

LTMUA DESIGN MANUAL DRAWING LIST

SEWER LINES and MANHOLES

LT-1 Standard 4'-0" Diameter Precast Manhole

LT-2 Concrete Shallow Manhole Detail

LT-3 Sampling/Metering Manhole Detail

LT-4 Doghouse Manhole

LT-5 Automatic Interior Grease Interceptor

LT-6 Oil Water Separator

LT-7 Grease Interceptor Detail

LT-8 Concrete Saddle Detail and Connection to Existing Manhole Detail

LT-9 Typical Lateral Detail and Sanitary Sewer Cleanout Detail

LT-10 Trench Detail and Concrete Encasement Detail for Pipe Crossings

LT-11 Drop Manhole Detail

PUMP STATIONS

LTPS-1 Building Plan

LTPS-2 Front Building Elevation and Placard Detail

LTPS-3 Rear Building Elevation

LTPS-4 Building Section

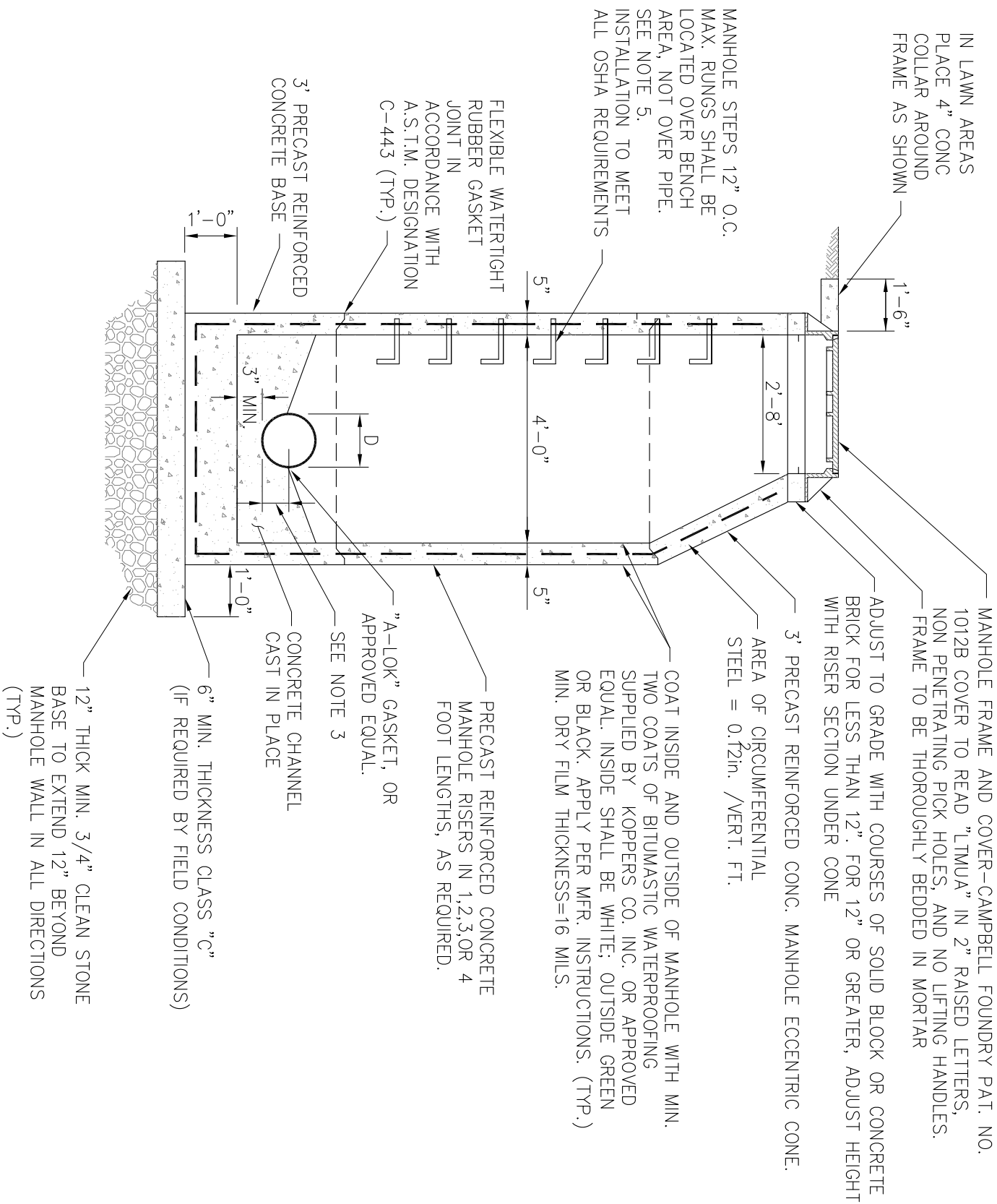
LTPS-5 Pump Station and Valve Chamber Drain Schematic

LTPS-5A Pump Station and Valve Chamber Schematic Notes

LTPS-6 Pump Station- Wet Well Portion

LTPS-6A Pump Station- Meter Chamber and Valve Chamber Portion

LTPS-7 Pump Station Site Plan



NOTES:

1. PRECAST MANHOLE IN ACCORDANCE WITH A.S.T.M. DESIGNATION C-478, MINIMUM COMPRESSIVE STRENGTH 4000 P.S.I. (TYP.), MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE, OR APPROVED EQUAL
2. ALL MANHOLES NOT LOCATED IN CROWN OF ROAD SHALL BE CONSTRUCTED WATERTIGHT WITHOUT THE USE OF A RUBBER GASKET. WATER TIGHTNESS MAY BE ACHIEVED BY DISH SHAPED INSERTS, WATERTIGHT CASTING, OR APPROVED EQUAL. DISH SHAPED WATERTIGHT INSERT SHALL BE SUPPLIED, TWO PER MANHOLE.
3. SMOOTH CONCRETE CHANNEL WITH DEPTH EQUAL TO 0.80 TIMES THE DIA. OF THE MAIN SEWER FOR SIZES 8" TO 15" AND 0.50 TIMES THE DIA. FOR SIZES 16" AND ABOVE. (USE CLASS C CONCRETE).
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING ADEQUATE BALLAST TO OFFSET FLOATATION FORCES ACTING ON MANHOLES INSTALLED IN WET AREAS.
5. POLYPROPYLENE RUNGS, WITH GRADE 60 STEEL REINFORCEMENT AND TEETH AND SIDE CLEATS, AS MANUFACTURED BY MA INDUSTRIES. STEEL RUNGS NOT ALLOWED. FOR MANHOLES GREATER THAN 15'-0" DEEP, APPLICANT SHALL CONTACT LTMUA FOR SPECIFIC MANHOLE REQUIREMENTS. ALL OSHA REQUIREMENTS MUST BE MET.
6. ANY MANHOLE REQUIRING LINING SHALL HAVE MANHOLE RUNGS REMOVED AND HAVE A COMPOSITE LADDER INSTALLED.
7. PROVIDE WRAPIDSEAL MANHOLE ENCAPSULATION SYSTEM, AS MANUFACTURED BY CANUSA-CPS, AROUND FRAME AND GRADE RINGS FOR ALL MANHOLES AND AROUND ALL RISER JOINTS. INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH ALL OF MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
8. MANHOLE FRAME SHALL BE LAID IN 1-INCH OF MORTAR AND HAVE 1-INCH MORTAR AROUND THE RIM.
9. THERE SHALL BE NO CHANGE IN FLOW DIRECTION GREATER THAN 90 DEGREES.

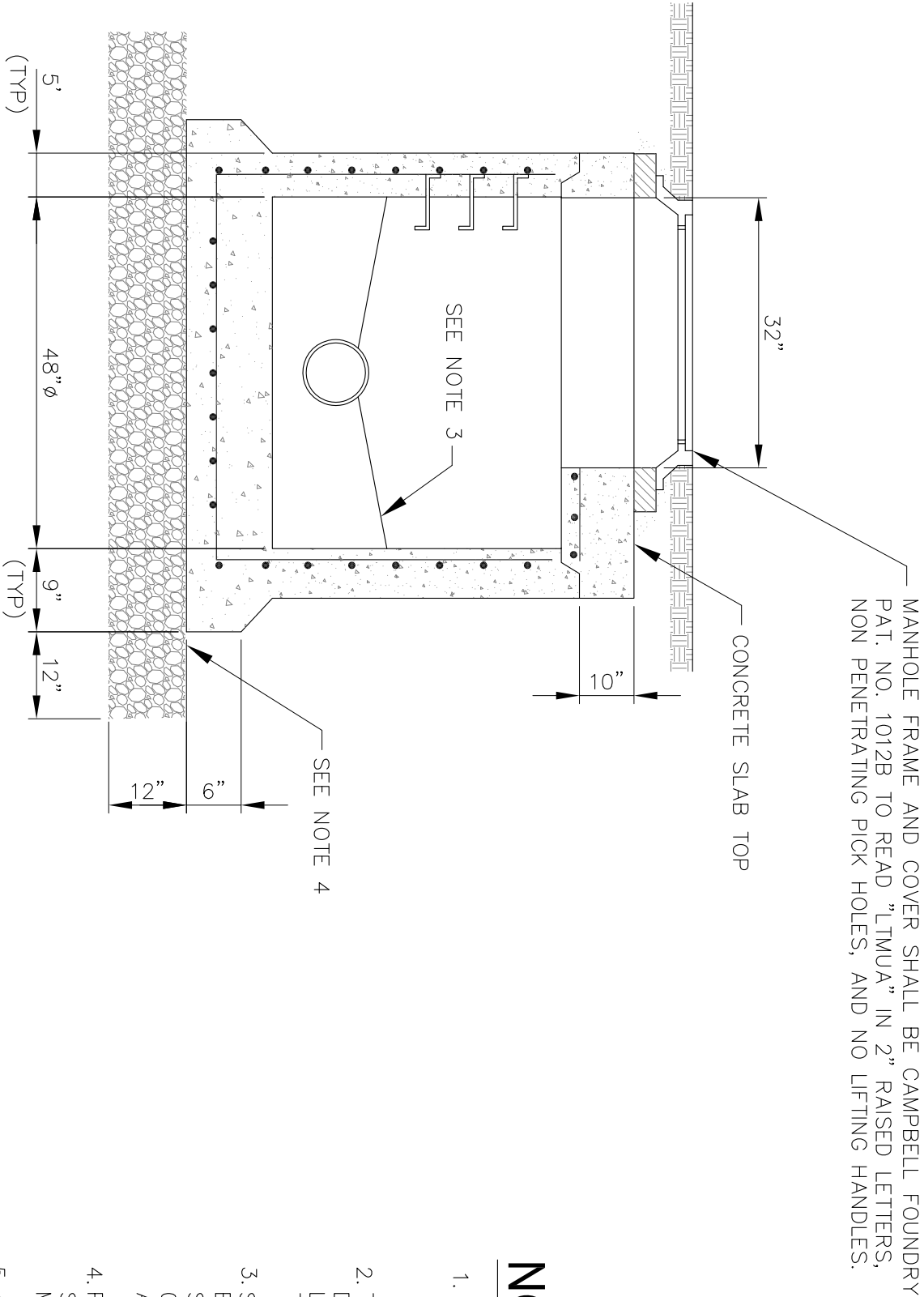
STANDARD 4'-0" Ø PRECAST MANHOLE

(FOR PIPES 36" DIA. OR LESS)

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY

GLOUCESTER COUNTY, NEW JERSEY

ALL REQUESTS FOR REVISIONS OR SUBSTITUTIONS MUST BE APPROVED BY LTMUA ENGINEER. ALL REVIEW COSTS SHALL BE PAID BY APPLICANT'S ESCROW ACCOUNT



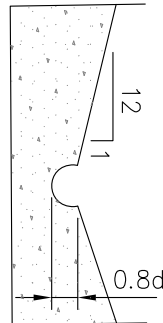
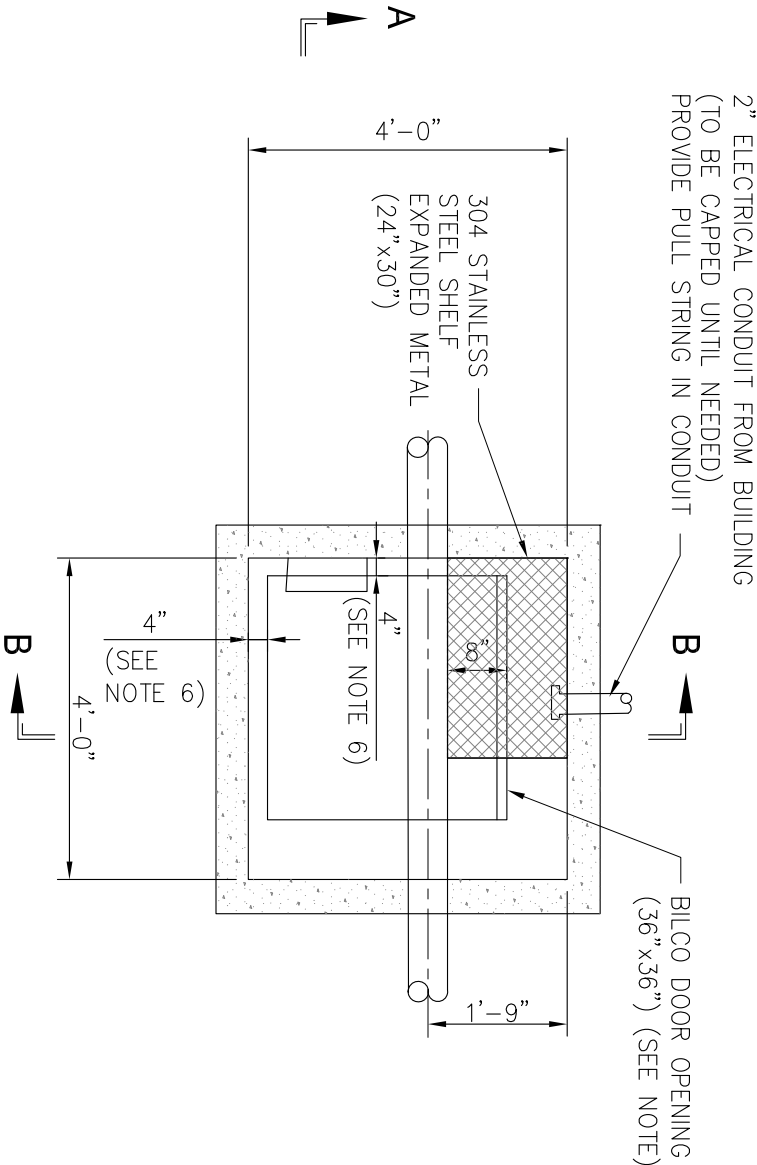
NOTES:

1. MANHOLE CONSRUCTION SHALL BE IN ACCORDANCE WITH 4'-0" DIAMETER PRECAST MANHOLE
2. TOP SLAB REINFORCING SHALL BE DESIGNED TO WITHSTAND H20 WHEEL LOADS. SIGNED AND BE PROVIDED BY THE PRECAST MANUFACTURER
3. SMOOTH CONCRETE CHANNEL WITH DEPTH EQUAL TO 0.80 TIMES THE DIA. OF THE SEWER MAIN FOR SIZES 8" TO 15" AND 0.50 TIMES THE DIA. FOR SIZES 16" AND ABOVE. USE CLASS C CONCRETE.
4. PLACE UPON 12" THICK 3/4" CLEAN STONE EXTENDED TO 12" BEYOND MANHOLE IN ALL DIRECTIONS.
5. ALL STANDARDS AND REQUIREMENTS FOR STANDARD 4'-0" DIAMETER PRECAST MANHOLE SHALL APPLY FOR CONCRETE SHALLOW MANHOLES. REFER TO LT-1 FOR REQUIREMENTS.
6. CONCRETE SHALLOW MANHOLE IS DEFINED AS ANY MANHOLE WITH LESS THAN 4" STRAIGHT WALL AROUND ENTIRE MANHOLE CIRCUMFERENCE.
7. FOLLOW ALL SPECIFICATIONS PROVIDED ON LT-1.

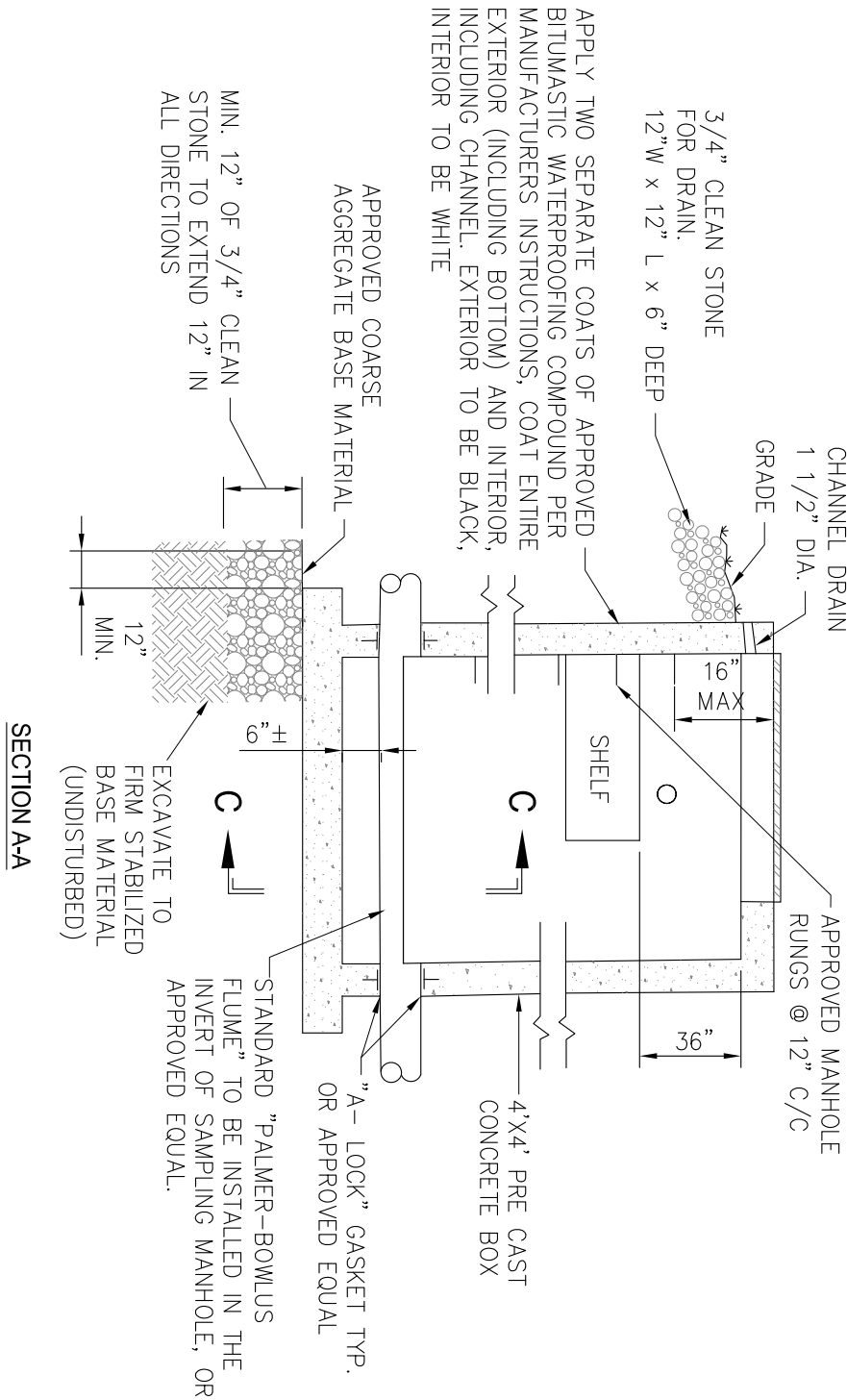
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CONCRETE SHALLOW MANHOLE DETAIL

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GLOUCESTER COUNTY, NEW JERSEY



SECTION C-C

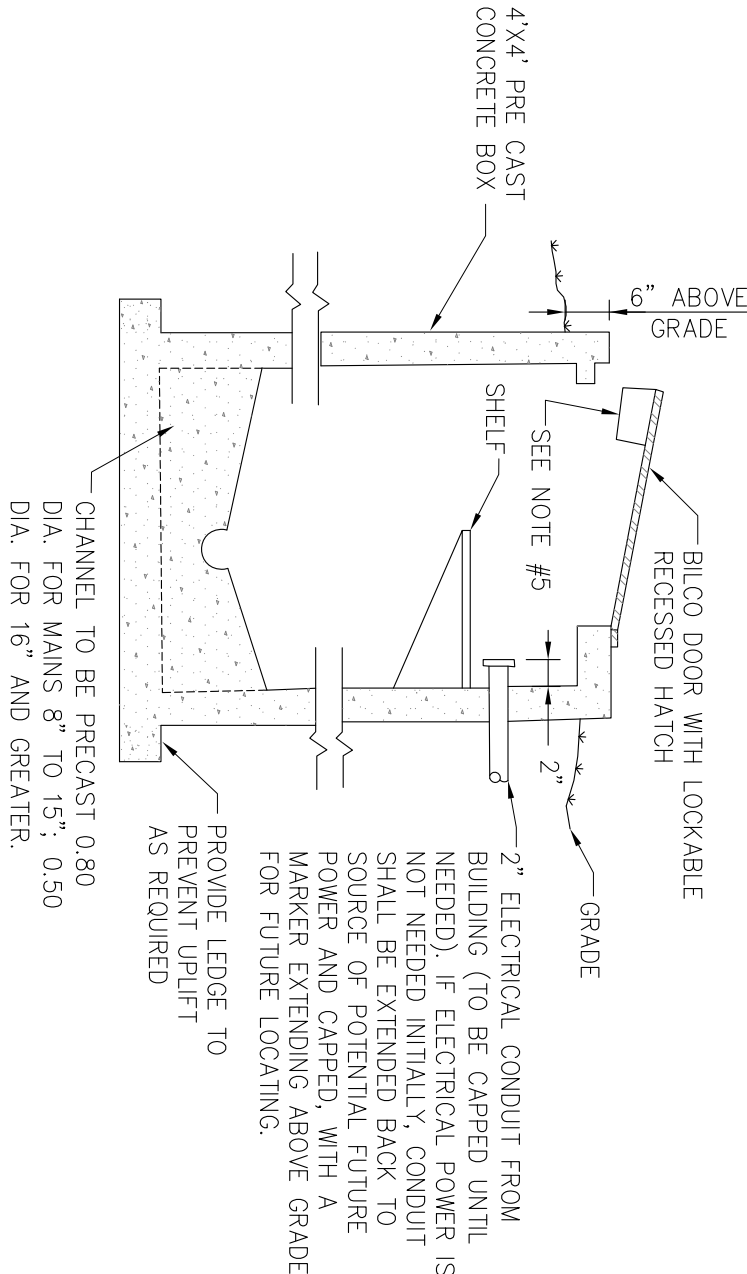


BILCO DOOR NOTES:

- 1) DOOR TO BE MODEL J-4AL, MODIFIED WITH RECESSED PADLOCK HATCH, FLUSH MOUNTED, OR APPROVED EQUAL. AS DETERMINED BY AUTHORITY ENGINEER.
- 2) DOOR TO BE WATERTIGHT.
- 3) DOOR CHANNEL TO BE DRAINED.
- 4) FURNISH 2 KEYS TO LTMUA.
- 5) RECESSED HASP PROTECTED BY HINGED FLAP DOOR FLUSH WITH SURFACE.
- 6) FRAME AND COVER TO BE ALUMINUM, AND LOCATED IN TOP SLAB AS SHOWN 4" OFF CONCRETE WALL.
- 7) ALL HARDWARE TO BE 316 STAINLESS STEEL OR EQUAL BILCO COMPOSITE MATERIAL FOR USE IN HYDROGEN SULFIDE ENVIRONMENT.

SAMPLING/METERING MANHOLE NOTES:

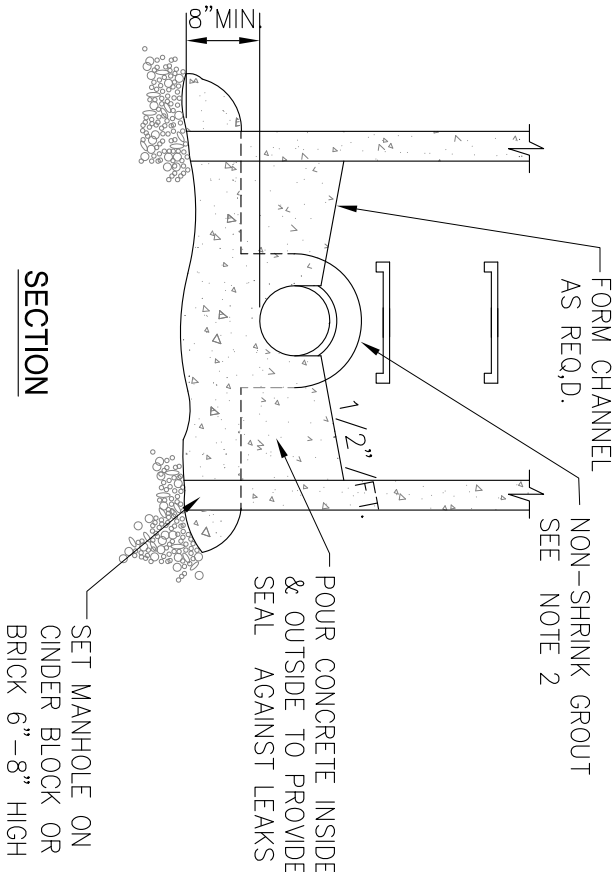
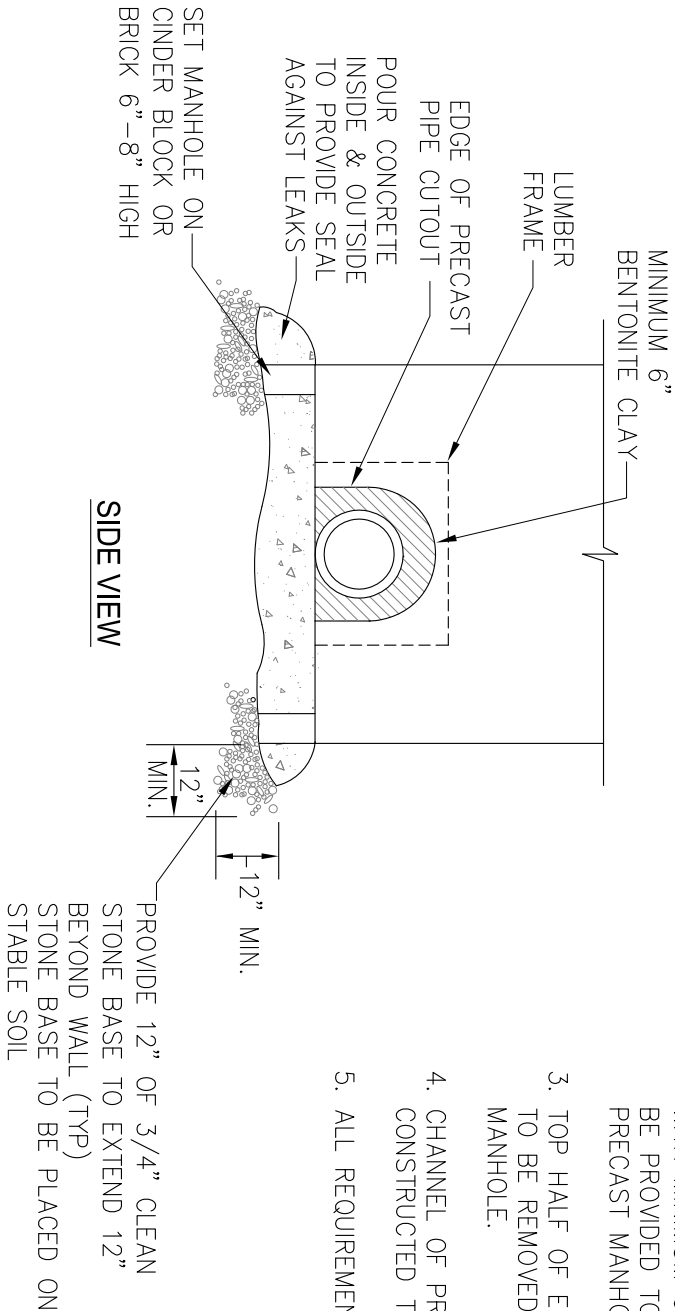
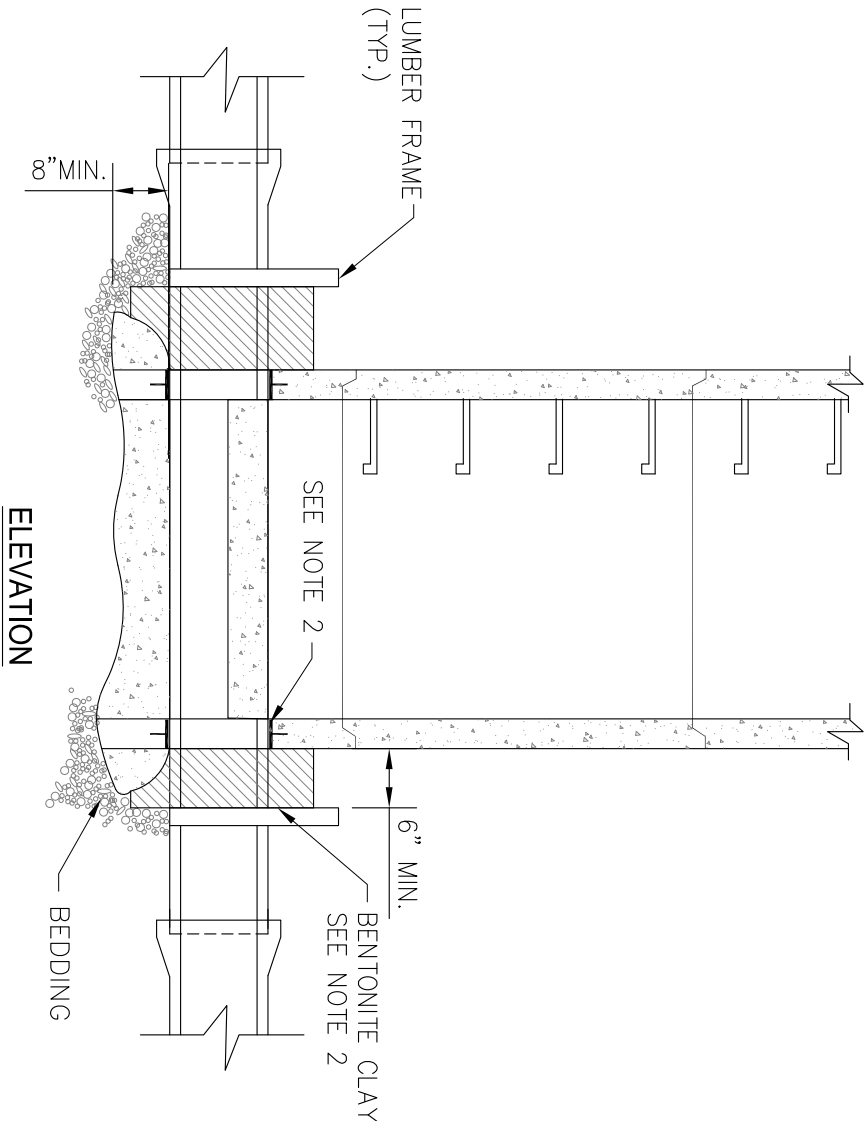
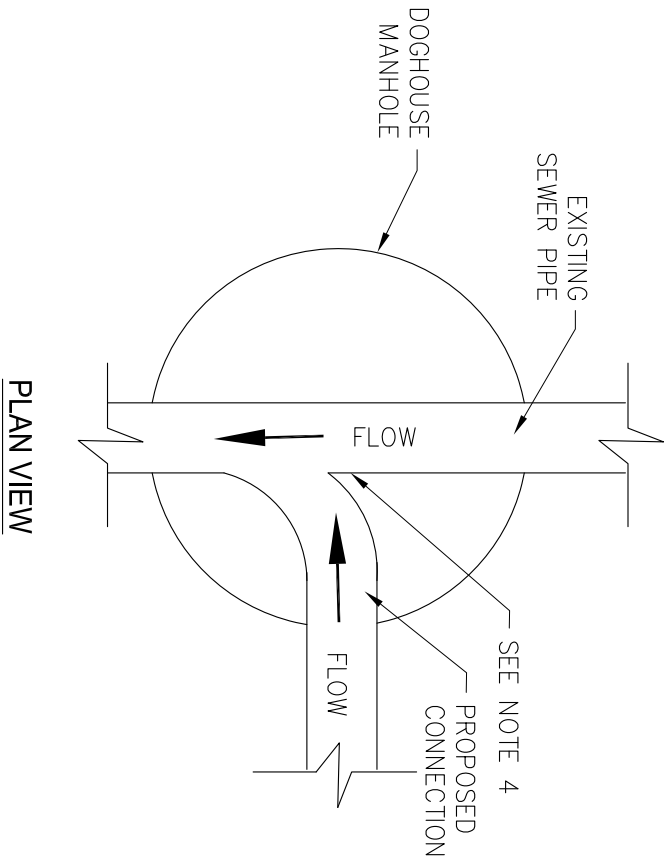
- 1) LOCATE IN NON-PAVED AREA ONLY.
- 2) SAMPLING MANHOLE SHALL CONFIRM TO ASTM C913 FOR SQUARE AND RECTANGULAR MANHOLES.
- 3) SLOPE OF FRAME SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 4) SUPPORT 2 SIDES OF SHELF WITH SHOP FABRICATED ANGELS. EDGES OF SHELF SHALL BE COVERED WITH PROTECTIVE MATERIAL.
- 5) MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE OR APPROVED EQUAL.
- 6) FLUME TO BE INSTALLED AND CERTIFIED BY QUALIFIED FLUME PROVIDER.
- 7) ALL COMPONENTS OF MANHOLE MUST MEET ALL OSHA STANDARDS.
- 8) IF A FLOW METER IS NOT REQUIRED, A SAMPLER SHELF SHALL BE PROVIDED AND ELECTRIC POWER PROVIDED TO A 20 AMP GFI OUTLET (MEETING ALL CODE REQUIREMENTS) LOCATED TO OUTSIDE THE MANHOLE. A 2" CONDUIT SHALL BE INSTALLED FROM AREA OF GFI OUTLET TO INSIDE THE MANHOLE UNDER THE SHELF. IF A FLOW METER IS REQUIRED, A CONCRETE PAD SHALL BE INSTALLED (52" x 38", 4" ABOVE GRADE) TO ACCOMMODATE A PRECISION SYSTEMS STORM BOX AS PROVIDED BY HARTICO, OR APPROVED EQUAL EQUIPPED TO ACCOMMODATE FLOW METERING AND SAMPLING. IN SUCH SITUATIONS, A SHELF IS NOT REQUIRED.



SAMPLING / METERING MANHOLE DETAIL

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LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



NOTES:

1. USE OF THIS MANHOLE SHALL BE AT THE APPROVAL OF ENGINEER. THIS MANHOLE WILL NOT BE PERMITTED IN AREAS OF UNSTABLE SOIL OR FOR TCP OR ACP PIPE.
2. PIPE TO BE FITTED WITH INSERTA LOK, OR APPROVED EQUAL, THEN SPACE BETWEEN PIPE AND MANHOLE TO BE FILLED WITH NON-SHRINK GROUT AND COVERED WITH MINIMUM 6" BENTONITE CLAY. LUMBER FRAME TO BE PROVIDED TO ENSURE 6" BENTONITE OVERLAP INTO PRECAST MANHOLE UNIT, AND REMAIN IN PLACE.
3. TOP HALF OF EXISTING SEWER PIPE INSIDE MANHOLE TO BE REMOVED THROUGH ENTIRE LENGTH OF MANHOLE.
4. CHANNEL OF PROPOSED CONNECTION SHALL BE CONSTRUCTED TO ASSIST FLOW.
5. ALL REQUIREMENTS OF LT-1 APPLY.

DOGHOUSE MANHOLE

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LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY

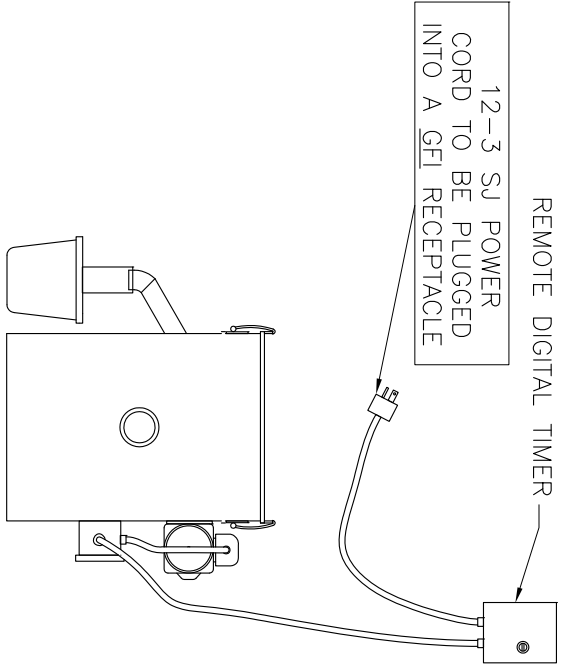
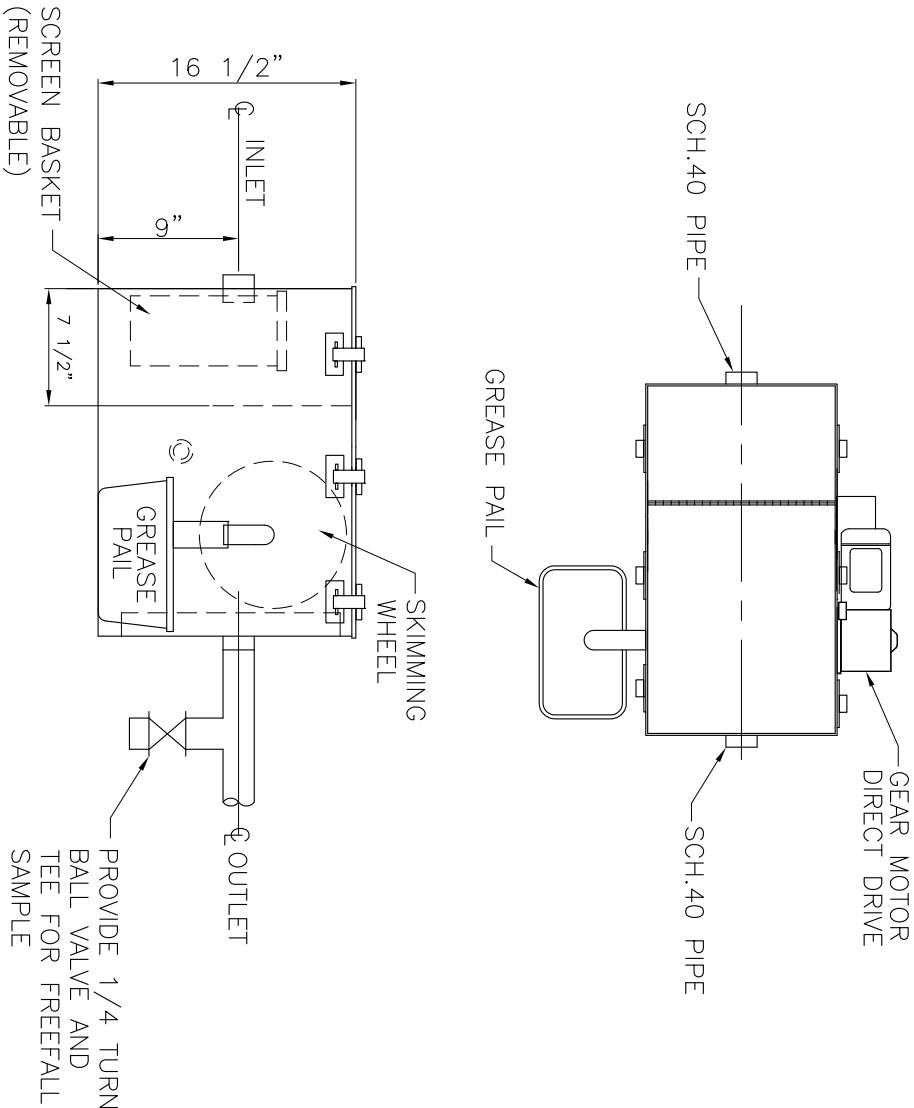
ELECTRICAL INFORMATION

UNIT MUST BE PLUGGED INTO
A GFI((GROUND FAULT INTERRUPT)RECEPTACLE.

GEARMOTOR– .93 FLA. 115V, 60hz ELECTRIC

HEATING ELEMENT– 115 V, 1500 W

NOTE:
THE AUTOMATIC INTERIOR GREASE INTERCEPTOR IS NOT
A TRAP FOR SEWER GAS. A TRAP SHALL BE PROVIDED
DOWN STREAM FROM THE GREASE STOPPER.

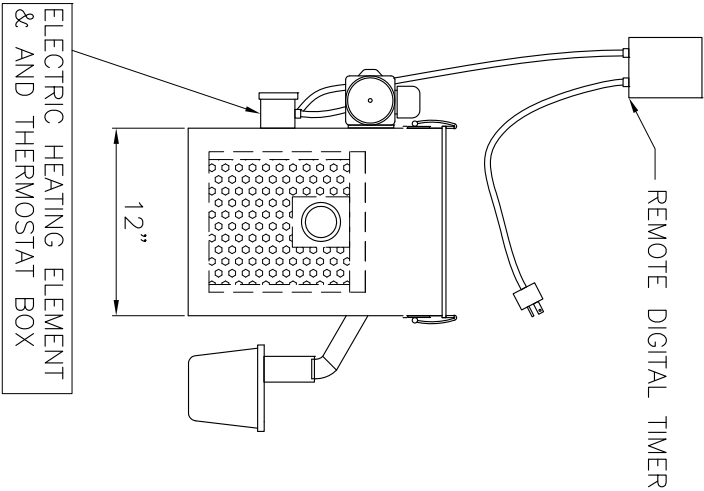
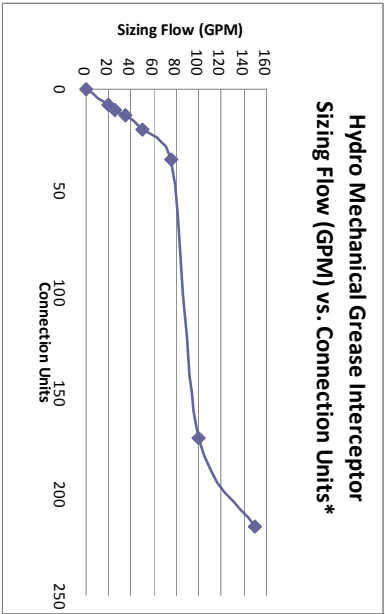


MODEL CAPACITY ***	PEAK ALLOWABLE FLOW (GPM) *	DIMENSIONS			STATIC WATER (GAL)	**GREASE HOLDING CAPACITY (GAL)	INLET/ OUTLET DIAMETER	INLET/ OUTLET HEIGHT
		LENGTH	WIDTH	HEIGHT				
GS-15	25	23"	12"	17"	9	50	2" /2"	9" /9"
GS-20	34	27"	14"	18"	13	69	2" /2"	9" /9"
GS-25	45	33"	16"	18"	17	91	3" /3"	9" /9"
GS-25L	41	40"	22"	18"	19	83	3" /3"	6" /6"
GS-30	62	36"	17"	19"	23	124	3" /3"	10" /10"
GS-35	126	36"	18"	26"	44	253	3" /3"	17" /17"
GS-50	146	40"	18"	33"	50	292	4" /4"	18" /18"
GS-75	229	48"	18"	36"	75	458	4" /4"	22" /22"
GS-100	318	60"	20"	36"	104	636	4" /4"	22" /22"

* – SEE CHART FOR STANDARD RELATIONSHIP BETWEEN CONNECTION UNITS AND SIZING FLOW. LTMUA MAY REQUIRE ALTERNATE CONNECTION UNIT VS. SIZING FLOW RELATIONSHIPS FOR SPECIFIC APPLICATIONS

** – NATIONAL PLUMBING CODE REQUIRES A MINIMUM 2 LBS. GREASE DETENTION FOR EACH GPM OF FLOW

*** – MODEL CAPACITY NUMBER BASED UPON "GREASE STOPPER" AS PROVIDED BY HIGHLAND TANK. GREASE INTERCEPTOR SHALL BE "GREASE STOPPER", THE "BIG DIPPER" OR APPROVED EQUAL. CONTACT LTMUA FOR MANUFACTURER CONTACTS.



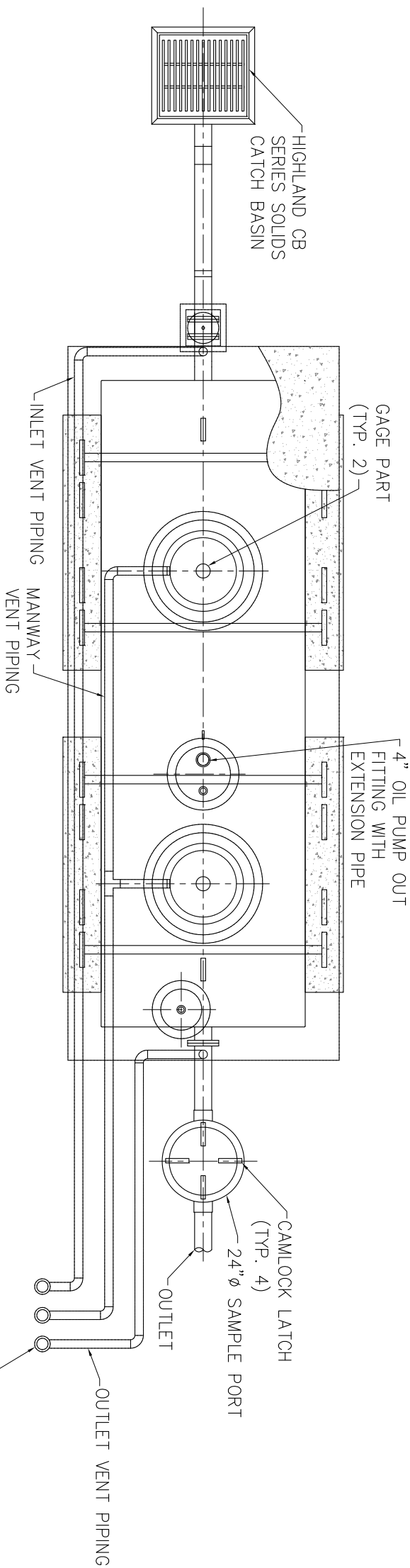
NOTE:

1. BASIS OF DESIGN SHOWN IS GREASE STOPPER BY LOWE ENGINEERING, WWW.GREASESTOPPER.COM.

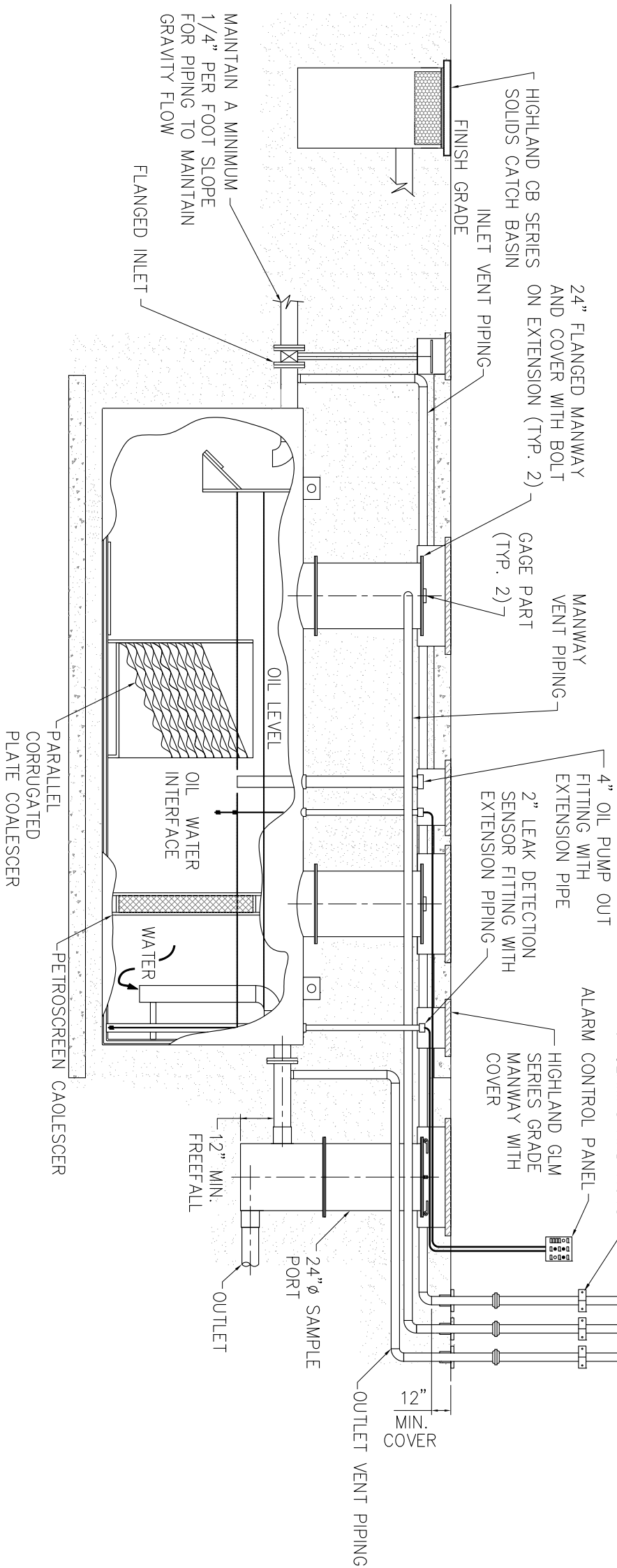
AUTOMATIC INTERIOR GREASE INTERCEPTOR

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GLOUCESTER COUNTY, NEW JERSEY



PLAN



SECTION

OIL WATER SEPARATOR

ALL REQUESTS FOR REVISIONS OR
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GLOUCESTER COUNTY, NEW JERSEY

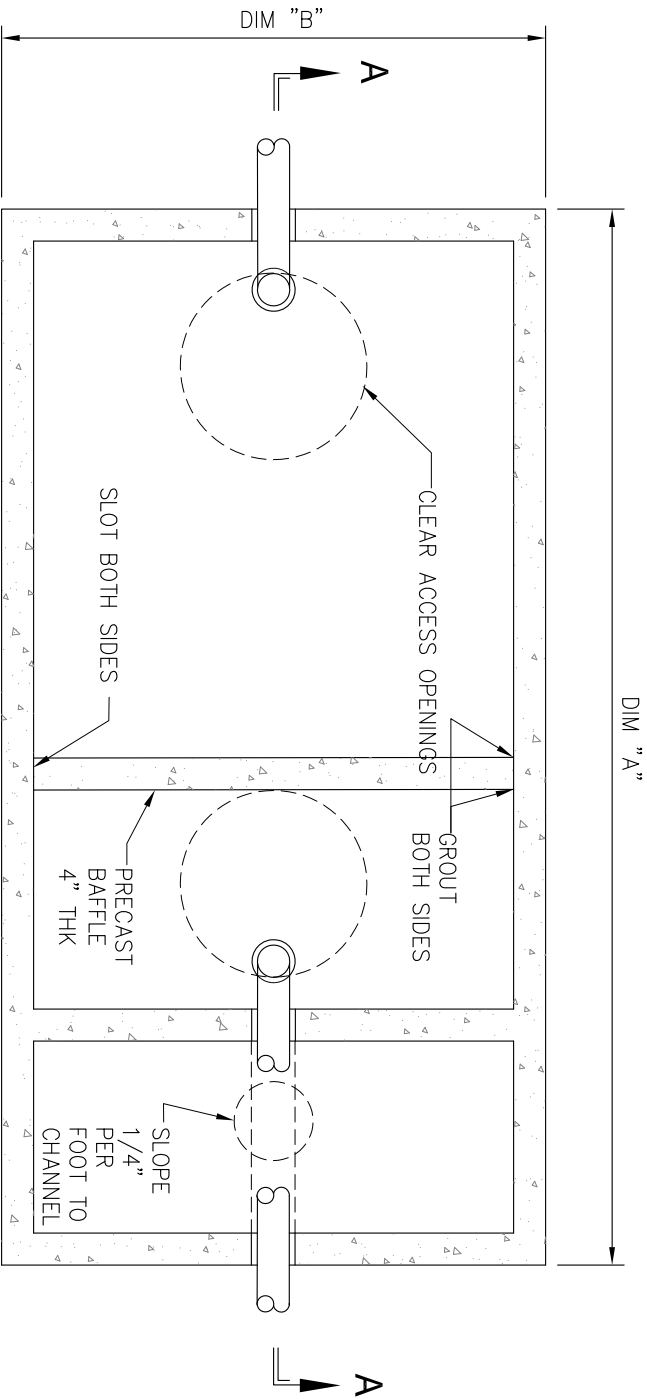
NOTES:

1. UNDERGROUND COATING SYSTEM OPTIONS ARE THE HIGHGUARD, ACT-100-U, AND S.T.I.P. 3.
2. MANHOLE AND PIPE EXTENSION LENGTHS VARY PER TANK SIZE AND DEPTH.
3. LEAK SENSOR, LEVEL SENSOR AND OIL PUMP-OUT PIPE EXTENSIONS ARE TO EXTEND TO THE SAME ELEVATION AS THE MANWAY EXTENSION.
4. ALL VENT PIPES SLOPED TO DRAIN BACK TO SEPARATOR.
5. WHERE AUTOMOBILES ARE SERVICED, GREASED, REPAIRED OR WASHED OR WHERE GASOLINE IS DISPENSED, OIL SEPARATORS SHALL HAVE A MINIMUM CAPACITY OF 6 CUBIC FEET FOR THE FIRST 100 SQUARE FEET OF AREA TO BE DRAINED PLUS 1 CUBIC FOOT FOR EACH ADDITIONAL 100 SQUARE FEET OF AREA TO BE DRAINED INTO THE SEPARATOR.
6. BASIS OF DESIGN SHOWN IS BY HIGHLAND TANK 2 MARNI COURT, MARLTON, NJ 08053 856-985-1214.
7. OIL WATER SEPARATOR MUST BE INSTALLED IN NON-TRAFFIC AREA.

NOTES:

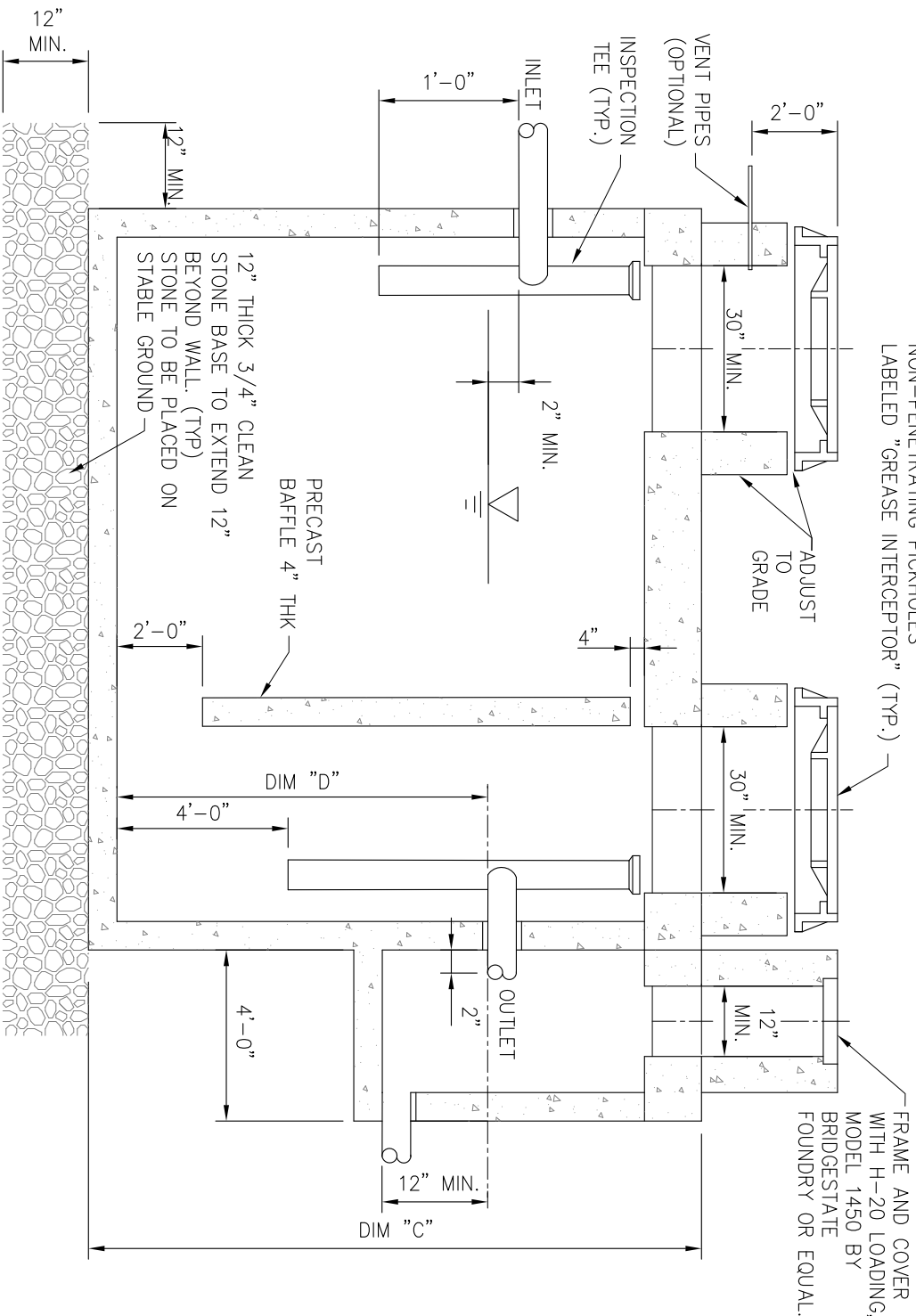
1. CONCRETE: 28 DAY f_c =4000 PSI. STRUCTURE TO BE OF PRECAST CONSTRUCTION, AS MANUFACTURED BY ATLANTIC CONCRETE OR APPROVED EQUAL.
2. REBARS: ASTM A615 GRADE 60
3. MESH: ASTM A-185 GRADE 65
4. DESIGN: ACI318-83 BUILDING CODE ASTM C-857 MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES.
5. LOADS: H-20 TRUCK WHEEL W/30% IMPACT PER AASHTO.
6. FILL W/CLEAN WATER PRIOR TO START UP OF SYSTEM.
7. CONTRACTOR TO SUPPLY & INSTALL ALL PIPING AND SANITARY TEES, 4 CLEAN OUTS, FOR CLEANING TOWARD TRAP AND FOR CLEANING AWAY FROM TRAP ON BOTH THE INLET AND OUTLET/ALT. DUAL SWEEP CLEAN OUTS.
8. GRAY WATER ONLY, BLACK WATER SHALL BE CARRIED BY SEPARATESEWER.
9. COAT OUTSIDE WITH TWO COATS (MIN DFT.= 25 MILS) OF BLACK BITUMASTIC WATER PROOFING SUPPLIED BY KOPPERS CO. INC. OR APPROVED EQUAL; INTERIOR TO BE COATED WITH TWO COATS WHITE EPOXY. APPLY PER MFR. INSTRUCTIONS.
10. SEPARATOR TO BE PLACED IN GRASS AREA, AS AVAILABLE. MUST BE IN A NON-TRAFFIC AREA.
11. EXTERIOR PENETRATIONS TO HAVE A-LOCK GASKET, OR APPROVED EQUAL.
12. FOR GREASE SEPARATOR SIZES LARGER THAN SHOWN IN THE TABLE ABOVE, CONSULT WITH LTMUA AND ITS ENGINEER.
13. NOTE THAT GREASE SEPARATOR IS DIFFERENT THAN OIL-WATER SEPARATOR.
14. MANUFACTURER'S ENGINEER SHALL CERTIFY SIZING SELECTION.
15. MANHOLE LIDS TO SAY "GREASE INTERCEPTOR" IN 2" RAISED LETTERS.

GALLON CAPACITY	DIM "A"	DIM "B"	DIM "C"	DIM "D"
600	7'-0"	4'-8"	7'-0"	3'-6"
750	7'-0"	4'-8"	7'-0"	4'-3"
1000	7'-0"	5'-0"	7'-2"	5'-8"
1250	9'-0"	5'-0"	7'-2"	5'-2"
1500	9'-0"	5'-8"	7'-2"	5'-4"
1750	11'-2"	5'-8"	7'-2"	4'-11"
2000	11'-2"	6'-8"	8'-0"	4'-7"
2500	12'-8"	6'-8"	8'-0"	5'-6"
3000	12'-8"	6'-8"	8'-0"	6'-0"



CAMPBELL FOUNDRY COVER WITH NON-PENETRATING PICKHOLES LABELED "GREASE INTERCEPTOR" (TYP.)

PLAN VIEW

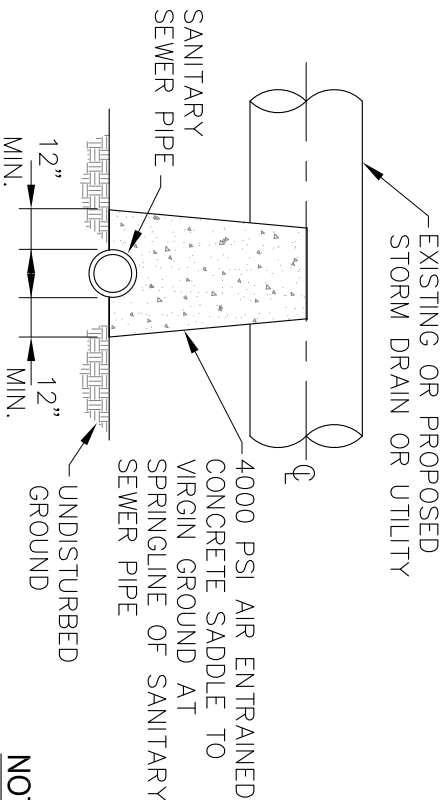
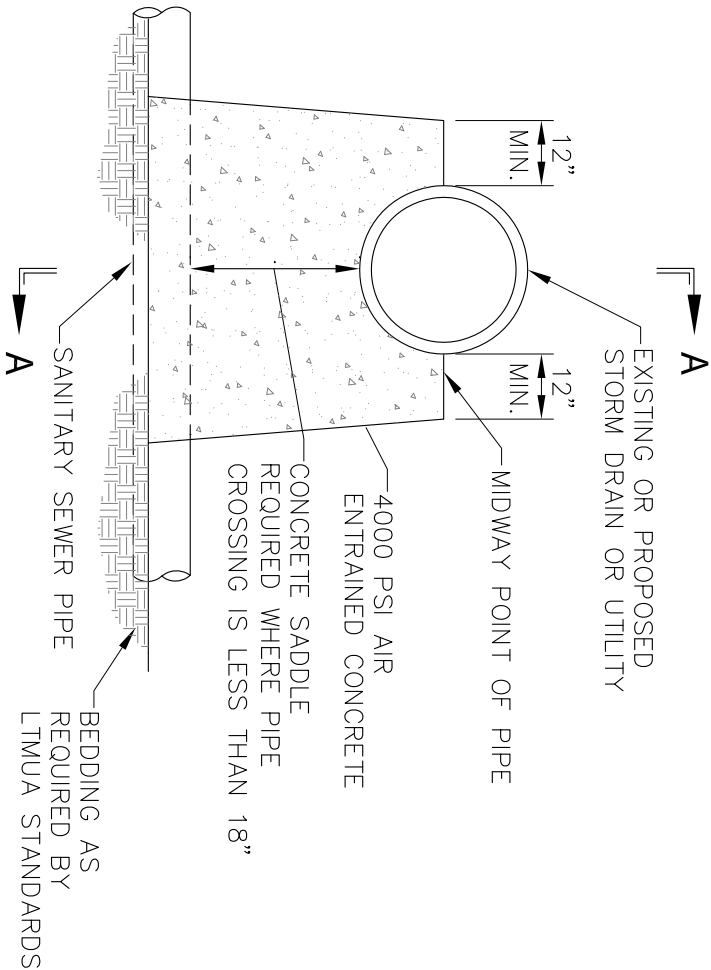


SECTION A-A

GREASE INTERCEPTOR DETAIL

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GLOUCESTER COUNTY, NEW JERSEY

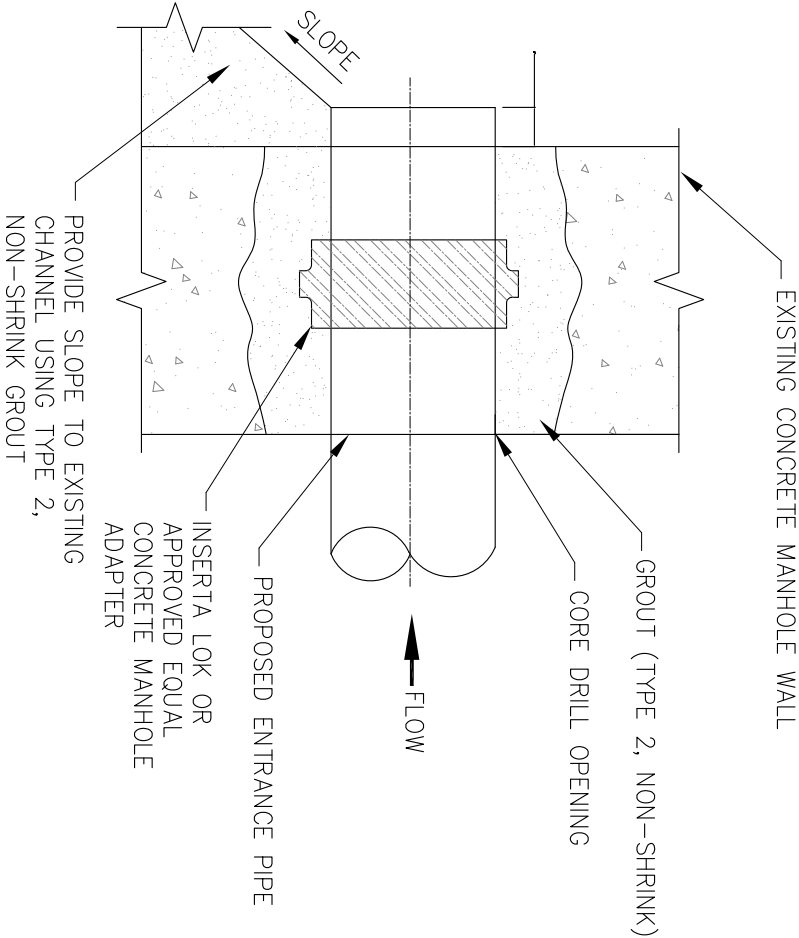


NOTE:

1. ALLOW CONCRETE TO CURE FOR 24 HOURS BEFORE BACKFILLING.

SECTION "A-A"

CONCRETE SADDLE

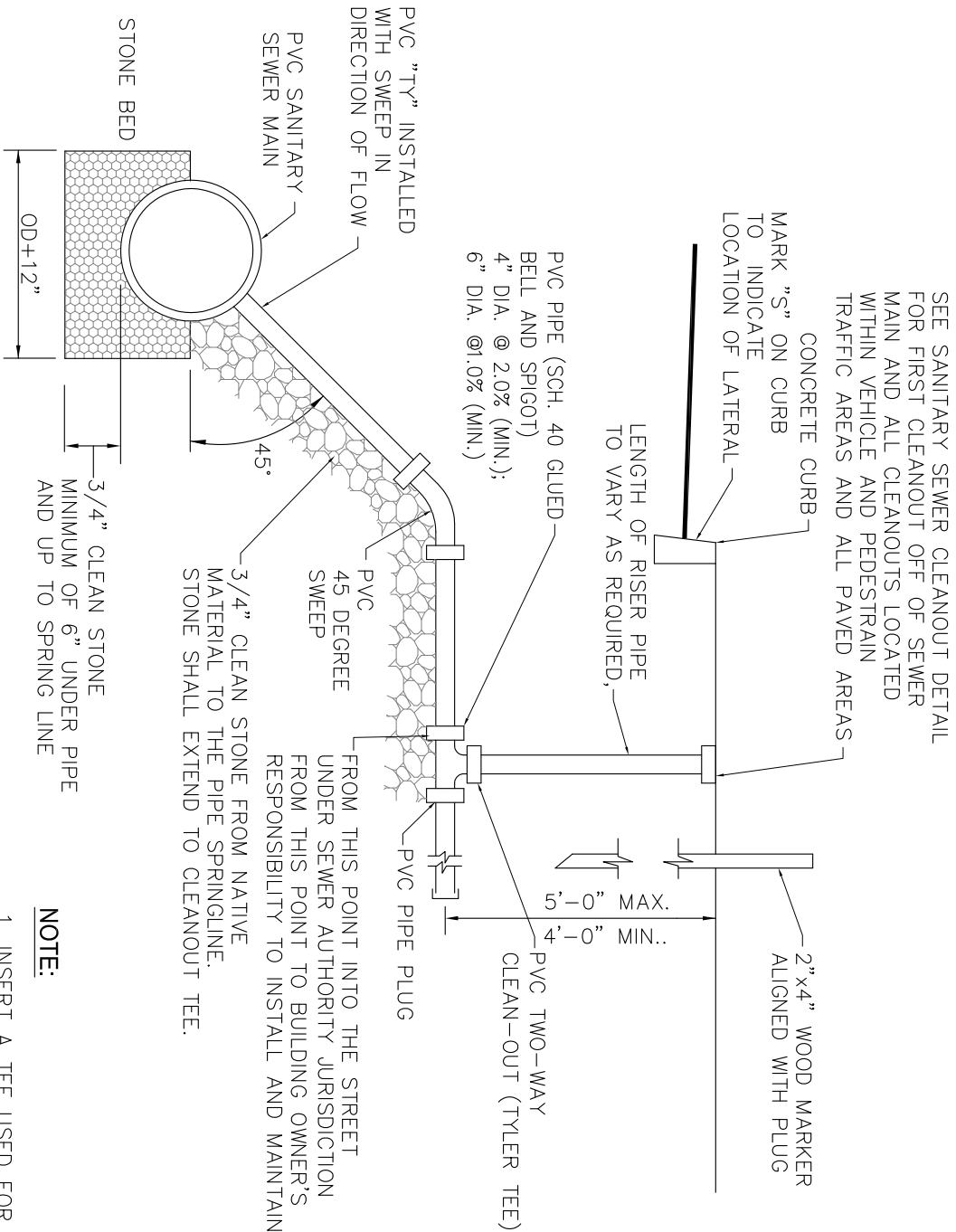


CONNECTION TO EXISTING MANHOLE

CONCRETE SADDLE DETAIL AND CONNECTION TO EXISTING MANHOLE DETAIL

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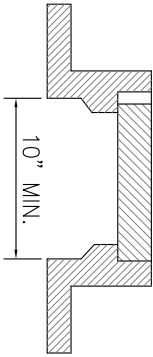
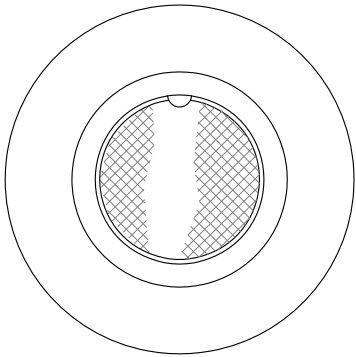


- NOTE:**
1. TRENCH BOTTOM TO BE VIRGIN SOIL, 0.75" STONE OR MECHANICALLY TAMPED AND TESTED BACKFILL

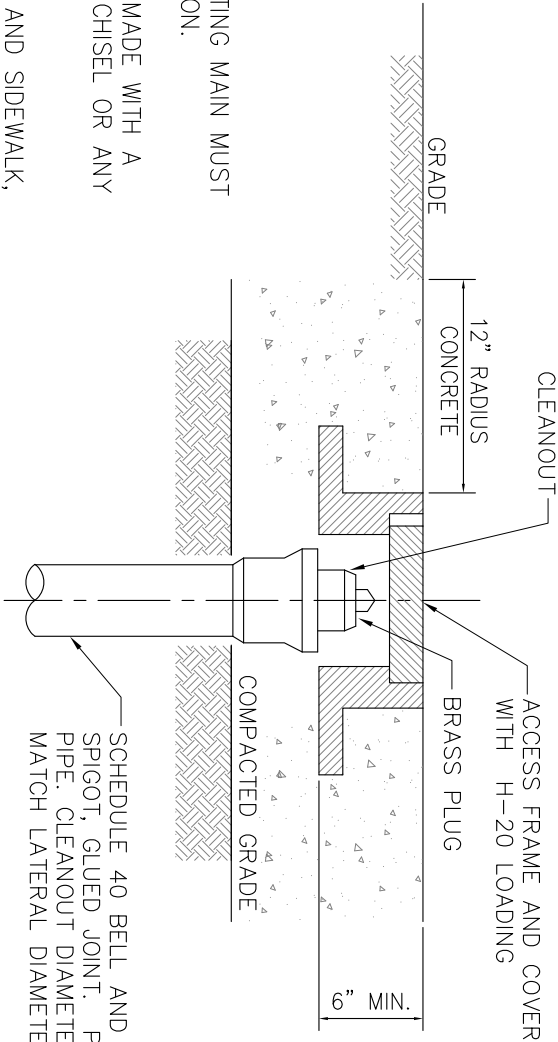
TYPICAL LATERAL

- NOTE:**
1. INSERT A TEE USED FOR CONNECTION TO EXISTING MAIN MUST BE APPROVED BY LTMUA PRIOR TO INSTALLATION.
 2. CONNECTION TO LTMUA SEWER MAIN MUST BE MADE WITH A HOLE SAW. CONNECTION WITH A HAMMER AND CHISEL OR ANY OTHER MEANS WILL NOT BE PERMITTED.
 3. CLEANOUT SHALL BE LOCATED BETWEEN CURB AND SIDEWALK, OR A MAXIMUM OF 2' FROM CURB. ELEVATION OF TOP OF CLEANOUT SHALL BE LEVEL WITH THE HIGHER OF CURB OR GRADE. NO CLEANOUTS LOCATED IN PAVED AREAS.

4. 3' MIN. COVER FROM FINISHED GRADE TO TOP OF SERVICE. DUCTILE IRON PIPE, IN AREAS NOT SUBJECT TO VEHICULAR TRAFFIC IS REQUIRED IN AREAS WITH 3' COVER.
5. ALL CLEANOUTS ALONG LATERAL TO HAVE BRASS PLUGS OF SAME SIZE AS LATERALS.
6. ALL LATERALS MUST BE STRAIGHT RUNS.
7. LATERAL SIZE MUST BE 4" MINIMUM.



PATTERN NUMBER 1000
CAMPBELL FOUNDRY CO.



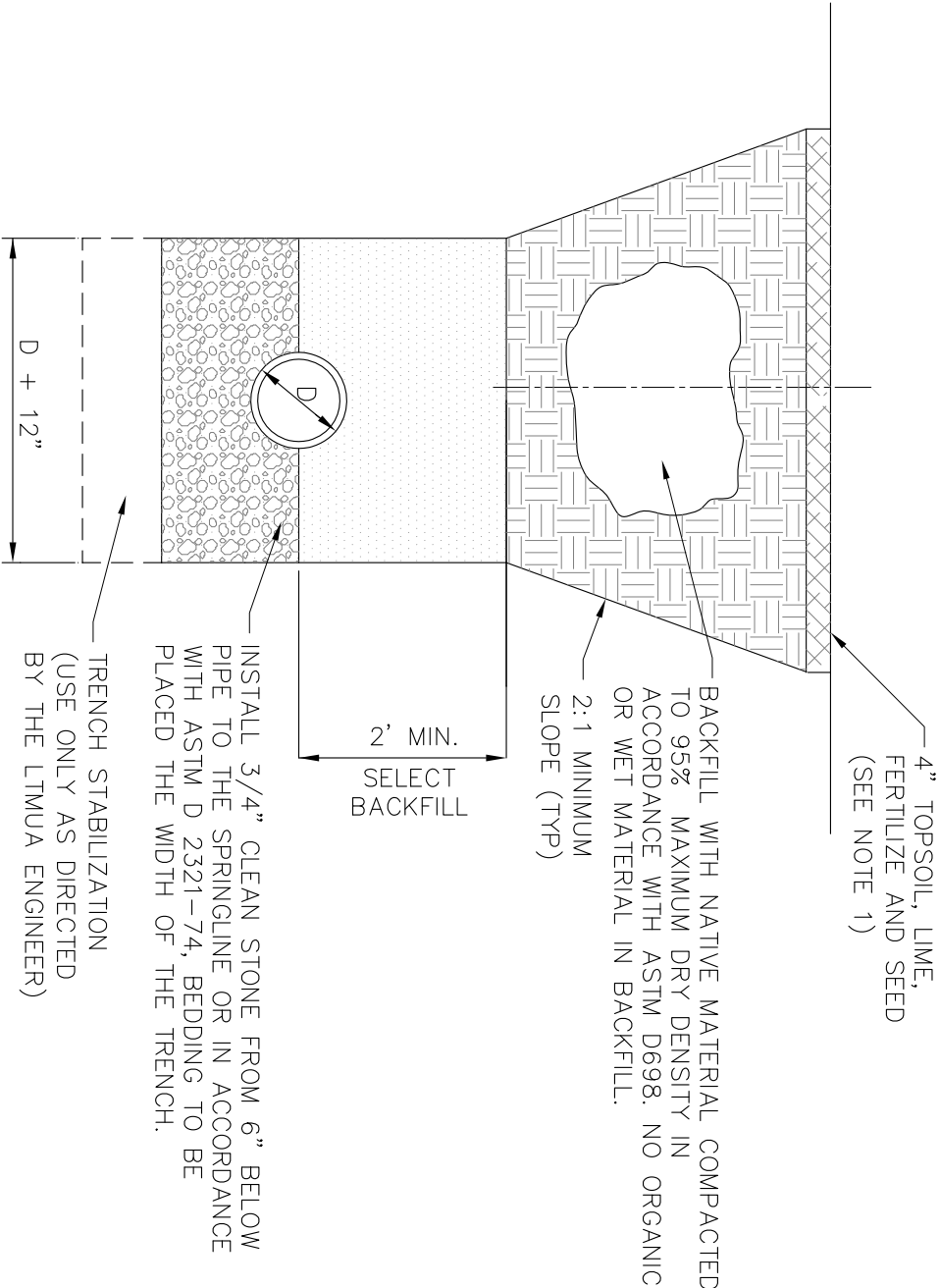
SANITARY SEWER CLEANOUT

- NOTE:**
1. REQUIRED FOR FIRST CLEANOUT OFF OF SEWER MAIN AND ALL CLEANOUTS LOCATED WITHIN VEHICULAR AND PEDESTRAIN TRAFFIC AREAS AND ALL PAVED AREAS.

TYPICAL LATERAL DETAIL AND SANITARY SEWER CLEANOUT DETAIL

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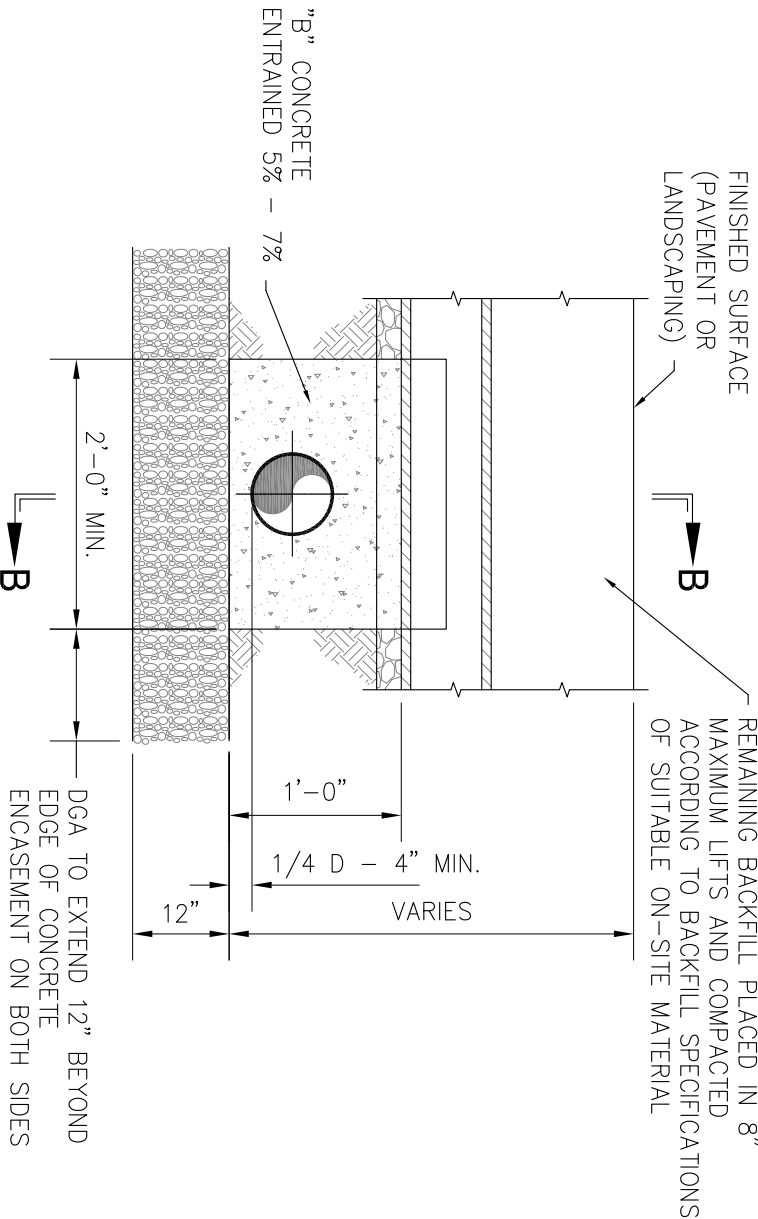
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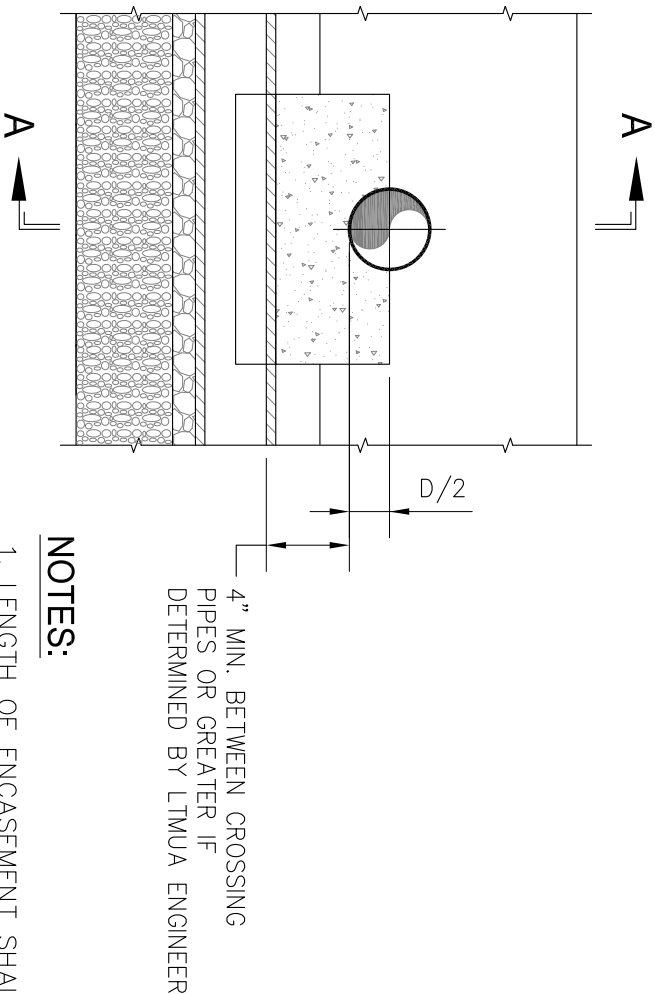
TRENCH DETAIL

NOTES:

1. PAVEMENT SHALL BE RESTORED TO EXISTING CONDITIONS FOR THE PIPE TRENCH IN ROADWAY.
2. SEWER PIPE MATERIAL SHALL BE IN ACCORDANCE WITH L.T.M.U.A. RULES AND REGULATIONS AND LTMUA DESIGN, CONSTRUCTION, INSPECTION AND TESTING MANUAL.
3. A MINIMUM COVER OF 48" SHALL BE MAINTAINED.
4. PIPE SHALL BE INSTALLED IN ACCORDANCE WITH LTMUA SEWER USE RULES AND REGULATIONS.
5. DETAIL AS SHOWN IS FOR PVC PIPE. FOR DI PIPE, THE SELECT BACKFILL STONE INTERFACE SHALL BE AT THE BOTTOM OF THE PIPE.
6. IF REQUIRED BY THE LTMUA ENGINEER, APPLICANT SHALL PROCURE THE SERVICES OF A LICENSED GEOTECHNICAL ENGINEER AT APPLICANT'S EXPENSE TO PERFORM COMPACTION OR OTHER REQUIRED TESTING FOR SUBMISSION AND APPROVAL BY LTMUA ENGINEER.
7. IF REQUIRED BY LTMUA ENGINEER, CONTRACTOR SHALL PROVIDE BACKFILL. BACKFILL TO BE APPROVED BY LTMUA ENGINEER.
8. ALL FORCEMAINS MUST BE CONTINUOUSLY WELDED HDPE.



SECTION A-A



NOTES:

1. LENGTH OF ENCASEMENT SHALL BE 10 FEET FROM CENTERLINE OF INTERSECTION IN EACH DIRECTION.

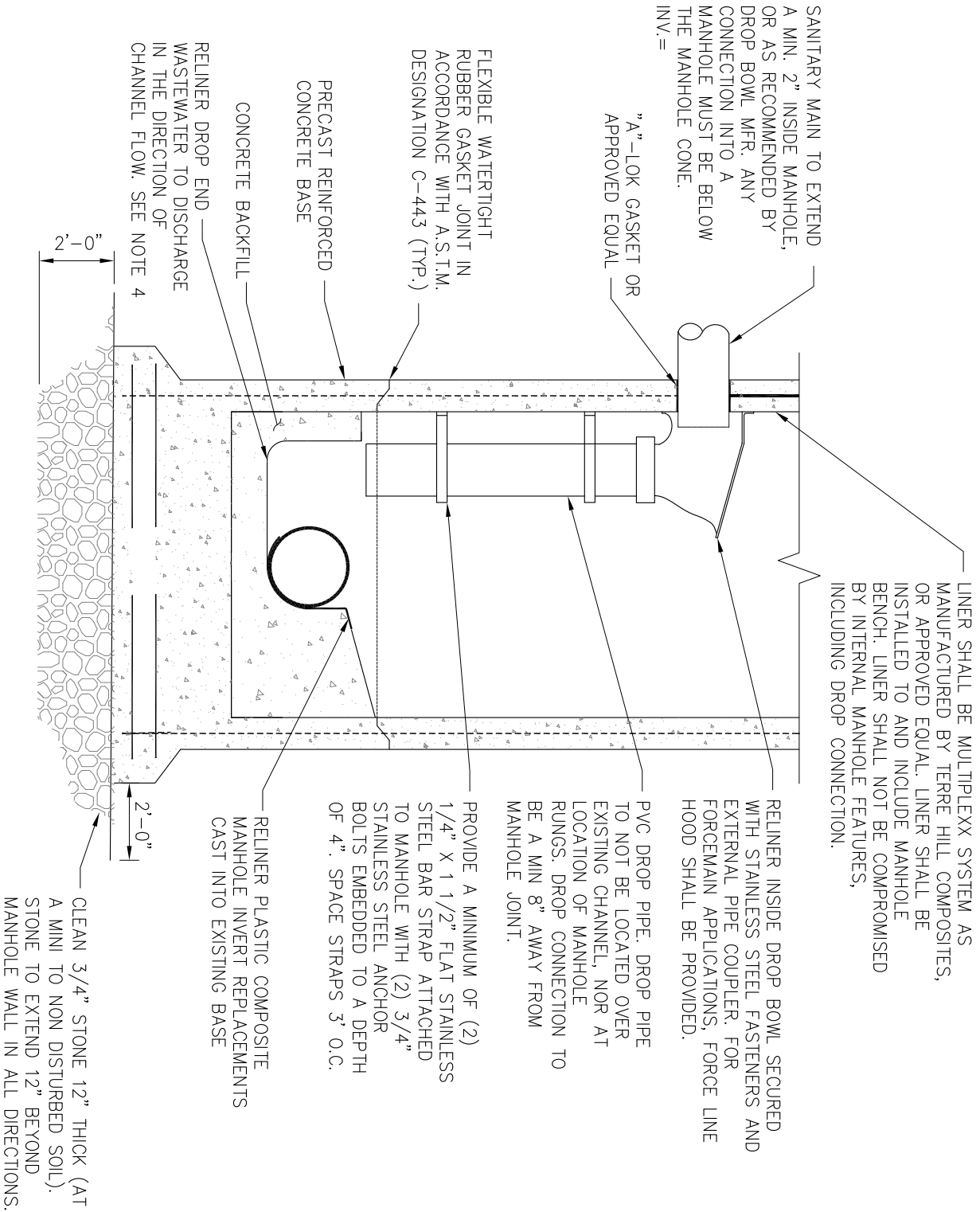
SECTION B-B

CONCRETE ENCASEMENT FOR PIPE CROSSINGS

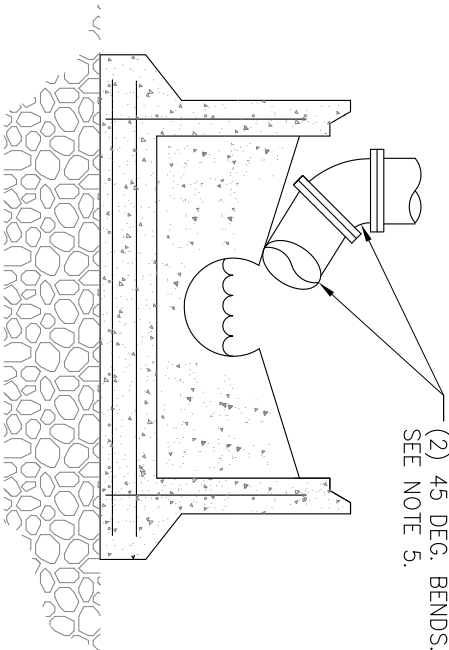
TRENCH DETAIL AND CONCRETE ENCASEMENT DETAIL FOR PIPE CROSSINGS

ALL REQUESTS FOR REVISIONS OR SUBSTITUTIONS MUST BE APPROVED BY LTMUA ENGINEER. ALL REVIEW COSTS SHALL BE PAID BY APPLICANT'S ESCROW ACCOUNT

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



INTERNAL DROP MANHOLE



RETROFIT MANHOLE FOR DROP CONNECTION

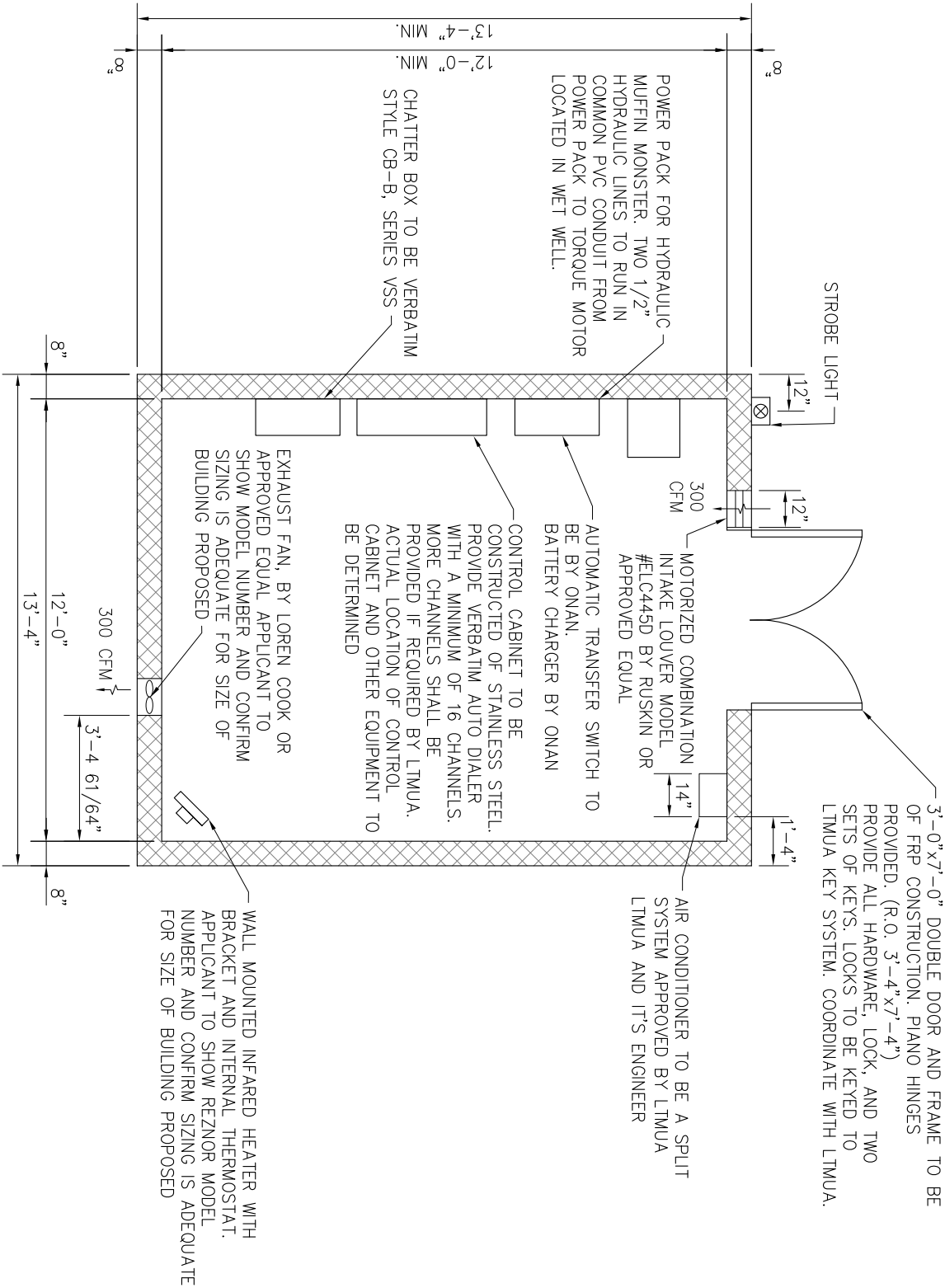
NOTES:

1. MANHOLE TO BE MANUFACTURED BY ATLANTIC CONCRETE, OR APPROVED EQUAL. WHERE NOT SPECIFIED ON THIS DETAIL, MANHOLE SHALL CONFORM TO STANDARD LTMUA MANHOLE REQUIREMENTS. ALL CONCRETE TO BE N.J.D.O.T. CLASS "C".
2. FOR ALL DROP MANHOLES LADDERS SHALL BE PROVIDED BY LINER MANUFACTURER. RETROFITTING MANHOLES WITH A DROP SHALL REQUIRE THE REMOVAL OF STEPS OR LADDERS BEFORE THE LINER APPLICATION, AND NO REINSTALLATION.
3. WHERE FESSIBLE, AS DETERMINED BY LTMUA ENGINEER, ALL DISCHARGES SHALL DISCHARGE DIRECTLY IN THE DIRECTION OF EXISTING FLOW AND AT THE INVERT OF THE EXISTING CHANNEL, NOT ABOVE IT.
4. FOR NEW CONSTRUCTION OF DROP MANHOLE, MANHOLE SHALL BE A MIN. 60" Ø AND VERTICAL PIPE SHALL EMPTY INTO RELINER DROP END, CAST INTO MANHOLE BASE. CHANNEL SHALL BE CONSTRUCTED TO PUSH EXISTING FLOW, AND NOT HINDER IT IN ANY WAY.
5. TO RETROFIT MANHOLE FOR GRAVITY DROP CONNECTION, CONTRACTOR SHALL FIELD ROUTE (1) 45 DEG. BEND AT BOTTOM OF VERTICAL PIPE AND A SECOND 45 DEG. BEND TO DISCHARGE FLOW IN THE SAME DIRECTION AS THE EXISTING MANHOLE FLOW. THE SECOND 45 DEG. BEND SHALL BE LOCATED SUCH THAT IT DISCHARGES FLOW AT THE EDGE OF BENCH, ABOVE CHANNEL (SEE BELOW).

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SUBSTITUTIONS MUST BE APPROVED BY
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DROP MANHOLE DETAIL

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



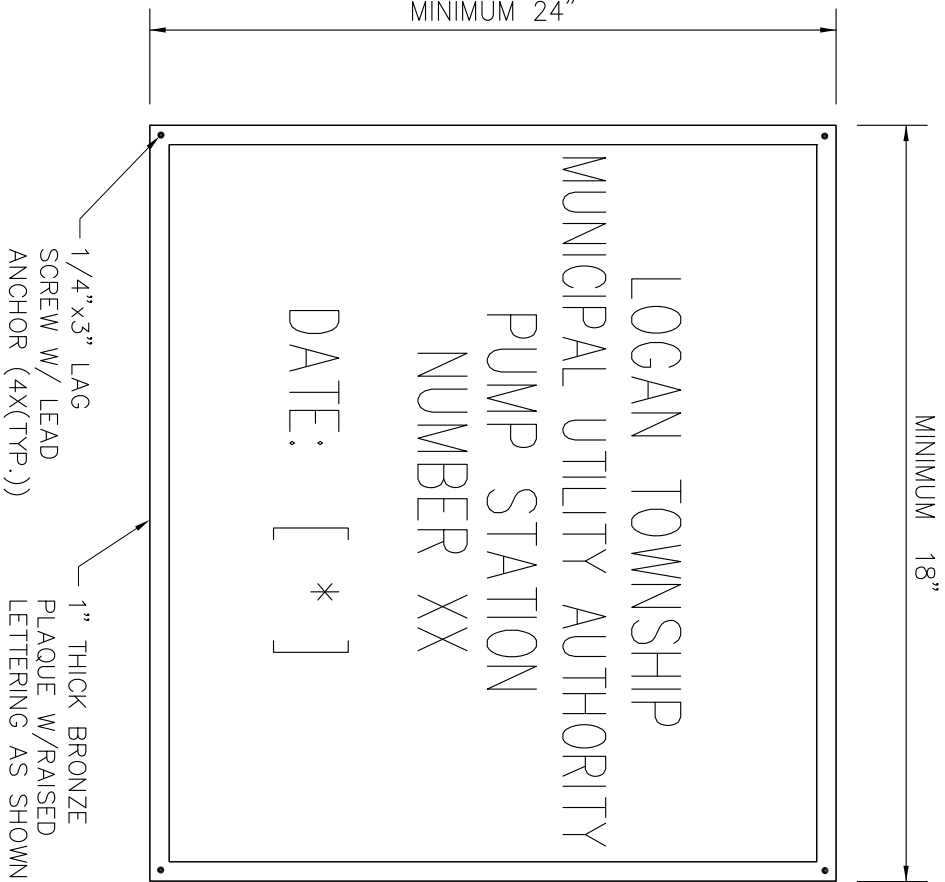
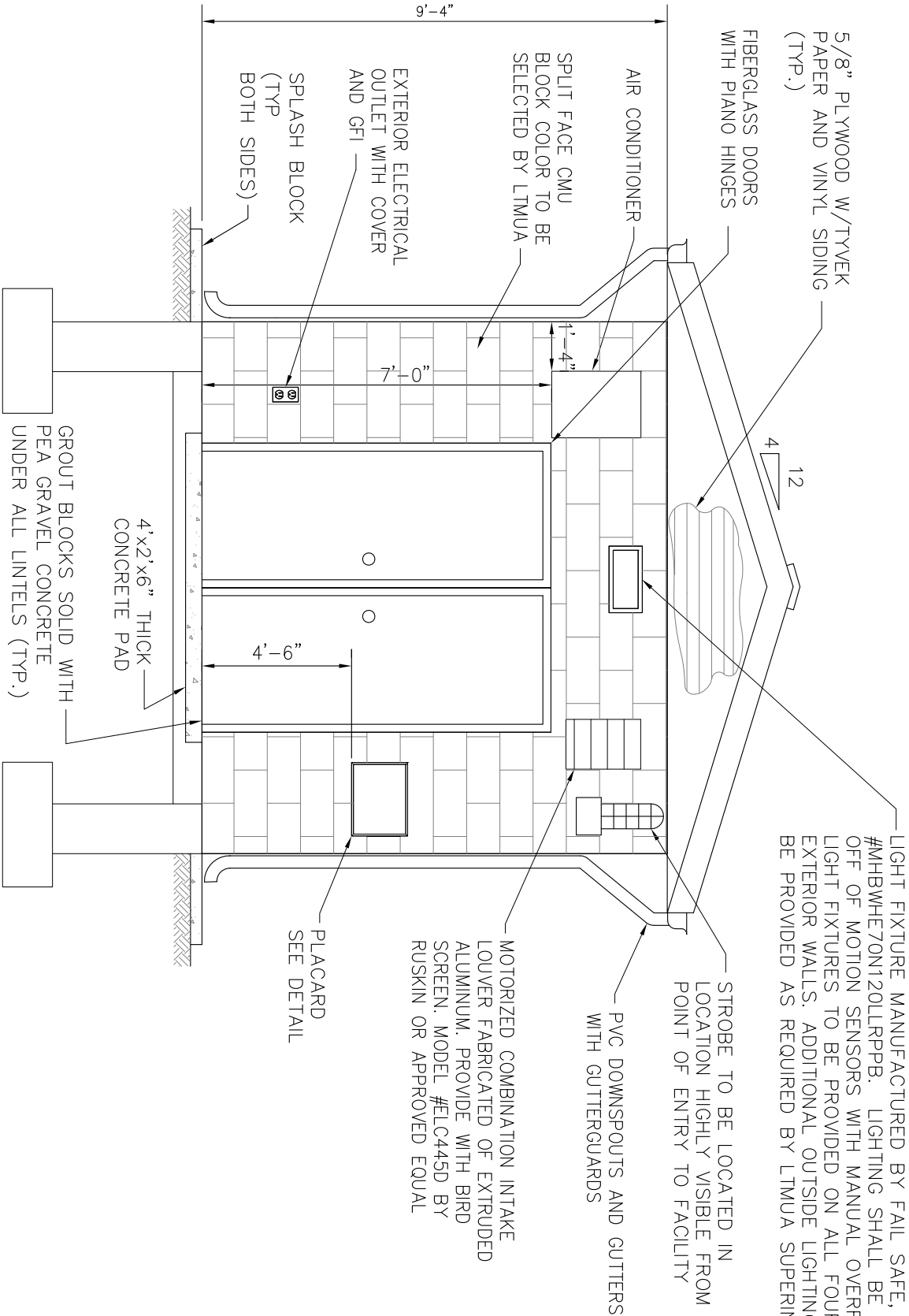
NOTES:

1. BUILDING TO HOUSE GENERATOR, CONTROLS, TRANSFER SWITCH, BREAKERS, CHATTER BOX AND ALL OTHER ELECTRICAL COMPONENTS.
2. BUILDING SHOWN AS CONCRETE BLOCK, AND SHALL HAVE DECORATIVE OFF WHITE FACING.
3. THE NEED FOR A/C TO BE DETERMINED ON A STATION BY STATION BASIS BY THE LTMUA AND ITS ENGINEER.
4. BUILDING DIMENSIONS AND LAYOUT AS SHOWN SHALL BE CONSIDERED TYPICAL AND FINAL DESIGN MUST BE SUBMITTED TO LTMUA AND ITS ENGINEER FOR APPROVAL.
5. ALL SIGNAGE SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR AS REQUIRED BY OSHA AND LOCAL, STATE AND FEDERAL REQUIREMENTS, INCLUDING 18" x 24" EMERGENCY CONTACT SIGN.
6. POLE MOUNTED LIGHT WITH CONTROL BY PHOTO CELL AND TIMER WITH MANUAL OVERRIDE SHALL BE PROVIDED AT LOCATION APPROVED BY LTMUA ENGINEER.
7. CONTACT LTMUA FOR CURRENT REQUIREMENTS FOR ELECTRICAL EQUIPMENT.

BUILDING PLAN

ALL REQUESTS FOR REVISIONS OR
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LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



* DATE OF SUBSTANTIAL COMPLETION, (MONTH AND YEAR)

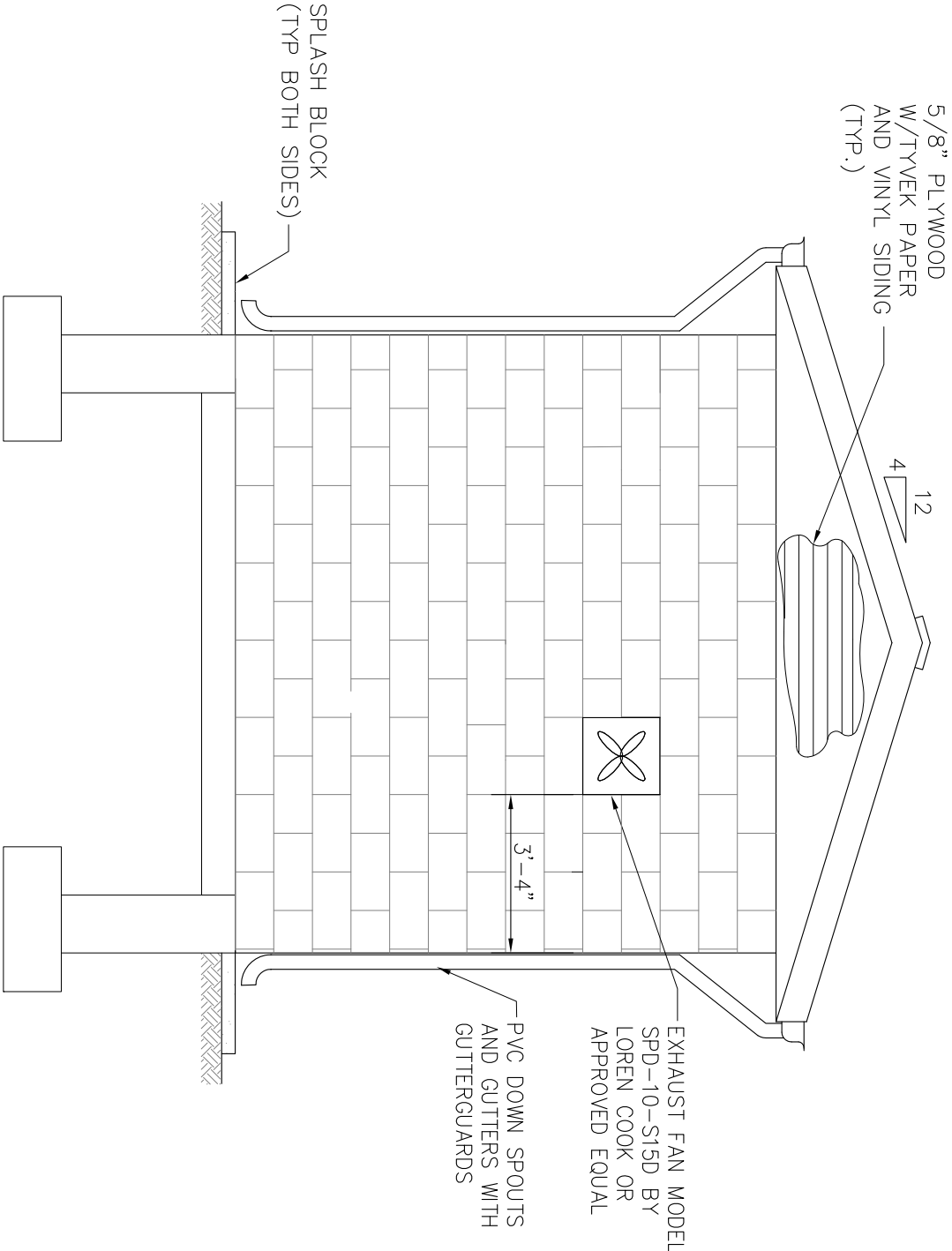
FRONT BUILDING ELEVATION

PLACARD DETAIL

ALL REQUESTS FOR REVISIONS OR
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LTMUA ENGINEER. ALL REVIEW COSTS SHALL
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FRONT BUILDING ELEVATION AND PLACARD DETAIL

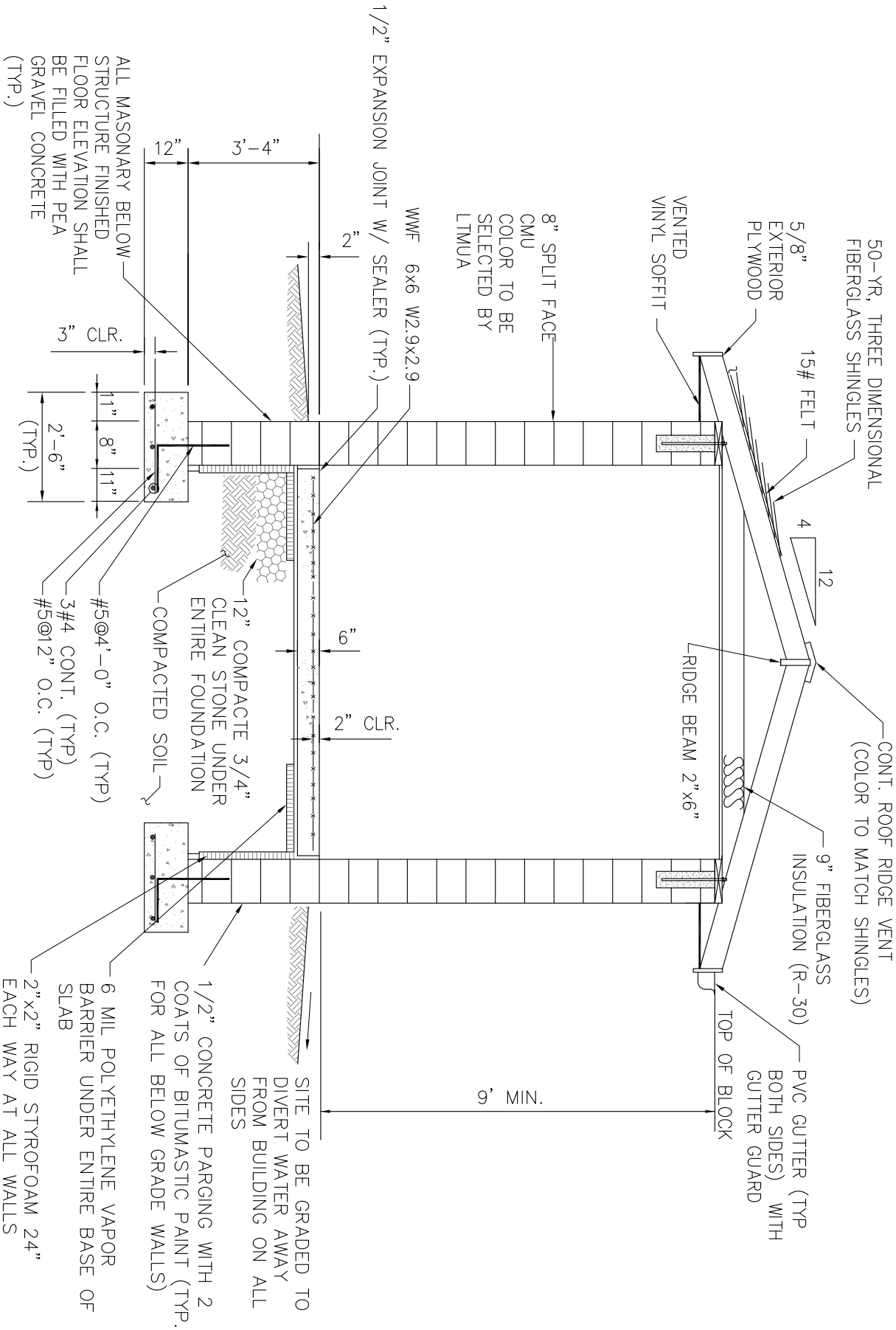
LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



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REAR BUILDING ELEVATION

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



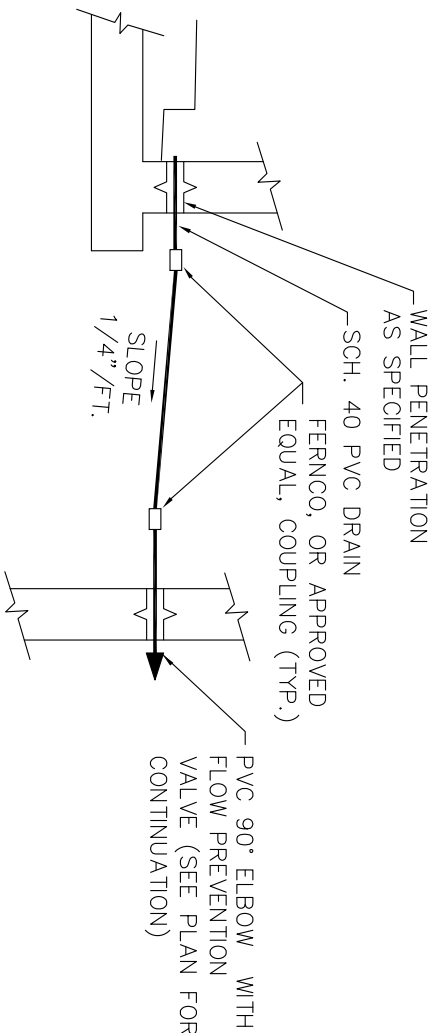
NOTES:

1. BUILDING MUST MEET ALL APPLICABLE CODES AND STANDARDS.

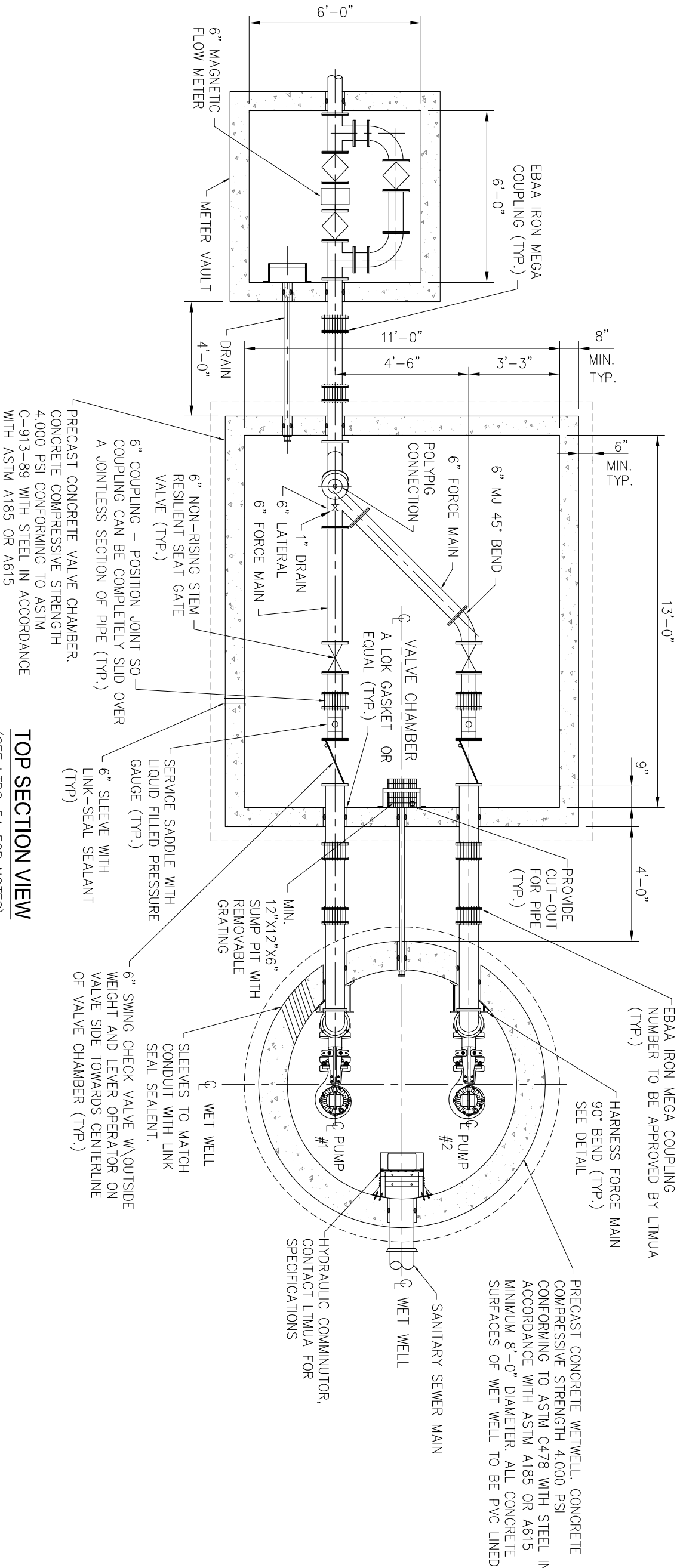
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BUILDING SECTION

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY



VALVE CHAMBER AND METER VAULT DRAIN SCHEMATIC



TOP SECTION VIEW

(SEE LTPS-5A FOR NOTES)

PUMP STATION AND VALVE CHAMBER DRAIN SCHEMATIC

ALL REQUESTS FOR REVISIONS OR
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LTMUA ENGINEER. ALL REVIEW COSTS SHALL
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LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY

NOTES:

1. LOCATION OF ACCESS HATCH AND HINGES, DAVIT BASE, COMMUNITOR, AND POWER/CONTROL WIRING, AT A MINIMUM, MUST BE SHOWN ON SUBMITTED STATION PLAN FOR APPROVAL. ELECTRIC HOIST MUST BE LOCATED TO REMOVE BOTH PUMPS AND COMMINATOR. ELECTRIC HOIST MUST BE AS PROVIDED BY THERN OR APPROVED EQUAL. CONTACT LTMUA FOR SPECIFIC REQUIREMENTS.
2. PROVIDE TWO FLYGT PUMPS WITH "N" TYPE IMPELLERS. ONE PUMP SHALL BE SUPPLIED WITH A MIX-TYPE FLUSH VALVE. PROVIDE CERTIFIED COPY OF PUMP CURVE AND 5 O&M MANUALS FOR EACH PUMP STATION.
3. TYPE MJ-AL BILCO DOOR OR APPROVED EQUAL WITH RECESSED PADLOCK HASP. DOOR MUST BE LOCKABLE AND HAVE H2O LOADING IF IN A PAVED AREA. PROVIDE TWO KEYS PER DOOR. OPENING OF DOOR SHALL BE SIZED TO PROVIDE ACCESS TO ALL PUMPS, VALVES, AND OTHER MOVEABLE PARTS FROM GROUND SURFACE, AT A MINIMUM 36"x36". SAFETY GRATING MUST BE PROVIDED UNDER BILCO DOOR.
4. ENTIRE WET WELL MUST BE PVC LINED, EPOXY LINING WILL NOT BE ACCEPTED. ALL ELECTRICAL CONTROLS TO BE LOCATED IN BUILDING.
5. ALL PIPING SHALL BE PAINTED WITH EPOXY PAINT APPROVED BY LTMUA ENGINEER. ALL BRACES PUMP GUIDE RAILS, AND HARDWARE SHALL BE OF 316 STAINLESS STEEL.
6. PUMP STATION LAYOUT MUST SHOW YARD HYDRANT WITH ANTISYPHON/BACKFLOW PREVENTER, FENCING IN ACCORDANCE WITH LTMUA STANDARDS, LIGHTING, PAVED AND STONE SURFACE TO 2' BEYOND FENCING, CONTROL BUILDING, AND GENERATOR. **FINAL PUMP STATION LAYOUT MUST BE APPROVED BY LTMUA SUPERINTENDENT OR EXECUTIVE DIRECTOR.**
7. PUMP TO OPERATE ON LATEST MYRIAD OR FLYGT PRESSURE TRANSDUCERS, (LTMUA APPROVAL REQUIRED) WITH BACKUP FLOATS. CONTROLS SHALL BE IN LOW LEVEL (PUMP OFF), HIGH LEVEL (LEAD PUMP ON), AND HIGH HIGH LEVEL (LAG PUMP ON AND ALARM TO CHATTERBOX). ALL ELECTRICAL PARTS TO BE SQUARE D.
8. PUMP STATION SHALL BE PROVIDED WITH A ONAN NATURAL GAS POWERED GENERATOR IF NATURAL GAS IS AVAILABLE. IF NATURAL GAS IS NOT AVAILABLE PROVIDE A DIESEL POWERED ONAN GENERATOR WITH A KIM HOT-START SMALL TANK BLOCK HEATER. GENERATOR SIZING SHALL BE SUBMITTED TO THE LTMUA ENGINEER FOR REVIEW. THE GENERATOR SHALL AT A MINIMUM HAVE AN AUTOMATIC TRANSFER SWITCH, 3 DAY OR 200 GALLON CAPACITY FUEL TANK, AND BE ABLE TO RUN BOTH PUMPS AND THE BALANCE OF THE PUMP STATION AT THE SAME TIME. GENERATOR MUST HAVE A 5 YEAR MAINTENANCE CONTRACT.

9. FENCING SHALL BE A MINIMUM 6' HIGH MADE OF NO-CLIMB CONSTRUCTION. OPENING FOR GATE SHALL BE 16' MINIMUM, SWING TYPE OR PREFERRED SLIDE GATE, IF SPACE PERMITS. VINYL FENCE MUST BE GREEN EPOXY EMPREGNATED WITH BARBWIRE AT THE TOP.
10. VALVE BOXES MUST BE SUPPLIED WITH VALVES IN VALVE CHAMBER. TWO VALVE KEYS TO BE PROVIDED PER EACH STATION.
11. LAYOUT AS SHOWN BELOW MAY NOT REFLECT ACTUAL SITE CONDITIONS.
12. ACCESS TO ALL MOVABLE PARTS AND PIPE OPENINGS IN VALVE CHAMBER, METER CHAMBER AND WET WELL SHALL BE PROVIDED THROUGH VALVE COVERS IN CONCRETE SLAB. OPENINGS MUST FACILITATE OPERATING ALL VALVES, (INCLUDING CHECK VALVES) FROM TOP OF VALVE CHAMBER WITHOUT ENTRY REQUIRED.
13. CONTROLS FOR COMMUNITOR TO BE LOCATED IN BUILDING WITH EMERGENCY SHUT OFF SWITCH PROVIDED BY WET WELL.
14. CONDUIT MUST BE PROVIDED FROM THE FLOW METER INTO THE BUILDING. A CHART RECORDER OR REMOTE READOUT MUST BE PROVIDED IN BUILDING. CONTACT LTMUA FOR REQUIREMENTS.
15. METER VAULT AND VALVE CHAMBER TO SLOPE TO DRAIN.
16. ALL CONTROLS TO BE SCADA COMPATIBLE.
17. PIPE SIZING TO BE APPROVED BY LTMUA.
18. MINIMUM OF 18" CLEARANCE REQUIRED BETWEEN EDGE OF PIPE AND WELL IN ALL VAULTS AND CHAMBERS.

PUMP STATION AND VALVE CHAMBER DRAIN SCHEMATIC NOTES

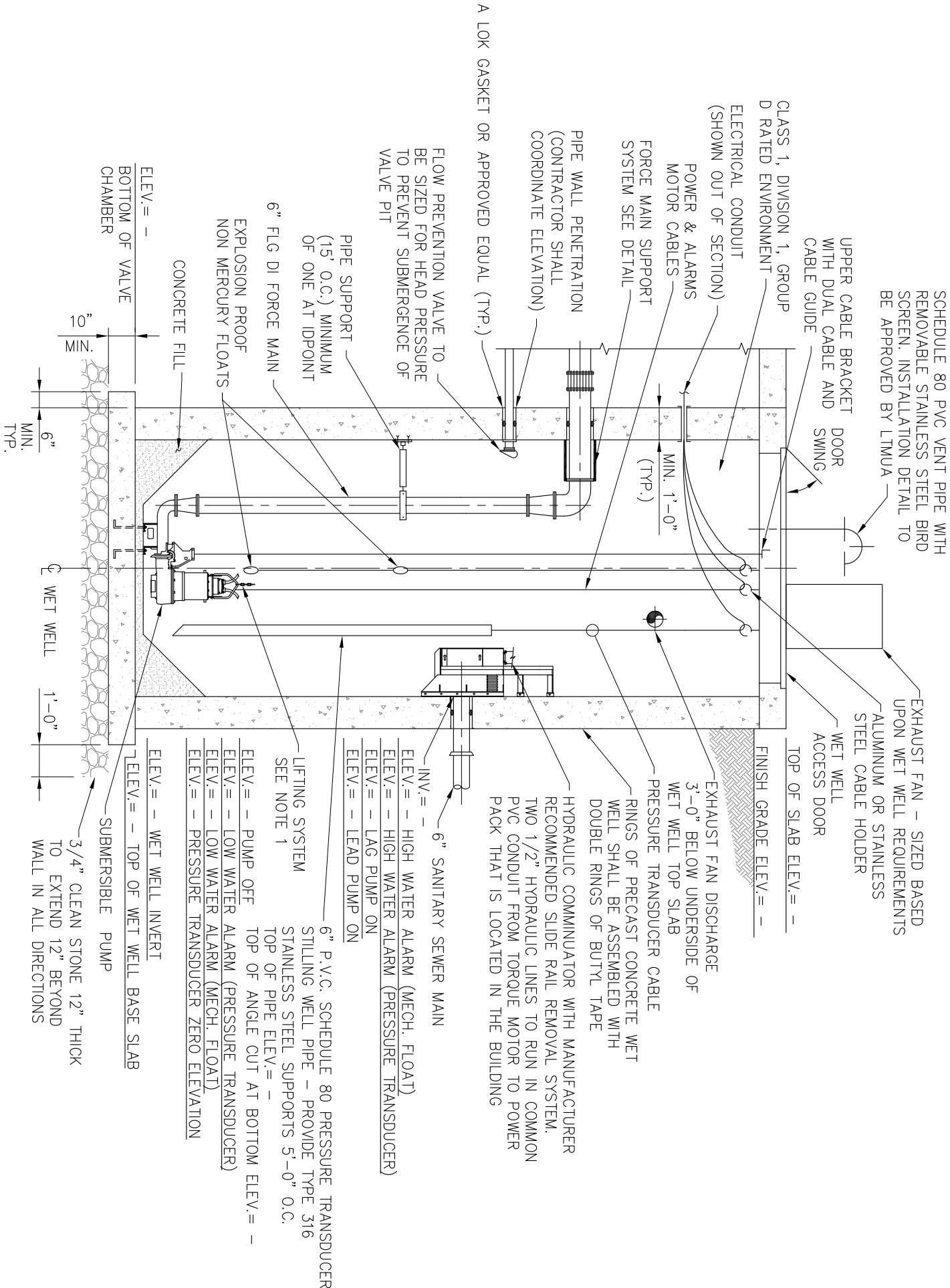
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(SEE LTPS-5 FOR PUMP STATION AND VALVE CHAMBER)
LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY

ALL REQUESTS FOR REVISIONS OR
SUBSTITUTIONS MUST BE APPROVED BY
LTMUA ENGINEER. ALL REVIEW COSTS SHALL
BE PAID BY APPLICANT'S ESCROW ACCOUNT

1. VALVE PIT SHALL BE SIZED A MIN. 7'-0" FROM
BOTTOM SLAB TO UNDERSIDE OF UPPER SLAB.
2. BASE SLAB THICKNESS AND EXTENSION TO BE
DESIGNED BY APPLICANT'S ENGINEER TO
PREVENT FLOATATION.
3. ACCESS TO ALL MOVEABLE PARTS AND PIPE
OPENINGS IN VALVE CHAMBER, METER CHAMBER
AND WET WELL SHALL BE PROVIDED THROUGH
VALVE COVERS IN CONCRETE SLAB. OPENINGS
MUST FACILITATE OPERATING ALL VALVES,
(INCLUDING CHECK VALVES), FROM TOP OF
VALVE CHAMBER WITHOUT ENTRY REQUIRED.
4. FOR INFORMATION ON POLY PIG SYSTEM,
CONTACT FLO-KLEEN AT 716-778-7042.

NOTES:



SECTION

SEE LTPS-6A FOR METER CHAMBER
AND VALVE CHAMBER PORTION

PUMP STATION - WET WELL PORTION

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY

ALL REQUESTS FOR REVISIONS OR
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PUMP STATION - METER CHAMBER AND VALVE CHAMBER PORTION

LOGAN TOWNSHIP MUNICIPAL UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY

LTPS-6A

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CONTACT FLO-KLEEN AT 716-778-7042.

SEE LTPS-6 FOR WET WELL PORTION

SECTION

SHALL BE INSTALLED OVER VIRGIN SOIL
ENTIRE BASE SLAB

6" FLG LATERAL (FOR PIPING
CONTINUATION SEE DETAIL)
MASONRY SADDLE SUPPORT
(MAINTAIN ACCESS TO
FLANGE BOLTS)

SEE VALVE CHAMBER
DRAIN SCHEMATIC
MIN. 3" OF
CONCRETE FILL

3/4" CLEAN STONE 12" THICK
TO EXTEND 12" BEYOND
WALL IN ALL DIRECTIONS

3/4" CLEAN STONE 12" THICK
TO EXTEND 12" BEYOND
WALL IN ALL DIRECTIONS

EBAA IRON
MEGA COUPLING
(TYP.)

3/4" CLEAN STONE 12" THICK
TO EXTEND 12" BEYOND
WALL IN ALL DIRECTIONS

CONCRETE FILL

MIN. 3" OF
CONCRETE FILL

EBAA IRON MEGA
COUPLING (TYP.)
NUMBER TO BE
APPROVED BY LTMUA

6" CHECK
VALVE

12" MIN.
(TYP. T&B)

NON CONTACT LIQUID
FILLED PRESSURE
GAUGE SYSTEM

CLASS 1, DIVISION 1, GROUP D
RATED ENVIRONMENT

6" NON-RISING
STEM RESILIENT
SEAT GATE
VALVE (TYP.)

1" DRAIN

6" D.I.
FORCE
MAIN

6" MAGNETIC
FLOW METER

METER
CHAMBER

DOOR
SWING

TOP OF SLAB ELEV.= -

FINISH GRADE ELEV.= -

MIN. 10"
THICK SLAB

CAM LOCK

PIG PORT

STAINLESS STEEL GRAB BAR
PERMANENTLY INSTALLED

VALVE CHAMBER
ACCESS DOOR

12" MINI
MANHOLE

DOOR
SWING

TOP SLAB SHALL EXTEND PAST WALL
4" ON WET WELL SIDE OF CHAMBER

3/4" CLEAN STONE BELOW
OVERHANG (MIN. 30" DEPTH)

3'-6"

1/4" /FT SLOPE

ENTIRE BASE SLAB

SHALL BE INSTALLED OVER VIRGIN SOIL

SEE LTPS-6 FOR WET WELL PORTION

CONCRETE FILL

MIN. 3" OF
CONCRETE FILL

EBAA IRON MEGA
COUPLING (TYP.)
NUMBER TO BE
APPROVED BY LTMUA

6" CHECK
VALVE

12" MIN.
(TYP. T&B)

NON CONTACT LIQUID
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VALVE CHAMBER
ACCESS DOOR

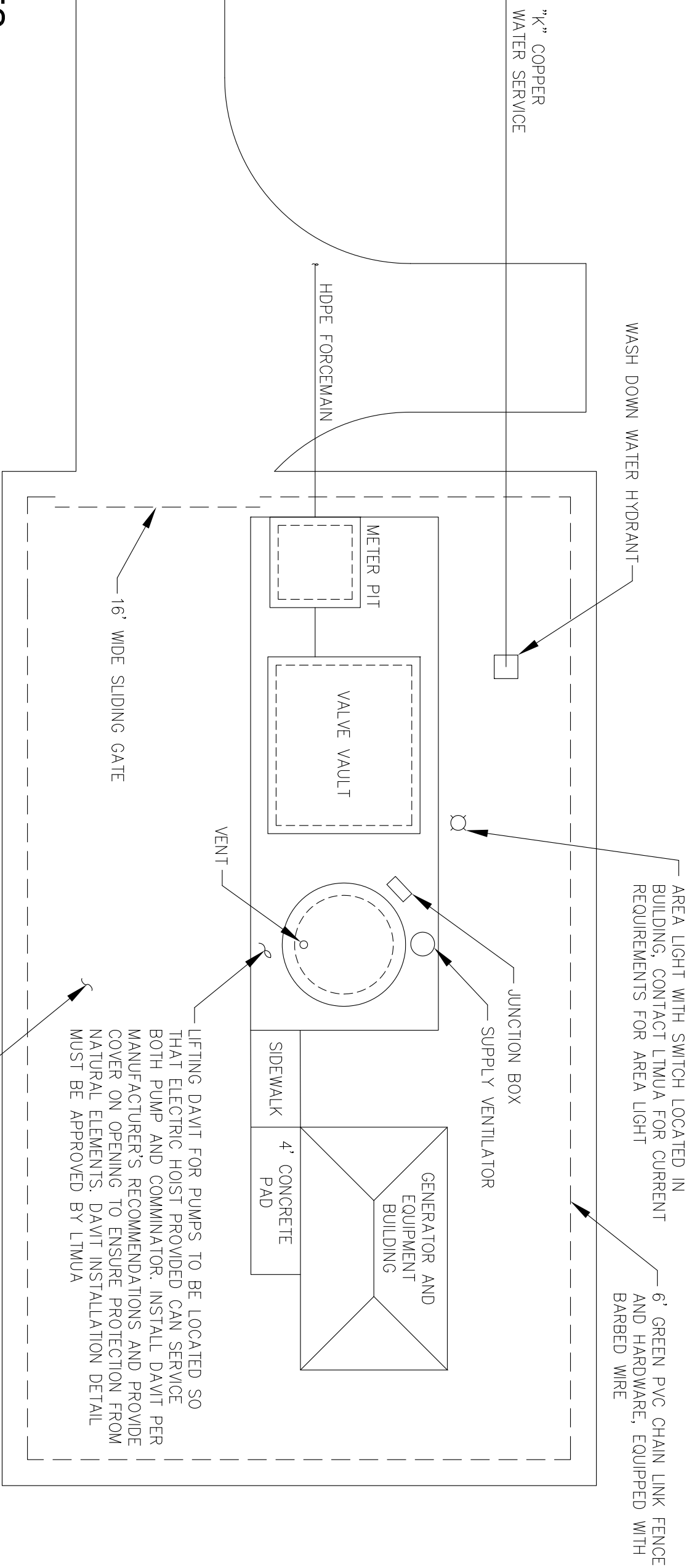
12" MINI
MANHOLE

DOOR
SWING

TOP SLAB SHALL EXTEND PAST WALL
4" ON WET WELL SIDE OF CHAMBER

3/4" CLEAN STONE BELOW
OVERHANG (MIN. 30" DEPTH)

3'-6"



NOTES:

1. PUMP STATION SHALL NOT BE IN A SWALE AREA.
2. PAVING MUST BE GRADED TO DIVERT WATER AWAY FROM GENERATOR AND EQUIPMENT BUILDING.

ALL REQUESTS FOR REVISIONS OR SUBSTITUTIONS MUST BE APPROVED BY LTMUA ENGINEER. ALL REVIEW COSTS SHALL BE PAID BY APPLICANT'S ESCROW ACCOUNT

PUMP STATION SITE PLAN

LOGAN TOWNSHIP UTILITIES AUTHORITY
GLOUCESTER COUNTY, NEW JERSEY