOW.

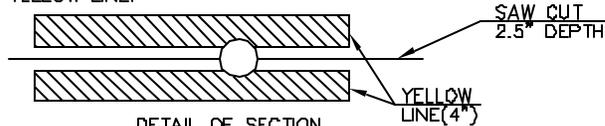
BODY CASTING: HIGH STRENGTH SPHERIODAL GRAPHITE IRON FINISHED IN SAFETY YELLOW.

STRESS BEARING: 11 TONS DYNAMIC LOAD AND 22 TONS STATIC LOAD.

MOISTURE-PROOF LIGHT CAVITY VERIFIABLE BY MEANS OF PRESSURE TEST PLUG.

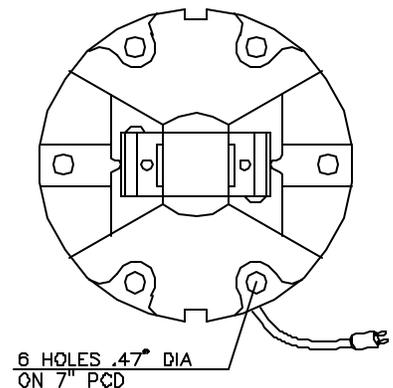
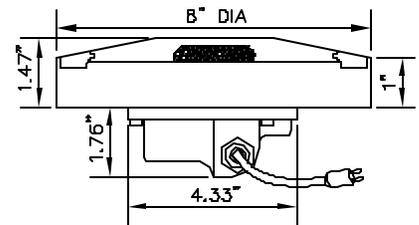
## INSTALLATION

MUST BE CORED TO PRECISE DIAMETER AND DEPTH FOR PROPER INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. (SQUARE SAW CUT METHOD WILL NOT BE PERMITTED). CENTER OF CORE WILL BE AT CENTER OF DOUBLE YELLOW LANE LINES.  
 SAW CUT FOR WIRE WILL RUN DOWN MIDDLE OF DOUBLE YELLOW LINE.



SAW CUT AT JUNCTION OF FIXTURE CUT MUST BE 3" DEEP. WIRING HARNESS IS 3" DEEP. FLASH RATE SHALL COME FROM ONE OUTPUT FOR SCHOOL ZONE FLASHER. THIS SHALL

## GENERAL ARRANGEMENT



STANDARD CONSTRUCTION DRAWINGS (JULY 2007) REVISED (JULY 2004) REVISIONS (JULY 2004) REVISIONS (JULY 2004) REVISIONS (JULY 2004)

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**IN-PAVEMENT LIGHTS  
 FOR SCHOOL ZONES**

**TRAFFIC**  
 SPECIFICATION NO. X  
 SZS-06 PAGE 280A

## GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
2. THE BRIDGE CONTRACTOR SHALL PROVIDE HOLES FOR THE CONNECTION OF W-BEAM TERMINAL CONNECTOR (SPECIAL END SHOE) TO BRIDGE RAIL AND SLOPED FACE PARAPET. RETROFIT CONNECTIONS FOR GUARDRAIL (SPECIAL END SHOE) SHALL BE FIELD DRILLED BY THE SURFACING CONTRACTOR.
3. GUARDRAIL COMPONENTS SHALL MEET THE APPLICABLE STANDARDS OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" PREPARED AND APPROVED BY THE AASHTO-ARTBA-AGC JOINT COMMITTEE, TECHNICAL BULLETIN NO. 268 B.
4. STEEL POST AND BLOCKOUT MAY BE USED IN LIEU OF WOOD POST AND BLOCKOUT FOR ANCHOR UNIT TYPE D (BF).
5. POST SPACING AND FACE OF RAIL ALIGNMENT REMAINS THE SAME.

2025 STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL DEPARTMENT  
 APRIL 2025 11881 7400 201 1000000

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

GENERAL NOTES

<b>TRAFFIC</b>	
SPECIFICATION NO. 732	
GR-01	PAGE 281

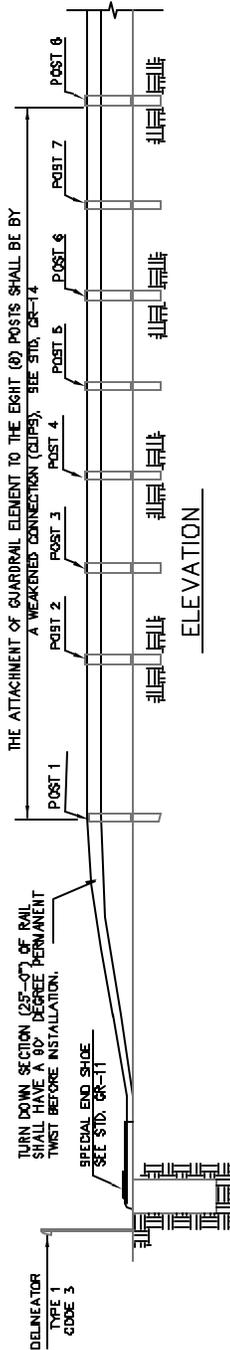
AS APPROVED, COUNCIL MEETING 11/15/05, 05-03 2005  
 APR. 20, 1998 5:00 PM, MOORE

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**ANCHOR UNIT  
 TYPE "A"**

**TRAFFIC**  
 SPECIFICATION NO. 732  
 GR-02 PAGE 282



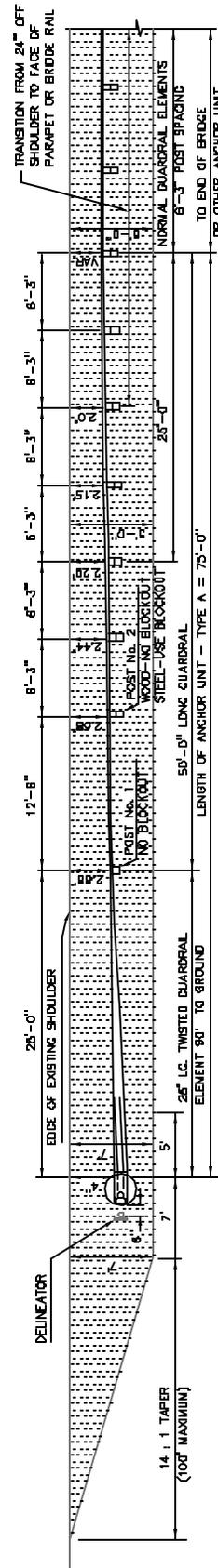
THESE EIGHT POSTS SHALL BE WOOD POSTS AS SHOWN ON STANDARD DRAWING GR-08. WEAKEN POSTS BY DRILLING ONE 2" DIAMETER HOLE THROUGH THE POST & ABOVE THE GROUND LINE PARALLEL WITH THE EDGE OF PAVEMENT. DRILLED HOLES SHOULD BE ANGLED SLIGHTLY VERTICAL TO PREVENT WATER FROM STANDING. HOLES SHALL BE TREATED WITH AN APPROVED PRESERVATIVE. BLOCKOUT SHALL NOT BE USED AT POST 1 & 2.

WOOD POSTS OPTION

ANCHOR UNIT - TYPE A

STEEL POSTS OPTION

POST 1 SHALL BE A WOOD POST WITH NO BLOCKOUT AND WITH A 2" DIAMETER HOLE DRILLED THROUGH THE POST PARALLEL TO EDGE OF PAVEMENT JUST ABOVE GROUND LINE. POST 2 THRU 8 SHALL BE STEEL POSTS WITH STEEL BLOCKOUTS. SEE STANDARD DRAWING GR-08 FOR POST DETAILS.



GUARDRAIL WIDENING

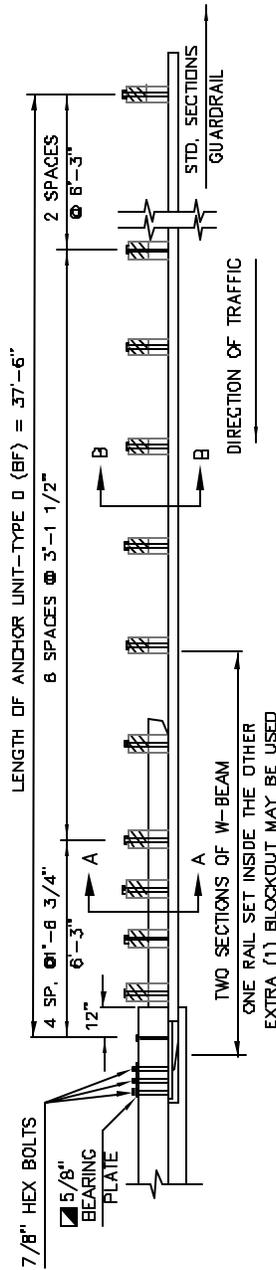
CITY OF EDMOND, OKLA. DEPARTMENT OF PUBLIC WORKS  
 121 N. 1ST ST., SUITE 100, EDMOND, OKLA. 73119

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# ANCHOR UNIT TYPE "D"

**TRAFFIC**  
 SPECIFICATION NO. 732  
 GR-03 PAGE 283

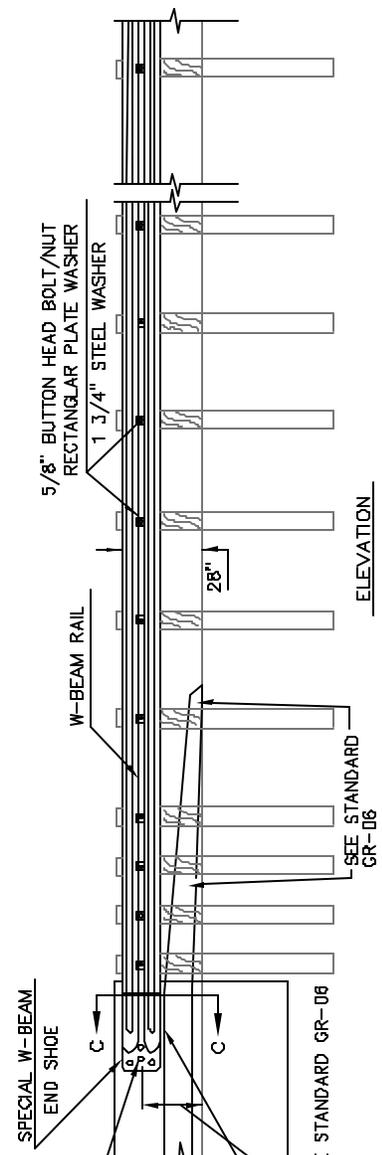


PLAN

FOR SECTIONS SEE STANDARD GR-06

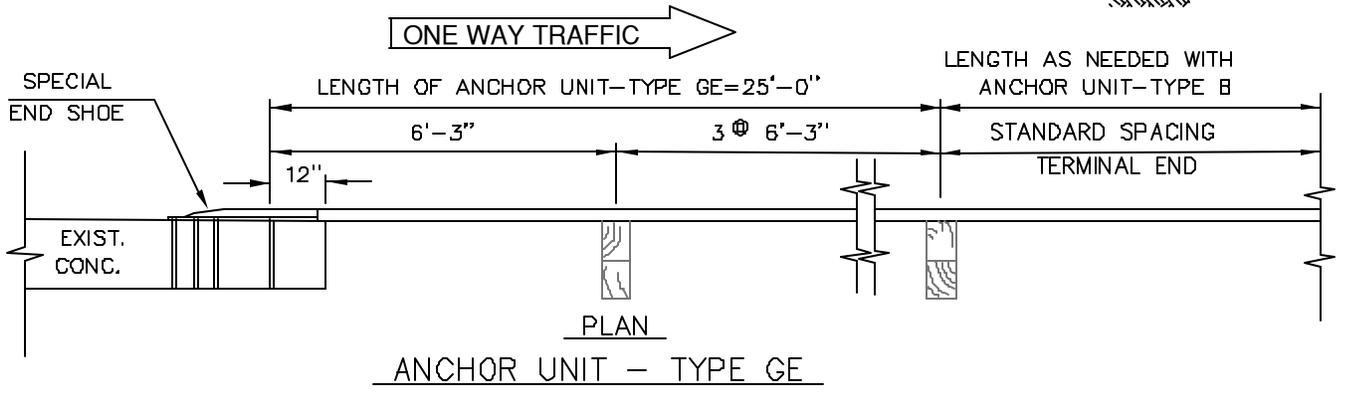
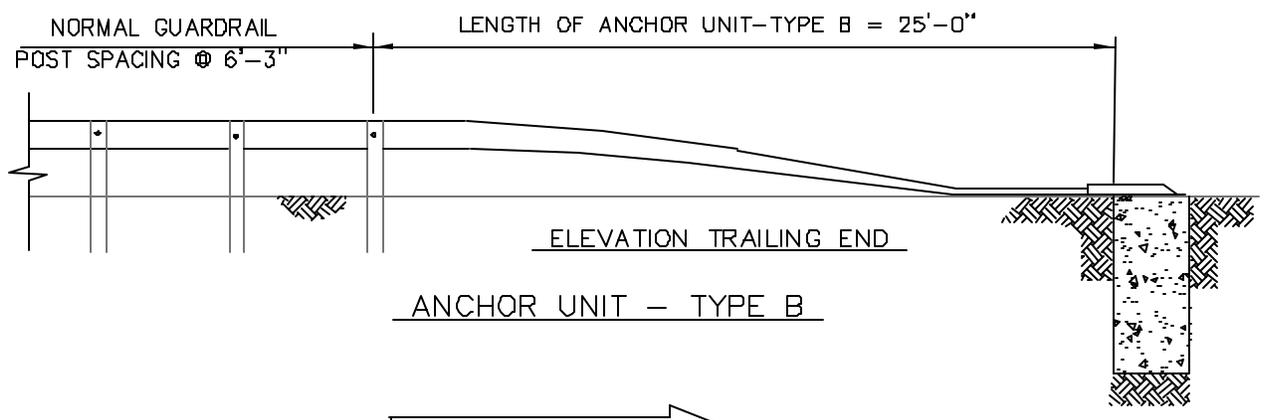
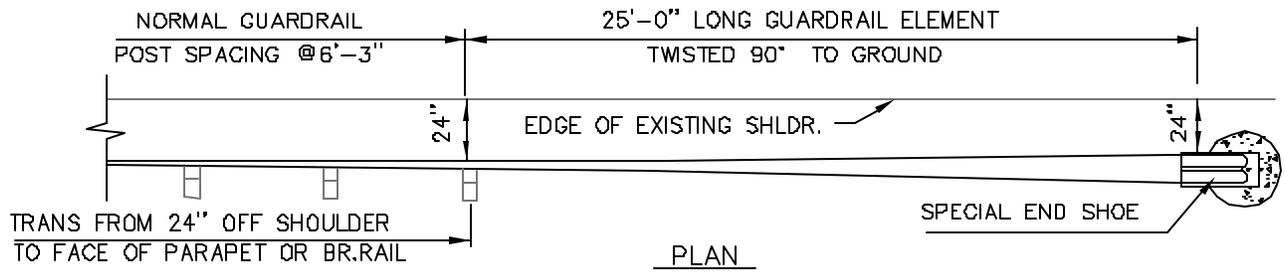
- 4 EA.- BOLT NO. 7 AND ASSEMBLY
- 1 EA.- BOLT NO. 4 AND ASSEMBLY, AN EXTRA WASHER SHALL BE USED UNDER THE BOLT HEAD. SEE TABLE OF BOLTS, NUTS & WASHERS ON STANDARD DRAWING GR-07. BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THRU THE FULL THICKNESS OF THE NUT AND AT LEAST 1/2" BEYOND. THEY SHALL BE TIGHTENED BY THE TURN-OF-THE-NUT METHOD WITH A MINIMUM OF 1/12 TURN AND MAXIMUM OF 1/4 TURN OVER SNUG TIGHT CONDITION.

- 5/8" BEARING PLATE SHALL BE USED WHEN RECESSED HOLES ARE NOT PROVIDED ON BACKSIDE OF PARAPET OR CONCRETE RAIL.
- 8 EA. REQUIRED-BOLT NO.1 & ASSEMBLY WITH STEEL WASHER. SEE TABLE OF BOLTS, NUTS & WASHERS ON STD. GR-07.



ELEVATION

ANCHOR UNIT- TYPE D (BF)



ONLY TO BE USED AT EXITING ENDS OF ONE WAY BRIDGES

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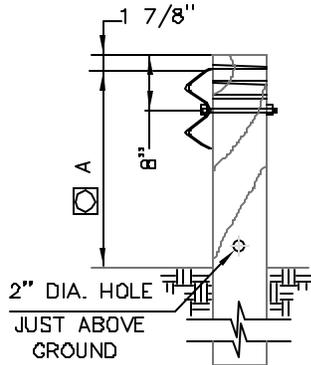
**CITY OF EDMOND**  
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 CONSTRUCTION STANDARDS

**ANCHOR UNIT  
 TYPE "B" & "GE"**

**TRAFFIC**

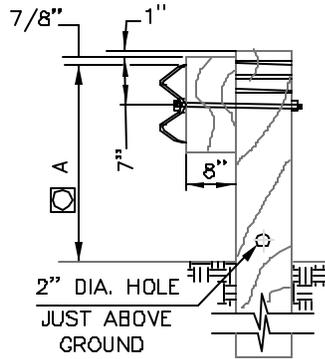
SPECIFICATION NO. 732  
 GR-04 PAGE 284

POST NO.	DIMENSION
1	26"
2	27"
3	27 1/2"
4 - 8	28"



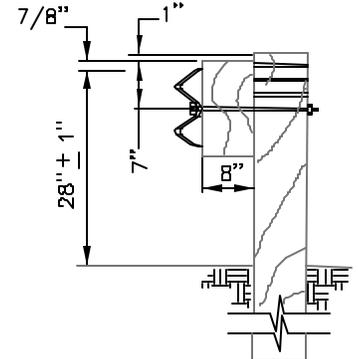
**POST 1 & 2**

NO BLOCKOUT  
CLIPPED CONNECTIONS  
(STEEL POST WITH  
BLOCKOUT MAY BE  
USED FOR POST 2)



**POST 3 THRU 8**

BLOCKOUT WITH  
CLIPPED CONNECTIONS  
(STEEL POSTS & BLOCKOUTS  
MAY BE USED)

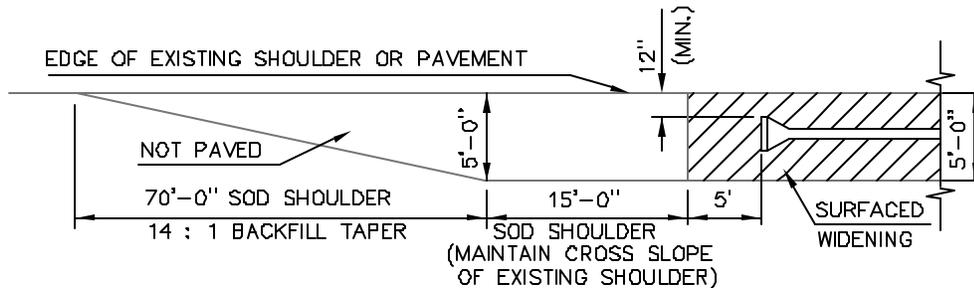


**STANDARD POSTS**

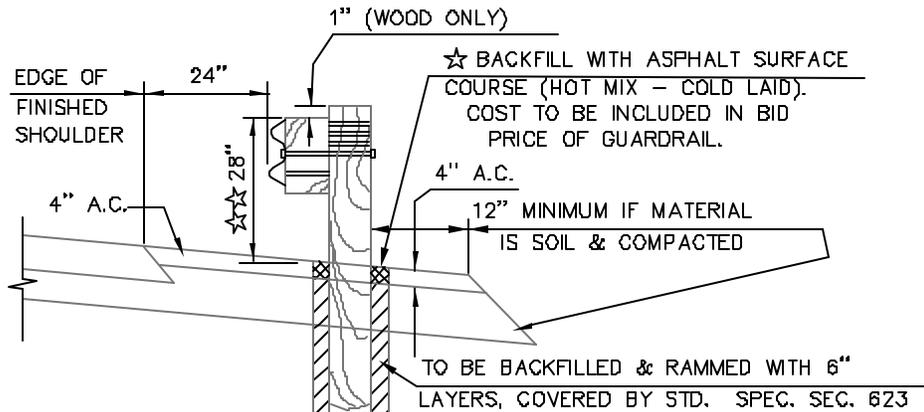
FORWARD  
(STEEL POSTS &  
BLOCKOUTS  
MAY BE USED)

RECTANGULAR POSTS SHOWN

**ANCHOR UNIT - TYPE A - APPROACH END WOOD POST DETAIL**



**TYPICAL G.E.T. ANCHOR UNIT**



**DETAIL OF GUARDRAIL POST  
IN SHOULDER BASE WIDENING**

NOTE: TYPICAL BASE WIDENING PLACED BY SURFACING CONTRACTOR FOR THICKNESS AND SLOPE SEE SURFACING PLANS.

★ SEE 1988 STD. SPECIFICATIONS-SEC. 405, ASPH SURFACE COURSE (HOT MIX-COLD LAID)  
★ ★ MEASURE DIRECTLY BELOW RAIL. GUARDRAIL TO BE INSTALLED THIS DIMENSION ±1". WHEN INSTALLING GUARDRAIL IN AN AREA WITH NO SHOULDER WIDENING, THE RAIL HEIGHT SHALL BE MEASURED AS FOLLOWS:  
FOR NEGATIVE GRADE SHOULDERS, MEASURE TO A LINE FROM THE SHOULDER ON THE SAME SLOPE AS THE SHOULDER.  
FOR POSITIVE GRADE & LEVEL SHLDERS, MEASURE FROM A LINE LEVEL WITH THE EDGE OF SHOULDER.

REVISIONS	ND.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**POST DETAILS**

TRAFFIC

SPECIFICATION NO. 732

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REVISIONS	ND.	DATE	ITEM CHANGED

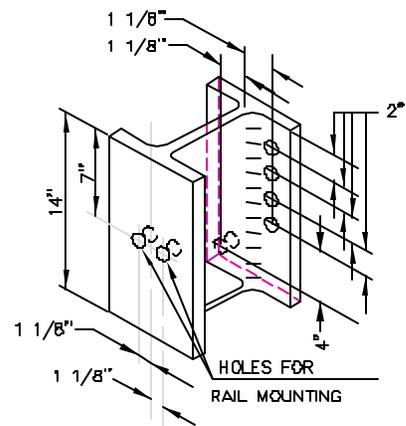
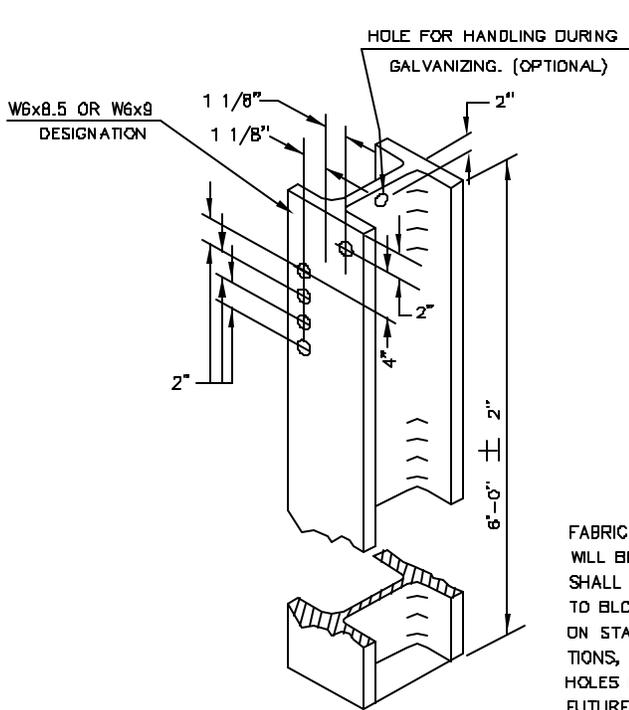
CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

# TABLE OF BOLTS, NUTS & WASHERS

TRAFFIC  
SPECIFICATION NO. 732  
GR-07 PAGE 287

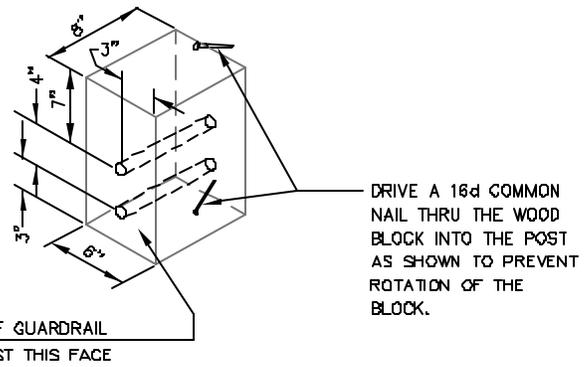
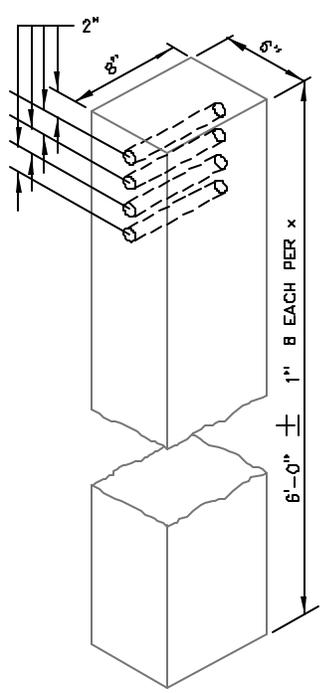
ITEM	ASSEMBLY	NOMENCLATURE & DIMENSIONS
② BOLT 1	RECESS NUT & SPECIFIED WASHER	5/8-11 UNC - 2A x 1 1/4" LONG BUTTON HEAD W/ OVAL SHOULDER
② BOLT 2	RECESS NUT & STEEL WASHER	5/8-11 UNC - 2A x 1 1/2" LONG BUTTON HEAD W/ OVAL SHOULDER
② BOLT 3	HEX NUT & LOCK WASHER	5/8-11 UNC - 2A x 1 1/2" LONG HEX-HEAD BOLT
② BOLT 4	RECESS NUT & 5/8" STEEL WASHER	5/8-11 UNC - 2A x 1 1/2" LONG BUTTON HEAD W/ OVAL SHOULDER
② BOLT 5	5/8" STEEL WASHER & ANCHOR DEVICE	5/8-11 UNC - 2A x 10 1/2" LONG HEX-HEAD BOLT
① BOLT 6	7/8" STEEL WASHER & ANCHOR DEVICE	7/8- 9 UNC - 2A x 8" LONG HEX-HEAD BOLT
① BOLT 7	7/8" STEEL WASHER & 7/8" HEX NUT	7/8- 9 UNC - 2A x 10 1/2" LONG HIGH STRENGTH STL. HEX-HEAD BOLT
② RECESS NUT		5/8- 11 UNC - 2B SEMI-FINISHED
② 5/8" HEX NUT		5/8- 11 UNC - 2B SEMI-FINISHED
① 7/8" HEX NUT		7/8- 9 UNC - 2B SEMI-FINISHED
⑤ 5/8" STEEL WSHR.		11/16" x 1 3/4" x 0.141" TYPE A PLAIN WASHER
⑥ 7/8" STEEL WSHR.		15/16" x 2 1/4" x 0.156" TYPE A PLAIN WASHER
① LOCK WASHER		11/16" I.D. GALVANIZED STANDARD HARDWARE ITEM
⑦ BEAM WASHER	USE BEAM WASHER WITH ANCHOR BOLTS, ATTACH RAIL TO SPACER BLOCK AND/OR POST.	1 3/4" x 3" LONG x 0.167" WITH A 11/16" x 1" SLOTTED HOLE

- ① NOT A STANDARD ITEM IN "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", TECHNICAL BULLETIN # 268-B
- ② SHALL MEET REQUIREMENTS OF A.S.T.M. A307 & A153
- ③ SHALL MEET REQUIREMENTS OF A.S.T.M. A325 & A449 & A153
- ④ SHALL MEET REQUIREMENTS OF A.S.T.M. A153 & A563 GRADE B OR BETTER
- ⑤ SHALL MEET REQUIREMENTS OF A.S.T.M. A153 & A.N.S.I. B27.2
- ⑥ SHALL MEET REQUIREMENTS OF A.S.T.M. A153 & A563 GRADE A OR BETTER
- ⑦ SHALL MEET REQUIREMENTS OF A.A.S.H.T.O. M180



STEEL POST & BLOCKOUT

FABRICATED STEEL BEAMS OF THE SAME BASIC DIMENSIONS AND BENDING PERFORMANCE WILL BE AN ACCEPTABLE ALTERNATE. ALL HOLES IN STEEL TO BE 3/4 INCH DIAMETER AND SHALL BE PUNCHED OR DRILLED BEFORE GALVANIZING. USE BOLT NO. 1 TO MOUNT RAIL TO BLOCKOUT AND BOLT NO. 3 TO MOUNT BLOCKOUT TO POST. SEE TABLE OF BOLTS ON STANDARD GR-07. UNIT TO BE GALVANIZED AFTER FABRICATION. ON INITIAL INSTALLATIONS, THE BLOCKOUT SHALL BE ATTACHED TO THE POST USING THE TOP AND BOTTOM HOLES IN THE POST AND BLOCKOUT. (TWO BOLTS ARE REQUIRED) OTHER HOLES ARE FOR FUTURE VERTICAL ADJUSTMENT. USE BEAM WASHER WITH BOLT NO. 1.



WOOD POSTS & BLOCKOUT

ALL HOLES IN WOOD TO BE 3/4 INCH IN DIAMETER AND DRILLED, AS SHOWN, ON THE LONGITUDINAL CENTER OF THE 6 INCH FACE AND TREATED WITH AN APPROVED PRESERVATIVE. ON INITIAL INSTALLATIONS, THE RAIL AND BLOCKOUT SHALL BE ATTACHED TO THE POST USING ONE BOLT NO. 2 THROUGH THE RAIL, THE CENTER HOLE IN THE BLOCKOUT AND THE BOTTOM HOLE IN THE THE POST. OTHER HOLES ARE FOR FUTURE VERTICAL ADJUSTMENT. USE BEAM WASHER WITH BOLT NO. 2.

OPTIONAL TYPE POSTS FOR GUARDRAIL

THE CONTRACTOR MAY, AS HIS OPTION, USE ONE OF THE TYPE POSTS SHOWN ABOVE AND HAVING MADE HIS CHOICE MUST USE THE SAME TYPE POST AND BLOCK FOR THE ENTIRE PROJECT. THE ONLY OBLIGATORY USE OF WOODPOST IS FOR POST NO. 1 AS SHOWN ON ANCHOR UNIT TYPE A.

CITY OF EDMOND, OKLAHOMA  
 ENGINEERING DEPARTMENT  
 JULY 26, 1988  
 PWD/AM  
 WARDEN

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**ENGINEERING DEPARTMENT**  
**CONSTRUCTION STANDARDS**

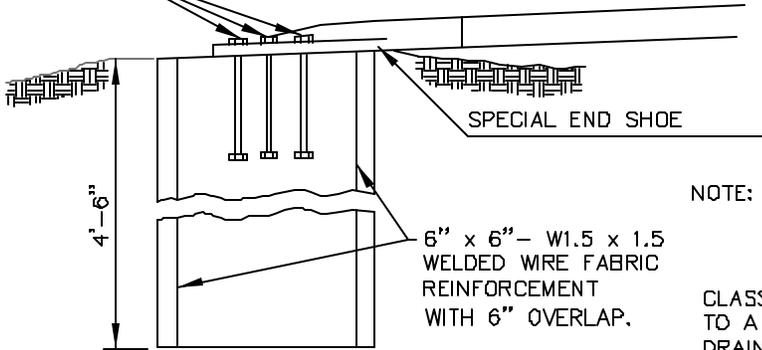
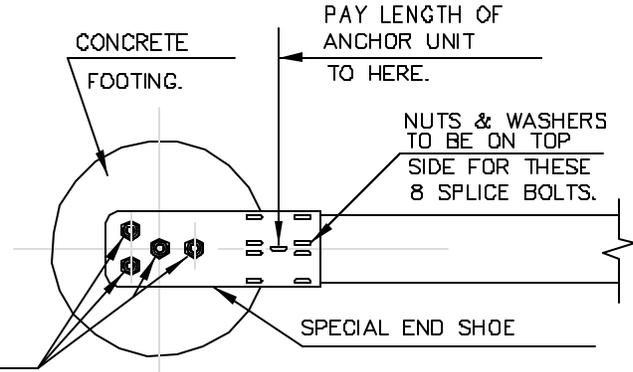
**POST & BLOCKOUTS**

**TRAFFIC**  
 SPECIFICATION NO. 732  
 GR-08 PAGE 288





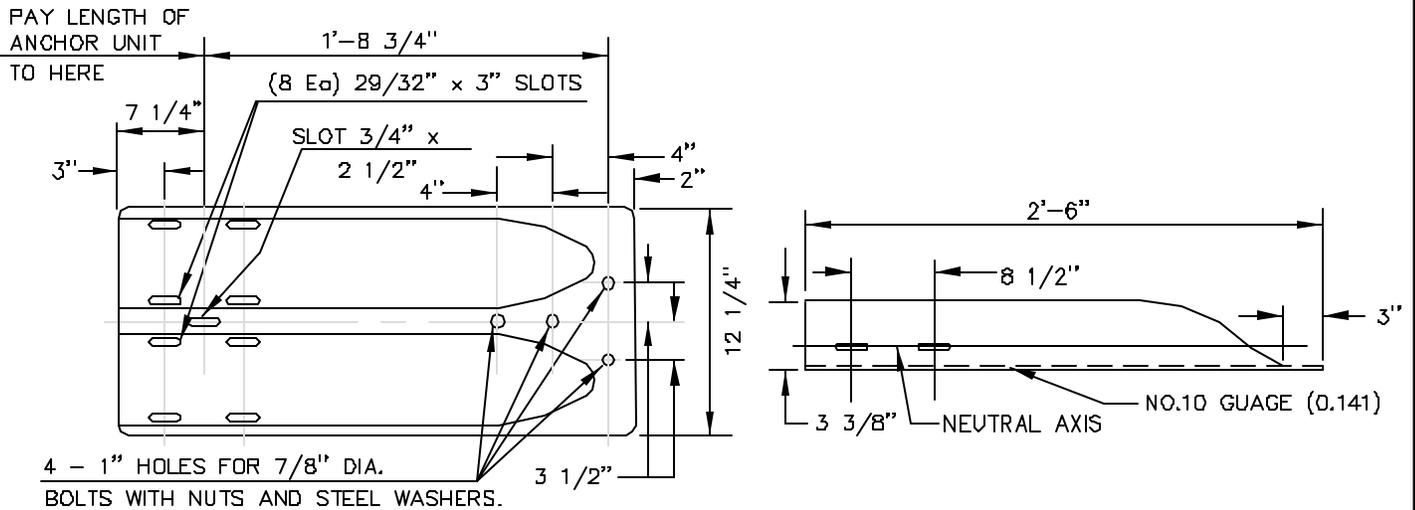
NO. 7 BOLTS - 18" LONG (4 EA.)  
 BOLTS SHALL PROTRUDE 1 1/2" FROM TOP  
 SURFACE OF FOOTING. USE BACKUP NUTS  
 AND WASHERS UNDER SPECIAL END SHOE.  
 TIGHTEN NUTS USING TURN OF THE NUT  
 METHOD WITH MINIMUM OF 1/12 TURN  
 AND MAXIMUM OF 1/4 TURN OVER  
 SNUG TIGHT.



NOTE: PRECAST FOOTING (EQUIV. SIZE & DESIGN) MAY  
 BE SUBSTITUTED FOR CAST-IN-PLACE FOOTING,  
 IF APPROVED BY THE ENGINEER.

CLASS A CONCRETE TO BE PLACED INTO 18" DIA. HOLE  
 TO A DEPTH OF APPROX. 4'-6". SHAPE CONCRETE TO  
 DRAIN OR FIT SLOPES. END SHOE MUST REMAIN LEVEL.  
 CLASS A CONCRETE = 0.26 C.Y.

DETAIL OF CONCRETE & BOLTS  
 USED IN ANCHOR



SPECIAL END SHOE

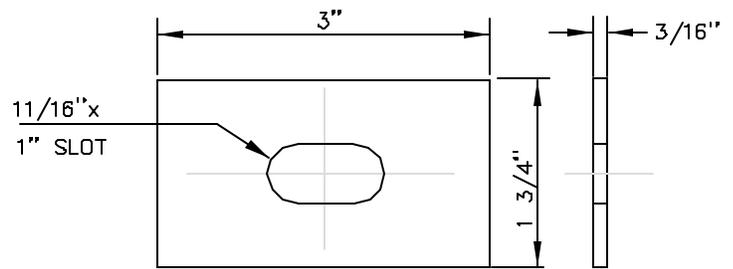
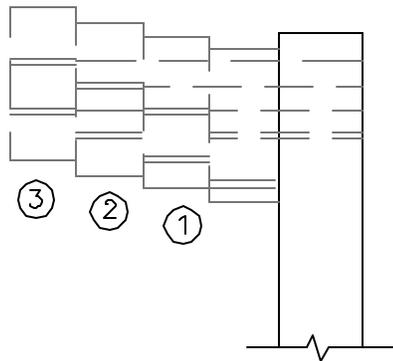
50 SPRINGFIELD, EDMOND, OKLA. 73116-1100  
 JULY 10, 1988 5:00 PM TACB:REK

REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**END SHOE /  
 BOLT DETAIL**

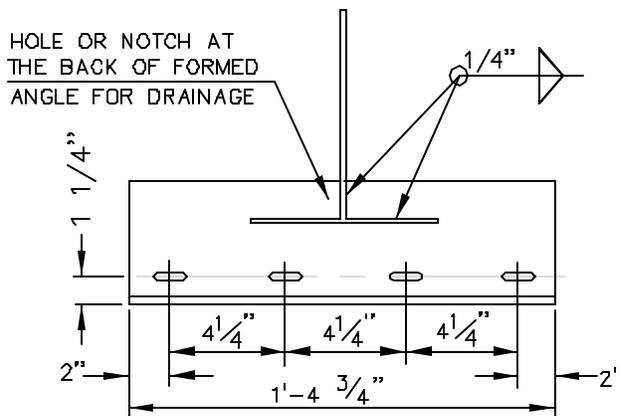
<b>TRAFFIC</b>	
SPECIFICATION NO. 732	
GR-11	PAGE 291



DETAIL ADDITIONAL BLOCKOUTS

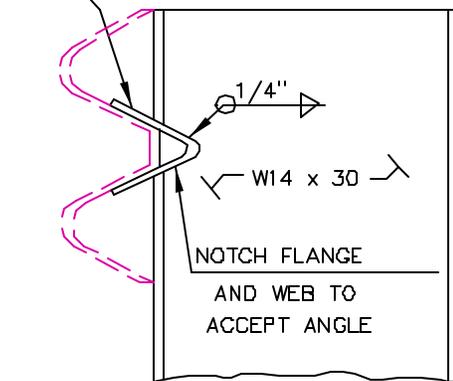
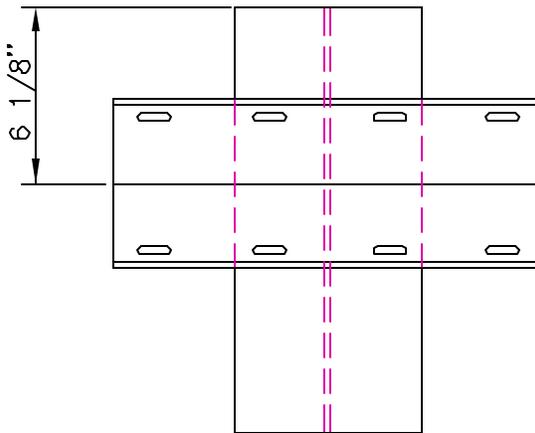
BLOCKOUTS RAISED IN 2" INCREMENTS  
(AN ADDITIONAL BOLT WILL BE  
REQUIRED FOR INCREMENT NO. 3)

BEAM WASHER



2 PLATES (1'-4 3/4" x 5 1/2" x 1/4")  
WELDED TO FORM A 70° ANGLE OR

1 PLATE (1'-4 3/4" x 11" x 1/4")  
BENT TO A 70° ANGLE



NOTE: GUARDRAIL COMPONENTS SHALL MEET THE  
APPLICABLE STD'S OF "A GUIDE TO STANDARDIZED  
HIGHWAY BARRIER RAIL HARDWARE" PREPARED AND  
APPROVED BY THE AASHTO ARTBA AGC JOINT COOPER-  
ATIVE COMMITTEE. TECHNICAL BULLETION NO. 26B B.

BRIDGE SPECIAL STEEL  
ANCHOR POST DETAIL

UNIT TO BE GALVANIZED  
AFTER FABRICATION

REVISIONS	ND.	DATE	ITEM CHANGED

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

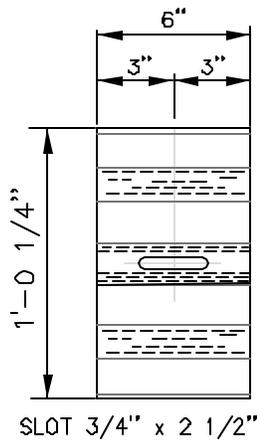
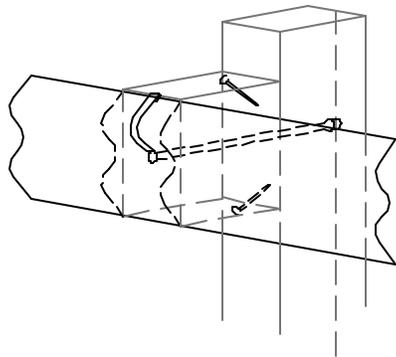
BEAM WASHER /  
ADDITIONAL BLOCKOUTS

TRAFFIC

SPECIFICATION NO. 732

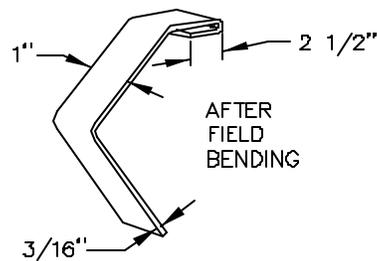
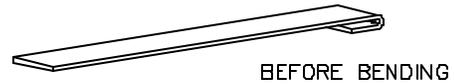
GR-12 PAGE 292

501 SPANWAY, EDMOND, OKLA. 73112-1200  
 JULY 16, 1988 4:08 PM 100888



BACKUP CONNECTION  
PIECE (6")

12 GAUGE GALVANIZED STEEL  
W-BEAM 6" LONG BOLTED  
DIRECTLY (BEHIND THE RAIL  
ELEMENT) TO POST.



FASTENING CLIP

3/16" x 12" A36 ( MILD ) GALVANIZED STEEL  
PLATE FIELD SHAPED WITH HAMMER FOR  
TIGHT FIT. HOOK FITS OVER BACKUP CONNEC-  
TION PIECE AND GUARDRAIL ELEMENT TO FORM  
WEAKENED CONNECTION. COAT WITH A ZINC-  
RICH GALVANIZING PAINT AFTER BENDING.

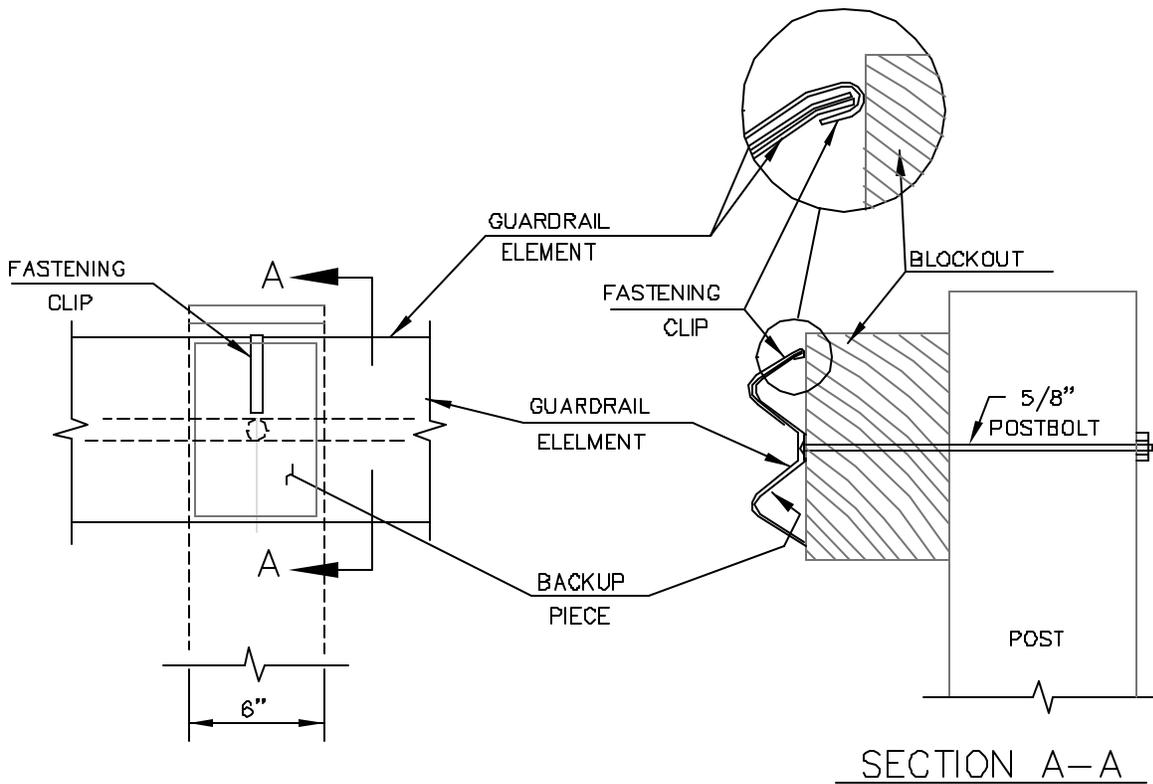
2017 12 15 11:58 AM  
 2017 12 15 11:58 AM  
 2017 12 15 11:58 AM

REVISIONS	ND.	DATE	ITEM CHANGED

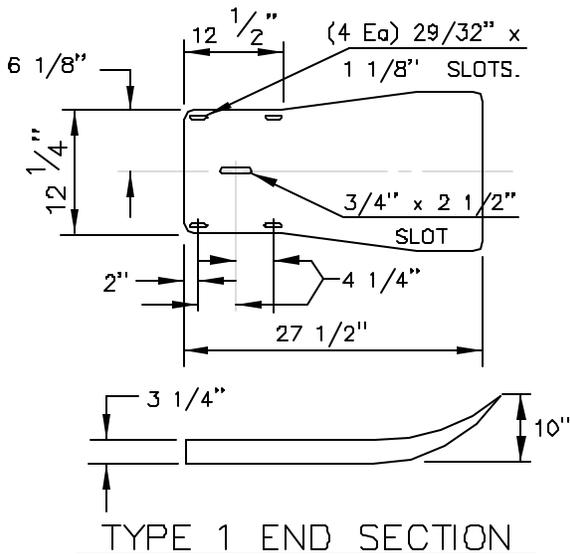
**CITY OF EDMOND**  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

**FASTENING CLIP /  
CONNECTION**

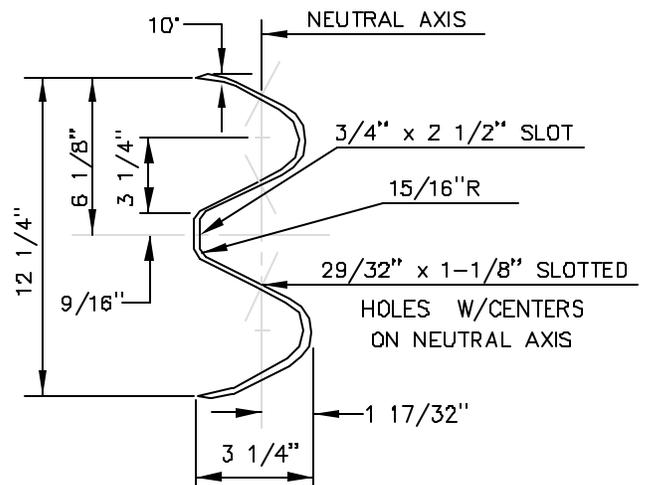
<b>TRAFFIC</b>	
SPECIFICATION NO. 732	
GR-13	PAGE 293



DETAIL OF WEAKENED CONNECTION



TYPE 1 END SECTION



SECTION THRU 12 GAUGE STEEL RAIL ELEMENT

MAY VARY DUE TO TOLERANCES. NOMINAL THICKNESS OF 0.105", EXCLUSIVE OF PROTECTIVE COATING.

CITY OF EDMOND, OKLAHOMA, SPEC. 732-14, 2010  
 JULY 20, 1988, 408 P.M., MODIFIED

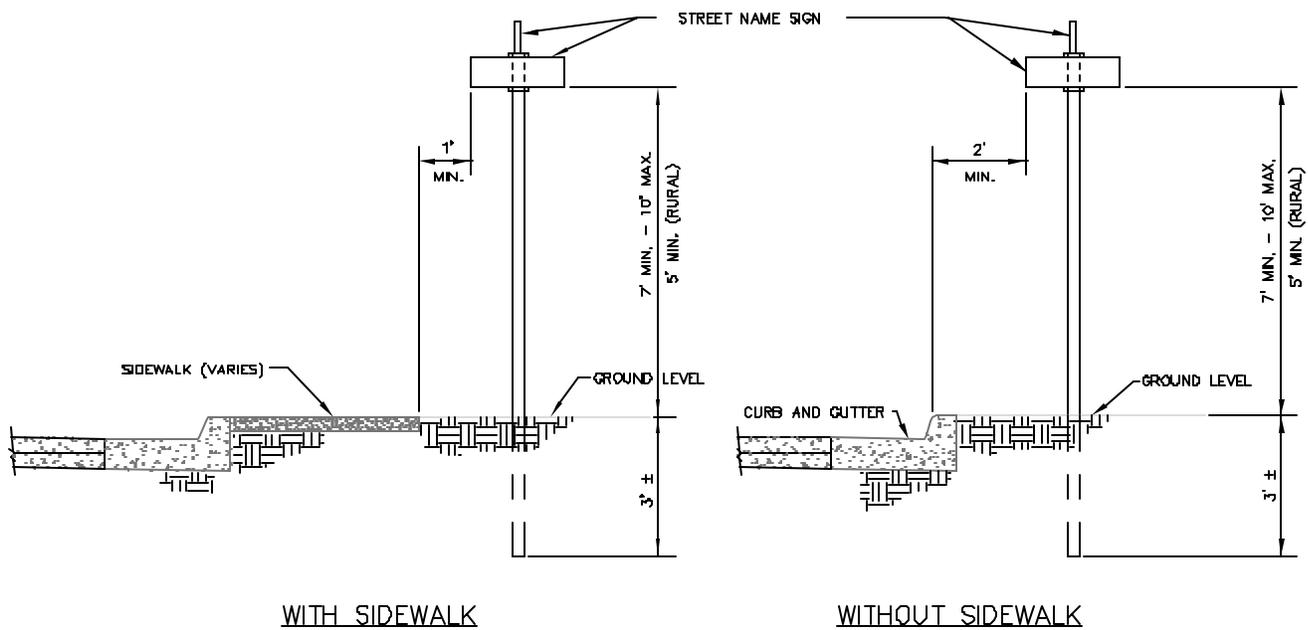
REVISIONS	NO.	DATE	ITEM CHANGED

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**WEAKENED CONNECTION**  
 / SECTION

TRAFFIC

SPECIFICATION NO. 732  
 GR-14 PAGE 294



**NOTES**

1. STREET NAME SIGNS ARE CLASSIFIED AS GUIDE SIGNS AND SHALL HAVE A GREEN BACKGROUND WITH A WHITE LEGEND.
2. STREET NAME SIGNS SHALL BE REFLECTORIZED WITH DIAMOND GRADE SHEETING ( VIP SHEETING ) OR APPROVED EQUAL.  
 4" LETTERING SHALL BE FHWA GOTHIC "B".  
 2" LETTERING SHALL BE FHWA GOTHIC "C".  
 ALL SPACING PER FHWA SPECIFICATIONS.
3. SIGN BLANKS TO BE 6" EXTRUDED ALUMINUM. POLES TO BE SQUARE 2" GALVANIZED UNLESS USING DECORATIVE POLE POLICY.
4. STREET NAME SIGNS SHALL BE MOUNTED BY CAPS & CROSS METHOD EXCEPT (SEE SPECIFICATIONS) MOUNTING TO DECORATIVE POLES.
5. REFER TO DECORATIVE POLE POLICY IF REQUIRED.



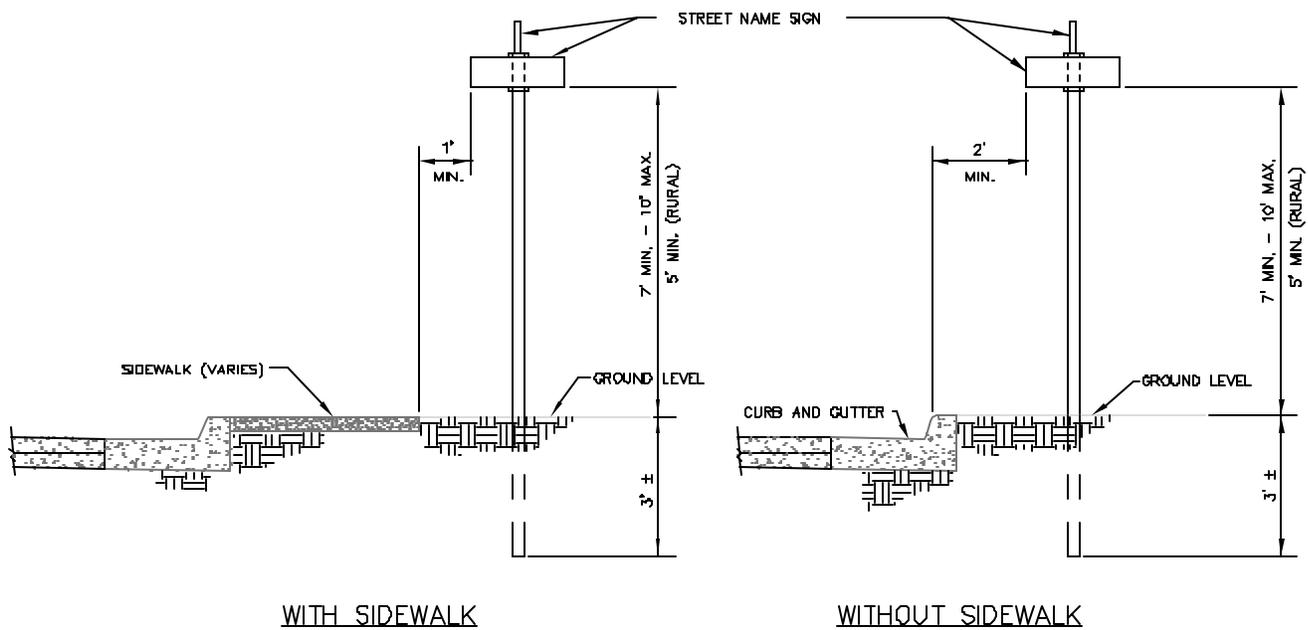
STANDARD CONSTRUCTION DRAWINGS (JULY 2004) REVISED 7/26/2004  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS  
 CITY OF EDMOND  
 JULY 26, 2004

REVISIONS	NO.	DATE	ITEM CHANGED
	1	7/26/2004	MODIFIED NOTES

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

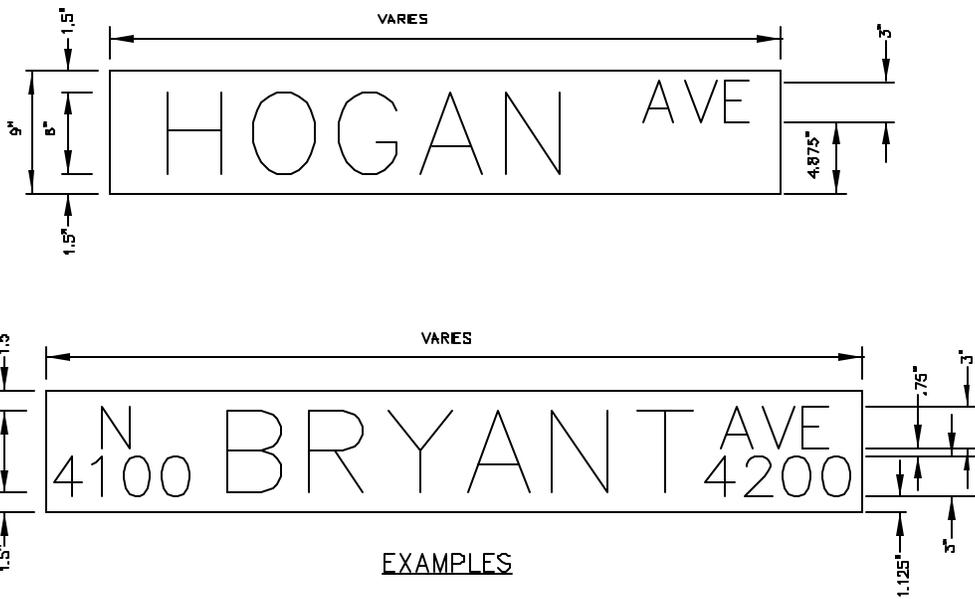
**STREET SIGNS**  
**6" SIGN BLANK**

**TRAFFIC**  
 SPECIFICATION NO. 791.721  
 STS-01 PAGE 295



**NOTES**

1. STREET NAME SIGNS ARE CLASSIFIED AS GUIDE SIGNS AND SHALL HAVE A GREEN BACKGROUND WITH A WHITE LEGEND.
2. STREET NAME SIGNS SHALL BE REFLECTORIZED WITH DIAMOND GRADE SHEETING ( VIP SHEETING ) OR APPROVED EQUAL. 6" LETTERING SHALL BE FHWA GOTHIC "B". 3" LETTERING SHALL BE FHWA GOTHIC "C". ALL SPACING PER FHWA SPECIFICATIONS.
3. SIGN BLANKS TO BE 9" EXTRUDED ALUMINUM. POLES TO BE SQUARE 2" GALVANIZED UNLESS USING DECORATIVE POLE POLICY.
4. STREET NAME SIGNS SHALL BE MOUNTED BY CAPS & CROSS (SEE SPECIFICATIONS) METHOD EXCEPT MOUNTING TO DECORATIVE POLES.
5. REFER TO DECORATIVE POLE POLICY IF REQUIRED.



STANDARD CONSTRUCTION DRAWINGS (JULY 2007) REVISED 08-2010  
 CITY OF EDMOND ENGINEERING DEPARTMENT  
 JULY 2007 REVISION

REVISIONS	NO.	DATE	ITEM CHANGED
CITY OF EDMOND			
ENGINEERING DEPARTMENT			
CONSTRUCTION STANDARDS			

**STREET SIGNS**  
**9" SIGN BLANK**

TRAFFIC	
SPECIFICATION NO. 791.721	
STS-02	PAGE 295A

## GENERAL NOTES

1. STREET NAME SIGNS ARE CLASSIFIED AS GUIDE SIGNS AND SHALL HAVE A GREEN BACKGROUND WITH A WHITE LEGEND.
2. STREET NAME SIGNS SHALL BE REFLECTORIZED WITH DIAMOND GRADE SHEETING (VIP SHEETING) ASTM CLASS IX OR APPROVED EQUAL.
3. MAST ARM SIGN BLANKS TO BE MIN. 18", .063 " ALUMINUM (2 NAMES ON SIGN 24".)
4. MAST ARM SIGN TEXT TO BE HIGHWAY GOTHIC TYPE "C". (IF SIGN WILL BE EXCESSIVELY LONG THEN GOTHIC TYPE "B" MAY BE USED.)

## SPECIFICATIONS

1. POLES SHALL BE QUIK PUNCH 2.0", 14 GAUGE, 9.5' (OR APPROVED EQUIVALENT).
2. ANCHORS SHALL BE PGAL/HOLES 2.25", 12 GAUGE, 2.5' (OR APPROVED EQUIVALENT).
3. HARDWARE: DRIVE PIVET W/NYLON WASHER PART #TLDRA 387306 (DR 3868)
4. POLE CAP 2.0" SQ. (FOR EXTRUDED SIGN BLADE) PART #SH 1800 (OR APPROVED EQUIVALENT).
5. CROSS (FOR EXTRUDED SIGN BLADE) PART # SH 1801 (OR APPROVED EQUIVALENT).

ITEMS 1-3  
 ALLIED TUBE & CONDUIT - TELES PAR  
 TELES PAR TRAFFIC DIVISION  
 16100 LATHROP AVENUE  
 HARVEY, IL 60426  
 800-882-5543

ITEMS 4 & 5  
 PELCO PRODUCTS, INC.  
 320 SW 18TH STREET  
 EDMOND, OK 73013  
 405-340-3434

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 JULY 26, 2004 REEHER

REVISIONS	ND.	DATE	NOTES ADDED ITEM CHANGED
	1	7/26/2004	

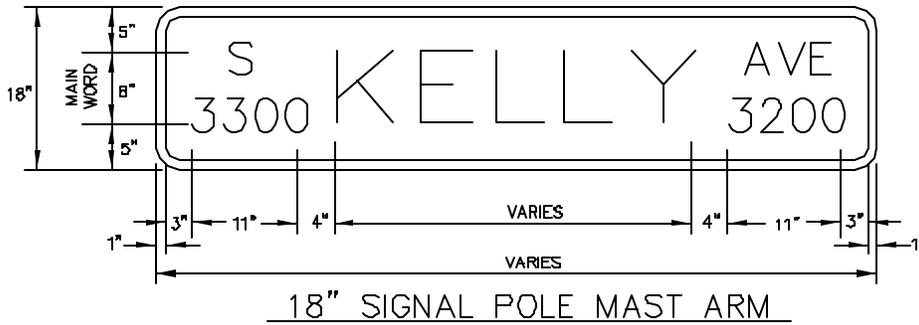
**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

# GENERAL NOTES & SPECIFICATIONS

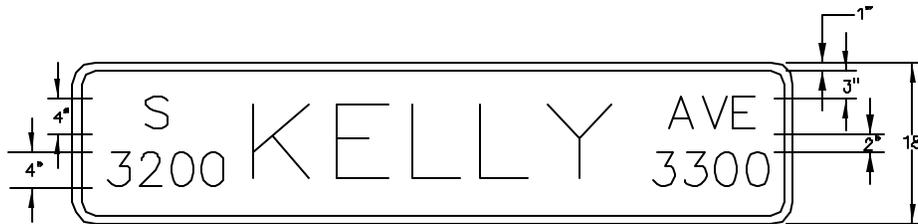
**TRAFFIC**

SPECIFICATION NO. 791, 721

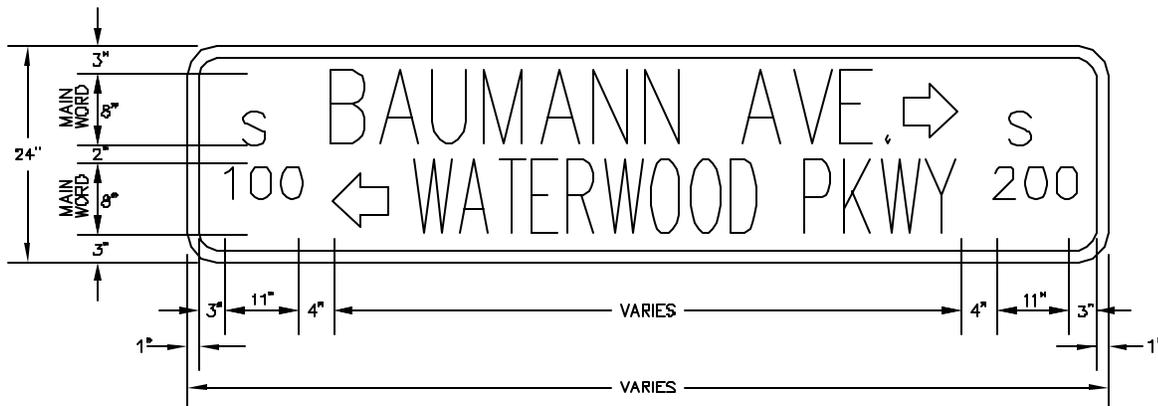
MAS-01 PAGE 296



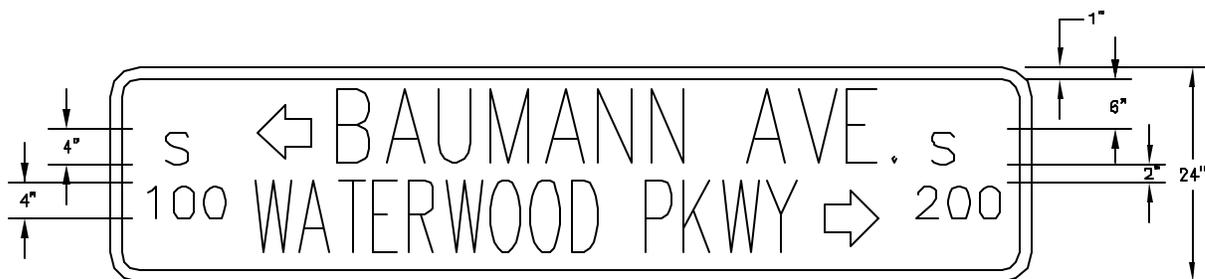
18" SIGNAL POLE MAST ARM



18" OPPOSITE SIGNAL POLE MAST ARM



24" SIGNAL POLE MAST ARM



24" OPPOSITE SIGNAL POLE MAST ARM

CITY OF EDMOND CONSTRUCTION STANDARDS DRAWINGS (JULY 2007) NEW & REVISED VMS-OBSERVING  
 JULY 2004 REVISION

REVISIONS	ND.	DATE	ITEM CHANGED
1	7/26/2004		SPLIT INTO 2 SIGN SIZES

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

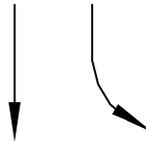
18" & 24" MAST  
 ARM SIGNS

**TRAFFIC**  
 SPECIFICATION NO. 791, 721  
 MAS-02 PAGE 297

PRE-EMPT #2

AD1 AD2

SB Ø2 SBLT Ø5



AD3

Ø4 WB

AD4

Ø7 WBLT

PRE-EMPT #4

PRE-EMPT #3

EBLT Ø3

AD8

EB Ø8

AD7

Ø1 Ø6  
NBLT NB

AD6 AD5

PRE-EMPT #1

NOTE: PHASING DIAGRAMS FOR INTERSECTIONS WITH MORE OR LESS THAN 8 PHASES MUST BE APPROVED BY THE ENGINEERING DEPARTMENT

REVISIONS	ND.	DATE	ITEM CHANGED
◇			

CITY OF EDMOND  
ENGINEERING DEPARTMENT  
CONSTRUCTION STANDARDS

TYPICAL 8 PHASE  
SIGNAL PHASING

TRAFFIC

SPECIFICATION NO. 73B

SF-01 PAGE 29B

CITY OF EDMOND, MISSOURI, SF-01, 01/2018  
JULY 6, 1988 4:00 PM WJH/REB

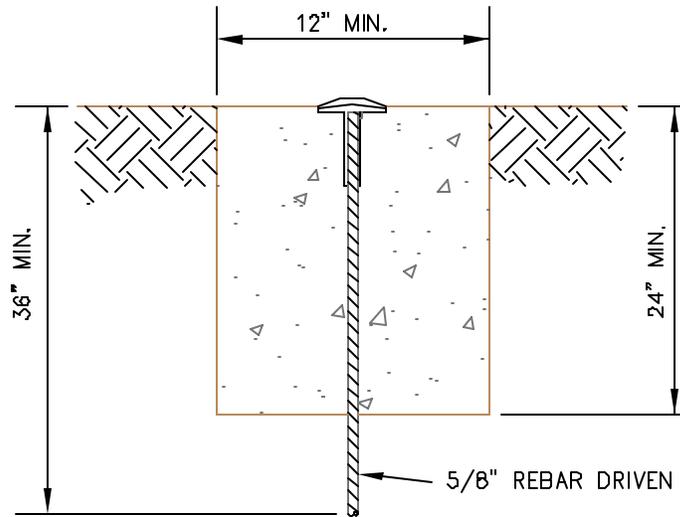


## GENERAL NOTES

1. THE GLOBAL POSITIONING SYSTEM (GPS) MONUMENT SHALL BE CONSTRUCTED AND SET ACCORDING TO THE CITY OF EDMOND GPS MONUMENT CONSTRUCTION STANDARD. EVERY MONUMENT SHALL HAVE A CITY OF EDMOND PROVIDED BRONZE MARKER STAMPED WITH A UNIQUE STATION NUMBER. EVERY EFFORT SHALL BE MADE TO PLACE MONUMENTS IN POSITIONS OF EXTREME PROTECTION. ALSO LOCATIONS THAT ARE ACCESSIBLE, SAFE AND "GPSABLE" WILL BE SOUGHT. THE LOCATION OF GPS MONUMENT MUST BE APPROVED BY THE CITY OF EDMOND ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION.
  
2. FOLLOWING ACCEPTANCE OF MONUMENT CONSTRUCTION, THE CENTER POINT OF THE MONUMENT SHALL BE SURVEYED BY A PROFESSIONAL LAND SURVEYOR REGISTERED WITH THE STATE OF OKLAHOMA FOR PROFESSIONAL SURVEY SERVICES TO DETERMINE THE ACTUAL POSITIONAL COORDINATES OF THE MONUMENT.
  
3. COORDINATE DATA WILL BE IN NAD-83 FORMAT INSURING COMPATIBILITY WITH THE NEW OKLAHOMA HIGH ACCURACY REFERENCE NETWORK. ELEVATION DATUM WILL BE MEAN SEA LEVEL TO INSURE ACCURATE REFERENCE TO LOCAL EXISTENT CONTROL, EXISTING CITY OF EDMOND GPS MONUMENTATION AND UNITED STATES GEOLOGICAL SURVEY (USGS) BENCHMARK DATA. COORDINATES WILL BE RECORDED IN BOTH LATITUDE AND LONGITUDE (DEGREES, MINUTES, SECONDS TO THE 4TH SIGNIFICANT DIGIT) AND STATE PLANE U.S. SURVEY FEET.
  
4. THE MINIMUM POSITIONAL ACCURACY OF GPS MONUMENTS WILL BE WITHIN 2CM. THE ACCURACY OF THE GPS MONUMENT WILL BE CHECKED BY THE CITY OF EDMOND WITHIN ONE MONTH OF THE MONUMENT BEING PLACED AND SURVEYED.
  
5. THE SURVEYOR SHALL CREATE AND SUBMIT THE FOLLOWING GPS MONUMENT RECORD INFORMATION FOR EACH GPS MONUMENT SURVEYED IN A DIGITAL AND HARDCOPY FORMAT: NAME OF STATION (MONUMENT NUMBER), DESCRIPTION OF MONUMENT, GENERAL LOCATION DESCRIPTION, SPECIFIC LOCATION DESCRIPTION, GEOID MODEL USED, DATUM, ELIPSOID, ELEVATION, MEASUREMENT IN U.S. SURVEY FEET, SEMI-MAJOR AXIS, SEMI-MINOR AXIS, L/F, U.S. SURVEY FOOT, DATUM, LATITUDE (DEGREES, MINUTES, SECONDS TO THE 4TH SIGNIFICANT DIGIT), LONGITUDE (DEGREES, MINUTES, SECONDS TO THE 4TH SIGNIFICANT DIGIT), HAE, SPCC NAD-83 (U.S. SURVEY FOOT) ZONE- OKLAHOMA NORTH, NORTHING, EASTING, MSL ELEVATION, REFERENCES AND NOTES OR SPECIAL INSTRUCTIONS WITH A GENERAL LOCATION MAP.

C:\DATA\MASTER FORMS\STANDARD CONSTRUCTION DRAWINGS\STANDARD CONSTRUCTION DRAWINGS (JULY 2007)\NEW & REVISED\M0-01RS0204  
 JULY 2004 REVISION

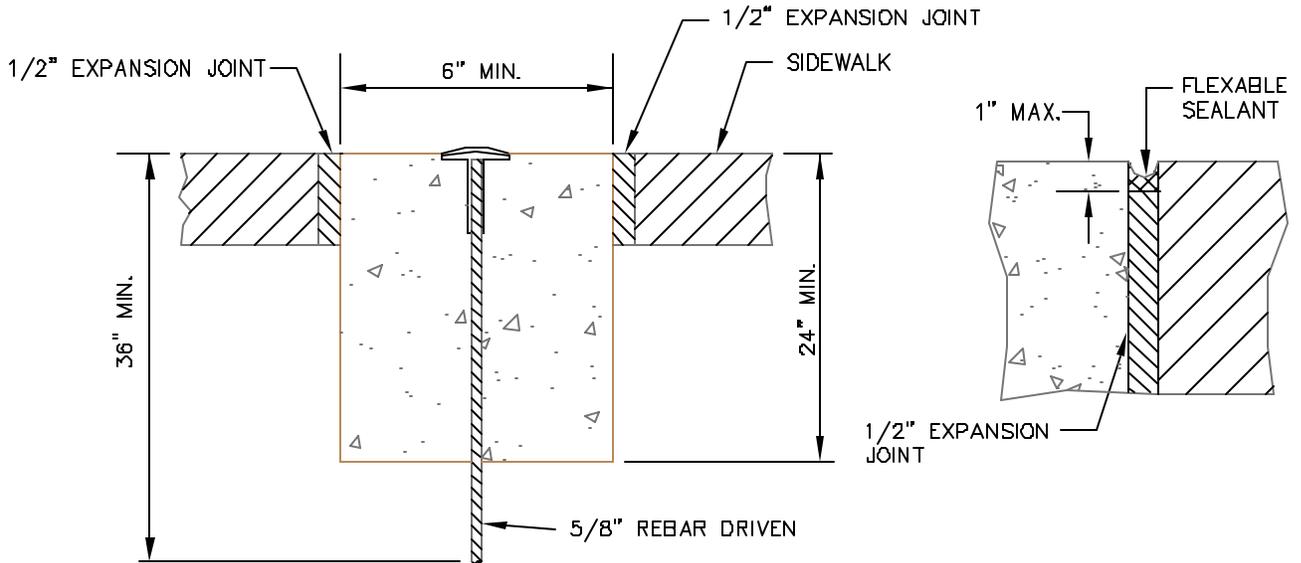
	◆	7/26/2004	LOCATION APPROVAL
REVISIONS	NO.	DATE	ITEM CHANGED
<b>CITY OF EDMOND</b> ENGINEERING DEPARTMENT CONSTRUCTION STANDARDS			<b>GPS MONUMENT                  GENERAL NOTES</b>
			MISC.
			SPECIFICATION NO.
			M0-01 PAGE 300



**INSTRUCTIONS:**

1. DIG 12" DIAMETER CIRCULAR HOLE AT LEAST 24" DEEP.
2. FILL HOLE WITH CLASS "A" CONCRETE.
3. DRIVE ROD TO 12" ABOVE SURFACE OF GROUND.
4. CRIMP CAP TO ROD.
5. COMPLETE DRIVING UNTIL CAP IMBEDDED IN SURFACE OF CONCRETE.

GROUND MOUNTED MONUMENT



**INSTRUCTIONS:**

1. CIRCULAR HOLE 6" IN DIAMETER CUT THROUGH SIDEWALK, 24" DEEP.
2. FILL HOLE WITH CLASS "A" CONCRETE.
3. DRIVE ROD THROUGH CONCRETE TO WITHIN 12" ABOVE SIDEWALK.
4. CRIMP CAP TO ROD.
5. COMPLETE DRIVING WITH CAP PROTECTED, UNTIL FLUSH WITH SIDEWALK.
6. FINISH OFF AND CLEAN.

SIDEWALK MOUNTED MONUMENT

IN CHARGE: WALTER EDWARDS, APPROVED: CONSTRUCTION STANDARDS DEPARTMENT, STANDARD CONSTRUCTION DRAWINGS (JULY 2004), NEW & REVISED, NO. 03-001-010, JULY 26, 2004, REVISION

REVISIONS	NO.	DATE	ITEM CHANGED
	1	7/26/2004	DEPTH OF CONCRETE

**CITY OF EDMOND**  
 ENGINEERING DEPARTMENT  
 CONSTRUCTION STANDARDS

**GPS MONUMENTS**

MISC.	
SPECIFICATION NO.	
MO-02	PAGE 301