CITY OF

MEXICO BEACH
UTILITIES DEPARTMENT

JULY 2020

STANDARDS FOR CITY OF MEXICO BEACH UTILITY SYSTEM

K:\MEXICO BEACH\STANDARD DETAILS\ALL.DWG

UTILITY STANDARDS FOR THE CITY OF MEXICO BEACH

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MISCELLANEOUS

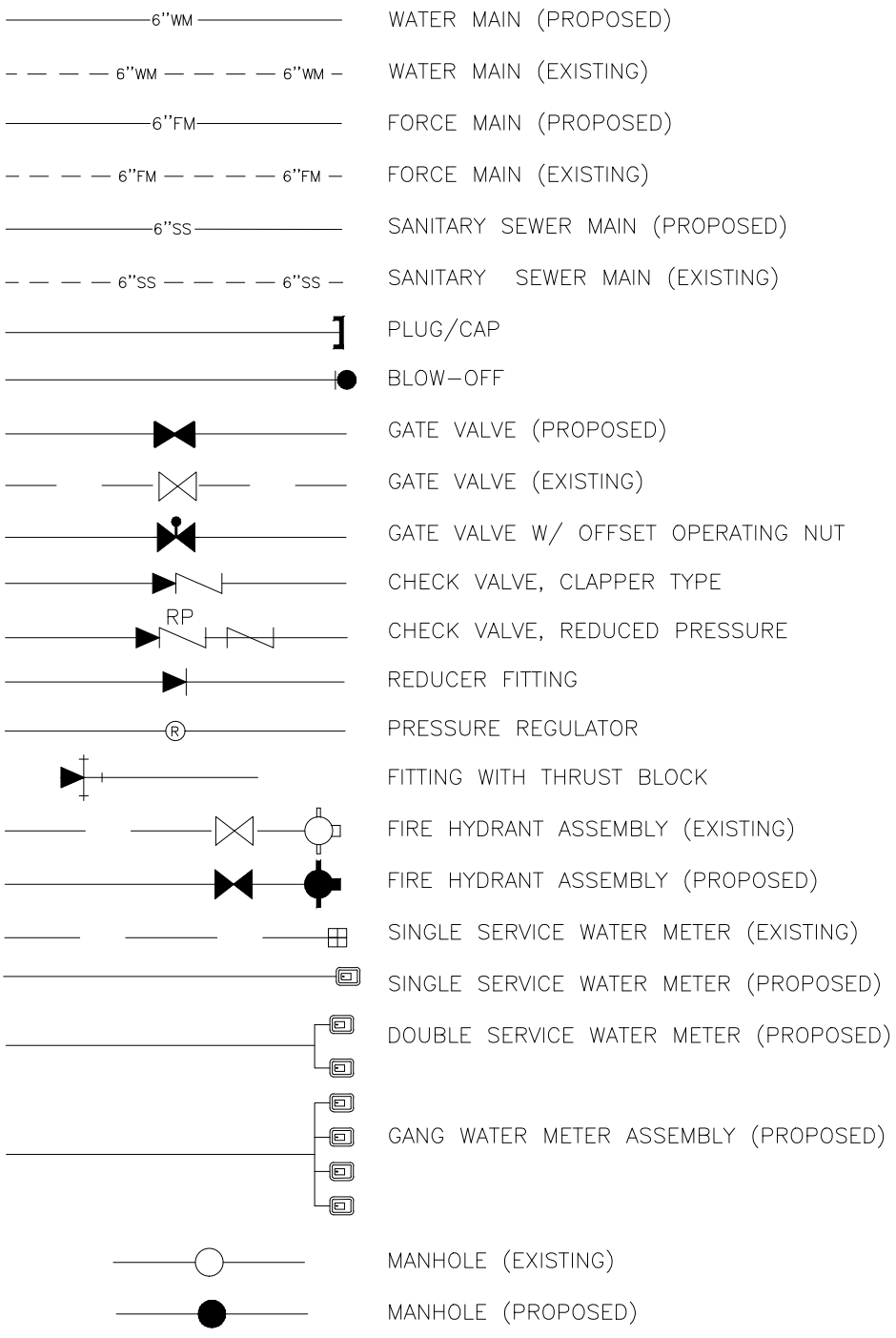
SUBSTANTIAL EFFORT HAS BEEN MADE TO ENSURE THE INFORMATION IN THESE STANDARDS IS ACCURATE HOWEVER, CITY OF MEXICO BEACH UTILITIES DEPT. CANNOT ACCEPT RESPONSIBILITY FOR ANY ERRORS OR OVERSIGHT IN THE USE OF THE MATERIAL OR IN THE PREPARATION OF THE ENGINEERING PLANS. THIS PUBLICATION IS INTENDED FOR USE BY PROFESSIONAL PERSONNEL COMPETENT TO EVALUATE THE SIGNIFICANCE AND LIMITATIONS OF IT'S CONTENTS AND ABLE TO ACCEPT RESPONSIBILITY FOR THE APPLICATION OF THE MATERIAL IT CONTAINS.

THE DESIGNER MUST RECOGNIZE THAT NO HANDBOOK OR CODE CAN BE A SUBSTITUTE FOR EXPERIENCED ENGINEERING JUDGEMENT.

USERS OF THESE STANDARDS ARE ENCOURAGED TO OFFER COMMENTS TO CITY OF MEXICO BEACH UTILITIES DEPARTMENT ON THE CONTENTS OF THIS PUBLICATION AND SUGGESTIONS FOR CHANGES IN THE FUTURE EDITIONS.

PRODUCTS TO BE CONSIDERED "APPROVED EQUAL" SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL IN WRITING PRIOR TO USE.

THESE STANDARDS ARE UNDER CONSTANT REVIEW AND ARE SUBJECT TO CHANGES APPROVED BY THE UTILITIES DIRECTOR OF THE CITY OF MEXICO BEACH.



CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

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.....
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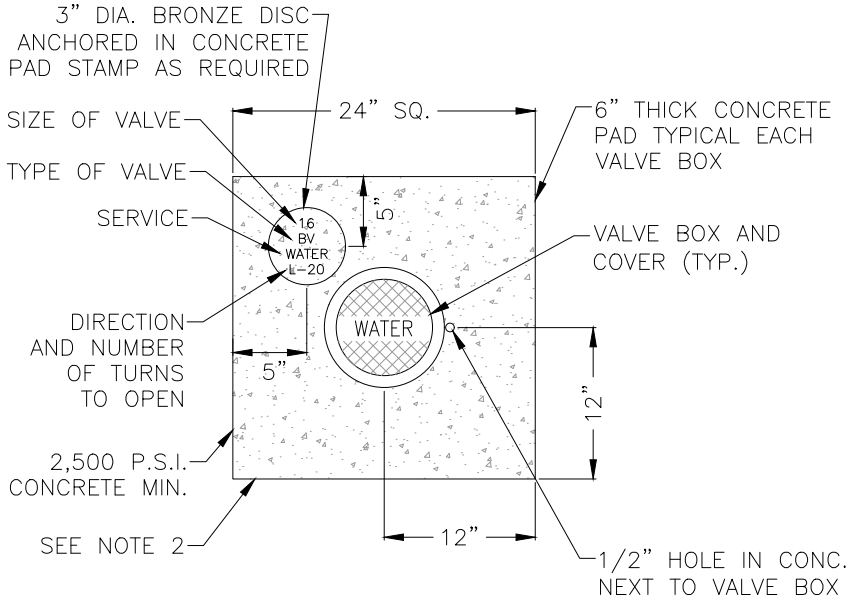
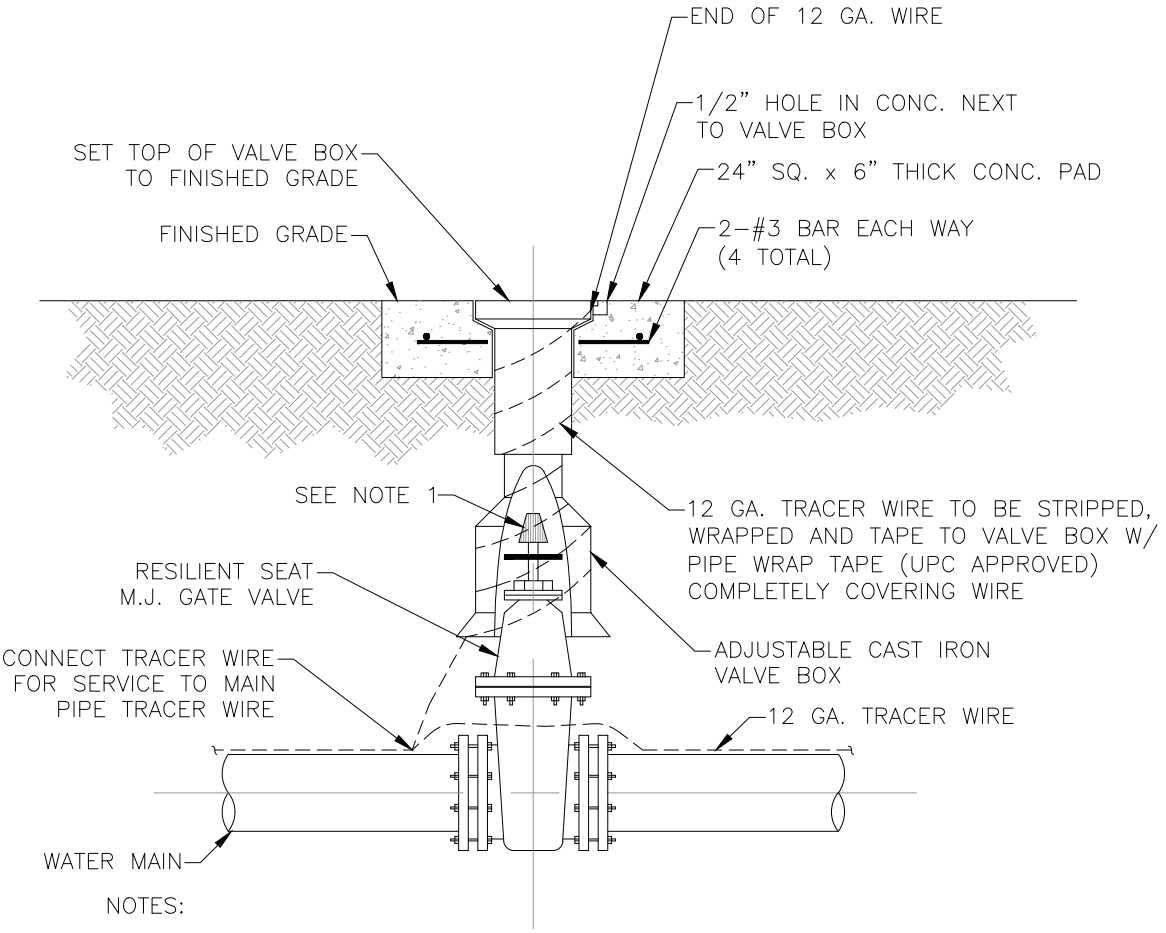
SYMBOLS

SYM 1





NOTES:

1.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

2.) FOR VALVE COLLAR PADS THAT FALL ON SLOPES GREATER THAN 1:6, SEE DETAIL W-20 FOR PAD.

3.) ALL VALVES SHALL TURN CLOCKWISE TO CLOSE.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			WATER GATE VALVE & BOX DETAIL (4" TO 12")	W-1
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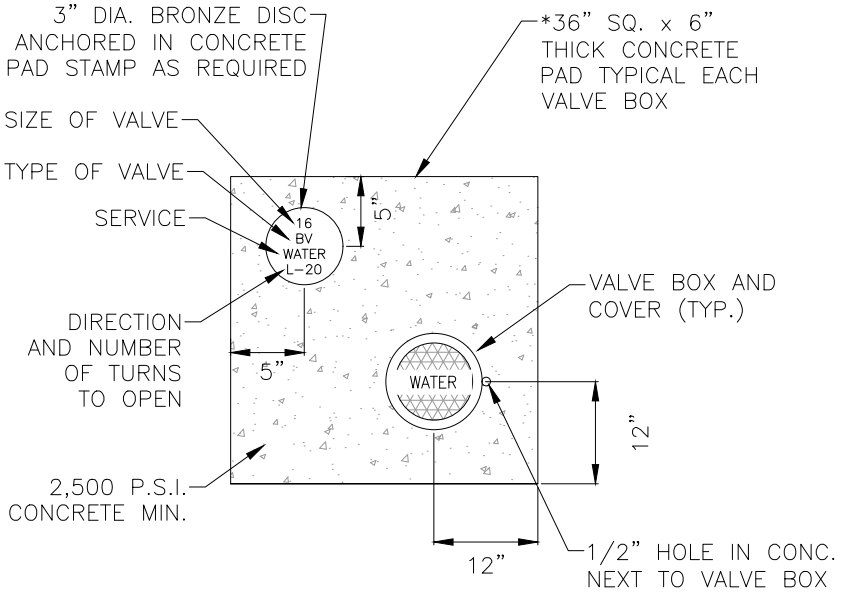

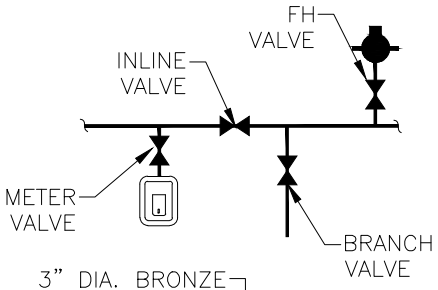

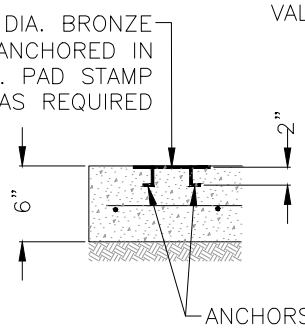

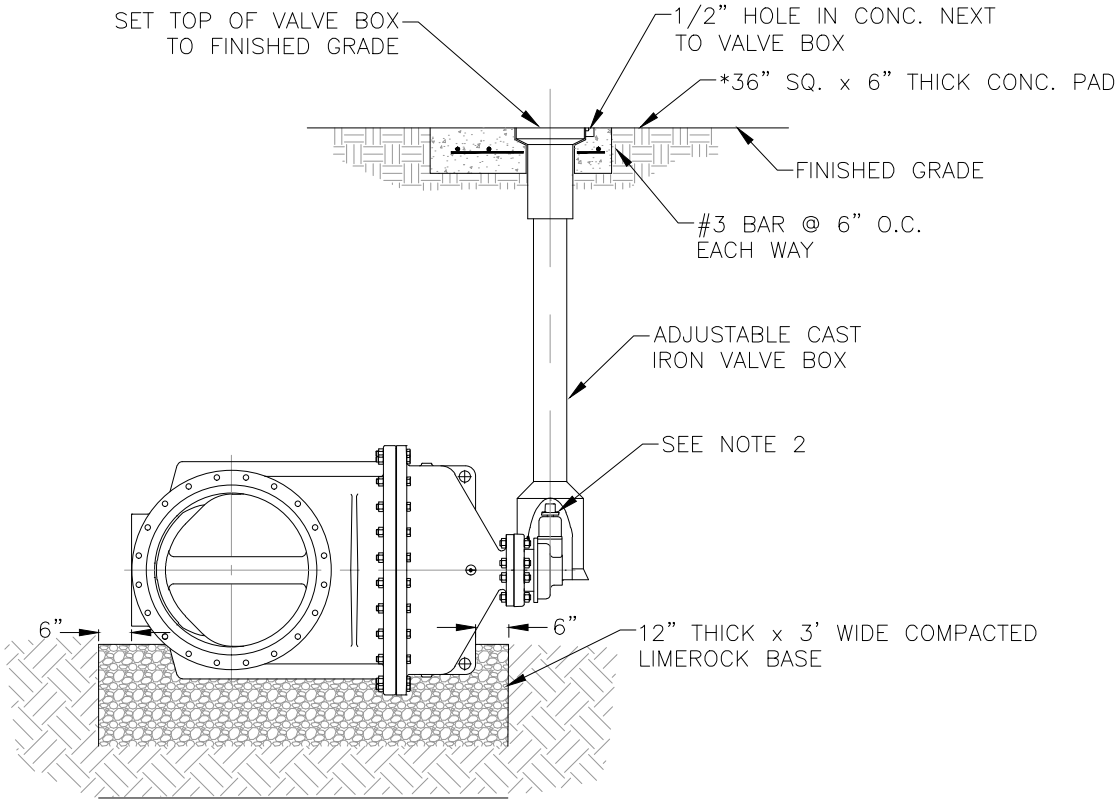

NOTES:

1.) PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.

2.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

3.) ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.

4.) VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.

5.) ALL EXPOSED EDGES OF CONCRETE PAD SHALL BE CHAMFERED 1/2".

6.) ALL VALVES SHALL TURN CLOCKWISE TO CLOSE.

*NOTE: 24" SQ. PAD TO BE CONSTRUCTED INSIDE RESIDENTIAL AREAS.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

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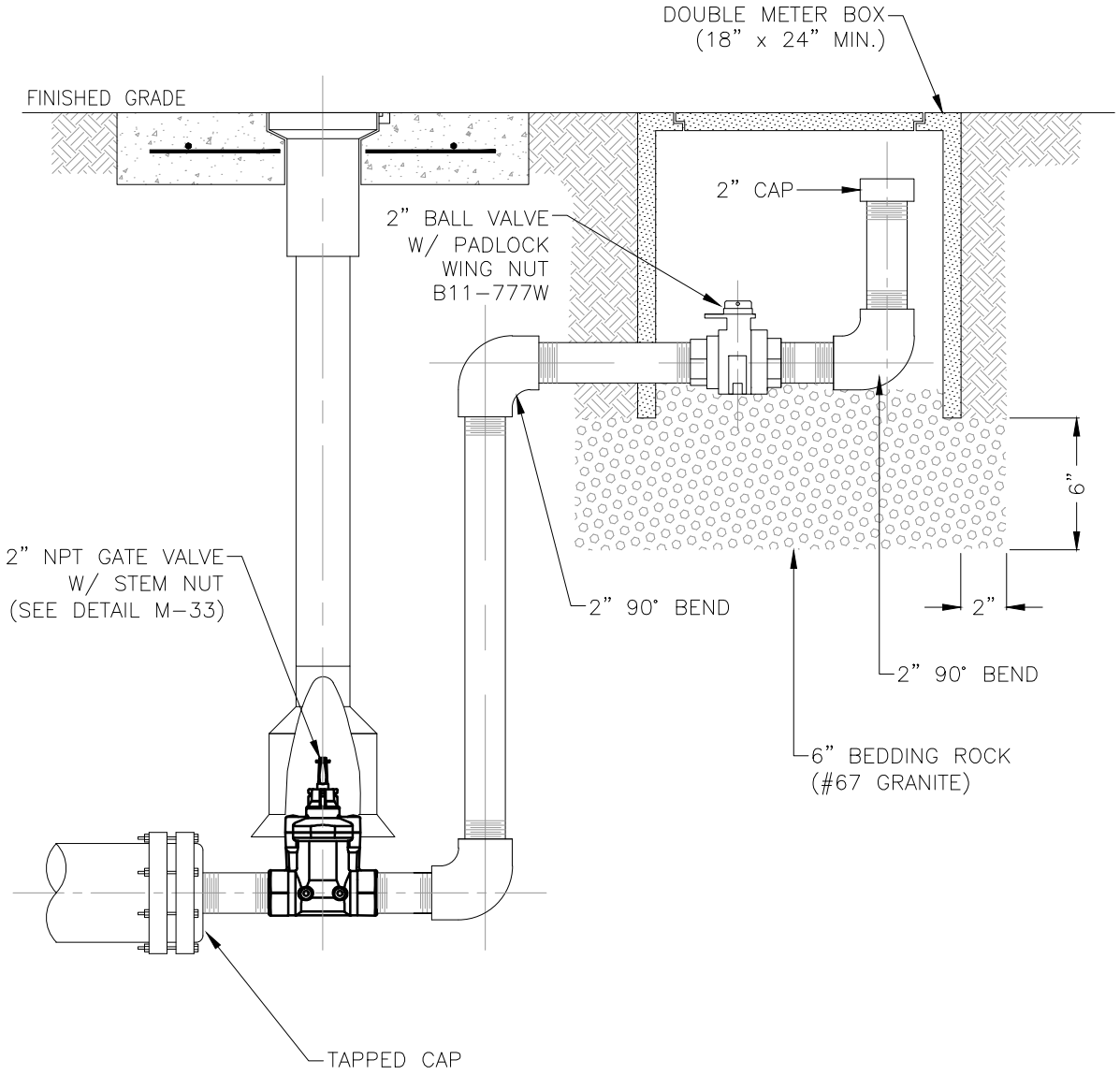
WATER GATE VALVE & BOX DETAIL (16" & LARGER)

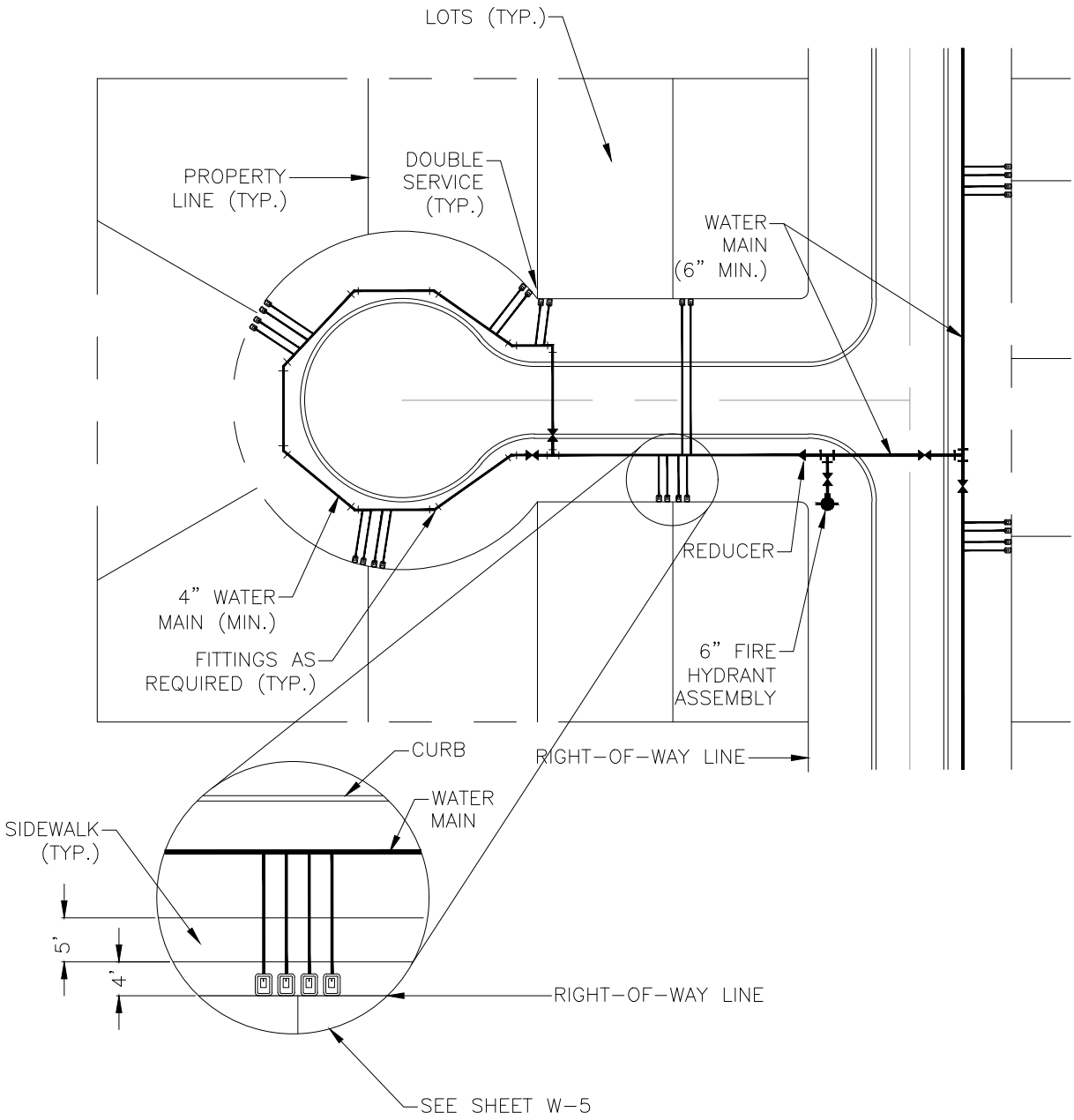
W-2



NOTE:

ALL 2" PIPE AND FITTINGS SHALL BE SCHEDULE 40 BRASS WITH THREADED (NPT) JOINTS.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	BLOWOFF VALVE DETAIL	W-3



PROVIDE SINGLE SERVICE VALVES
IRRIGATION TO BE PROVIDED.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			WATER SERVICE LOCATION DETAIL	W-4
REV.	DATE			
		.....		
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CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

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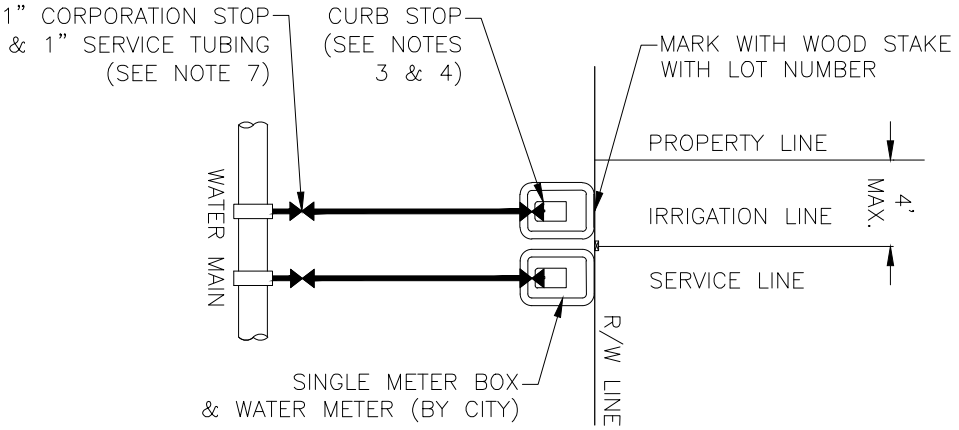
3/4" & 1" WATER METER ASSEMBLY DETAIL

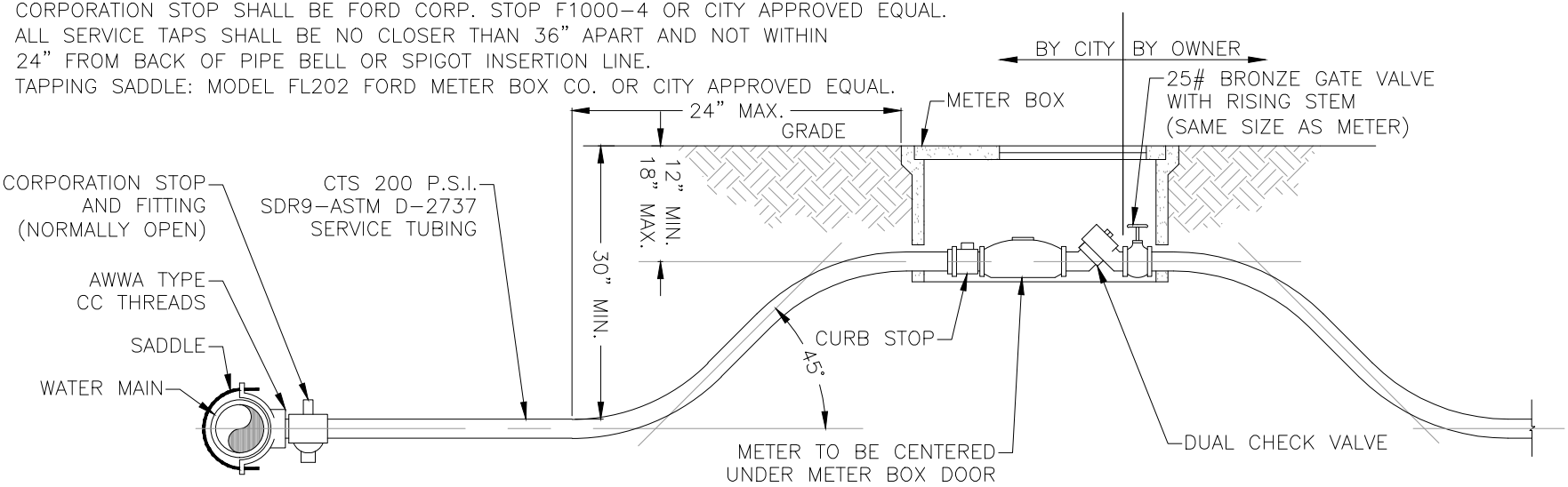
W-5



TYPICAL CITY SERVICE
(PER. LOT)

NOTES:

1.) ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.
2.) NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.
3.) EACH SERVICE SHALL TERMINATE AT A CURB STOP WHICH SHALL BE FASTENED TO A 1" x 4" x 30" STAKE PAINTED WHITE AND MARKED WITH THE NUMBER OF THE LOT TO BE SERVED.
4.) CURB STOP SHALL BE A FORD BALL METER VALVE B43-342WG, B43-444WG OR CITY APPROVED EQUAL.
5.) ALL SERVICE TAPS TO BE LOCATED IN FIELD. TAPS SHALL BE NO CLOSER THAN AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.
6.) METER BOXES & YOKE ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.
7.) CORPORATION STOP SHALL BE FORD CORP. STOP F1000-4 OR CITY APPROVED EQUAL.
8.) ALL SERVICE TAPS SHALL BE NO CLOSER THAN 36" APART AND NOT WITHIN 24" FROM BACK OF PIPE BELL OR SPIGOT INSERTION LINE.
9.) TAPPING SADDLE: MODEL FL202 FORD METER BOX CO. OR CITY APPROVED EQUAL.



CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

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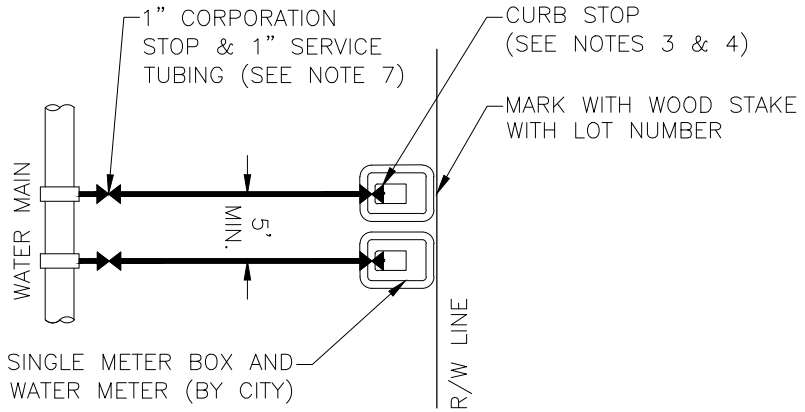
1" WATER METER ASSEMBLY DETAIL (COMMERCIAL USE)

W-6



TYPICAL CITY SERVICE

(PER. LOT)

NOTES:

1.) ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.

2.) NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.

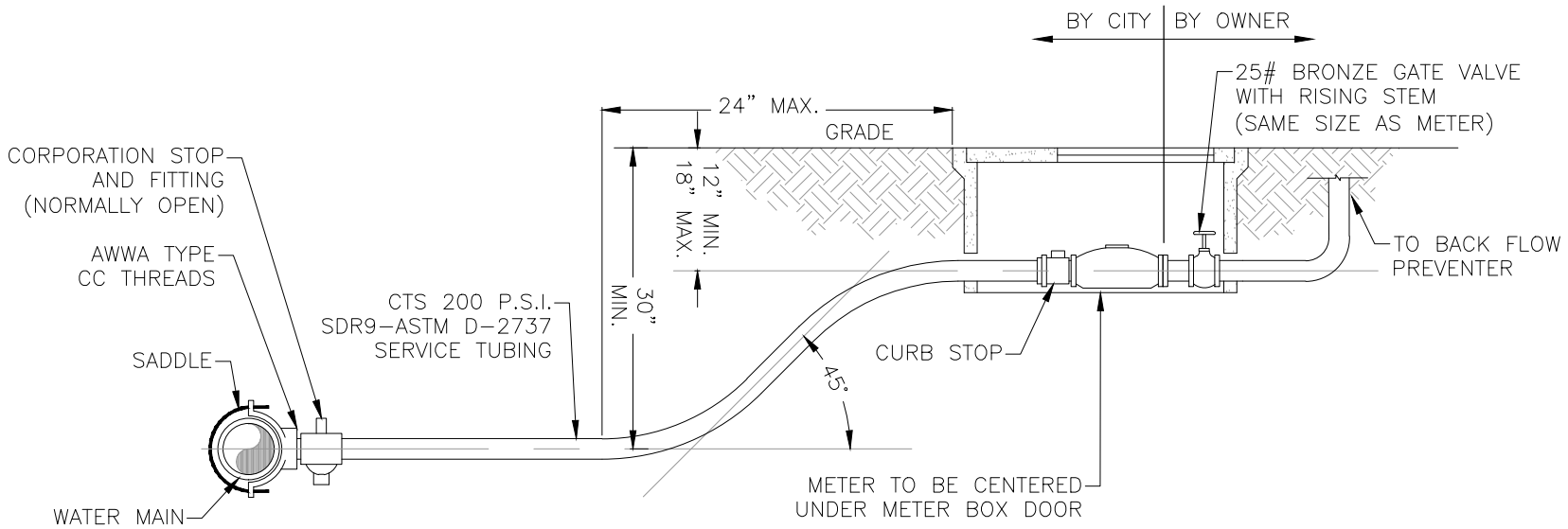
3.) EACH SERVICE SHALL TERMINATE AT A CURB STOP WHICH SHALL BE FASTENED TO A 1"x4"x30" STAKE PAINTED WHITE AND MARKED WITH THE NUMBER OF THE LOT TO BE SERVED.

4.) CURB STOP SHALL BE A FORD BALL METER VALVE B43-344WG OR CITY APPROVED EQUAL.

5.) ALL SERVICE TAPS TO BE LOCATED IN FIELD. TAPS SHALL BE NO CLOSER THAN 3'-0" INTERVALS OR WITHIN 2'-0" FROM BELL OR SPIGOT ENDS.

6.) METER BOXES & YOKE ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS. AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.

7.) CORPORATION STOP SHALL BE FORD CORP. STOP F1000-4 OR CITY APPROVED EQUAL.



CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

2" WATER METER ASSEMBLY DETAIL

W-7

NOTES:

1.) ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.

2.) NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.

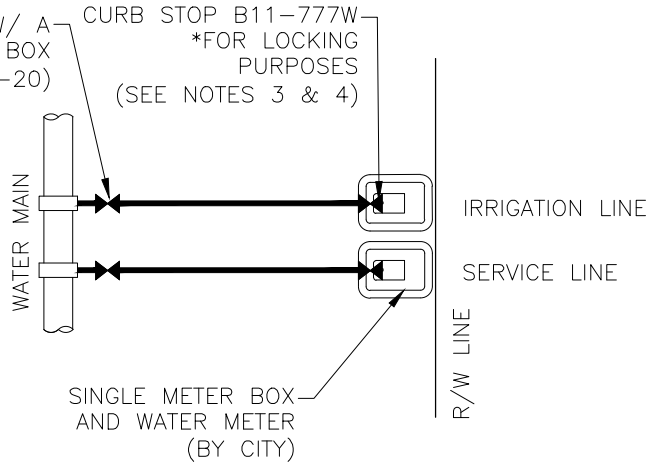
3.) EACH SERVICE SHALL TERMINATE AT A BALL VALVE WHICH SHALL BE FASTENED TO A 1" x 4" x 30" STAKE PAINTED WHITE.

4.) CURB STOP SHALL BE A 2" FORD BALL METER VALVE B11-777W OR CITY APPROVED EQUAL.

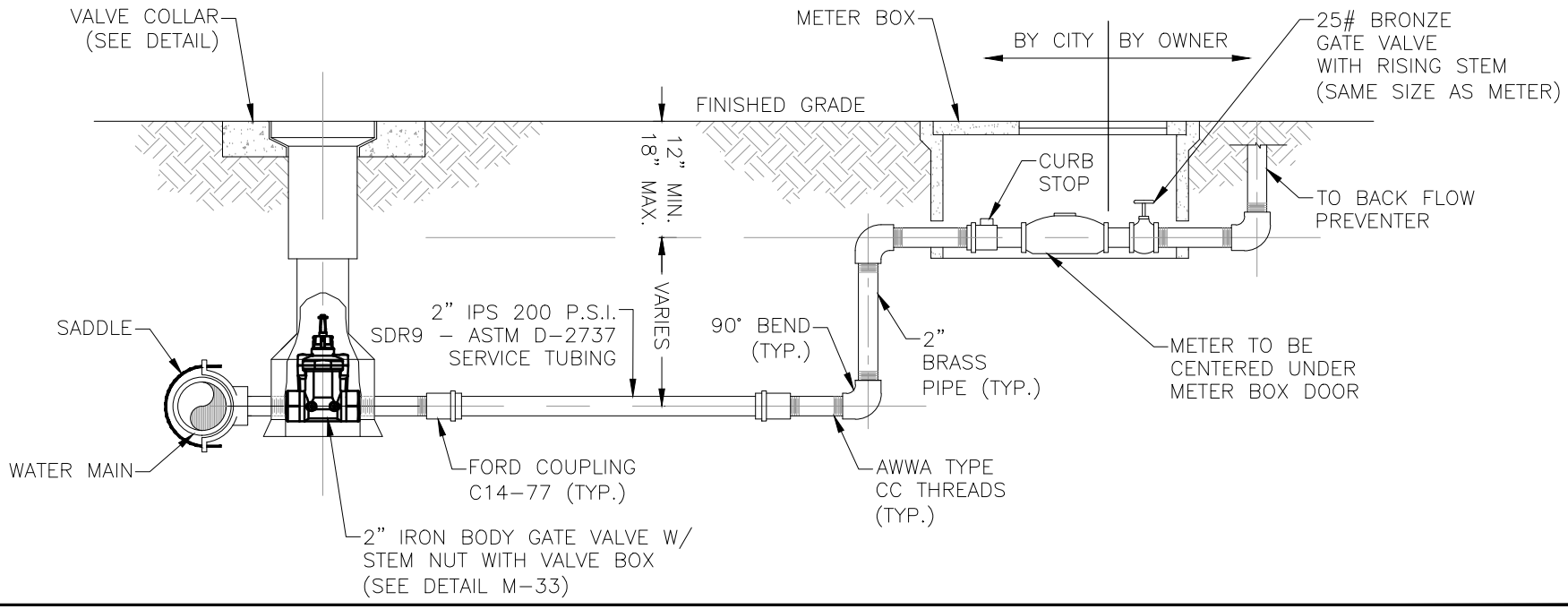
5.) ALL SERVICE TAPS TO BE LOCATED IN FIELD. TAPS SHALL BE NO CLOSER THAN 36" APART AND NOT WITHIN 24" FROM BACK OF PIPE BELL OR SPIGOT INSERTION LINE AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.

6.) TAPPING SADDLE: MODEL FL202 FORD METER BOX CO. OR CITY APPROVED EQUAL.

7.) 1-1/2" METERS WILL REQUIRE A 2" TAP & GATE VALVE, THEN REDUCED.



TYPICAL CITY SERVICE



CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

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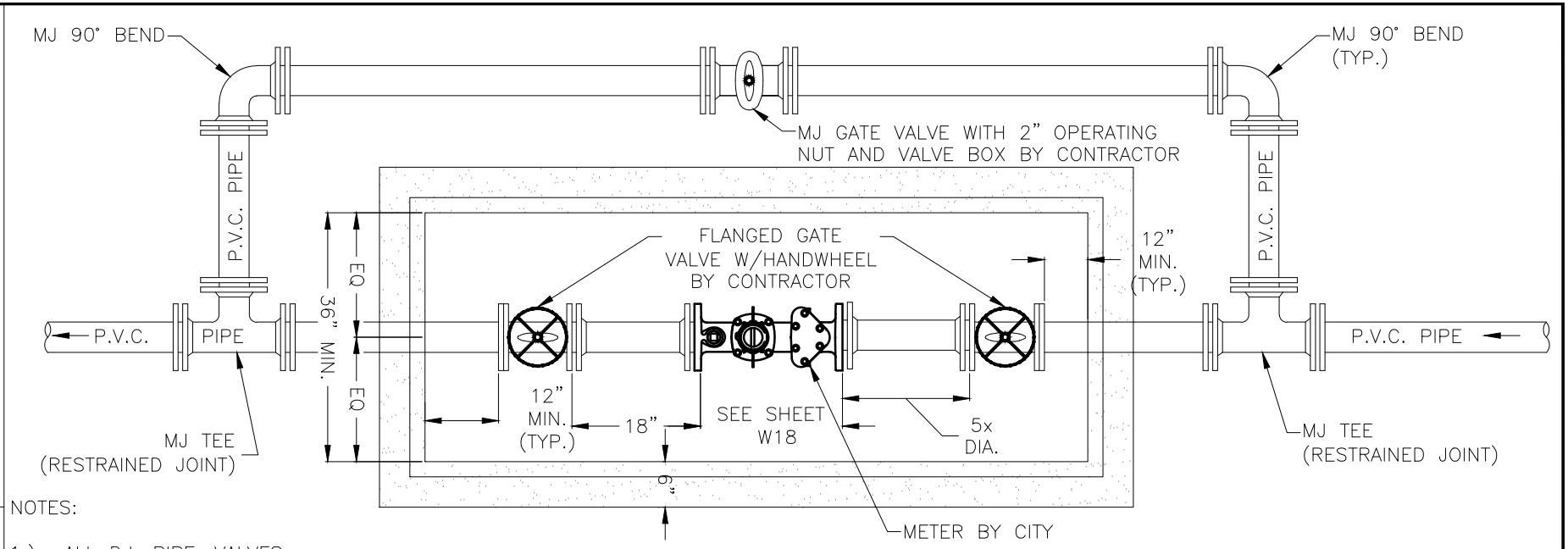
DATE OF APPROVAL .....

3", 4" AND 6" WATER METER DETAIL W/ BYPASS

(BACK FLOW PREVENTER IN REMOTE LOCATION)

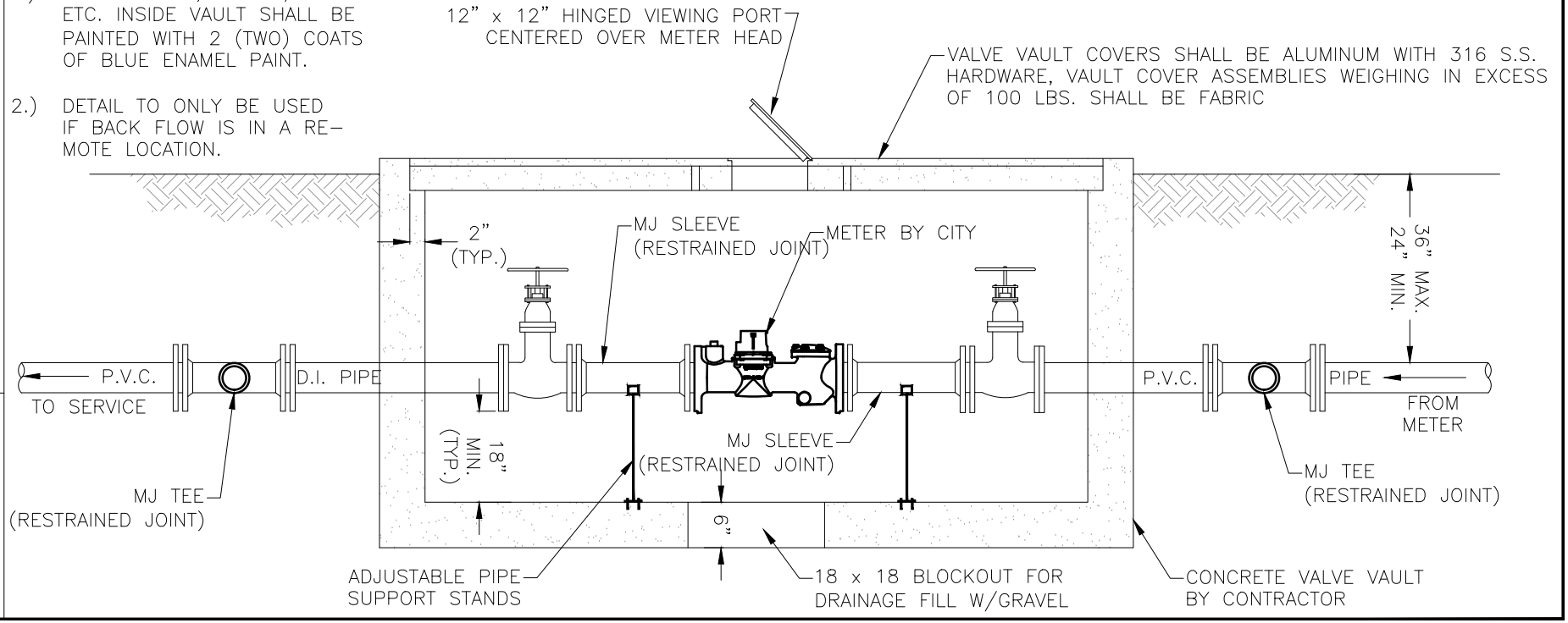
W-8



NOTES:

1.) ALL D.I. PIPE, VALVES, ETC. INSIDE VAULT SHALL BE PAINTED WITH 2 (TWO) COATS OF BLUE ENAMEL PAINT.

2.) DETAIL TO ONLY BE USED IF BACK FLOW IS IN A RE-MOTE LOCATION.



CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

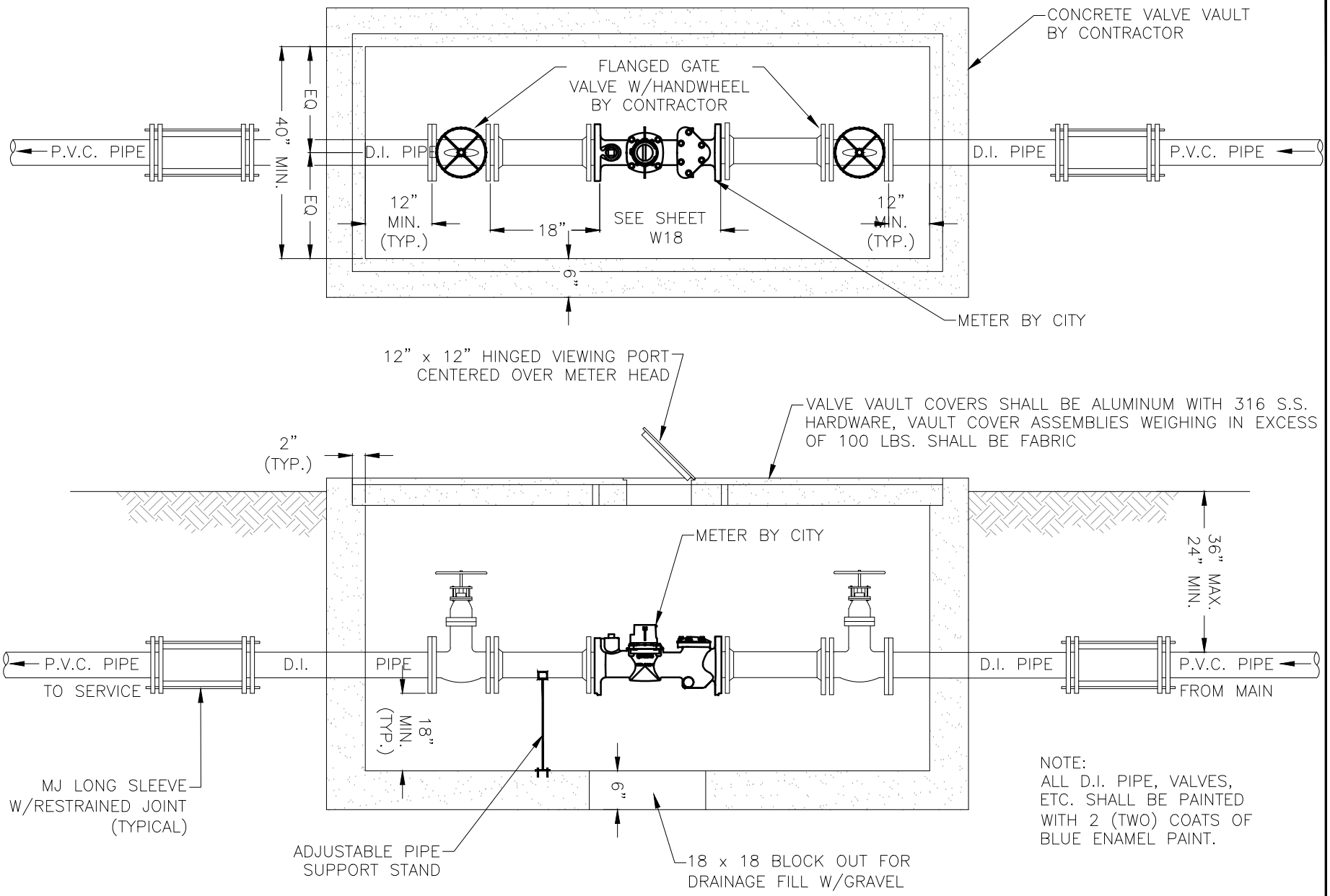
REV.	DATE

DATE OF APPROVAL .....

3", 4" AND 6" WATER METER ASSEMBLY DETAIL

(BACK FLOW PREVENTER IN REMOTE LOCATION)

W-9



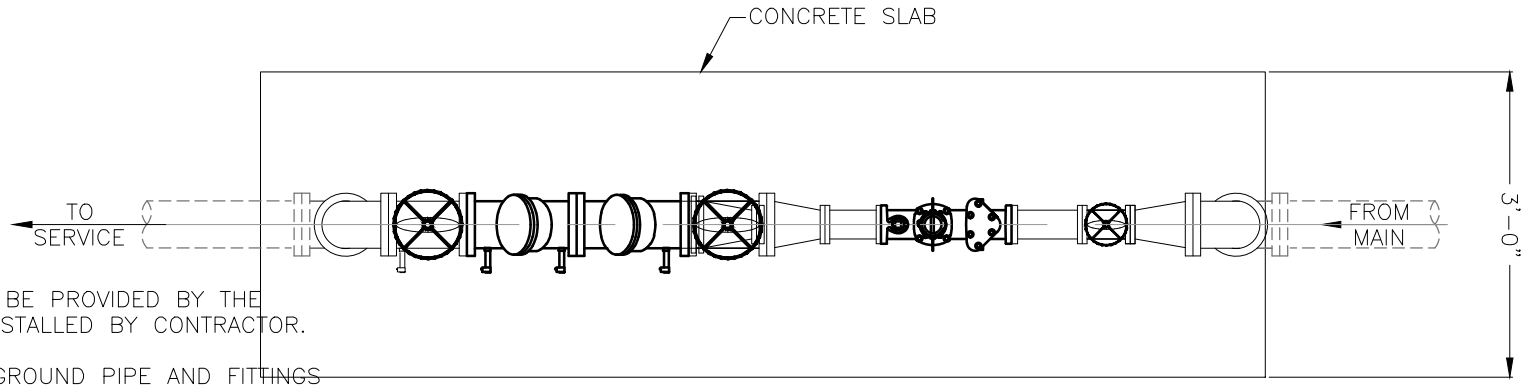
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

4" AND 6" WATER METER & BACK FLOW ASSEMBLY DETAIL

W-10

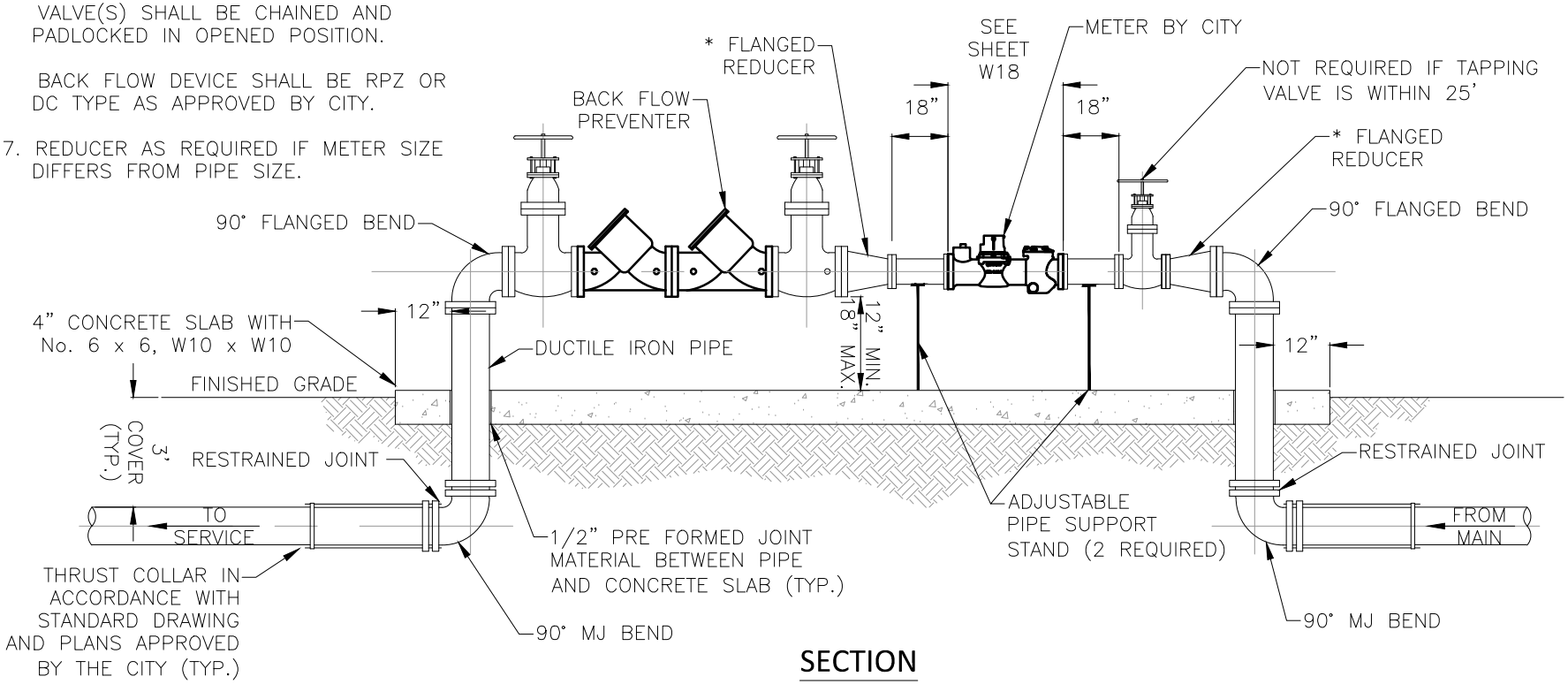


PLAN VIEW

NOTE:

1. METER WILL BE PROVIDED BY THE CITY, AND INSTALLED BY CONTRACTOR.
2. ALL ABOVE GROUND PIPE AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
3. ALL ITEMS ABOVE GRADE SHALL HAVE TWO COATS OF APPROVED EPOXY BLUE ENAMEL PAINT.
4. ALL VALVES SHALL HAVE HANDWHEELS.
5. VALVE(S) SHALL BE CHAINED AND PADLOCKED IN OPENED POSITION.
6. BACK FLOW DEVICE SHALL BE RPZ OR DC TYPE AS APPROVED BY CITY.

* 7. REDUCER AS REQUIRED IF METER SIZE DIFFERS FROM PIPE SIZE.



SECTION

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

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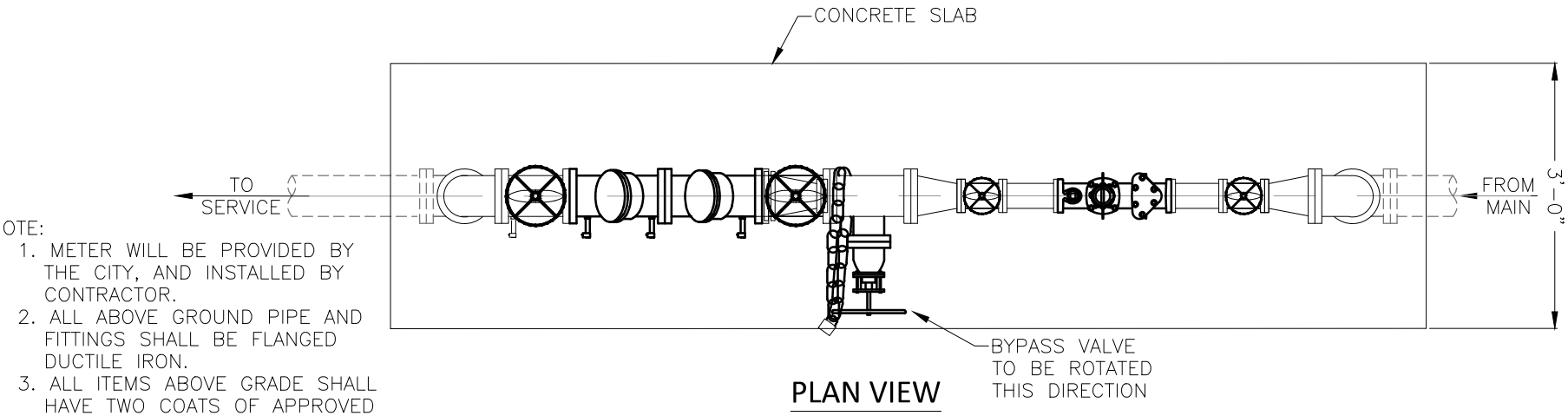
DATE OF APPROVAL .....

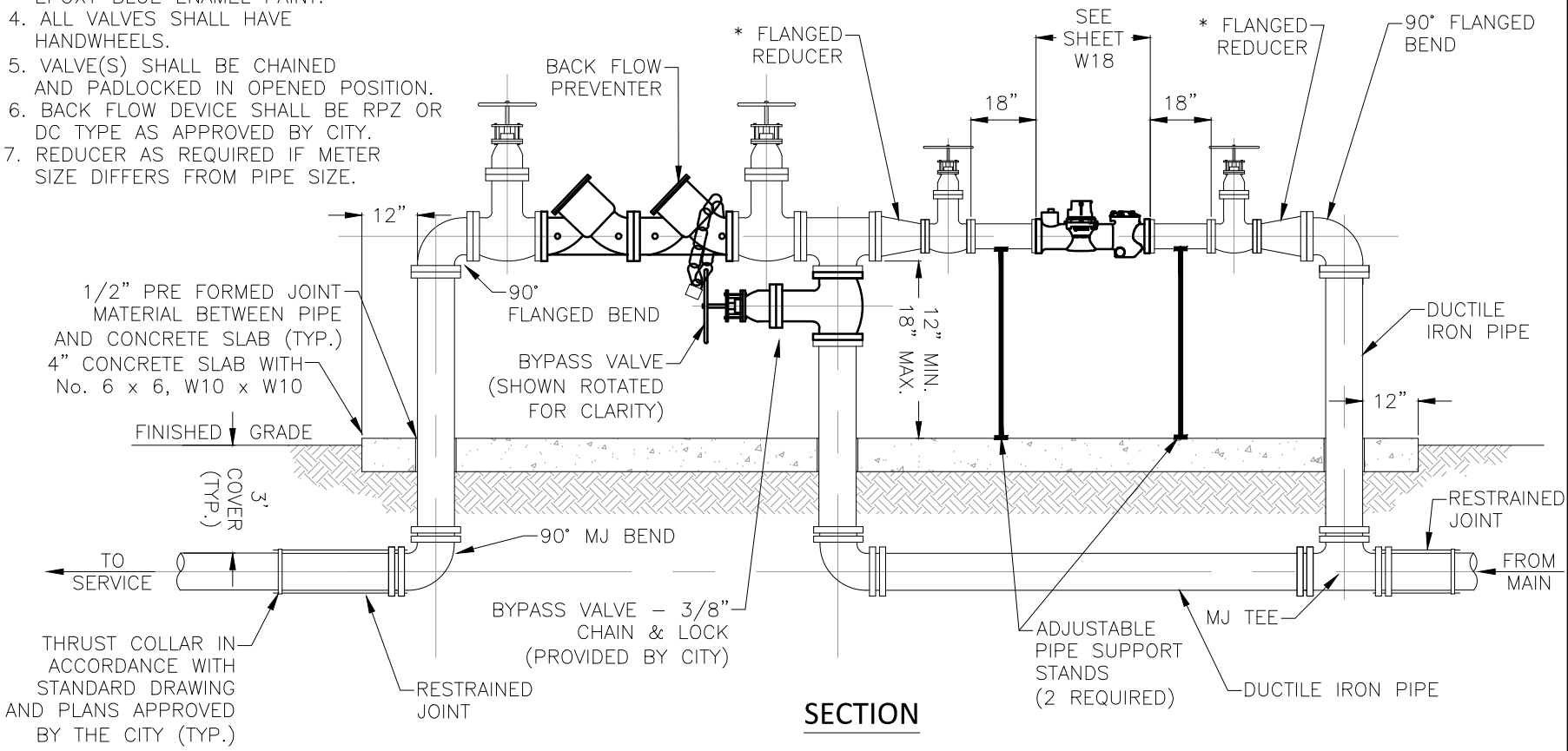
4" AND 6" WATER METER & BACK FLOW WITH BYPASS

W-11

NOTE:
1. METER WILL BE PROVIDED BY THE CITY, AND INSTALLED BY CONTRACTOR.
2. ALL ABOVE GROUND PIPE AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
3. ALL ITEMS ABOVE GRADE SHALL HAVE TWO COATS OF APPROVED EPOXY BLUE ENAMEL PAINT.
4. ALL VALVES SHALL HAVE HANDWHEELS.
5. VALVE(S) SHALL BE CHAINED AND PADLOCKED IN OPENED POSITION.
6. BACK FLOW DEVICE SHALL BE RPZ OR DC TYPE AS APPROVED BY CITY.
* 7. REDUCER AS REQUIRED IF METER SIZE DIFFERS FROM PIPE SIZE.



PLAN VIEW



SECTION

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

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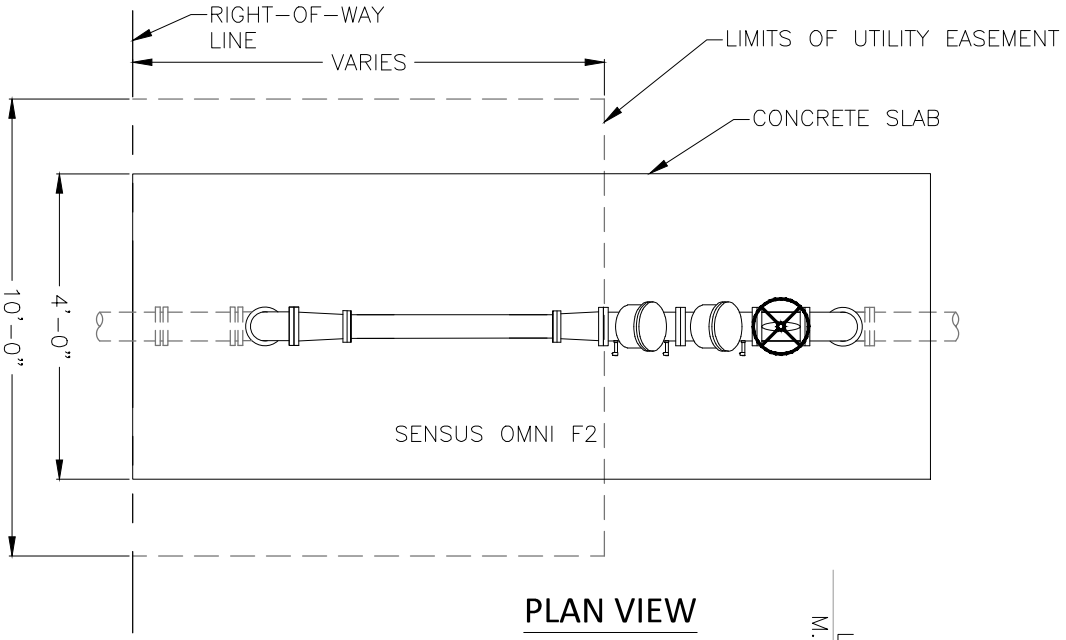
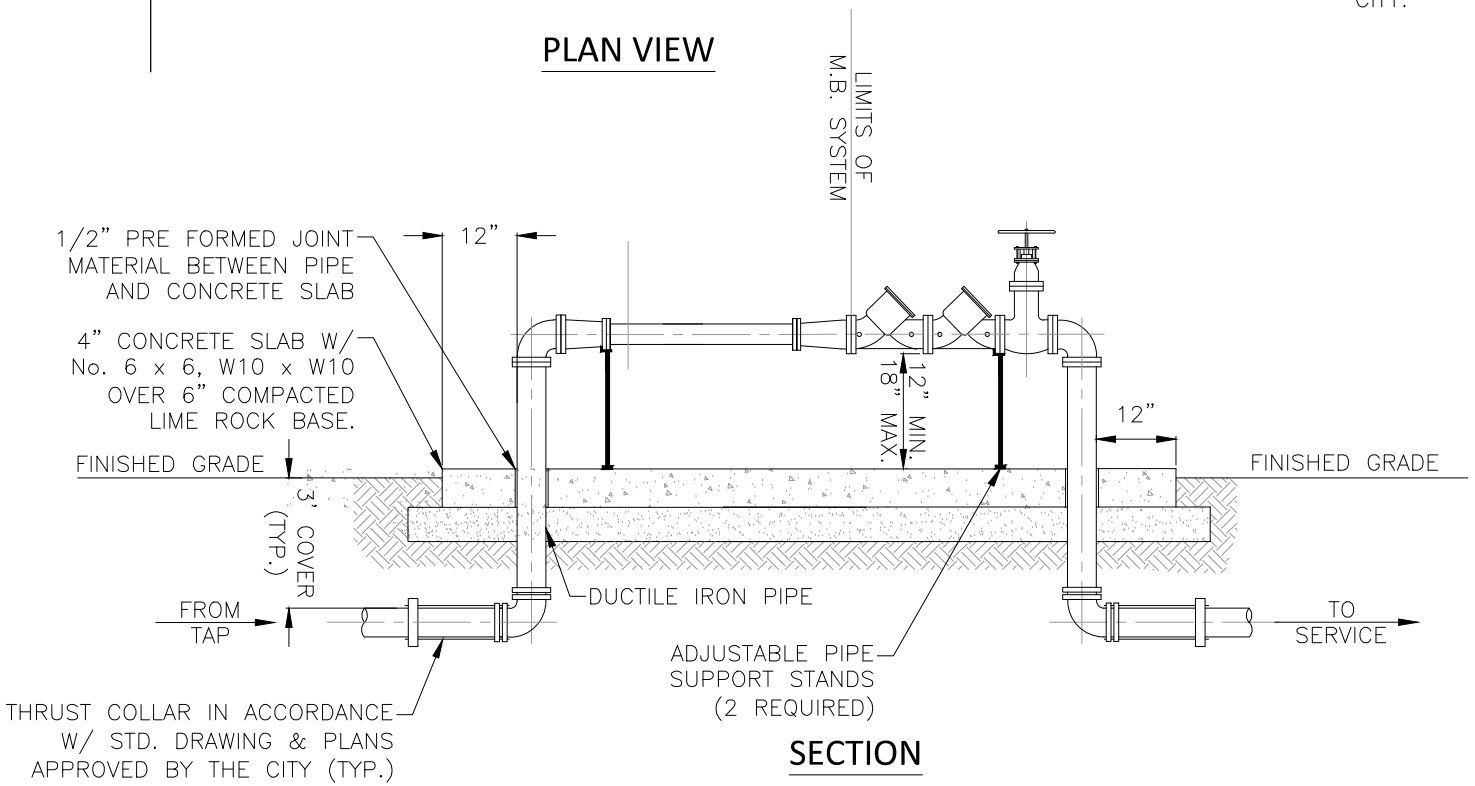
FIRE LINE SERVICE ASSEMBLY DETAIL
(WITHOUT BYPASS)

W-12

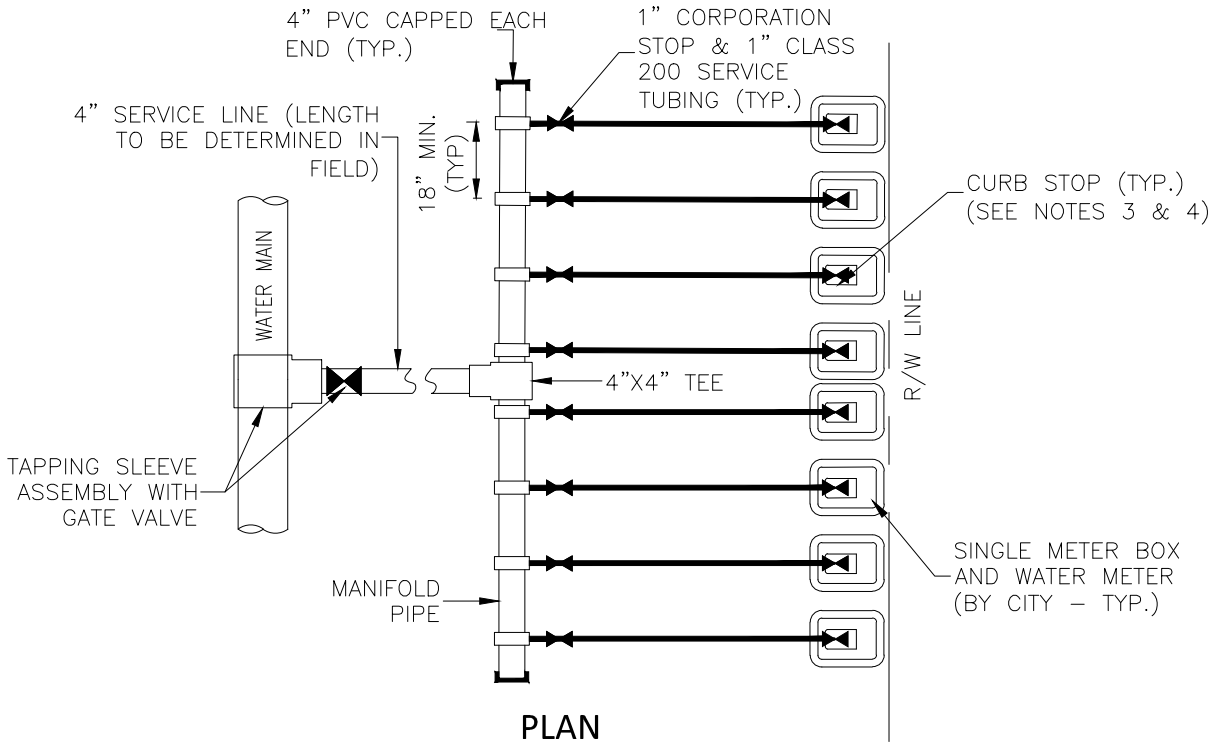


PLAN VIEW

NOTES:
1.) METER WILL BE PROVIDED AND INSTALLED BY THE CITY.
2.) ALL ABOVE GROUND PIPE AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
3.) PROVIDE PROTECTION AGAINST FREEZING FOR ALL ABOVE GROUND PIPE.
4.) ALL ITEMS ABOVE GRADE SHALL HAVE ONE COAT OF APPROVED EPOXY RED ENAMEL PAINT.
5). ALL ABOVE GROUND VALVES SHALL HAVE HANDWHEELS.
6.) BACK FLOW DEVICE SHALL BE RPZ TYPE AS APPROVED BY CITY.



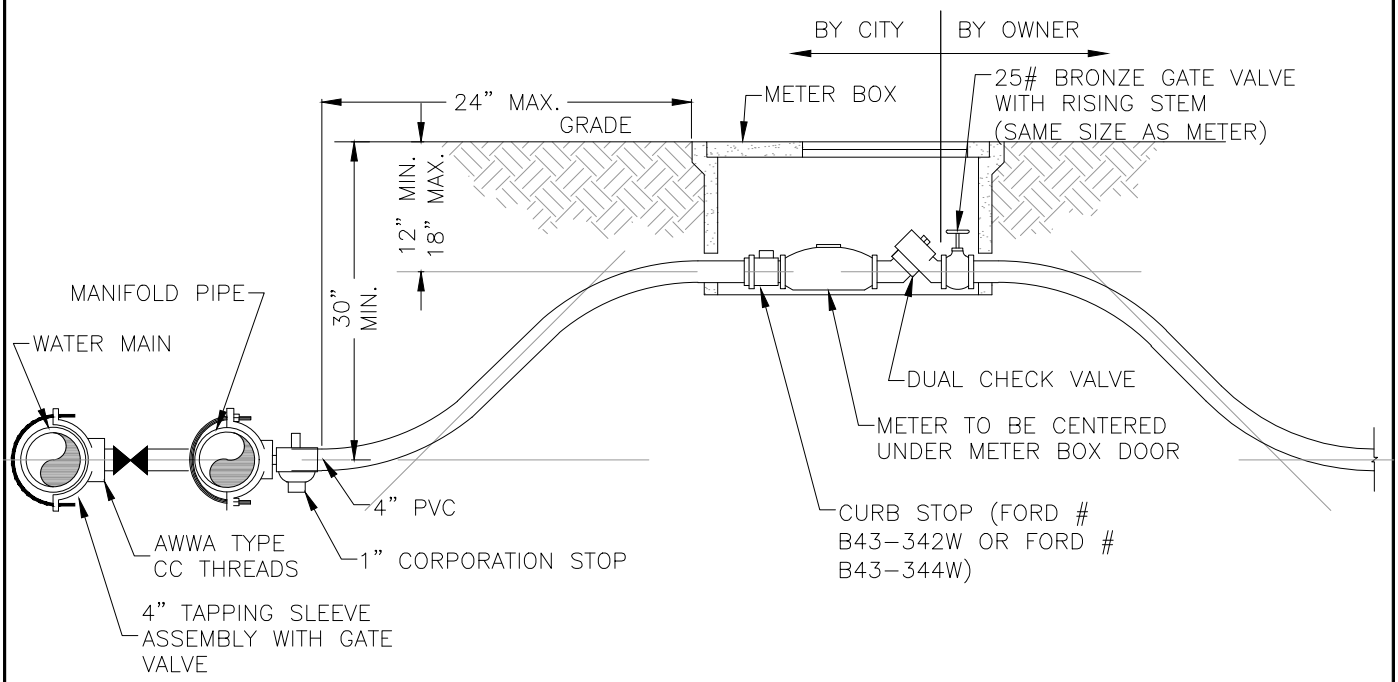
SECTION



PLAN

NOTES:

1.) ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.
2.) NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.
3.) EACH SERVICE SHALL TERMINATE AT A CURB STOP WHICH SHALL BE FASTENED TO A 1" x 4" x 30" STAKE PAINTED WHITE AND MARKED WITH THE NUMBER OF THE LOT TO BE SERVED.
4.) CURB STOP SHALL BE A FORD BALL METER VALVE B43–342W, B43–344W OR CITY APPROVED EQUAL.
5.) ALL SERVICE TAPS TO BE LOCATED IN FIELD. TAPS SHALL BE NO CLOSER THAN AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.
6.) METER BOXES & YOKE ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.



SECTION

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			MULTI–METER ASSEMBLY DETAIL	W–13
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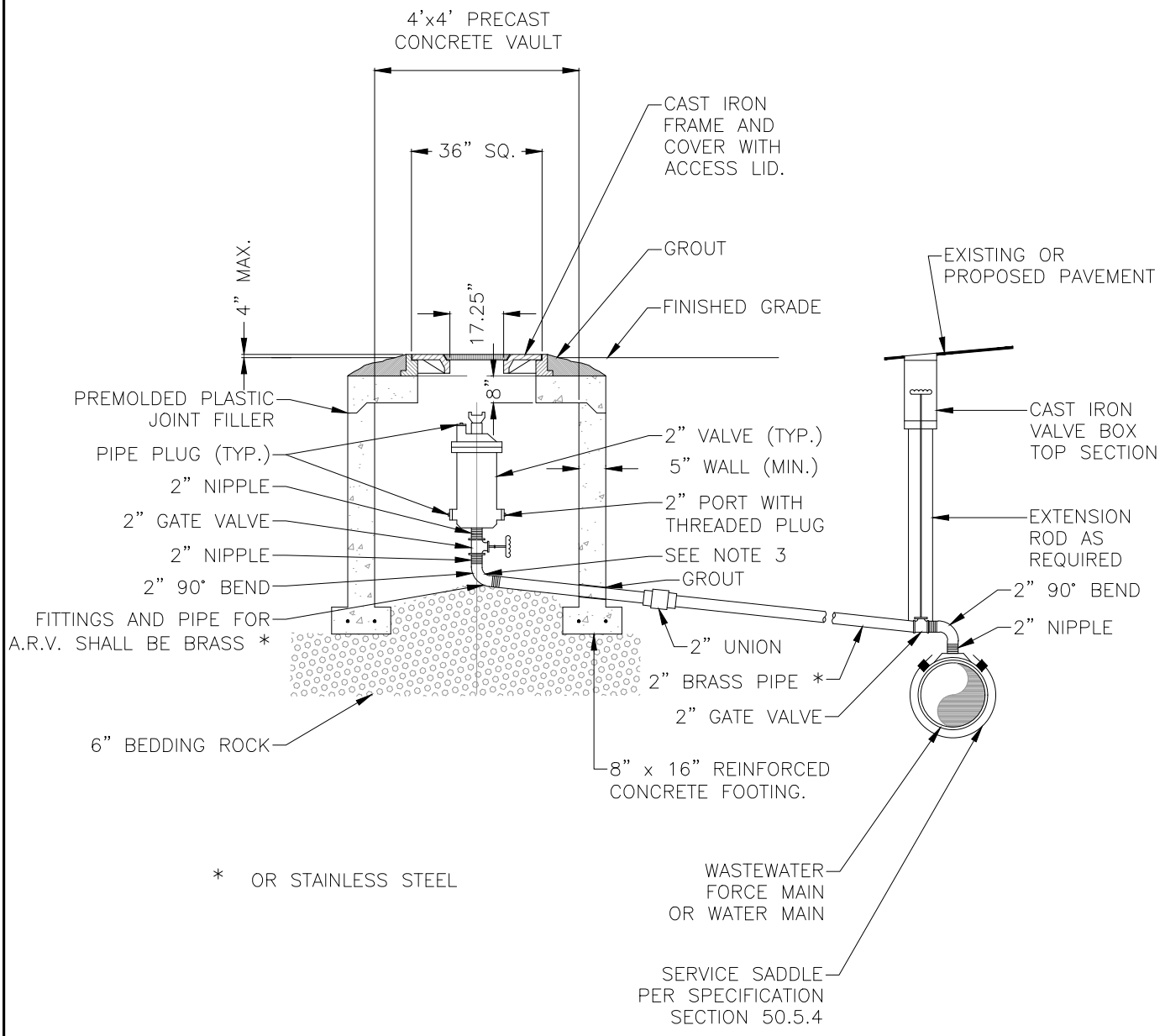


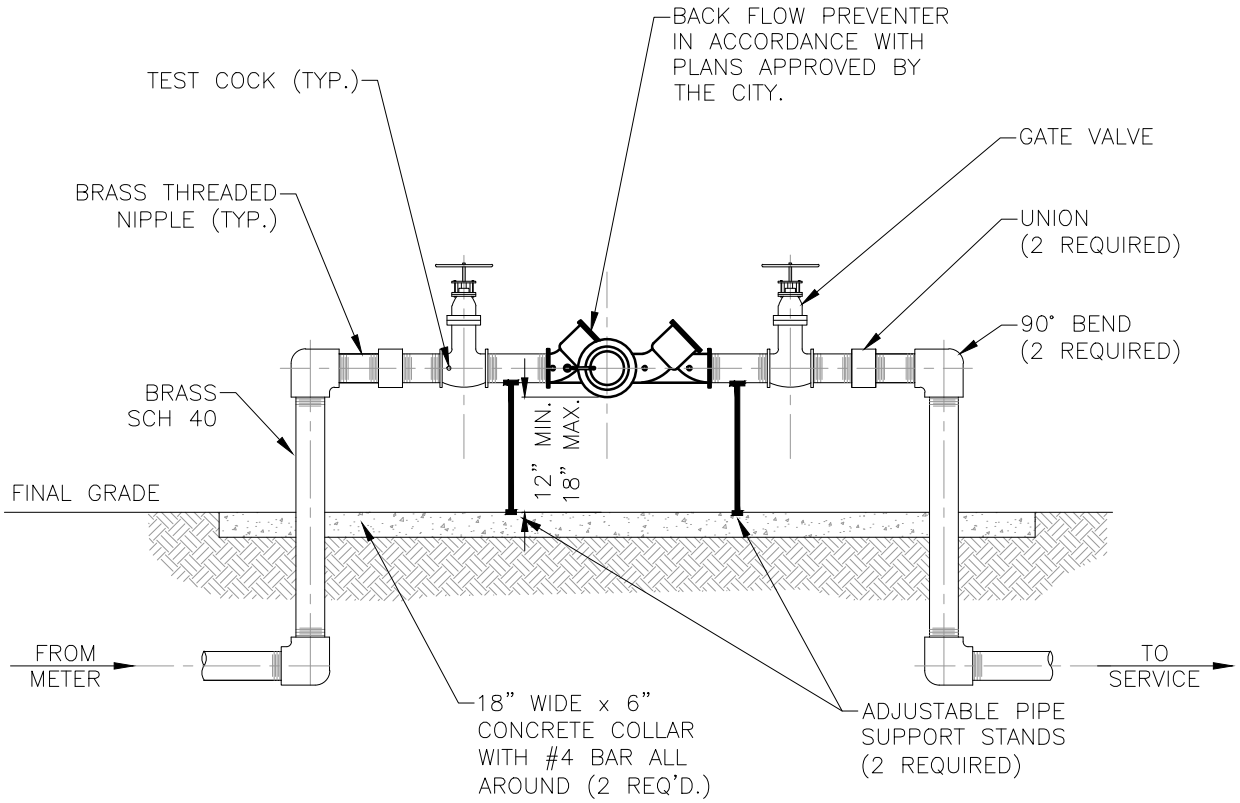
NOTES:

1.) ABOVE DETAIL IS BASED ON 2" COMBINATION AIR/VACUUM RELEASE VALVE.

2.) CHANGE PIPE AND FITTINGS ACCORDINGLY FOR OTHER VALVE SIZES AND TYPES. VALVE SIZES TO BE DETERMINED BY THE ENGINEER AND APPROVED BY THE COUNTY PRIOR TO INSTALLATION.

3.) THE MINIMUM DIMENSION FROM ELBOW INVERT TO FINISHED GRADE SHALL BE 4.0 FEET.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			OFFSET AIR AND/OR VACUUM RELEASE VALVE DETAIL	W-14
REV.	DATE	..... DATE OF APPROVAL		



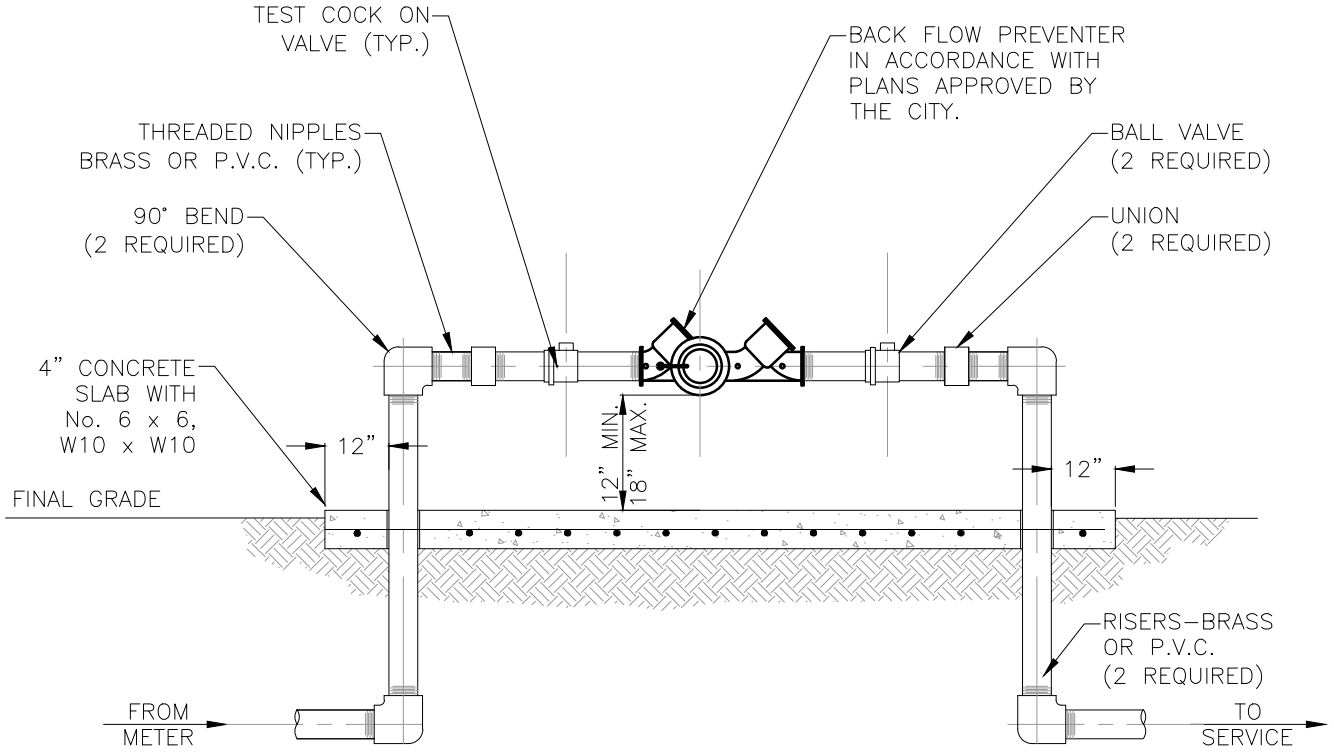
NOTES:

1.) ALL PIPE AND FITTINGS 2" AND SMALLER SHALL BE THREADED SCHEDULE 40 BRASS OR SCHEDULE 80 PVC.

2.) PROVIDE PROTECTION AGAINST FREEZING, INSULATE OR "HOT BOX".

3.) TWO PIPE SUPPORTS REQUIRED.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			BACK FLOW PREVENTER ASSEMBLY DETAIL	W-15
REV.	DATE	..... DATE OF APPROVAL		

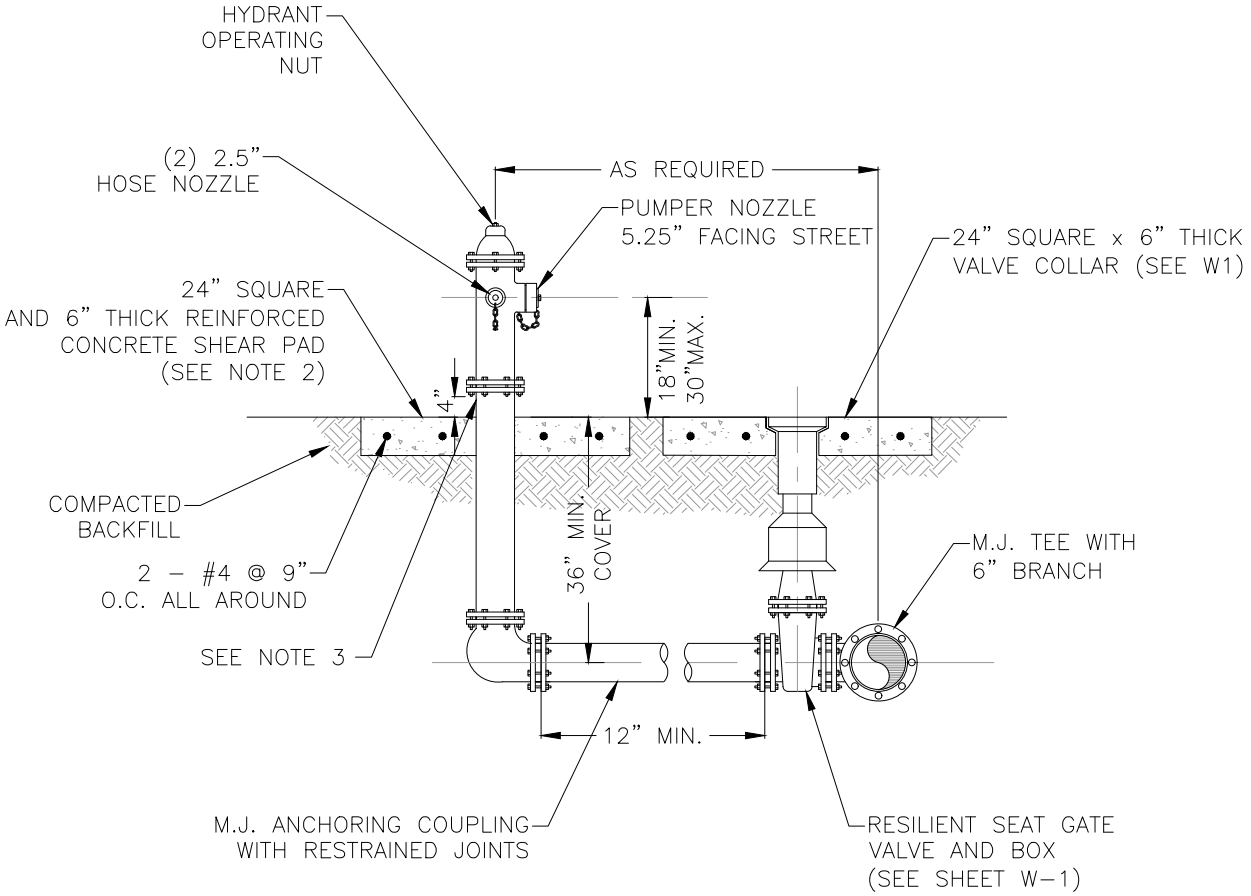


NOTES:

1.) ALL PIPE AND FITTINGS 2" AND SMALLER SHALL BE THREADED SCHEDULE 40 BRASS OR SCHEDULE 80 PVC.

2.) PROVIDE PROTECTION AGAINST FREEZING, INSULATION OR "HOTBOX".

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			REDUCED PRESSURE BACK FLOW PREVENTER FOR 3/4,1,1-1/2 & 2"	W-16
REV.	DATE	..... DATE OF APPROVAL		



NOTES:

1.) FIRE HYDRANT SHALL BE SUPPLIED WITH A WEEP HOLE.

2.) THE SHEAR PAD MAY BE RECESSED UP TO 6 INCHES BELOW FINISHED GRADE.

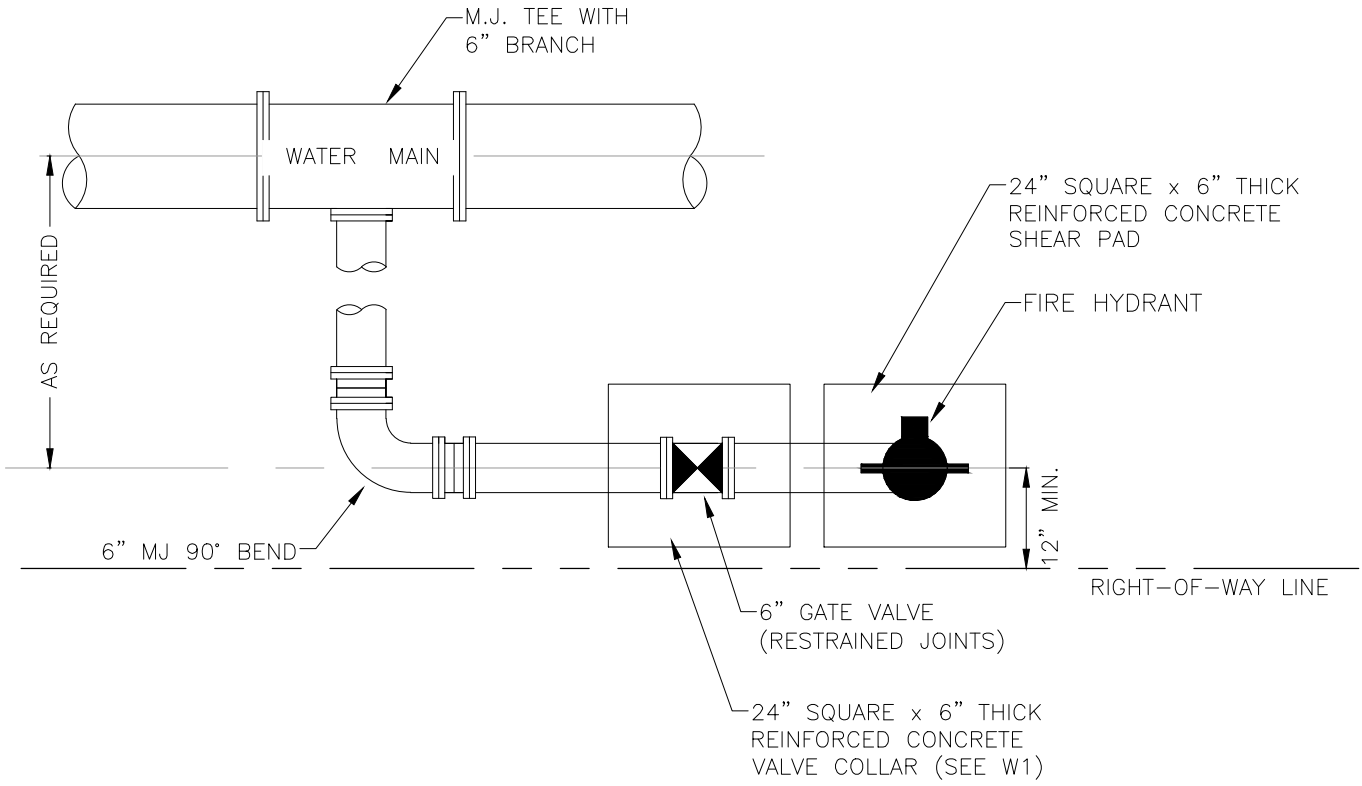
3.) CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 4" MINIMUM.

4.) HYDRANT SHALL BE AVK MODEL 2780 NOSTALGIC, AMERICAN DARLING B-84-B, CLOW MEDALLION OR US FIRE HYDRANT, MODEL SENTINEL 250 WITH SS VALVE ROD.

5.) A WEATHER SHIELD SHALL BE PROVIDED TO PROTECT OPERATING STEM OR NUT.

6.) THE HYDRANT'S UPPER AND LOWER STEM, BREAK COUPLING. INTERNAL PINS AND CLIPS. AND ALL EXTERNAL BOLTING SHALL BE MANUFACTURED OF 304 OR 316 STAINLESS STEEL.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			5-1/4" FIRE HYDRANT ASSEMBLY DETAIL	W-17
REV.	DATE	..... DATE OF APPROVAL		

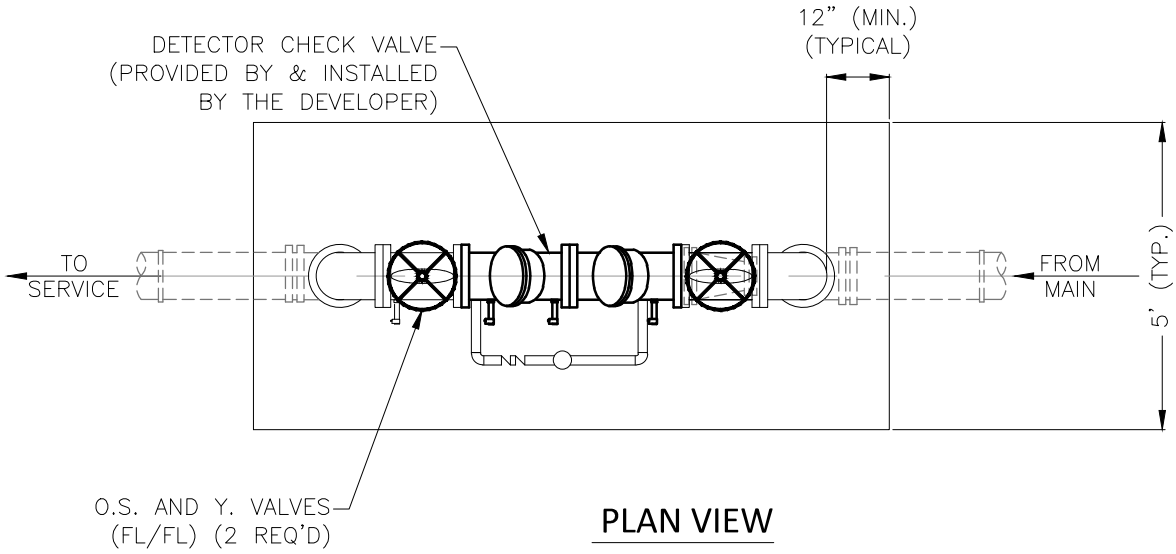


PLAN

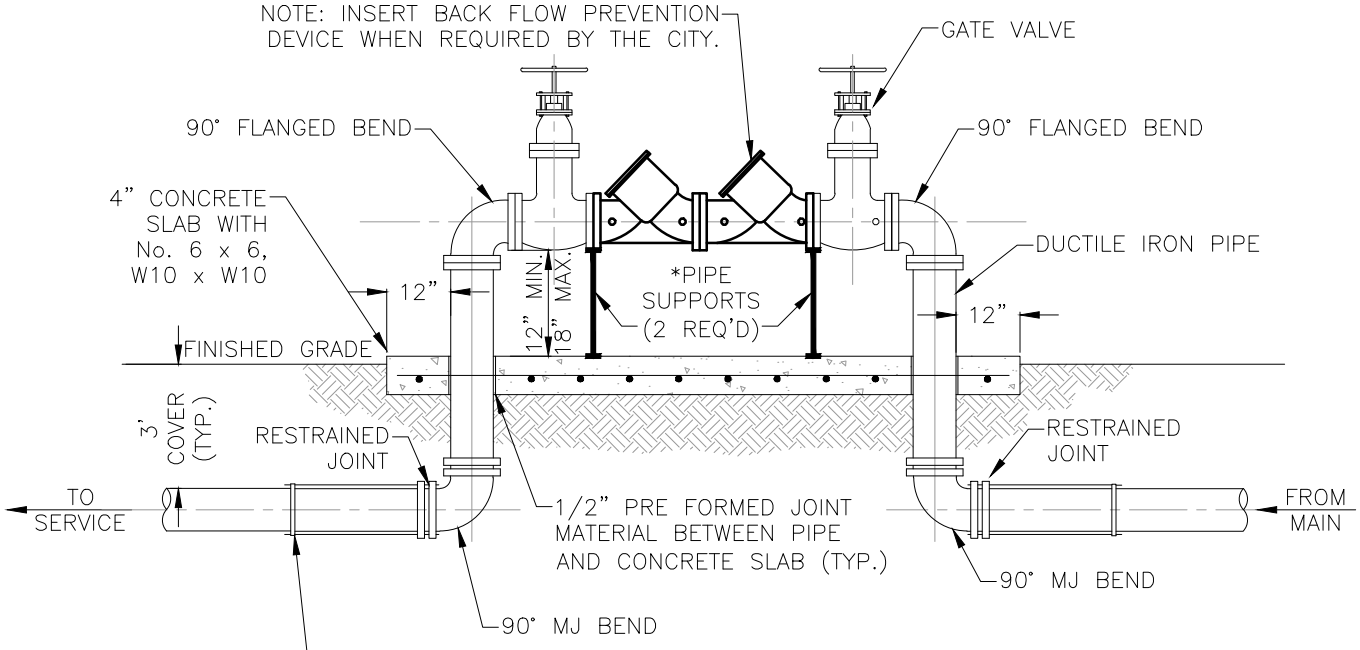
NOTE:

THIS DETAIL FOR USE ONLY WHEN THE WATER MAIN IS LOCATED TOO CLOSE TO THE RIGHT-OF-WAY LINE TO USE DETAIL ON SHEET 16A.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			TYPICAL FIRE HYDRANT WITH 90° BEND ASSEMBLY DETAIL	W-18
REV.	DATE			
		.....		
		DATE OF APPROVAL		



PLAN VIEW



SECTION

NOTE:

ALL ABOVE GROUND PIPE JOINTS SHALL BE FLANGED.

* PIPE SUPPORTS:
1 REQ'D UNDER CENTER FOR 6",
2 REQ'D FOR 8" AND LARGER

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

DOUBLE DETECTOR CHECK VALVE ASSEMBLY DETAIL

W-19

Master Meter Water Meter Specifications				
TYPE	SIZE (Inches)	LAY LENGTH (Inches)	FLOW RATING (GPM) Max	FLOW RANGE (GPM) Normal
3G BLMJ	5/8	7–1/2	20	1–20
3G BLMJ	1	10–3/4	50	3–50
3G BLMJ	1.5	13	100	5–100
3G MG	2	17	160	8–160
3G Octave	2	10	250	0.5–250
3G Octave	3	12	500	1–500
3G Octave	4	14	1,000	1.5–1,000
3G Octave	6	18	1,600	3–1,600
3G Octave	8	20	2,800	5–2,800
3G Octave	10	17–3/4	5,500	14–5,500

1. IF METER(S) IS TO BE SUPPLIED BY CONTRACTOR, CONTRACTOR MUST HAVE A WRITTEN SIGNED APPROVAL FROM THE CITY.

2. METER(S) HAS TO BE PROGRAMMED AND CODED TO MATCH CITY'S METER READING SYSTEM.

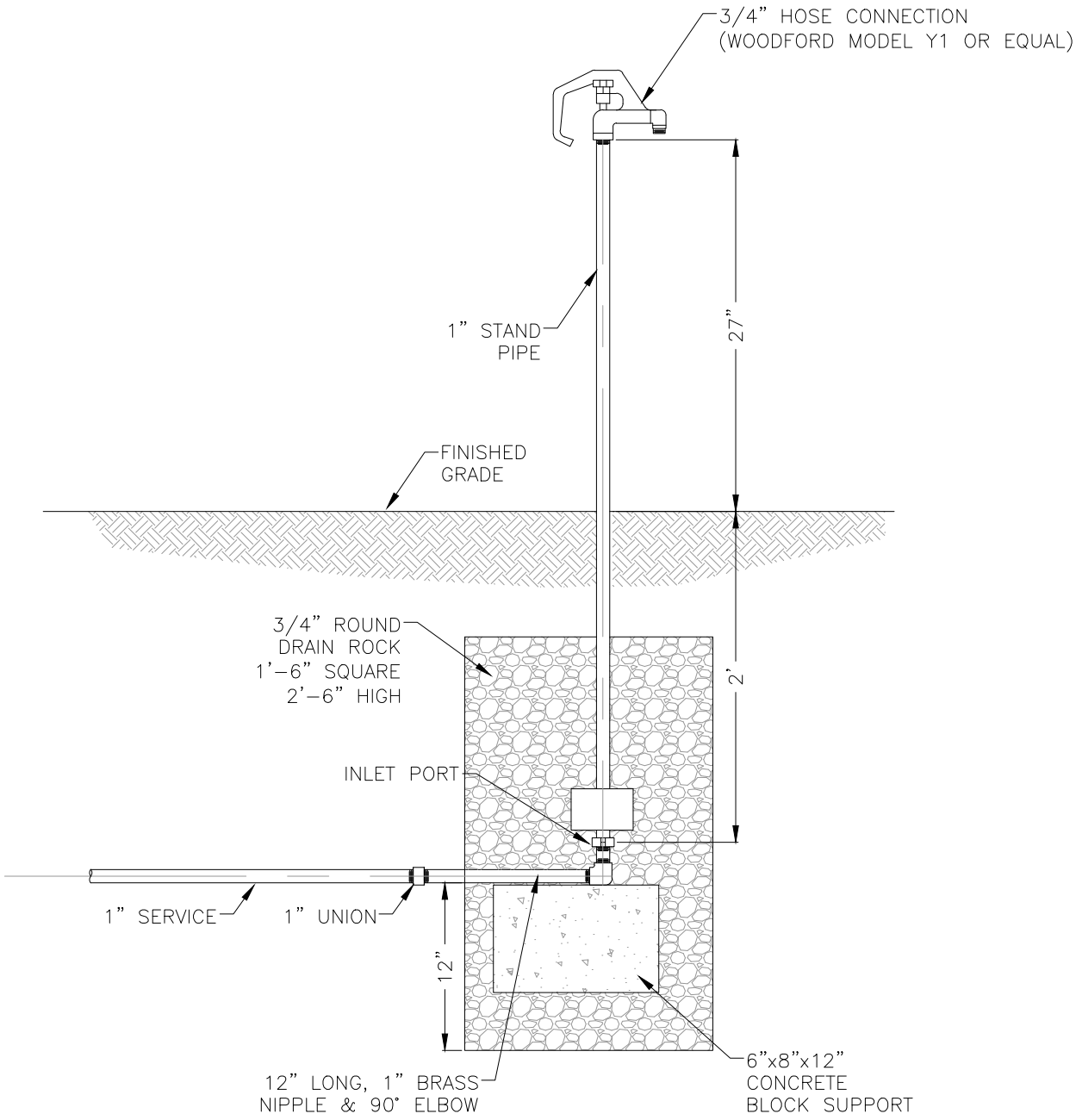
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

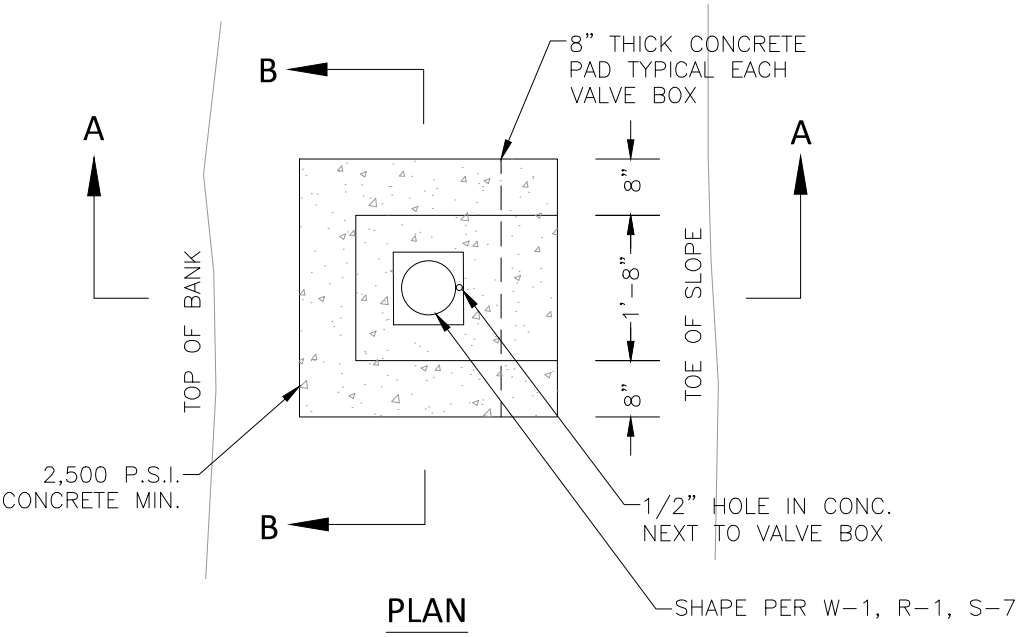
.....
DATE OF APPROVAL

MASTER METER
WATER METER
SPECIFICATIONS

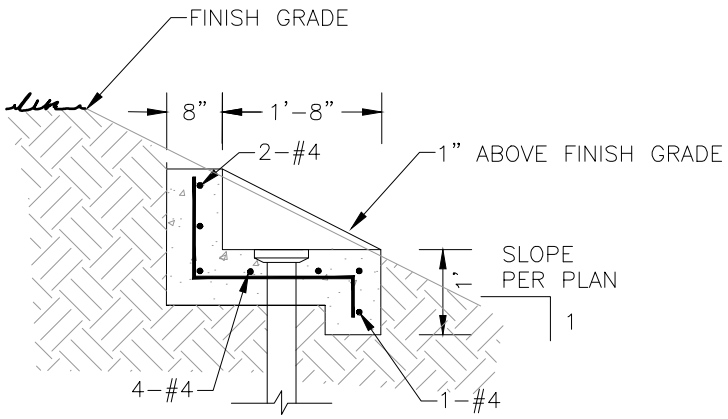
W–20



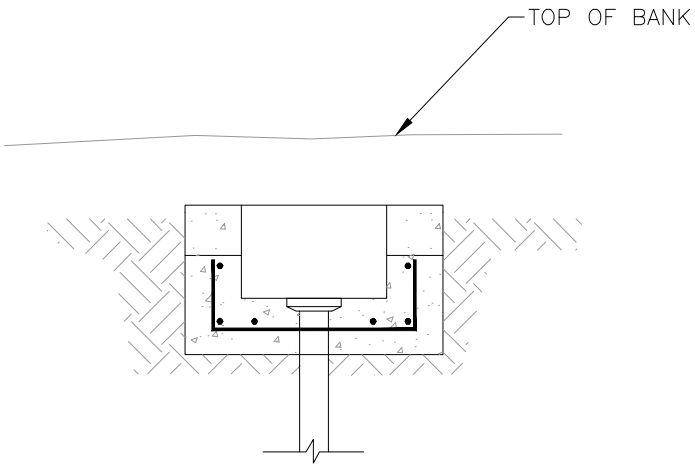
CITY OF MEXICO BEACH UTILITIES DEPARTMENT			FREEZE-PROOF YARD HYDRANT	W-21
REV.	DATE			
		.....		
		DATE OF APPROVAL		



PLAN

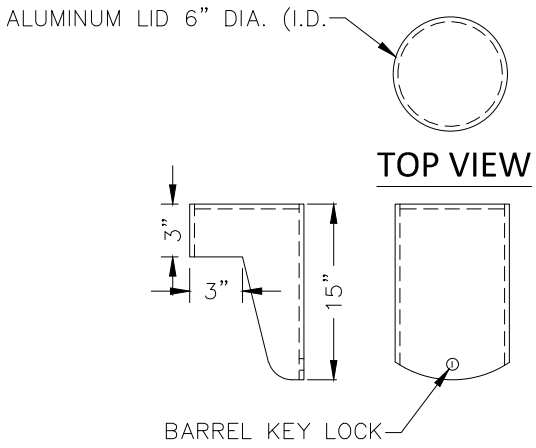


SECTION A - A



SECTION B-B

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			WATER GATE VALVE & BOX DETAIL (ON SLOPES >1:6)	W-22
REV.	DATE	..... DATE OF APPROVAL		

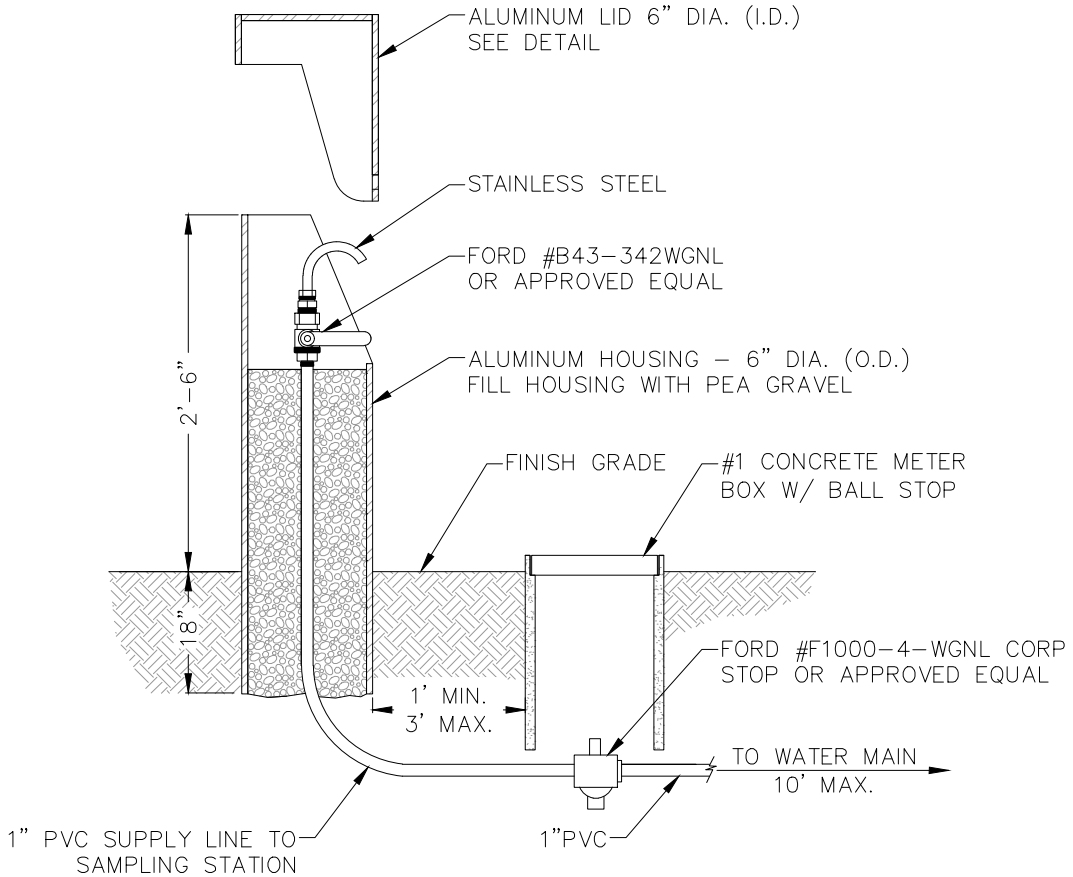


LID DETAILS

N.T.S.

NOTES:

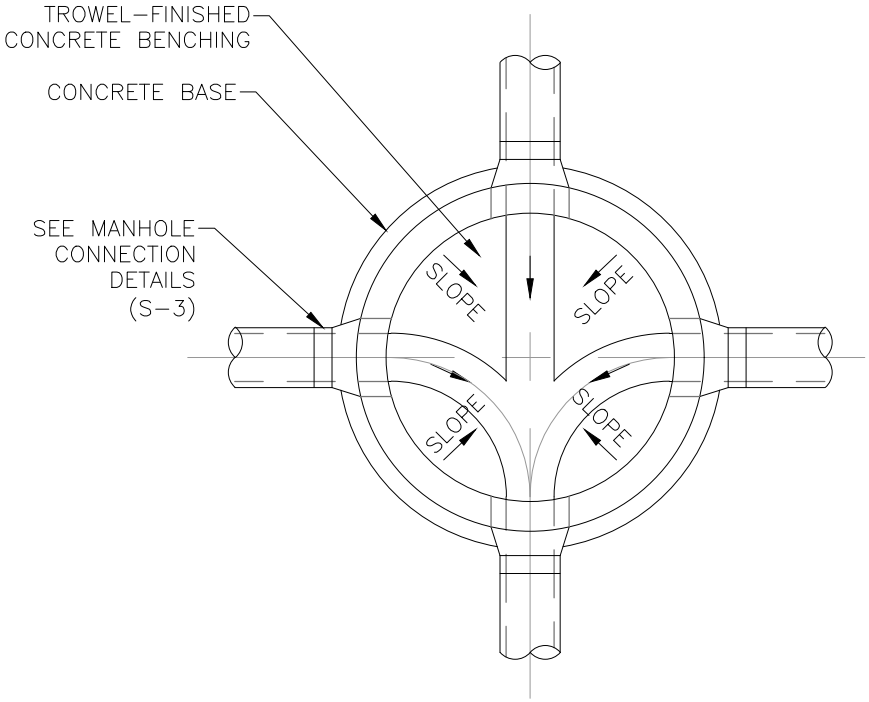
1. WATER QUALITY SAMPLING STATION TO BE KORALEAN OR APPROVED EQUAL.
2. KEYS TO LOCKS SHALL BE DELIVERED TO THE CITY WATER QUALITY DEPARTMENT UPON ACCEPTANCE.



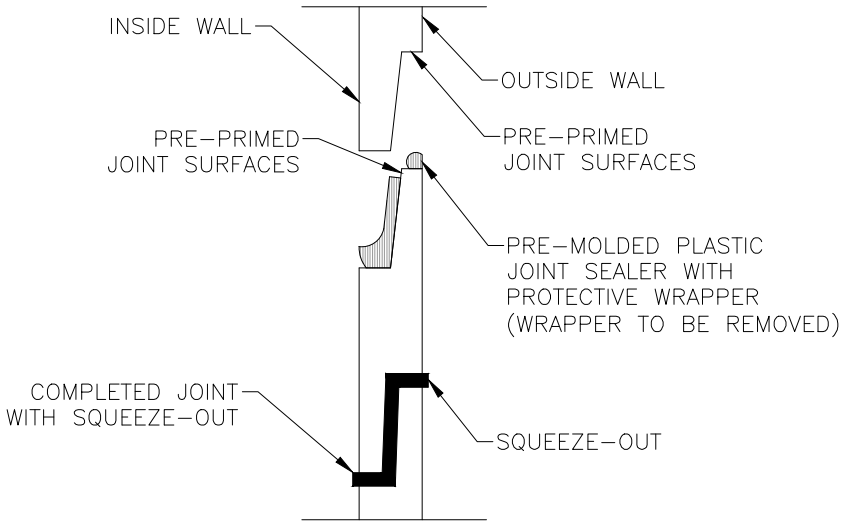
TYPICAL INSTALLATION

N.T.S.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			WATER QUALITY SAMPLING STATION	W-23
REV.	DATE	..... DATE OF APPROVAL		



* SEE SHEET S–2 FOR
CROSS SECTION AND NOTES



HANSON PRE–LINED OR APPROVED EQUAL, SPECTRASHIELD
SPRAY LINED MANHOLES WILL ALSO BE ACCEPTED

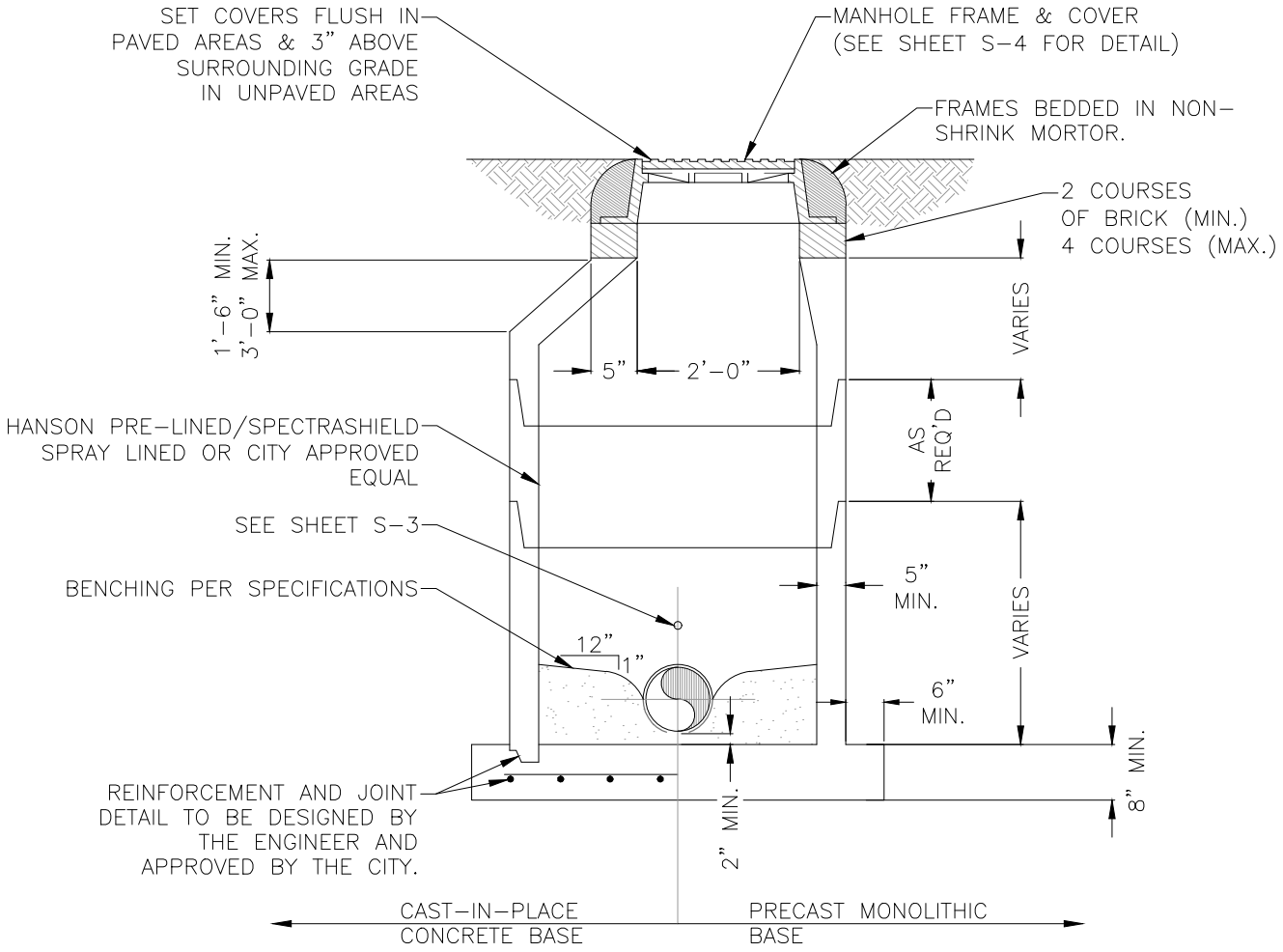
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

PRECAST CONCRETE MANHOLE DETAILS JOINTS & FLOW

S–1



NOTES:

1.) MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY.

2.) DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.

3.) APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.

4.) MANHOLE COVERS IN SWALES OR DITCHES SHALL BE EXTENDED TO TOP OF BANK ELEVATION.

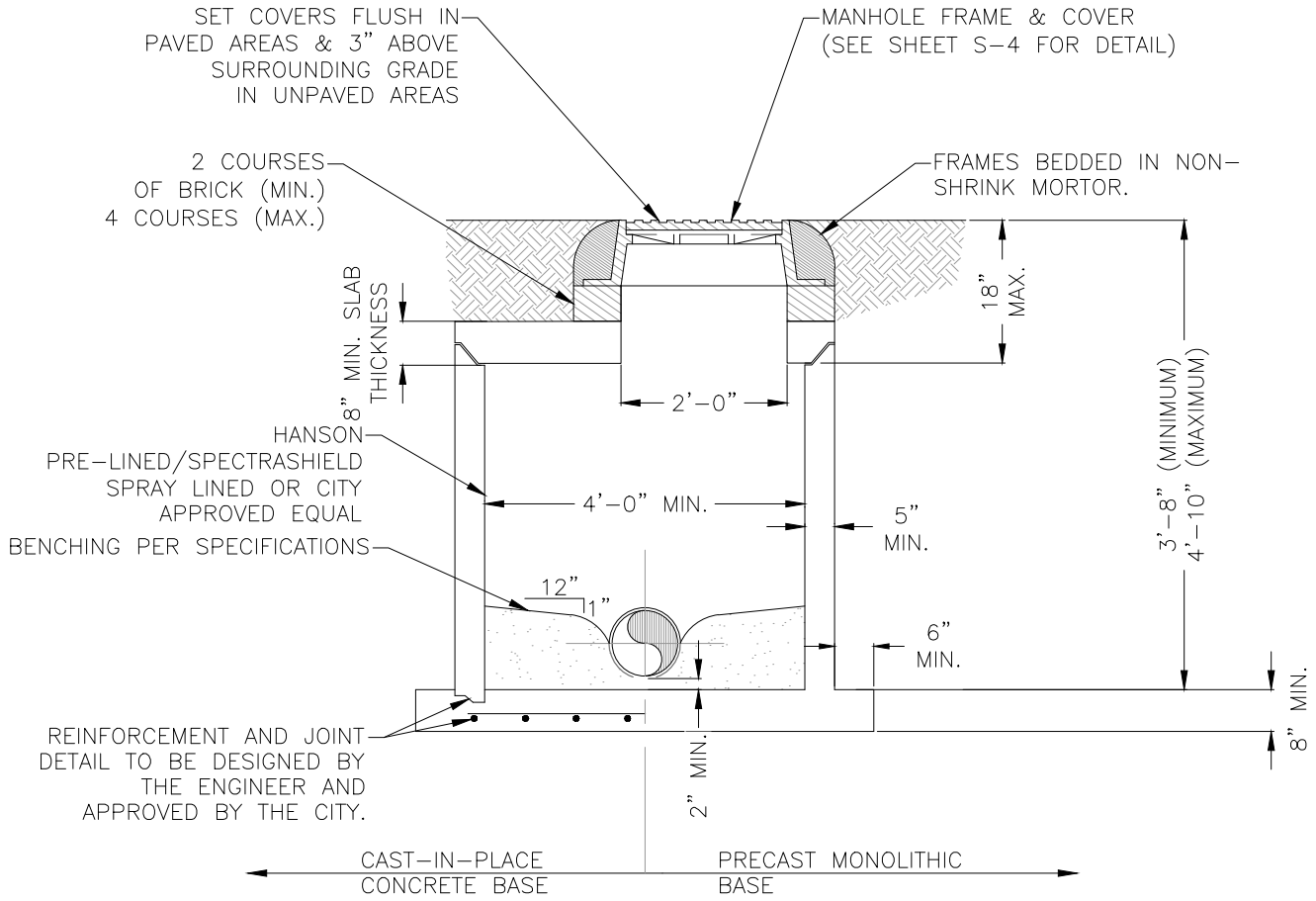
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

PRECAST CONCRETE MANHOLE DETAILS SECTION & NOTES

S-2



NOTES:

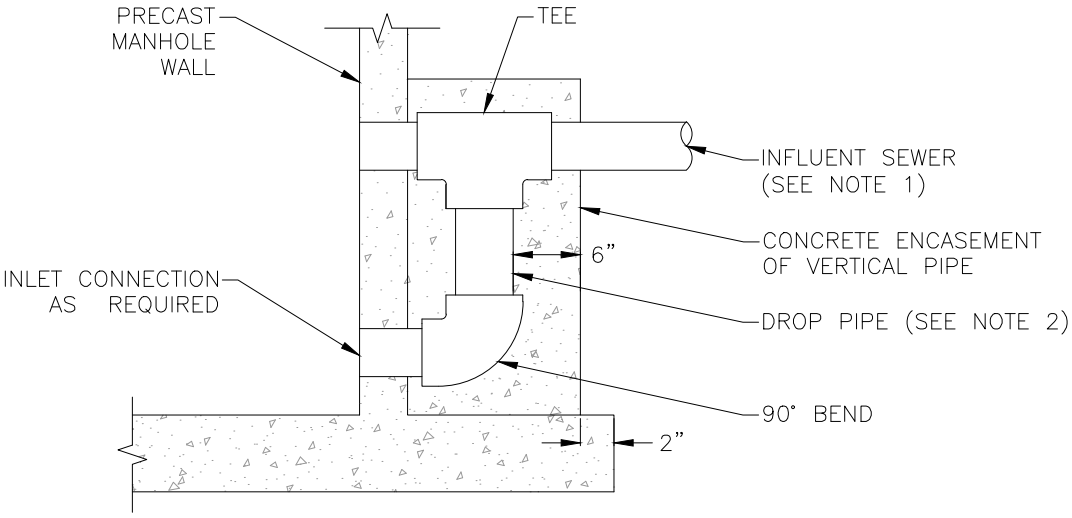
1.) MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY.

2.) DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.

3.) APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.

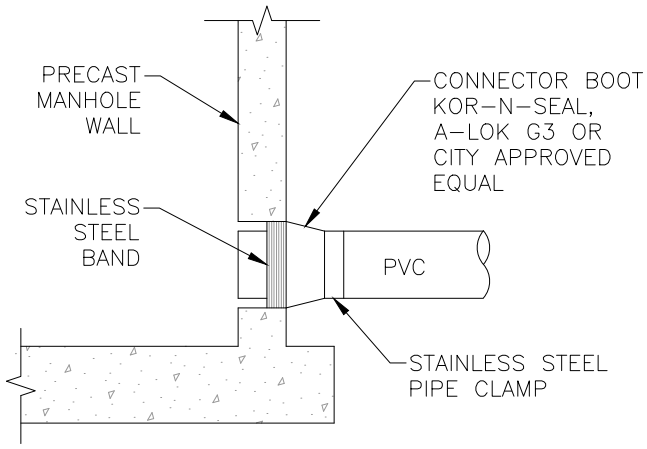
4.) MANHOLE COVERS IN SWALES OR DITCHES SHALL BE EXTENDED TO TOP OF BANK ELEVATION.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			PRECAST SHALLOW CONCRETE MANHOLE DETAILS SECTION & NOTES	S-3
REV.	DATE			
		.....		
		DATE OF APPROVAL		

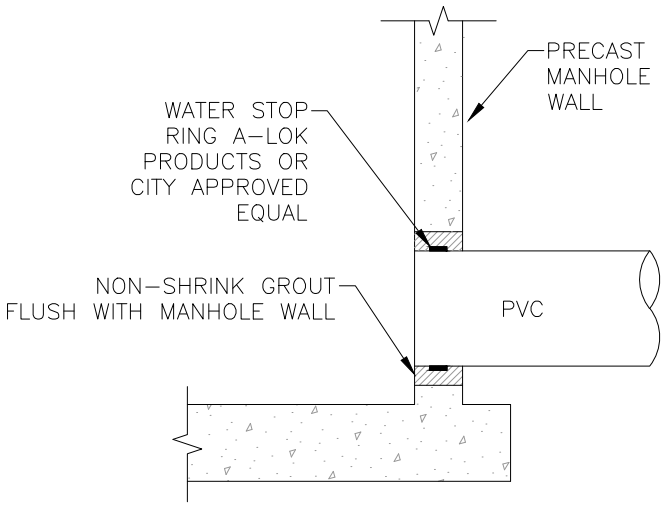


STANDARD DROP DETAIL

(PRIVATE SYSTEMS ONLY)



STANDARD PRECAST MANHOLE PIPE CONNECTION



SPECIAL DETAIL FOR 21" DIAMETER PIPE AND LARGER

NOTES:

1.) AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT 2' OR MORE ABOVE THE MANHOLE INVERT. (PRIVATE SYSTEMS ONLY)

2.) DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.

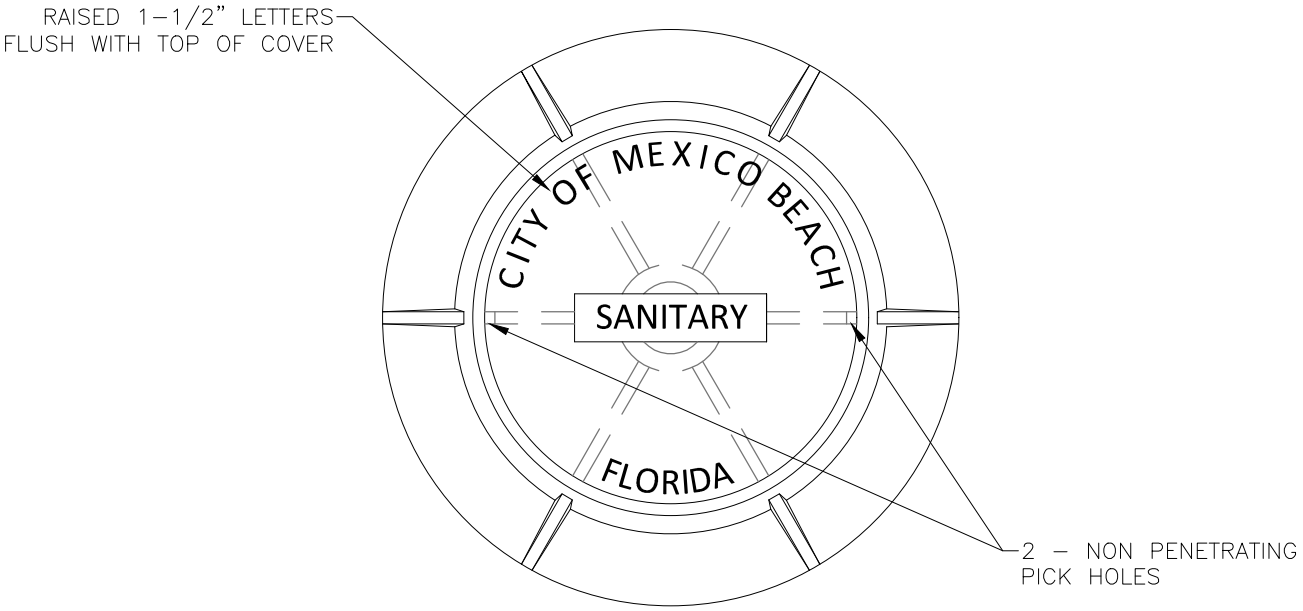
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

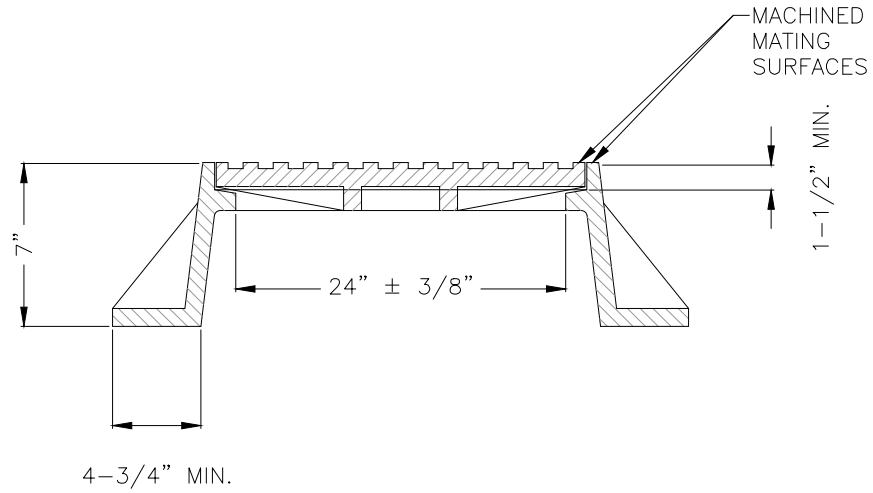
DATE OF APPROVAL

MANHOLE CONNECTION DETAILS

S-4

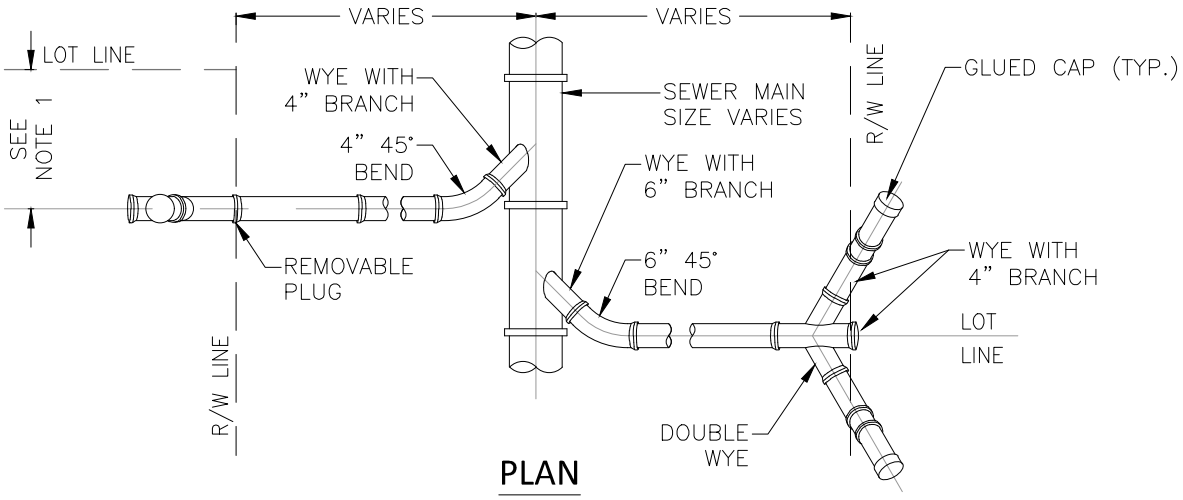


PLAN

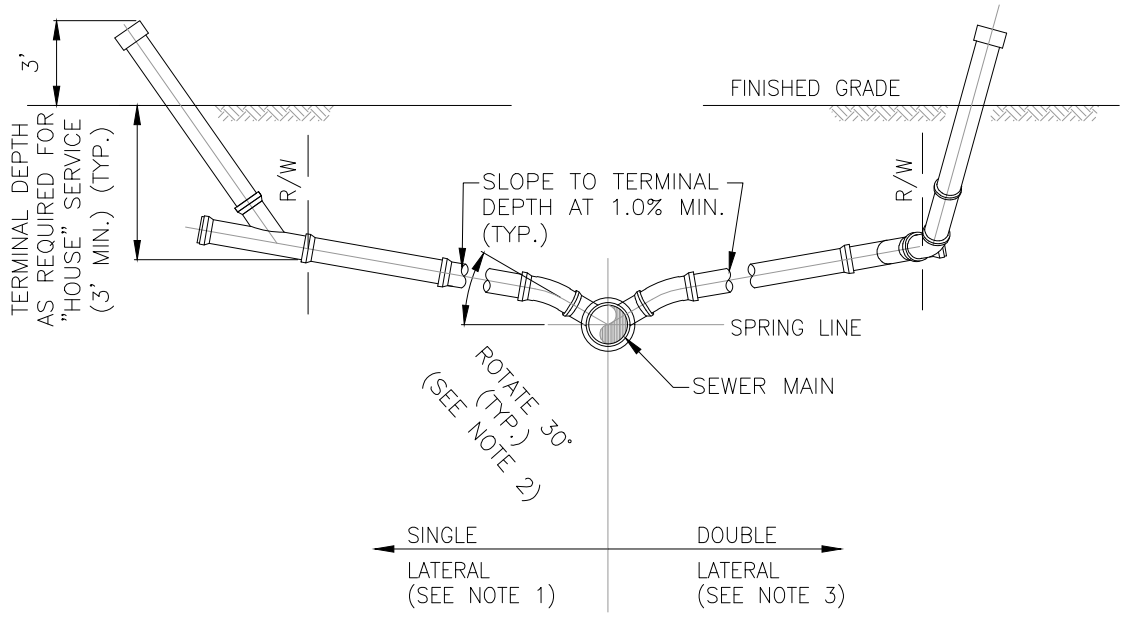


ELEVATION

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			STANDARD MANHOLE FRAME AND COVER	S–5
REV.	DATE			
		.....		
		DATE OF APPROVAL		



PLAN



PROFILE

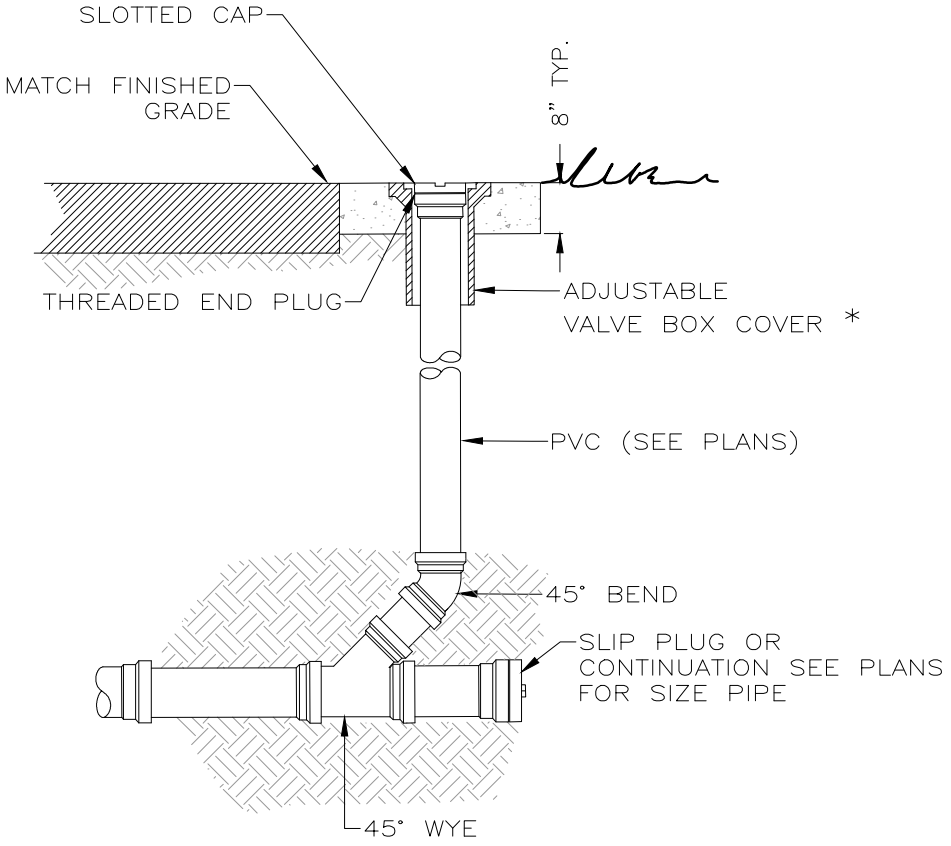
NOTES:

1.) INVERT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW SPRING LINE.

2.) DOUBLE SERVICE LATERALS ONLY PERMITTED ON TAPS TO EXISTING GRAVITY MAINS WERE EXISTING ROAD PAVEMENT MUST BE CUT.

3.) ALL PIPE FITTINGS SHALL BE PVC ASTM 3034 SDR35, GREEN IN COLOR.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	SERVICE LATERAL DETAIL	S-6



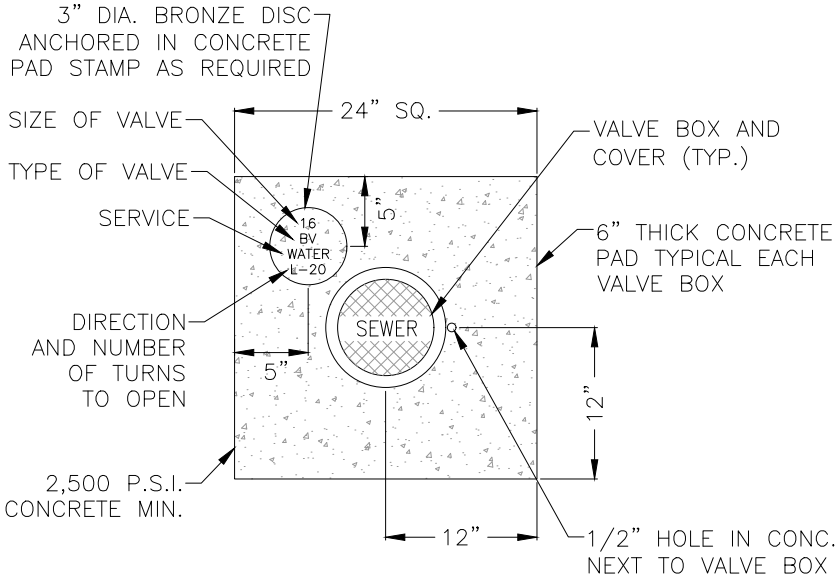
NOTE: SEE SEWER SIZE IN PLANS

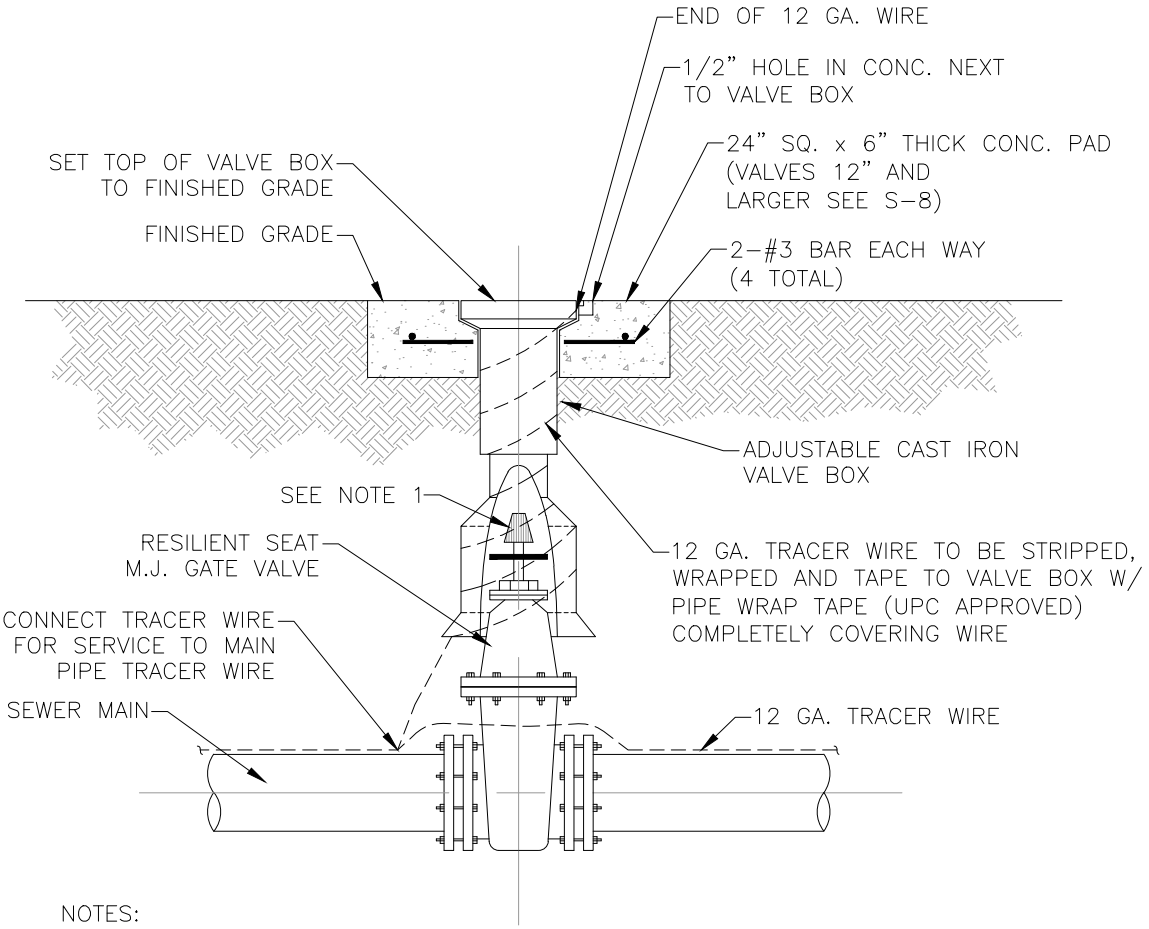
* VALVE BOX ONLY IF IN CONCRETE OR ASPHALT

CLEANOUT DETAIL

NOT TO SCALE

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			SEWER CLEANOUT DETAIL	S-7
REV.	DATE			
		.....		
		DATE OF APPROVAL		





NOTES:

1.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

2.) FOR VALVE COLLAR PADS THAT FALL ON SLOPES GREATER THAN 1:6, SEE DETAIL W-20 FOR PAD.

3.) ALL VALVES SHALL TURN CLOCKWISE TO CLOSE.

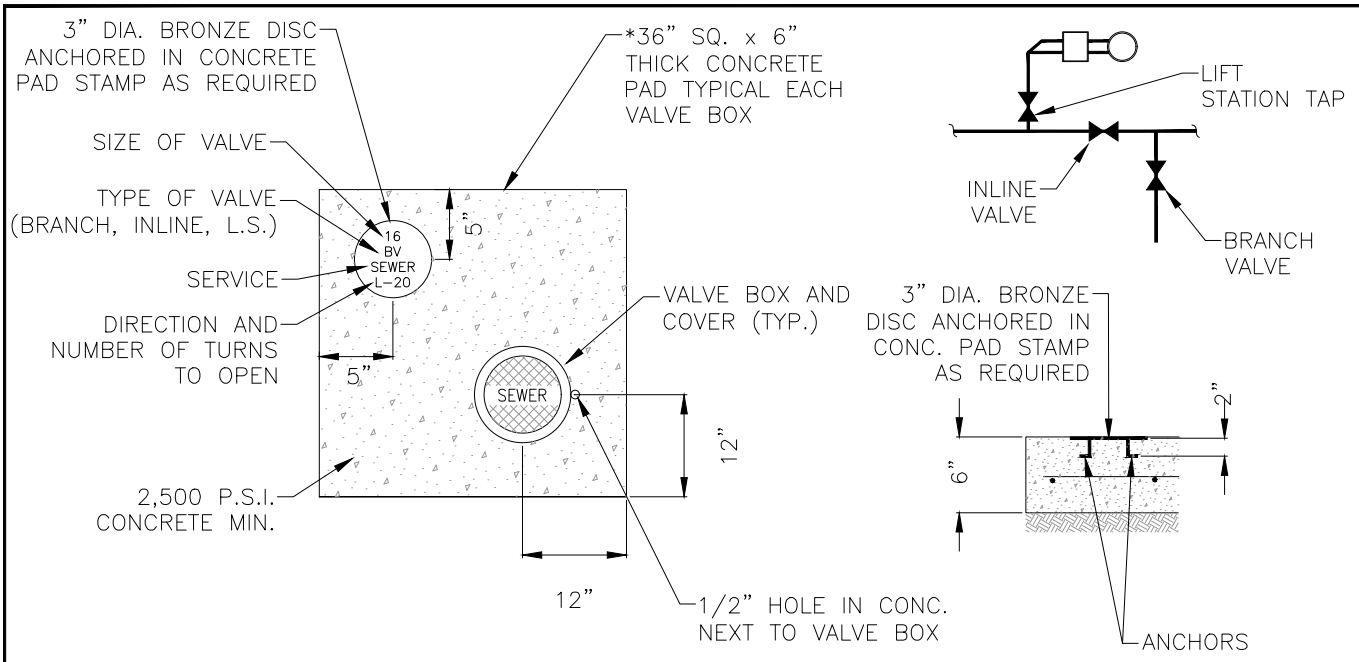
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

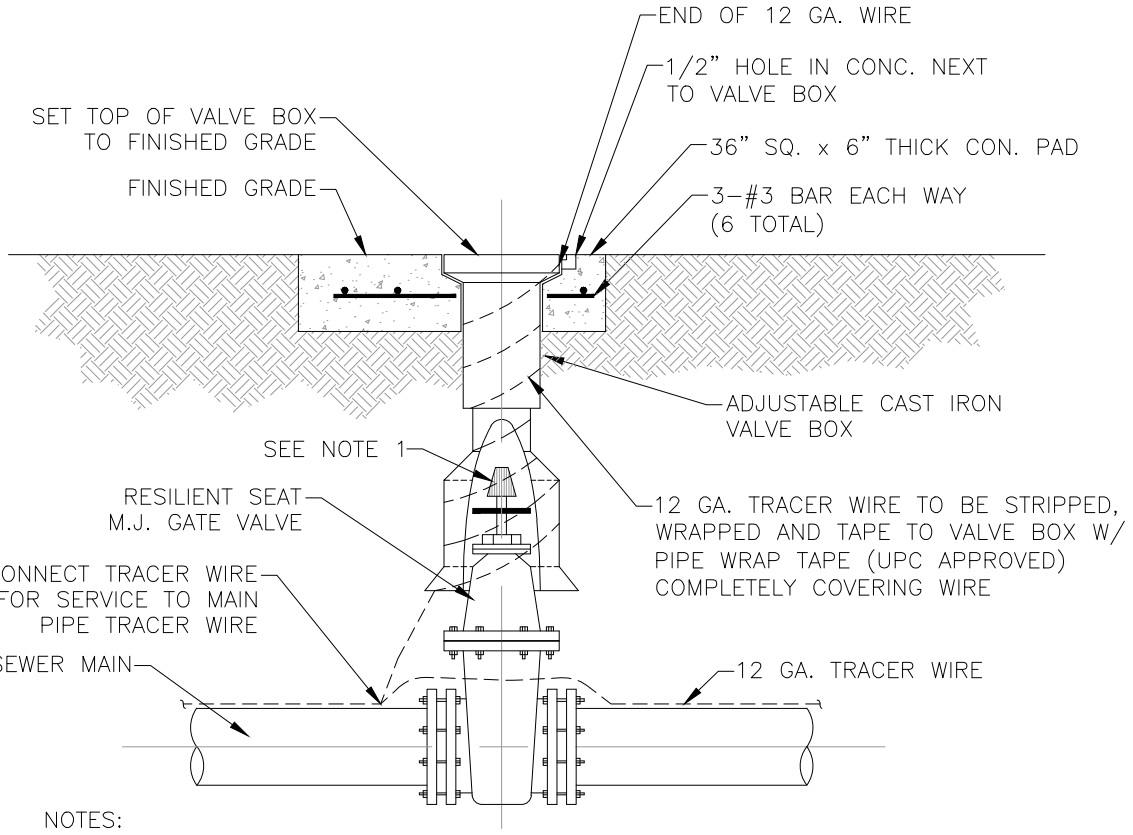
REV.	DATE

DATE OF APPROVAL

SEWER GATE VALVE & BOX DETAIL (4" TO 10")

S-8





NOTES:

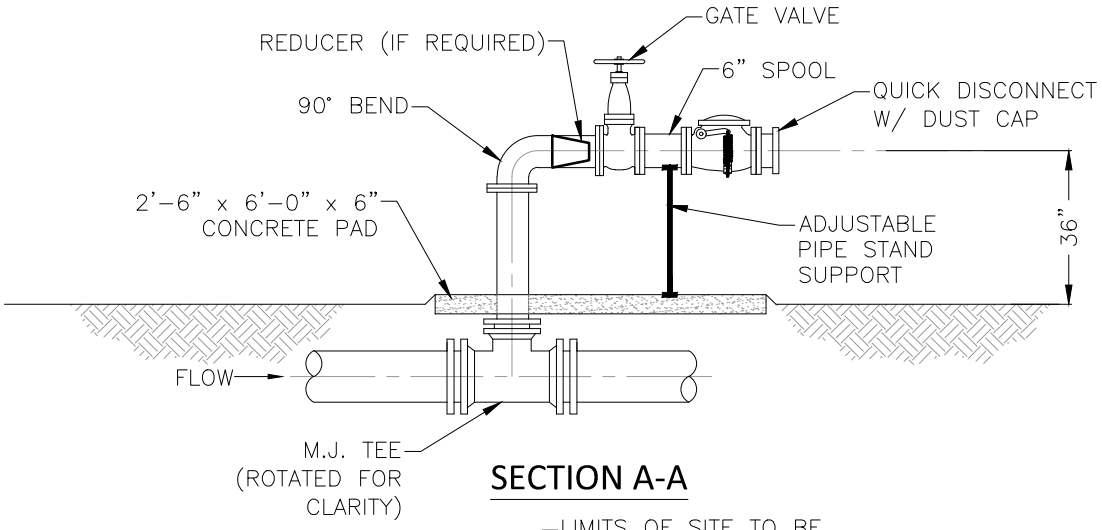
1.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

2.) VALVES 20" & LARGER SHALL HAVE BEVEL-GEAR OPERATORS UNLESS DEPTH IS ADEQUATE TO MAINTAIN 24" COVER ON VALVE NUT.

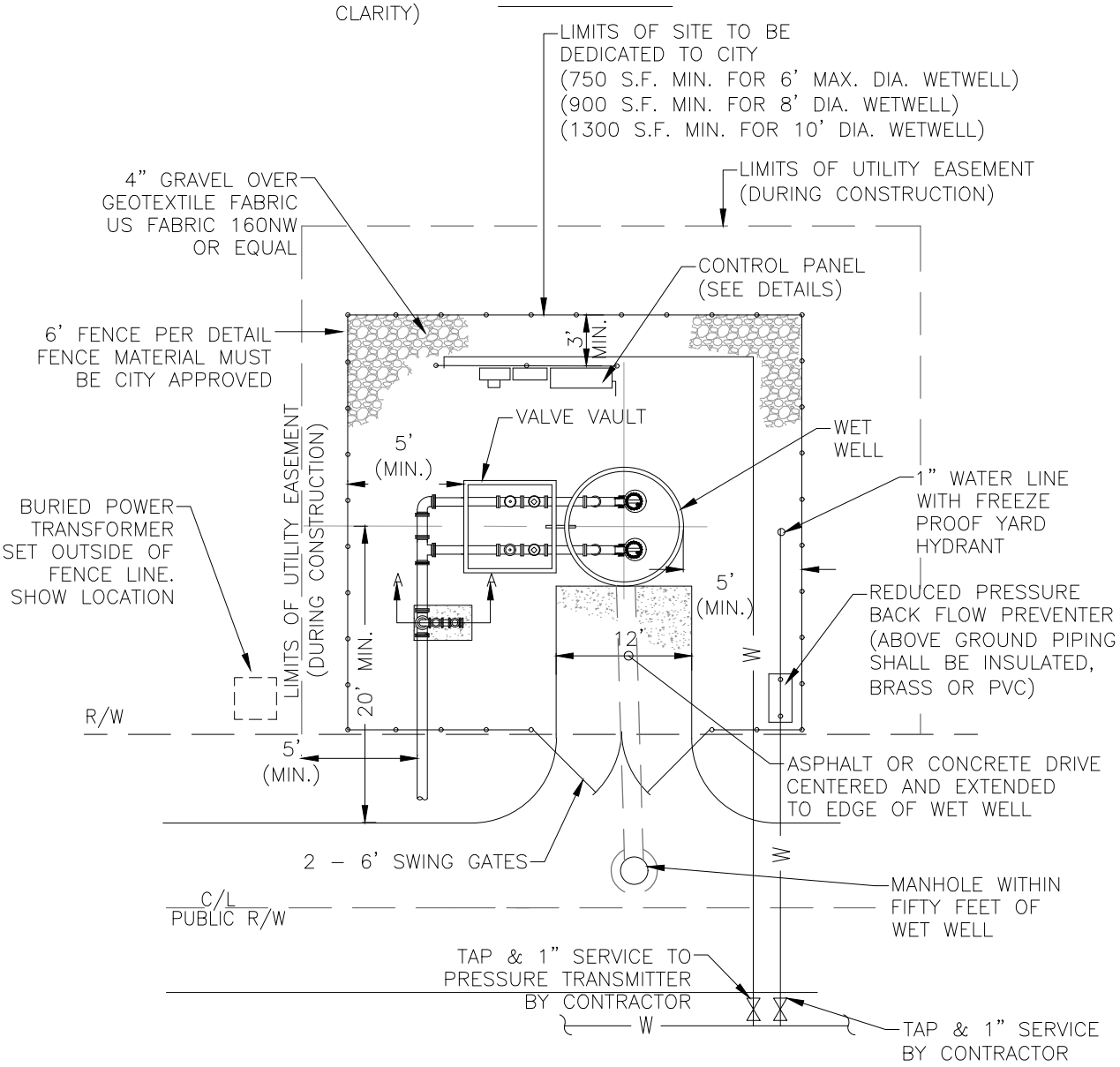
3.) ALL VALVES SHALL TURN CLOCKWISE TO CLOSE.

*NOTE: 24" SQ. PAD TO BE CONSTRUCTED INSIDE RESIDENTIAL AREAS.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			SEWER GATE VALVE & BOX DETAIL (12" & LARGER)	S-9
REV.	DATE	..... DATE OF APPROVAL		



SECTION A-A



ENGINEER SHALL PROVIDE A SCALED (1" = 10' MIN.) SITE SPECIFIC DETAIL

IF LIFT STATION SITE IS NOT CONTIGUOUS TO PUBLIC R/W, A 20' MINIMUM WIDTH EASEMENT APPROVED BY CITY MUST BE PROVIDED TO R/W.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

PUMP STATION SITE PLAN

S-10

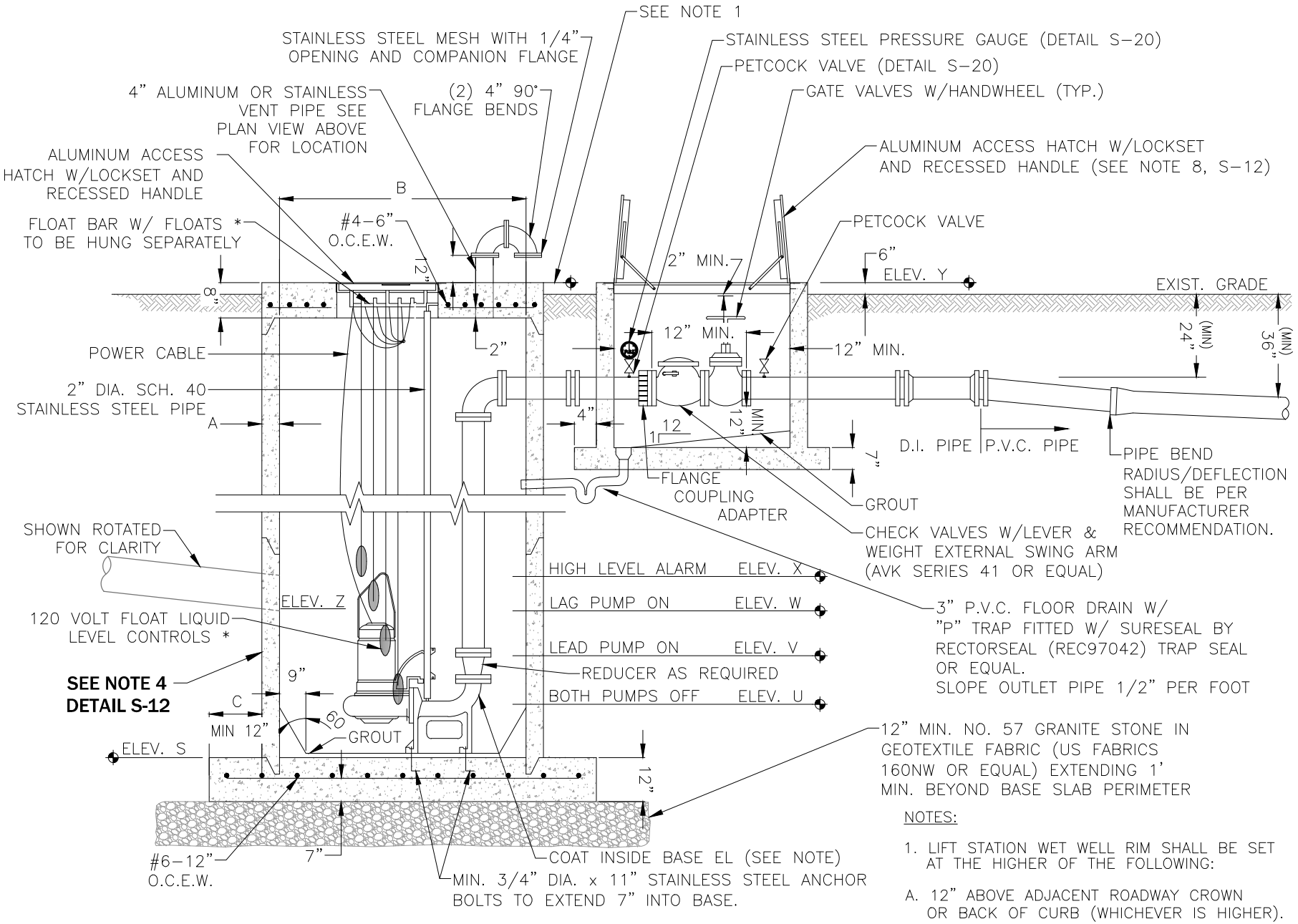
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

PUMP STATION SECTION VIEW

S-11



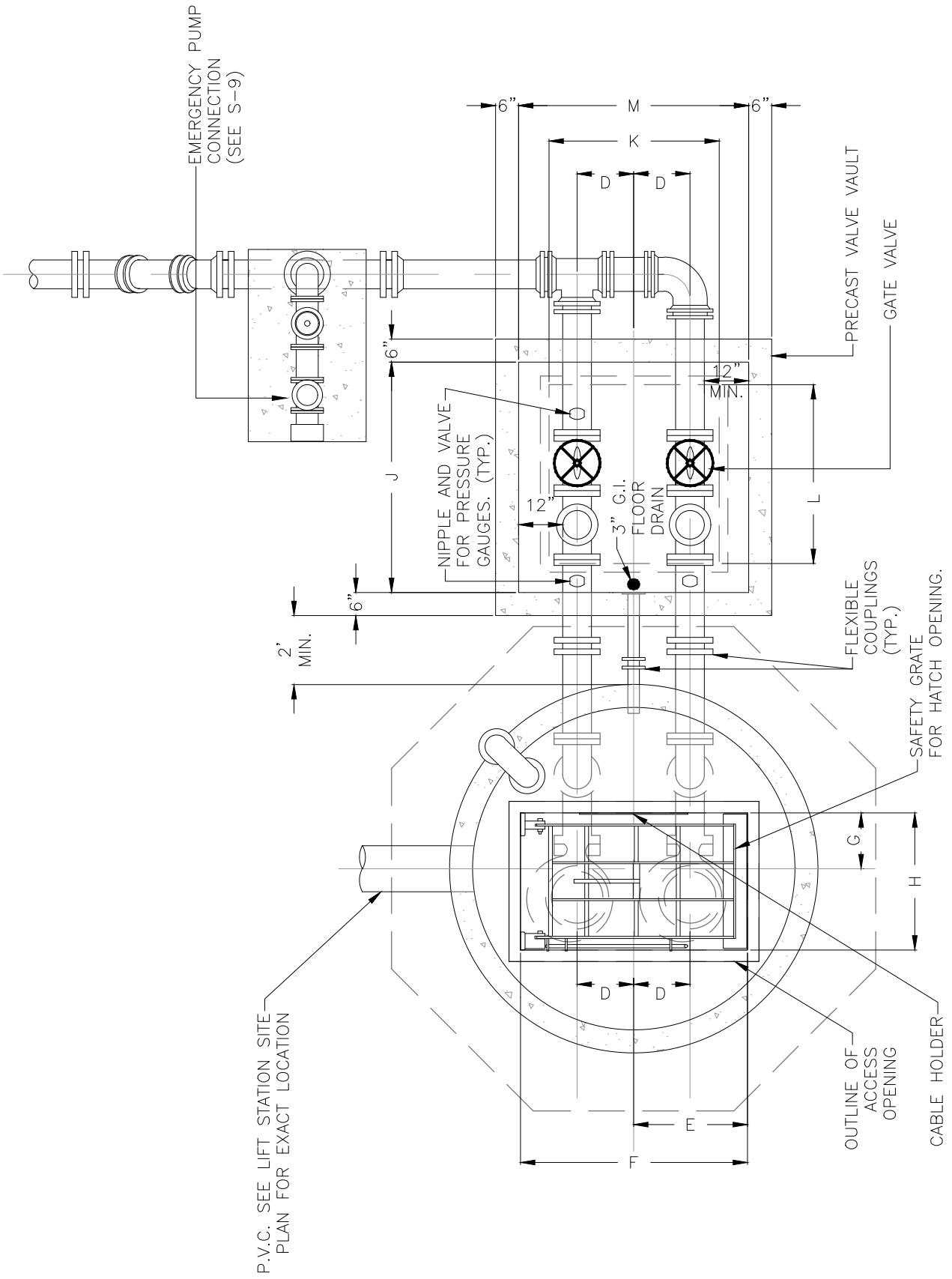
* Y-20MA ULTRASONIC LEVEL INDICATOR IS ALLOWED, MUST BE COMPATIBLE WITH DATA FLOW CONTROLLER.

NOTES:

1. LIFT STATION WET WELL RIM SHALL BE SET AT THE HIGHER OF THE FOLLOWING:

   A. 12" ABOVE ADJACENT ROADWAY CROWN OR BACK OF CURB (WHICHEVER IS HIGHER).

   B. 8" ABOVE PROPOSED FINISHED GRADE.



CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

PUMP STATION PLAN VIEW

S-12

PUMPING STATIONS	DIMENSIONS	ELEV. AT CONST.	PUMPING STATIONS	DIMENSIONS	ELEV. AT CONST.
DIM A		—	DIM L	4'–0" MIN.	—
DIM B		—	ELEV M	4'–8" MIN.	
DIM C		—	ELEV S	—	
DIM D	*	—	ELEV T	—	
DIM E	*	—	ELEV U	—	
DIM F	*	—	ELEV V	—	
DIM G	*	—	ELEV W	—	
DIM H	*	—	ELEV X	—	
DIM J	6'–0" MIN.	—	ELEV Y	—	
DIM K	4'–0" MIN.	—	ELEV Z	—	

* PER PUMP MANUFACTURERS REQUIREMENT

GENERAL NOTES:

1.) ALL EXPOSED METAL SHALL BE PAINTED WITH 2 COATS OF INDUSTRIAL EXTERIOR ENAMEL, GLIDDEN HUNTER GREEN, (HEX#355E3B) OR CITY APPROVED EQUAL.
2.) WET WELL AND VALVE VAULT SHALL BE COATED WITH COAL TAR INSIDE AND OUT EXCEPT TOP SURFACE OF COVERS. (TWO COATS, 9 MILS EACH.)
3.) BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4.) THE WETWELL SHALL BE INSTALLED PLUMB AND WATERTIGHT WITH A MAXIMUM DEVIATION OF 3/16 INCH PER FOOT OF HEIGHT. THE BOTTOM SECTION SHALL BE VERIFIED WITH A SURVEY LEVEL FOR ELEVATION AND PLUMBNESS. DATA MUST BE SUBMITTED TO CITY FOR APPROVAL PRIOR TO SETTING ANY ADDITIONAL RISERS.
5.) VALVE VAULT SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE SPINDLES WITH MINIMUM CLEARANCES AS SHOWN FOR 6" DIAMETER PIPE AND SMALLER. CLEARANCES SHALL INCREASE AS REQUIRED FOR LARGER PIPE SIZES.
6.) VALVE VAULT SHALL HAVE SEALED FLOOR AND DRAIN.
7.) ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON–SHRINK GROUT.
8.) THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN WET WELL.
9.) WET WELL AND VALVE VAULT COVERS SHALL BE ALUMINUM WITH 316 S.S. HARDWARE AND LOCK BRACKET. SIZE AS REQUIRED BY PUMP MANUFACTURER AND APPROVED BY THE CITY.
10.) FLEXIBLE COUPLING SHALL BE SLEEVE TYPE.
11.) PUMPS SHALL BE:

MANUFACTURER: HOMA; MODEL: _____; IMP: _____; DIA: _____;
MM, SPEED: _____ RPM; DISCHARGE SIZE: _____ IN.; VOLTAGE: _____;
HZ.: _____; PHASE: _____; H.P.: _____;
MIN. SOLID SIZE: _____ IN.; CURVE: _____.

MANUFACTURER: HCP; MODEL: _____; IMP: _____; DIA: _____;
MM, SPEED: _____ RPM; DISCHARGE SIZE: _____ IN.; VOLTAGE: _____;
HZ.: _____; PHASE: _____; H.P.: _____;
MIN. SOLID SIZE: _____ IN.; CURVE: _____.

MANUFACTURER: FLYGT; MODEL: _____; IMP: _____; DIA: _____;
MM, SPEED: _____ RPM; DISCHARGE SIZE: _____ IN.; VOLTAGE: _____;
HZ.: _____; PHASE: _____; H.P.: _____;
MIN. SOLID SIZE: _____ IN.; CURVE: _____.

12.) OPERATING CONDITIONS SHALL BE _____ GPM AT _____ FEET TDH.
13.) ALL NUTS, BOLTS, WASHERS, ETC. IN WET WELL AND VALVE BOX TO BE 316L STAINLESS STEEL.

14.) APPLY TWO COATS OF CERAMIC EPOXY ON THE ENTIRE INSIDE OF EACH BASE ELBOW IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS INCLUDING COATING THICKNESS. SURFACE PREPARATION SHALL ALSO BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. ACCEPTABLE COATINGS ARE BELZONA CERAMIC CARBIDE NO. 1811 OR ENGINEER APPROVED EQUAL.

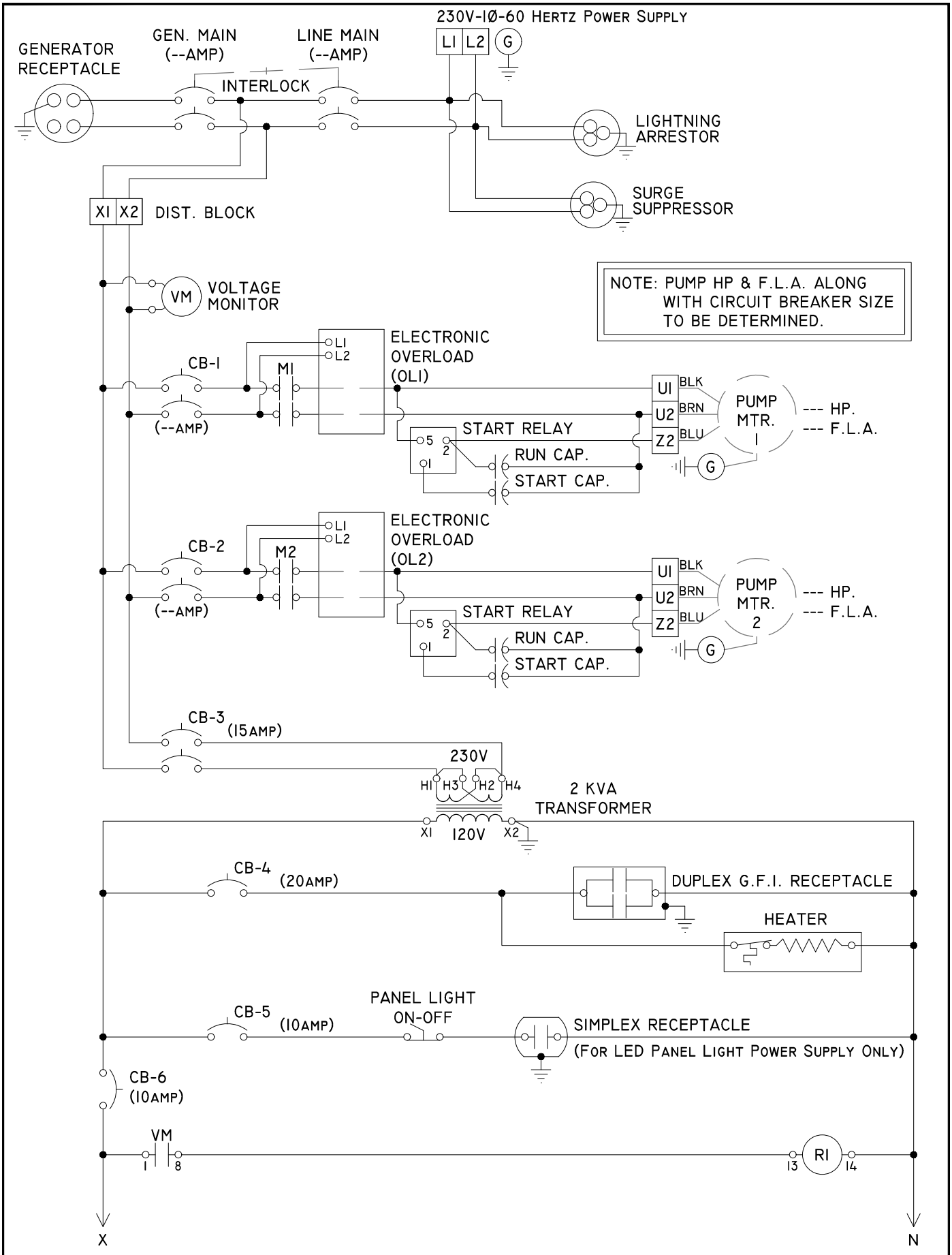
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

..... DATE OF APPROVAL

PUMP STATION NOTES AND TABLE

S–13



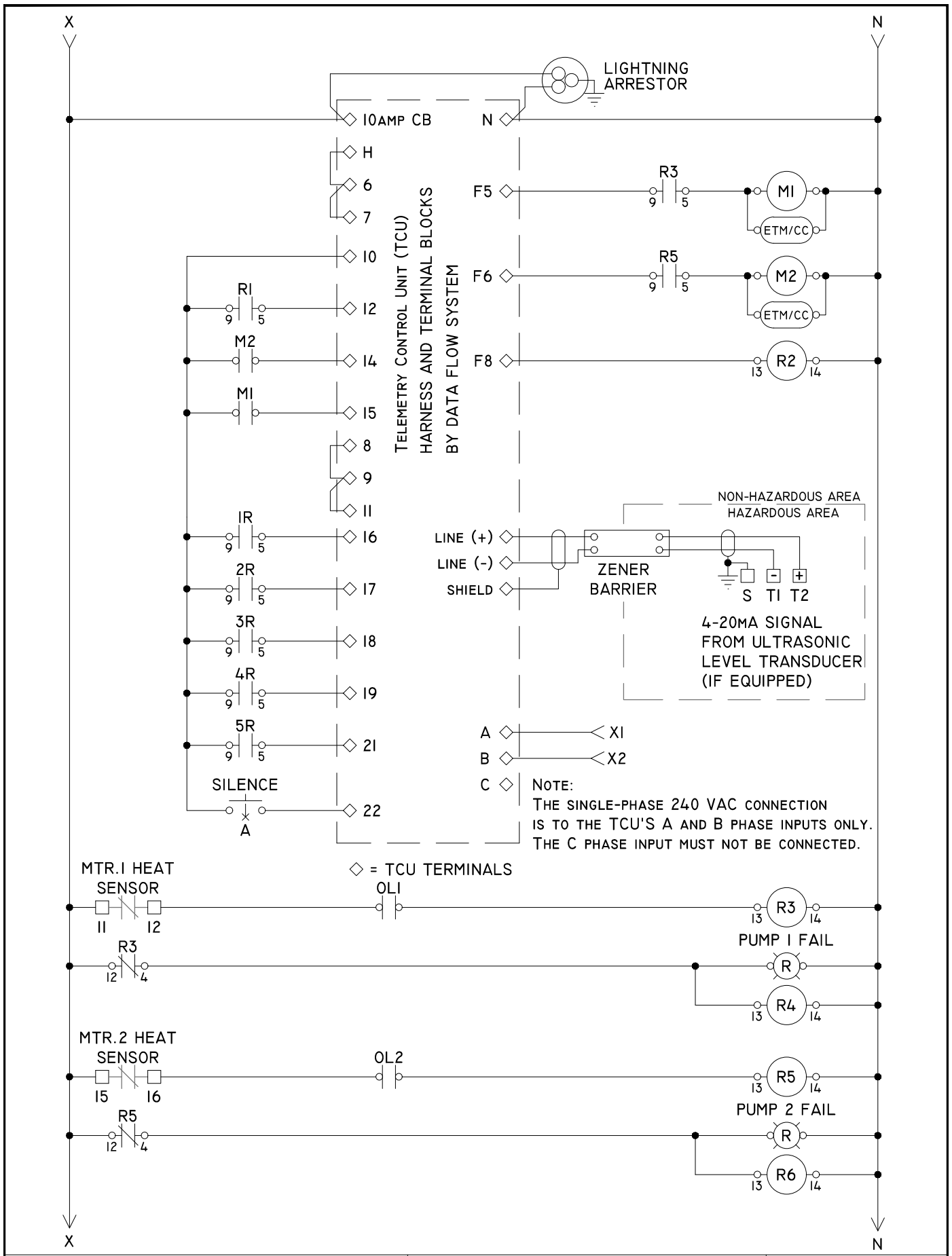
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

1PH DUPLEX PUMP CONTROL PANEL

S-14A



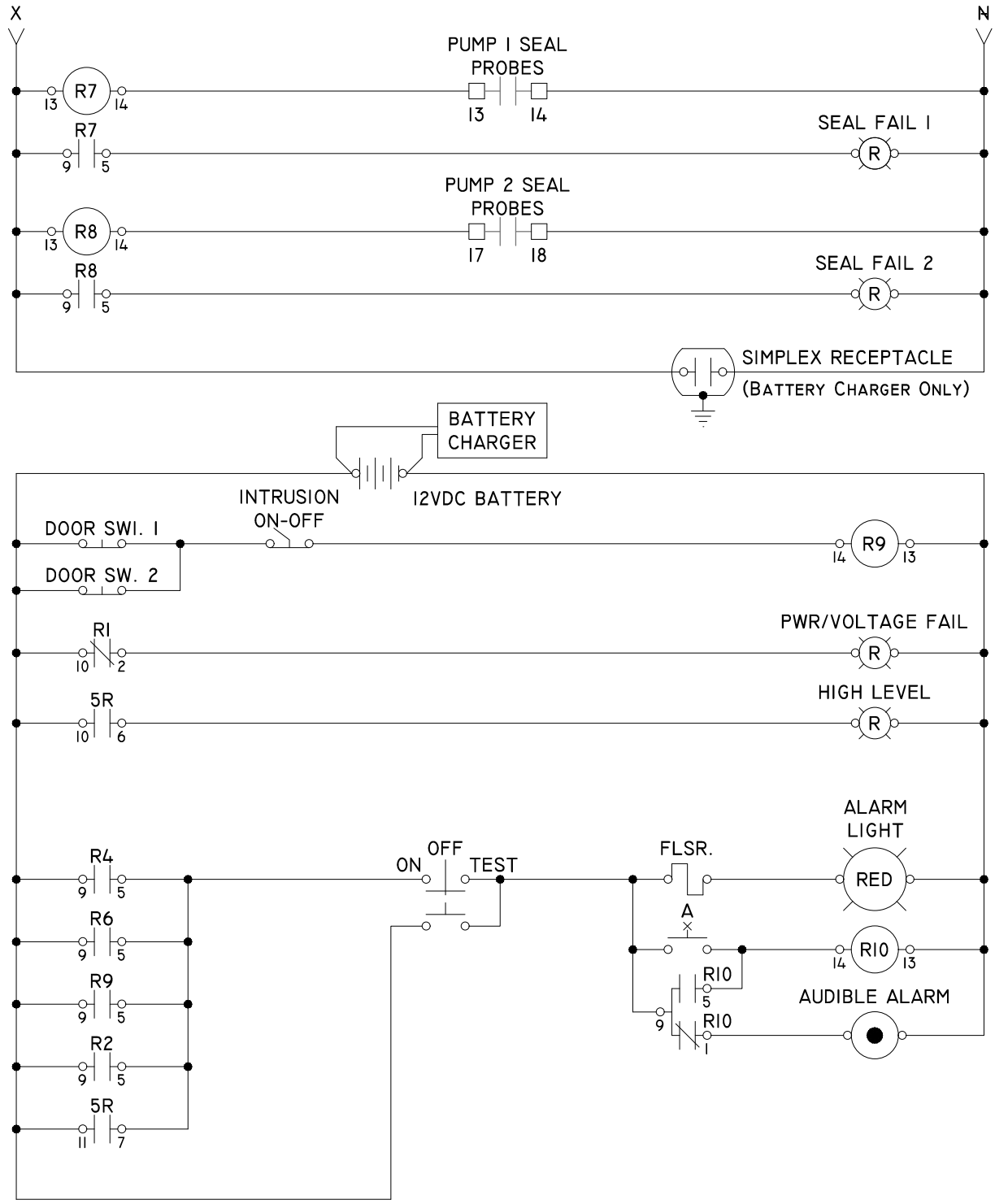
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

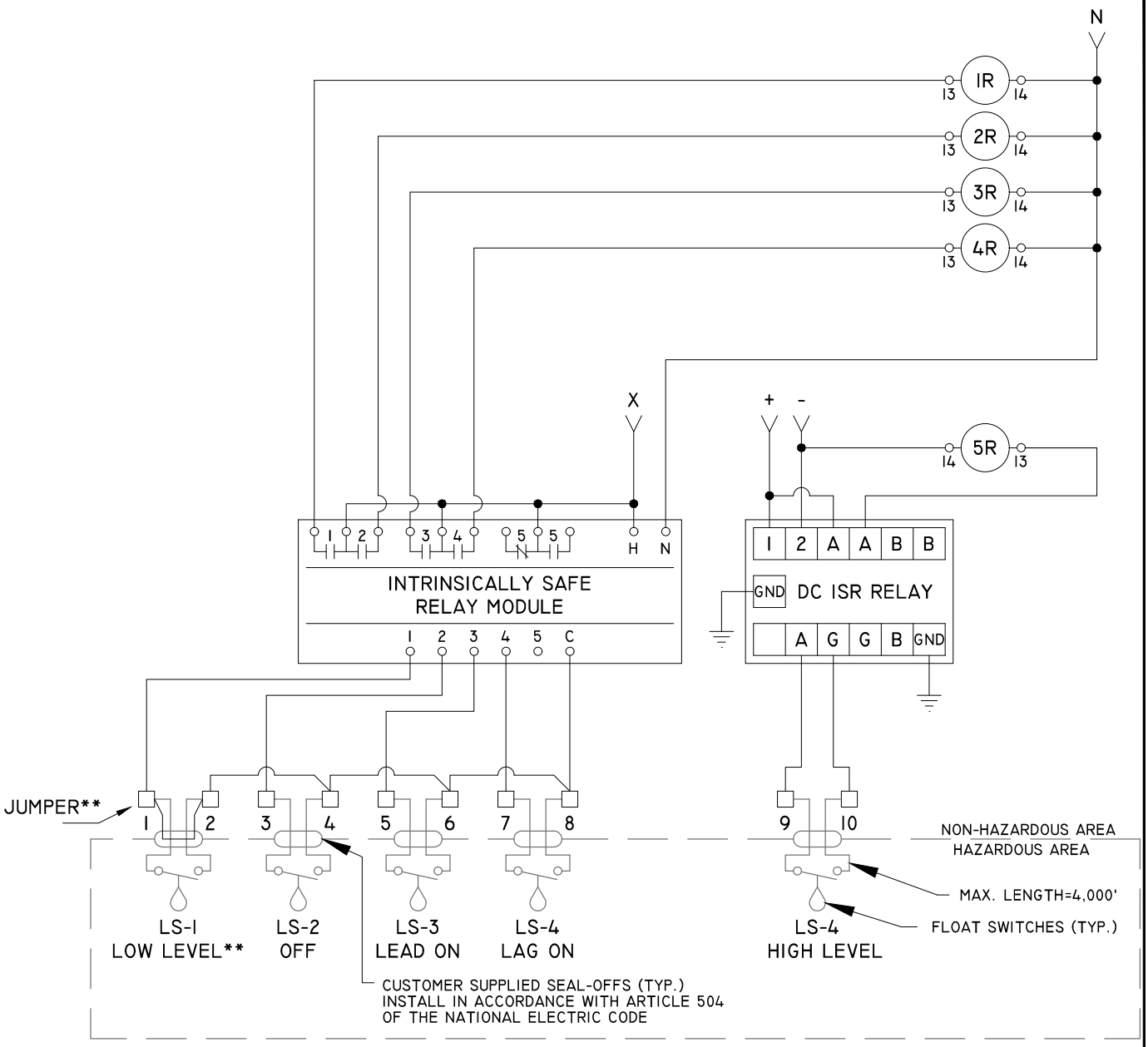
DATE OF APPROVAL

1PH DUPLEX PUMP CONTROL PANEL

S-14B

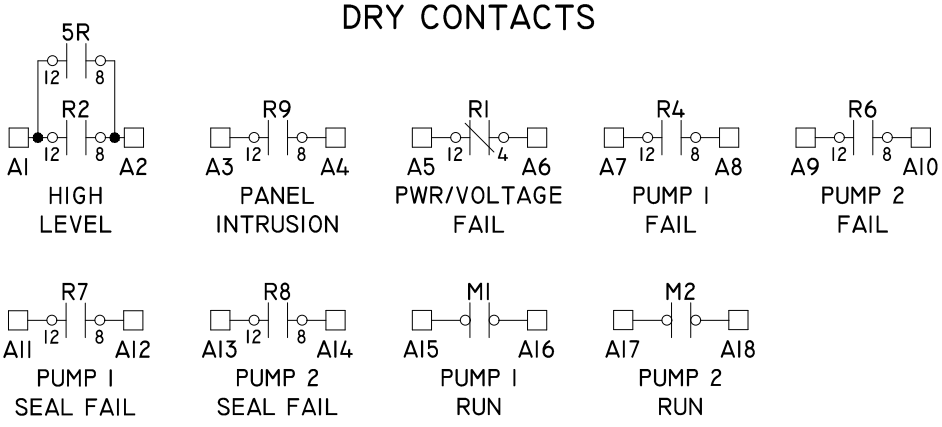


CITY OF MEXICO BEACH UTILITIES DEPARTMENT			1PH DUPLEX PUMP CONTROL PANEL	S-14C
REV.	DATE	..... DATE OF APPROVAL		

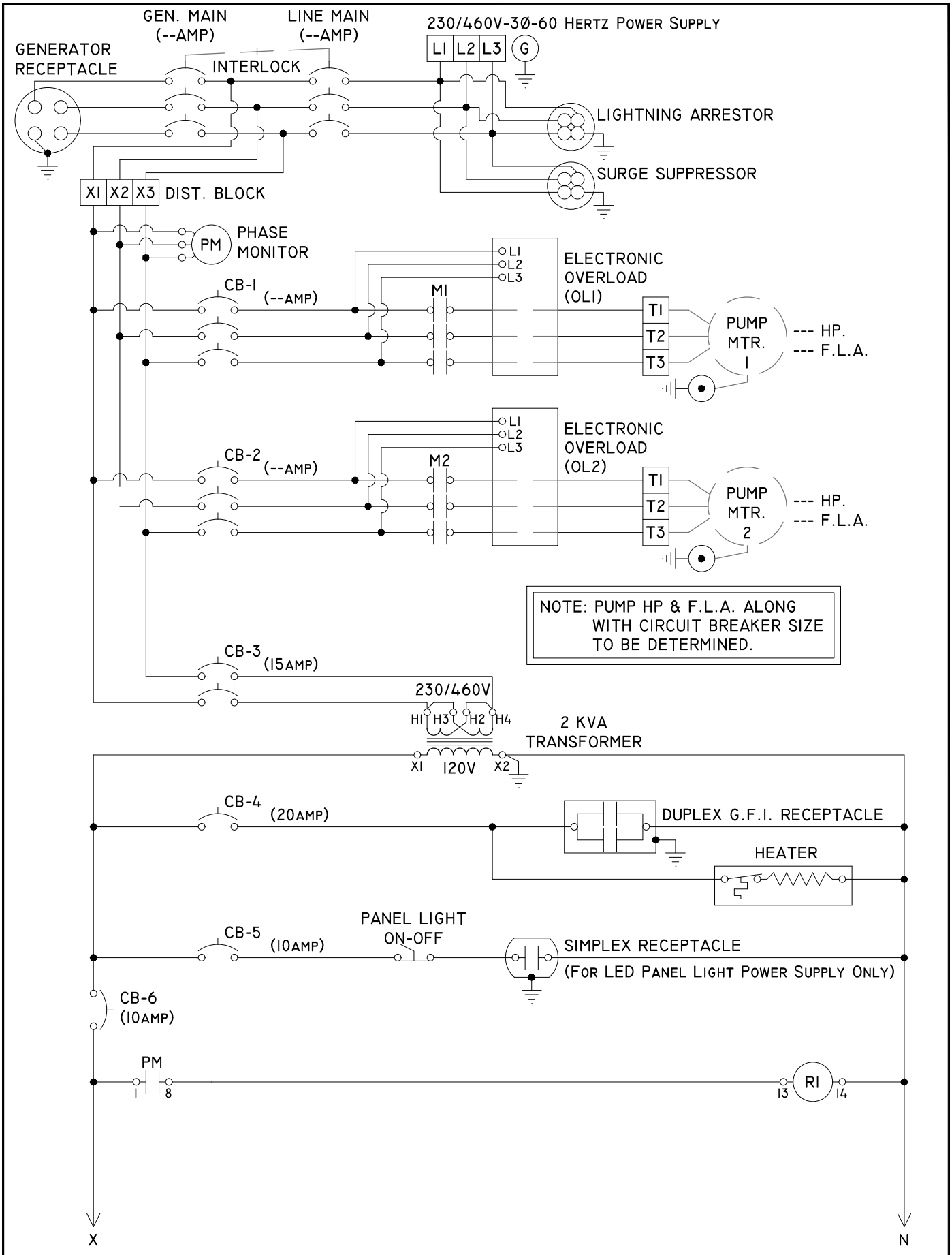


** IF A LOW LEVEL FLOAT IS SUPPLIED REMOVE JUMPER AND CONNECT FLOAT TO TERMINAL BLOCK 1 & 2

DRY CONTACTS



CITY OF MEXICO BEACH UTILITIES DEPARTMENT			1PH DUPLEX PUMP CONTROL PANEL	S-14D
REV.	DATE			
		..... DATE OF APPROVAL		



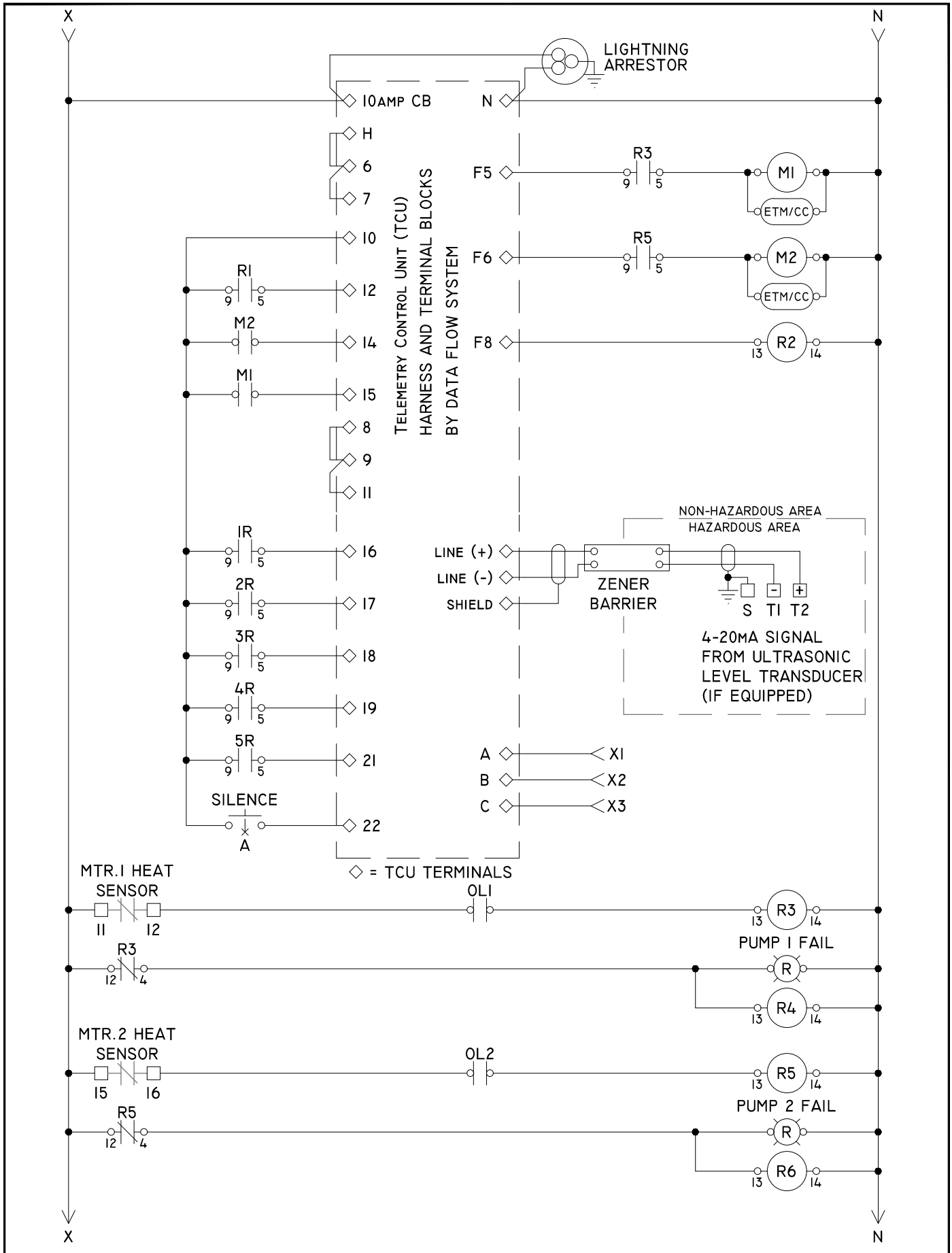
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

3PH DUPLEX PUMP CONTROL PANEL

S-15A



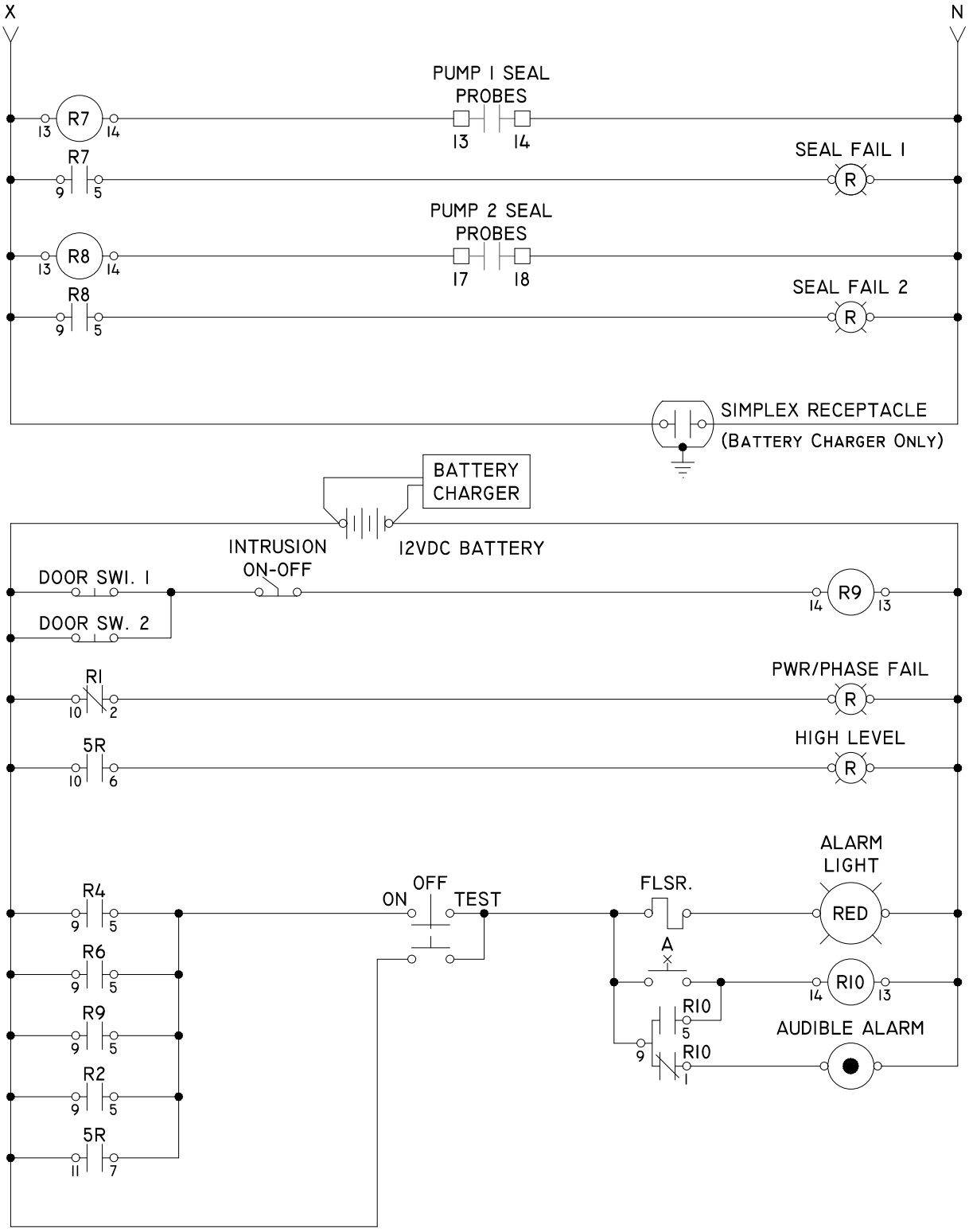
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

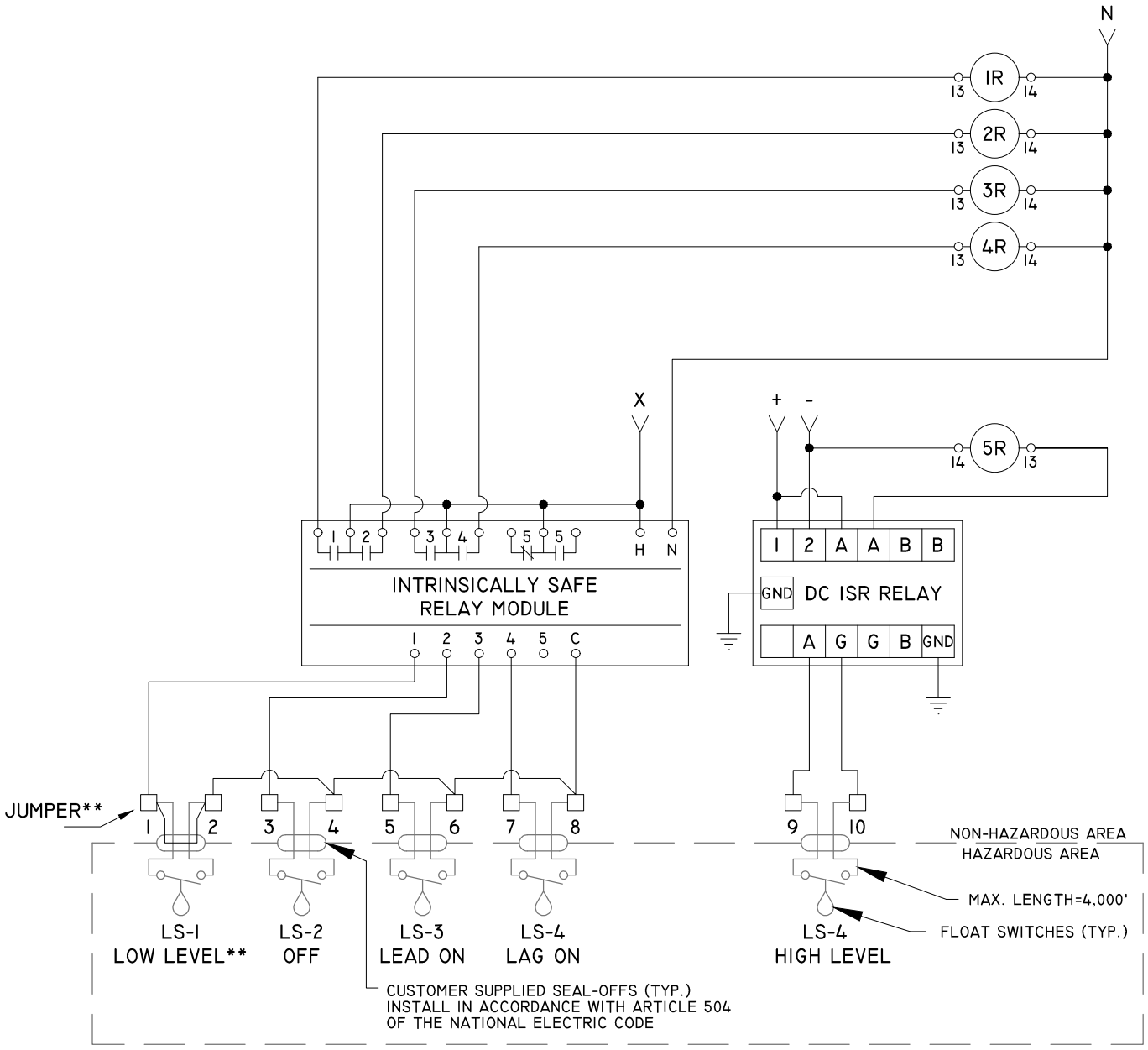
DATE OF APPROVAL

3PH DUPLEX PUMP CONTROL PANEL

S-15B

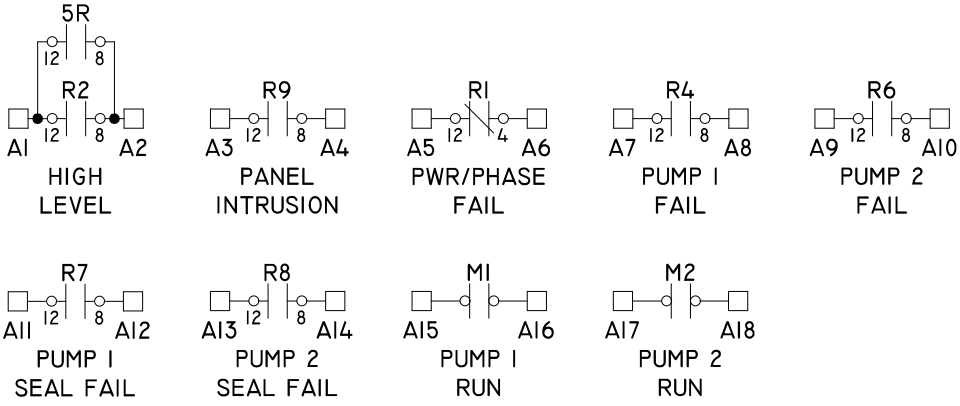


CITY OF MEXICO BEACH UTILITIES DEPARTMENT			3PH DUPLEX PUMP CONTROL PANEL	S-15C
REV.	DATE	..... DATE OF APPROVAL		

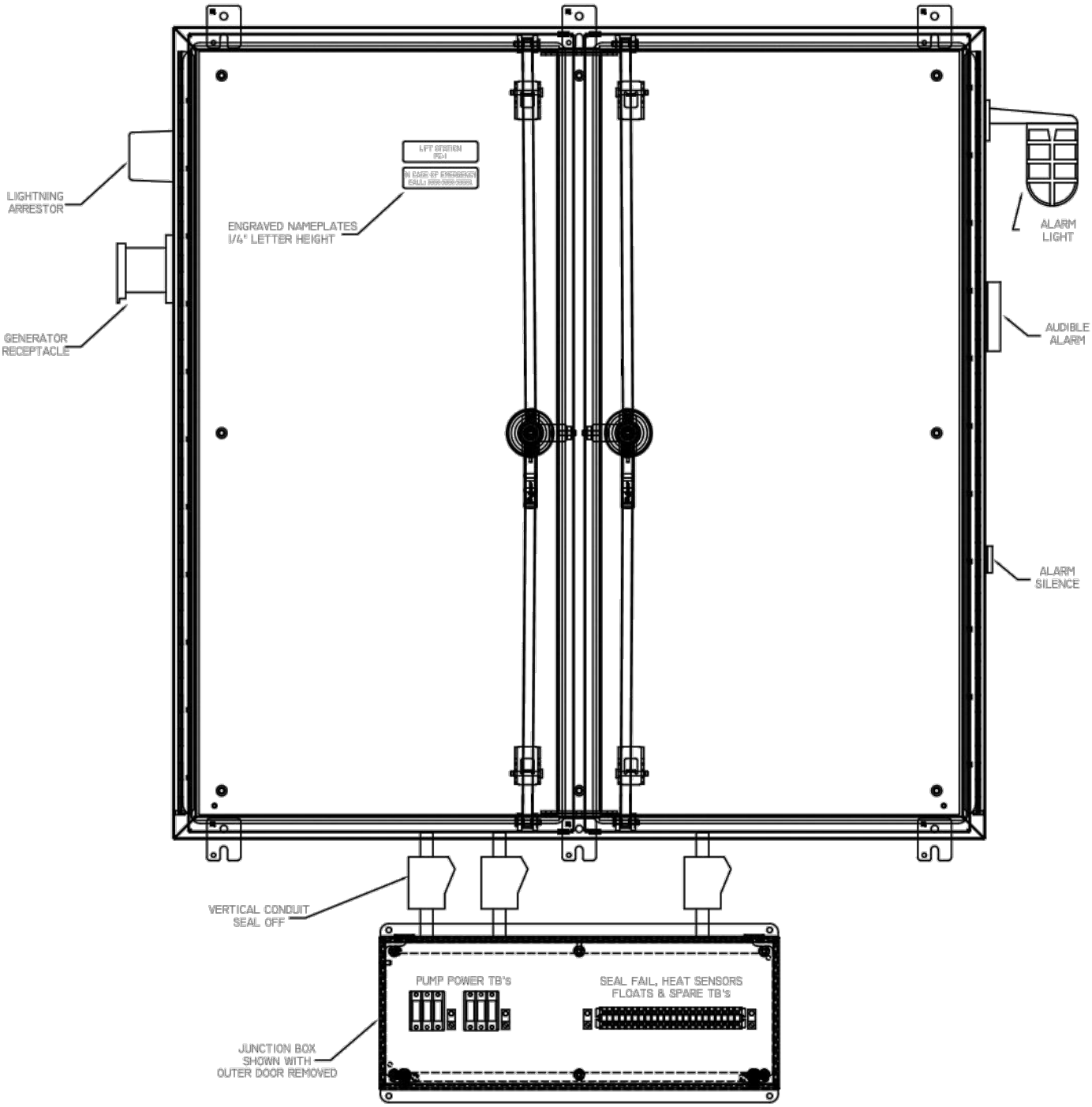


** IF A LOW LEVEL FLOAT IS SUPPLIED REMOVE JUMPER AND CONNECT FLOAT TO TERMINAL BLOCK 1 & 2

DRY CONTACTS



CITY OF MEXICO BEACH UTILITIES DEPARTMENT			3PH DUPLEX PUMP CONTROL PANEL	S-15D
REV.	DATE			
		DATE OF APPROVAL		



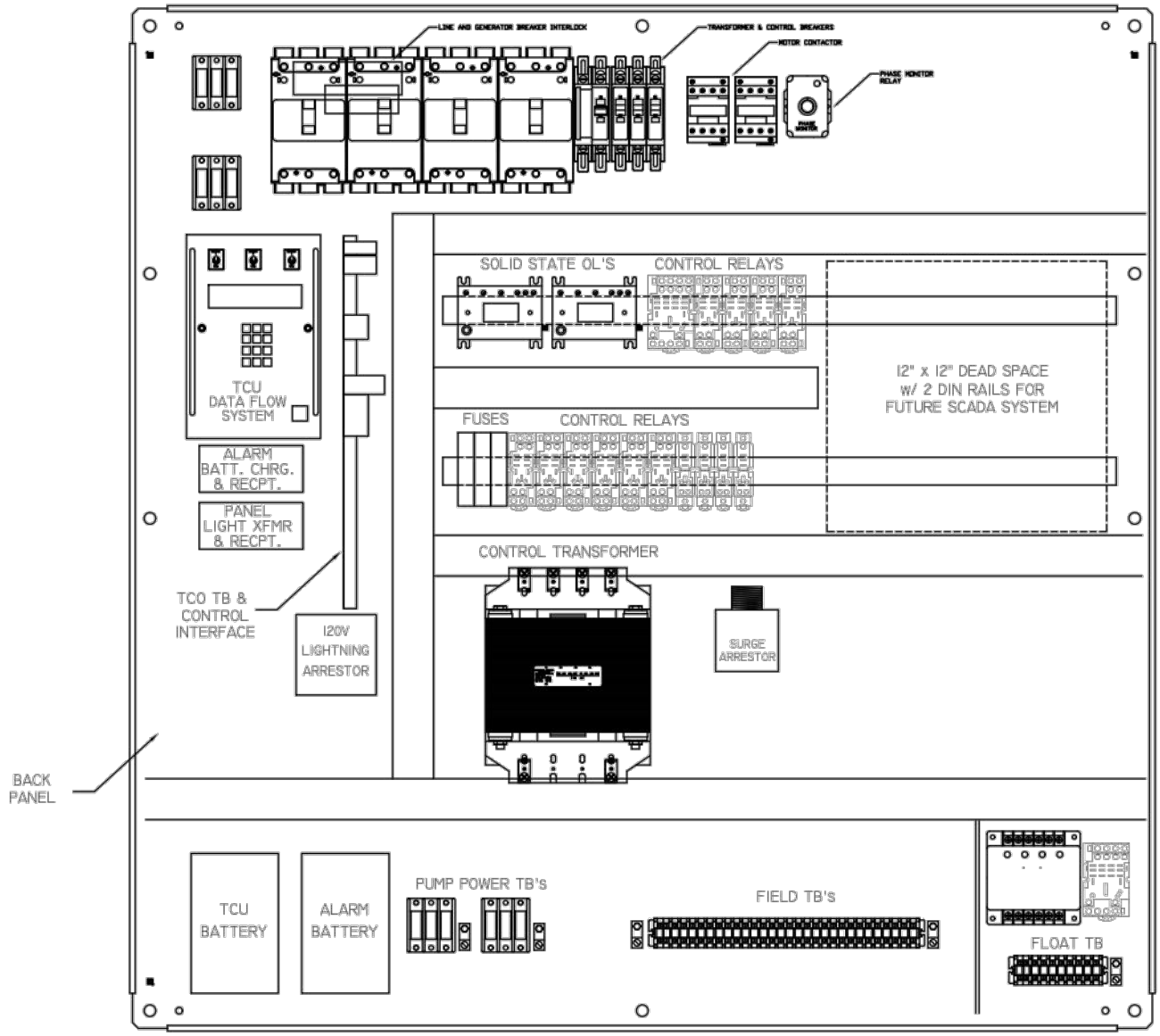
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

PUMP STATION CONTROL PANEL

S-16A



CITY OF MEXICO BEACH

UTILITIES DEPARTMENT

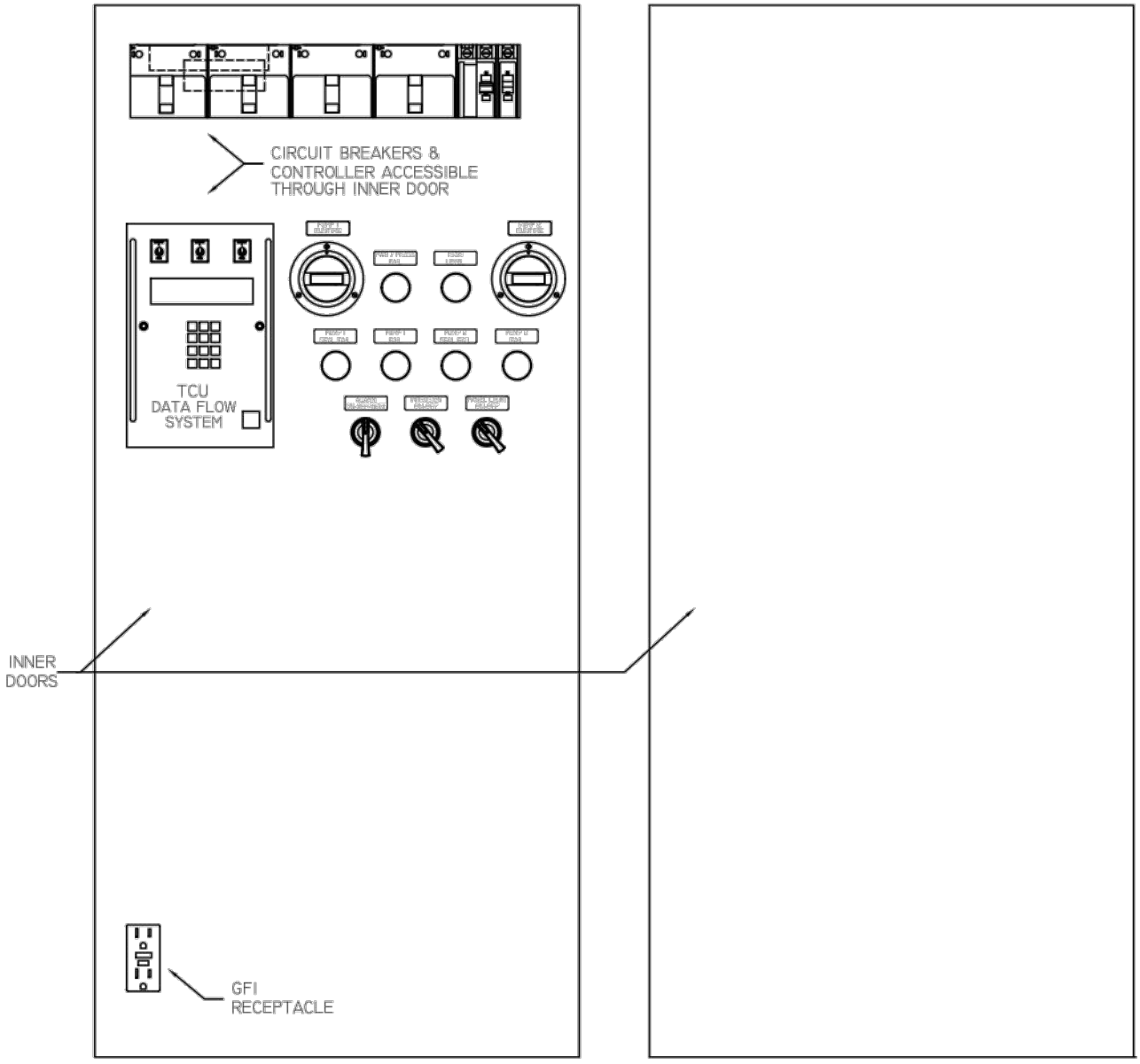
REV.	DATE

.....

DATE OF APPROVAL

PUMP STATION CONTROL PANEL

S-16B



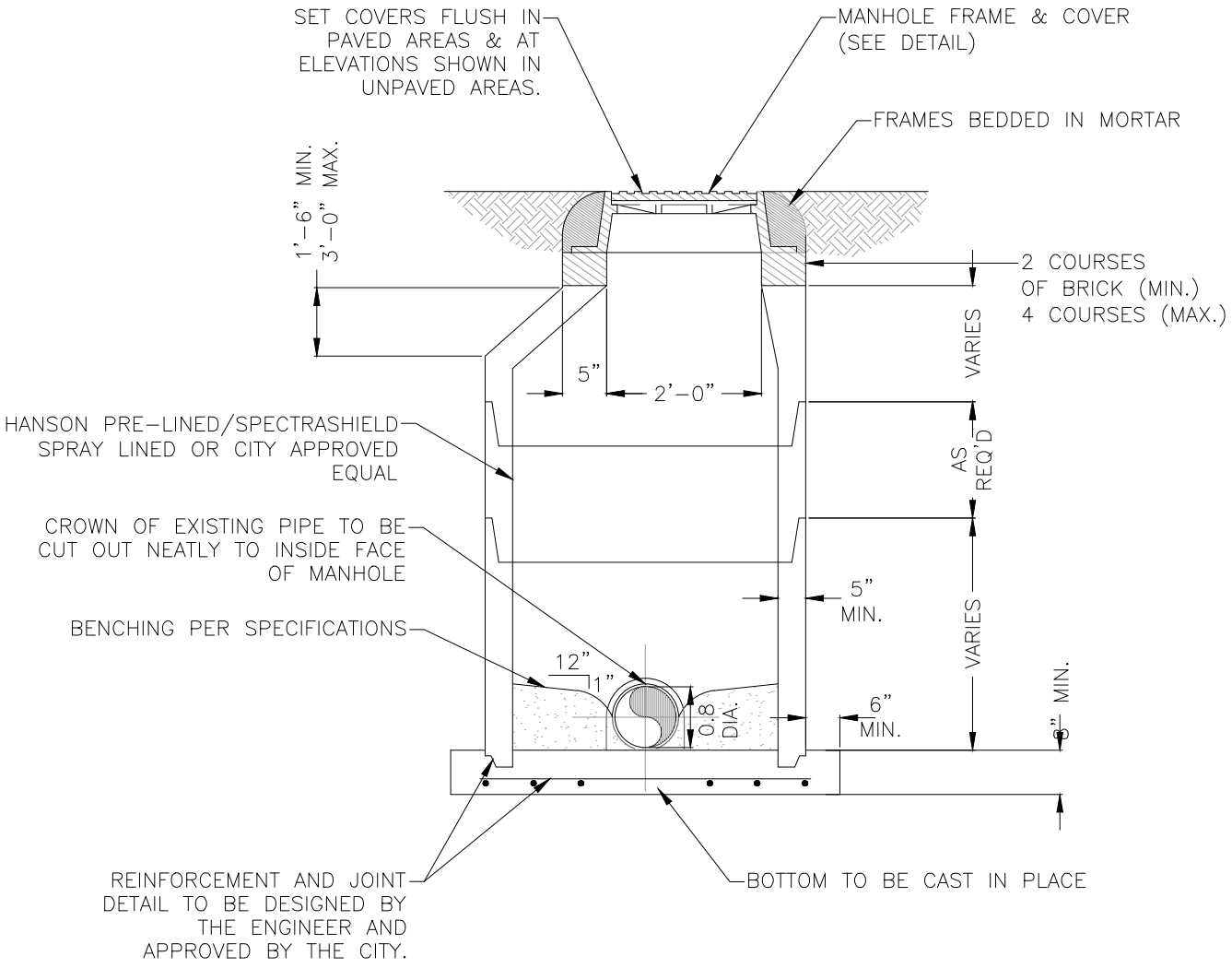
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

PUMP STATION
CONTROL PANEL

S-16C



NOTES:

1.) MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY.

2.) DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.

3.) APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.

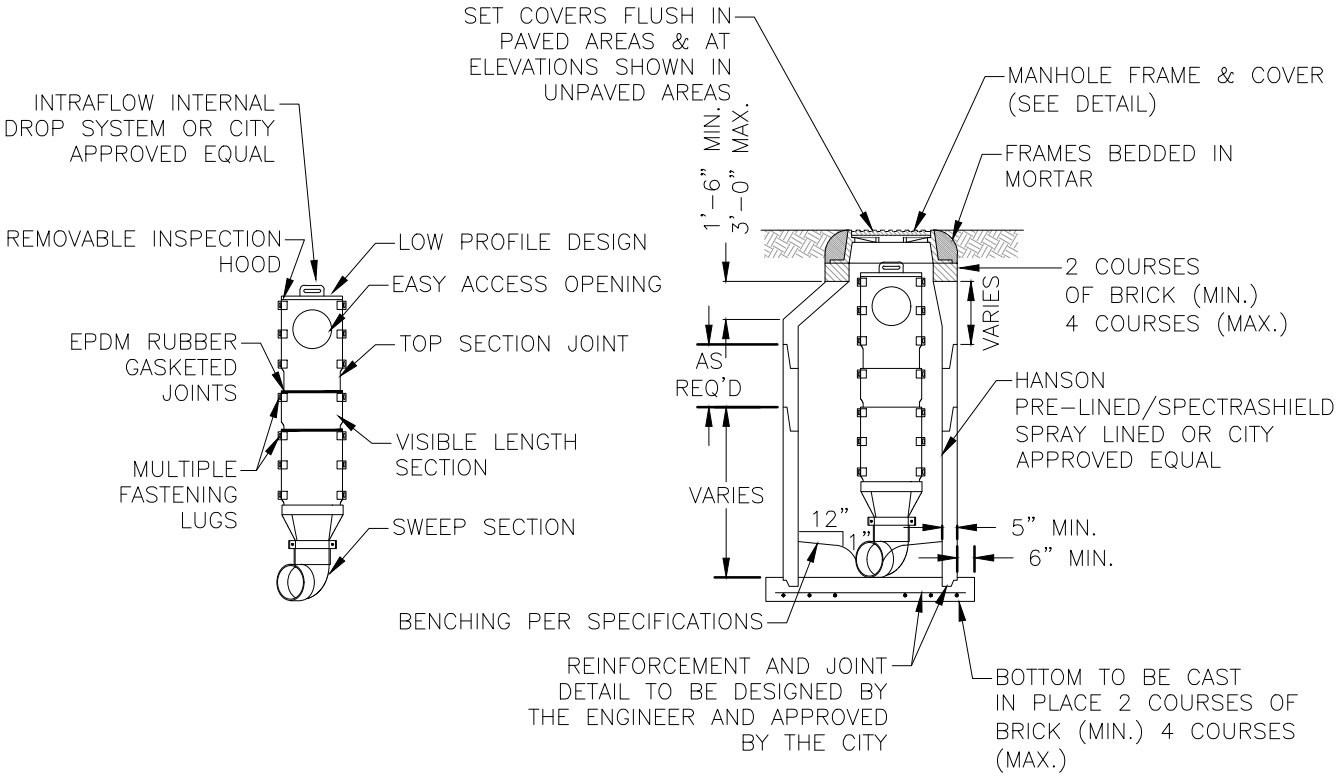
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

DOGHOUSE MANHOLE DETAIL

S-17

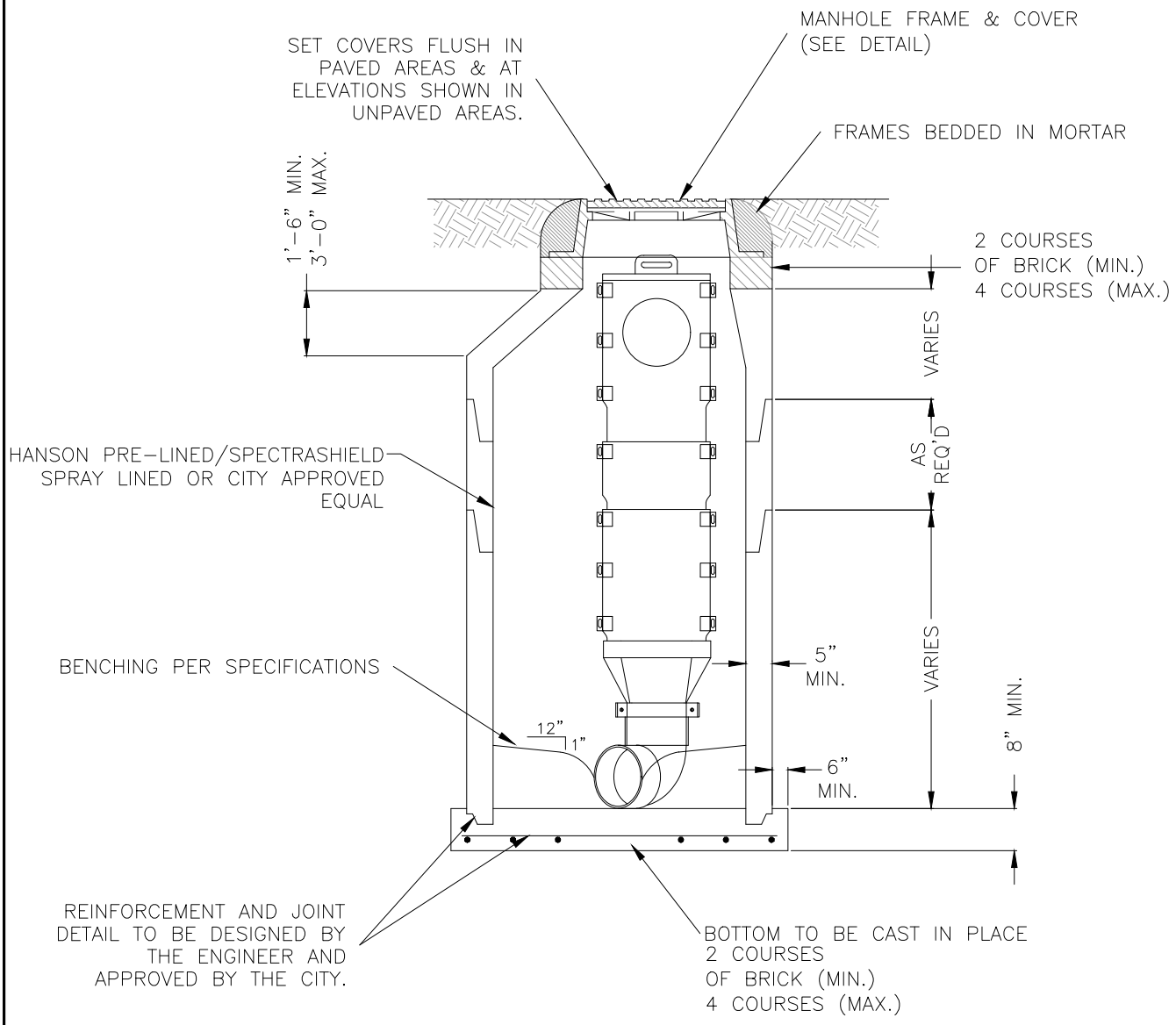


NOTES:

1. MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY.
2. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.
3. APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.

THE INTRAFLOW INTERNAL DROP SYSTEM SHALL BE A ROTATIONAL MOLDED; SECTIONAL ENCLOSURE MADE OF POLYETHYLENE (PE). THE INSIDE DROP ASSEMBLY SHALL CONTAIN, AND DIRECT SEWAGE FLOW FROM THE UPPER PORTION OF THE MANHOLE TO THE INVERT CHANNEL. THE SECTIONS SHALL BE OF LOW PROFILE DESIGN WITH MOLDED FASTENING LUGS CONFORMING TO THE INSIDE MANHOLE WALL. THE INTERMEDIATE SECTIONS SHALL BE SUPPLIED IN THREE AND FOUR FOOT SECTIONS. THE TOP SECTION SHALL HAVE A 9" ADJUSTMENT JOINT AT THE BOTTOM AND REMOVABLE INSPECTION HOOD AT THE TOP. THE INSIDE OF THE TOP SECTION SHALL HAVE AN OPENING FOR 4" THROUGH 12" PIPE ENTRY. THE OUTSIDE OF THE TOP SECTION SHALL HAVE A NOMINAL 13" INSPECTION / CLEANOUT OPENING. THE BOTTOM SECTION SHALL BE ELONGATED AT THE TOP WITH A TRANSITION TO A 10" ROUND PIPE AT THE BOTTOM. A 90° 10" PVC SWEEP SHALL ATTACH TO THE BOTTOM TRANSITION SECTION. SECTIONS SHALL BE SECURED TO THE MANHOLE WALL THROUGH THE FASTENING LUGS USING TYPE 302 OR 304 STAINLESS STEEL ANCHOR BOLT ASSEMBLIES.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	DROP MANHOLE DETAIL	S-18



NOTES:

1. MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY.
2. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.
3. APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

DROP MANHOLE DETAIL

S-19

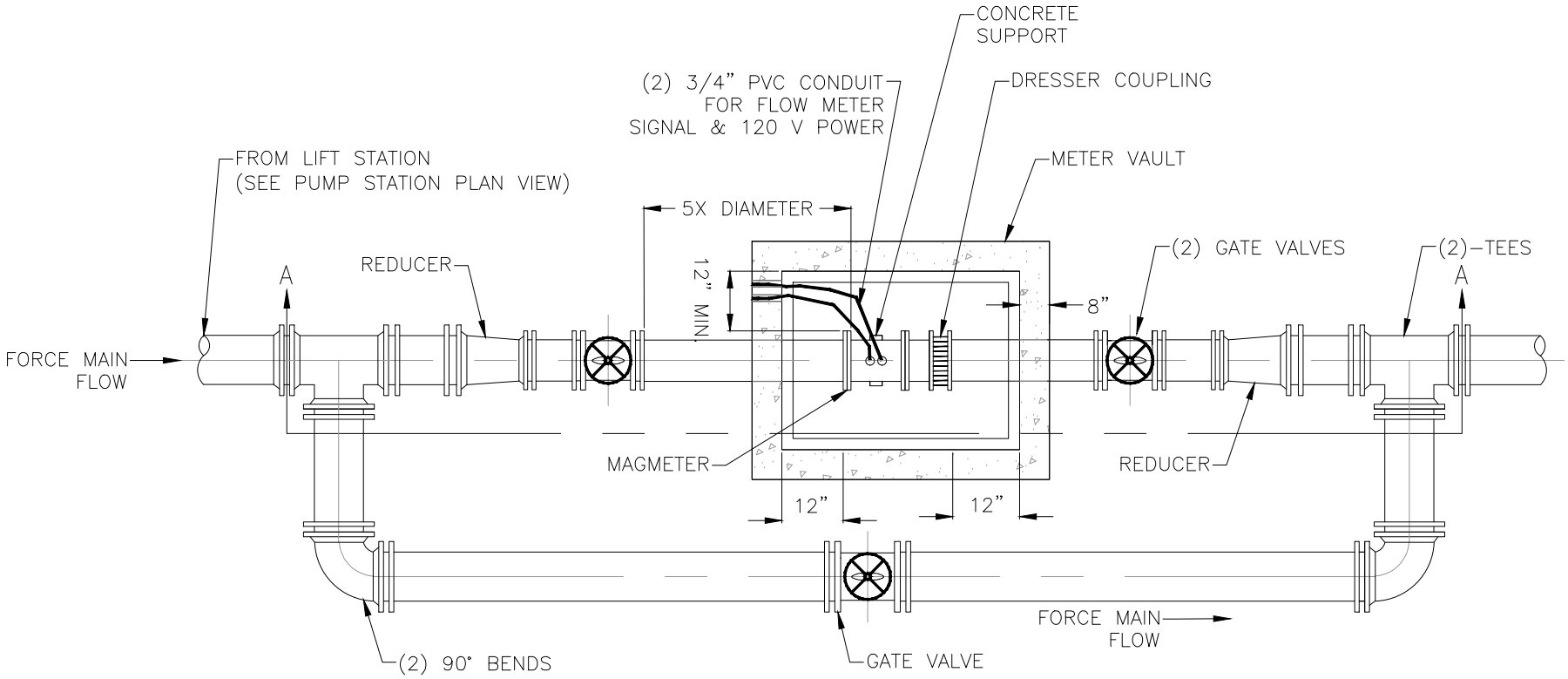
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

SEWER FLOW
METER PLAN VIEW

S-20



FLOW METER PLAN VIEW

* METER ONLY REQUIRED IF GOING INTO FORCE MAIN ON TYNDALL AND WILL NOT GO THROUGH MEXICO BEACH MASTER LIFT STATION.

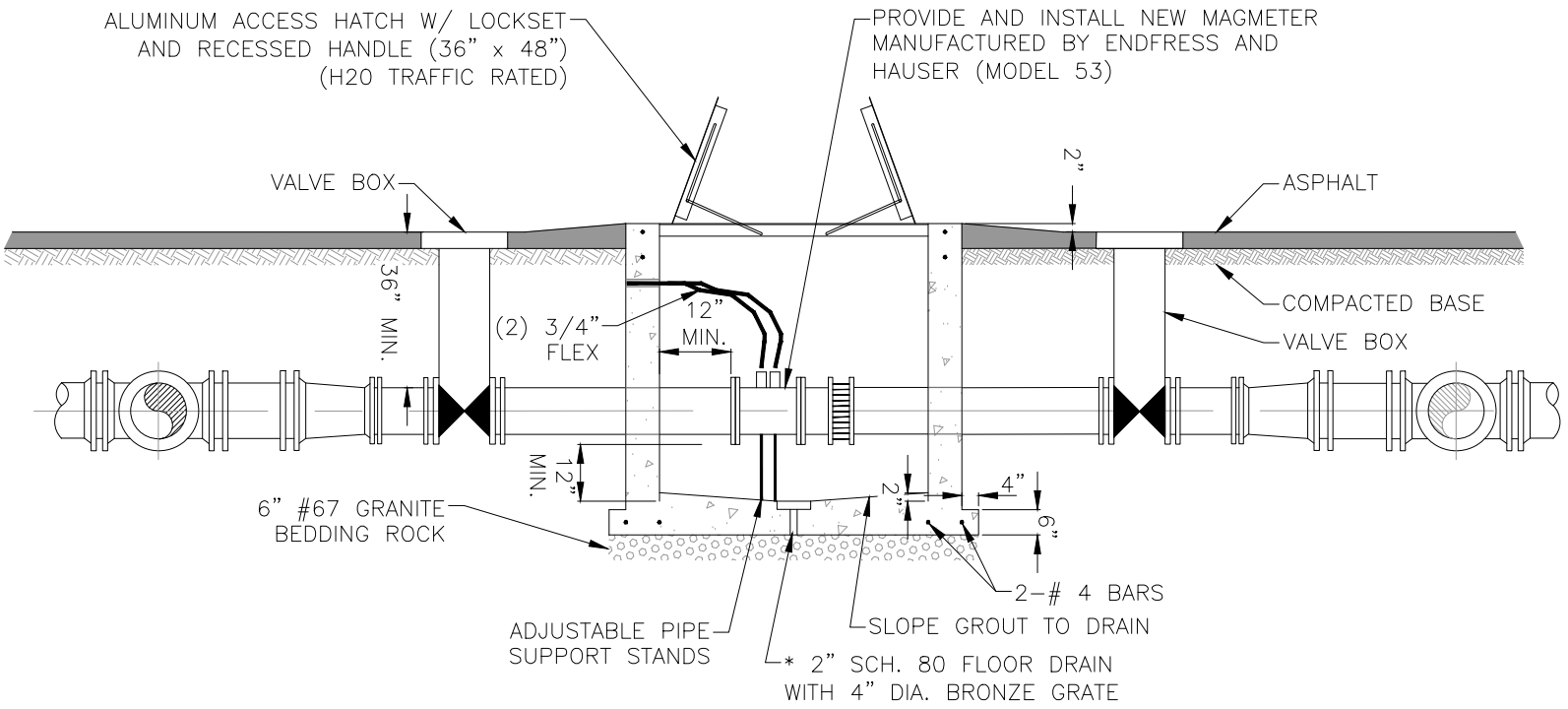
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

SEWER FLOW
METER SECTION

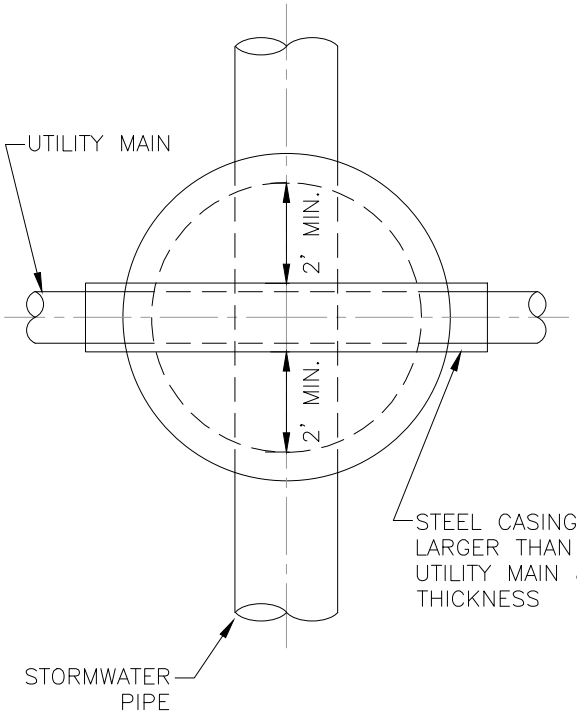
S-21



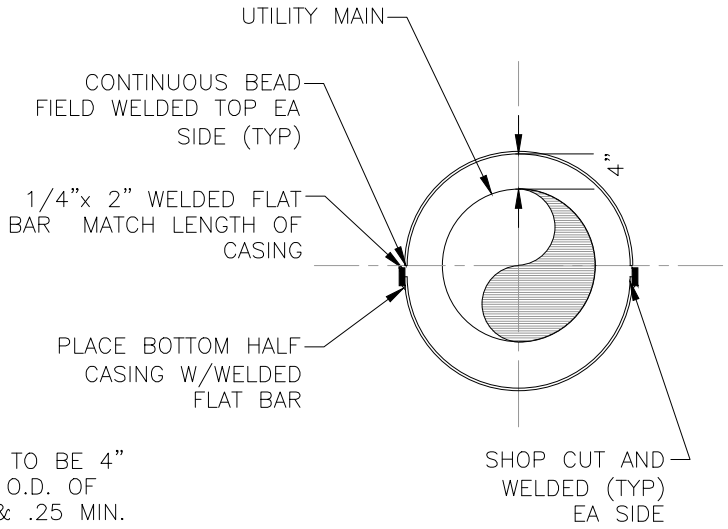
SECTION "A-A"

* AREAS W/ HIGH WATER TABLE SHALL HAVE SUMP PUMP IN LIEU OF DRAIN

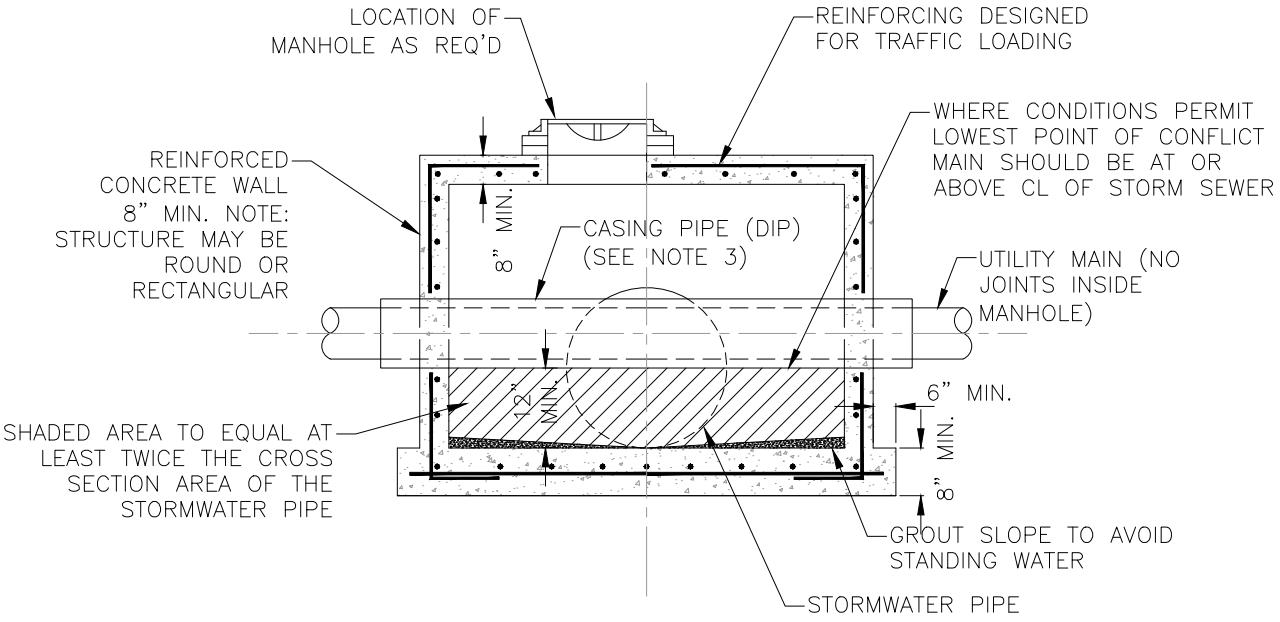
* METER ONLY REQUIRED IF GOING INTO FORCE MAIN ON TYNDALL AND WILL NOT GO THROUGH MEXICO BEACH MASTER LIFT STATION.



PLAN VIEW
N.T.S.



SPLIT SLEEVE CASING PIPE SECTION
N.T.S.



NOTES:
1. CONFLICT MANHOLE WILL BE ALLOWED WHERE DESIGN PROBLEMS AND ECONOMICS PROVE THEM TO BE THE ONLY VIABLE SOLUTION AS APPROVED BY THE THE ENGINEER AND OWNERS.
2. CONFLICT MANHOLES WILL NOT BE ALLOWED FOR WATER MAINS CROSSING GRAVITY WASTEWATER SYSTEMS.
3. WHEN NECESSARY FOR EXISTING UTILITY MAINS, THE CARRIER PIPE SHALL BE SPLIT SLEEVED STEEL CASING. (SEE DETAIL)

CONFLICT MANHOLE
N.T.S.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

CONFLICT MANHOLE DETAIL

S-22

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

GRINDER PUMP SERVICE DETAIL

S-23

NOTES:

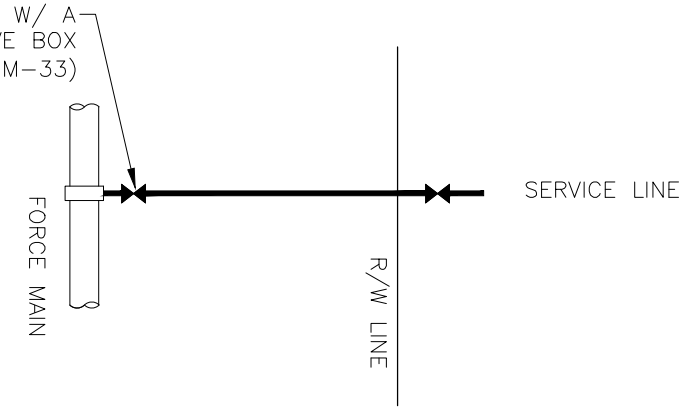
1.) ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.

2.) NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.

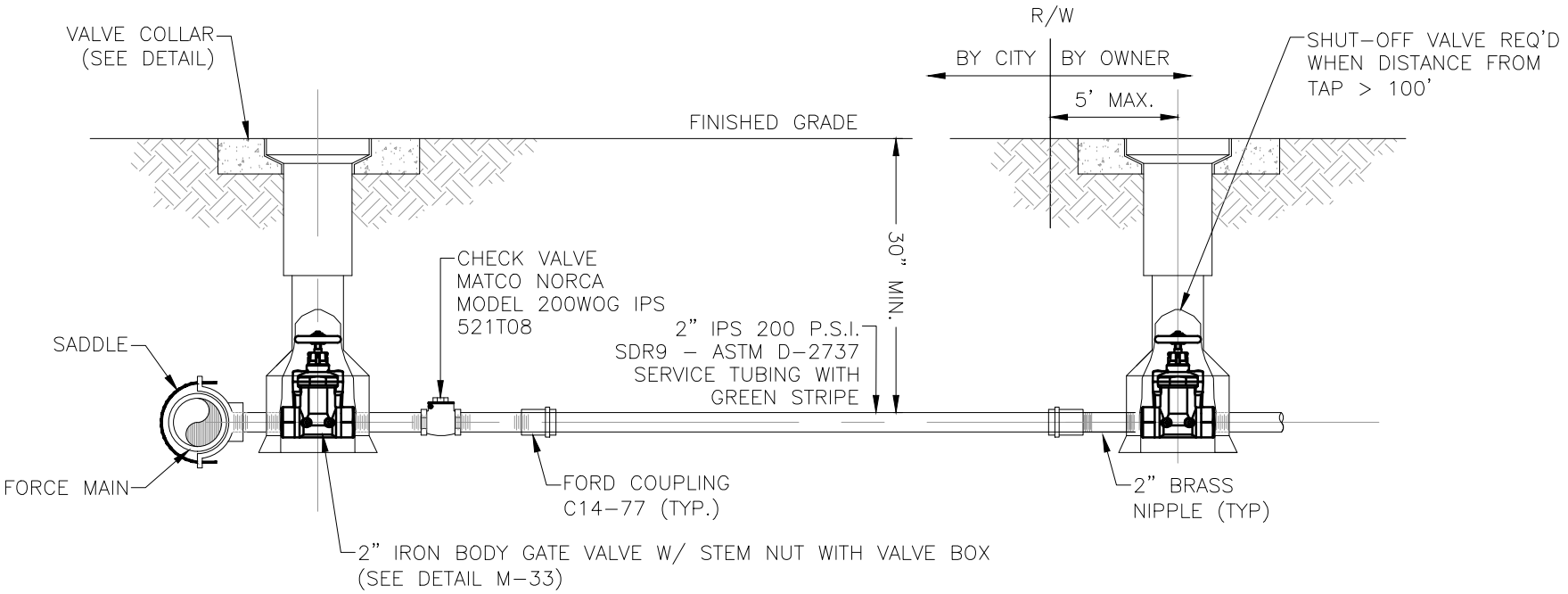
3.) TAPPING SADDLE: SHALL BE MODEL FC202 FORD METER BOX CO., INC. WITH EPOXY GATED BODY (NSF 61) AND 304 SS BAND AND HARDWARE. ALL OUTLETS SHALL BE IRON PIPE THREAD.

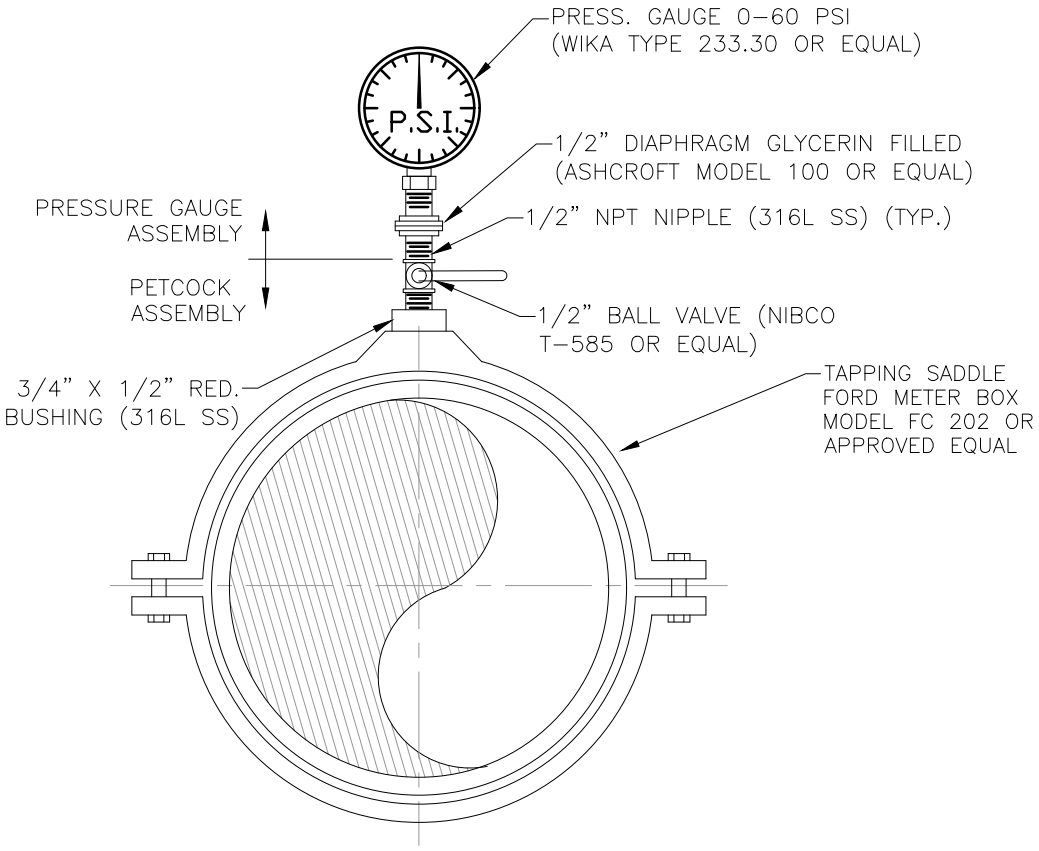
4.) ALL SERVICE TAPS TO BE LOCATED IN FIELD. TAPS SHALL BE NO CLOSER THAN 36" APART AND NOT WITHIN 24" FROM BACK OF PIPE BELL OR SPIGOT INSERTION LINE.

5.) TAPS SHALL NOT BE SET IN DRAINAGE SWALES, EASEMENTS, OR SIDEWALKS.

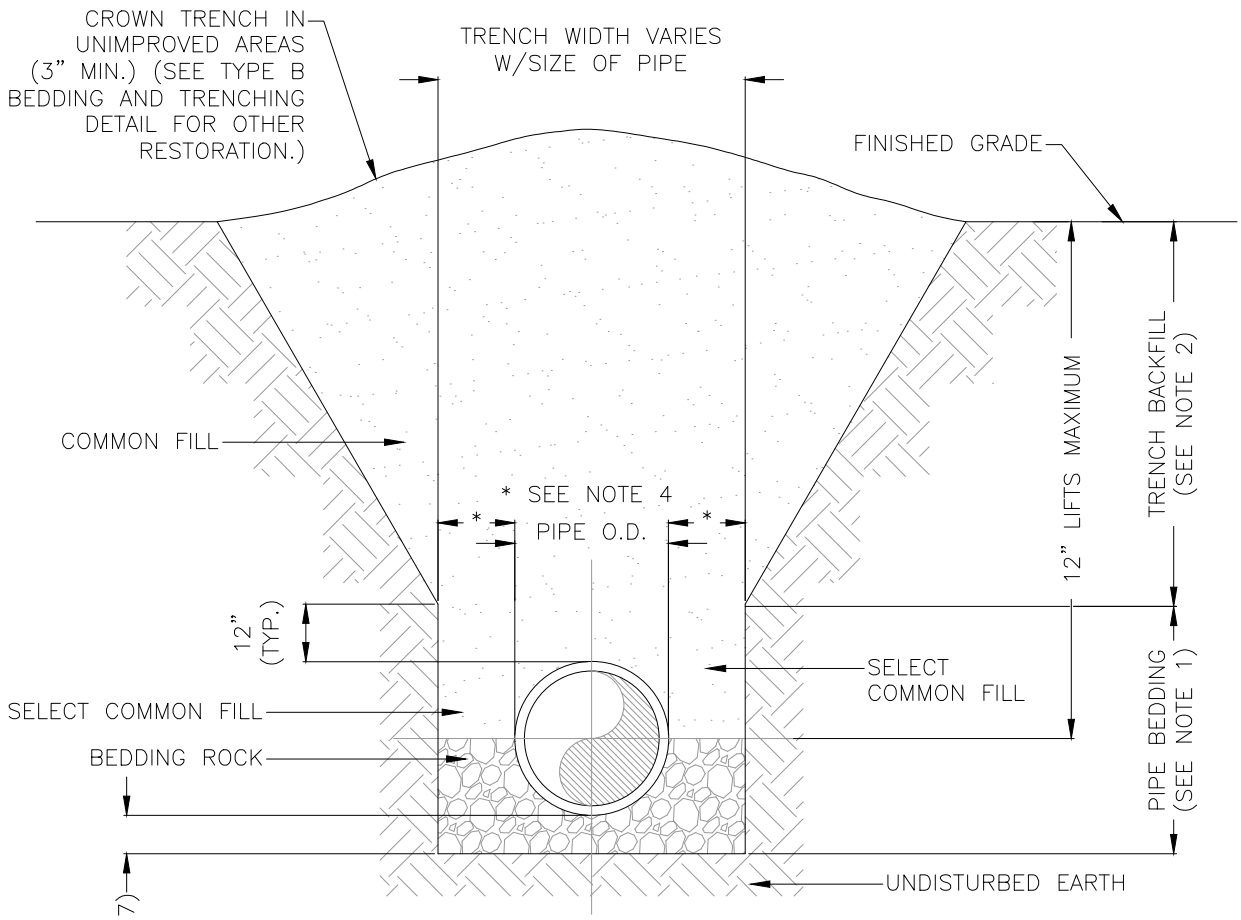


TYPICAL CITY SERVICE





CITY OF MEXICO BEACH UTILITIES DEPARTMENT			PETCOCK/ PRESSURE GAUGE ASSEMBLY	S–24
REV.	DATE			
		.....		
		DATE OF APPROVAL		



NOTES:

1.) PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.

2.) TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.

3.) USE TYPE A BEDDING TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE CITY.

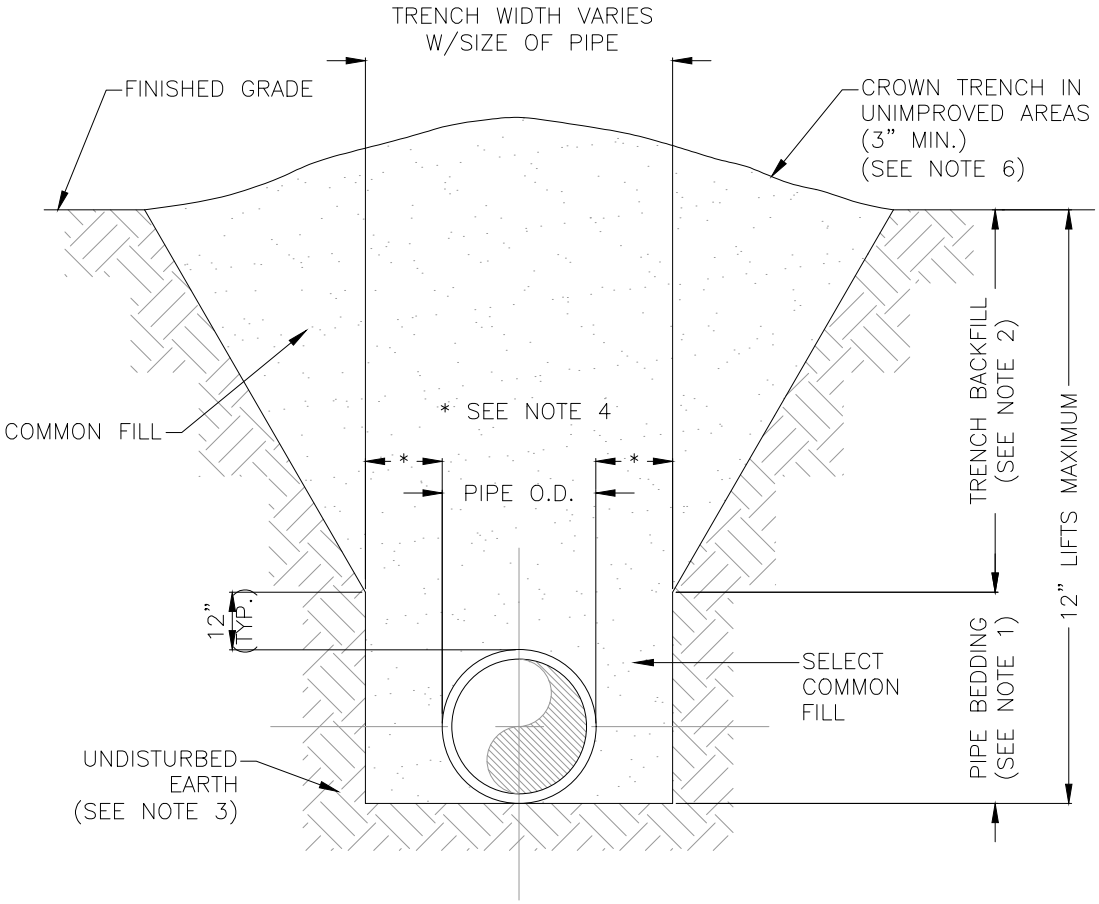
4.) (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.

5.) ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.

6.) GRAVITY SEWERS SHALL UTILIZE TYPE A BEDDING, IF REQUIRED BY THE CITY. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER LESS THAN 15", AND 6" MINIMUM PIPE DIAMETER 16" AND LARGER.

7.) DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. CITY SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	TRENCH DETAIL TYPE A BEDDING	M-1



NOTES:

1.) PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.

2.) TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.

3.) PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY THE CITY.

4.) (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.

5.) ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.

6.) FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN FDOT, BAY COUNTY & CITY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

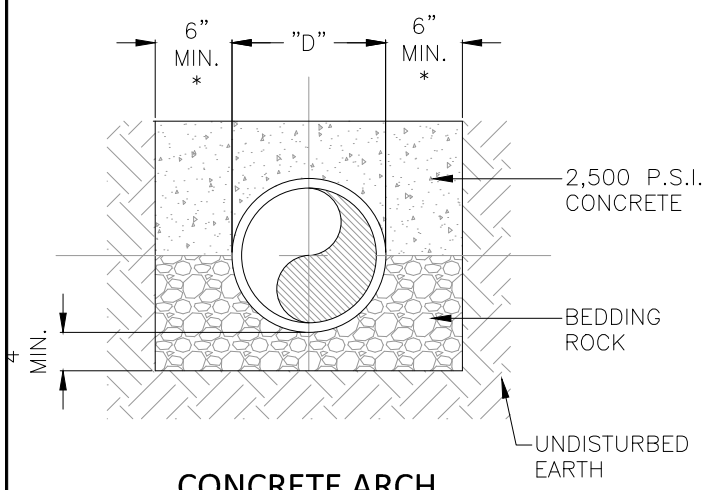
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

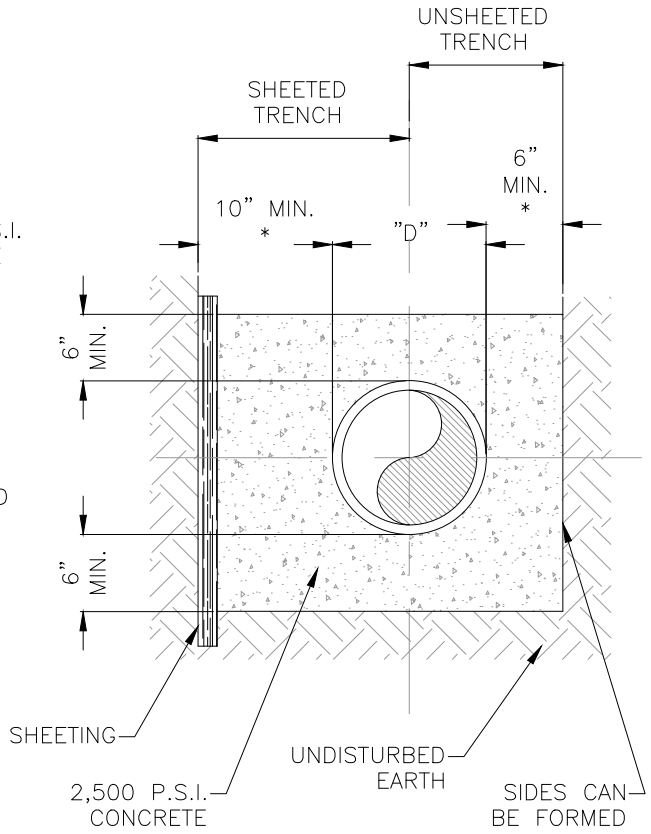
.....
DATE OF APPROVAL

TRENCH DETAIL
TYPE B BEDDING

M-2



CONCRETE ARCH



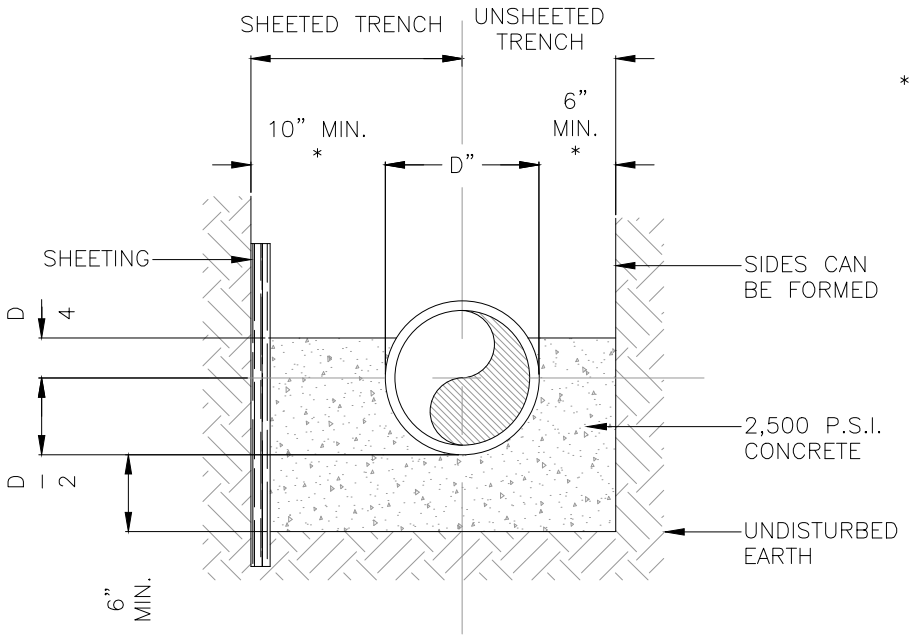
FULL ENCASEMENT

NOTES:

1.) (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIA. 24" AND OVER.

2.) "D" REFERS TO THE DIAMETER OF THE PIPE.

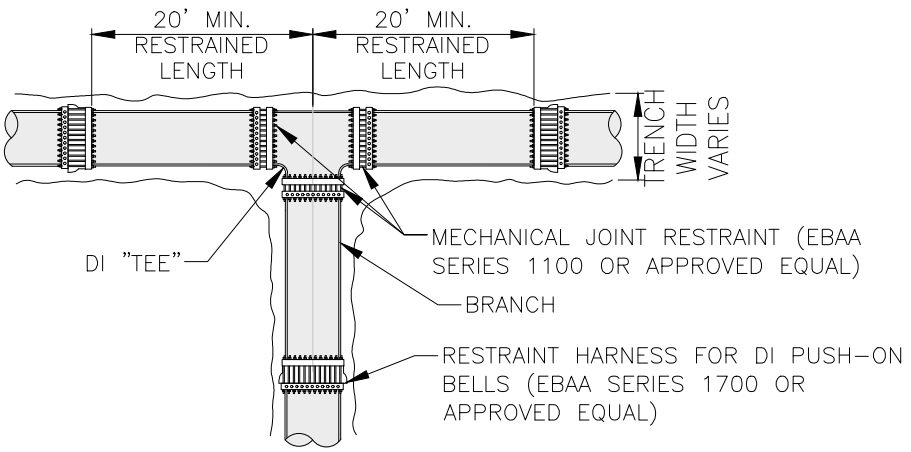
3.) USE OF CONCRETE ARCH HALF ENCASEMENT OR FULL ENCASEMENT TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE CITY.



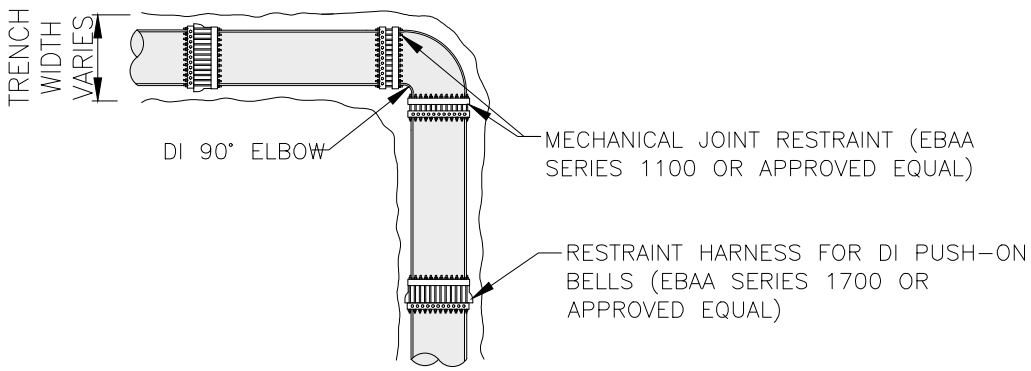
* SEE NOTE 1 (TYPICAL)

CRADLE OR HALF ENCASEMENT

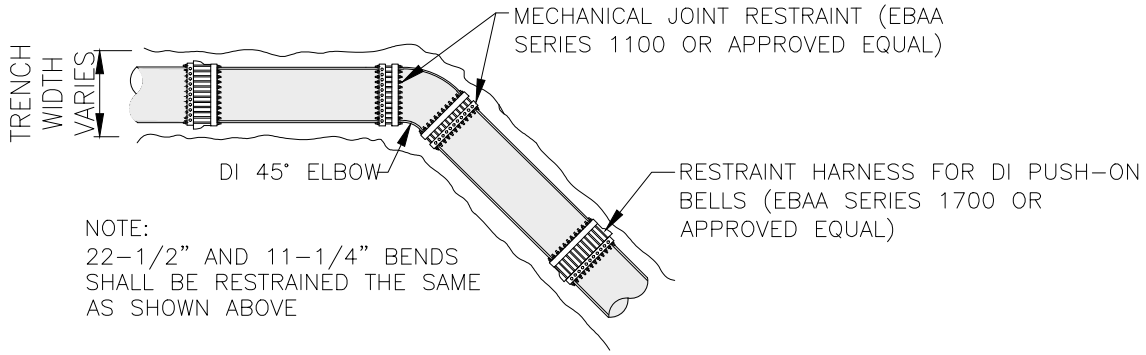
CITY OF MEXICO BEACH UTILITIES DEPARTMENT			CONCRETE ARCH & ENCASEMENT DETAIL	M-3
REV.	DATE	..... DATE OF APPROVAL		



D E T A I L - TEE RESTRAINT



D E T A I L - 90° BEND RESTRAINT

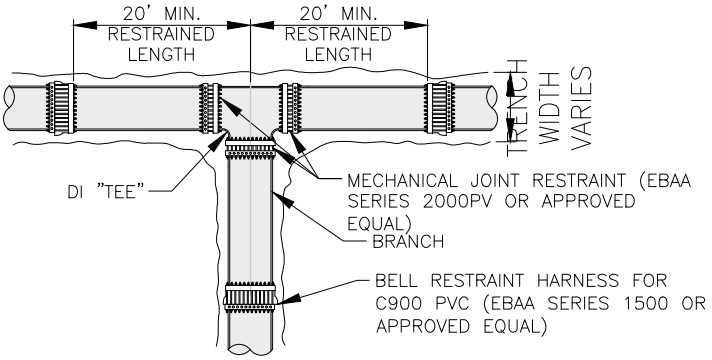


D E T A I L - 45° BEND RESTRAINT

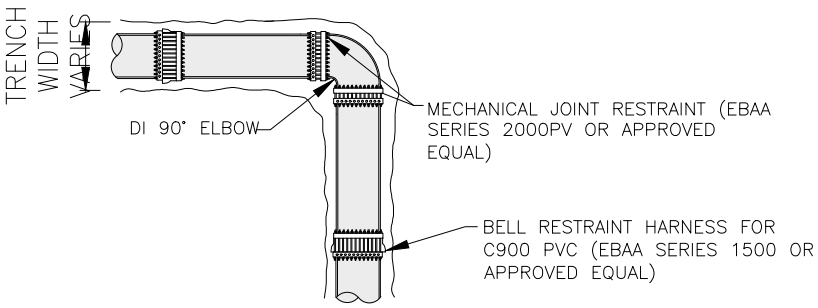
NOTES:

1. RESTRAINED JOINT PIPING SHALL BE USED FOR ALL THRUST RESTRAINTS. THE ADJACENT SCHEDULE GIVES MINIMUM PIPE LENGTHS (FT) TO BE RESTRAINED ON EACH SIDE OF ALL FITTINGS. ALL CALCULATIONS ARE BASED ON 20' PIPE LENGTHS. THIS INCLUDES ALL MAIN RUNS ON TEES.
2. CONCRETE THRUST BLOCKS SHALL NOT BE USED UNLESS DIRECTED BY THE ENGINEER.
3. SOME PIPE RESTRAINT REQUIREMENTS ARE SHOWN IN THE PLANS FOR SPECIFIC CIRCUMSTANCES.
4. ALL 45° AND 22 1/2° COMBINATION BENDS AND 22 1/2° AND 11 1/4° COMBINATION BENDS SHALL BE TREATED AS 90° BENDS AND 45° BENDS, RESPECTIVELY, FOR RESTRAINED LENGTHS.
5. ALL FITTINGS AND RESTRAINED JOINTS MUST BE VISUALLY INSPECTED AND APPROVED BY THE ENGINEER BEFORE COVERED.
6. CONTRACTOR SHALL INSTALL BELL HARNESS RESTRAINTS ON ALL EXISTING PIPE AT TIE-IN LOCATIONS TO ACCOMMODATE THE THRUST RESTRAINT SCHEDULE.
7. ALL CAPS AND PLUGS SHALL BE RESTRAINED.
8. ALL TIE-INS TO EXISTING WATER MAINS AND FORCE MAINS, SHALL BE TREATED LIKE A 90° BEND (NOT LIKE TEES) AND SHALL BE RESTRAINED ACCORDINGLY.
9. CONTRACTOR SHALL INSTALL A MINIMUM OF 20' OF RESTRAINED JOINT PIPE ON EACH SIDE OF ALL VALVES, SMALL SIDE OF ALL REDUCERS AND ON THE MAIN RUN OF ALL TEES.

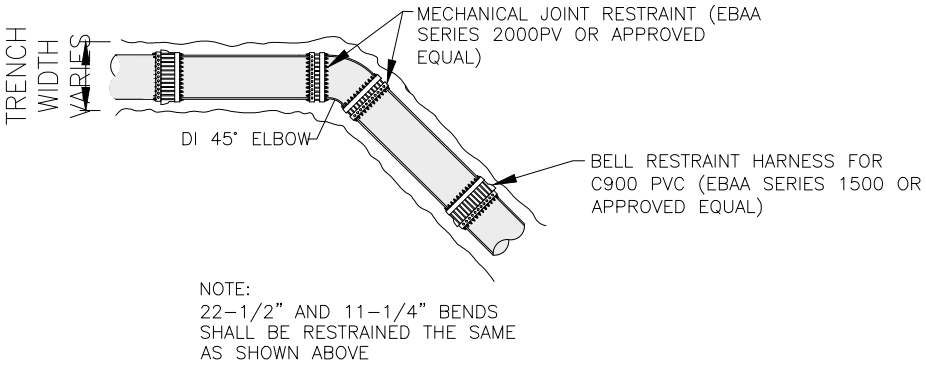
CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	DIP THRUST BLOCK RESTRAINTS	M-4



D E T A I L - TEE RESTRAINT



D E T A I L - 90° BEND RESTRAINT



D E T A I L - 45° BEND RESTRAINT

NOTES:

1. RESTRAINED JOINT PIPING SHALL BE USED FOR ALL THRUST RESTRAINTS. THE ADJACENT SCHEDULE GIVES MINIMUM PIPE LENGTHS (FT) TO BE RESTRAINED ON EACH SIDE OF THE STANDARD FITTINGS.
2. CONCRETE THRUST BLOCKS SHALL NOT BE USED, NO EXCEPTIONS.
3. SOME PIPE RESTRAINT REQUIREMENTS ARE SHOWN IN THE PLANS FOR SPECIFIC CIRCUMSTANCES.
4. ALL 45° AND 22 1/2° COMBINATION BENDS AND 22 1/2° AND 11 1/4° COMBINATION BENDS SHALL BE TREATED AS 90° BENDS AND 45° BENDS, RESPECTIVELY, FOR RESTRAINED LENGTHS.
5. ALL FITTINGS AND RESTRAINED JOINTS MUST BE VISUALLY INSPECTED AND APPROVED BY THE ENGINEER BEFORE COVERED.
6. ALL VALVES SHALL BE RESTRAINED W/ EBBA SERIES SERIES 2000PV MECHANICAL JOINT RESTRAINT OR APPROVED EQUAL.
7. BELL HARNESS RESTRAINTS SHALL BE EBAA SERIES 1500 OR APPROVED EQUAL.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	PVC THRUST BLOCK RESTRAINTS	M-5

TEES	RESTRAINED LENGTH
10" x 10"	7' (BRANCH)

	HORIZONTAL BENDS				VERTICAL BENDS
PIPE SIZE	11 1/4°	22 1/2°	45°	90°	45°
4"	3'	5'	9'	22'	UPPER BEND LENGTH = 19' LOWER BEND LENGTH = 5'
6"	3'	6'	13'	30'	UPPER BEND LENGTH = 26' LOWER BEND LENGTH = 7'
8"	4'	8'	16'	39'	UPPER BEND LENGTH = 34' LOWER BEND LENGTH = 9'
10"	5'	10'	19'	46'	UPPER BEND LENGTH = 41' LOWER BEND LENGTH = 11'

DIP THRUST RESTRAINT SCHEDULE

REDUCERS	RESTRAINED LENGTH
8" x 6"	54' (LARGE SIDE)
10" x 8"	52' (LARGE SIDE)

TEES	RESTRAINED LENGTH
6" x 6"	10' (BRANCH)
8" x 8"	1' (BRANCH)
10" x 10"	1' (BRANCH)

	HORIZONTAL BENDS				VERTICAL BENDS
PIPE SIZE	11 1/4°	22 1/2°	45°	90°	45°
4"	3'	6'	11'	26'	UPPER BEND LENGTH = 29' LOWER BEND LENGTH = 6'
6"	4'	8'	15'	36'	UPPER BEND LENGTH = 41' LOWER BEND LENGTH = 8'
8"	5'	10'	20'	47'	UPPER BEND LENGTH = 53' LOWER BEND LENGTH = 11'
10"	6'	11'	23'	55'	UPPER BEND LENGTH = 64' LOWER BEND LENGTH = 13'

PVC THRUST RESTRAINT SCHEDULE

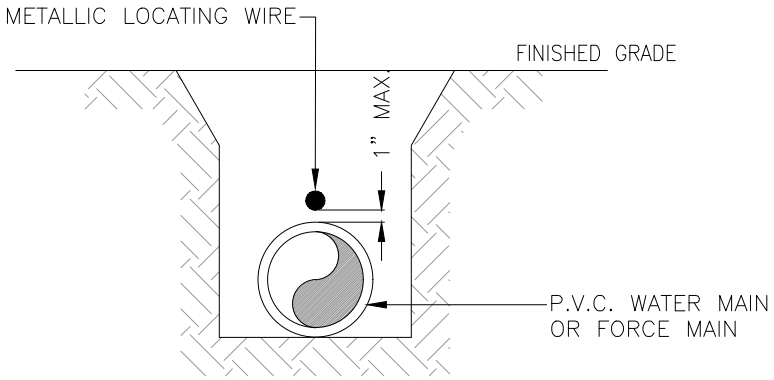
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

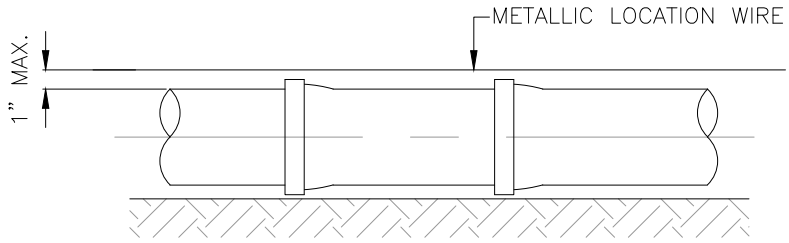
REV.	DATE

.....
DATE OF APPROVAL

DIP/PVC THRUST BLOCK RESTRAINT SCHEDULES

M-6





NOTES:

1.) PVC PIPE SHALL REQUIRE INSULATED METALLIC LOCATING WIRE (12 GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BURIED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE.

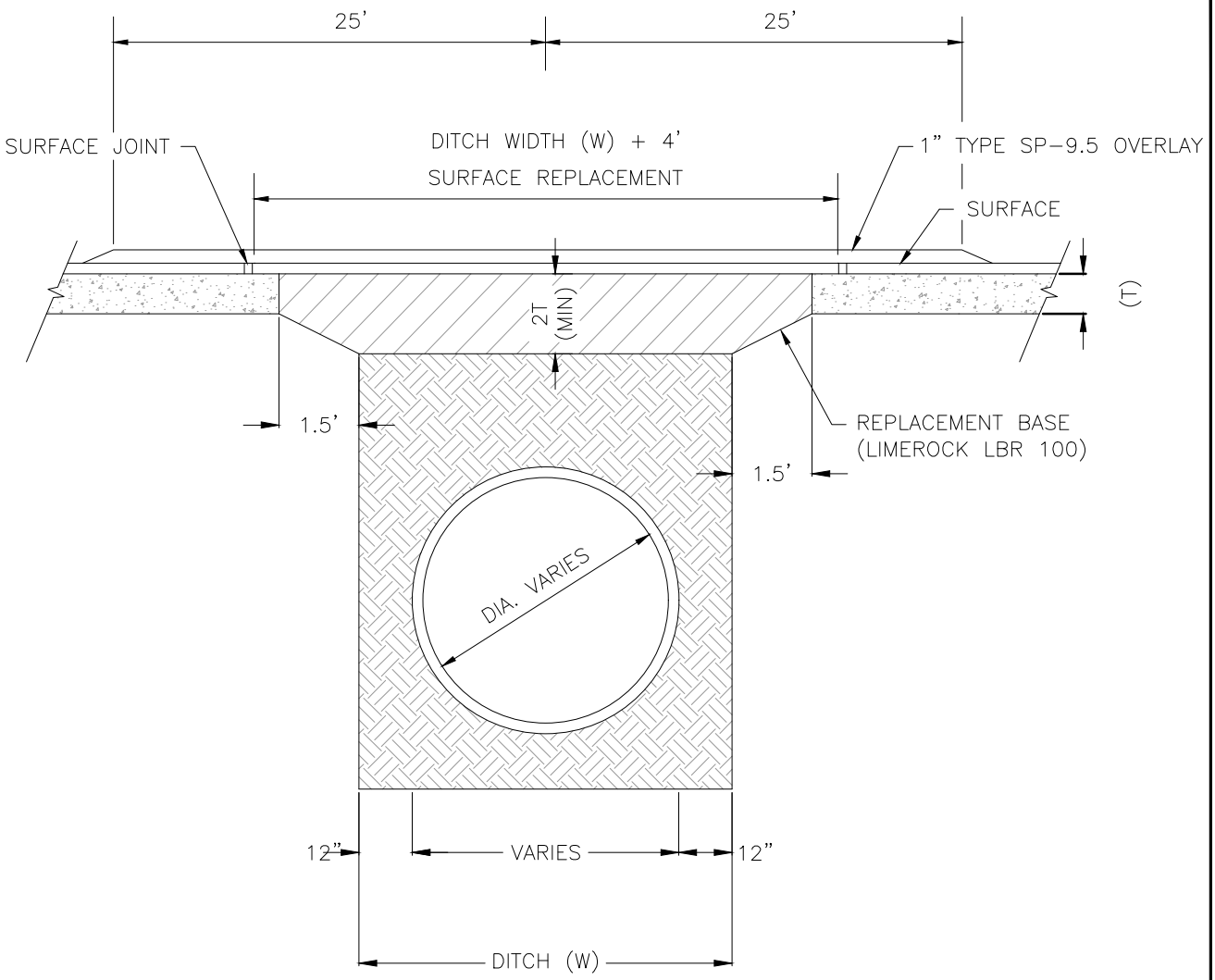
2.) LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOP OF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION.

3.) USE DUCT TAPE AS NECESSARY TO HOLD WIRE ON THE TOP OF THE PIPE.

4). ALL SPLICES SHALL BE MADE USING A WATER–TIGHT SEALING METHOD APPROVED BY THE CITY.

5.) METALLIC BURIAL TAPE SHOULD BE INSTALL ATOP OF LINE.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			PVC PIPE LOCATING WIRE DETAIL	M–7
REV.	DATE			
		.....		
		DATE OF APPROVAL		



GENERAL NOTES:

1.) REPLACEMENT BASE OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE, BUT NOT LESS THAN 8" THICK.

2.) BASE MATERIAL SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

3.) ASPHALT CONC. PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED

4.) SURFACE TREATED PAVEMENT JOINTS SHALL BE LAPPED AND FEATHERED.

5.) SURFACE PATCH MATERIAL SHALL BE FDOT SP-12.5 AND MATCH EXISTING ASPHALT THICKNESS, BUT NOT LESS THAN 1-1/2" THICK. FOR SMALL PATCHES SP-9.5 MAY BE USED WITH PRIOR WRITTEN APPROVAL BY THE CITY.

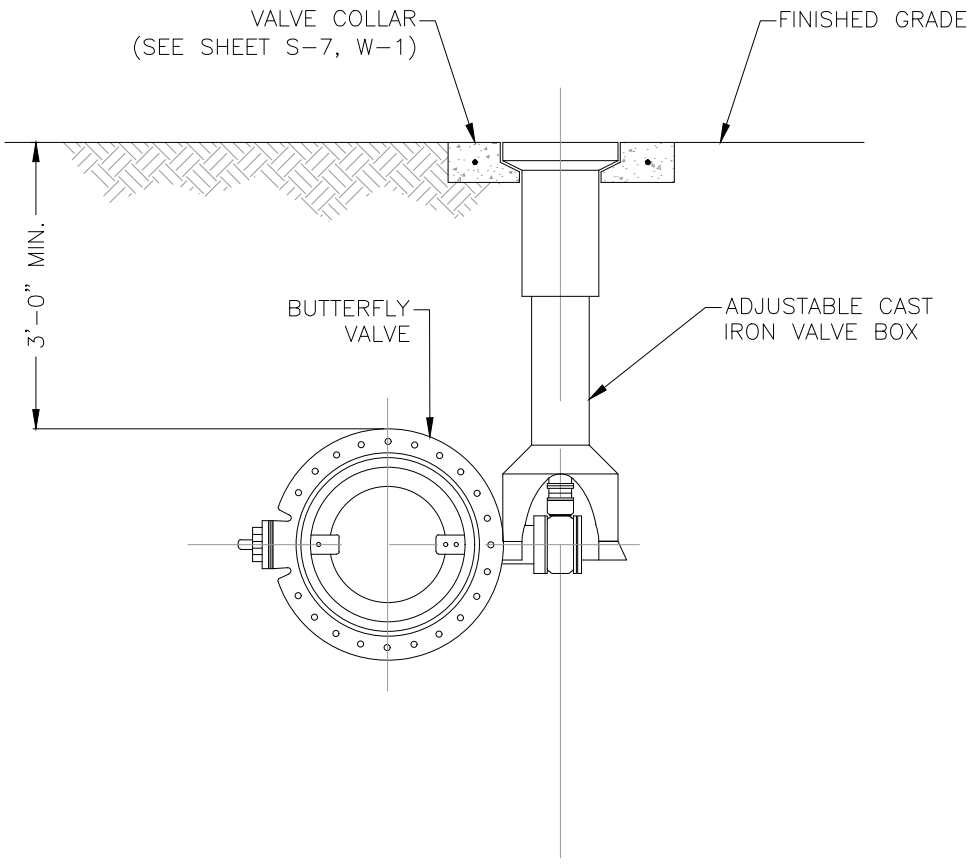
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

ASPHALT PAVEMENT PATCH DETAIL

M-8



NOTE:

PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

BUTTERFLY VALVE AND BOX DETAIL

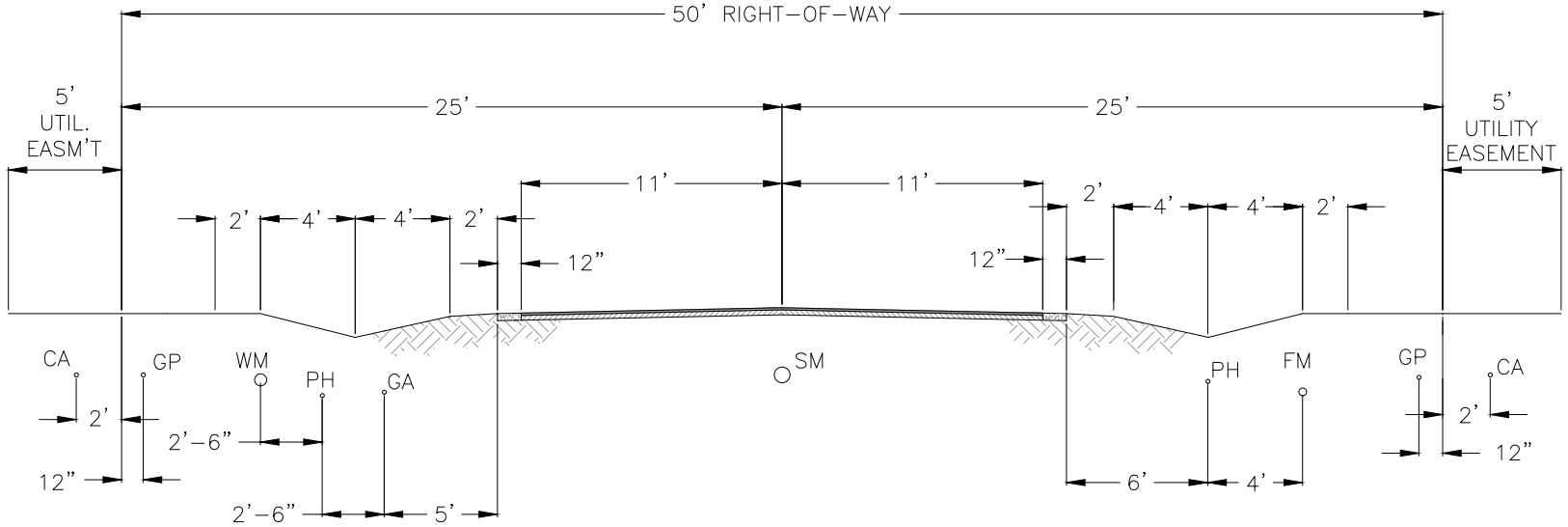
M-9

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

TYPICAL UTILITY LOCATIONS



STREET SECTION

FM – FORCE MAIN
WM – WATER MAIN
SM – SEWER MAIN
DE – DUKE ENERGY
PH – PHONE
GA – GAS
CA – CABLE

NOTE: ALL UTILITIES TO HAVE 36" MINIMUM COVER & 48" MAXIMUM COVER.

M-10

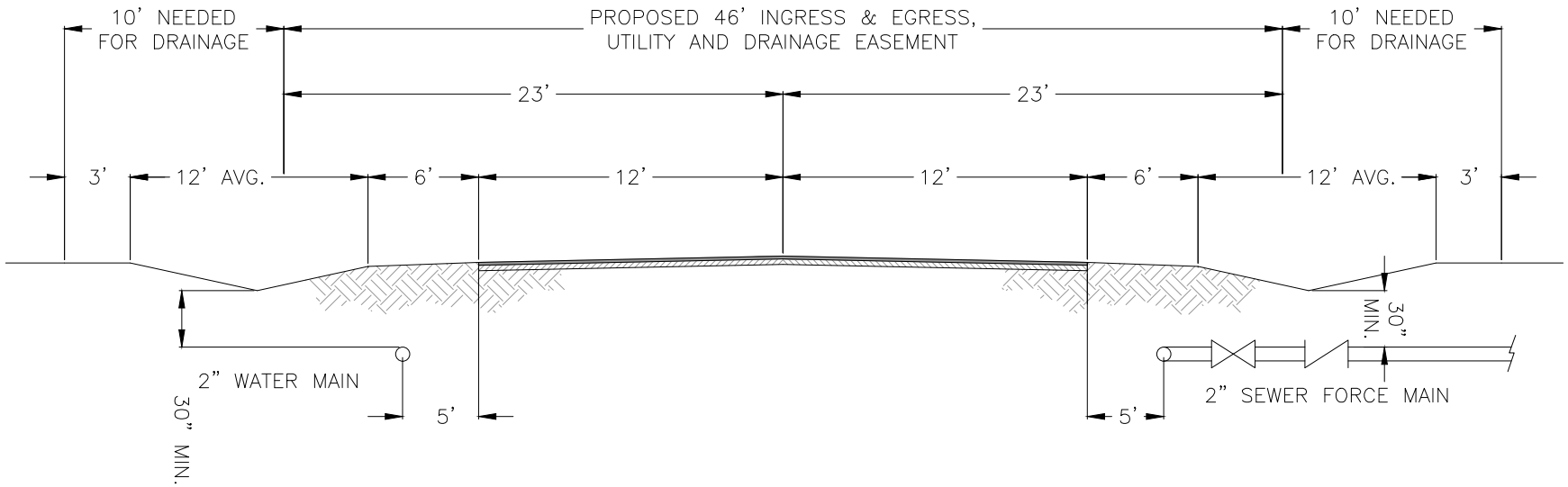
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

TYPICAL UTILITY LOCATIONS

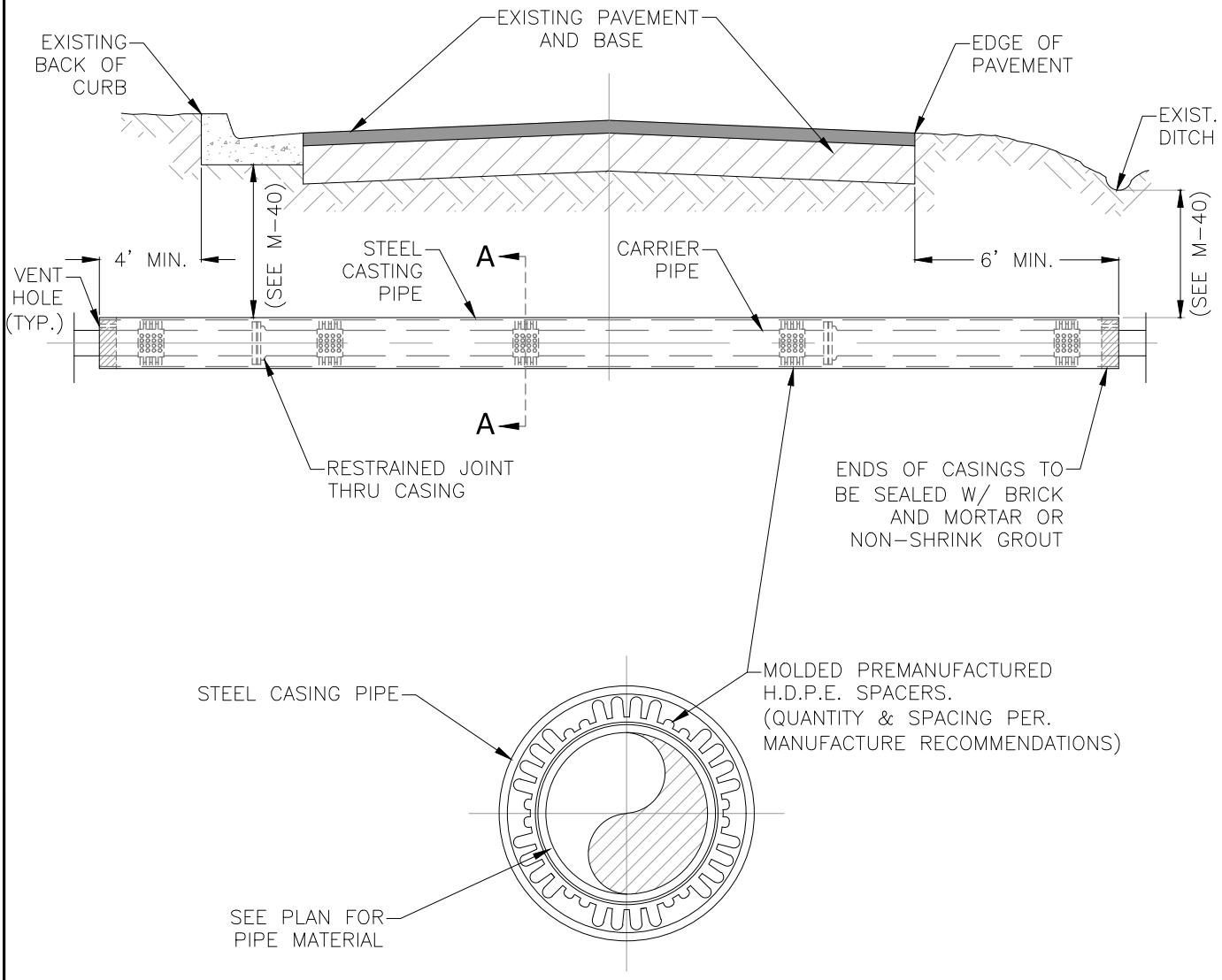
M-11



STREET SECTION

NOTES:

2" GATE VALVE & CHECK VALVE AT EACH HOUSE
1 1/2" HOUSE CONNECTION (TYPICAL)



SECTION A-A

NOTES:

1.) WHEN CONSTRUCTION IS WITHIN FDOT JURISDICTION, ADDITIONAL REQUIREMENTS OF THE UTILITY ACCOMMODATION GUIDE SHALL BE MET.

2.) WHERE PRACTICAL, CASING SHALL EXTEND 10' BEYOND EDGE OF PAVEMENT AND SHALL NOT BE LESS THAN 6' BEYOND EDGE OF PAVEMENT IN ANY CASE. THE CITY MAY REQUIRE LONGER CASING FOR DEEPER BORES.

3.) CASING PIPE JOINTS SHALL BE MADE BY USING A FULL CIRCUMFERENCE COMPLETE PENETRATION GROOVE WELD.

CARRIER & CASING SIZE										
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
CASING	12"	14"	16"	18"	20"	24"	30"	30"	30"	36"
CASING / WALL THICKNESS	0.250"	0.250"	0.250"	0.250	0.250"	0.250"	0.312"	0.312"	0.312"	0.375"

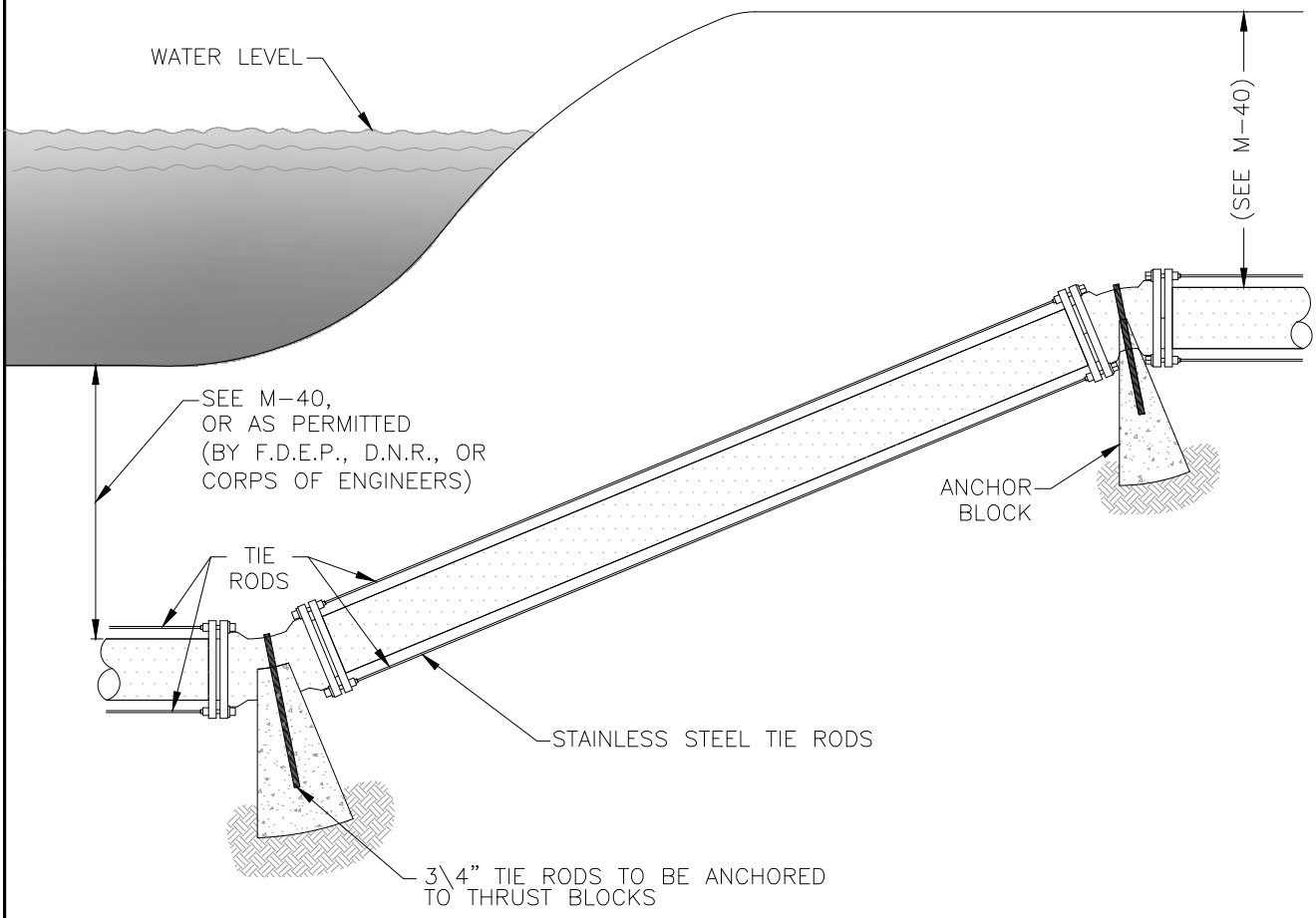
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

JACK & BORE UNDER PAVED ROADS

M-12



NOTES:

1.) RESTRAINED JOINT PIPE & FITTINGS MAY BE USED IN LIEU OF TIE-RODS & BLOCKS, J.C.M., M.J.R., "STAR GRIP", "ALL GRIP" OR APPROVED EQUAL. SUBMIT DETAILS TO THE CITY OF MEXICO BEACH PUBLIC WORKS DEPARTMENT FOR APPROVAL.

2.) SEE SHEET M-4 FOR THRUST BLOCK DETAILS.

3.) ENGINEER TO DETERMINE REQUIRED LENGTH OF RESTRAINT EACH SIDE OF BEND.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE		TYPICAL CANAL CROSSING	M-13
		.....		
		DATE OF APPROVAL		

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

MAIN PIPE SIZE	HORIZ. BENDS			*TEES					REDUCERS			PLUGS
	90°	45°	22.5°	SIZE / LENGTH					SIZE / LENGTH			
36	106	44	21	X36 / 163	X30 / 102	X24 / 39	X20 / 1	X16 / 1	X30 / 78	X24 / 141	X20 / 175	257
30	93	39	19	X30 / 132	X24 / 68	X20 / 22	X16 / 1	X12 / 1	X24 / 78	X20 / 121	X16 / 156	222
24	79	33	16	X24 / 99	X20 / 53	X16 / 3	X12 / 1	X10 / 1	X20 / 56	X16 / 101	X12 / 137	185
20	68	29	14	X20 / 75	X16 / 26	X12 / 1	X10 / 1	X8 / 1	X16 / 56	X12 / 100	X10 / 117	159
16	57	24	12	X16 / 51	X12 / 1	X10 / 1	X8 / 1		X12 / 56	X10 / 78	X8 / 96	131
12	45	19	9	X12 / 25	X10 / 1	X8 / 1	X6 / 1		X10 / 30	X8 / 54	X6 / 74	102
10	39	16	8	X10 / 11	X8 / 1	X6 / 1			X8 / 29	X6 / 53	X4 / 71	87
8	33	14	7	X8 / 1	X6 / 1	X4 / 1			X6 / 31	X4 / 52		72
6	25	11	5	X6 / 1	X4 / 1				X4 / 29			55
4	18	8	4	X4 / 1								39

NOTES:

1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.

2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.

5.) PIPE SIZES ARE GIVEN IN INCHES.

6.) PIPE LENGTHS ARE GIVEN IN FEET.

7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 150 PSI.

8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.

9.) RESTRAINED LENGTHS ARE TO BE USED FOR POTABLE WATER.

10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

..... DATE OF APPROVAL

RESTRAINED LENGTHS FOR P.V.C. POTABLE & REUSE WATER

M-14

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR D.I.P. (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			*TEES					REDUCERS			PLUGS
	90°	45°	22.5°	SIZE / LENGTH					SIZE / LENGTH			
48	104	43	21	X48 / 146	X42 / 108	X36 / 71	X30 / 32	X24 / 1	X42 / 48	X36 / 88	X30 / 122	203
42	95	40	19	X42 / 127	X36 / 89	X30 / 49	X24 / 9	X20 / 1	X36 / 48	X30 / 89	X24 / 122	183
36	86	36	17	X36 / 109	X30 / 68	X24 / 26	X20 / 1	X16 / 1	X30 / 50	X24 / 89	X20 / 111	163
30	75	31	15	X30 / 88	X24 / 45	X20 / 15	X16 / 1	X12 / 1	X24 / 50	X20 / 77	X16 / 100	141
24	63	27	13	X24 / 66	X20 / 35	X16 / 2	X12 / 1	X10 / 1	X20 / 36	X16 / 64	X12 / 87	118
20	55	23	11	X20 / 50	X16 / 18	X12 / 1	X10 / 1	X8 / 1	X16 / 36	X12 / 64	X10 / 75	101
16	46	19	10	X16 / 34	X12 / 1	X10 / 1	X8 / 1		X12 / 36	X10 / 50	X8 / 61	84
12	36	15	8	X12 / 17	X10 / 1	X8 / 1	X6 / 1		X10 / 20	X8 / 35	X6 / 48	65
10	31	13	7	X10 / 7	X8 / 1	X6 / 1			X8 / 19	X6 / 34	X4 / 45	56
8	26	11	6	X8 / 1	X6 / 1	X4 / 1			X6 / 20	X4 / 34		47
6	20	9	4	X6 / 1	X4 / 1				X4 / 19			36
4	15	6	3	X4 / 1								25

NOTES:

1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.

2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.

5.) PIPE SIZES ARE GIVEN IN INCHES.

6.) PIPE LENGTHS ARE GIVEN IN FEET.

7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 150 PSI.

8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.

9.) RESTRAINED LENGTHS ARE TO BE USED FOR POTABLE WATER.

10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

..... DATE OF APPROVAL

RESTRAINED LENGTHS FOR D.I.P. POTABLE & REUSE WATER

M-15

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

MAIN PIPE SIZE	HORIZ. BENDS			*TEES					REDUCERS			PLUGS
	90°	45°	22.5°	SIZE / LENGTH					SIZE / LENGTH			
48	86	36	17	X48 / 117	X42 / 77	X36 / 36	X30 / 1	X24 / 1	X42 / 50	X36 / 93	X30 / 129	214
42	78	33	16	X42 / 100	X36 / 58	X30 / 14	X24 / 1	X20 / 1	X36 / 50	X30 / 93	X24 / 128	193
36	71	30	14	X36 / 81	X30 / 37	X24 / 1	X20 / 1	X16 / 1	X30 / 52	X24 / 94	X20 / 117	171
30	62	26	13	X30 / 61	X24 / 14	X20 / 1	X16 / 1	X12 / 1	X24 / 52	X20 / 81	X16 / 104	148
24	53	22	11	X24 / 40	X20 / 6	X16 / 1	X12 / 1	X10 / 1	X20 / 37	X16 / 68	X12 / 91	124
20	46	19	9	X20 / 25	X16 / 1	X12 / 1	X10 / 1	X8 / 1	X16 / 38	X12 / 67	X10 / 78	106
16	38	16	8	X16 / 9	X12 / 1	X10 / 1	X8 / 1		X12 / 38	X10 / 52	X8 / 64	88
12	30	13	6	X12 / 1	X10 / 1	X8 / 1	X6 / 1		X10 / 20	X8 / 36	X6 / 50	68
10	26	11	6	X10 / 1	X8 / 1	X6 / 1			X8 / 20	X6 / 36	X4 / 47	58
8	22	9	5	X8 / 1	X6 / 34	X4 / 1			X6 / 21	X4 / 35		48
6	17	7	4	X6 / 1	X4 / 1				X4 / 19			37
4	12	5	3	X4 / 1								26

NOTES:

1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.

2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.

5.) PIPE SIZES ARE GIVEN IN INCHES.

6.) PIPE LENGTHS ARE GIVEN IN FEET.

7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 100 PSI.

8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.

9.) RESTRAINED LENGTHS ARE TO BE USED FOR SEWER AND RECLAIM WATER.

10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

RESTRAINED LENGTHS FOR P.V.C. SEWER

M-16

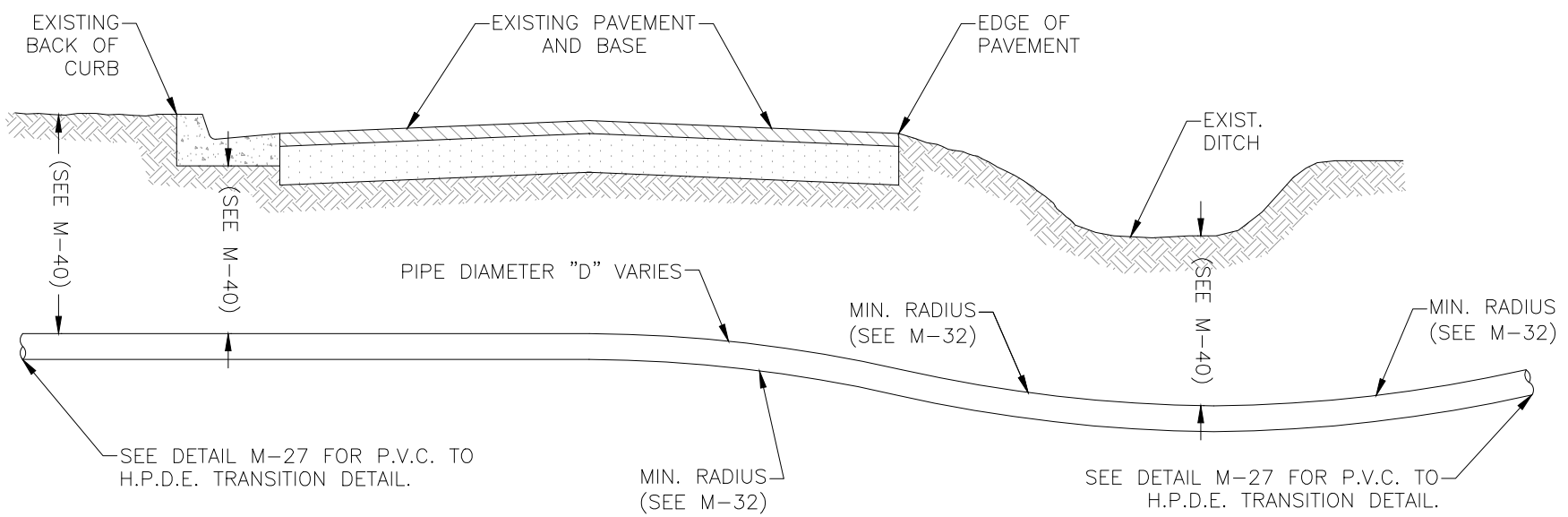
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

DIRECTIONAL BORE ROADWAY CROSSING

M-17



1.) ALL POLYETHYLENE PIPING SHALL MEET CITY OF PANAMA CITY BEACH STANDARDS AND SPECIFICATIONS

2.) SDR 9, CLASS 250, PE4710 RESIN HDPE FOR 1" SERVICE TUBING.
SDR-11, CLASS 200, PE4710 RESIN HDPE FOR 2" DIAMETER AND LARGER POTABLE WATER.
SDR-11, CLASS 160, PE4710 RESIN HDPE FOR 2" DIAMETER AND LARGER SANITARY FORCE MAINS COLOR CODED BLUE FOR POTABLE WATER COLOR CODED GREEN FOR SANITARY FORCE MAIN.

3.) THE COLOR CODING SHALL MEETING REQUIREMENTS IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320 (21)(B) 3 F.A.C. AND SHALL BE CO-EXTRUDED DURING PIPE MANUFACTURING.

4.) ALL HDPE PIPE 2" DIAMETER AND LARGER MUST BE IPS, NO CTS IS ALLOWED. ALL 1" SERVICE TUBING SHALL BE CTS.

5.) ALL DIRECTIONAL BORES SHALL BE A MINIMUM OF 36 INCHES UNDER ALL ROADWAYS AND START AND TERMINATE A MINIMUM OF 6 FEET OFF THE EDGE OF PAVEMENT.

6.) CONTRACTOR SHALL PROVIDE A DETAILED "AS-BUILT" PROFILE OF ALL DIRECTIONAL BORE AND JACK AND BORE LOCATION OF ACTUAL PIPE ELEVATIONS AT 10 FOOT INTERVALS ON AS-BUILT PLAN SHEETS.

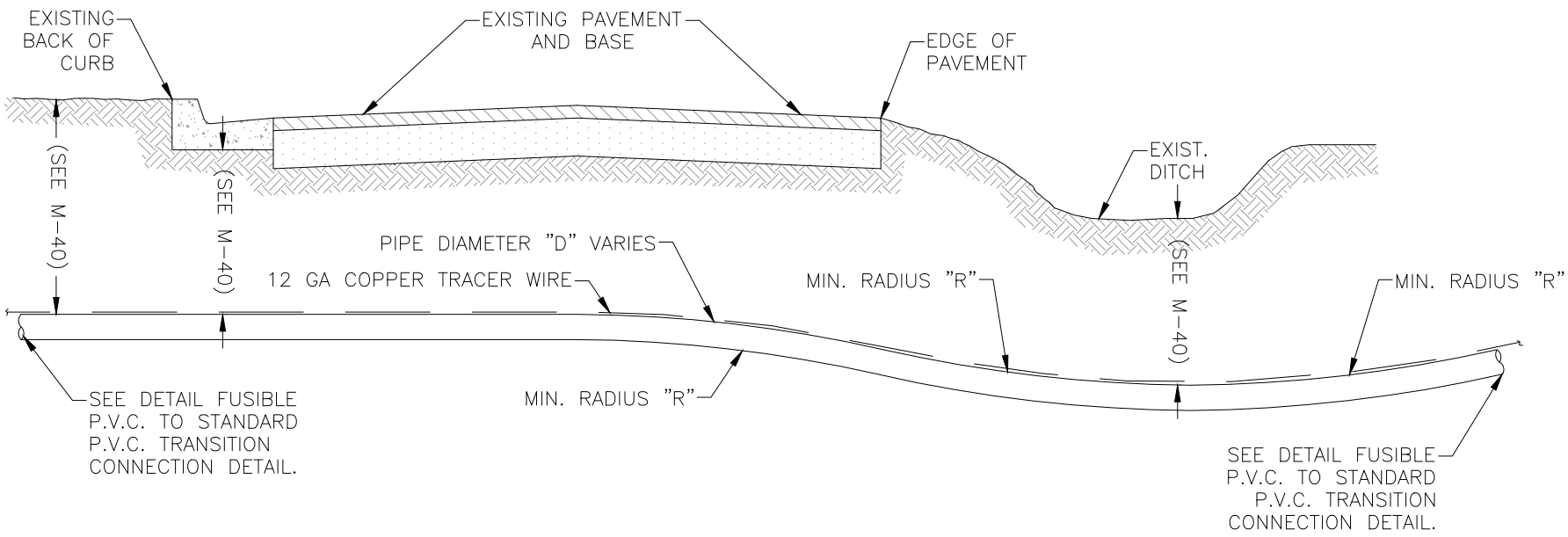
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

DIRECTIONAL BORE FUSIBLE P.V.C. MINIMUM RADIUS DETAIL

M-18



	MIN. RADIUS FOR FUSIBLE PVC PIPE IN FEET
PIPE DIAMETER "D" IN INCHES	MIN. RADIUS "R" FUSIBLE PVC FOR DR-18
2	XX
3	73
4	100
6	144
8	189
10	231
12	275
16	363
18	406
20	450

1.) ALL PIPE MUST BE C900/C905.

2.) THE COLOR CODING SHALL MEETING REQUIREMENTS IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320 (21)(B) 3 F.A.C. AND SHALL BE CO-EXTRUDED DURING PIPE MANUFACTURING.

3.) PIPE ROLLERS SHALL BE PROVIDED AS REQUIRED BY SPECIFICATIONS TO SUPPORT PIPE AND PROTECT PIPE FROM SCRATCHES AND GOUGES.

4.) ALL DIRECTIONAL BORES SHALL BE A MINIMUM OF 36 INCHES UNDER ALL ROADWAYS AND START AND TERMINATE A MINIMUM OF 6 FEET OFF THE EDGE OF PAVEMENT.

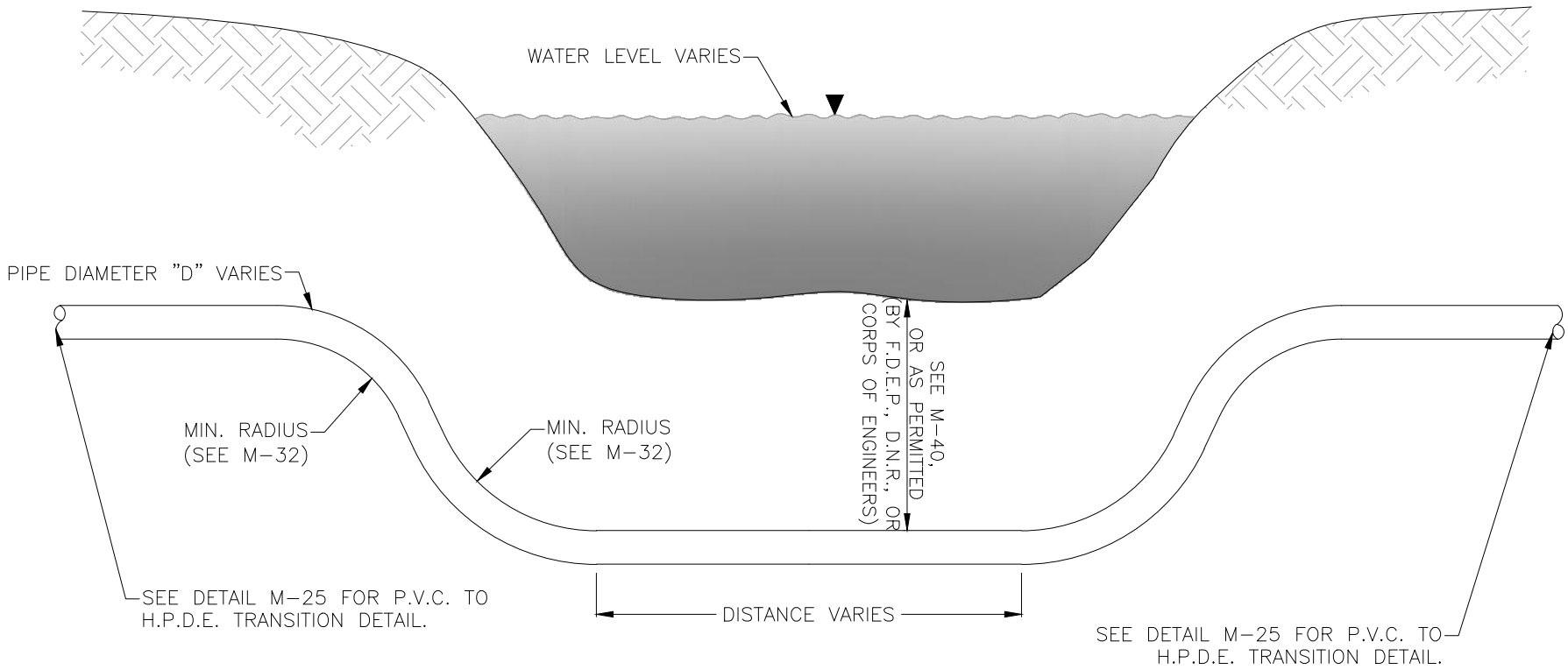
5.) CONTRACTOR SHALL PROVIDE A DETAILED "AS-BUILT" PROFILE OF ALL DIRECTIONAL BORE AND JACK AND BORE LOCATION OF ACTUAL PIPE ELEVATIONS AT 10 FOOT INTERVALS ON AS-BUILT PLAN SHEETS.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

DIRECTIONAL BORE CANAL CROSSING

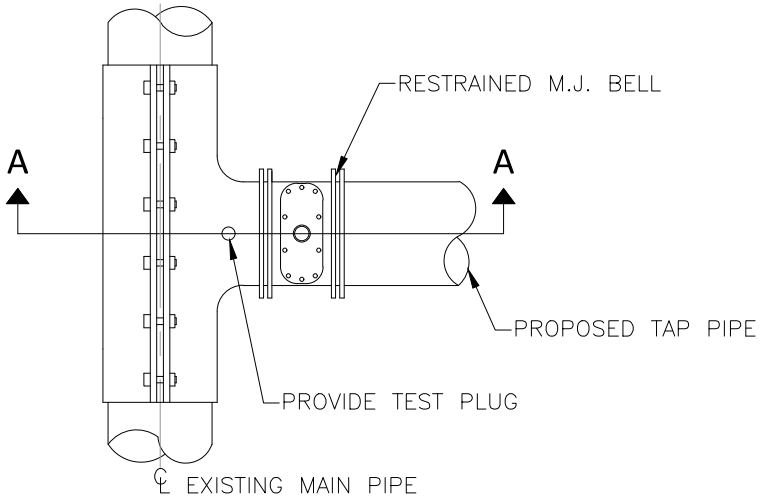


NOTE:

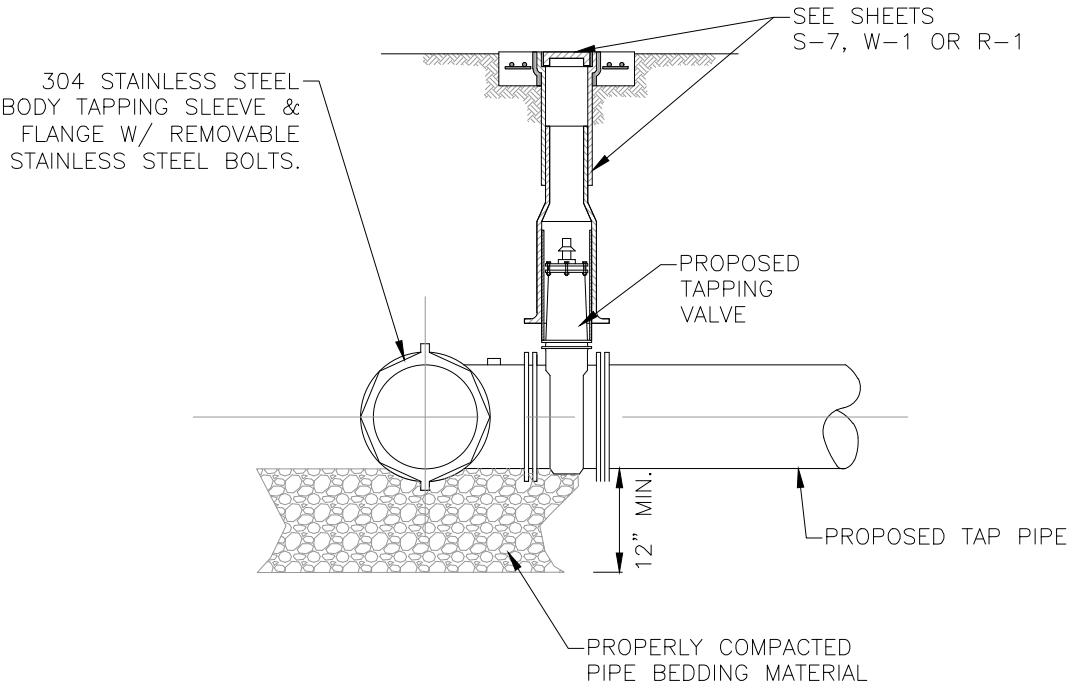
ALL POLYETHYLENE PIPING SHALL MEET CITY OF MEXICO BEACH STANDARDS AND SPECIFICATIONS:

SDR-9, CLASS 200 FOR POTABLE WATER & RECLAIMED WATER
SDR-11, CLASS 160 FOR SANITARY FORCE MAINS
COLOR CODED BLUE FOR POTABLE WATER
COLOR CODED GREEN FOR SANITARY FORCE MAIN

M-19



PLAN



SECTION A-A

NOTES:

1.) NO TAPPING CUTS SHALL BE MADE BEFORE:
A 60 MINUTE TEST AT 100 P.S.I. FOR FORCEMAINS, OR 150 P.S.I. FOR POTABLE WATERMAINS IS PERFORMED.

2.) ALL TAPS MUST BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS LARGER) FROM A JOINT OR FITTING.

3.) CONTRACTOR TO SUPPLY A DRY HOLE, PROPERLY CONFIGURED, FOR TAPPING CREW TO WORK AND A BACK-HOE TO LOWER MACHINE INTO HOLE. TAPPING ASSEMBLY MUST BE BOLTED ON & PRESSURE TESTED BY THE CONTRACTOR & WITNESSED BY THE CITY PRIOR TO TAP.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

TAPPING SLEEVE & VALVE DETAIL

M-20

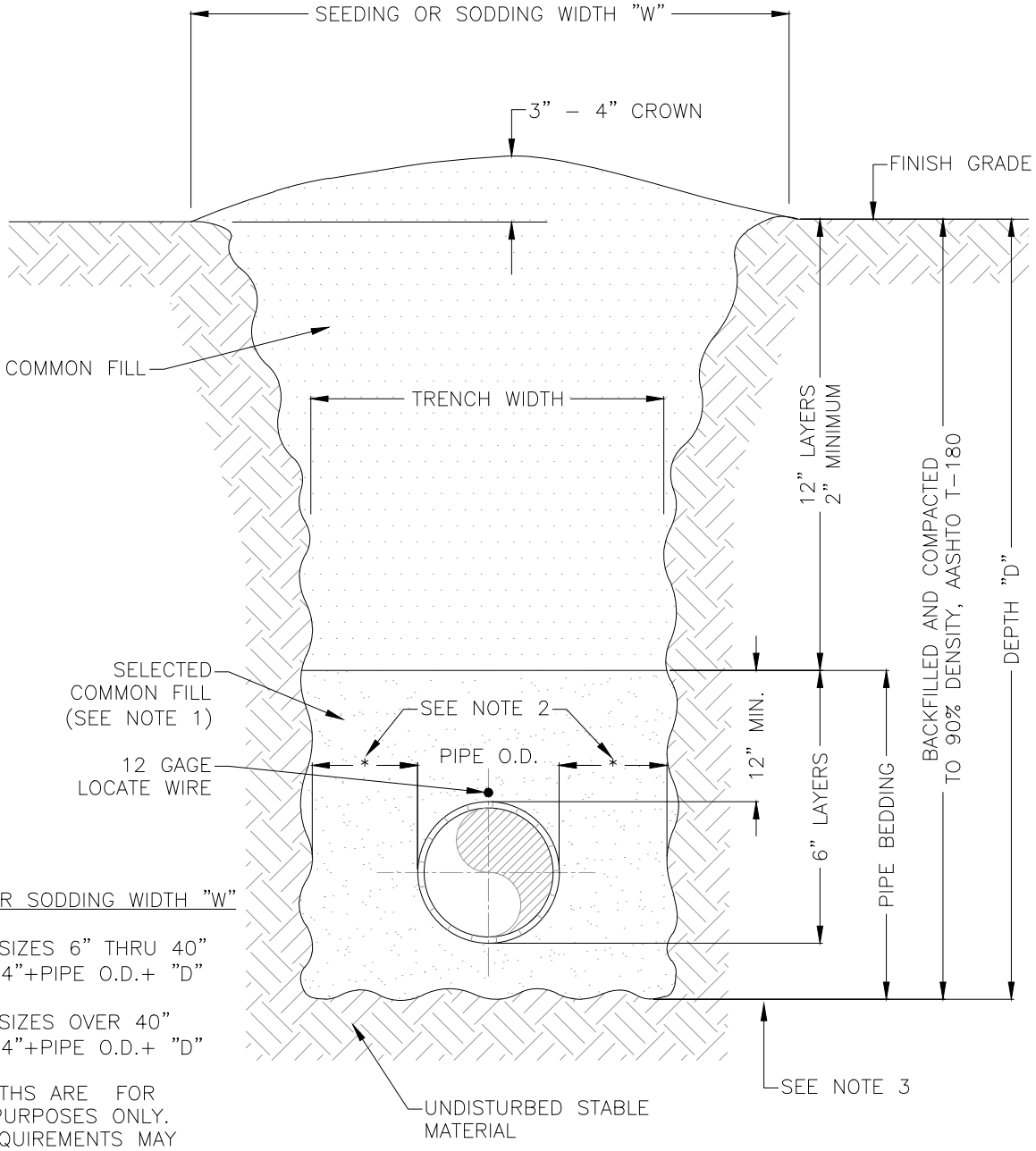
NOTES:

1.) USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE 24" DIAMETER AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.



SEEDING OR SODDING WIDTH "W"

FOR PIPE SIZES 6" THRU 40"
"W" = 2'–4"+PIPE O.D.+ "D"

FOR PIPE SIZES OVER 40"
"W" = 4'–4"+PIPE O.D.+ "D"

THESE WIDTHS ARE FOR PAYMENT PURPOSES ONLY. SAFETY REQUIREMENTS MAY DICTATE INCREASED WIDTHS.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

TRENCH DETAIL UNIMPROVED SURFACE TYPE A–1 PIPE BEDDING

M–21

NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

5.) WEARING SURFACE TO BE SAME TYPE & THICKNESS (1-1/2" MIN.) AS EXISTING PAVEMENT.

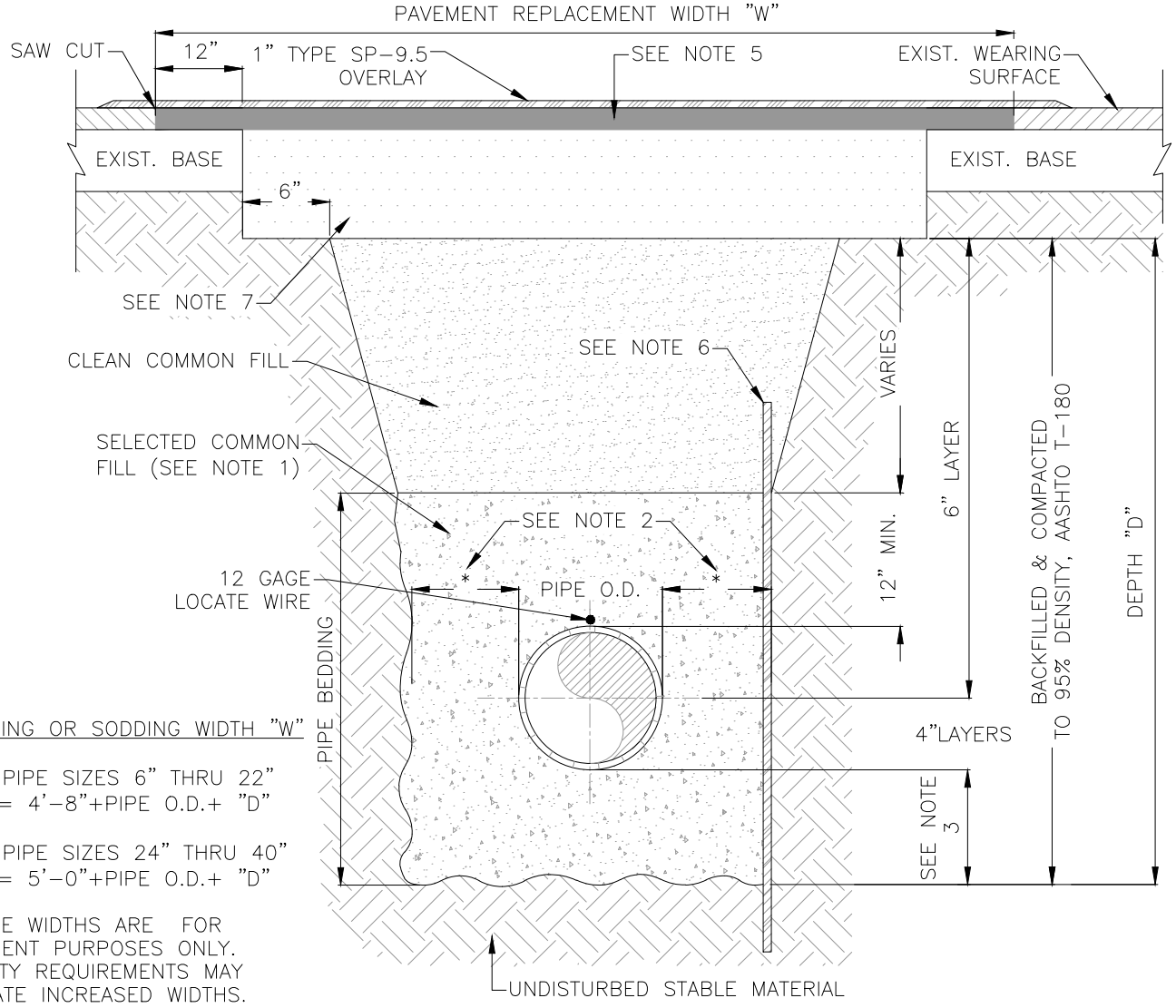
6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 8" MINIMUM THICKNESS LIMEROCK OR CRUSHED CONCRETE BASE, OR APPROVED EQUAL.

8.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 95% AASHTO T-180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) NOTES 5.) THRU 9.) ARE MINIMUM REQUIREMENTS. REFER TO F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS FOR ADDITIONAL REQUIREMENTS.



SEEDING OR SODDING WIDTH "W"

FOR PIPE SIZES 6" THRU 22"
"W" = 4'-8"+PIPE O.D.+ "D"

FOR PIPE SIZES 24" THRU 40"
"W" = 5'-0"+PIPE O.D.+ "D"

THESE WIDTHS ARE FOR PAYMENT PURPOSES ONLY. SAFETY REQUIREMENTS MAY DICTATE INCREASED WIDTHS.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

TRENCH DETAIL
ASPH. PAVEMENT SURFACE
TYPE A-1 PIPE BEDDING

M-22

NOTES:

1.) USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

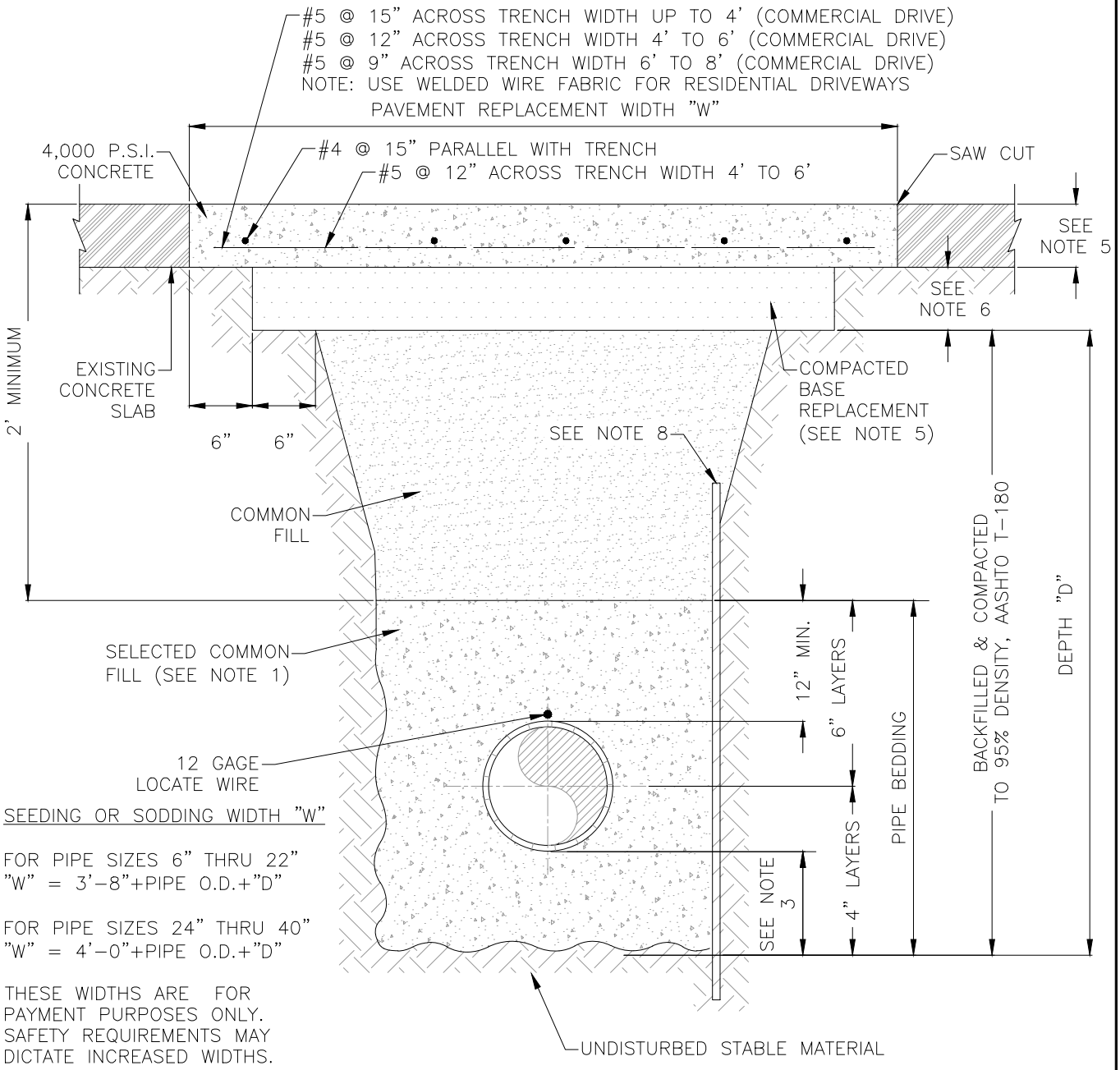
4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

5.) THICKNESS TO MATCH EXISTING OR BE 4" MINIMUM, WHICHEVER IS GREATER.

6.) THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.

7.) IF ANY PART OF REQUIRED SAWCUT REMOVAL COMES WITHIN 3 FT. OF EXISTING JOINT ON EITHER SIDE OF TRENCH, REMOVE AND REPLACE TO EXISTING JOINT.

8.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.



SEEDING OR SODDING WIDTH "W"

FOR PIPE SIZES 6" THRU 22"
"W" = 3'–8"+PIPE O.D.+"D"

FOR PIPE SIZES 24" THRU 40"
"W" = 4'–0"+PIPE O.D.+"D"

THESE WIDTHS ARE FOR PAYMENT PURPOSES ONLY. SAFETY REQUIREMENTS MAY DICTATE INCREASED WIDTHS.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

TRENCH DETAIL
CONC. PAVEMENT SURFACE
TYPE A–1 PIPE BEDDING

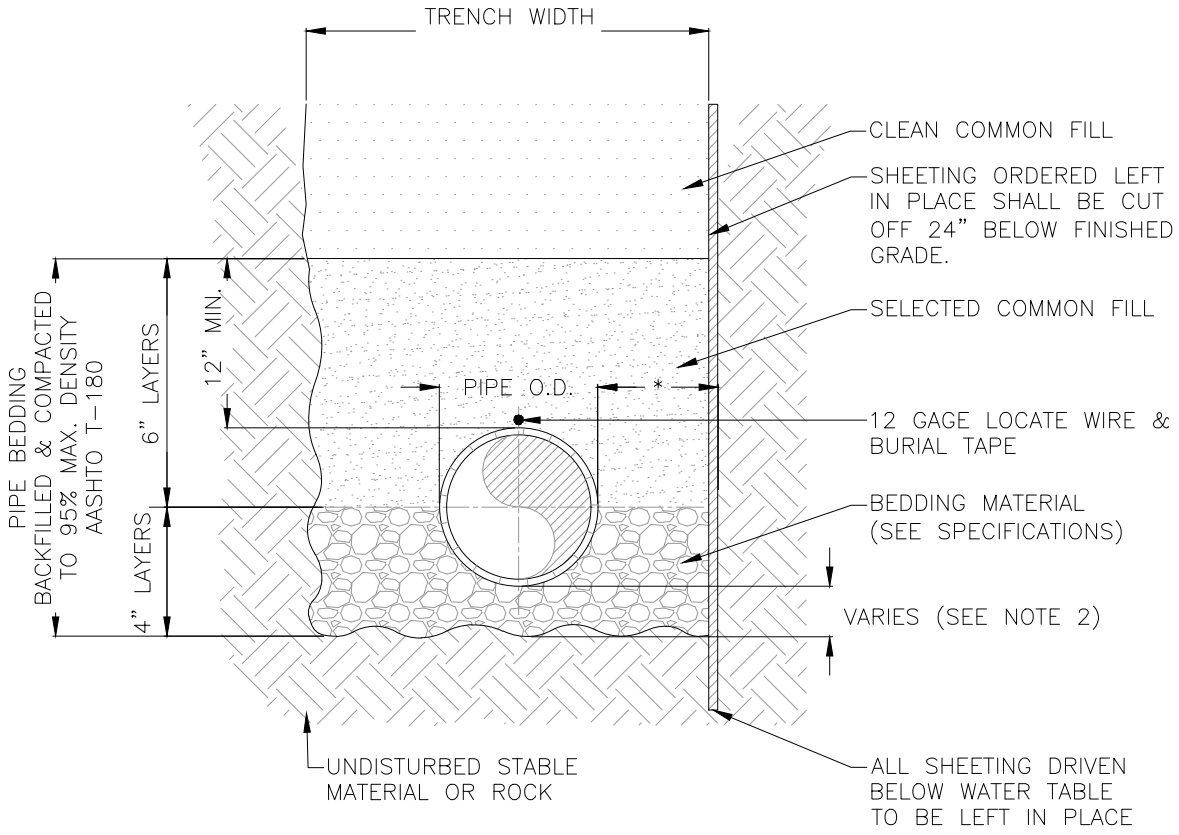
M–23

NOTES:

1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.



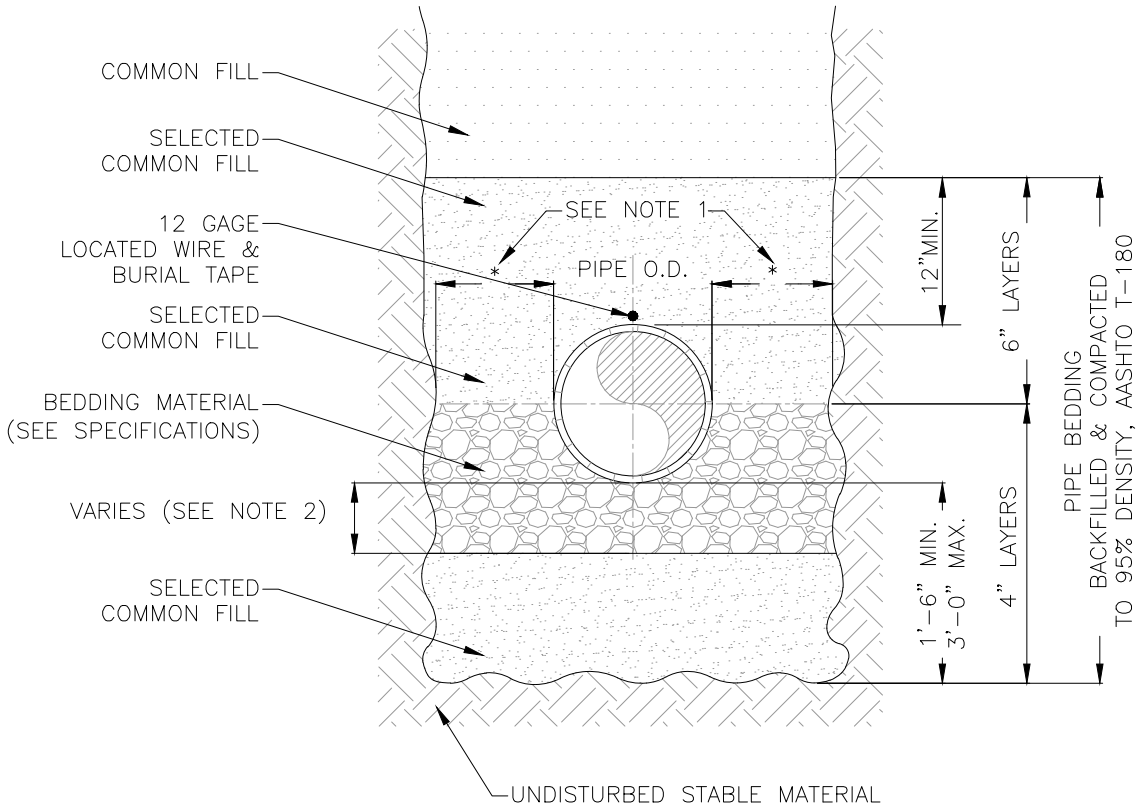
CITY OF MEXICO BEACH UTILITIES DEPARTMENT			TRENCH DETAIL TYPE A-2 PIPE BEDDING	M-24
REV.	DATE			
		..... DATE OF APPROVAL		

NOTES:

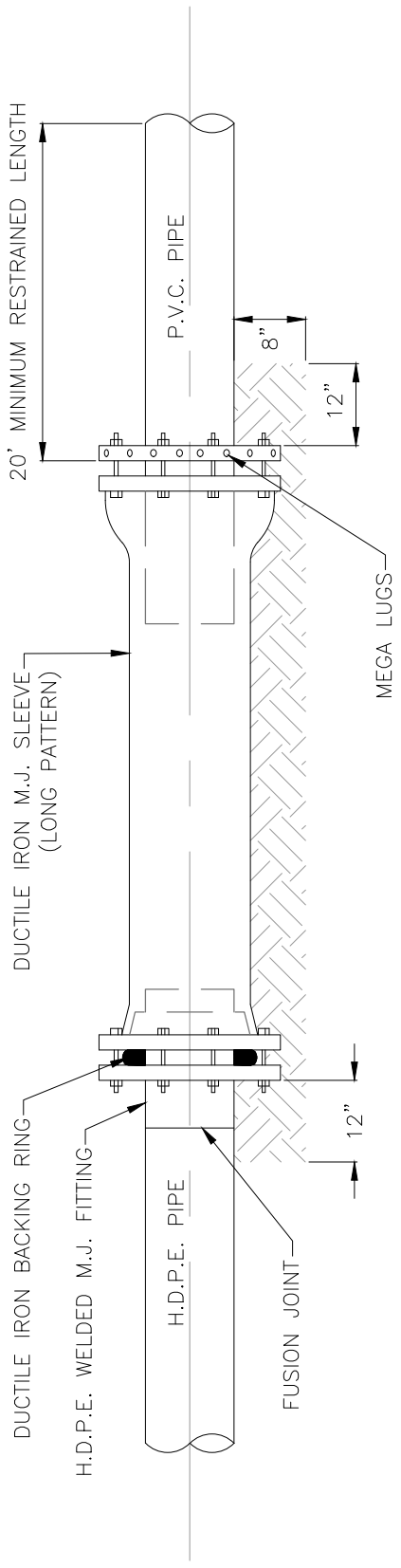
1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.



CITY OF MEXICO BEACH UTILITIES DEPARTMENT			TRENCH DETAIL TYPE A-3 PIPE BEDDING	M-25
REV.	DATE			
		.....		
		DATE OF APPROVAL		



CITY OF MEXICO BEACH UTILITIES DEPARTMENT			H.D.P.E. TO P.V.C. TRANSITION CONNECTION DETAIL	M-26
REV.	DATE			
		.....		
		DATE OF APPROVAL		

CITY OF MEXICO BEACH

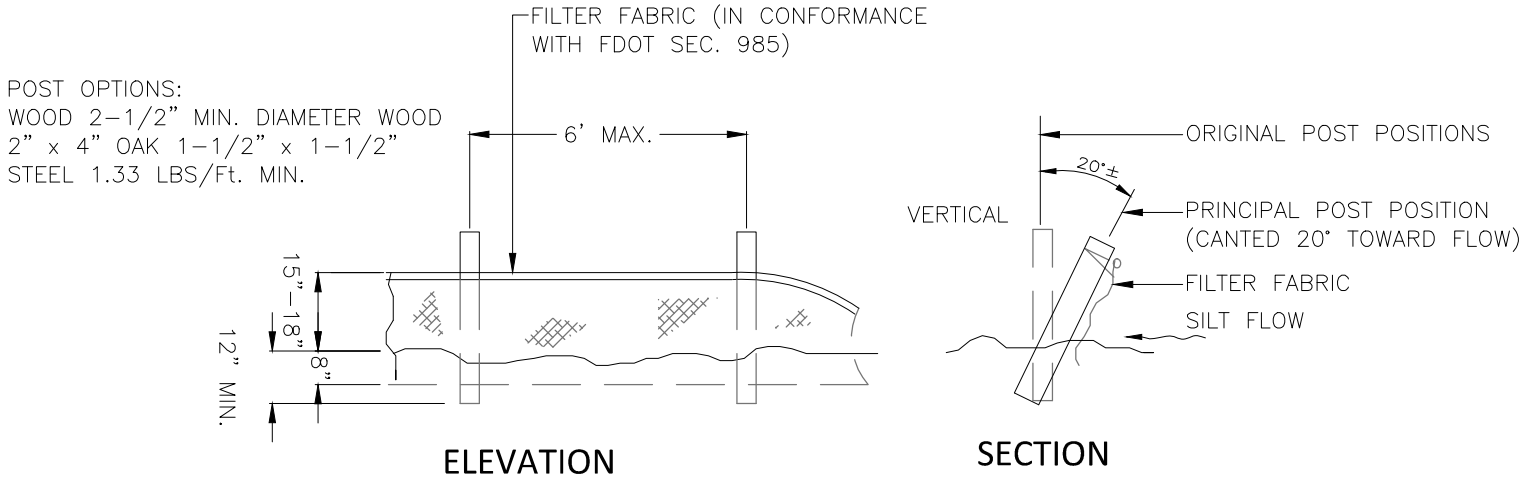
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

EROSION CONTROL
SILT FENCE DETAIL

M-27



NOTE:

DO NOT DEPLOY SILT FENCES IN A MANNER THAT WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND AS TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

MINIMUM TECHNICAL STANDARDS CHECKLIST FOR UTILITY AS-BUILTS

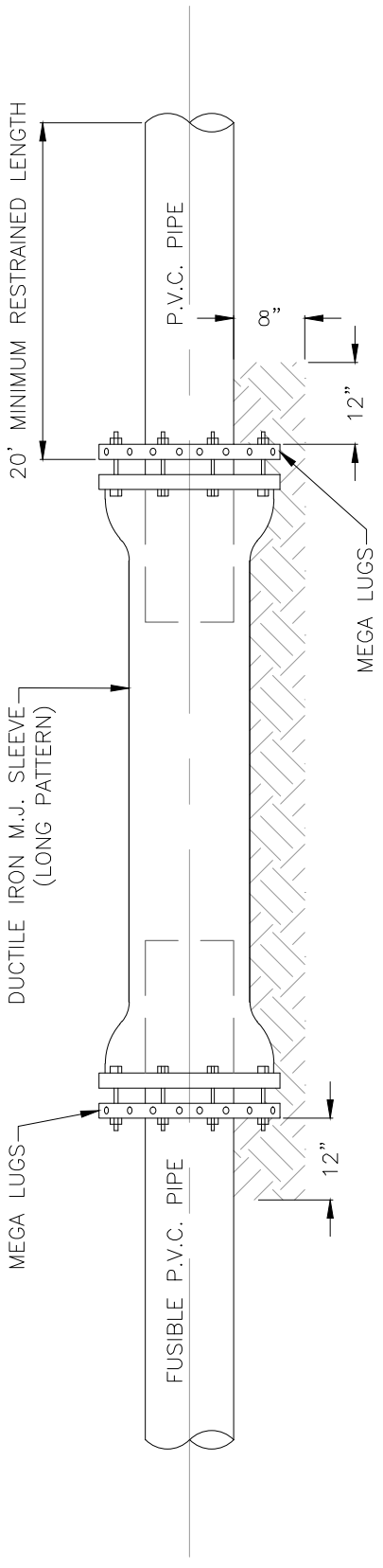
CITY OF MEXICO BEACH
DATED MAY, 2012

SURVEYORS AND MAPPERS MUST MEET THE FOLLOWING MINIMUM STANDARDS OF ACCURACY, COMPLETENESS, AND QUALITY FOR THE CITY OF PANAMA CITY BEACH TO ACCEPT AS-BUILTS:

1. MUST IDENTIFY THE RESPONSIBLE SURVEYOR AND MAPPER.
2. SHALL STATE THE TYPE OF SURVEY IT DEPICTS AND THE PURPOSE OF THE SURVEY.
3. MUST BEAR THE NAME, CERTIFICATE OF AUTHORIZATION NUMBER, AND STREET AND MAILING ADDRESS OF THE BUSINESS ENTITY ISSUING THE AS-BUILT SURVEY, ALONG WITH THE NAME AND LICENSE NUMBER OF THE SURVEYOR IN RESPONSIBLE CHARGE.
4. MUST REFLECT A SURVEY DATE, WHICH IS THE DATE OF ACQUISITION. WHEN THE GRAPHICS OF THE AS-BUILT SURVEY ARE REVISED, BUT THE SURVEY DATE STAYS THE SAME, THE AS-BUILT SURVEY MUST LIST DATES FOR ALL REVISIONS.
5. MUST BE SIGNED AND SEALED BY THE SURVEYOR IN RESPONSIBLE CHARGE.
6. A DESIGNATED "NORTH ARROW" AND EITHER A STATED SCALE OR GRAPHIC SCALE SHALL BE SHOWN.
7. APPROPRIATE LINE TYPES, LINE WEIGHTS, AND LINE WIDTHS SHALL BE USED ON THE AS-BUILT DRAWING TO DIFFERENTIATE EXISTING FROM PROPOSED AND WATER FROM SEWER, RECLAIM, AND STORM. ALL PHYSICAL ITEMS (I.E. PIPES, VALVES, ETC.), SURVEYED BOUNDARIES, AND EASEMENTS SHOULD BE CLEARLY MARKED, AND DIMENSIONED, AND IDENTIFIED BY SIZE AND MATERIAL.
8. ALL UTILITIES IN THE PUBLIC RIGHT OF WAY AND WITHIN EASEMENTS OR TO THE END OF THE PUBLICLY OWNED PORTION OF THE UTILITY (I.E. METER AND BACKFLOW PREVENTER, CLEANOUT, ETC.) SHALL BE SHOWN WITH ASSOCIATED SIZES LABELED. THIS INCLUDES, BUT IS NOT LIMITED TO, STUB-OUTS/LATERALS, METERS, BFP'S, WATER MAINS, FORCE MAINS, GRAVITY SEWER MAINS, MANHOLES, STORM WATER PIPING AND ASSOCIATED STRUCTURES, VALVES, FIRE HYDRANTS, LIFT STATIONS, ETC. ALL PIPE LINE WORK MUST BE CONNECTED WITHIN THE SITE AS WELL AS THE CONNECTION TO EXISTING UTILITIES ADJACENT TO THE SITE (IT IS THE SURVEYOR'S RESPONSIBILITY TO COORDINATE WITH ALL CONTRACTORS FOR LOCATIONS AND SIZING). ALL UTILITY CONNECTIONS TO THE BUILDINGS MUST BE SHOWN.
9. ALL PROPOSED UTILITY/INGRESS/EGRESS EASEMENTS MUST BE SHOWN ON THE DRAWING AND MUST HAVE THE ASSOCIATED LEGAL DESCRIPTION WRITTEN.
10. EDGE OF PAVEMENT, ROADS (ASPHALT SHADED), CURBS, DRIVEWAY CONNECTIONS, BUILDINGS, PARKING LOTS, RIGHT-OF-WAY, AND STREET NAMES MUST BE SHOWN IN ALL APPLICATIONS. ALL ITEMS MENTIONED ABOVE MUST BE FIELD LOCATED.
11. IF A LIFT STATION IS TO BE DEDICATED TO THE CITY THE PLAN MUST SHOW A DETAIL SCALED AT 1"=10' SHOWING ALL IMPROVEMENTS INCLUDING: WATER AND SEWER SERVICES, MANHOLES, INVERTS, RIMS, BFP'S, YARD HYDRANTS, CONTROL PANELS, FENCING, PARCEL BOUNDARY, LEGAL DESCRIPTION OF PARCEL BOUNDARY, WET WELL, VALVE BOX, FORCE MAIN, FLOW METER (IF APPLICABLE), DRIVEWAY, GATE.
12. PROPERTY BOUNDARY MUST BE CLEARLY LABELED AND DIMENSIONED.
13. INVERTS, GRATES, TOPS, RIMS MUST BE SHOWN FOR ALL STORM WATER DRAINAGE STRUCTURES. INVERTS (PIPES AND CLEANOUTS) AND RIMS MUST BE SHOWN FOR ALL GRAVITY SEWER MANHOLES. SLOPES MUST BE SHOWN ON EACH RUN OF PIPE FOR REVIEW AND APPROVAL.
14. "AS-BUILT" PROFILE OF ALL DIRECTIONAL BORES AND JACK-AND-BORES INDICATING GRADE AND PIPE ELEVATIONS AT 10 FOOT INTERVALS SHALL BE PROVIDED ON AS-BUILT PLAN SHEETS BASED ON BORE LOGS DEVELOPED BY BORING CONTRACTOR DURING INSTALLATION. PROFILES SHALL USE HORIZONTAL STATIONING WHICH TIES TO STATIONING ON PLANS. PROFILES SHALL ALSO SHOW EXISTING SURFACE ELEVATIONS AS WELL AS ANY PROPOSED SURFACE ELEVATIONS ON THE PROFILE. SURFACE PROFILES MUST SHOW ANY PAVEMENT, SIDEWALKS, DITCHES, SWALES ETC. NOTE THAT PROFILES LOCATING PIPE SOLELY BY "DEPTH BELOW EXISTING GROUND" WILL NOT BE ACCEPTED.
15. COASTAL SETBACK LINE OR COASTAL CONSTRUCTION CONTROL LINE SHOULD BE DESIGNATED.
16. ELEVATIONS AND LOCATION OF ANY FLOOD ZONES ALONG THE FLOOD HAZARD BOUNDARIES SHALL BE DELINEATED.
17. NEARBY WETLANDS AND OTHER ENVIRONMENTALLY SIGNIFICANT RESOURCES CLEARLY LABELED.
18. STORM WATER MANAGEMENT SYSTEM FEATURES INCLUDING DIMENSIONS OF : WET AND DRY SWALES, WET AND DRY PONDS, CONVEYANCE SYSTEMS, EASEMENTS, ALONG WITH ALL ASSOCIATED M.E.S. STRUCTURES AND INVERTS, OUTFALL STRUCTURES AND INVERTS, SKIMMERS, DISCHARGE STRUCTURES AND INVERTS AND SLOT ELEVATIONS, TOP OF BANK, SLOPE OF BANK AND BOTTOM OF ALL PONDS, SWALES, CLOSED AND OPEN CONVEYANCES. FOR FEMA LOMR SUBMITTALS ALSO PROVIDE: FINISHED FLOOR ELEVATIONS, SPOT ELEVATIONS AND/OR CONTOURS SHOWING LOWEST LOT ELEVATIONS.
19. THE ENGINEER OF RECORD SHALL REVIEW AND APPROVE THE AS-BUILT PRIOR TO SUBMISSION TO THE CITY FOR FINAL APPROVAL. WRITTEN APPROVAL BY THE ENGINEER OF RECORD SHALL BE NOTED ON A TRANSMITTAL WITH A STATEMENT OF NO EXCEPTIONS TO MINIMUM STANDARDS PROVIDED HEREIN.

STORM WATER REQUIREMENTS FOR THE AS-BUILT SURVEYS ONLY APPLY TO PARCELS WITHIN CITY LIMITS. PLEASE SUBMIT THREE (3) HARD COPIES AND ONE (1) DIGITAL (AUTOCAD FORMAT & PDF) FOR REVIEW AND APPROVAL.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE		MINIMUM TECHNICAL STANDARDS FOR AS-BUILTS	M-28
		.....		
		DATE OF APPROVAL		



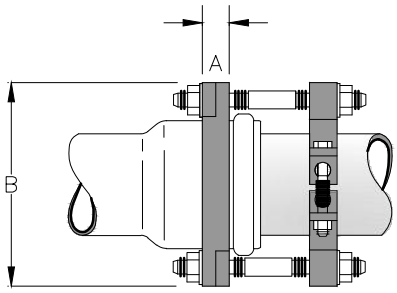
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

FUSIBLE
P.V.C. TO STANDARD
P.V.C. TRANSITION
CONNECTION DETAIL

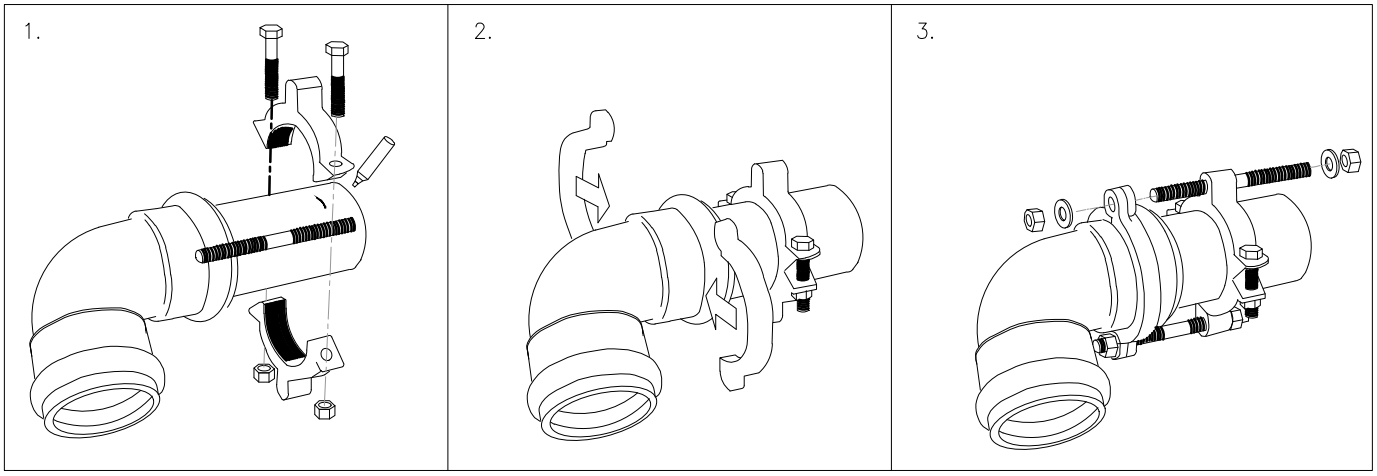
M-29



RESTRAINT DEVICE FOR IPS CLASS 200 PVC FITTINGS						
PIPE SIZE (INCHES)	PIPE O.D. (INCHES)	A	B	SIDE BOLTS NUMBER AND SIZE	CONNECTING RODS NUMBER AND SIZE	APPROX. WT. LBS.
2"	2.38	1-1/8"	6-3/8"	(2) 5/8"x11"	(2) 5/8"x3-1/2"	9.5
2-1/2"	2.88	1-1/8"	6-7/8"	(2) 5/8"x11"	(2) 5/8"x3-1/2"	10.0
3"	3.50	1-1/8"	7-5/8"	(2) 5/8"x11"	(2) 5/8"x3-1/2"	10.5

BASED ON UNI-FLANGE BLOCK BUSTER SERIES 1360 PIPE RESTRAINT. ALTERNATE, EQUIVALENT RESTAINTS MUST BE APPROVED BY THE CITY IN WRITING BEFORE USE.

INSTALLATION INSTRUCTIONS



1.) INSTALL PIPE INTO FITTING. INSTALL SERIES 1300 SPLIT CLAMPING RING ON THE SPIGOT END OF THE PIPE. (USE CONNECTING ROD AS A GUIDE TO POSITION SERRATED RESTRAINER.) TIGHTEN CLAMPING BOLTS EVENLY TO THE RECOMMENDED TORQUE.

2.) INSTALL SPLIT BACK-UP RING BEHIND GASKET RACE OF FITTING. MAKE SURE THE BEVEL FACES THE GASKET RACE. THE TWO HALVES INTERLOCK AT THE BOLT HOLES.

3.) INSERT RODS THROUGH SERIES 1300 AND BACK-UP RING. PLACE WASHERS AGAINST RESTRAINER AND BACK-UP RING EARS. SNUG RETAINING NUTS AGAINST WASHERS. DO NOT OVERTIGHTEN RETAINING NUTS. (HAND TIGHT, THEN ONE FULL TURN.)

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

..... DATE OF APPROVAL

2"-3" PVC FITTING RESTRAINT DEVICE INSTALLATION DETAIL

M-30

MINIMUM BEND RADIUS IN FEET					
	PVC		FPVC		HDPE
NOMINAL DIAMETER	IPS (200 x O.D.)	C900/C905 (250 x O.D.)	IPS	C900/C905	(25 x O.D.)
2	9		40		5
4	75	100	94	100	10
6	110	144	138	144	14
8	144	189	180	189	19
10	180	232	224	231	23
12	213	275	266	275	28
14	–	319	–	319	32
16	–	363	–	363	36
18	–	406	–	406	41
20	–	450	–	450	45
24	–	538	–	538	54
30	–	–	–	667	67
36	–	–	–	798	80

1.) ALL POLYETHYLENE PIPING SHALL MEET CITY OF MEXICO BEACH STANDARDS AND SPECIFICATIONS

2.) SDR 9, CLASS 250, PE4710 RESIN HDPE FOR 1" SERVICE TUBING.
SDR–11, CLASS 200, PE4710 RESIN HDPE FOR 2" DIAMETER AND LARGER POTABLE WATER & RECLAIMED WATER.
SDR–11, CLASS 160, PE4710 RESIN HDPE FOR 2" DIAMETER AND LARGER SANITARY FORCE MAINS COLOR CODED BLUE FOR POTABLE WATER COLOR CODED GREEN FOR SANITARY FORCE MAIN.

3.) THE COLOR CODING SHALL MEETING REQUIREMENTS IN ACCORDANCE WITH SUBPARAGRAPH 62–555.320 (21)(B) 3 F.A.C. AND SHALL BE CO–EXTRUDED DURING PIPE MANUFACTURING.

4.) ALL HDPE PIPE 2" DIAMETER AND LARGER MUST BE IPS, NO CTS IS ALLOWED. ALL 1" SERVICE TUBING SHALL BE CTS.

5.) ALL PVC PIPE MUST BE C900/C905.

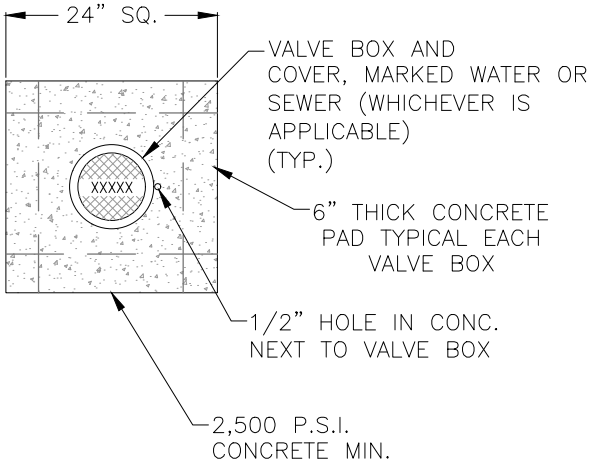
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

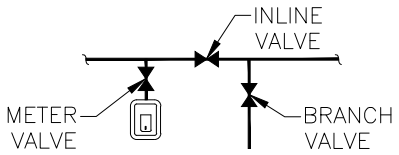
REV.	DATE

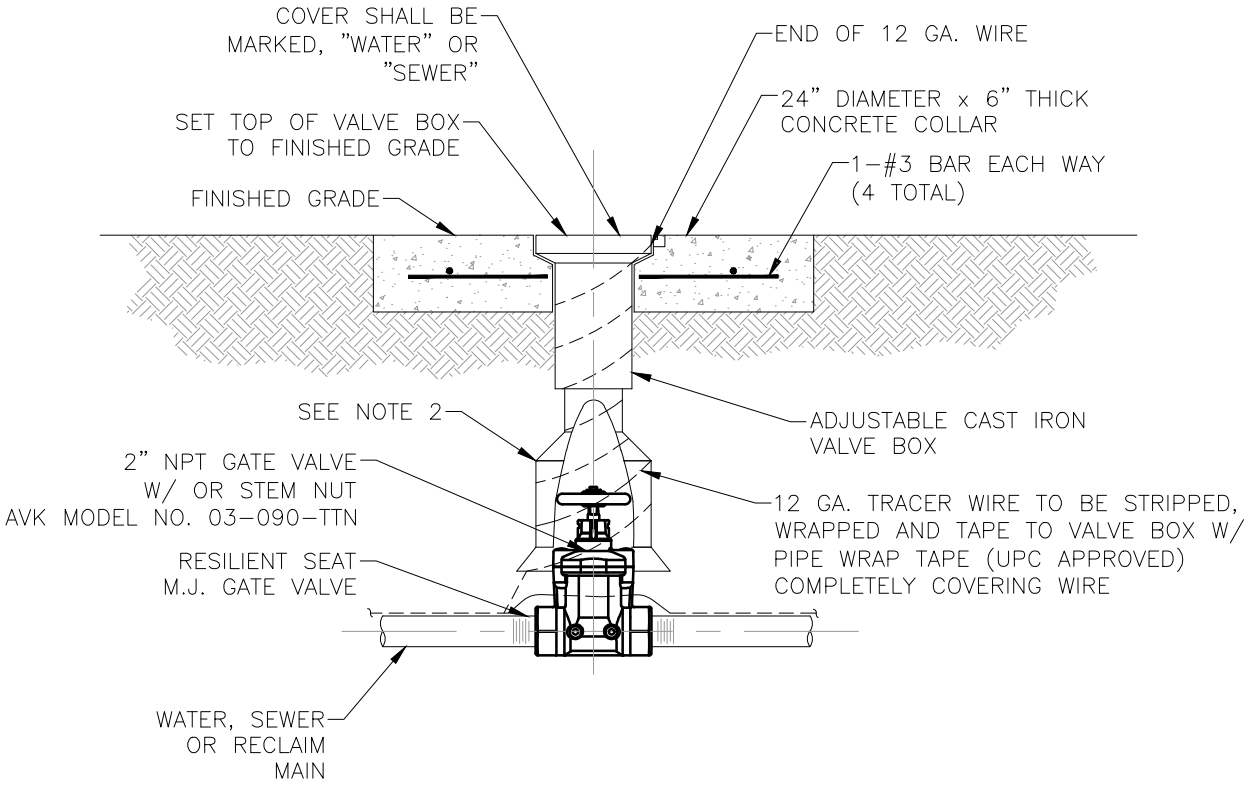
.....
DATE OF APPROVAL

MINIMUM PIPE BEND RADIUS TABLE

M–31







NOTES:

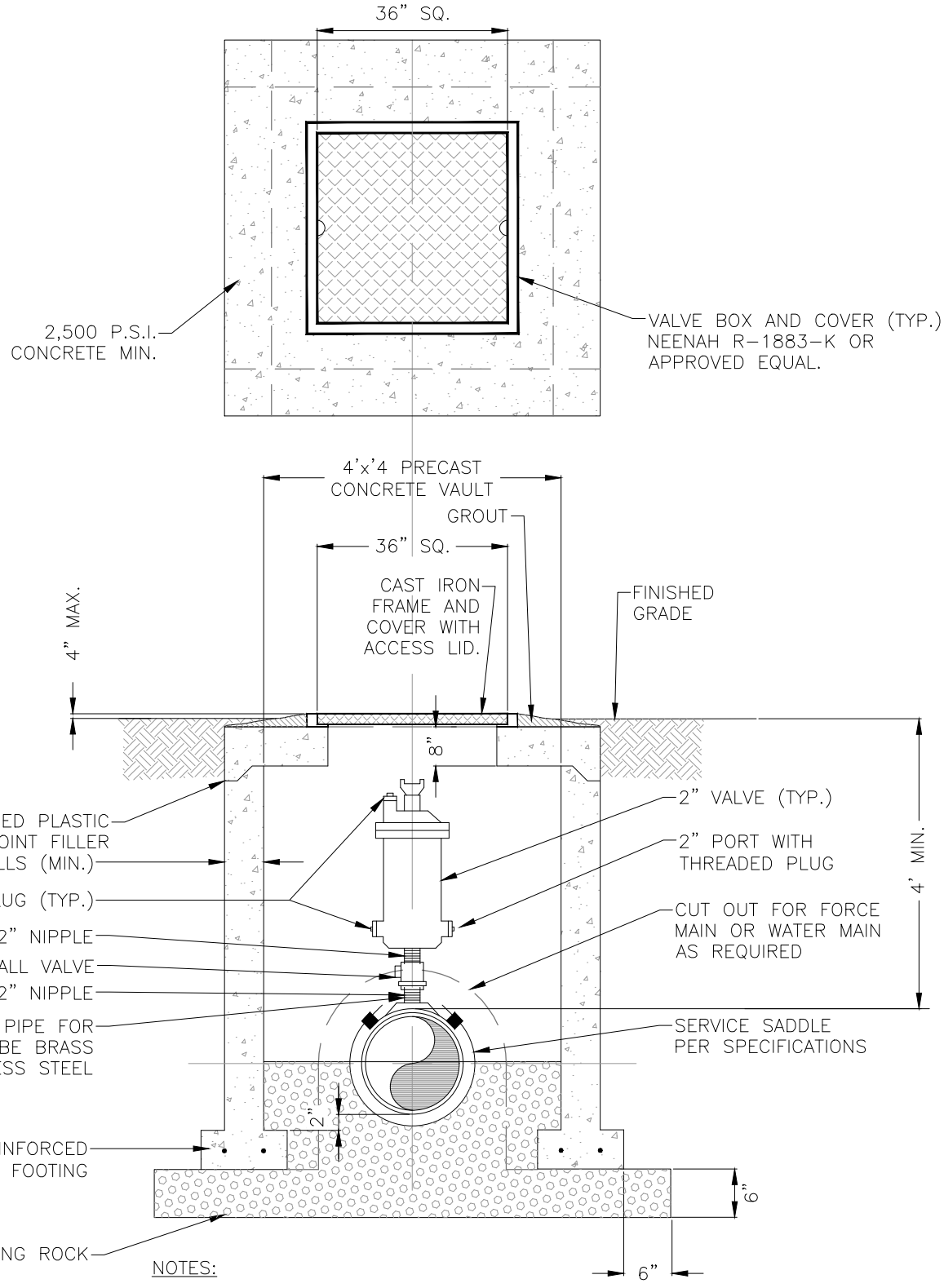
1.) PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.

2.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

3.) ALL WATER, SEWER MAINS 2" & BELOW SHALL HAVE HAND WHEEL OR OPERATING NUT.

4.) PRECAST "DONUT" VALVE COLLARS ARE NOT ACCEPTABLE UNLESS WRITTEN AUTHORIZATION IS PROVIDED BY THE CITY.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			2"-3" DUCTILE IRON GATE VALVE DETAIL (WATER, SEWER)	M-32
REV.	DATE	..... DATE OF APPROVAL		



NOTES:

1.) ABOVE DETAIL IS BASED ON 2" COMBINATION AIR/VACUUM RELEASE VALVE. CHANGE PIPE AND FITTINGS ACCORDINGLY FOR OTHER VALVE SIZES AND TYPES. VALVE SIZES TO BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL

AIR AND/OR VACUUM RELEASE VALVE DETAIL

M-33

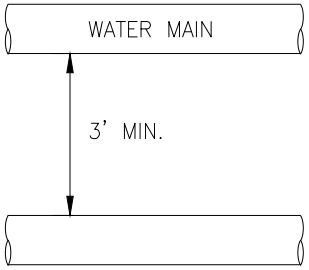
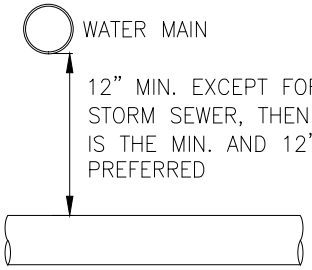
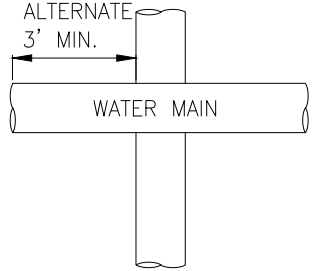
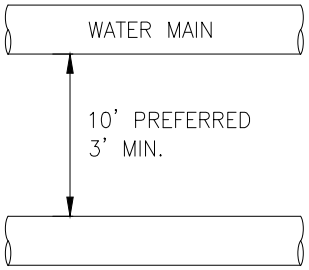
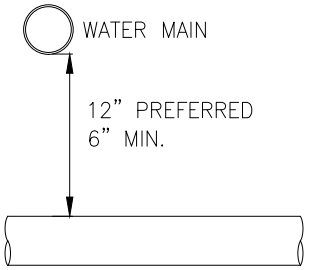
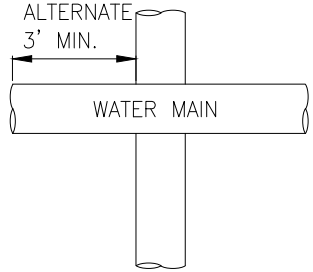
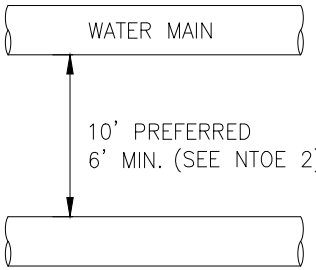
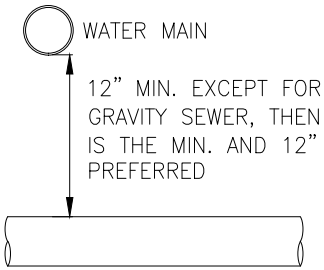
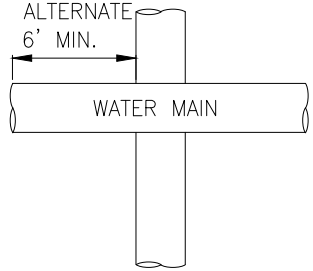
CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

DATE OF APPROVAL .....

STANDARD MAIN CROSSING/ SEPARATION DETAIL

M-34

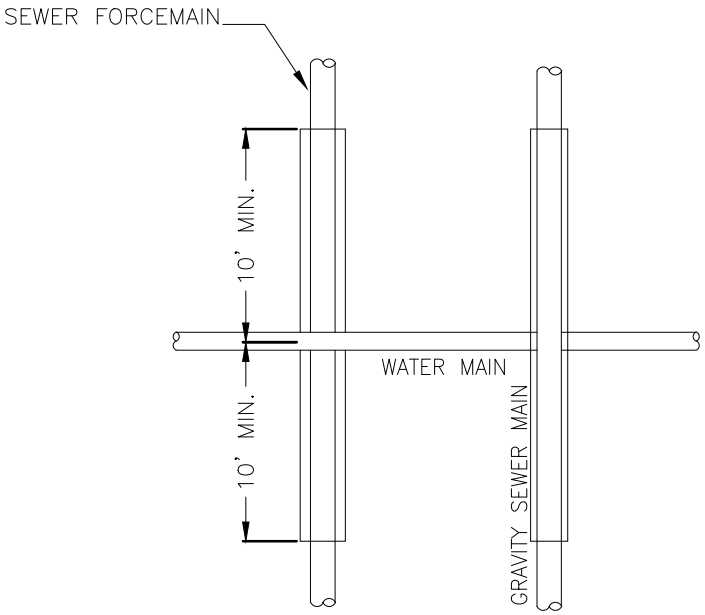
OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (SEE NTOE 1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN			
VACUUM SANITARY SEWER			
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN			
ON - SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10' MIN.	-----	-----

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MIN. SEPARATION IS 12".

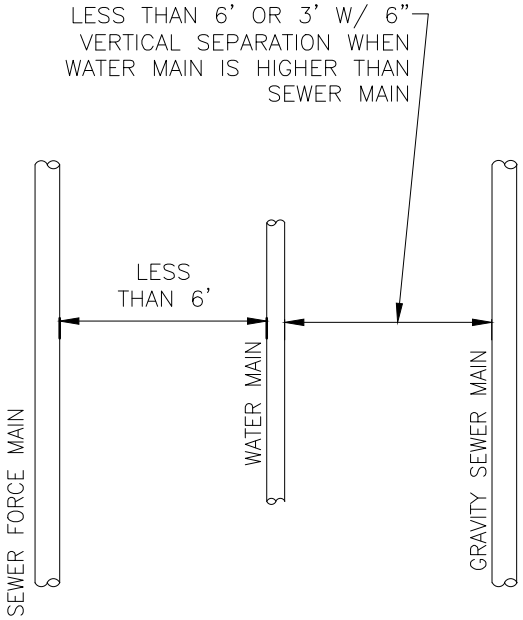
(2) 3' FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6" ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.

(3) IF REQUIRED SEPARATION CANNOT BE PROVIDED SEE DETAIL M-35B FOR REQ'D ADDITIONAL PROTECTION.

TO BE USED ONLY WHEN STANDARD SEPARATION (DETAIL M35A) CANNOT BE PROVIDED. USE OF PROVISIONS OF THIS DETAIL TO BE APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION



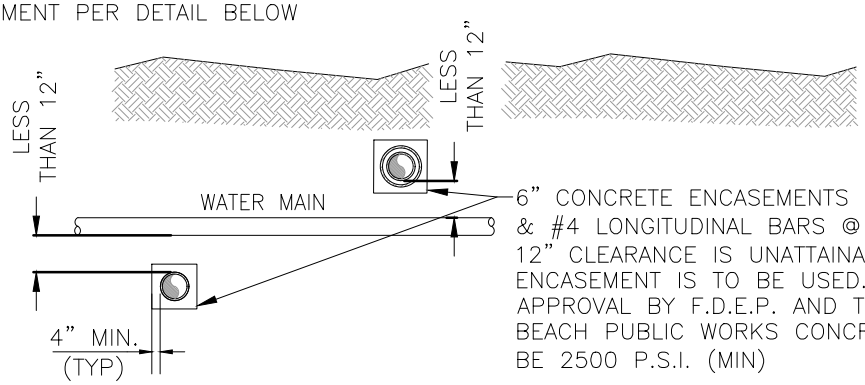
CROSSING - PLAN



PARALLEL - PLAN

USE ANY OF THE FOLLOWING:

1.) GRAVITY SEWER ONLY – USE PRESSURE RATED PIPE PER AWWA STDS.
2.) ALL MAIN TYPES – USE WELDED OR FUSED JOINTS FOR EITHER WATER OR OTHER MAIN
3.) ALL MAIN TYPES – USE WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT PER DETAIL BELOW



6" CONCRETE ENCASEMENTS W/#3 STIRRUPS @ 24" & #4 LONGITUDINAL BARS @ EACH CORNER. WHERE 12" CLEARANCE IS UNATTAINABLE, CONCRETE ENCASEMENT IS TO BE USED. SUBJECT TO APPROVAL BY F.D.E.P. AND THE CITY OF MEXICO BEACH PUBLIC WORKS CONCRETE STRENGTH SHALL BE 2500 P.S.I. (MIN)

CROSSING - SECTION

GENERAL NOTES:

A.) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:

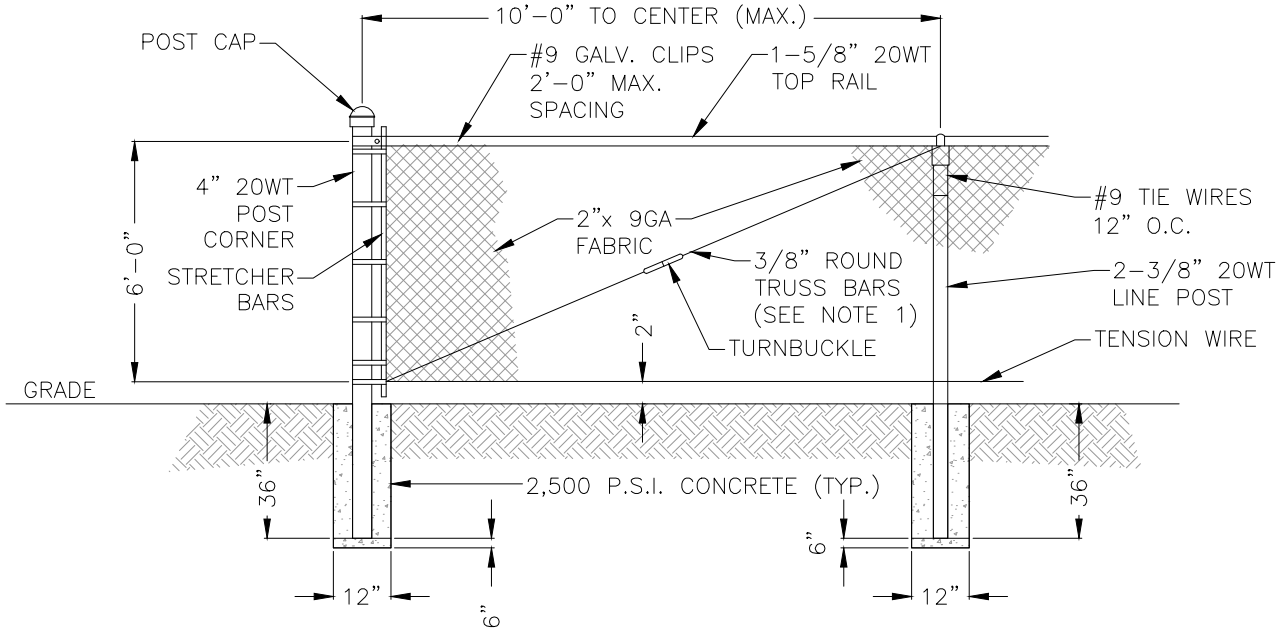
i. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25–INCH–THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND

ii. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25–INCH–THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

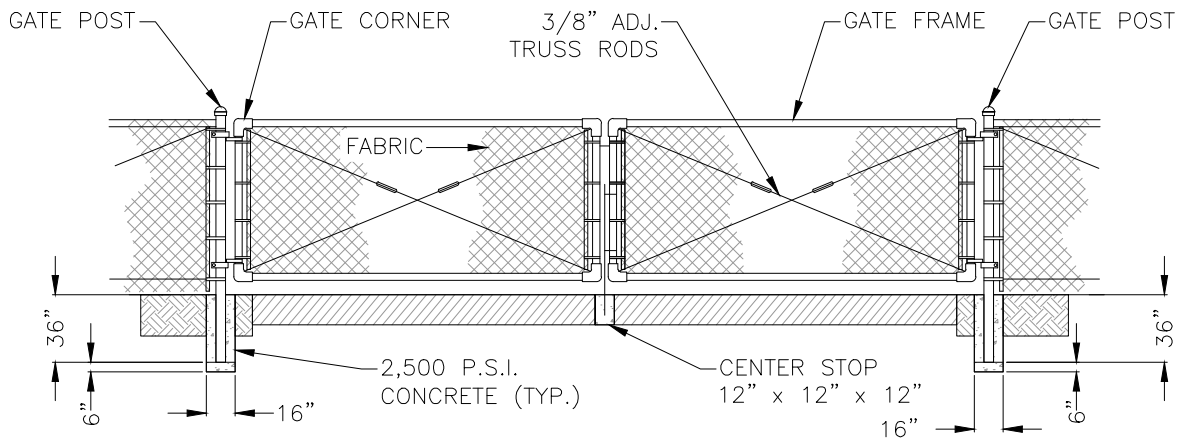
B.) THE USE OF ANY ASPECT OF THIS DETAIL MUST BE APPROVED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE CITY OF MEXICO BEACH PUBLIC WORKS

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			SPECIAL CASE MAIN CROSSING/ SEPARATION DETAIL	M–35
REV.	DATE	..... DATE OF APPROVAL		

* IF CHAIN LINK – GREEN SLATES MUST BE INSTALLED.



FENCE DETAIL



DOUBLE SWING GATE DETAIL

OTHER TYPES OF FENCING MUST BE APPROVED BY CITY.

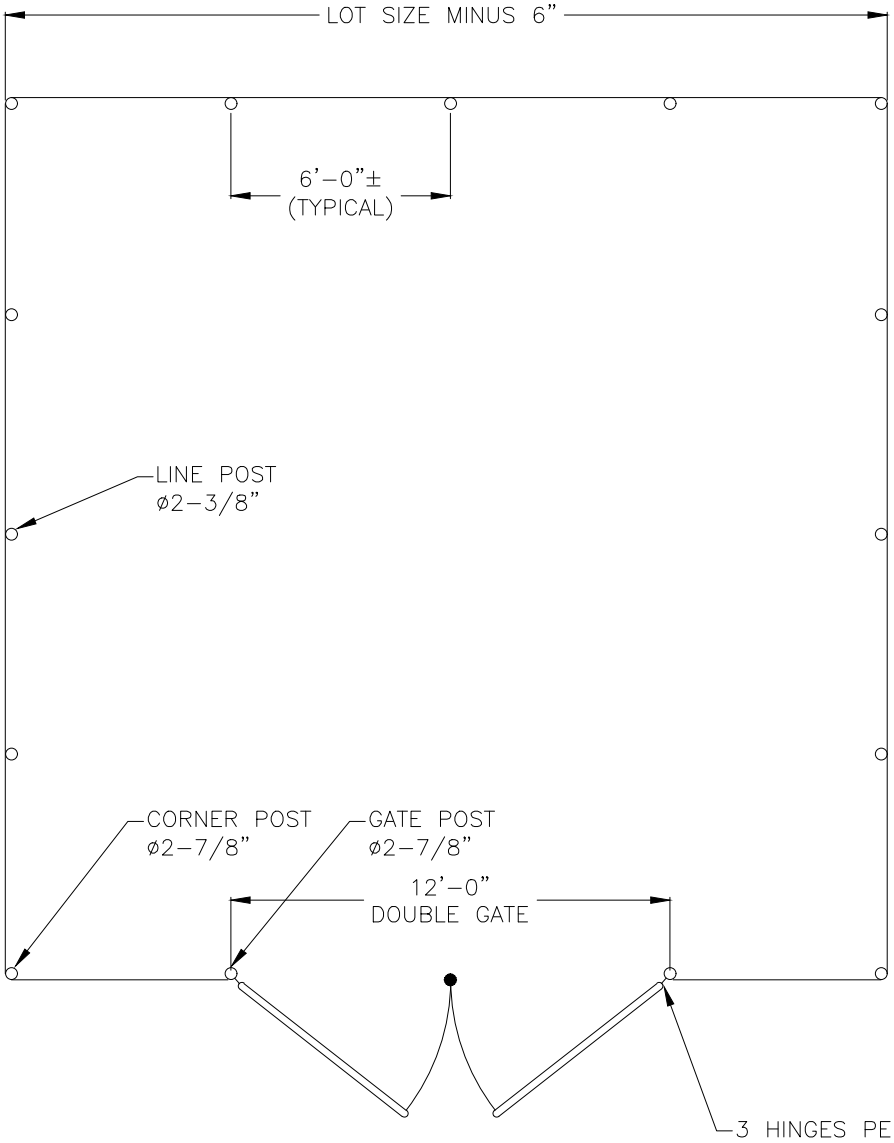
NOTES:

1.) TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.

2.) SEE SHEET S–14 FOR PLAN AND CROSS SECTION VIEWS.

3.) FABRIC, POST, RODS & ACCESSORIES SHALL BE GALVANIZED WITH GREEN VINYL COATING.

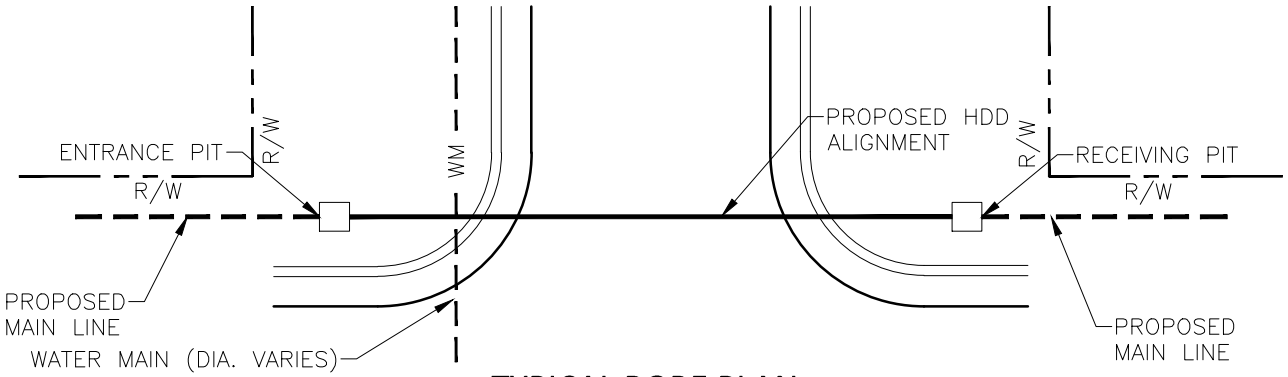
CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE		FENCE DETAIL	M–36
		.....		
		DATE OF APPROVAL		



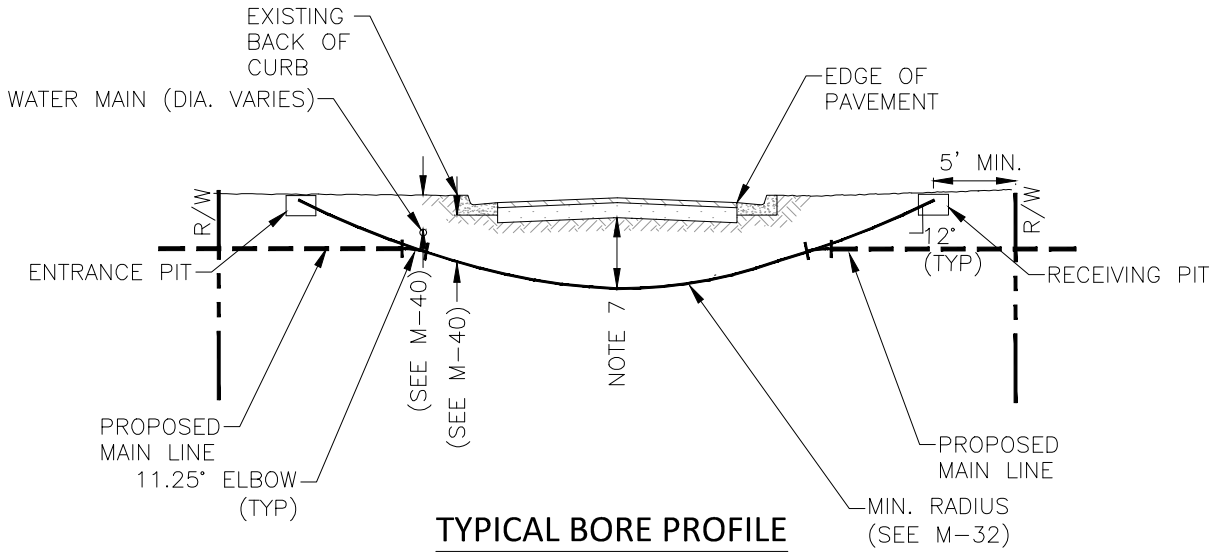
NOTE:
SEE SHEET S-13 FOR FRONT
AND SIDE VIEWS.

PLAN VIEW

CITY OF MEXICO BEACH UTILITIES DEPARTMENT			TYPICAL LIFT STATION FENCE	M-37
REV.	DATE			
		.....		
		DATE OF APPROVAL		



TYPICAL BORE PLAN



TYPICAL BORE PROFILE

NOTES:

1. AL HDD INSTALLATION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE FLORIDA D.O.T. UTILITY ACCOMMODATIONS MANUAL.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF AFFECTED AGENCIES AND COORDINATION WITH ALL UTILITIES PRIOR TO CONSTRUCTION.

3. ALL CONSTRUCTION MATERIALS, INCLUDING DRILLING FLUID, SHALL BE REMOVED FROM THE SITE PRIOR TO RESTORATION OF DISTURBED AREAS.

4. ALL RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE R/W OWNER.

5. EXCAVATIONS SHALL BE RESTORED IN ACCORDANCE WITH THE REQUIREMENTS OF THE R/W OWNER.

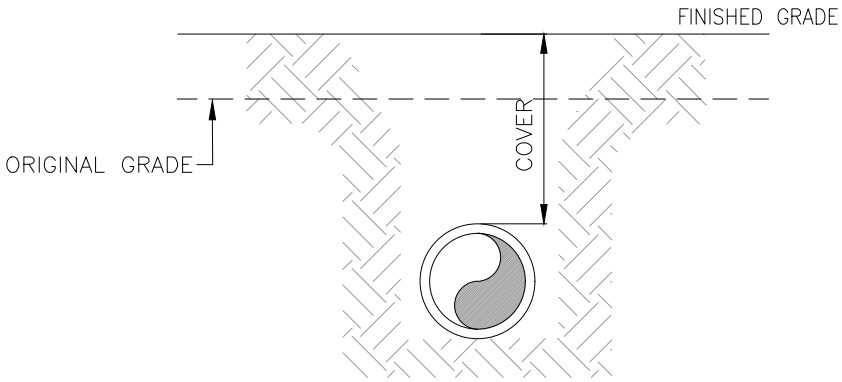
6. ANY DEVIATION FROM THE PROPOSED BORE PLAN (ENTRY ANGLE, DEPTH, ETC.) MUST BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

7. A) UP TO 12" DIAMETER PIPE, GREATER OF:
   a) 10 X PIPE DIAMETER
   b) 6' MINIMUM
   B) FOR PIPE OVER 12" DIAMETER, DETERMINED BY ANALYSIS.
   C) BORE PATH SHALL NOT EXCEED DESIGN BY MORE THAN 5% OF DEPTH OVER 100 FT LENGTH.

CITY OF MEXICO BEACH UTILITIES DEPARTMENT				
REV.	DATE	..... DATE OF APPROVAL	HORIZONTAL DIRECTIONAL DRILL DETAIL	M-38

PIPE COVERAGE TABLE

PIPE DIAMETER	REQUIRED COVER
UP TO 12"	36"
ABOVE 12" UP TO 24"	42"
30" AND ABOVE	48"



NOTES:

1. COVER SHALL BE MEASURED WHEN FINISH GRADES ARE ESTABLISHED.

2. COVER TOLERANCES ARE +6", −3", PROVIDED THE AVERAGE COVER MEETS TABLE REQUIREMENTS.

CITY OF MEXICO BEACH
UTILITIES DEPARTMENT

REV.	DATE

.....
DATE OF APPROVAL

REQUIRED PIPE COVERAGE TABLE

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