



REVISION	DESIGN	DRAWN	DATE
ORIGINAL	AC/LAG	A.C./G.M.	07/02/07
REV. 1	AC/LF	J.F./G.M.	05/29/15

APPROVED BY THE CITY OF EL CENTRO
 PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION

ABRAHAM CAMPOS, P.E.
 SENIOR ENGINEER

TERRY L. HAGGEN, P.E.
 DIRECTOR OF PUBLIC WORKS

R.C.E. 70281 05.29.15

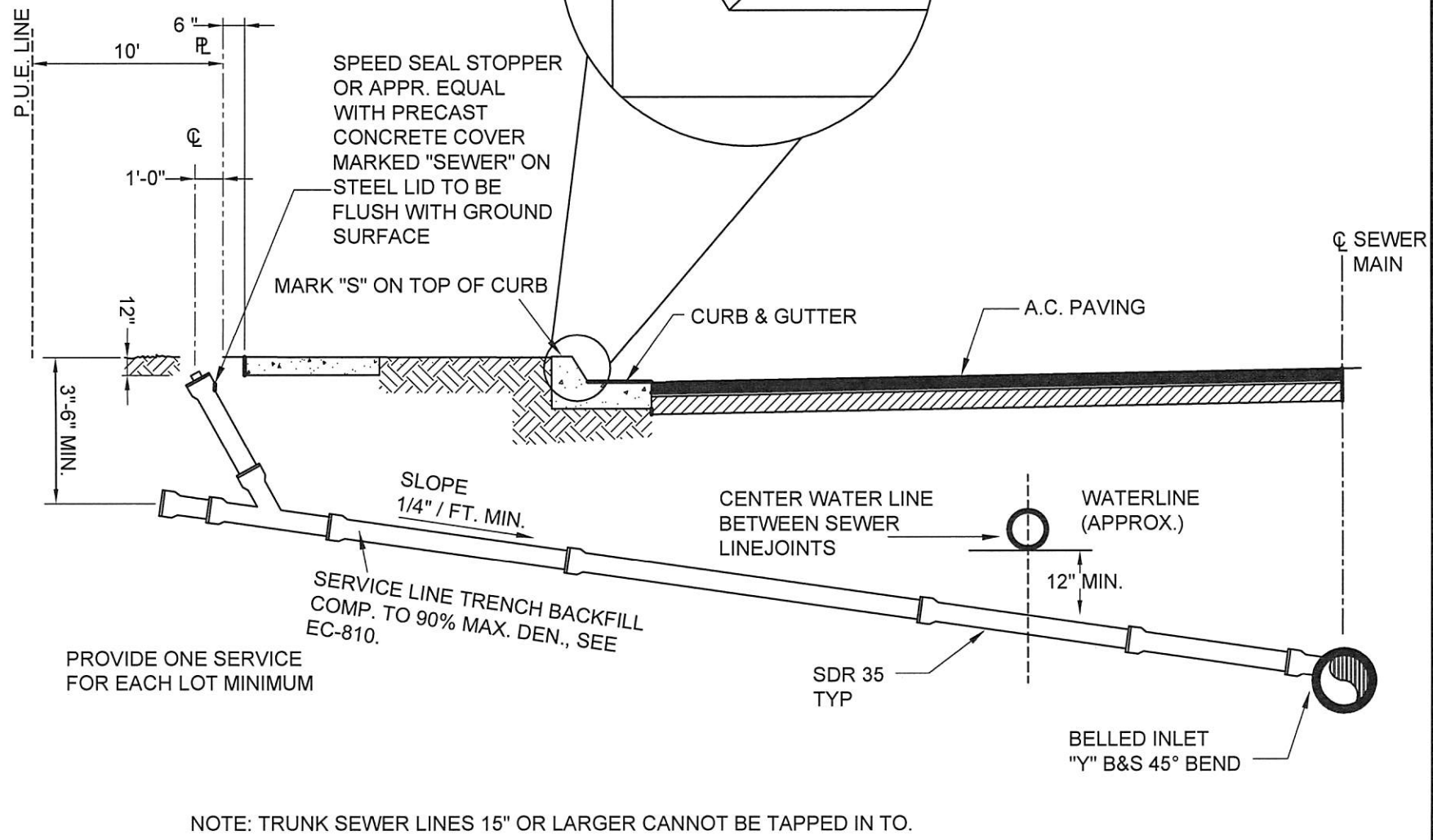
R.C.E. 24740 05.29.15

DATE

CITY OF EL CENTRO
 PUBLIC WORKS DEPARTMENT

TYPICAL SEWER SERVICE CONNECTION

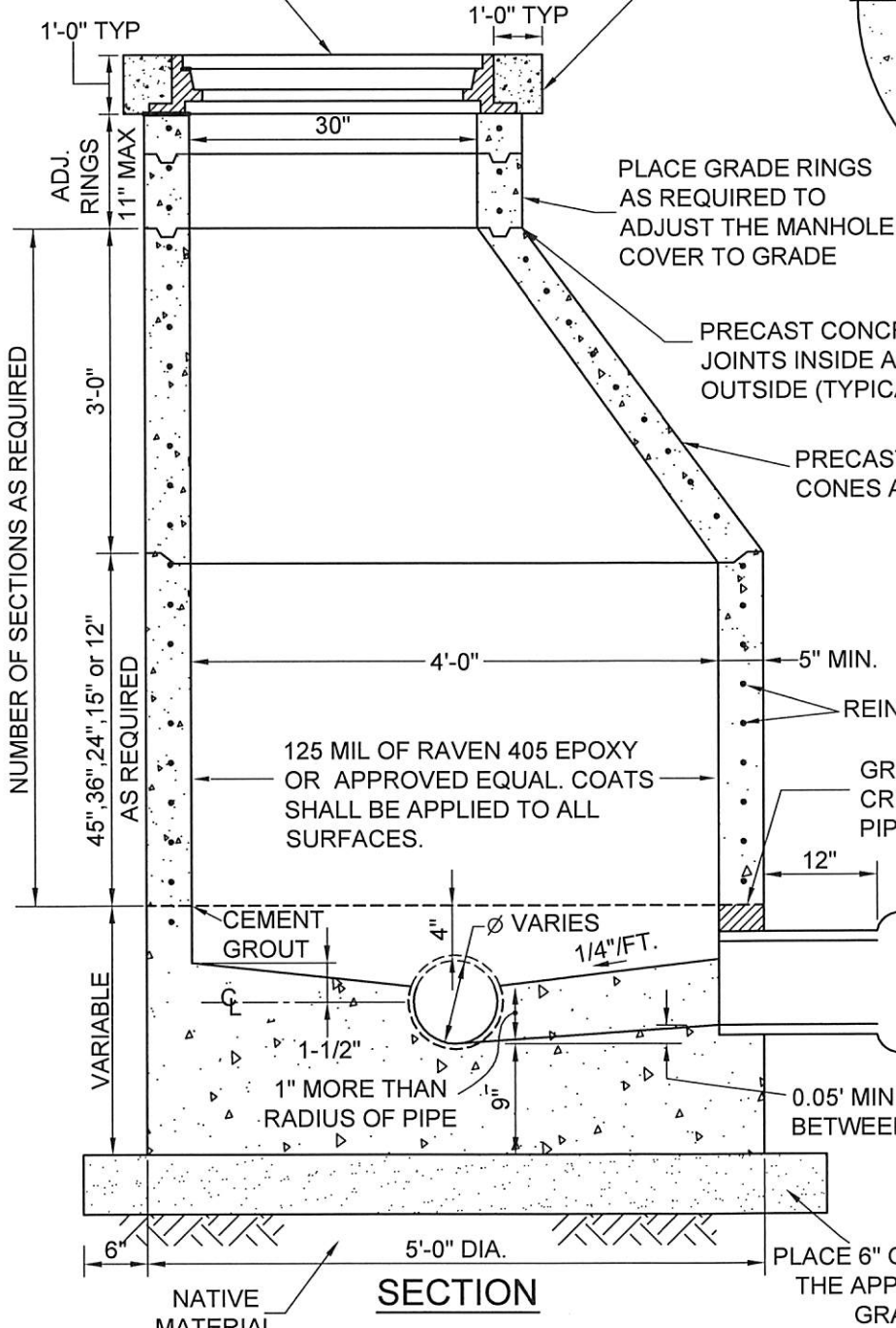
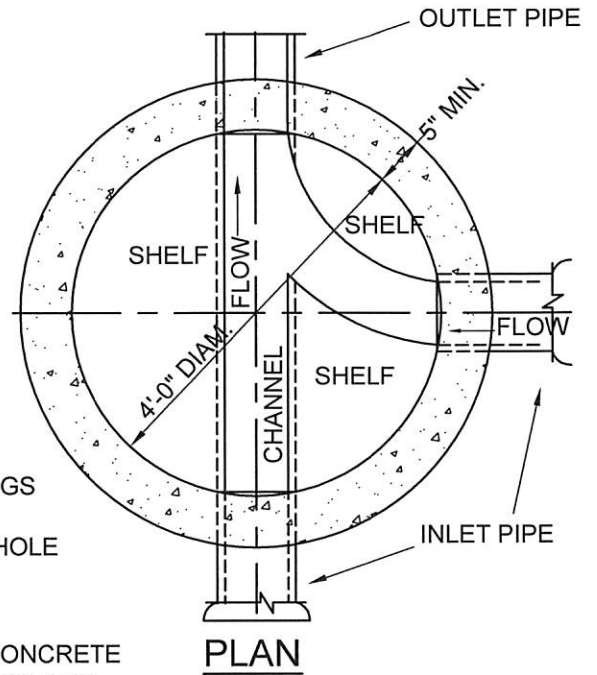
DWG. NO. **EC-600**



SCALE: N.T.S.

M.H FRAME AND COVER SHALL BE ALHAMBRA FOUNDRY A-1497 OR AN APPROVED EQUAL MARKED "SEWER" OR "S" AND A 3/4" RICK HOLE

INSTALL A 1'-0" WIDE 1'-0" DEEP CONCRETE RING CIRCUMFERENTIALLY AROUND THE MANHOLE FRAME. PLACE THE CONC. RING FLUSH WITH PAVEMENT



PLACE GRADE RINGS AS REQUIRED TO ADJUST THE MANHOLE COVER TO GRADE

PRECAST CONCRETE JOINTS INSIDE AND OUTSIDE (TYPICAL)

PRECAST CONCRETE CONES AND SHAFTS.

REINFORCEMENT PER ASTM C478

125 MIL OF RAVEN 405 EPOXY OR APPROVED EQUAL. COATS SHALL BE APPLIED TO ALL SURFACES.

GROUT ANULAR SPACE CREATED FOR SEWER PIPELINE

*SEE EC-630 FOR ADDITIONAL SEWER MANHOLE REQUIREMENTS

0.05' MIN DROP BETWEEN PIPES

PLACE 6" GRAVEL TO THE APPROPRIATE GRADE.

SECTION



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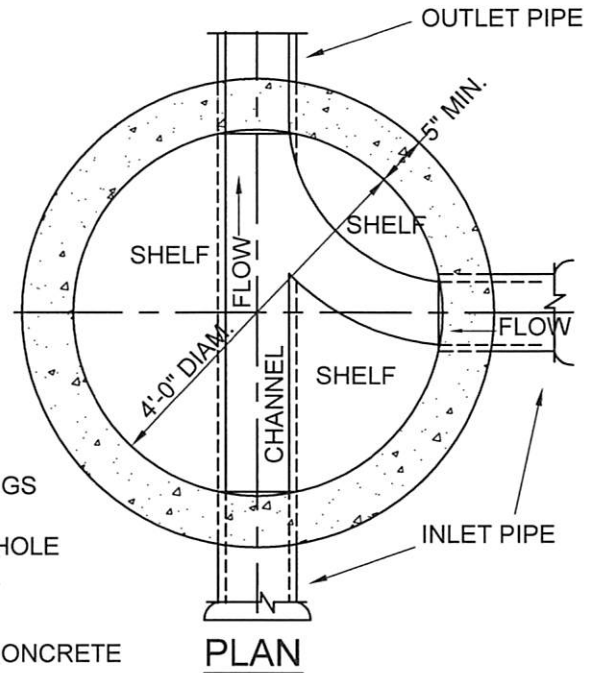
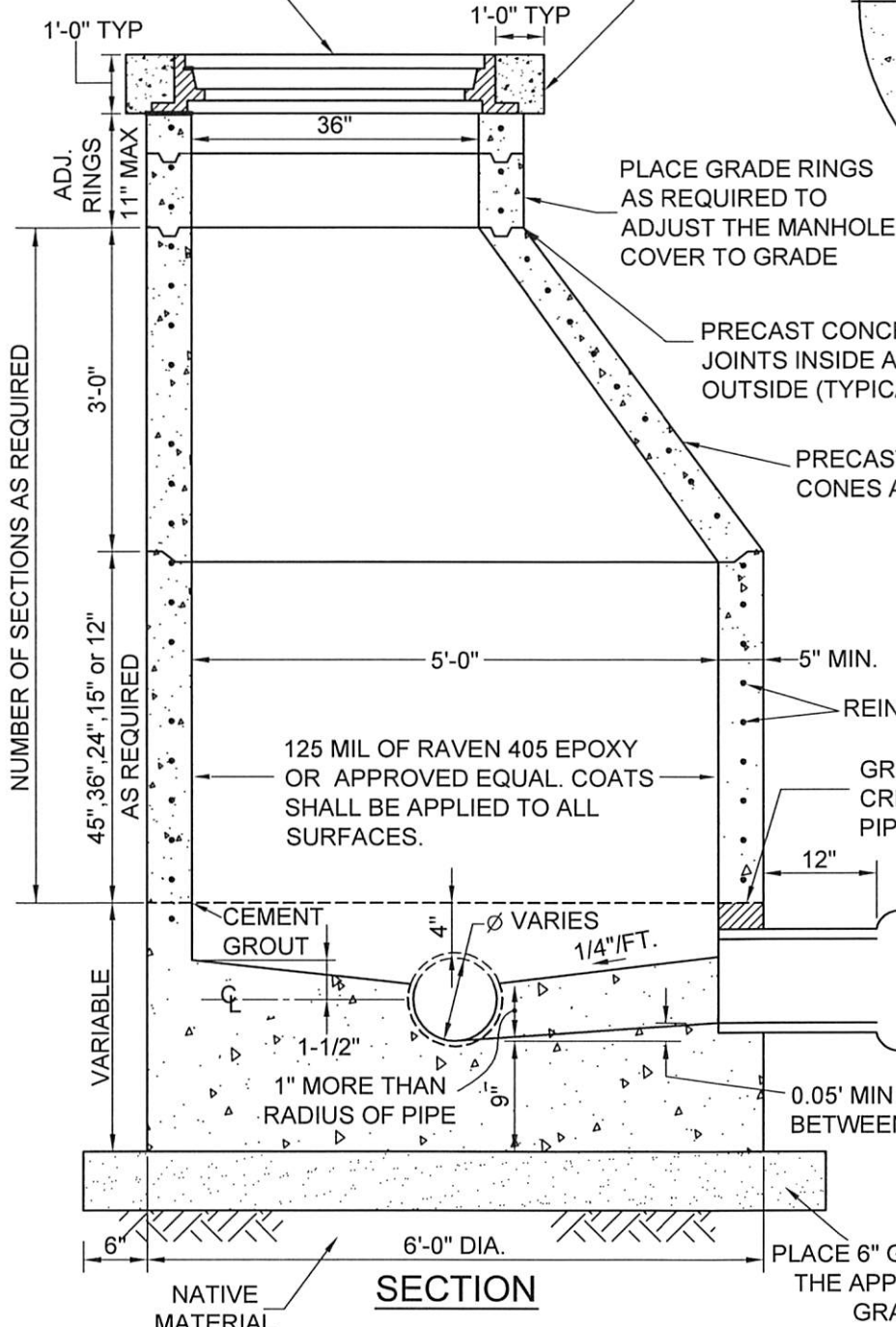
**4'-0" DIAMETER ECCENTRIC SEWER
MANHOLE (DEPTH UP TO 10'-0")**

DWG NO. **EC-610**

SCALE: N.T.S.

M.H FRAME AND COVER SHALL BE ALHAMBRA FOUNDRY A-1325 OR AN APPROVED EQUAL MARKED "SEWER" OR "S" AND A 3/4" RICK HOLE

INSTALL A 1'-0" WIDE 1'-0" DEEP CONCRETE RING CIRCUMFERENTIALLY AROUND THE MANHOLE FRAME. PLACE THE CONC. RING FLUSH WITH PAVEMENT



PLACE GRADE RINGS AS REQUIRED TO ADJUST THE MANHOLE COVER TO GRADE

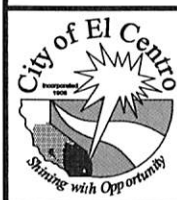
PRECAST CONCRETE JOINTS INSIDE AND OUTSIDE (TYPICAL)

PRECAST CONCRETE CONES AND SHAFTS.

REINFORCEMENT PER ASTM C478

GROUT ANULAR SPACE CREATED FOR SEWER PIPELINE

*SEE EC-630 FOR ADDITIONAL SEWER MANHOLE REQUIREMENTS



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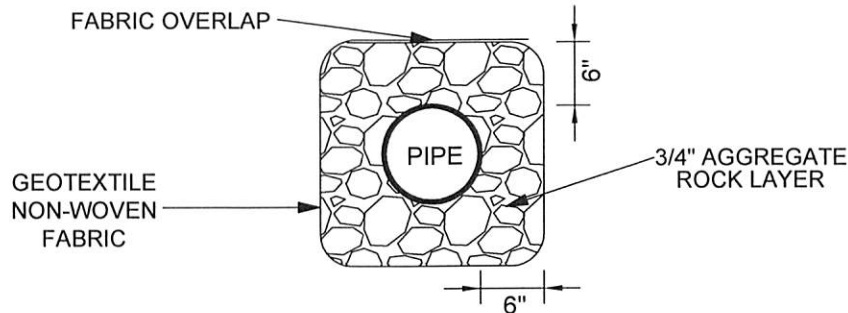
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**5'-0" DIAMETER ECCENTRIC SEWER
MANHOLE (DEPTH OVER 10'-0")**

DWG NO. **EC-611**

SEWER NOTES

1. ALL SEWER LINES INSTALLED SHALL BE PRESSURE TESTED BASED ON THE "AIR PRESSURE TEST" SECTION OF THE MOST CURRENT VERSION OF THE "GREENBOOK: STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"
2. ALL SEWER LINES CONSTRUCTED AT A DEPTH OF 9' OR GREATER (TRENCH BOTTOM) FROM THE NATURAL GROUND SURFACE OR WHERE GROUNDWATER IS SEEPING INTO THE TRENCH SHALL BE INSTALLED WITH GEOTEXTILE NON-WOVEN FABRIC (TO BE APPROVED BY CITY) AROUND A 6" THICK LAYER OF 3/4" AGGREGATE ROCK AROUND THE PIPE. THE FABRIC SHALL OVERLAP ON TOP OF THE TRENCH THE ENTIRE TRENCH WIDTH.



3. ALL PRECAST MANHOLES SHALL HAVE CERTIFICATES OF COMPLIANCE SUBMITTED TO THE CITY WHEN THE MATERIALS ARE DELIVERED TO THE SITE.
4. ALL SEWER LINES INSTALLED WITH A DIAMETER OF 6" OR GREATER SHALL BE TESTED FOR DEFLECTION BASED ON THE "MAXIMUM ALLOWABLE DEFLECTION FOR PLASTIC PIPE AND FITTINGS" SECTION OF THE MOST CURRENT VERSION OF THE "GREENBOOK: STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"
5. ALL SEWER MANHOLES SHALL BE HYDROSTATICALLY TESTED FOR LEAKS AFTER THE COATING HAS BEEN APPLIED AS FOLLOWS:
 - SEAL WASTEWATER LINES COMING INTO THE MANHOLE WITH INTERNAL PLUGS
 - FILL THE MANHOLE WITH WATER INITIALLY FOR 1-HOUR TO ALLOW FOR ANY WATER SETTLEMENT
 - REFILL THE MANHOLE TO THE ORIGINAL WATER LEVEL (APPROXIMATELY 1'-0" BELOW THE TOP OF THE CONE) AND BEGIN THE 4-HOUR TEST. THE MAXIMUM ALLOWABLE LEAKAGE FOR THE HYDROSTATIC TEST SHALL BE 0.025 GALLONS PER FOOT DIAMETER PER FOOT DEPTH PER HOUR (I.E. A 48" DIAMTER MANHOLE THAT IS 8' DEEP HAS AN ALLOWABLE LEAKAGE OF 3.2 GALLONS DURING A 4-HOUR TEST)
 - IF WATER LOSS EXCEEDS AMOUNT TABULATED ABOVE, LOCATE THE LEAKS, COMPLETE ANY NECESSARY REPAIRS TO SEAL MANHOLE AND REPEAT THE TEST UNTIL SATISFACTORY RESULTS ARE OBTAINED.
6. ONCE THE MANHOLE COATING HAS BEEN COMPLETED (INCLUDING GRADE RINGS), COATING SHALL BE SPARK TESTED BASED ON THE "SPARK TEST" SECTION OF THE MOST CURRENT VERSION OF THE "GREENBOOK: STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"
7. AFTER A SEWER MANHOLE HAS BEEN ADJUSTED TO GRADE, THE ENTIRE LINER MUST BE REPAIRED (I.E. THE GRADE RINGS CANNOT BE RE-SPRAYED ONLY)
8. AFTER A SEWER MANHOLE HAS BEEN ADJUSTED TO GRADE, THE ENTIRE LINER MUST BE REPAIRED
9. TOLERANCES FOR SEWER LINE INSTALLATION SHALL CONFORM TO THE "PIPE LAYING" SECTION OF THE MOST CURRENT VERSION OF THE "GREENBOOK: STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"



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CITY OF EL CENTRO PUBLIC WORKS DEPARTMENT	
SEWER NOTES	
DWG NO.	EC-630