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# WASTEWATER COLLECTION SYSTEM

## SCOPE

THE WORK UNDER THIS SECTION INCLUDES THE FURNISHING, INSTALLING AND/OR LAYING, JOINTING, AND TESTING OF ALL SEWER LINES, MANHOLES, FITTINGS AND APPURTENANCES, INCLUDING NECESSARY SERVICE CONNECTIONS, REQUIRED FOR A COMPLETE SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THE WORK SHALL ALSO INCLUDE SUCH CONNECTIONS, RECONNECTIONS, TEMPORARY SERVICE, AND ALL OTHER PROVISIONS IN REGARD TO EXISTING SEWER OPERATIONS AND MODIFICATIONS AS IS REQUIRED TO PERFORM THE NEW WORK.

## GENERAL

ALL MATERIAL SHALL BE FREE FROM DEFECTS IMPAIRING STRENGTH AND DURABILITY AND BE OF THE BEST COMMERCIAL QUALITY FOR THE PURPOSE SPECIFIED. IT SHALL HAVE STRUCTURAL PROPERTIES SUFFICIENT TO SAFELY SUSTAIN OR WITHSTAND STRAINS AND STRESSES TO WHICH IT IS NORMALLY SUBJECTED AND BE TRUE TO DETAIL.

## POLYVINYLCHLORIDE (PVC) PIPE & FITTINGS

PIPE AND FITTINGS FOR GRAVITY SEWER CONSTRUCTION SHALL BE MANUFACTURED FROM VIRGIN MATERIAL AND SHALL MEET THE REQUIREMENTS OF ASTM D3034 – LATEST. THE PIPE SHALL BE SDR 35 OR GREATER FOR DEPTHS LESS THAN 10'. THE PIPE SHALL BE SDR 26 FOR DEPTHS GREATER THAN 10'. ALL JOINTS SHALL BE COMPRESSION TYPE JOINTS MEETING THE REQUIREMENTS OF ASTM D3212 – LATEST.

## MANHOLES

MANHOLES SHALL BE THE SIZE AND DEPTH SHOWN ON THE DRAWINGS AND SHALL BE PRECAST REINFORCED CONCRETE BARRELS AND CONES COATED AS SPECIFIED.

PRECAST CONCRETE SECTIONS SHALL CONFORM TO THE ASTM SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS DESIGNATION C478 – LATEST, WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:

CEMENT SHALL MEET THE REQUIREMENTS OF ASTM C150 – LATEST, SPECIFICATIONS FOR PORTLAND CEMENT, TYPE II. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. MINIMUM WALL THICKNESS SHALL BE 5", OR 1/12 THE INSIDE DIAMETER AS SHOWN, WHICHEVER IS GREATER. RINGS SHALL BE CUSTOM MADE WITH OPENINGS TO MEET INDICATED PIPE ALIGNMENT CONDITIONS AND INVERT ELEVATIONS.

JOINT CONTACT SURFACES SHALL BE FORMED WITH MACHINED CASTINGS; THEY SHALL BE EXACTLY PARALLEL WITH A 2: 1 SLOPE AND NOMINAL 1/16" CLEARANCE WITH THE TONGUE EQUIPPED WITH A PROPER RECESS FOR THE INSTALLATION OF AN O-RING RUBBER GASKET, CONFORMING TO ASTM C443 –LATEST, JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKET OR RAMNEK PRE MOLDED PLASTIC JOINT SEALER WITH JOINTS PRE-PRIMED.


WITH THE EXCEPTION OF JOINT CONTACT SURFACES, AND THE INTERIOR SURFACES OF ALL OPENINGS TO RECEIVE THE SEWER PIPE AND A 1" ANNULAR RING AROUND THE EXTERIOR AND INTERIOR OF SAID OPENINGS, THE INTERIOR AND EXTERIOR SURFACES OF EACH MANHOLE SHALL BE GIVEN TWO COATS OF COAL-TAR EPOXY. TOTAL MINIMUM DRY FILM THICKNESS SHALL BE 12 MILS. EACH COAT SHALL BE APPLIED AT THE RATE OF ONE GALLON PER 100 S.F. THE WATERPROOFING MATERIALS SHALL BE APPLIED BY BRUSH OR SPRAY AND IN ACCORDANCE WITH THE INSTRUCTIONS OF THE MANUFACTURER. TIME SHALL BE ALLOWED BETWEEN COATS TO PERMIT SUFFICIENT DRYING SO THAT THE APPLICATION OF THE SECOND COAT HAS NO EFFECT ON THE FIRST COAT. THE COAL-TAR EPOXY SHALL BE APPLIED AT THE PLACE OF FABRICATION. ADDITIONAL COATING OR TOUCH UP WILL BE REQUIRED AFTER MANHOLE INSTALLATION IF SO DIRECTED BY THE ENGINEER.

EXISTING OR NEW MANHOLES RECEIVING FLOW FROM A FORCE MAIN WILL REQUIRE AN AGRU SURE GRIP HDPE LINER OR APPROVED EQUAL.

## MANHOLE FRAMES AND COVERS

FRAMES AND COVERS SHALL BE CAST IRON OF THE TYPE AND SIZE SHOWN ON THE DRAWINGS. CASTINGS SHALL BE MADE OF GOOD QUALITY, STRONG, TOUGH, EVEN GRAINED CAST IRON, AND SHALL BE SMOOTH, FREE FROM SCALE, LUMPS, BLISTERS, SANDHOLES AND DEFECTS OF ANY NATURE WHICH SHOULD RENDER THEM UNFIT FOR THE SERVICE FOR WHICH THEY ARE INTENDED. THEY SHALL BE THOROUGHLY CLEANED AND SUBJECTED TO A CAREFUL HAMMER INSPECTION. CASTINGS SHALL MEET THE REQUIREMENTS OF ASTM A48 – LATEST, SPECIFICATIONS FOR GRAY IRON CASTINGS, CLASS NO. 30, OR GRADE 65-45-12, DUCTILE IRON MEETING THE REQUIREMENTS OF ASTM A536 – LATEST, STANDARD SPECIFICATION FOR DUCTILE IRON CASTINGS. IN EITHER CASE, MANHOLE FRAME AND COVER SHALL BE DESIGNED TO WITHSTAND AN HS20-44 LOADING DEFINED IN THE AASHTO SPECIFICATIONS. FRAMES AND COVERS SHALL BE MACHINED OR GROUND AT TOUCHING SURFACES SO AS TO SEAT FIRMLY AND PREVENT ROCKING.

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EXCAVATION AND BACKFILL

EXCAVATION AND BACKFILL CONSISTS OF EXCAVATING FOR SANITARY SEWER, AND ALL OTHER PIPELINES, MANHOLES, AND SIMILAR STRUCTURES WITH THE FOLLOWING AMENDMENTS TO SECTION 125 OF F.D.O.T. STANDARD SPECIFICATIONS.

WHEN SOIL BORINGS ARE PROVIDED BY THE ENGINEER OR OWNER, THEY SHALL BE CONSIDERED AS SUPPLEMENTAL INFORMATION AND SHALL NOT BE CONSIDERED AS DEFINITIVE OF THE SUBSOIL CONDITIONS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ASSESSING SUBSOIL CONDITIONS FOR THE ENTIRE PROJECT.

SECT. 125.8 BACKFILLING – THE REQUIREMENTS SPECIFIED SHALL ALSO INCLUDE THE SANITARY SEWER, MANHOLES, FORCE MAIN AND RELATED FACILITIES.

SECT. 125.8.3.3 COMPACTION – THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 12” LAYERS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

WHERE PAVEMENT IS TO BE CONSTRUCTED OVER THE PIPE OR WITHIN 4’ THEREOF, THE BACKFILL FOR THE THIRD STAGE (MIN. 4’ BELOW FINISH GRADE) SHALL BE PLACED IN THE MANNER REQUIRED FOR THE FIRST AND SECOND STAGES AND COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. WHERE THE CONSTRUCTION IS OUTSIDE THESE LIMITS, THE THIRD STAGE SHALL BE COMPACTED TO A FIRMNESS APPROXIMATELY EQUAL TO THAT OF THE ADJACENT SOIL AND NO TESTING WILL BE REQUIRED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING OF THE BACKFILL COMPACTION. THE TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY. DENSITY TESTS SHALL BE TAKEN ON EACH 12” LAYER AT INTERVALS NOT TO EXCEED 300 L.F. AND AT EACH TRANSVERSE SECTION OF PIPELINE.

PIPE LAYING

PIPE LAYING SHALL BE DONE ONLY AFTER A CAREFUL INSPECTION OF EACH PIECE HAS BEEN CONDUCTED AND DEFECTIVE PIPE DISCARDED AND REPLACED IMMEDIATELY. THE PIPE GRADE MAY BE ESTABLISHED BY USE OF LASER BEAM EQUIPMENT.

THE LAYING OF PIPE SHALL COMMENCE AT THE LOWEST POINT, WITH THE SPIGOT ENDS POINTED THE DIRECTION OF FLOW, AND PROCEED UPWARD IN GRADIENT WITH THE ENDS ABUTTING AND TRUE TO LINE AND GRADE.

UNDER NO CIRCUMSTANCES SHALL PIPE BE LAID IN WATER, AND NO PIPE SHALL BE LAID WHEN THE TRENCH CONDITIONS OR WEATHER IS UNSUITABLE FOR WORKING IN DRY CONDITIONS. AT ALL TIMES WHEN WORK IS NOT IN PROGRESS, ALL OPEN ENDS OF PIPE AND FITTINGS SHALL BE SECURELY CLOSED SO THAT NO TRENCH WATER, EARTH, OR OTHER SUBSTANCE CAN ENTER THE PIPE. ANY TRENCH DEWATERING (WELL POINT, ETC.) REQUIRED FOR PROPER ALIGNMENT OF PIPE SHALL BE DONE BY THE CONTRACTOR AT HIS OWN EXPENSE, AND NO PIPE SHALL BE LAID IN THE DEWATERED TRENCH UNTIL APPROVAL IS MADE BY THE ENGINEER.


OPENINGS SUCH AS STUBS, WYES, TEES OR OTHER SERVICES ALONG THE LINES SHALL BE SECURELY CLOSED BY MEANS OF AN APPROVED STOPPER THAT FITS INTO THE BELL OF THE PIPE AND IS RECOMMENDED BY THE PIPE MANUFACTURER. THIS STOPPER SHALL BE JOINTED IN SUCH A MANNER THAT IT MAY BE REMOVED AT SOME FUTURE TIME WITHOUT INJURY TO THE PIPE ITSELF. AT THE CLOSE OF EACH DAY’S WORK, AND AT OTHER TIMES WHEN PIPE IS NOT BEING LAID, THE END OF THE PIPE SHALL BE TEMPORARILY CLOSED WITH A CLOSE-FITTING STOPPER APPROVED BY THE ENGINEER.

ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT THE ENTRANCE OF MUD, SAND OR OTHER OBSTRUCTING MATERIAL INTO THE PIPELINES. AS THE WORK PROGRESSES, THE INTERIOR OF THE SEWER SHALL BE CLEANED OF ALL DIRT, JOINTING MATERIAL, AND SUPERFLUOUS MATERIALS OF EVERY DESCRIPTION. THE CONTRACTOR SHALL FLUSH ALL SEWER LINES CONSTRUCTED UNDER THIS CONTRACT WITH CLEAN WATER, PRIOR TO FINAL INSPECTION TO ASSURE COMPLETE REMOVAL OF ALL DEBRIS AND FOREIGN MATERIAL, AND TO THE SATISFACTION OF THE ENGINEER.

SEWER SERVICE CONNECTION

TYPES OF SERVICE CONNECTIONS SHALL BE SHOWN ON THE DRAWINGS. ALTHOUGH THE GENERAL LOCATION OF CONNECTIONS MAY BE SHOWN ON THE DRAWINGS, THE ACTUAL LOCATION SHALL BE DETERMINED BY THE CONTRACTOR, SUBJECT TO APPROVAL BY THE CITY INSPECTOR AND ENGINEER. EACH SERVICE CONNECTION SHALL BE ACCURATELY RECORDED BY STATIONING ON THE AS-BUILT DRAWINGS AND SHALL BE FURNISHED TO THE ENGINEER.

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SERVICE LINES SHALL BE CONNECTED TO THE SEWER LINES BY MEANS OF A WYE FITTING WITH A BRANCH AS SHOWN ON THE STANDARD DRAWINGS. IN THE ABSENCE OF AN EXISTING WYE, CONNECTIONS OF NEW SERVICES TO EXISTING MAINS SHALL BE MADE BY INSTALLING A SADDLE TYPE FITTING OF THE SAME MANUFACTURER AS THE PIPE. THE BRANCH OF THE WYE FITTING WILL BE ELEVATED AS DIRECTED DEPENDING ON THE DEPTH OF THE SEWER AND THE ELEVATION OF THE PROPERTY TO BE SERVED. EIGHT BENDS WILL BE USED TO CONNECT SERVICE LINE AT THE WYE BRANCH.

SERVICE LINES SHALL EXTEND FROM THE SEWER TO THE PROPERTY LINE AND BE PLUGGED, UNLESS OTHERWISE SHOWN. ALL SERVICE LINES SHALL BE 4" IN DIAMETER UNLESS A DOUBLE SERVICE. MARKERS SHALL BE INSTALLED AT THE END OF EACH SERVICE OR OPPOSITE WYES AND THEIR LOCATIONS RECORDED.

INSTALLATION OF PLUGGED WYES WHERE INDICATED ON THE DRAWINGS WILL BE MADE AS DIRECTED. PLUGS SHALL BE OF THE TYPE AND SIZE REQUIRED TO MATCH THE PIPE AND SHALL BE WATER-TIGHT AND REMOVABLE WITHOUT BREAKING THE PIPE.

AN EMS SANITARY MARKER #1253 (GREEN) MANUFACTURED BY AUTOMATION PRODUCTS COMPANY, AUSTIN, TEXAS, SHALL BE INSTALLED OVER EACH SANITARY SEWER SERVICE LATERAL, IF SO REQUIRED BY THE CONSTRUCTION DETAILS OF THE DRAWINGS. THE CONSTRUCTION DETAILS SHALL INDICATE IF THESE MARKERS ARE REQUIRED, AND, IF SO, THE REQUIRED LOCATION AND DEPTH.

FIELD TESTING

ALL WORK CONSTRUCTED SHALL BE SUBJECT TO VISUAL INSPECTION FOR FAULTS OR DEFECTS AND ANY SUCH DEVIATION OR OMISSION SHALL BE CORRECTED AT ONCE. ALL TESTS SHALL BE MADE BY THE CONTRACTOR WHO SHALL PROVIDE NECESSARY EQUIPMENT FOR TESTING AND LAMPING THE SYSTEM AFTER COMPACTION IN THE PRESENCE OF, AND UNDER THE SUPERVISION AND INSTRUCTION OF THE CITY, STAFF INSPECTOR, OR ENGINEER. ALL COSTS FOR TESTING DEFINED BELOW SHALL BE BORNE BY THE CONTRACTOR. LAMP TESTS SHALL BE OBSERVED FIRST HAND BY THE CITY INSPECTOR AND ENGINEER. UPON COMPLETION, EACH SECTION OF SEWER LINE SHALL SHOW A FULL CIRCLE OF LIGHT WHEN LAMPED BETWEEN MANHOLES.

FOLLOWING FULL COMPACTION OF LIMEROCK BASE AND PRIOR TO ASPHALT, THE PIPE SHALL BE SIGHTED BETWEEN SUCCESSIVE MANHOLES TO INSURE PROPER GRADE AND ALIGNMENT. A FULL PIPE CIRCLE SHALL BE OBSERVED. DEFECTS NOTED SHALL BE IMMEDIATELY DUG UP AND CORRECTED AFTER WHICH BACKFILLING MAY PROCEED TO THE TOP OF THE TRENCH. THE CONTRACTOR IS REQUIRED TO MAINTAIN THIS CONDITION, ENSURING AGAINST DISPLACEMENT, FLOTATION, ETC., SO THAT FINAL INSPECTION OF COMPLETED SECTIONS WILL BE FACILITATED.


IF, IN THE OPINION OF THE CITY INSPECTOR OR ENGINEER, INFILTRATION APPEARS EXCESSIVE, THE CONTRACTOR SHALL VIDEO THE SECTIONS IN QUESTION.

FOLLOWING COMPLETION OF THE BACKFILL COVER, THE COMPLETE SEWER LINE SHALL BE TESTED UTILIZING A LOW-PRESSURE AIR TEST (5 PSI FOR 5 MINUTES WITH ZERO LOSS). ALL TEST REQUIREMENTS AND PROCEDURES SHALL BE IN STRICT ACCORDANCE WITH UNI-BELL PVC PIPE ASSOCIATION UNI-B-6-90 "RECOMMENDED PRACTICE FOR LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE". THE CONTRACTOR SHALL FURNISH SUITABLE TEMPORARY TESTING PLUGS OR CAPS, PRESSURE GAUGES, AIR PUMPS, ETC. AND ANY OTHER NECESSARY EQUIPMENT AND ALL LABOR REQUIRED, WITHOUT ADDITIONAL COMPENSATION. THE ENGINEER SHALL CALCULATE THE MINIMUM TIME REQUIRED FOR EACH TEST ON EACH SECTION OF LINE AND SHALL SO ADVISE THE CONTRACTOR PRIOR TO THE TEST. IF THE SECTION OF PIPE FAILS TO PASS THE TESTS, THE CONTRACTOR SHALL DO EVERYTHING NECESSARY TO LOCATE, UNCOVER (EVEN TO THE EXTENT OF UNCOVERING THE ENTIRE SECTION) AND REPAIR OR REPLACE THE DEFECTIVE PIPE FITTING, JOINT OR OTHER APPURTENANCE, AND RETEST THE REPAIRED SECTION WITHOUT ADDITIONAL COMPENSATION. UPON SATISFACTORY COMPLETION OF THE TESTS, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY TEST PLUGS OR CAPS AND OTHER EQUIPMENT AND SHALL RESTORE THE PIPE TO A CONDITION READY FOR SERVICE. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE CITY INSPECTOR OR AN AUTHORIZED REPRESENTATIVE OF THE ENGINEER.

ALL SANITARY SEWER AIR TESTING SHALL BE COMPLETED A MINIMUM OF 30 DAYS PRIOR TO THE PROJECT SUBSTANTIAL COMPLETION DATE.

ALL SANITARY SEWER MUST MAINTAIN NO MORE THAN 0.25" OF SAG, SUBJECT TO APPROVAL BY THE ENGINEER AND CITY INSPECTOR.

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THE CONTRACTOR IS ADVISED THAT THE OWNER RESERVES THE RIGHT TO USE WHATEVER ADDITIONAL INSPECTION AND TESTING METHODS IT DEEMS APPROPRIATE TO VERIFY THE CONDITION AND ACCEPTABILITY OF THE WORK. THE CONTRACTOR SHALL REPAIR ALL DEFECTS IN THE WORK MADE APPARENT BY ANY AND ALL INSPECTIONS AND TESTS EVEN IF THE WORK OR PARTS OF THE WORK MAY HAVE PASSED OTHER TESTS AND INSPECTIONS.

MANHOLE INSTALLATION

MANHOLES ARE NOT TO BE LOCATED IN THE LOWEST LAYING AREA, AND ALL GRADING MUST BE AWAY FROM THE MANHOLE. MANHOLES ARE NOT TO BE LOCATED ADJACENT TO A CURB.

PRECAST CONCRETE MANHOLES SHALL HAVE EACH SECTION SET SO AS TO BE VERTICAL AND IN TRUE ALIGNMENT. JOINT SURFACES OF THE SECTIONS SHALL BE SEALED WITH PRE MOLDED PLASTIC JOINT SEALER EQUAL TO "RAMNEK", OR HAVE AN O-RING GASKET INSTALLED IN THE PREFORMED RECESS. ALL HOLES IN THE SECTIONS REQUIRED FOR HANDLING AND THE ANNULAR SPACE BETWEEN THE WALLS OF THE MANHOLE AND THE ENTERING PIPES SHALL BE THOROUGHLY PLUGGED WITH NON-SHRINKING GROUT AND SHALL BE FINISHED SMOOTH, AND SHALL BE WATER-TIGHT.

FOR GRADE ADJUSTMENT IN SETTING THE MANHOLE FRAME, PRECAST GRADE ADJUSTMENT RINGS SHALL BE USED ON TOP OF MANHOLE SLABS AND PRECAST CONCRETE MANHOLE CONES IN ACCORDANCE WITH THE DRAWINGS. PRECAST ADJUSTMENT RINGS SHALL BE CONSTRUCTED OF CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. MORTAR FOR JOINTS SHALL BE ONE PART CEMENT AND TWO PARTS SAND; LIME SHALL NOT BE USED. REINFORCEMENT SHALL BE PROVIDED AS NECESSARY TO PREVENT BREAKAGE DURING HANDLING. EACH ADJUSTMENT RING SHALL BE LAID IN A FULL BED AND JOINT OF MORTAR WITHOUT REQUIRING SUBSEQUENT GROUTING, FLUSHING, OR FILLING, AND SHALL BE THOROUGHLY BONDED AS DIRECTED.

MANHOLE FRAMES AND COVERS SHALL BE SET TO CONFORM ACCURATELY TO THE FINISHED PAVEMENT SURFACE. ALL ADJUSTMENTS REQUIRED FOR GRADE SHALL BE DONE WITH PRECAST GRADE ADJUSTMENT RINGS. TO ASSURE A SUFFICIENT BOND BETWEEN THE MANHOLE COVERS AND THE SURROUNDING ASPHALT SURFACE, THE MANHOLE COVER SHALL NOT BE SET UNTIL ALL BASE CONSTRUCTION HAS BEEN COMPLETED. THE MANHOLES SHALL BE PROTECTED DURING THE ROADWAY CONSTRUCTION BY COVERING WITH SUFFICIENT MATERIAL TO PREVENT THE ROADWAY MATERIAL FROM ENTERING THE MANHOLE AND TO SUPPORT THE CONSTRUCTION MACHINERY REQUIRED. IMMEDIATELY BEFORE THE PLACEMENT OF THE FINAL ASPHALT SURFACE COURSE, THE MANHOLE SHALL BE UNCOVERED AND THE RING AND COVER SO PLACED TO ACCURATELY MEET THE FINISH PAVEMENT GRADE. THE MANHOLE FRAME SHALL BE SET ON THIS CONCRETE SECTION IN A RING OF MORTAR AT LEAST 1" THICK AND SHAPED TO SHED WATER AWAY FROM THE FRAME. ADDITIONAL MORTAR SHALL BE ADDED TO EXTEND TO THE OUTER EDGE OF THE ADJUSTMENT RINGS AND SHALL BE FINISHED SMOOTH. THE AREA EXCAVATED IN THE LIMEROCK BASE COURSE TO ALLOW FOR ADJUSTMENT OF THE MANHOLE RING AND COVER TO GRADE SHALL BE BACKFILLED WITH LIMEROCK AND COMPACTED TO THE SAME DENSITY AS THE LIME ROCK BASE COURSE.

ALL MANHOLE COVERS SHALL BE CLEANED TO REMOVE ASPHALT AND DEBRIS, THEN PAINTED WITH BLACK RUST-INHIBITING PAINT. IF THE MANHOLE IS LOCATED IN A PAVED AREA, CLEANING AND PAINTING SHALL OCCUR AFTER THE FINAL ASPHALT SURFACE IS PLACED.


FLOW CHANNELS IN MANHOLE BASE SHALL BE FORMED OF 2500 PSI CONCRETE AND/OR BRICK RUBBLE AND MORTAR WHILE THE MANHOLES ARE UNDER CONSTRUCTION. CUT OFF PIPES AT INSIDE FACE OF THE MANHOLE AND CONSTRUCT THE INVERT TO THE SHAPE AND SIZES OF PIPE INDICATED. ALL INVERTS SHALL FOLLOW THE GRADES OF THE PIPE ENTERING THE MANHOLES. CHANGES IN DIRECTION OF THE SEWER AND ENTERING BRANCH OR BRANCHES SHALL BE LAID OUT IN SMOOTH CURVES OF THE LONGEST POSSIBLE RADIUS WHICH IS TANGENT TO THE CENTERLINES OF ADJOINING PIPELINES.

CONNECTIONS TO EXISTING STRUCTURES

WHERE SHOWN ON THE DRAWINGS STUB LINES SHALL BE PROVIDED FOR THE CONNECTION OF FUTURE SEWER LINES TO MANHOLES. THE END OF EACH STUB LINE SHALL BE PROVIDED WITH A BELL END WHICH SHALL BE CLOSED BY AN APPROVED STOPPER AS SPECIFIED HEREINBEFORE. EACH STUB LINE SHALL BE ACCURATELY REFERENCED TO THE CENTER OF THE MANHOLE, AND THE ACTUAL INVERT ELEVATION OF EACH OF THE STUB LINE SHALL BE ACCURATELY RECORDED ON THE AS-BUILT DRAWINGS.

IF A STRUCTURE HAS NOT BEEN MAINTAINED WITHIN 10 YEARS, THE CITY RESERVES THE RIGHT TO REQUIRE THE LINING OF THE STRUCTURE OR ANY OTHER REQUIRED MAINTENANCE.

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A FLEXIBLE PIPE TO MANHOLE CONNECTOR SHALL BE EMPLOYED IN THE CONNECTION OF THE SANITARY SEWER PIPE TO PRECAST MANHOLES. THE CONNECTOR SHALL BE THE SALE ELEMENT RELIED ON TO ASSURE A FLEXIBLE WATER-TIGHT SEAL OF THE PIPE TO THE MANHOLE. NO ADHESIVES OR LUBRICANTS SHALL BE EMPLOYED IN THE INSTALLATION OF THE CONNECTOR INTO THE MANHOLE. THE RUBBER FOR THE CONNECTOR SHALL COMPLY WITH ASTM C443 AND ASTM C923 AND CONSIST OF EPDM AND ELASTOMERS DESIGNED TO BE RESISTANT TO OZONE, WEATHER ELEMENTS, AND CHEMICALS, INCLUDING ACIDS, ALKALIS, ANIMAL AND VEGETABLE FATS, OILS AND PETROLEUM PRODUCTS FROM SPILLS. ALL STAINLESS STEEL ELEMENT OF THE CONNECTOR SHALL BE TOTALLY NONMAGNETIC SERIES 304 STAINLESS, EXCLUDING THE WORM SCREW FOR TIGHTENING THE STEEL BAND AROUND THE PIPE WHICH SHALL BE SERIES 305 STAINLESS. THE WORM SCREW FOR TIGHTENING THE STEEL BAND SHALL BE TORQUED BY A BREAKAWAY TORQUE WRENCH AVAILABLE FROM THE PRECAST MANHOLE SUPPLIER, AND SET FOR 60"/LBS. THE CONNECTOR SHALL BE INSTALLED IN THE MANHOLE WALL BY ACTIVATING THE EXPANDING MECHANISM IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE CONNECTOR MANUFACTURER.

WHERE SHOWN ON THE DRAWINGS NEW LINES SHALL BE CONNECTED INTO EXISTING MANHOLES OR STRUCTURES. UNLESS STUBS OF CORRECT SIZE ARE FOUND TO EXIST, THE CONTRACTOR SHALL CUT SUITABLE OPENINGS INTO THE EXISTING STRUCTURE (WALL AND FLOOR SLAB AS REQUIRED) OR REMOVE THE EXISTING PIPE TO ACCOMMODATE THE PIPELINES AS INDICATED ON THE DRAWINGS AND AS HEREIN SPECIFIED. THE PORTION OF EACH EXISTING STRUCTURE REMOVED FOR NEW INSTALLATION SHALL BE CONFINED TO THE SMALLEST OPENING POSSIBLE, CONSISTENT WITH THE WORK TO BE DONE.

AFTER THE PIPE IS INSTALLED, CONTRACTOR SHALL CAREFULLY CLOSE UP THE OPENINGS AROUND THE PIPE TO MAKE A WATER-TIGHT JOINT USING "CONSTRUCTION GROUT" OR "SET GROUT" AS MANUFACTURED BY MASTER BUILDERS, INC., "NS GROUT" AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY, OR APPROVED EQUAL, AND REPAIR THE EXISTING MANHOLE INVERT IN A MANNER SATISFACTORY TO THE ENGINEER. THE FLOOR SHALL BE REFORMED AND FINISHED TO PROVIDE FLOW CHANNELS AS SPECIFIED FOR NEW MANHOLES. ALL SUCH WORK SHALL BE DONE WITH THE PROPER TOOLS, AND BY CAREFUL WORKMEN COMPETENT TO DO SUCH WORK.

ADJUSTING EXISTING STRUCTURES

EXISTING MANHOLES, WITHIN THE LIMITS OF THE PROPOSED WORK, THAT DO NOT CONFORM TO THE FINISHED GRADE DESIGNATED ON THE DRAWINGS FOR SUCH STRUCTURES, SHALL BE CUT DOWN OR EXTENDED, AND MADE TO CONFORM TO THE GRADE OF THE NEW PAVEMENT, OR TO THE DESIGNATED GRADE OF THE STRUCTURE IF OUTSIDE OF THE PROPOSED PAVEMENT AREA. THE MATERIALS AND CONSTRUCTION METHODS FOR THIS WORK SHALL CONFORM TO THE REQUIREMENTS SPECIFIED ABOVE.

IF A STRUCTURE HAS NOT BEEN MAINTAINED WITHIN 10 YEARS, THE CITY RESERVES THE RIGHT TO REQUIRE THE LINING OF THE STRUCTURE OR ANY OTHER REQUIRED MAINTENANCE.

PAVEMENT REPLACEMENT


WHERE EXISTING PAVEMENT, CURB, CURB AND GUTTER, SIDEWALK OR DRIVEWAY PAVING IS REMOVED ONLY FOR THE PURPOSE OF CONSTRUCTING, REPLACING, OR REMOVING SEWER PIPE, SERVICE LATERALS, MANHOLES, ETC., SUCH PAVEMENT, ETC., SHALL BE REPLACED AND RESTORED TO AS GOOD CONDITION, AS DETERMINED BY PUBLIC WORKS STAFF AND/OR ENGINEER BEFORE REMOVAL. THE REPLACED PAVEMENT SHALL BE OF THE SAME OR SIMILAR TYPE AS THAT REMOVED, EXCEPT WHERE PERMISSION IS GIVEN BY THE CITY INSPECTOR OR ENGINEER FOR THE USE OF ANOTHER TYPE. ROUGH CUTS FOR PAVEMENT CURB AND GUTTER, SIDEWALK, DRIVEWAYS, ETC. SHALL BE TRIMMED BACK WITH A STRAIGHT SAW CUT IN A MANNER SO AS TO PRODUCE AS NEAR AS PRACTICAL A CUT OF UNIFORM WIDTH HAVING PARALLEL SIDES. SPECIFIC REQUIREMENTS FOR THE REPLACEMENT OF PAVEMENT ON PUBLIC ROADWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL GOVERNMENTAL ENTITY HAVING JURISDICTION AND IN ACCORDANCE WITH THE DETAILS AS SHOWN ON THE CONSTRUCTION DRAWINGS.

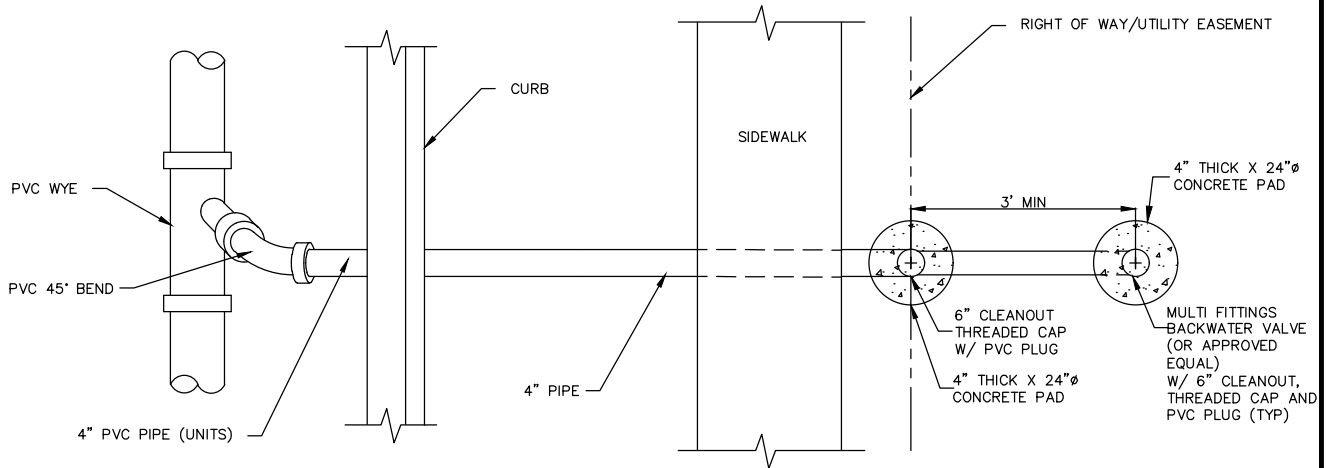
CLEARANCE REQUIREMENTS

MINIMUM SEPARATION REQUIREMENTS ARE SPECIFIED UNDER POTABLE WATER.

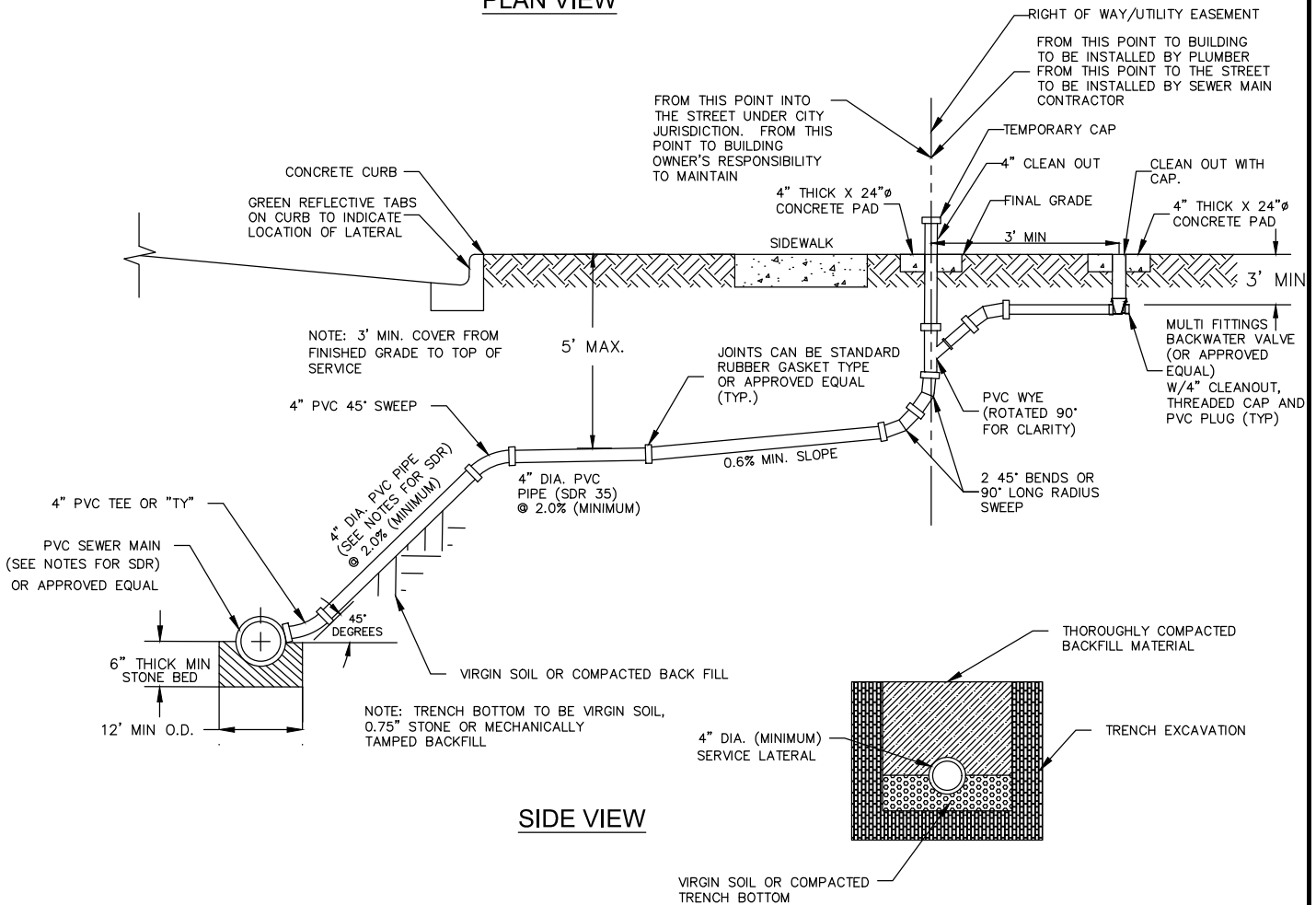
GENERAL DESIGN

1. MANHOLES SHALL BE LOCATED IN THE CENTERLINE OR "CROWN" OF THE STREET TO MINIMIZE INFILTRATION.
2. MANHOLE PIPING SHALL MATCH CROWN TO CROWN. INVERTS OVER 2 FEET FROM THE BOTTOM OF MANHOLES SHALL REQUIRE AN EXTERNAL DROP CONNECTION.
3. SANITARY LATERALS SHALL BE INSTALLED AT 90 DEGREES WITH THE RIGHT-OF-WAY TO THE GREATEST EXTENT POSSIBLE.
4. UNLESS OTHERWISE APPROVED, NO LATERALS SHALL CONNECT DIRECTLY TO A MANHOLE.
5. ALL MANHOLES SHALL BE WATER TIGHT WITH A COLD TAR EXTERIOR COATING.
6. ALL MANHOLES IN LOW LYING AREAS ARE TO INCLUDE RAIN CATCHERS AS DIRECTED BY THE CITY INSPECTOR AND ENGINEER.

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>WASTEWATER COLLECTION          SPECIFICATIONS</b>	<b>S-01</b>  5 OF 5



**PLAN VIEW**




**SIDE VIEW**

**NOTES:**

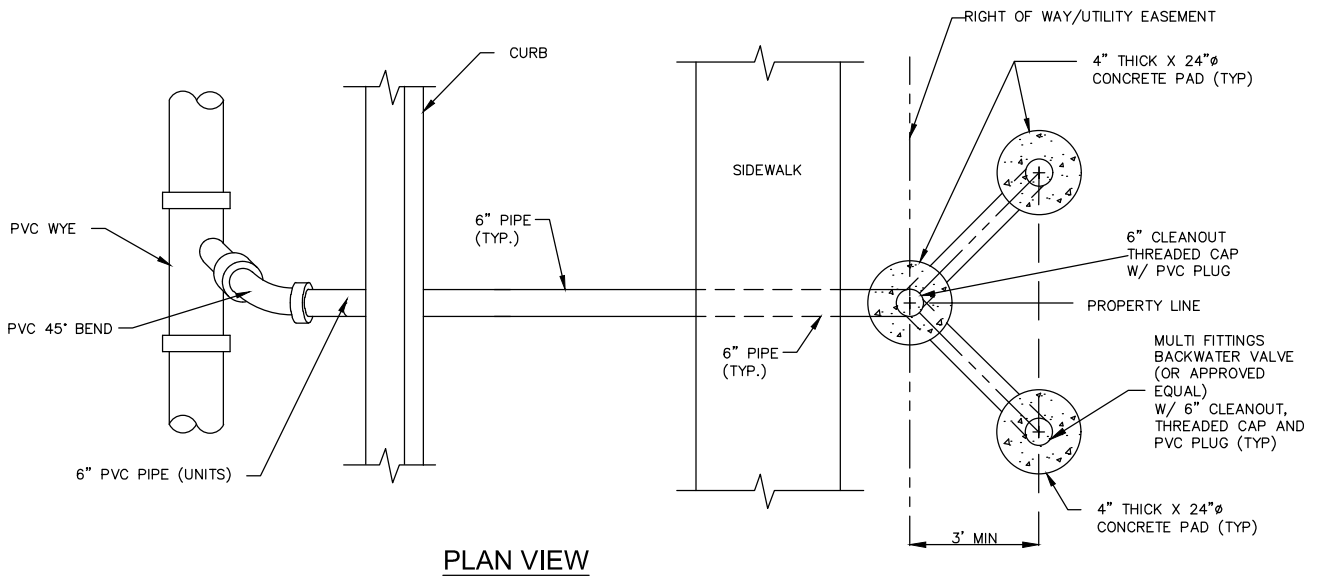
1. ALL LATERAL CONNECTIONS SHALL BE TO MAINS.  
NO LATERAL CONNECTIONS CAN BE TIED TO MANHOLES, UNLESS OTHERWISE APPROVED.
2. LATERAL DEPTH 4' TO 10' = SDR 35  
LATERAL DEPTH GREATER THAN 10' = SDR 26
3. ALL CLEAN OUTS IN PAVED AREAS SHALL BE PROSELECT PSVBM1007SWR OR APPROVED EQUAL.

NOTE: BEDDING MATERIAL TO BE SPREAD UNIFORMLY AND COMPACTED UNDER PIPE TO PROPER GRADIENT

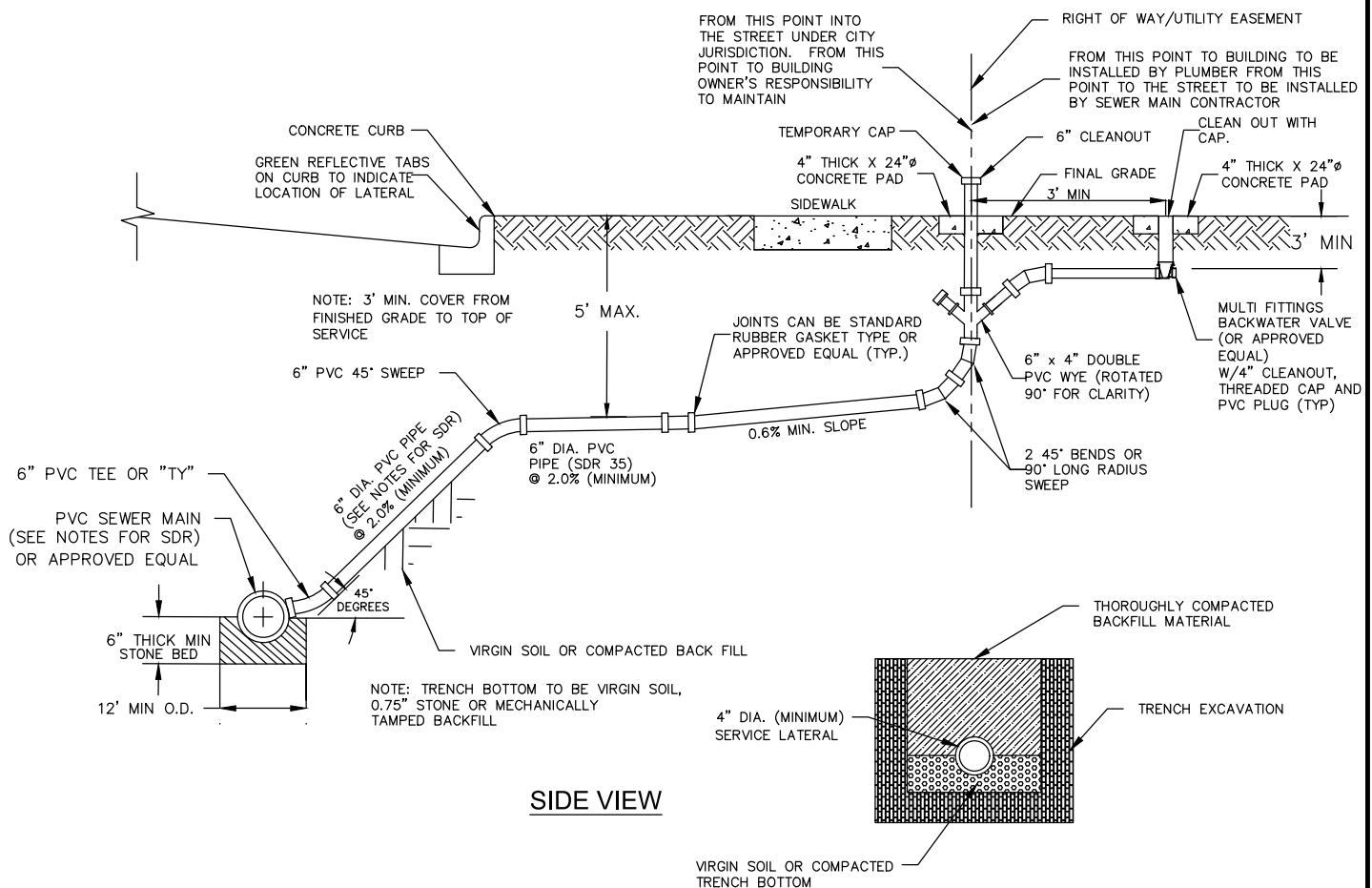
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 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>		<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>SANITARY SEWER SINGLE SERVICE</b></p>		<p><b>S-02</b> 1 OF 1</p>

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-03 Double Service.dwg Model Aug 21, 2024 6:27pm by: logan.kieran



**PLAN VIEW**



**SIDE VIEW**

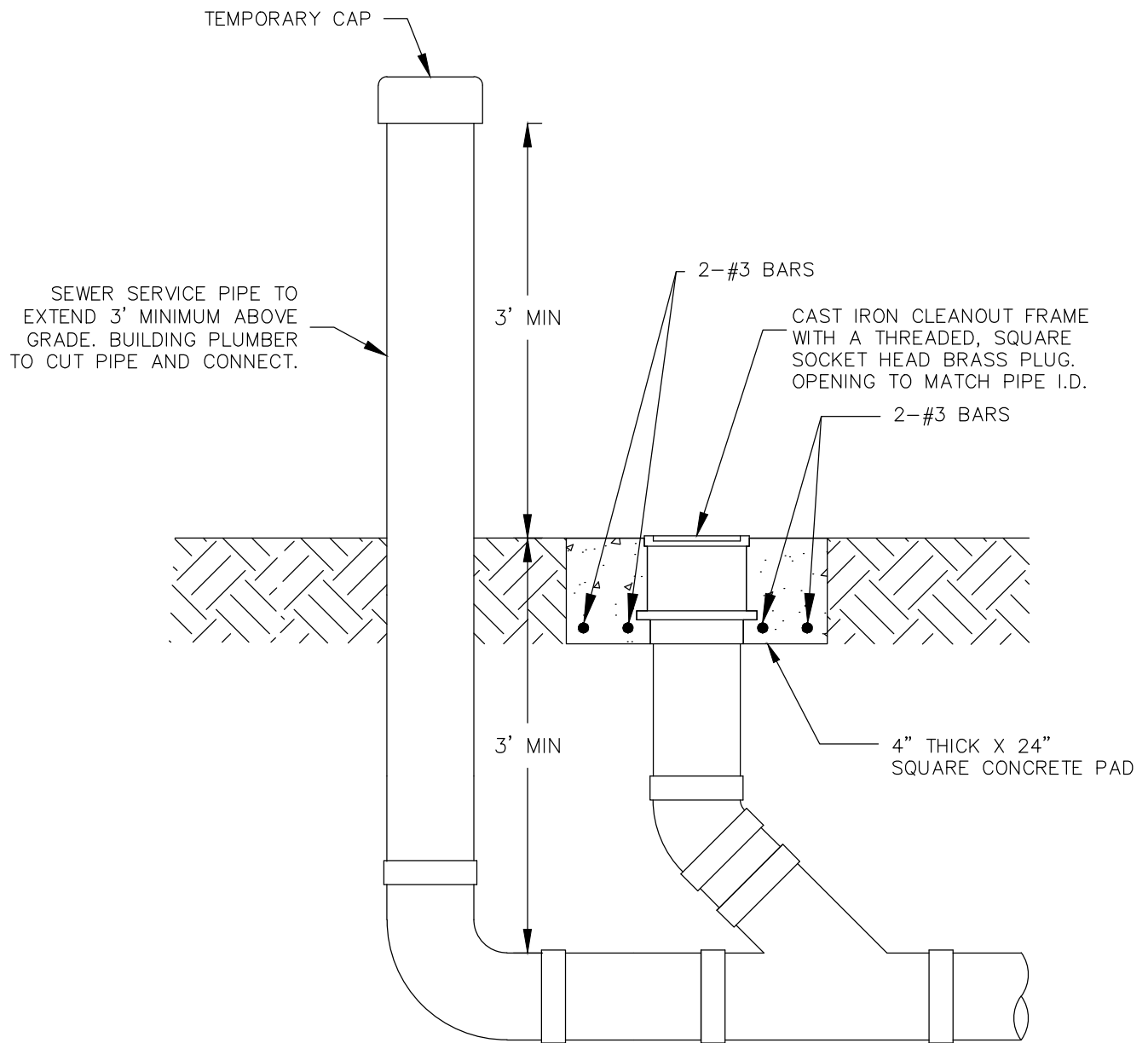
**NOTES:**

1. ALL LATERAL CONNECTIONS SHALL BE TO MAINS. NO LATERAL CONNECTIONS CAN BE TIED TO MANHOLES, UNLESS OTHERWISE APPROVED.
2. LATERAL DEPTH 4' TO 10' = SDR 35  
LATERAL DEPTH GREATER THAN 10' = SDR 26
3. ALL CLEAN OUTS IN PAVED AREAS SHALL BE PROSELECT PSVBM1007SWR OR APPROVED EQUAL.


<p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	SCALE <b>NONE</b>	CITY OF WILDWOOD SEWER DETAIL	DETAIL NUMBER
	LATEST REVISION <b>08-20-24</b>	<b>SANITARY SEWER DOUBLE SERVICE</b>	<b>S-03</b> 1 OF 1



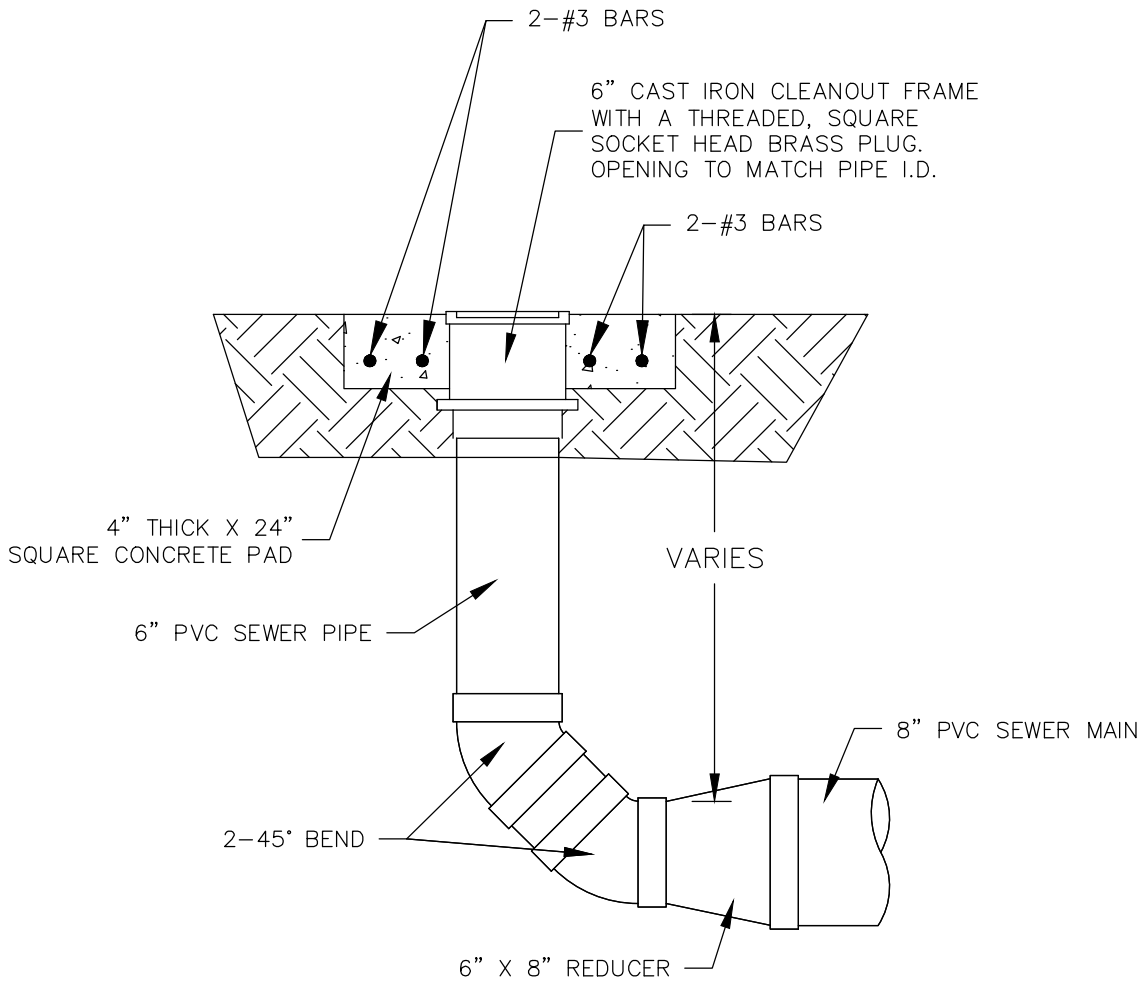
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NOTE:  
 IN PAVED AREAS, INSTALL SQUARE 4" THICK CONCRETE PAD. PAVED AND CONCRETE AREAS SHALL HAVE CAST IRON MONUMENT CLEAN OUT BODY AND COVER FROM PROSELECT (MODEL PSVBM1007SWR) OR APPROVED EQUAL. PAD TO BE APPROVED BY CITY INSPECTOR

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE	CITY OF WILDWOOD SEWER DETAIL		DETAIL NUMBER
		NONE	COMMERCIAL SANITARY SERVICE		S-04
LATEST REVISION	6" AND SMALLER MAINS		1 OF 1		
08-20-24					

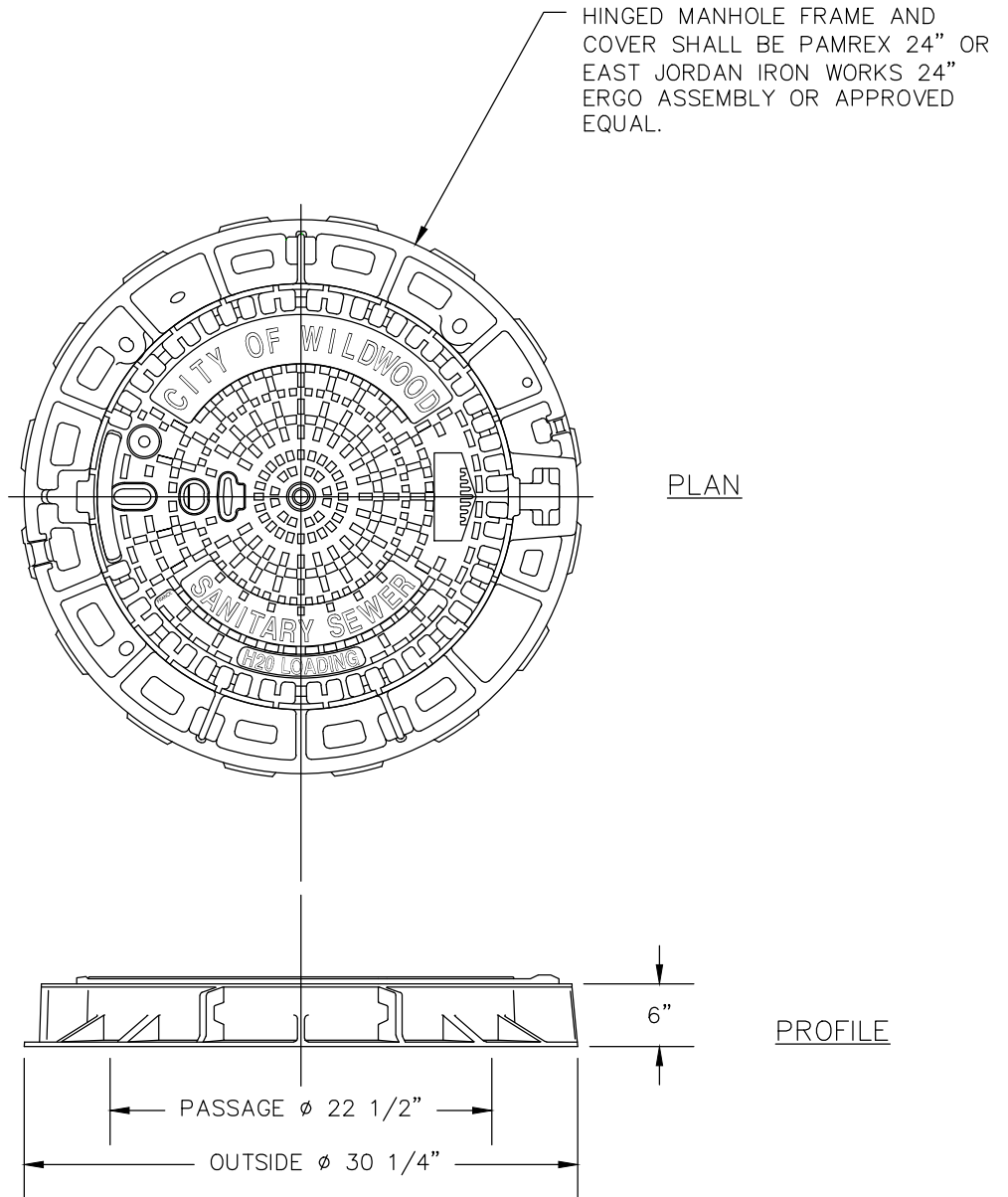
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NOTE:  
 IN PAVED AREAS, INSTALL SQUARE 4" THICK CONCRETE PAD. PAVED AND CONCRETE AREAS SHALL HAVE CAST IRON MONUMENT CLEAN OUT BODY AND COVER FROM PROSELECT (MODEL PSVBM1007SWR) OR APPROVED EQUAL. PAD TO BE APPROVED BY CITY INSPECTOR


	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>COMMERCIAL SANITARY CLEAN-OUT (8" MAIN)</b>	<b>S-05</b>  1 OF 1

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-06 Sanitary Manhole Frame and Cover.dwg Model Aug 21, 2024 6:27pm by: logan.kieran

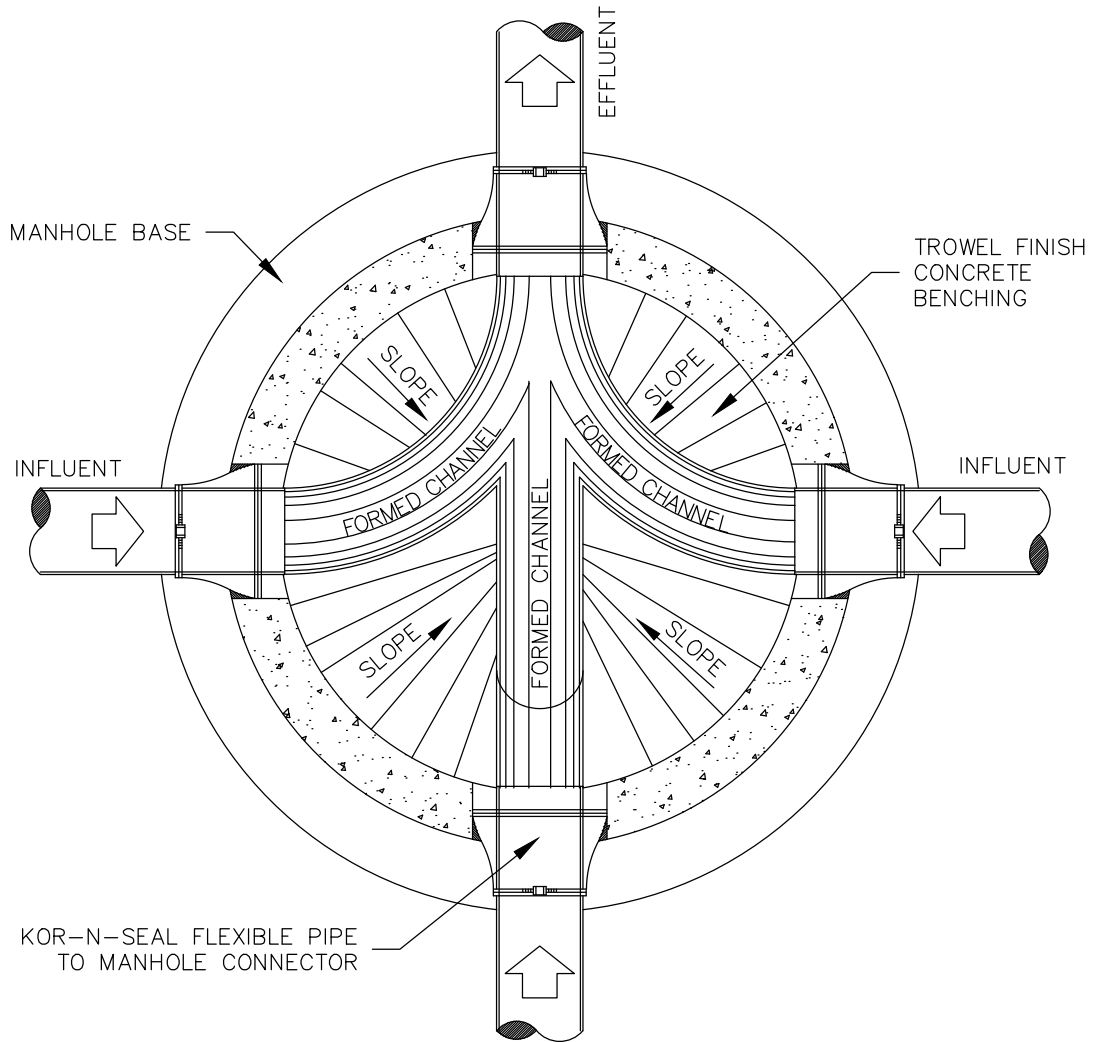


PRECAST MANHOLE TOPS

1. TWO COURSES OF ADJUSTMENT BRICK (MIN.) WITH FOUR COURSES (MAX.) SHALL BE REQUIRED BETWEEN ALL PRECAST MANHOLE TOPS AND COVER FRAMES.
2. CITY-OWNED MANHOLES SHALL HAVE COVER LETTERED WITH, "CITY OF WILDWOOD" ACROSS THE TOP AND "SANITARY SEWER" ACROSS THE BOTTOM. COVER OF PRIVATELY-OWNED MANHOLES SHALL ONLY INCLUDE "SANITARY SEWER" ACROSS THE BOTTOM.
3. ALL MANHOLES IN LOW LYING AREAS ARE TO INCLUDE RAIN CATCHERS AS DIRECTED BY THE CITY INSPECTOR AND ENGINEER.

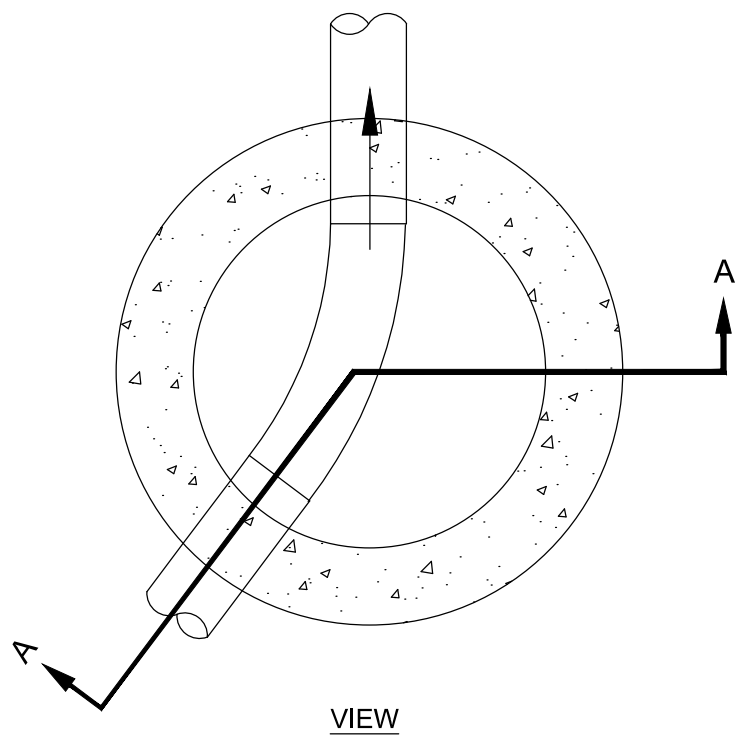
 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>STANDARD MANHOLE FRAME AND COVER</b></p>	<p><b>S-06</b> 1 OF 1</p>

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-07 Manhole Flow Channel.dwg Model Aug 21, 2024 6:28pm by: logan.kieran

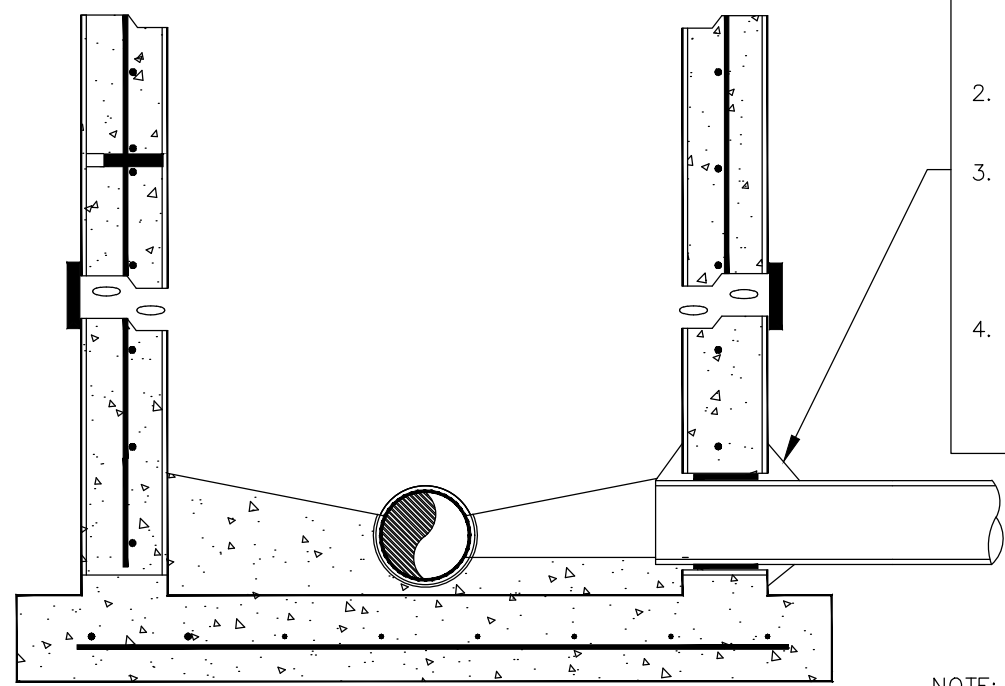


 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>TYPICAL MANHOLE PLAN</b></p>	<p><b>S-07</b> 1 OF 1</p>

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-08 Gravity Sewer Conn.dwg Model Aug 21, 2024 6:28pm by: logan.kieran




VIEW



TYPICAL SECTION A-A

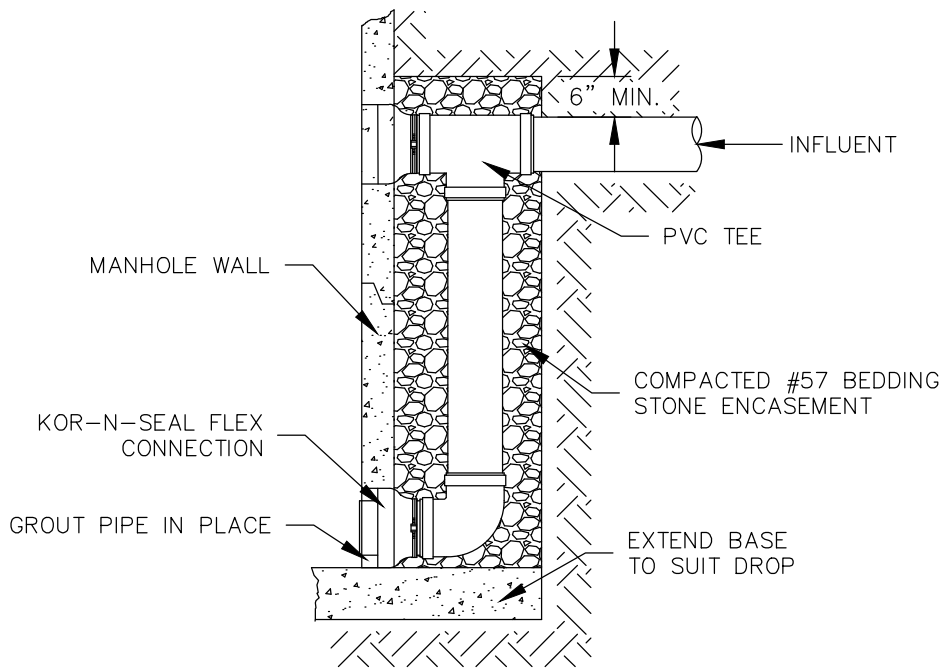
1. CORE AND CONNECT WITH "KORE N SEAL" BOOT OR OTHER APPROVED WATER TIGHT CONNECTION.
2. MORTAR ALL AROUND WITH NON-SHRINK GROUT.
3. RE-CONSTRUCT BENCH W/ 3000 PSI CONCRETE TO PROVIDE SMOOTH TRANSITION OF FLOW FROM NEW INCOMING PIPE TO OUTGOING MAIN.
4. PROVIDE MINIMUM OF 0.1' FALL ACROSS MANHOLE. IF PIPES ARE NOT SAME DIAMETER MATCH CROWN OF EXITING PIPE.


NOTE:  
IF A STRUCTURE HAS NOT BEEN MAINTAINED WITHIN 10 YEARS, THE CITY RESERVES THE RIGHT TO REQUIRE THE LINING OF THE STRUCTURE OR ANY OTHER REQUIRED MAINTENANCE.

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>GRAVITY SEWER CONNECTION</b>	<b>S-08</b> 1 OF 1

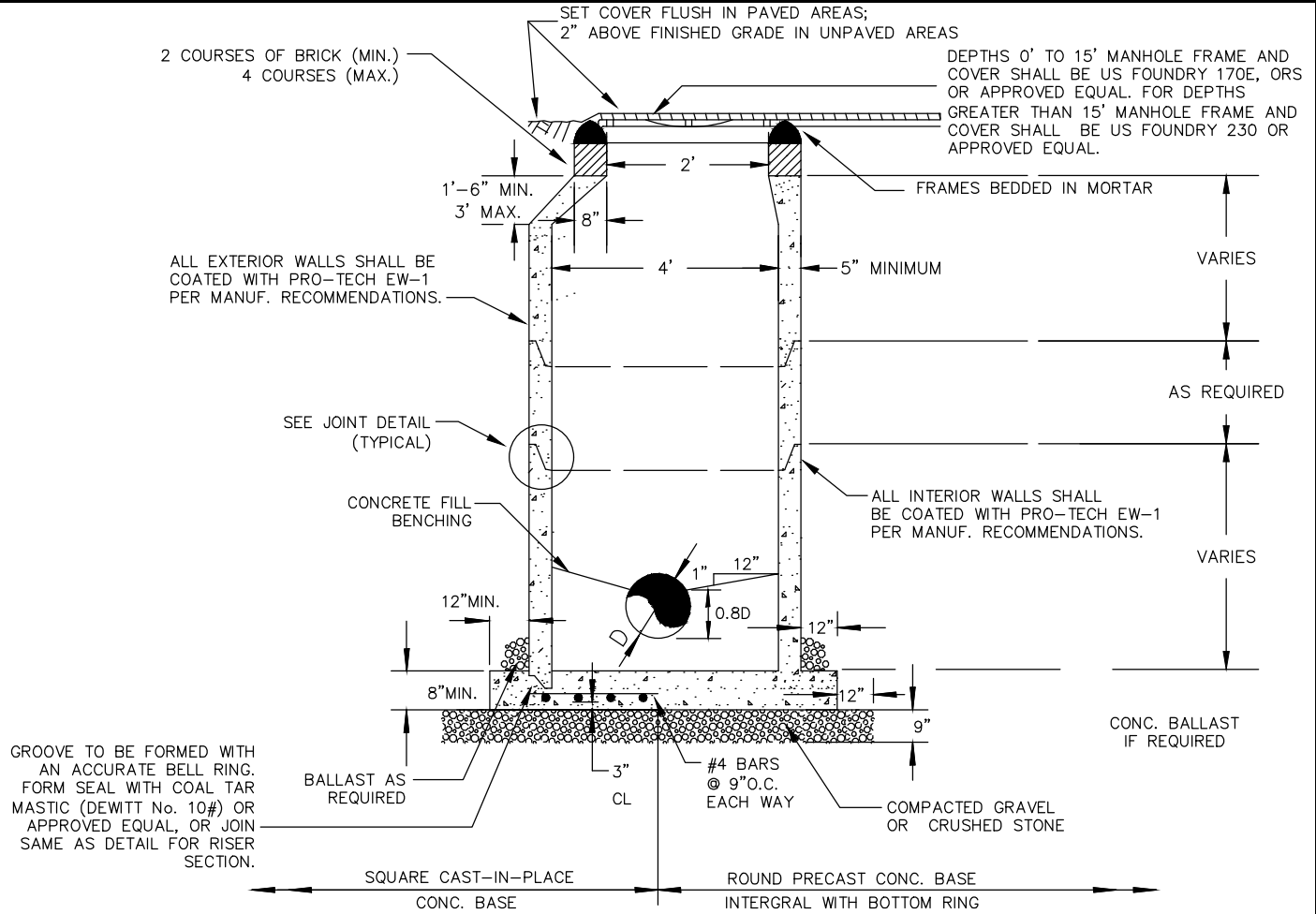


Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-09 Drop Manhole Conn.dwg Model Aug 21, 2024 6:28pm by: logan.kieran



 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p>CITY OF WILDWOOD SEWER DETAIL</p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>STANDARD DROP MANHOLE CONNECTION</b></p>	<p><b>S-09</b> 1 OF 1</p>

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-10 Standard Manhole.dwg Model Aug 21, 2024 6:28pm by: logon.kieron



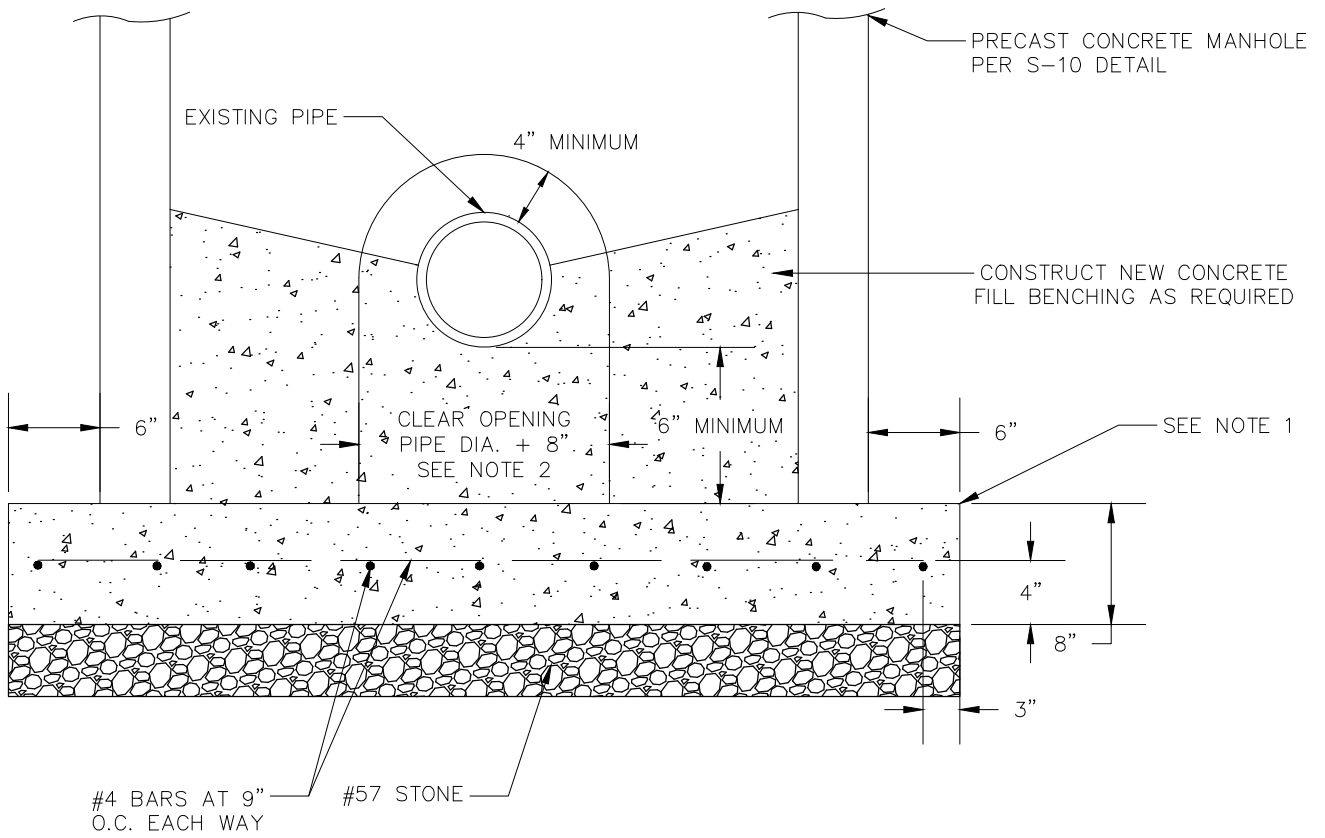
**NOTES**

**PRECAST CONC. MANHOLE**

1. MINIMUM WALL THICKNESS SHALL BE FIVE INCHES (5") OR 1/12 THE INSIDE DIAMETER, WHICHEVER IS GREATER.
2. THE INTERIOR, EXTERIOR, JOINTS AND GROUTED AREAS SHALL BE COATED WITH TWO (2) COATS OF BITUMASTIC SEALER.
3. MANHOLES SHALL BE FURNISHED WITH FACTORY INSTALLED BOOTS TO CONNECT SEWER PIPES TO MANHOLES.
4. MANHOLE TO BE INSTALLED WITH 24" US FOUNDRY 170E, ORS. MANHOLES 15' DEEP AND GREATER SHALL HAVE A 32" US FOUNDRY 230 RING AND COVER.
5. FILL ANNULAR VOID BETWEEN PIPE AND RUBBER BOOT WITH GROUT AND FLUSH WITH MANHOLE WALLS.
6. MANHOLES SHOWN ARE FOR SEWER SIZE 6" THRU 24". FOR LARGER SEWER SIZES SPECIALLY DESIGNED MANHOLES SHALL BE PROVIDED.
7. SEAL ALL PIPE OPENINGS IN PRECAST MANHOLE WITH "EMBECO" GROUT OR APPROVED EQUAL.
8. DROP PIPE AND FITTINGS SHALL BE EQUAL IN SIZE TO THE INFLUENT PIPE.
9. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. CONNECTION PIPES TO MANHOLES HAVE BEEN DETAILED AS P.V.C. PIPE AND SHALL BE MODIFIED AS REQUIRED FOR OTHER APPROVED MATERIAL.
10. THE CITY OF WILDWOOD MAY DETERMINE THAT CERTAIN MANHOLE STRUCTURES WILL BE CONSIDERED TURBULENT AND MAY REQUIRE AN AGRU SURE GRIP HDPE LINER OR APPROVED EQUAL.
11. IF A STRUCTURE HAS NOT BEEN MAINTAINED WITHIN 10 YEARS, THE CITY RESERVES THE RIGHT TO REQUIRE THE LINING OF THE STRUCTURE OR ANY OTHER REQUIRED MAINTENANCE.


MANHOLE STRUCTURAL DATA	
MANHOLE DEPTH IN FEET	BOTTOM SLAB THICKNESS THICKNESS IN INCHES BETWEEN DEPTHS SHOWN
0' TO 10'	8"
10' TO 15'	10"
15' TO 20'	14"
BELOW 20'	AS APPROVED

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-11 Doghouse Manhole.dwg Model Aug 21, 2024 6:28pm by: logan.kieran

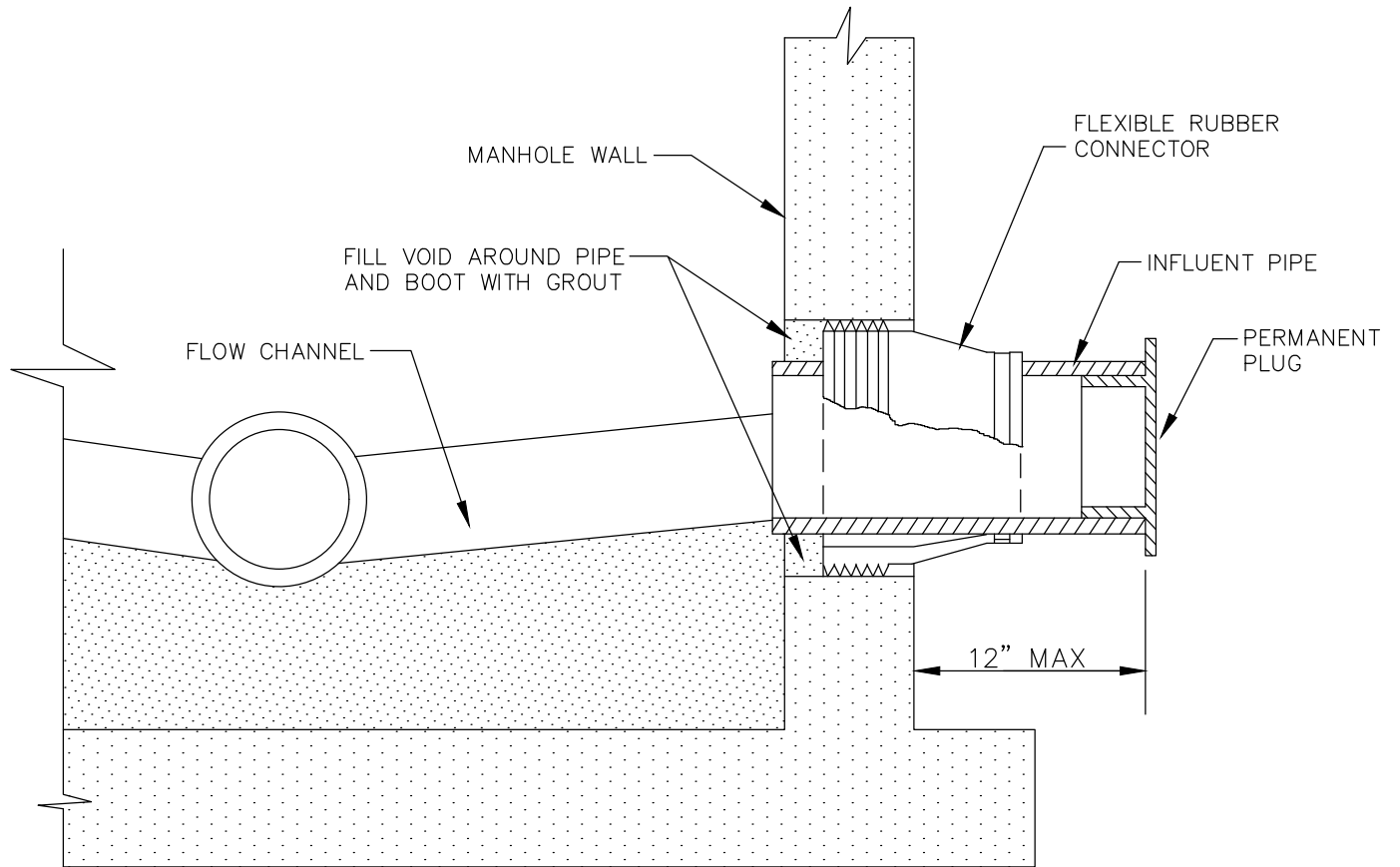


NOTES

1. MANHOLE BASE CAN BE SQUARE CAST IN PLACE CONCRETE BASE OR ROUND PRECAST CONCRETE BASE INTEGRAL WITH BOTTOM RING, SUBJECT TO CITY INSPECTOR OR ENGINEER APPROVAL.
2. FILL ANNULAR VOID BETWEEN PIPE AND RUBBER BOOT WITH GROUT AND FLUSH WITH MANHOLE WALLS.
3. DOGHOUSE MANHOLES ARE ONLY USED WHEN PLACING A NEW MANHOLE DIRECTLY OVER AN EXISTING ACTIVE SEWER PIPE AND MUST BE PRE-APPROVED BY THE WASTEWATER UTILITY.
4. DOGHOUSE MANHOLE SHALL BE CENTERED OVER EXISTING SEWER PIPE AND MUST MAINTAIN A 24" MINIMUM SEPARATION FROM THE NEAREST PIPE JOINT FOR FITTING.
5. PRIOR TO CUTTING AN ACCESS OPENING INTO THE EXISTING SEWER PIPE, A PASSING HYDROSTATIC WATER TEST MUST BE APPROVED BY THE WASTEWATER UTILITY. HYDROSTATIC TEST SHALL CONFORM TO I.S.P.W.C. SPECIFICATIONS (LATEST REVISION).
6. CUT ACCESS OPENING INTO TOP OF EXISTING SEWER PIPE BOTH SIDES TO MATCH FLUSH WITH MANHOLE SHELF. REMOVE ALL SHARP OR IRREGULAR EDGES AND DISPOSE OF REMOVED SECTION OF PIPE. WASTEWATER UTILITY INSPECTION IS REQUIRED.


	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>SEWER DOGHOUSE MANHOLE</b>	<b>S-11</b> 1 OF 1

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-12 Manhole Stubout.dwg Model Aug 21, 2024 6:28pm by: logan.kieran

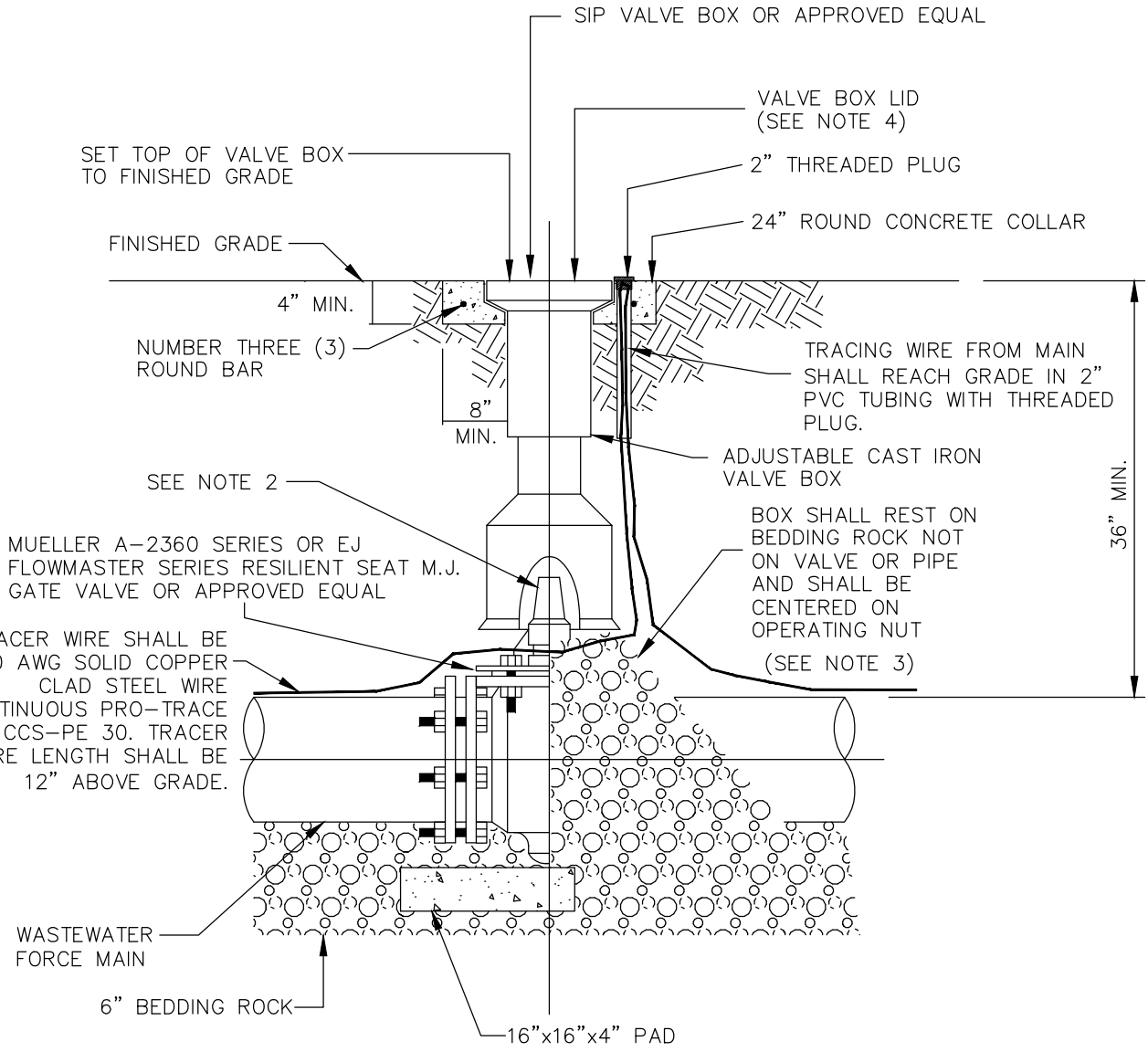


**NOTES**

BOOTS SHALL BE INSTALLED BY THE MANUFACTURER OF THE PRECAST MANHOLE IN ACCORDANCE WITH THE BOOT MANUFACTURERS INSTRUCTIONS.


 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>MANHOLE STUBOUT</b></p>	<p><b>S-12</b> 1 OF 1</p>

Drawing name: G:\Cities and Counties\Wildwood\SEWER\LMK EDITS\S-13 Gate Valve.dwg Model Aug 21, 2024 6:29pm by: logan.kieran



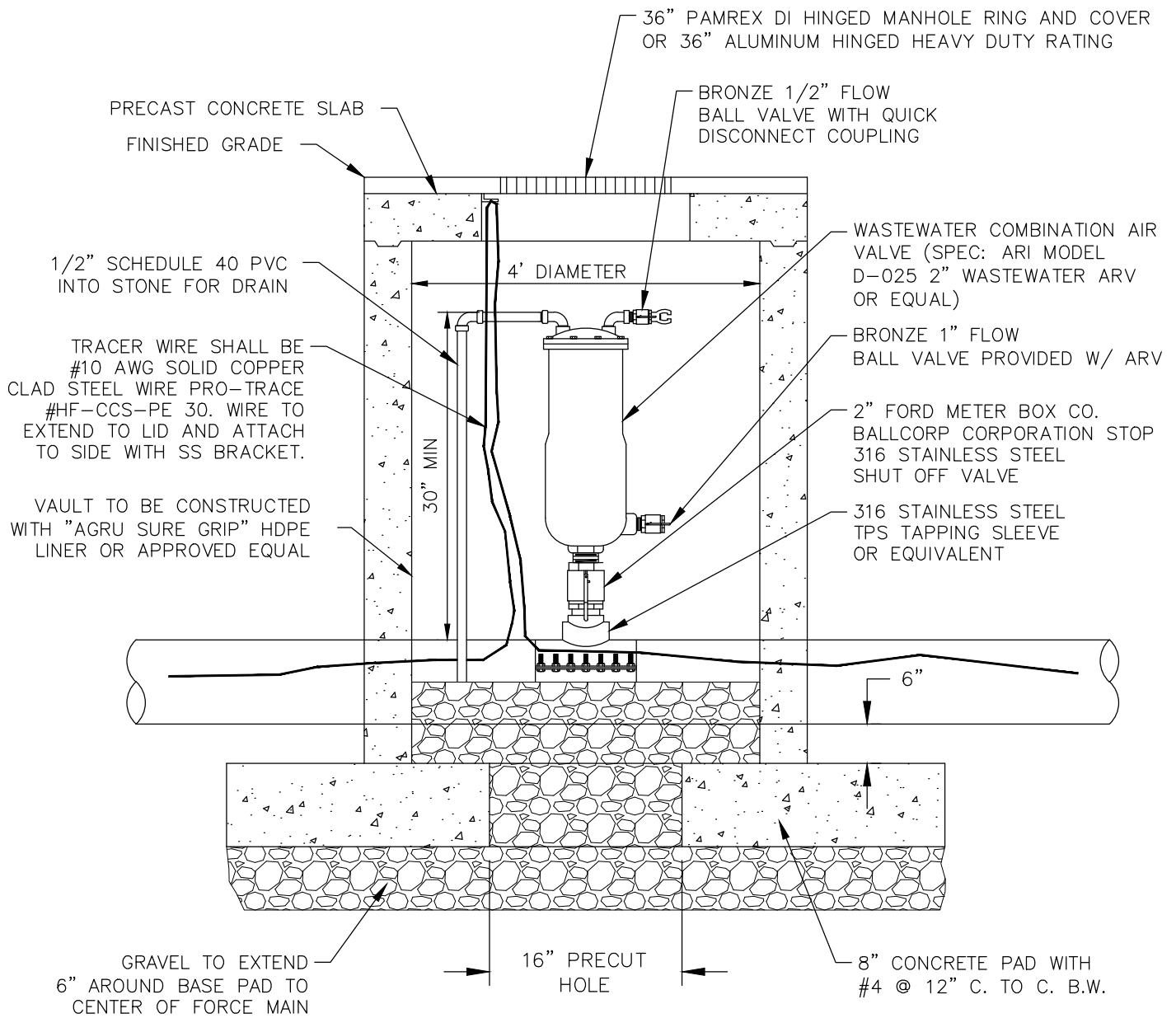
**NOTES**


1. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION UNLESS GREATER THAN 4' IN DEPTH.
2. THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.
3. WHEN VALVE BOX IS TO BE INSTALLED IN ROADWAY OR OTHER TRAFFIC AREAS SET VALVE BOX ON FIVE (5) SOLID BRICKS.
4. VALVE BOX LID TO BE LETTERED WITH THE WORD "SEWER".
5. THE VALVE BRASS TAB SHALL INCLUDE "END OF CITY MAINTENANCE" ON END OF SERVICE VALVES.

	<p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p>CITY OF WILDWOOD SEWER DETAIL</p>	<p>DETAIL NUMBER</p>
		<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>GATE VALVE AND BOX DETAIL</b></p>	<p><b>S-13</b> 1 OF 1</p>

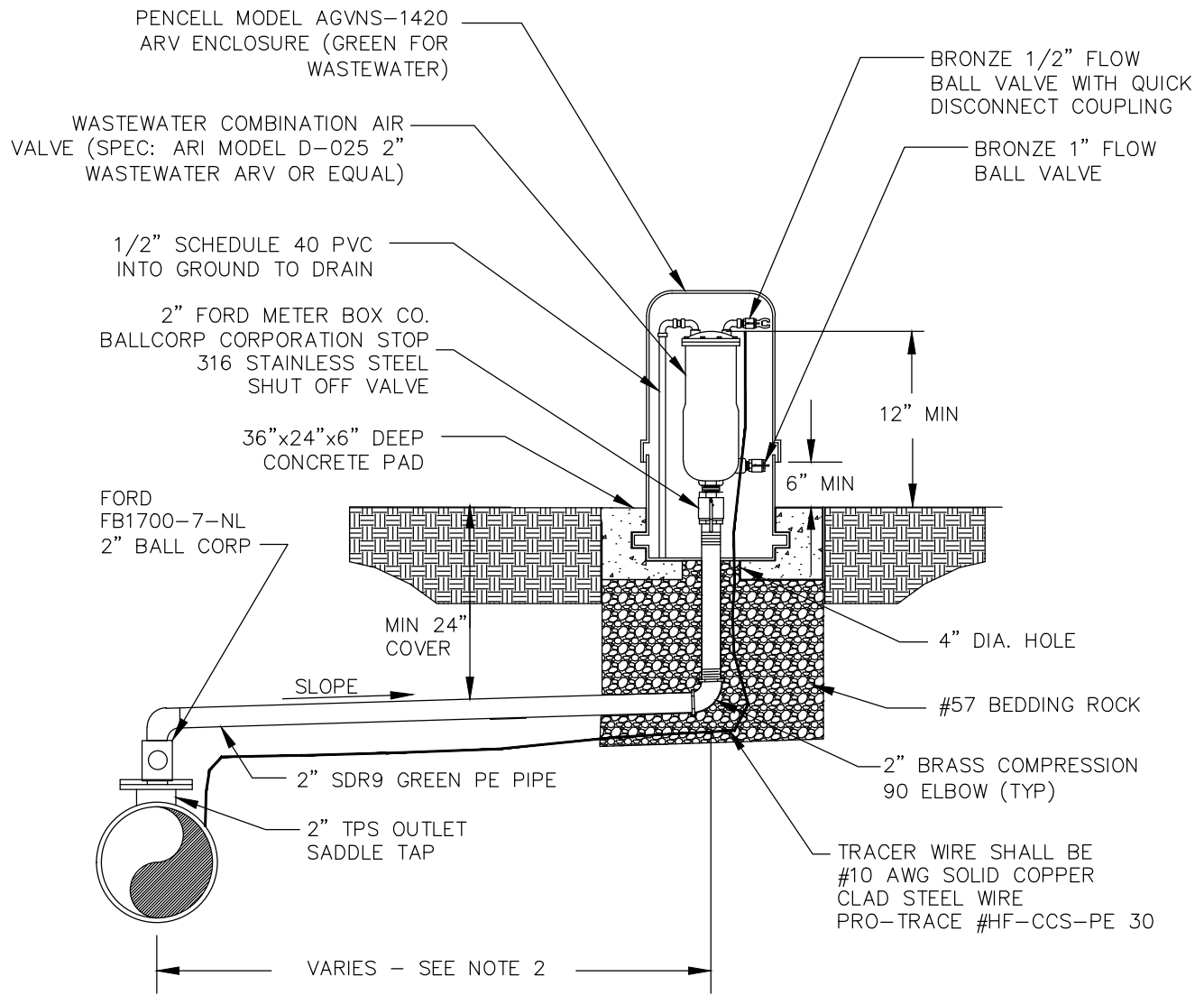


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 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE NONE</p>	<p>CITY OF WILDWOOD SEWER DETAIL</p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION 08-20-24</p>	<p><b>FORCE MAIN AIR RELEASE VALVE</b></p>	<p><b>S-14</b></p>

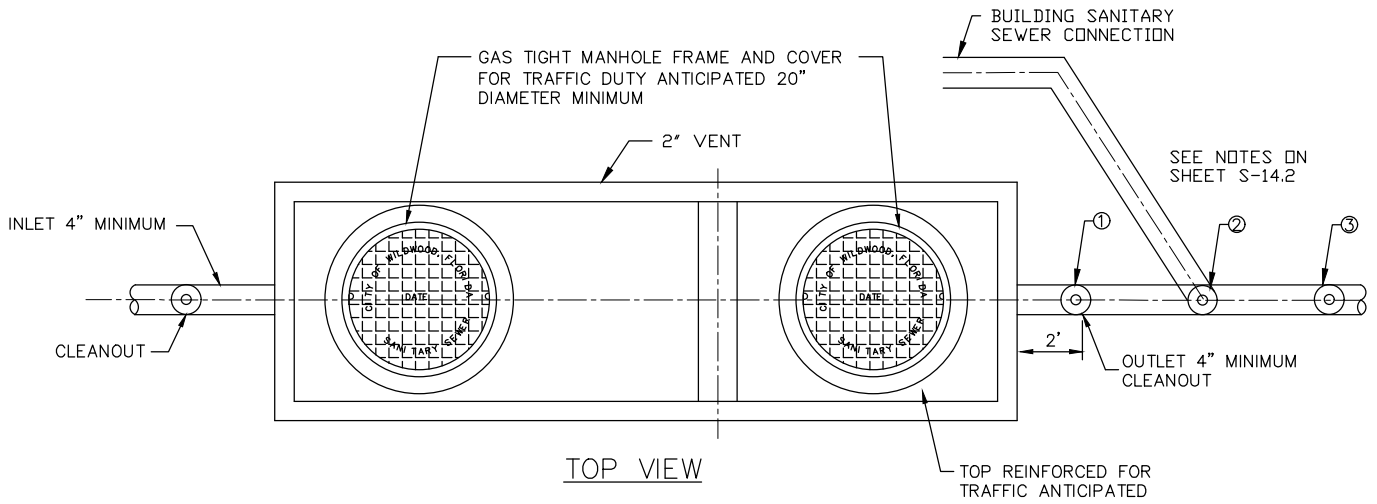
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**NOTES:**

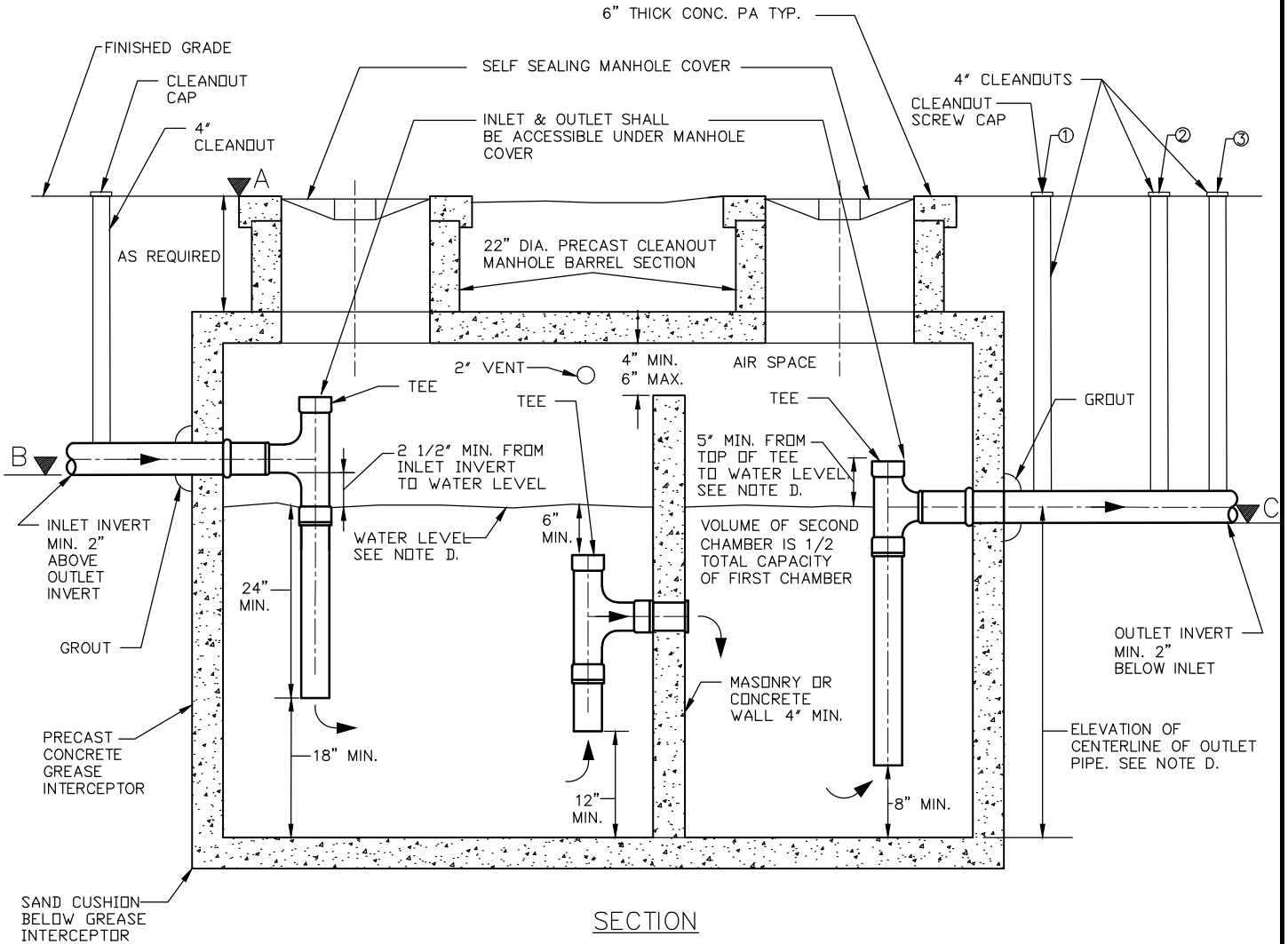
1. FOR WASTEWATER USE ONLY.
2. OFFSET DISTANCE TO BE FIELD DETERMINED AND AS CLOSE TO THE RIGHT OF WAY AS POSSIBLE.
3. ADJUST HORIZONTAL POSITION OF SIDEWALK, AS REQUIRED TO AVOID ARV ENCLOSURE.
4. LOCATE ARV ENCLOSURE WITHIN 6" OF RIGHT OF WAY.
5. LOCATING WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE
6. IF FORCE MAIN IS LOCATED UNDER PAVED ROAD, AN ADDITIONAL SQUARE NUT VALVE WILL BE ADDED IN THE NEAREST NON-PAVED AREA.

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD WASTEWATER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>2" AUTOMATIC COMBINATION AIR VALVE</b>	<b>S-14</b>  2 OF 2



GREASE TRAP ELEVATIONS

A	B	C



Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-15.1 Grease Oil Separator.dwg Model Aug 21, 2024 6:29pm by: logan.kieran

<p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p> <p><b>GREASE OIL SEPARATOR</b></p>	<p>DETAIL NUMBER</p> <p><b>S-15</b></p>
	<p>LATEST REVISION <b>08-20-24</b></p>		<p>1 OF 2</p>

NOTE

ACCESS FOR MONITORING THE INLET AND OUTLET PIPE FITTINGS OR BAFFLES SHALL BE PROVIDED FROM MANHOLES. CLEANOUTS SHALL BE INSTALLED BEFORE THE FIRST GREASE INTERCEPTOR AND WITHIN TWO FEET AFTER THE LAST INTERCEPTOR IN THE SERIES.

NOTE D:

THE OUTLET PIPE CENTERLINE ELEVATION SHALL BE 2/3 OF THE TOTAL CAPACITY OF THE GREASE TRAP. THE ELEVATION SHALL BE CALCULATED AS FOLLOWS:

$$\frac{(2/3) \times (C)}{(7.48) \times (A)} = (D)$$

NOTE

1. EFFLUENT CLEAN OUT NO.1 PRIOR TO CONNECTION POINT OF BUILDING SANITARY SEWER.
2. SANITARY SEWER CLEAN OUT NO.2, AFTER CONNECTION TO EFFLUENT SIDE OF GREASE TRAP AND AFTER CLEAN OUT NO.1
3. SAMPLE POINT CLEAN OUT NO.3, AFTER GREASE TRAP EFFLUENT CLEAN OUT NO.1 AND SANITARY SEWER CLEAN OUT NO.2. 5 FT MINIMUM DISTANCE BETWEEN CLEAN OUT NO.2 AND NO.3, UNLESS OTHERWISE APPROVED BY CITY.
4. SANITARY SEWER CLEAN OUT NO.2 CAN BE UNI-DIRECTIONAL TO ADJUST FOR CONNECTION POINT FROM BUILDING.
5. GREASE OIL SEPARATOR MUST HAVE A MINIMUM VOLUME OF 1,250 GALLONS.

DESIGN CALCULATIONS

$$(S) \times (GS) \times (HR/12) \times (LF) = (C)$$

(C) = TOTAL CAPACITY OF GREASE TRAP IN GALLONS

(S) = NUMBER OF SEATS IN DINING AREA

(GS) = GALLONS OF WASTE WATER PER SEAT  
(USE 25 GALLONS)


(HR) = NUMBER OF HOURS ESTABLISHMENT IS OPEN

(LF) = LOADING FACTOR—(2.0 WITH INTERSTATE HIGHWAYS, 1.5 OTHER FREEWAYS, 1.25 RECREATIONAL AREAS, 1.0 MAIN HIGHWAYS AND 0.75 OTHER HIGHWAYS)

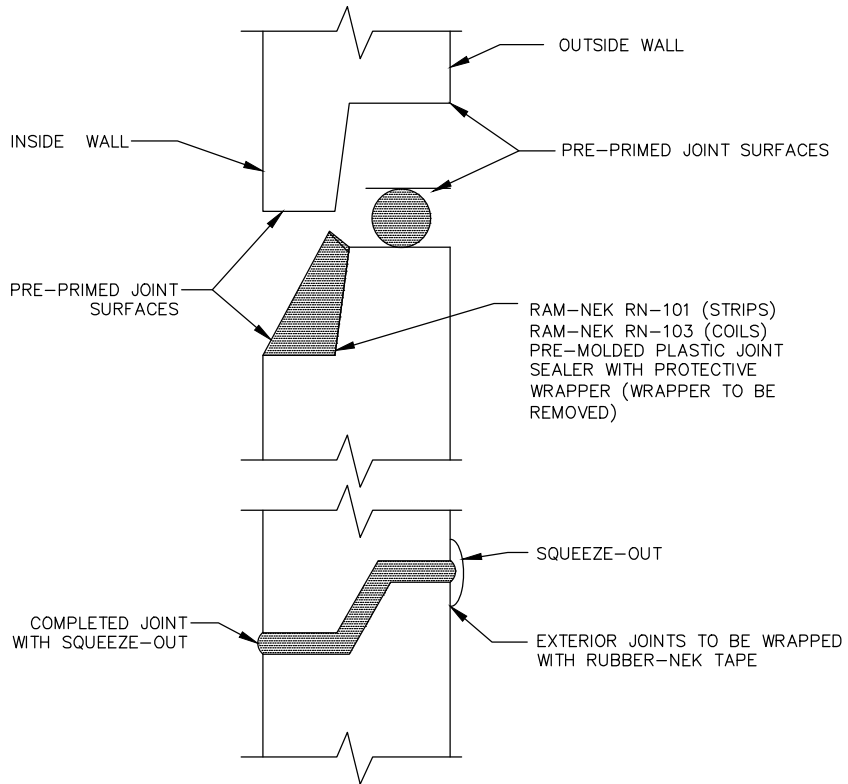
(A) = AREA OF THE GREASE TRAP IN FEET


(D) = ELEVATION OF CENTERLINE OF OUTLET PIPE

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-15.2 Grease Oil Separator.dwg Model Aug 21, 2024 6:29pm by: logan.kieran

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>GREASE OIL SEPARATOR</b>	<b>S-15</b> 2 OF 2

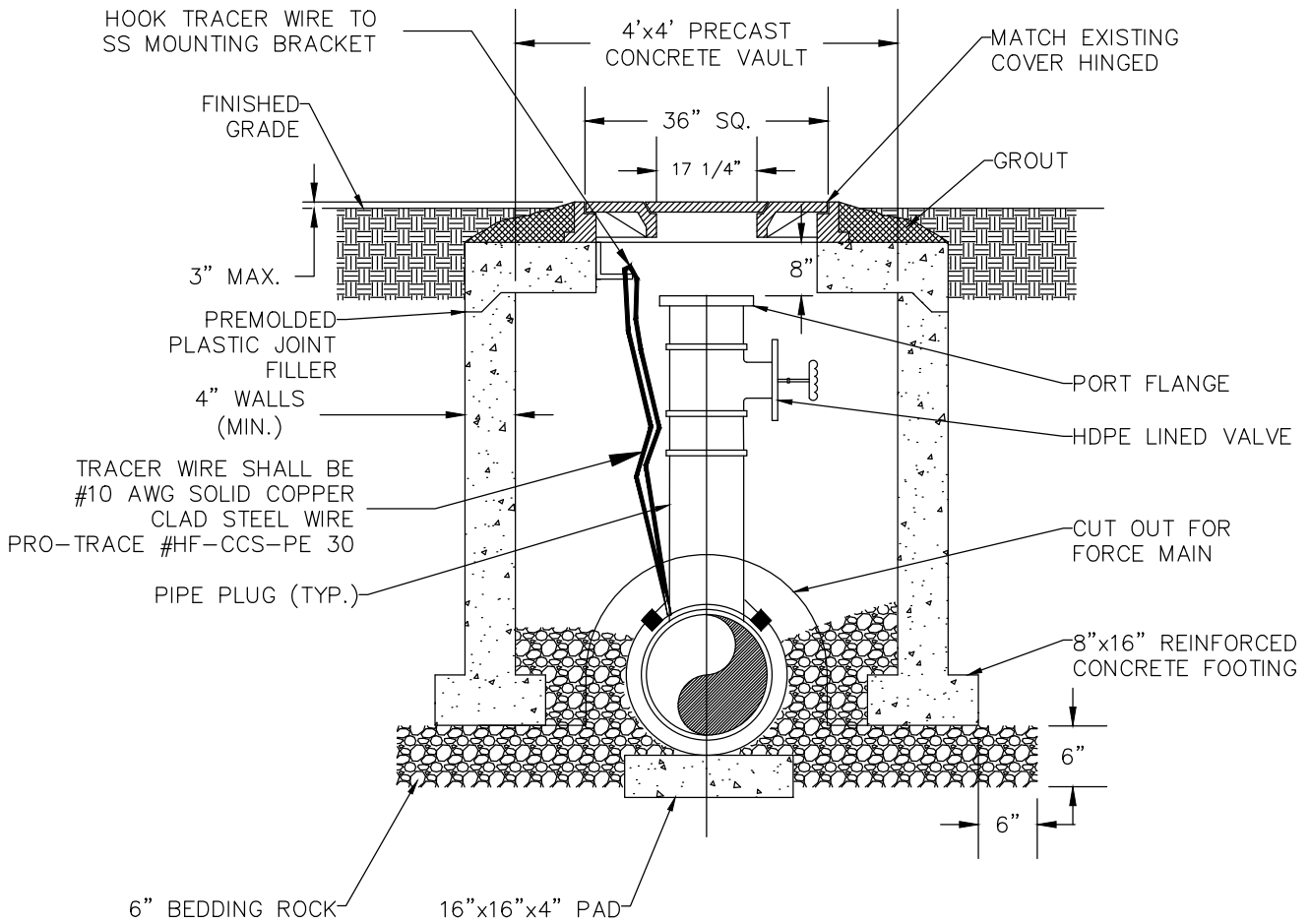
Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-16 Manhole Joint Const.dwg Model Aug 21, 2024 6:30pm by: logan.kieran



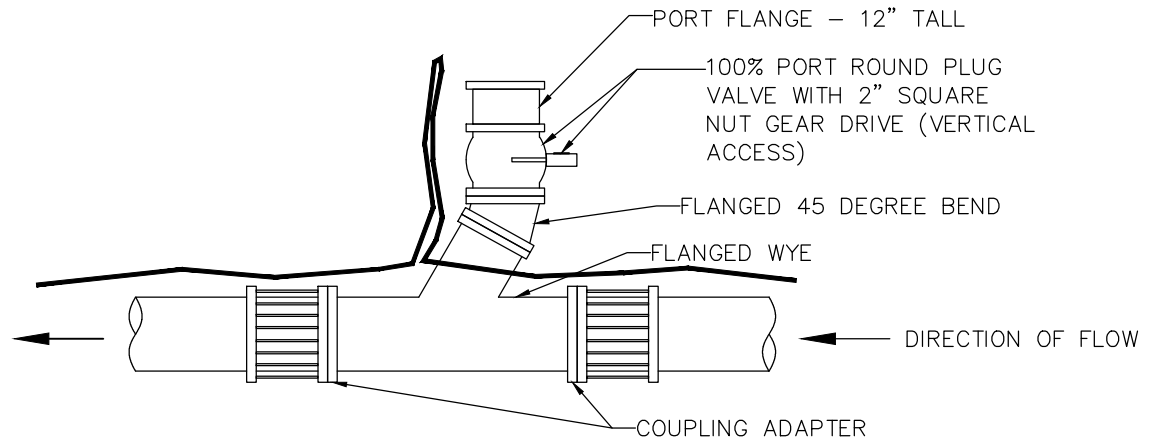
 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>PRECAST CONCRETE MANHOLE JOINT CONSTRUCTION</b></p>	<p><b>S-16</b> 1 OF 1</p>



Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-17 Pig Port.dwg Model Aug 21, 2024 6:30pm by: logan.kieran




FRONT VIEW



SIDE VIEW

**NOTES:**

1. ABOVE DETAIL IS BASED ON 2" COMBINATION AIR/VACUUM.
2. 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 PRIOR TO INSTALLATION. THE MINIMUM DIMENSION FROM TOP OF PIPE TO FINISHED.
3. GRADE SHALL BE 3.0 FEET LID TO BE LETTERED WITH THE WORD "SEWER".

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>PIG PORT</b>	<b>S-17</b> 1 OF 1

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-18 Thrust Blocks.dwg Model Aug 21, 2024 6:30pm by: logan.kieron

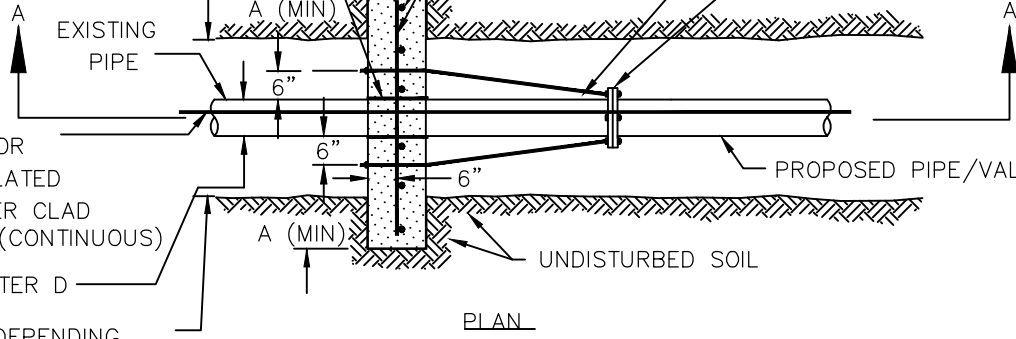
A SINGLE LAYER OF 6 MIL POLYETHYLENE SHEETING BEFORE POURING CONCRETE

6" (12" MIN.)

#5 REBAR @ 8" ON CENTER EACH WAY

"C" NUMBER OF "B" INCH TYPE 304 SS RODS THREADED BOTH ENDS, USE TYPE 304 SS EYE BOLTS AND WASHERS

MJ CONNECTION



10 AWG COLOR CODED INSULATED SOLID COPPER CLAD STEEL WIRE (CONTINUOUS)

PIPE DIAMETER D

VARIABLE DEPENDING ON PIPE DIA. & TRENCH WIDTH

PLAN

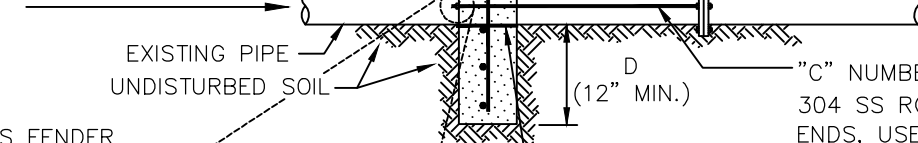
3000 PSI CONCRETE @ 28 DAYS

(5' MIN.)

MJ CONNECTION

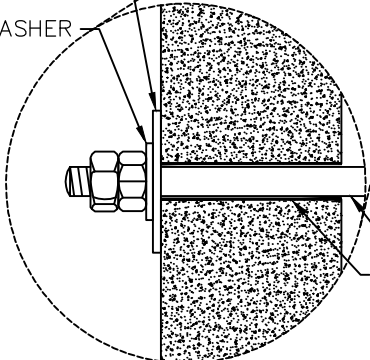
PROPOSED PIPE/VALVE/FITTING

DIRECTION OF THRUST



SS FENDER WASHER

SS WASHER



SECTION A-A

"B"-INCH DIA SS ROD

"B"-INCH DIA SCH 40 PVC PIPE SLEEVE

WRAP EXISTING PIPE WITH A SINGLE LAYER OF 6 MIL POLYETHYLENE SHEETING BEFORE POURING CONCRETE

7. A GATE VALVE OF A SIZE MATCHING MAIN SIZE SHALL BE INSTALLED PRIOR TO THE END CAP ON ALL MAINS NOT TERMINATING WITHIN A CUL-DE-SAC.

8. IF UNDISTURBED SOIL CANNOT BE OBTAINED, FLOWABLE FILL IS TO BE USED TO FILL IN ANY VOIDS

NOTES:

1. ADDITIONAL REINFORCEMENT SHALL BE AS SPECIFIED BY THE ENGINEER OF RECORD.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3000 PSI.
3. BEDDING, BACKFILL AND COMPACTION SHALL BE AS SPECIFIED IN OTHER DETAIL.
4. ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
5. NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
6. CHART FIGURES CALCULATED FOR 1000 PSF SOIL BEARING, 150 PSI LINE PRESSURE AND A 1.5 FACTOR OF SAFETY.

SCHEDULE OF DIMENSIONS AND MATERIALS

PIPE SIZE D (INCHES)	DIMENSIONS (IN.)		TIE RODS REQ'D
	A	B	
4	15	1/2	2
6	22	1/2	2
8	30	5/8	4
10	39	5/8	4
12	49	5/8	6
16	70	3/4	6



**CITY OF WILDWOOD**  
 100 NORTH MAIN STREET  
 WILDWOOD, FLORIDA 34785  
 (352) 330-1330

SCALE  
**NONE**

LATEST REVISION  
**08-20-24**

CITY OF WILDWOOD SEWER DETAIL

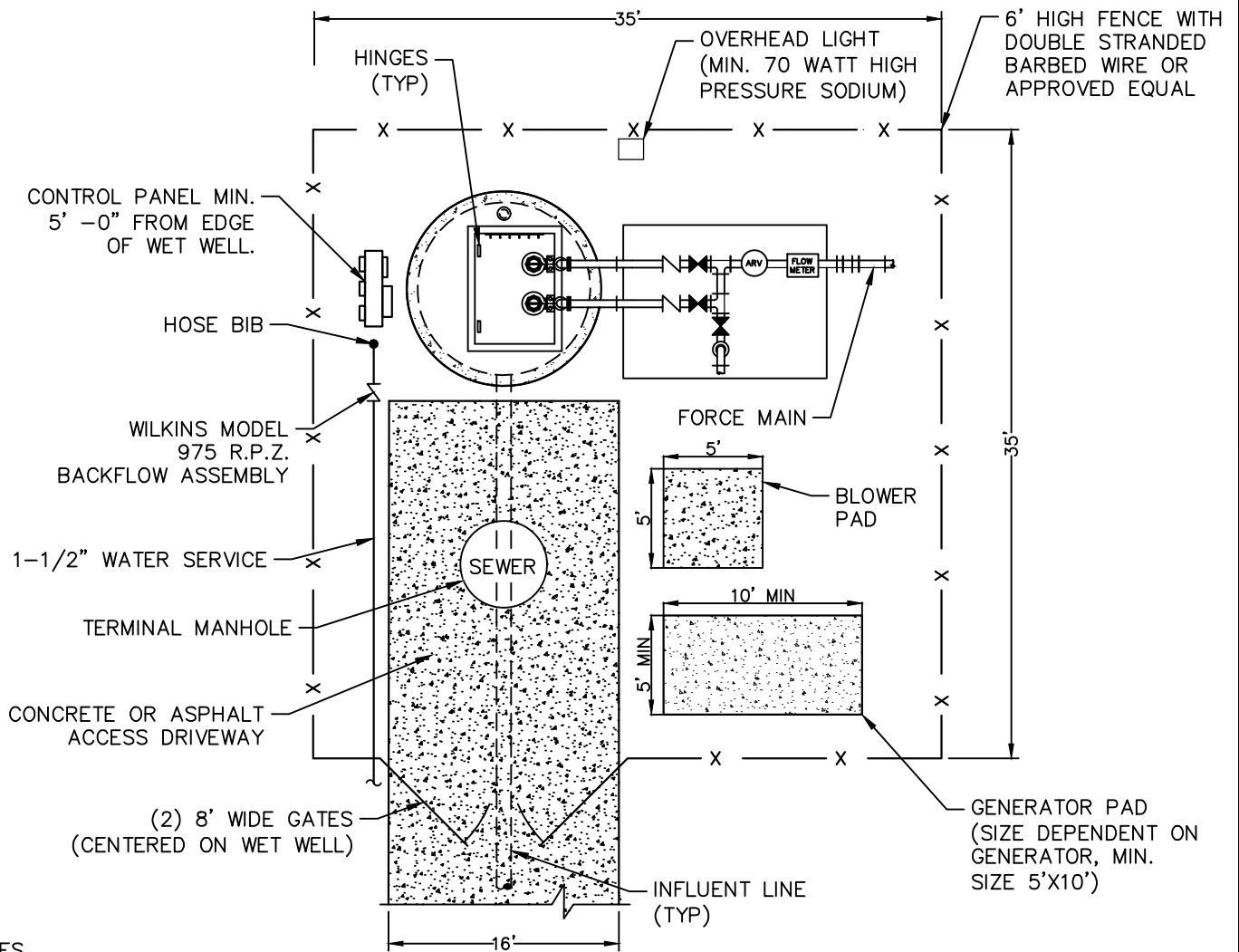
**THRUST COLLAR**

DETAIL NUMBER

**S-18**

1 OF 1


Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-19.1 Typical Lift Station Layout.dwg Model Aug 21, 2024 6:30pm by: logan.kieran



**NOTES**

ENGINEER TO DESIGN SITE PLAN USING THE ABOVE EXAMPLE. DESIGN CRITERIA "SITE PLAN LOCATION" DETAIL SHALL BE DRAWN TO SCALE WITH:

1. NORTH ARROW.
2. FENCE WITH 2-8' WIDE GATES.
3. INFLUENT LINE ENTRY LOCATION.
4. HINGE LOCATION.
5. SHOW POWER SERVICE FEED.
6. 5' -0" FROM CONTROL PANEL TO EDGE OF WET WELL.
7. DESIGN TO BE COORDINATED WITH DETAIL SHEET.
8. FENCED AREA TO BE COVERED WITH WEED BLOCK FABRIC AND A MINIMUM OF 3" OF #57 STONE
9. INFLUENT MAIN SHALL BE CLEAR OF PANEL AND VAULT.
10. MIN. LOT SIZE TO BE 35' x 35'.

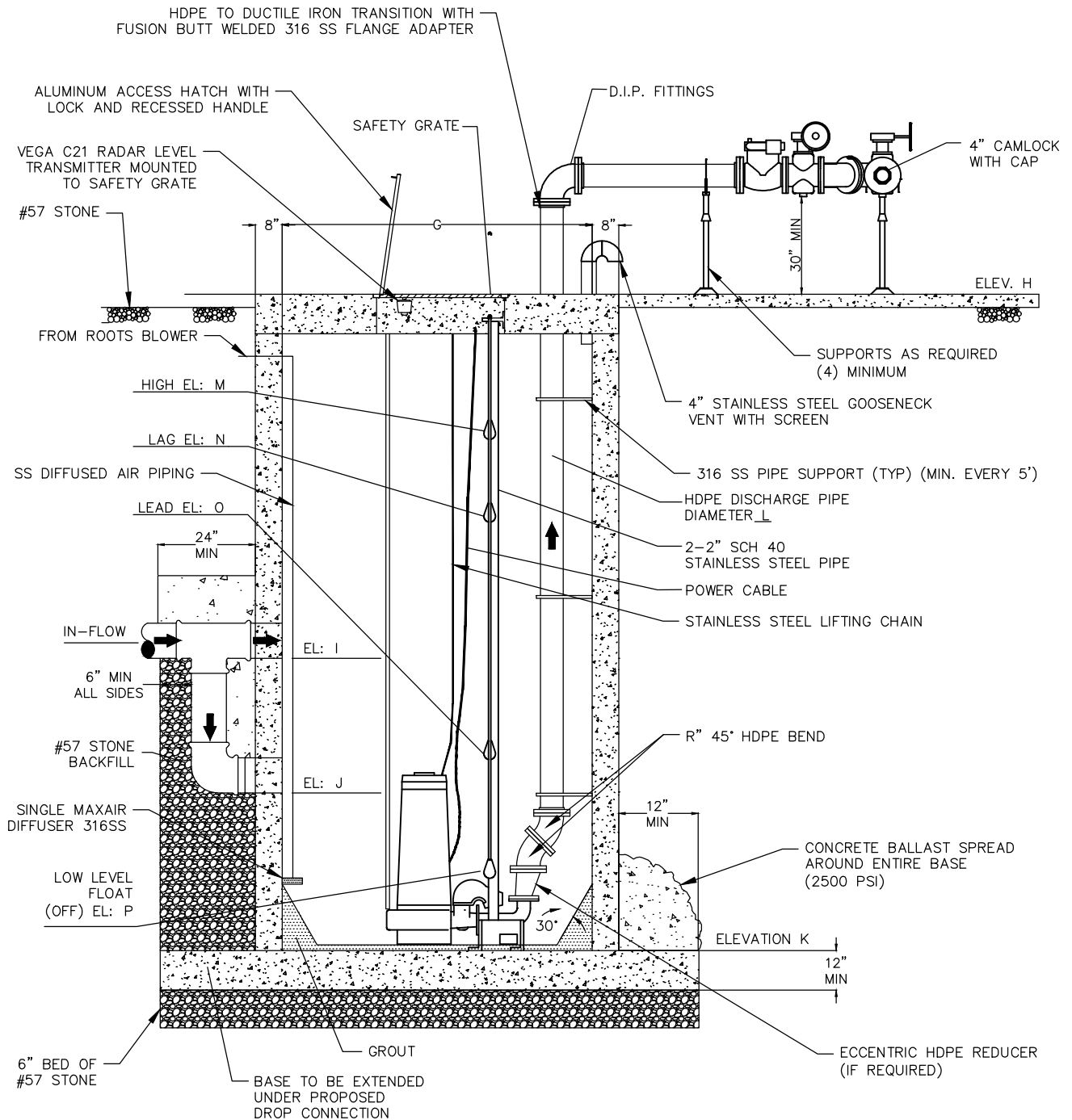
 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	SCALE <b>NONE</b>	CITY OF WILDWOOD SEWER DETAIL	DETAIL NUMBER
	LATEST REVISION <b>08-20-24</b>	<b>TYPICAL LIFT STATION LAYOUT DETAIL</b>	<b>S-19</b> 1 OF 3

LIFT STATION DATA

PUMPING STATION	DIMENSION / ELEVATION
G	
H	
I	

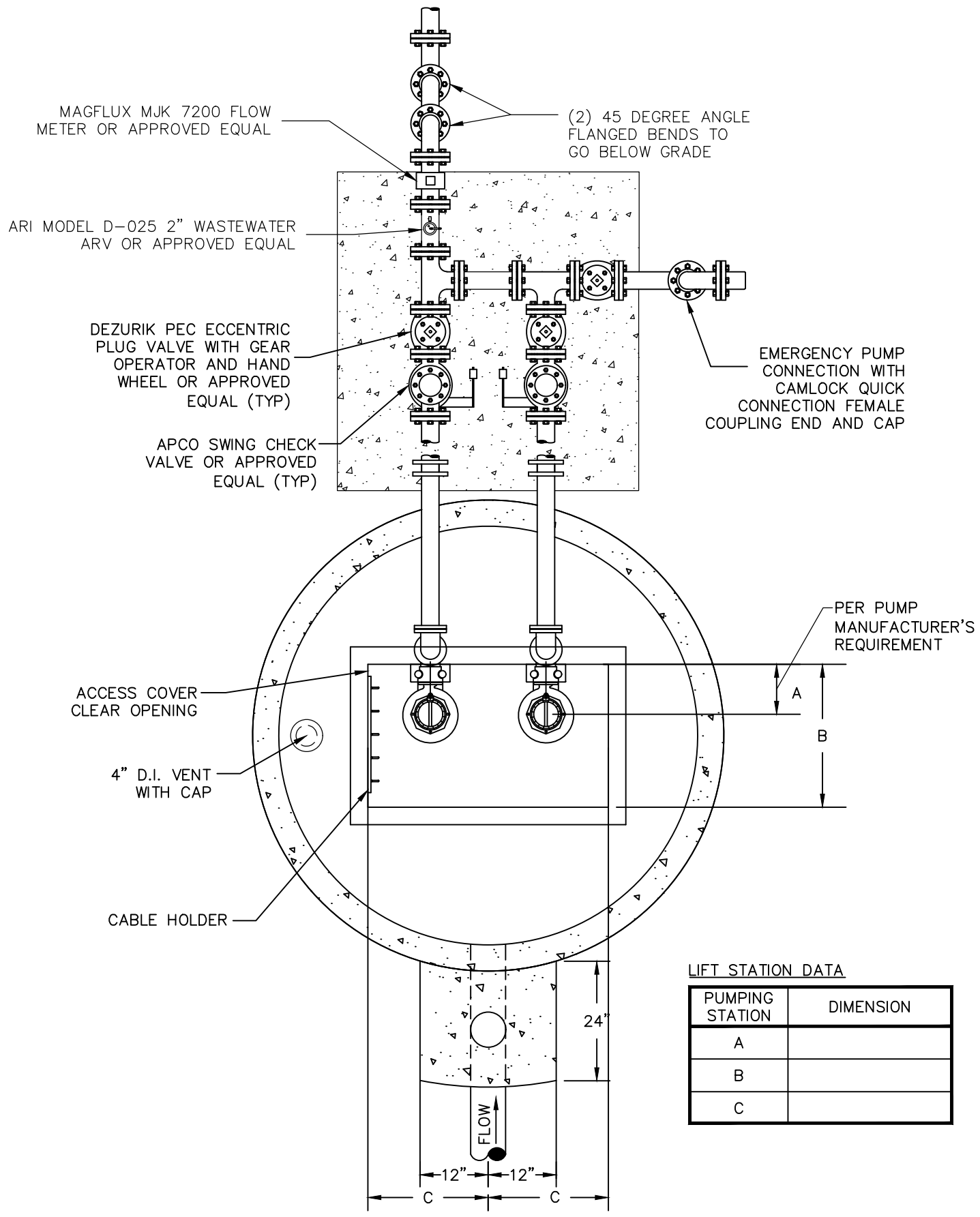
PUMPING STATION	DIMENSION / ELEVATION
J	
K	
L	

PUMPING STATION	DIMENSION / ELEVATION
M	
N	
O	
P	
Q	
R	



Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-19.2 Lift Station Section View.dwg Model Aug 21, 2024 6:30pm by: logan.kieran

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-19.3 Lift Station Plan View.dwg Model Aug 21, 2024 6:30pm by: logan.kieran



LIFT STATION DATA

PUMPING STATION	DIMENSION
A	
B	
C	



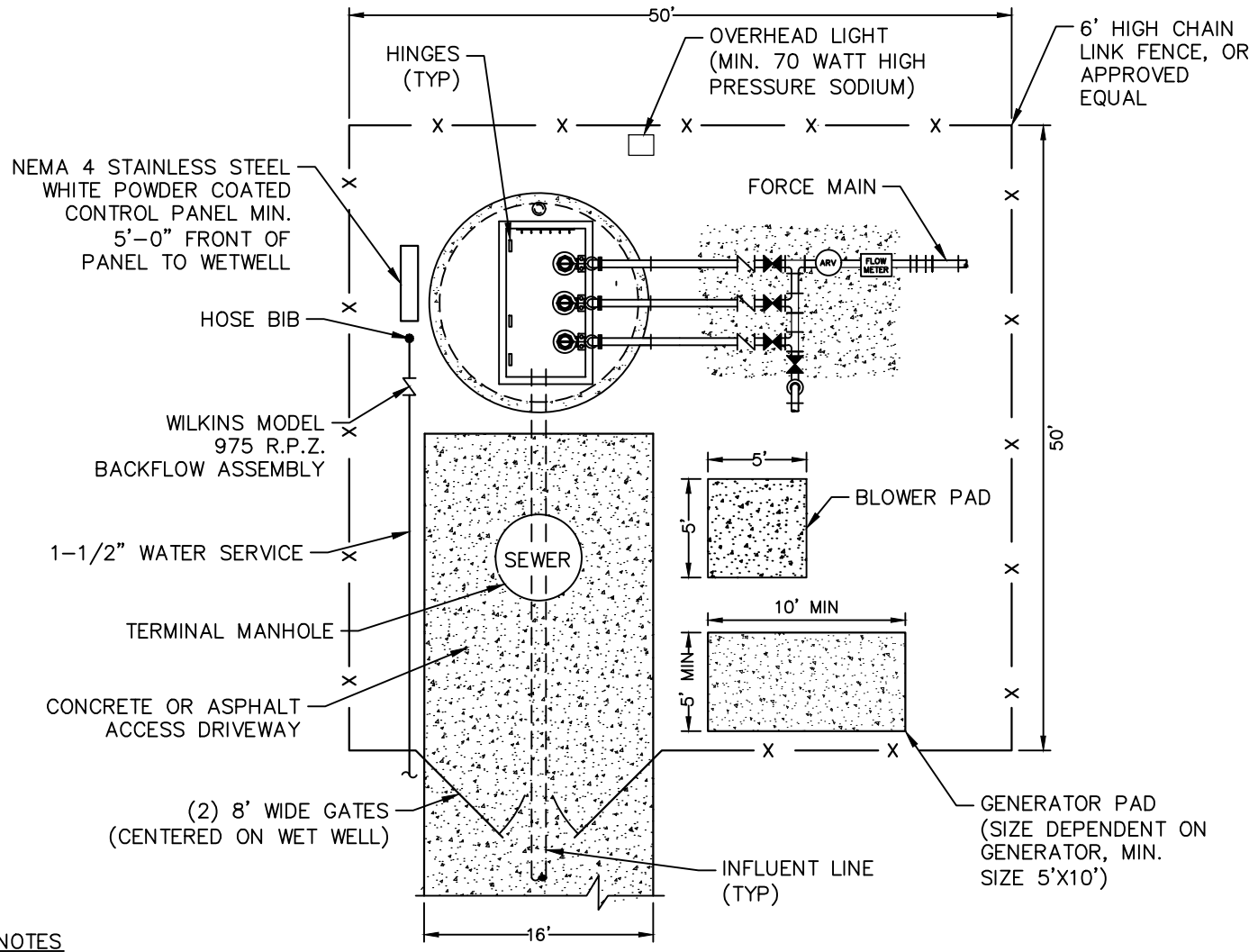
**CITY OF WILDWOOD**  
 100 NORTH MAIN STREET  
 WILDWOOD, FLORIDA 34785  
 (352) 330-1330

SCALE  
**NONE**  
 LATEST REVISION  
**08-20-24**

**CITY OF WILDWOOD SEWER DETAIL**  
**LIFT STATION PLAN VIEW**

DETAIL NUMBER  
**S-19**  
 3 OF 3


Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-20.1 Typical Triplex Lift Station Layout.dwg Model Aug 21, 2024 6:31pm by: Logan Kieran



**NOTES**

ENGINEER TO DESIGN SITE PLAN USING THE ABOVE EXAMPLE. DESIGN CRITERIA "SITE PLAN LOCATION" DETAIL SHALL BE DRAWN TO SCALE WITH:

1. NORTH ARROW.
2. FENCE WITH 2-8' WIDE GATES.
3. INFLUENT LINE ENTRY LOCATION.
4. HINGE LOCATION.
5. SHOW POWER SERVICE FEED.
6. 5'-0" FROM PANEL TO EDGE OF WET WELL.
7. DESIGN TO BE COORDINATED WITH DETAIL SHEET.
8. FENCED AREA TO BE COVERED WITH WEED BLOCK FABRIC AND A MINIMUM OF 3" OF #57 STONE
9. INFLUENT MAIN SHALL BE CLEAR OF PANEL AND VAULT.
10. MIN. LOT SIZE TO BE 50' x 50'.

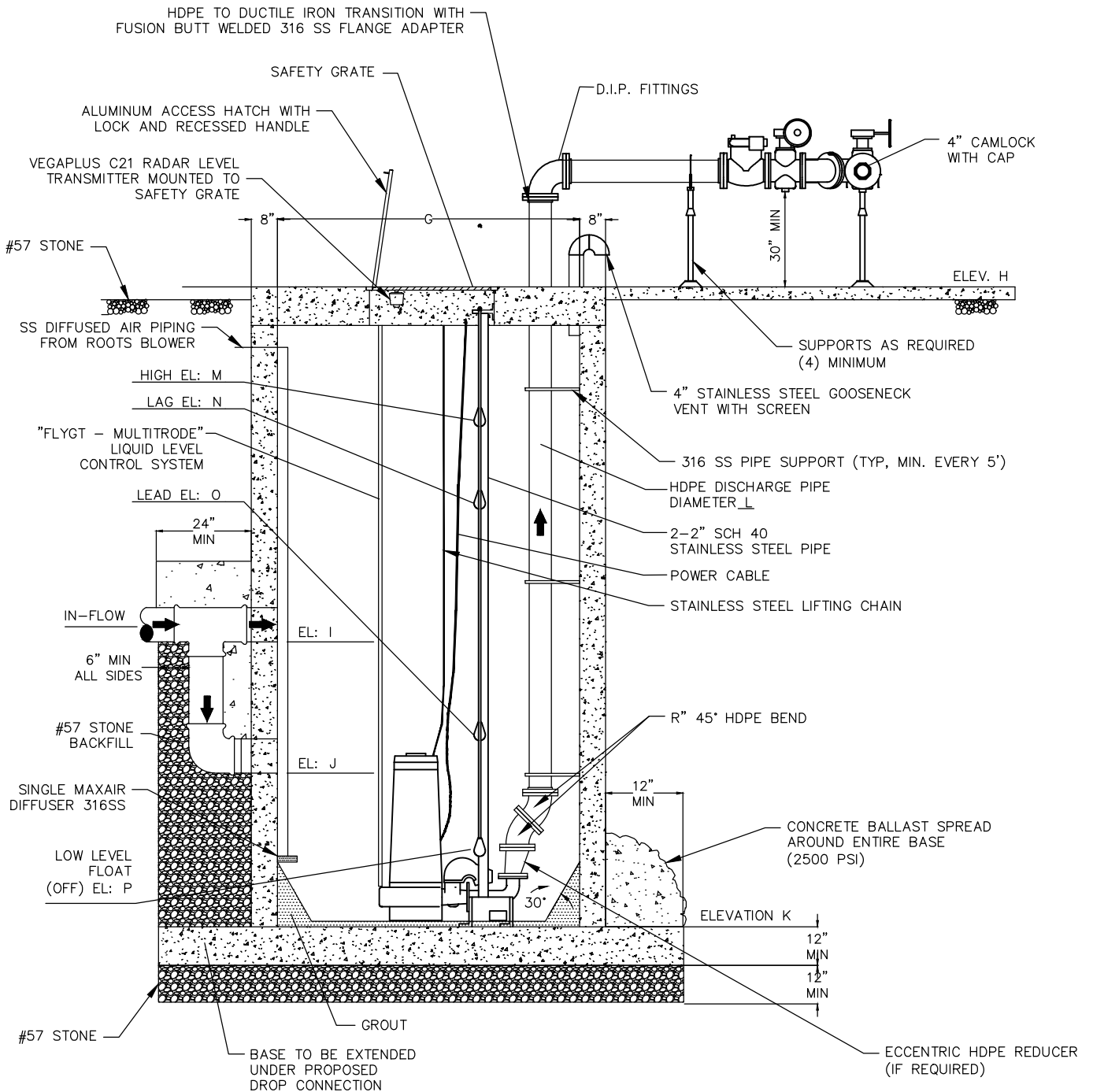
	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>  <b>TYPICAL TRIPLEX LIFT STATION LAYOUT DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>		<b>S-20</b>  1 OF 3

LIFT STATION DATA

PUMPING STATION	DIMENSION / ELEVATION
G	
H	
I	

PUMPING STATION	DIMENSION / ELEVATION
J	
K	
L	

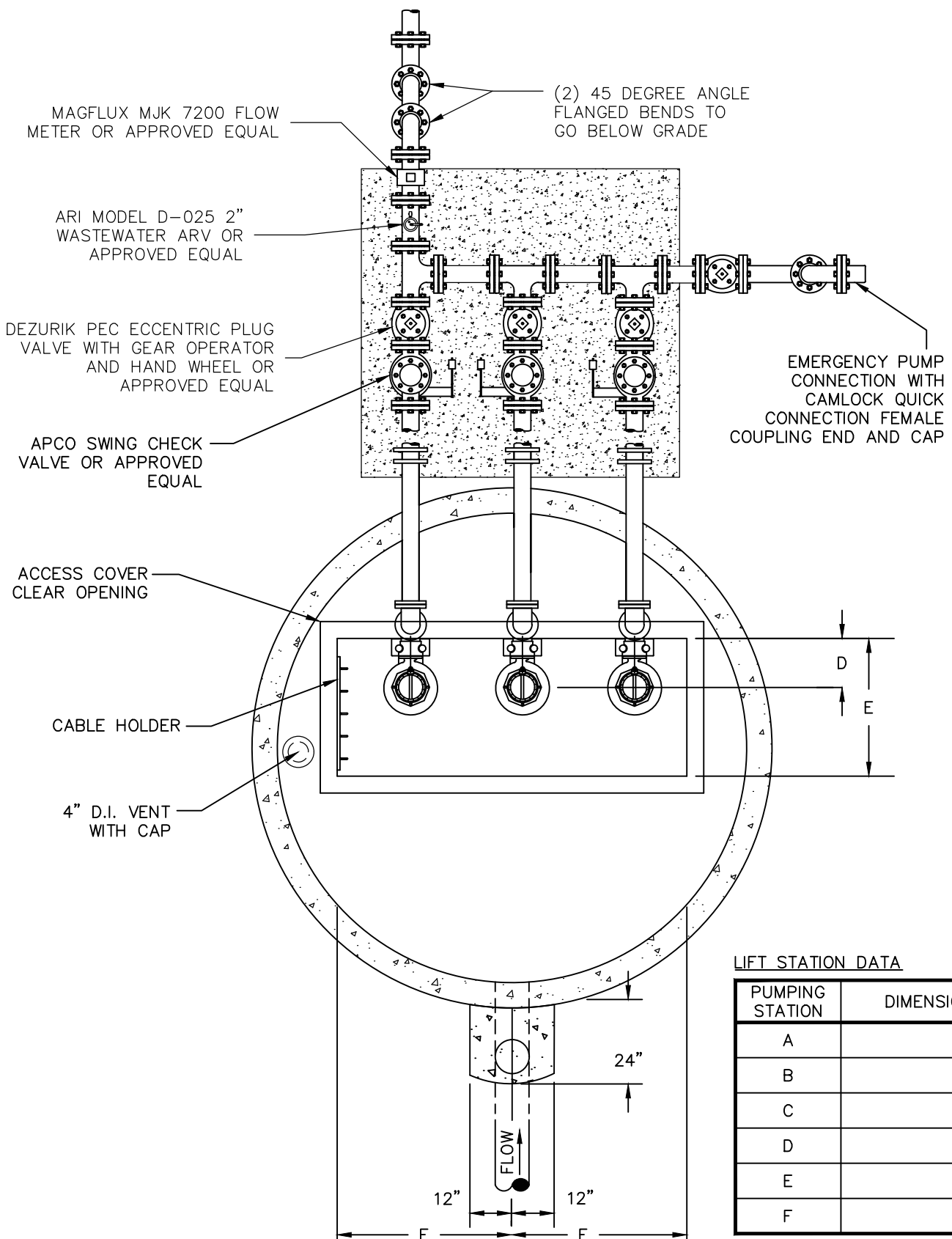
PUMPING STATION	DIMENSION / ELEVATION
M	
N	
O	
P	
Q	
R	



Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-20.2\_Triplex Lift Station Section View.dwg Model Aug 21, 2024 6:31pm by: logan.kieran



Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-20.3 Triplex Lift Station Plan View.dwg Model Aug 21, 2024 6:31pm by: logan.kieran



LIFT STATION DATA

PUMPING STATION	DIMENSION
A	
B	
C	
D	
E	
F	



**CITY OF WILDWOOD**  
 100 NORTH MAIN STREET  
 WILDWOOD, FLORIDA 34785  
 (352) 330-1330

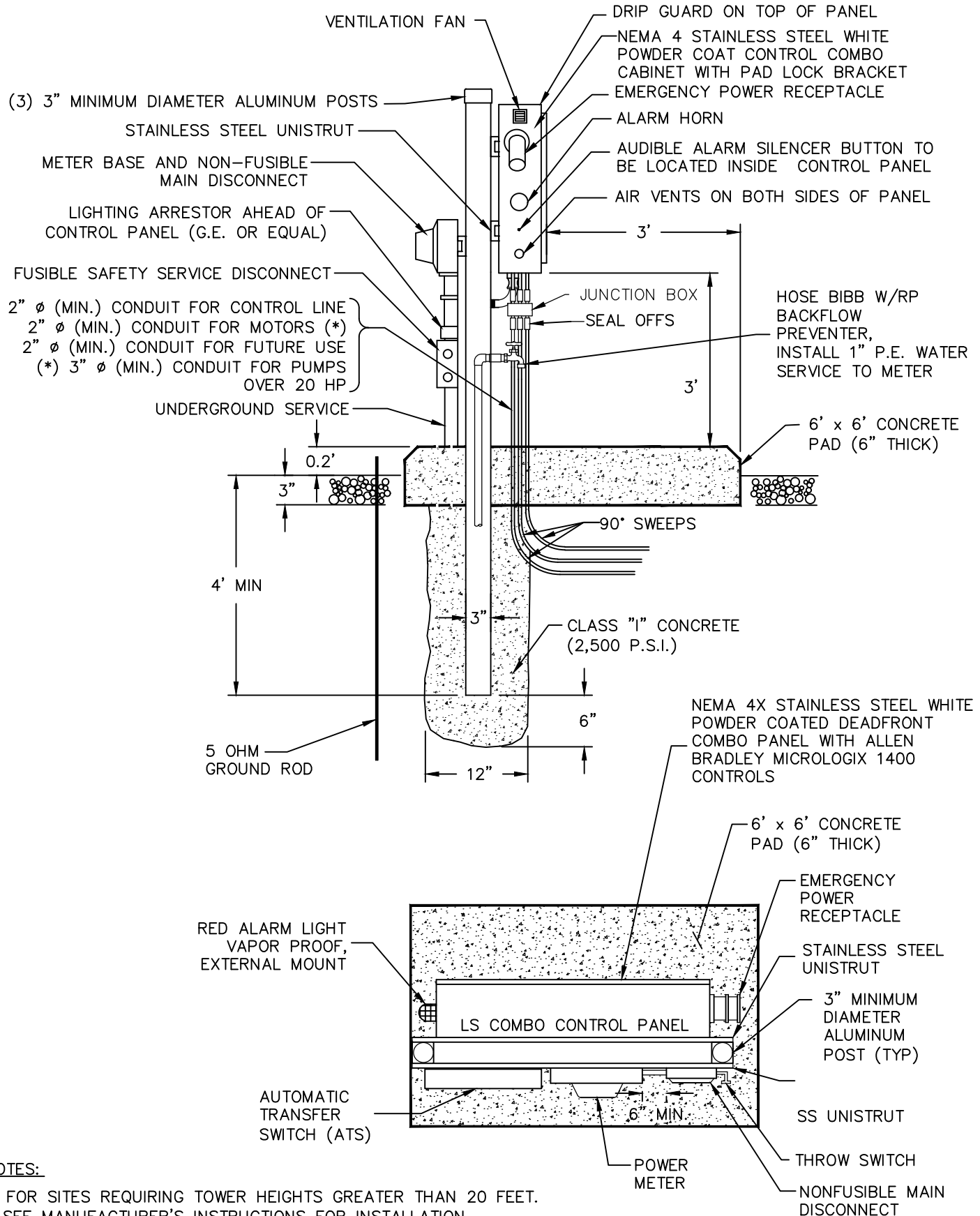
SCALE  
 NONE  
 LATEST REVISION  
 08-20-24

CITY OF WILDWOOD SEWER DETAIL  
**LIFT STATION PLAN VIEW**

DETAIL NUMBER  
**S-20**  
 3 OF 3




Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-21.1 Lift Station Control Panel.dwg Model Aug 21, 2024 6:31pm by: logan.kieran

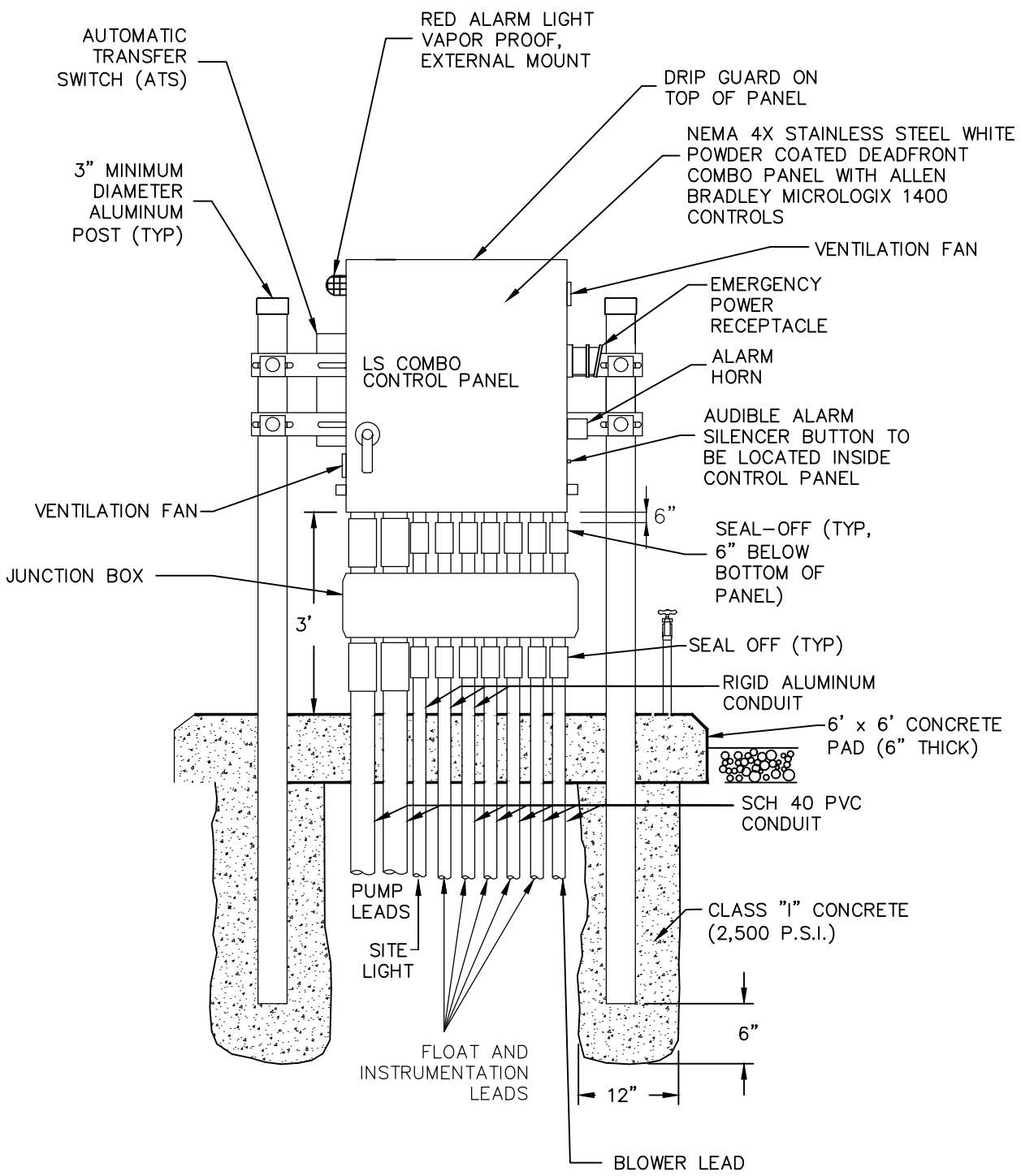


**NOTES:**

1. FOR SITES REQUIRING TOWER HEIGHTS GREATER THAN 20 FEET. SEE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CONTROL PANELS TO INCLUDE PUSH/ PULL VENTILATION SYSTEM.


 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>LIFT STATION CONTROL PANEL</b></p>	<p><b>S-21</b></p>

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-21.2 Lift Station Control Panel.dwg Model Aug 21, 2024 6:31pm by: logan.kieran



**NOTES:**

1. FOR SITES REQUIRING TOWER HEIGHTS GREATER THAN 20 FEET. SEE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CONTROL PANELS TO INCLUDE PUSH/PULL VENTILATION SYSTEM.

 <p><b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330</p>	<p>SCALE <b>NONE</b></p>	<p><b>CITY OF WILDWOOD SEWER DETAIL</b></p>	<p>DETAIL NUMBER</p>
	<p>LATEST REVISION <b>08-20-24</b></p>	<p><b>LIFT STATION CONTROL PANEL</b></p>	<p><b>S-21</b></p>


GENERAL NOTES

1. ALL EXPOSED PIPE SHALL BE PAINTED WITH 2 COATS OF GREEN TNEVEC SERIES 66 EPOXOLINE. OUTFLOW PIPE SHALL BE GREEN IN COLOR.
2. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
3. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
4. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
5. WET WELL ACCESS HATCH SHALL BE ALUMINUM WITH 316 SS HARDWARE AND LOCK CLASP; BY US FOUNDRY, HALLIDAY, OR APPROVED EQUAL.
6. WET WELL ACCESS HATCH SHALL BE EQUIPPED W/ OPT-GRATE AS MANUFACTURED BY HALLIDAY PRODUCTS OR EQUAL.
7. FLEXIBLE COUPLING SHALL BE SLEEVE TYPE.
8. ALL HARDWARE IN WET WELL TO BE STAINLESS STEEL.
9. ALL INTERIOR WALLS OF THE WET WELL SHALL BE CONSTRUCTED WITH "AGRU SURE GRIP" HDPE OR APPROVED EQUAL.
10. WET WELL SHALL BE COATED WITH COAL TAR OUTSIDE. (2 COATS, 9 MILS EACH)
11. PUMPS SHALL BE FLYGT. ONE PUMP SHALL BE INSTALLED WITH A "FLYGT MIX-FLUSH" VALVE.
12. WET WELL LIQUID LEVEL CONTROLS SHALL BE "VEGA" LEVEL TRANSDUCER WITH BACK-UP REDUNDANT FLOATS
13. FENCE AROUND WET WELL, MINIMUM 35'x35' (CHAIN LINK OR APPROVED EQUAL).
14. 2"x6" PRESSURE TREATED WOOD AROUND OUTSIDE 1 FOOT BEYOND FENCE AND ROCK.
15. PROVIDE GROUNDING GRID AROUND PERIMETER OF STATION.
16. EMERGENCY BY-PASS PUMPING CAPABILITY SHALL BE PROVIDED FOR ALL PUMP STATIONS.
17. IF REQUIRED, LIFT STATIONS WITH DESIGN FLOWS OF GREATER THAN 300 GPM OR STATIONS THAT REPUMP FLOWS SHALL BE EQUIPPED WITH STANDBY POWER GENERATOR MANUFACTURED BY CATERPILLAR, CUMMINS, OR APPROVED EQUAL.
  - A. AN ASCO OR APPROVED EQUAL AUTOMATIC TRANSFER SWITCH SHALL BE INSTALLED BETWEEN THE GENERATOR AND THE ELECTRIC PANEL.
  - B. THE GENERATOR SHALL BE RATED AT THE MAXIMUM STATION AMPERAGE PLUS 25 PERCENT.
  - C. THE GENERATOR SHALL HAVE ON SITE FUEL STORAGE SUFFICIENT TO RUN THE GENERATOR FOR A MINIMUM OF 24 HOURS AT FULL LOAD.
  - D. THE GENERATOR SHALL BE ENCLOSED BY A NEMA RATED WATERPROOF ENCLOSURE AND BE SOUND ATTENUATED.
  - E. CONTRACTOR SHALL BE RESPONSIBLE FOR A MANUFACTURER'S START UP WITH THE CITY IN ATTENDANCE.
  - F. GENERATOR SHALL BE MOUNTED ON A 6-INCH CONCRETE SLAB (3000 PSI AT 28 DAYS) WITH MINIMUM TWO FOOT CLEARANCE ON ALL FOUR SIDES.
18. OUTFLOW PIPE SHALL BE EQUIPPED WITH A ROSEMOUNT PRESSURE TRANSMITTER, MODEL 2088 WITH LOCAL DISPLAY (0-150 PSI) FOR ALL STATIONS WITH A DESIGN PUMPING RATE GREATER THAN 300 GPM.
19. MAGFLUX MJK 7200 FLOW METER WITH LOCAL DISPLAY SHALL BE REQUIRED ON ALL STATIONS WITH A DESIGN PUMPING RATE GREATER THAN 300 GPM.
20. ALL LIFT STATIONS WITHIN 100' OF A RESIDENCE ARE REQUIRED TO BE EQUIPPED WITH ODOR CONTROL. THE ODOR CONTROL EQUIPMENT SHALL REMOVE ODORS OR PREVENT THE FORMATION OF ODORS AND NOT SIMPLY MASK ODORS THROUGH THE USE OF DEODORIZERS OR OTHER METHODS. THE ODOR CONTROL SYSTEM SHALL BE APPROVED BY THE CITY AND CITY ENGINEER.

CONTROL PANEL NOTES

21. LIFT STATION CONTROL PANEL WILL BE CONSTRUCTED UTILIZING MICROLOGIX TOUCH SCREEN CONTROLS AND SHALL BE CONSTRUCTED TO CONNECT TO EXISTING CITY OF WILDWOOD SCADA SYSTEM.
22. ALL PANELS TO BE NEMA 4X STAINLESS STEEL. PANEL TO BE WHITE POWDER COATED WITH VENTILATION SYSTEM. PANEL TO INCLUDE CT'S FOR AMPERAGE MONITORING. PANEL DOORS TO INCLUDE STOPPERS.
23. ALL LIFT STATIONS WITH PUMPS 20 HP OR GREATER SHALL BE EQUIPPED WITH VARIABLE FREQUENCY DRIVES (VFD). VFDS TO BE MANUFACTURED BY DANFOSS OR APPROVED EQUALS.
24. ALL HARDWARE TO BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED
25. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND FREE OF BURRS

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-21.3 Lift Station General Notes.dwg Model Aug 21, 2024 6:32pm by: logan.kieran

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>LIFT STATION GENERAL NOTES</b>	<b>S-21</b>  3 OF 4

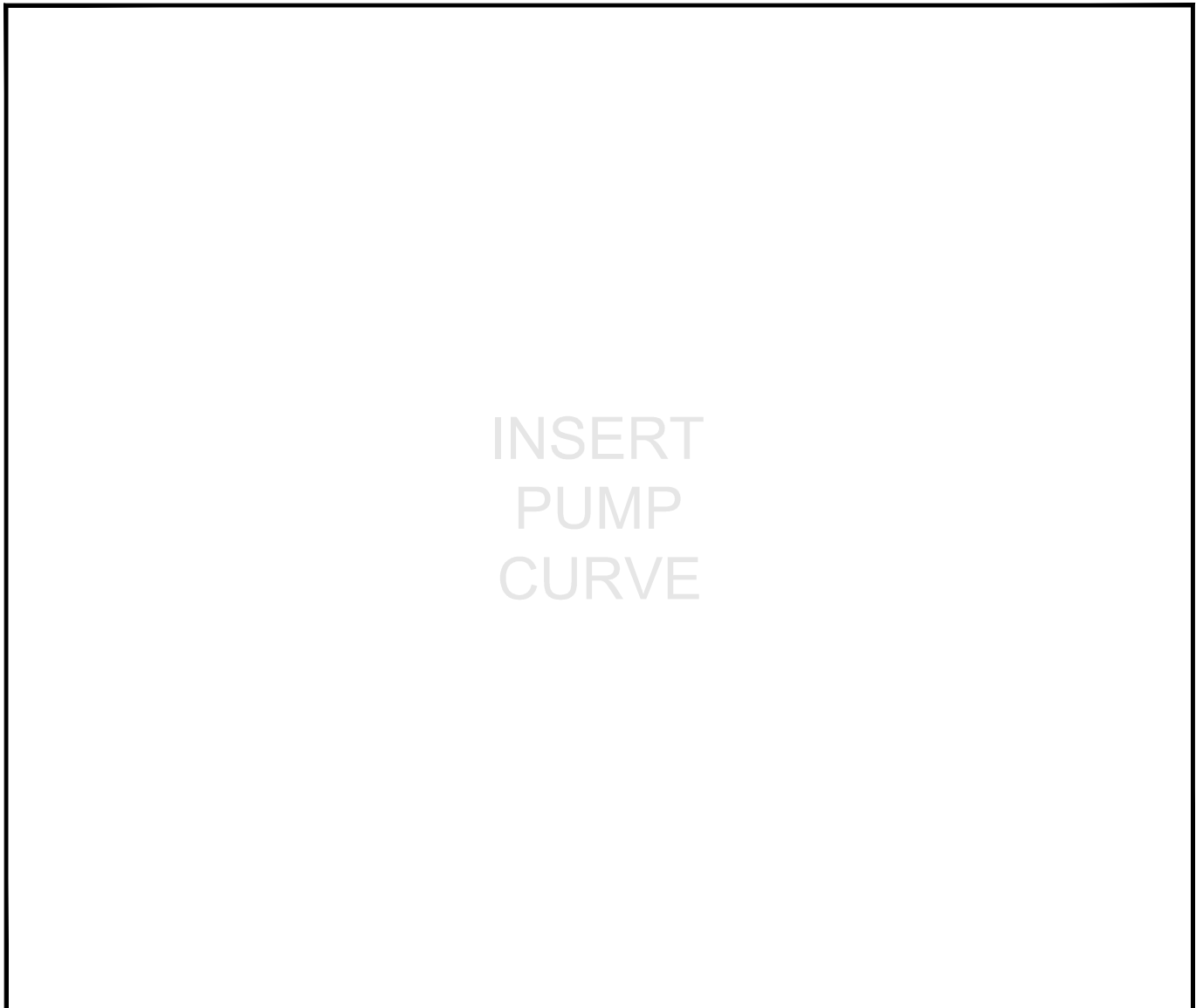
LIFT STATION PUMP SPECIFICATIONS

PUMP MANUFACTURER			
PUMP MODEL			
IMPELLER SIZE			
DESIGN POINT	GPM	HEAD	
PUMP POWER AND SPEED	HP	RPM	
ELECTRICAL DATA	PHASE	VOLTS	
INTAKE PIPE DIAMETER			
DISCHARGE PIPING DIAMETER			

NOTE

DESIGN ENGINEER TO PROVIDE PUMP CURVE FOR SPECIFIED IMPELLER. CURVE TO SHOW HEAD IN FEET, FLOW RATE IN GPM, MOTOR HORSE POWER LIMITS, PUMPING EFFICIENCIES, AND ANTICIPATED SYSTEM HEAD.

PUMP CURVE



Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-21.4 Lift Station Pump Specs.dwg Model Aug 21, 2024 6:32pm by: logan.kieran



**CITY OF WILDWOOD**  
 100 NORTH MAIN STREET  
 WILDWOOD, FLORIDA 34785  
 (352) 330-1330

SCALE  
**NONE**  
 LATEST REVISION  
**08-20-24**

CITY OF WILDWOOD SEWER DETAIL

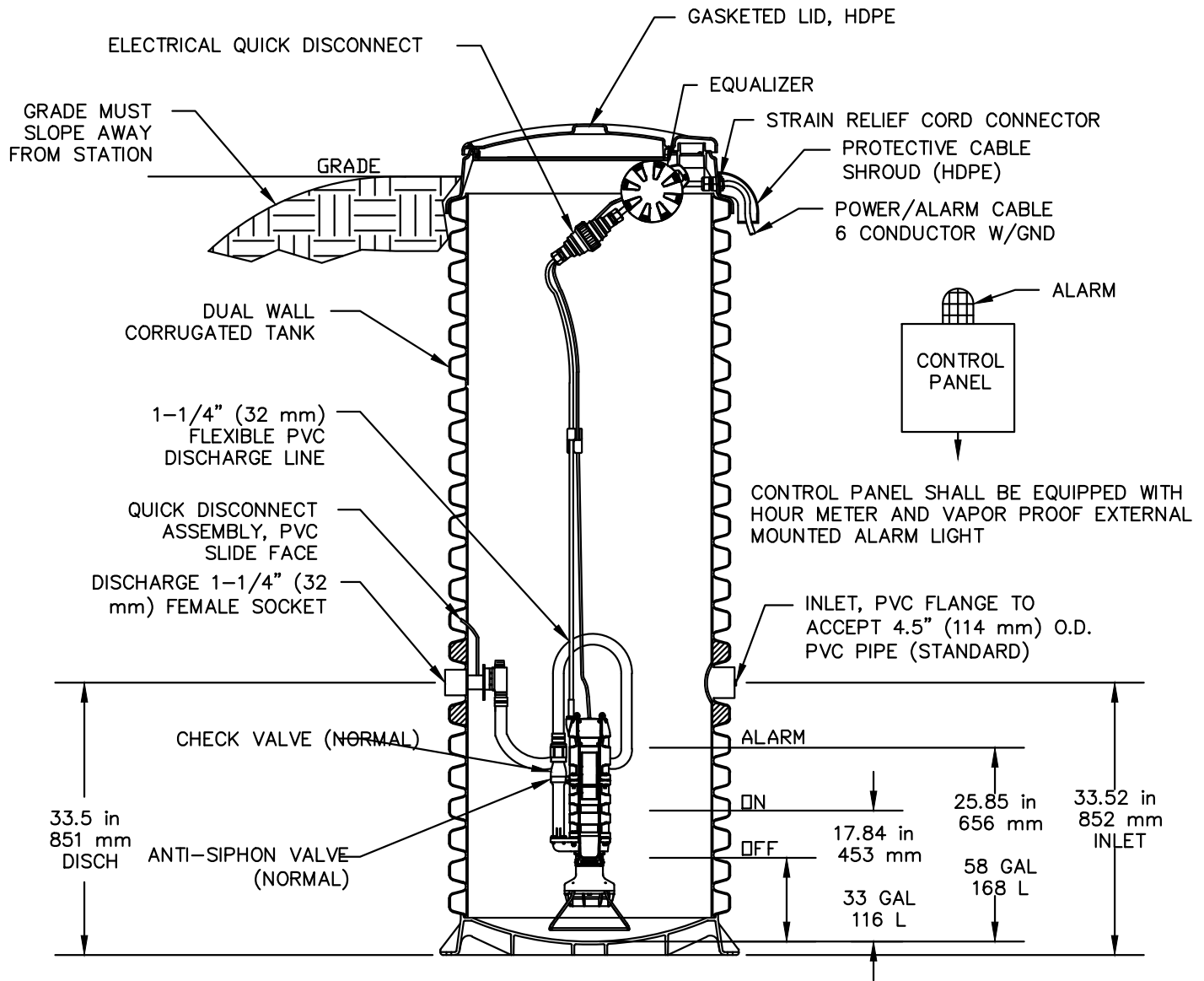
**PUMP SPECIFICATIONS**

DETAIL NUMBER

**S-21**


4 OF 4

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-22 Residential-Commercial Grinder Pump Station.dwg Model Aug 21, 2024 6:32pm by: Logan Kieran

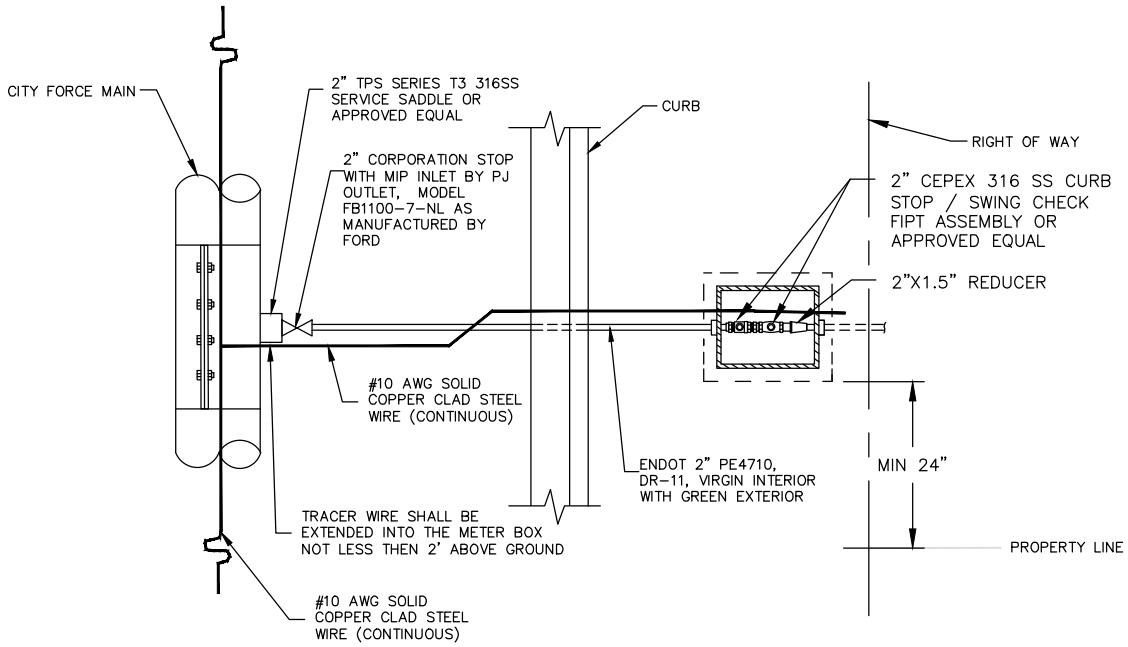


**NOTES**

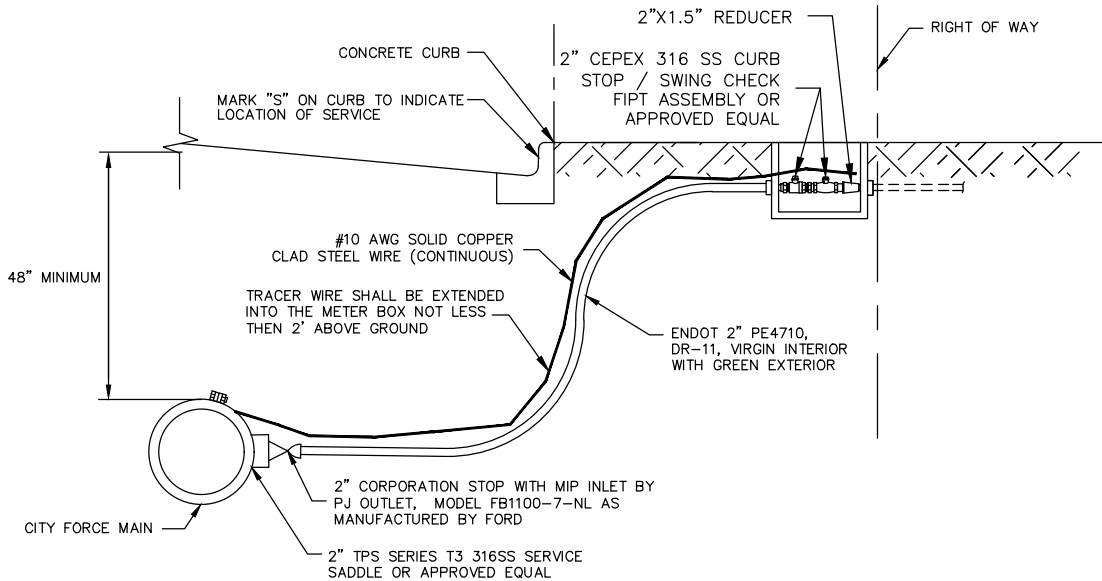
- A) SINGLE RESIDENTIAL SERVICES SHALL BE EQUIPPED WITH A MINIMUM OF ONE 1 HORSEPOWER PUMP CAPABLE OF INTRODUCING INTO THE CITY'S SEWER SYSTEM TEN (10) GALLONS PER MINUTE OF PROPERLY GROUND WASTE AT A TOTAL DYNAMIC HEAD OF NINETY TWO (92) FEET OR HIGHER. MINIMUM TANK VOLUME OF ONE HUNDRED FIFTEEN (115) GALLONS.
- B) SINGLE COMMERCIAL SERVICES SHALL BE EQUIPPED WITH A MINIMUM OF TWO 2 HORSEPOWER PUMPS CAPABLE OF INTRODUCING INTO THE CITY'S SEWER SYSTEM WITH EACH PUMP TEN (10) GALLONS PER MINUTE OF PROPERLY GROUND WASTE AT A TOTAL DYNAMIC HEAD OF NINETY TWO (92) FEET.
- C) MULTIPLE USE COMMERCIAL SERVICES WITH AN ENGINEERED PUMPING CAPACITY OF GREATER THAN THIRTY (30) GALLONS PER MINUTE SHALL BE CONSTRUCTED TO THE CITY OF WILDWOOD STANDARD CONSTRUCTION SPECIFICATIONS FOR WATER AND WASTEWATER SHEET S-19 (TYPICAL LIFT STATION LAYOUT) DETAIL, PAGES 1-8.
- D) A STAINLESS STEEL CHECK VALVE WILL BE REQUIRED BETWEEN THE GRINDER PUMP STATION AND THE CONNECTION POINT TO THE CITY'S FORCE MAIN FOR ADDED PROTECTION AGAINST BACKFLOW.

 <b>WILDWOOD</b> <small>FLORIDA</small>	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD SEWER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>RESIDENTIAL/SINGLE COMMERCIAL GRINDER PUMP STATION</b>	<b>S-22</b> 1 OF 1

Drawing name: G:\Cities and Counties\Wildwood\DETAILS\SEWER\LMK EDITS\S-23.1 Single Sewer Service Connection.dwg Model Aug 21, 2024 6:32pm by: logan.kieran




**PLAN VIEW**



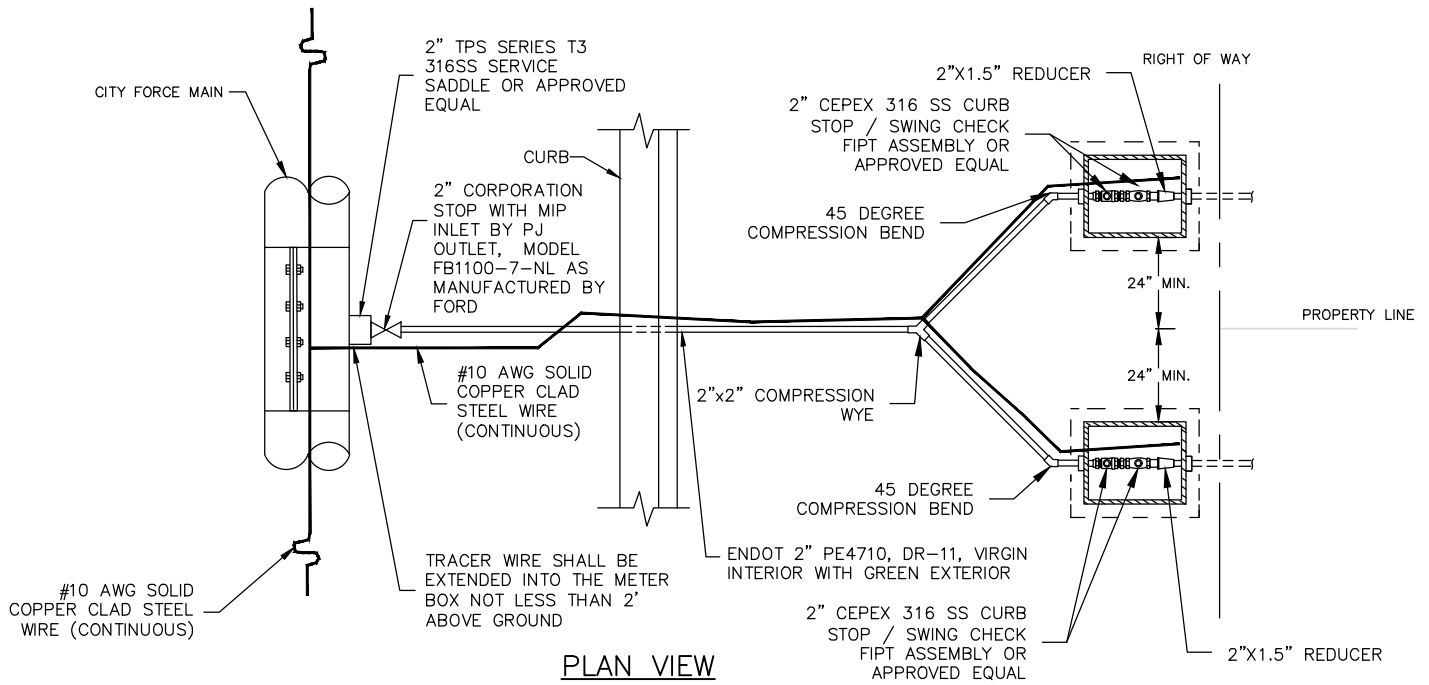
**PROFILE VIEW**

**NOTES:**

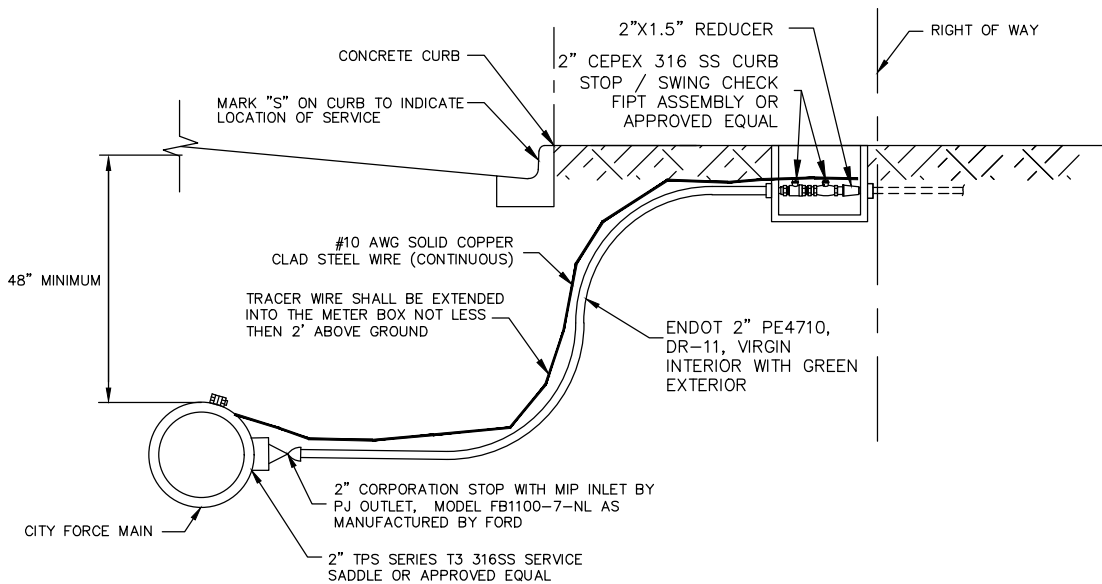
1. FORCE MAIN SERVICES SHALL BE LOCATED ON THE OPPOSITE SIDE OF LOT LINES OF WATER SERVICES.
2. ALL SERVICE CONNECTION PIPE SHALL BE COMPOSED OF THE SAME MATERIAL TYPE AND SIZE FROM THE CORPORATION STOP TO PROPERTY LINE.
3. FOR NON-TRAFFIC BEARING APPLICATIONS, BOX SHALL BE DFW-ROTEC SERIES C POLYMER ENCLOSURE (SIZE 36F) WITH CAST IRON LID. FOR TRAFFIC BEARING APPLICATIONS (SIDEWALKS, DRIVEWAYS, ETC.), VALVE BOX SHALL BE HEAVY DUTY VALVE BOX OR APPROVED EQUAL.
4. THE OUTLET SIZE ON THE SADDLE TAP, CORPORATION STOP SIZE AND SERVICE LINE SIZE SHALL BE THE SAME.
5. 3" SLEEVE IS REQUIRED FOR ALL FORCE MAIN SERVICES CROSSING ROADS.

	<b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	<b>CITY OF WILDWOOD WATER DETAIL</b>	DETAIL NUMBER
		LATEST REVISION <b>08-20-24</b>	<b>SINGLE SERVICE FORCE MAIN</b>	<b>S-23</b> 1 OF 2

Drawing name: \\OCAFILERO1\Project01\FL\_OCA\Shared\Cities and Counties\Wildwood\Details\SEWER\LMK\_EDIT\S-23.2 Double Sewer Service Connection.dwg Model Aug 21, 2024 6:32pm by: logan.kieran




**PLAN VIEW**



**PROFILE VIEW**

**NOTES:**

1. FORCE MAIN SERVICES SHALL BE LOCATED ON THE OPPOSITE SIDE OF LOT LINES OF WATER SERVICES.
2. ALL SERVICE CONNECTION PIPE SHALL BE COMPOSED OF THE SAME MATERIAL TYPE AND SIZE FROM THE CORPORATION STOP TO PROPERTY LINE.
3. FOR NON-TRAFFIC BEARING APPLICATIONS, BOX SHALL BE DFW-ROTEC SERIES C POLYMER ENCLOSURE (SIZE 36F) WITH CAST IRON LID. FOR TRAFFIC BEARING APPLICATIONS (SIDEWALKS, DRIVEWAYS, ETC.), VALVE BOX SHALL BE HEAVY DUTY VALVE BOX OR APPROVED EQUAL.
4. THE OUTLET SIZE ON THE SADDLE TAP, CORPORATION STOP SIZE AND SERVICE LINE SIZE SHALL BE THE SAME.
5. 3" SLEEVE IS REQUIRED FOR ALL FORCE MAIN SERVICES CROSSING ROADS.

 <b>CITY OF WILDWOOD</b> 100 NORTH MAIN STREET WILDWOOD, FLORIDA 34785 (352) 330-1330	SCALE <b>NONE</b>	CITY OF WILDWOOD WATER DETAIL	DETAIL NUMBER
	LATEST REVISION <b>08-20-24</b>	<b>DOUBLE SERVICE FORCE MAIN</b>	<b>S-23</b> 2 OF 2