

TOWN OF WHITESTOWN

BOONE COUNTY, INDIANA

STANDARD DETAILS



ADOPTED AUGUST 14, 2012

UPDATED MAY 31, 2013

TOWN OF WHITESTOWN - STAFF

TOWN MANAGER -
 UTILITY MANAGER - JASON LAWSON
 TOWN CLERK - AMANDA ANDREWS
 POLICE CHIEF - DENNIS ANDERSON
 FIRE CHIEF -

TOWN OF WHITESTOWN - COUNCIL

PRESIDENT - DAWN SEMMLER
 MEMBER - ERIC MILLER
 MEMBER - JULIE WHITMAN
 MEMBER - KEVIN RUSSELL
 MEMBER - SUSAN AUSTIN

TOWN HALL - (317) 769-6557
 UTILITY OFFICE - (317) 733-8584

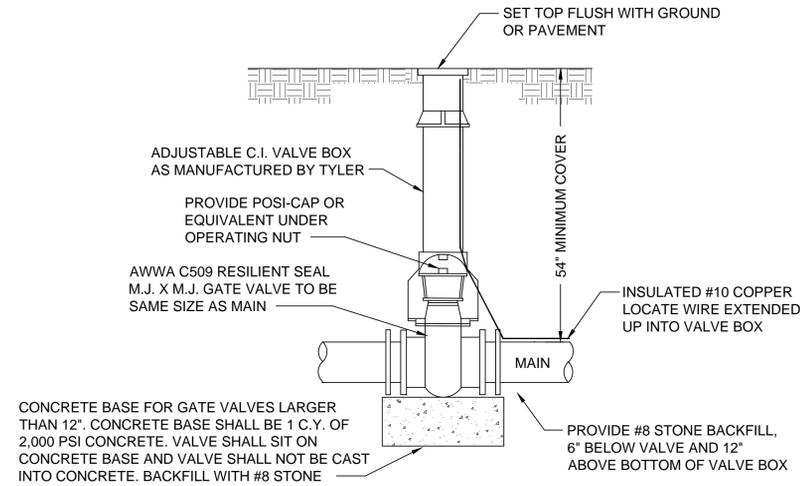
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WATER MAIN GENERAL NOTES

1. ALL FITTINGS TO BE RESTRAINED OR LOCK JOINT. THRUST BLOCKS NOT ACCEPTABLE.
2. TERMINATE LOCATION WIRE AT WATER MAIN GATE VALVE WITH TERMINAL CONNECTION.
3. ALL NEW OR REPAIRED WATER MAIN SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA 651 AND HYDROSTATIC TESTED IN ACCORDANCE WITH AWWA C600 PRIOR TO BEING PLACED IN SERVICE.
4. VALVES SHALL BE PROVIDED AT MAXIMUM 600' INTERVALS ALONG WATER MAINS.
5. ALL WATER MAINS PROVIDING FIRE SERVICE SHALL BE MIN. 6" DIAMETER.
6. IN UNDEVELOPED AREAS, WATER MAIN MARKER POSTS MAY BE REQUIRED AT 400' INTERVALS OR AS REQUIRED FOR LINE OF SIGHT. HANDLEY INDUSTRIES OR EQUAL.

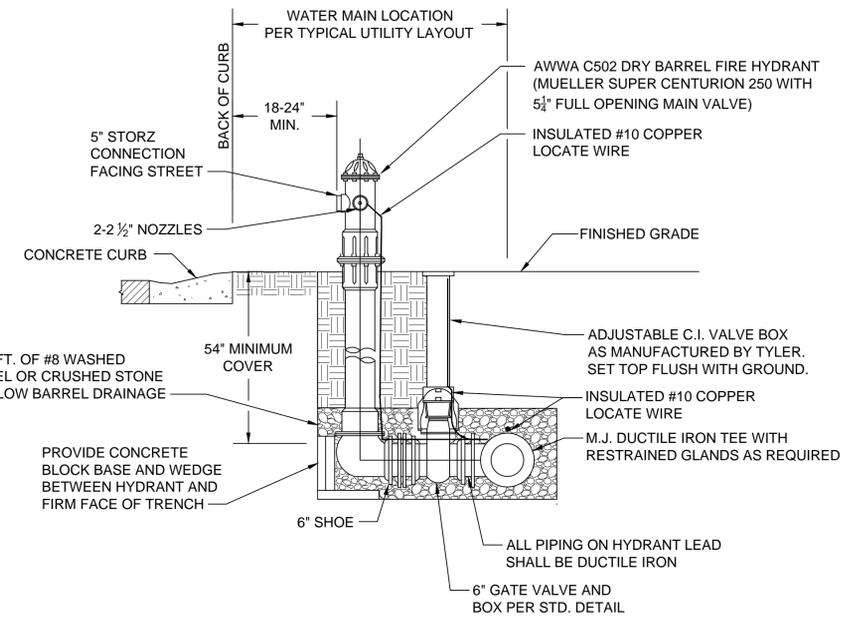
WATER METERS FOR COMMERCIAL MECHANICAL ROOMS

INDOOR COMMERCIAL WATER METERS UP TO 2" SHALL HAVE COPPER METER YOKES WITH HORIZONTAL INLET & OUTLET AND LOCKABLE BY-PASS, EQUIVALENT TO MUELLER B-2423-2. LARGER METERS SHALL BE EVALUATED ON A CASE-BY-CASE BASIS. A REMOTE DIGITAL METER READOUT SHALL BE INSTALLED ON THE OUTSIDE OF THE BUILDING TO FACILITATE METER READING. COORDINATE INSTALLATION WITH THE TOWN OF WHITESTOWN.



TYPICAL GATE VALVE & VALVE BOX

NOT TO SCALE

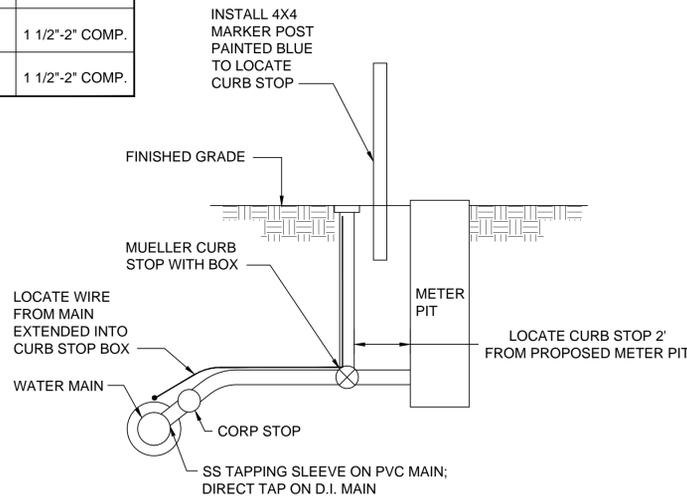


STANDARD FIRE HYDRANT

NOT TO SCALE

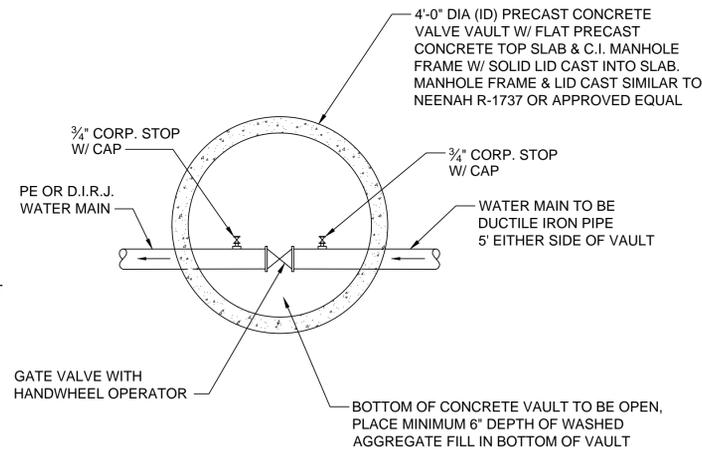
WATER METER SETTING SCHEDULE						
STYLE	SINGLE 5/8"	DOUBLE 5/8"	SINGLE 3/4"	DOUBLE 3/4"	SINGLE 1"	SINGLE 1 1/2"-2"
INLET	3/4" COMP.	1" COMP.	3/4" COMP.	1" COMP.	1" COMP.	1 1/2"-2" COMP.
OUTLET	3/4" COMP.	3/4" COMP.	3/4" COMP.	3/4" COMP.	1" COMP.	1 1/2"-2" COMP.

- NOTE:
1. ALL 1"-2" TAPS TO PVC PIPE WILL USE A SMITH BLAIR #264 STYLE S.S. BAND CLAMP FOR 4"-8" MAIN AND A #265 STYLE FOR 10" AND UP. NO SADDLES WILL BE ALLOWED. DUCTILE IRON PIPE MAY BE DIRECT TAPPED. TAPS SHALL BE ANGLED UP 45° AT CONNECTION TO MAIN.
 2. MINIMUM 6" OF WASHED AGGREGATE WILL BE USED UNDER ALL METER PITS FOR DRAINAGE.
 3. ALL METERS LARGER THAN 2" WILL BE SUPPLIED BY THE CONTRACTOR, FROM TOWN'S VENDOR.
 4. ALL TUBING CONNECTIONS WILL BE DONE WITH MUELLER OR McDONALD BRASS COMPRESSION FITTINGS.
 5. ALL CORPORATION AND CURB STOPS WILL BE MUELLER 300 BALL VALVE OR McDONALD EQUIVALENT.
 6. ALL RESIDENTIAL CONSTRUCTION REQUIRES THE USE OF DUAL METER INSTALLATIONS WHENEVER POSSIBLE. ANY EXCEPTIONS WILL NEED THE APPROVAL OF THE UTILITY MANAGER.
 7. FINAL GRADE OF METER PIT IS THE SOLE RESPONSIBILITY OF THE DEVELOPER. NO MORE THAN MAX. 12" RISER MAY BE ADDED IN ORDER TO BRING PIT TO GRADE.
 8. METER PIT LIDS AND PIPING SHALL BE CAST IRON WITH LARGE PENTAGON NUT (MUELLER OR TYLER). METER PIT LIDS SHALL HAVE HOLES FOR RADIO READ ANTENNA MOUNTING (TWO HOLES ON DUAL METER PIT).
 9. ALTERNATE FOR MUELLER WILL BE A.Y. McDONALD BRASS. A LIST OF THOSE SPECIFICATION NUMBERS IS AVAILABLE UPON REQUEST FROM THE TOWN OF WHITESTOWN UTILITY MANAGER.



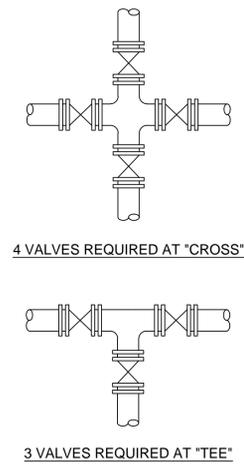
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



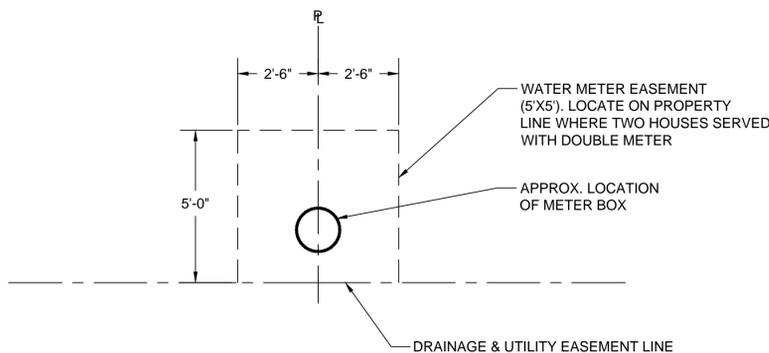
LEAK DETECTION METER DETAIL

NOT TO SCALE



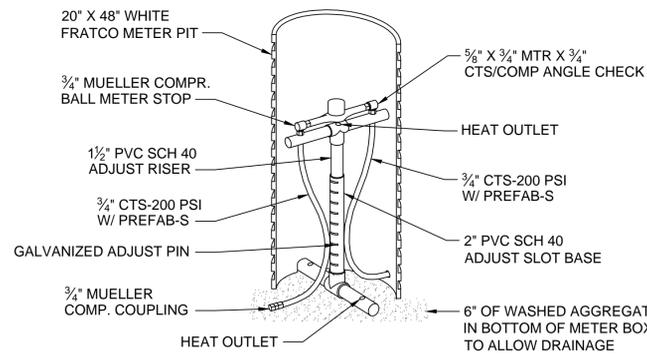
VALVE DETAILS AT INTERSECTIONS

NOT TO SCALE

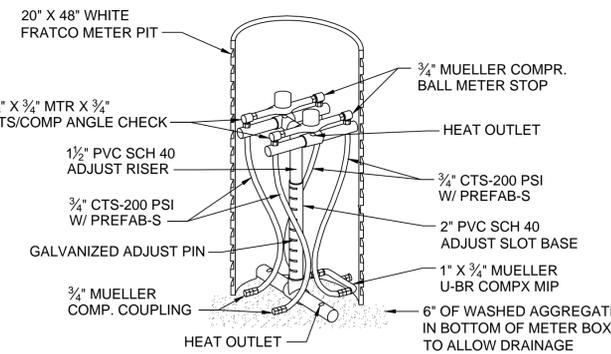


METER PIT EASEMENT DIAGRAM

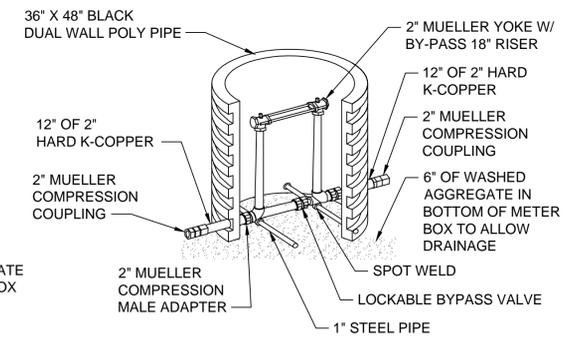
NOT TO SCALE



TZ PRODUCTS SINGLE METER BOX



TZ PRODUCTS DOUBLE METER BOX



TZ PRODUCTS 2\"/>

METER BOX AND METER SETTING

NOT TO SCALE



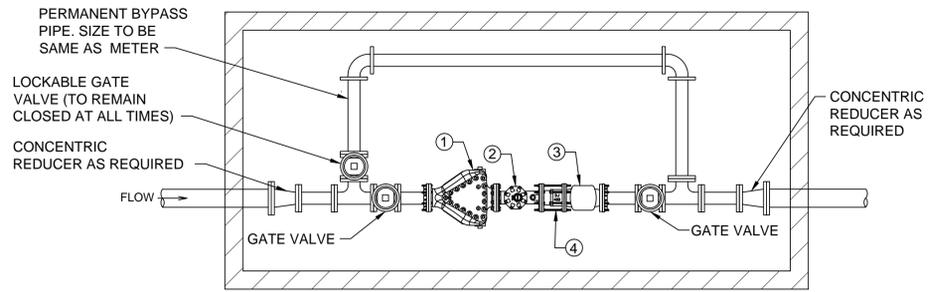
TOWN OF WHITESTOWN
STANDARD DETAILS FOR WATER MAINS

NO.	REVISIONS	DESCRIPTION	DATE	BY

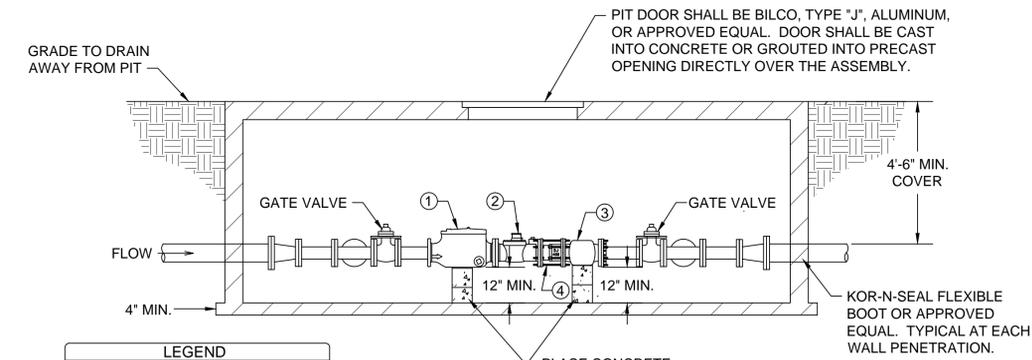
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SHEET NO. 1

FILE NAME: L:\AutoCAD Resources\Inky_Sanitary\Clients\Standards\Whitestown - 120409\Details 2013\SHEET_01_WATER.dwg
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SECTIONAL PLAN VIEW



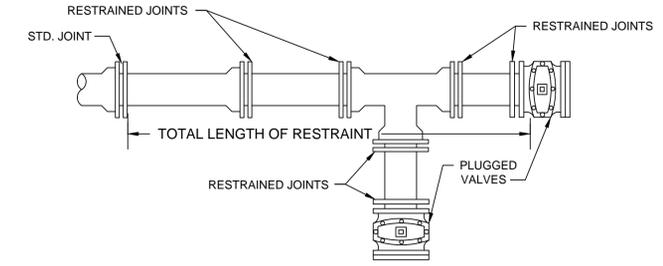
- LEGEND**
- ① UL/FM APPROVED STRAINER
 - ② METER
 - ③ CHECK VALVE
 - ④ DISMANTLING JOINT ROMAC DJ400 OR DJ405. (SET AT NOMINAL LENGTH)

METER ASSEMBLY 3"-10" METER INSTALLATION

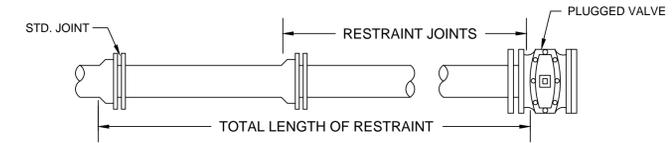
NOT TO SCALE

NOTES:

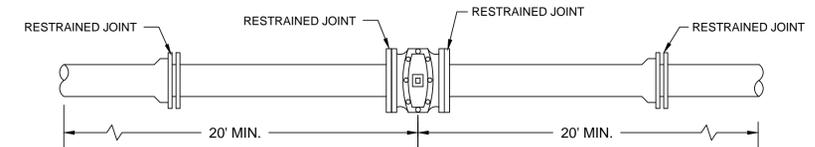
1. ALL MATERIALS AND CONSTRUCTION SHALL MEET CONSTRUCTION SPECIFICATIONS.
2. ALL METER ASSEMBLIES SHALL BE SPECIFIED BY THE TOWN OF WHITESTOWN.
3. EACH METER VAULT SHALL BE EQUIPPED WITH A DOOR MOUNTED ELECTRONIC DEVICE FOR USE WITH A TOUCH READING SYSTEM.
4. ALL FITTINGS SUCH AS BENDS AND TEES SHALL BE PROPERLY RESTRAINED.
5. VAULT SIZE TO PROVIDE 12" MINIMUM CLEARANCE FROM ALL PIPING AND FITTINGS.
6. PIT/VAULT (NON-TRAFFIC AREA) PIT SHALL BE REINFORCED CAST-IN-PLACE CONCRETE, PRECAST CONCRETE, OR LAID BLOCK. APPLY APPROVED WATERPROOFING AGENT TO INTERIOR AND EXTERIOR OF WALLS. SPECIFICATIONS FOR PITS IN TRAFFIC AREAS SHALL BE DETERMINED BY DESIGN REQUIREMENTS.



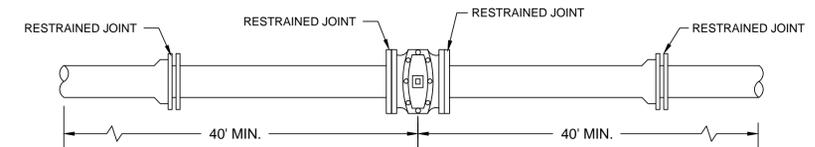
DEAD ENDS OF TEES



DEAD ENDS OF MAINS



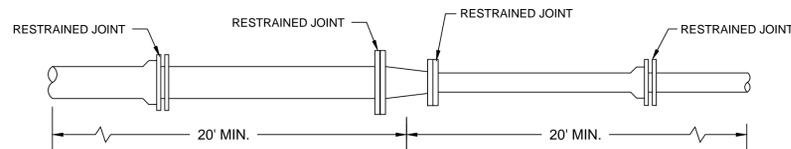
VALVES (NON-DEAD END) 8" AND SMALLER



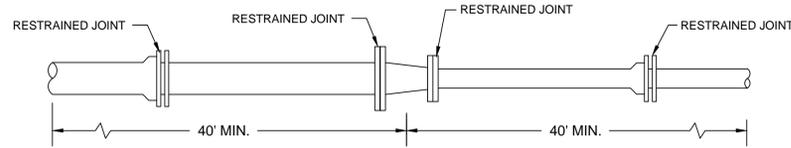
VALVES (NON-DEAD END) 12" AND LARGER

RESTRAINING VALVES-DETAIL

NOT TO SCALE



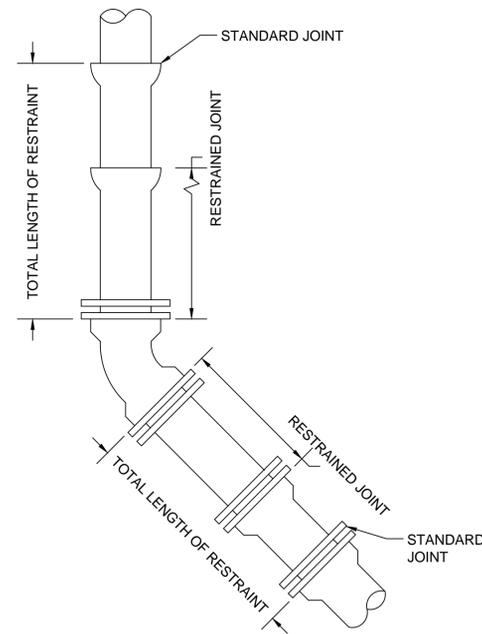
REDUCERS, LARGER PIPE DIAMETER IS 8" OR SMALLER



REDUCERS, LARGER PIPE DIAMETER IS 12" OR LARGER

RESTRAINING REDUCERS-DETAIL

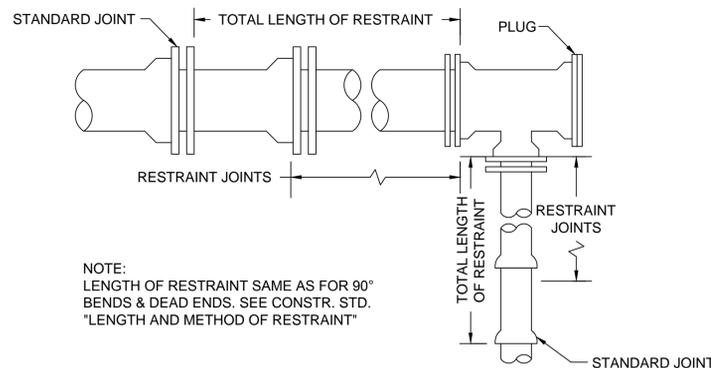
NOT TO SCALE



NOTE:
SEE CONSTR. STD. FOR "LENGTH AND METHOD OF RESTRAINT"

RESTRAINT OF BENDS-DETAIL

NOT TO SCALE



NOTE:
LENGTH OF RESTRAINT SAME AS FOR 90° BENDS & DEAD ENDS. SEE CONSTR. STD. "LENGTH AND METHOD OF RESTRAINT"

RESTRAINT OF TEES-DETAIL

NOT TO SCALE

LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 4" DI PIPE W/ POLY							
TYPE OF BEND	4" TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS	
HORIZ. BEND	44	18	10	10	10	53	
VERT. BEND				22 UPPER	11 UPPER	10 UPPER	
				10 LOWER	10 LOWER	10 LOWER	

LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 12" DI PIPE W/ POLY												
TYPE OF BEND	4" TEE	6" TEE	8" TEE	10" TEE	12" TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS		
HORIZ. BEND	28	58	89	116	144	49	21	10	10	152		
VERT. BEND							63 UPPER	31 UPPER	15 UPPER			
							17 LOWER	10 LOWER	10 LOWER			

LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 6" DI PIPE W/ POLY							
TYPE OF BEND	4" TEE	6" TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS
HORIZ. BEND	39	66	25	11	10	10	74
VERT. BEND				31 UPPER	15 UPPER	10 UPPER	
				10 LOWER	10 LOWER	10 LOWER	

LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 16" DI PIPE W/ POLY												
TYPE OF BEND	4" TEE	6" TEE	8" TEE	10" TEE	12" TEE	16" TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS	
HORIZ. BEND	19	48	79	105	133	188	63	26	13	10	196	
VERT. BEND							82 UPPER	39 UPPER	20 UPPER			
							22 LOWER	11 LOWER	10 LOWER			

LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 8" DI PIPE W/ POLY								
TYPE OF BEND	4" TEE	6" TEE	8" TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS
HORIZ. BEND	34	62	89	32	14	10	10	97
VERT. BEND				41 UPPER	20 UPPER	11 UPPER		
				12 LOWER	10 LOWER	10 LOWER		

LENGTH IN FT. TO BE REST. ON EACH SIDE OF FITTING FOR 20" DI PIPE W/ POLY												
TYPE OF BEND	6" TEE	8" TEE	10" TEE	12" TEE	16" TEE	20" TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS	
HORIZ. BEND	27	35	42	50	65	80	55	23	11	10	80	
VERT. BEND							45 UPPER	22 UPPER	11 UPPER			
							20 LOWER	10 LOWER	10 LOWER			

RESTRAINT JOINT TABLES

NOT TO SCALE

1. CONTRACTOR SHALL INSTALL RJDJ FITTINGS FOR ALL VERTICAL AND HORIZONTAL BENDS.
2. RESTRAINED LENGTHS WERE CALCULATED ASSUMING 54" DEPTH OF BURY, A 2.0 FACTOR OF SAFETY, TYPE 3 TRENCH CONDITIONS, "CL" SOIL CLASSIFICATION, AND 150 PSI HYDROSTATIC TEST PRESSURES. DESIGNER AND CONTRACTOR SHALL VERIFY INSTALLATION CONDITIONS AND MODIFY RESTRAINT LENGTHS AS REQUIRED TO MEET ACTUAL CONDITIONS SUBJECT TO REVIEW BY THE TOWN OF WHITESTOWN.
3. ALL WATER MAIN APPURTENANCES WITHIN RJDJ LIMITS MUST BE RESTRAINED AT EACH JOINT.

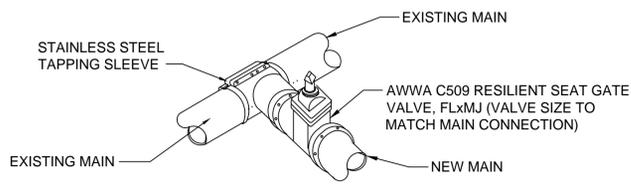


**TOWN OF WHITESTOWN
STANDARD DETAILS FOR WATER MAINS**

NO.	REVISIONS	DATE	BY

SCALE: N.T.S.
SHEET NO. 2

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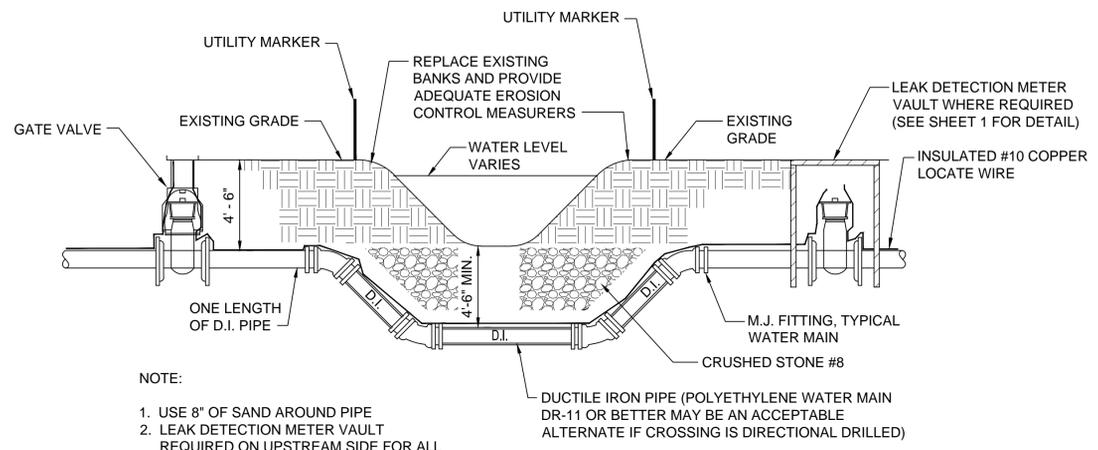


NOTE:

1. NO MECHANICAL JOINT TAPPING SLEEVES WILL BE ACCEPTED.
2. BOLTS, NUTS, & WASHERS SHALL BE 304 STAINLESS STEEL.

WET TAP TO EXISTING MAIN

NOT TO SCALE

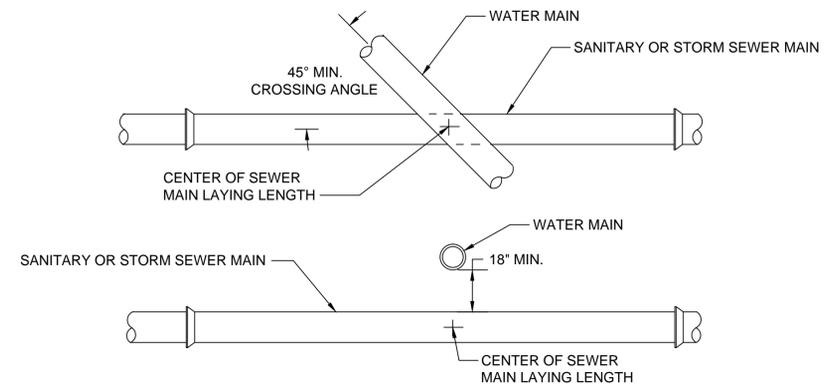


NOTE:

1. USE 8" OF SAND AROUND PIPE
2. LEAK DETECTION METER VAULT REQUIRED ON UPSTREAM SIDE FOR ALL CREEK CROSSINGS GREATER THAN 15' IN WIDTH (SEE DETAIL SHEET 2)

CREEK CROSSING DETAIL

NOT TO SCALE

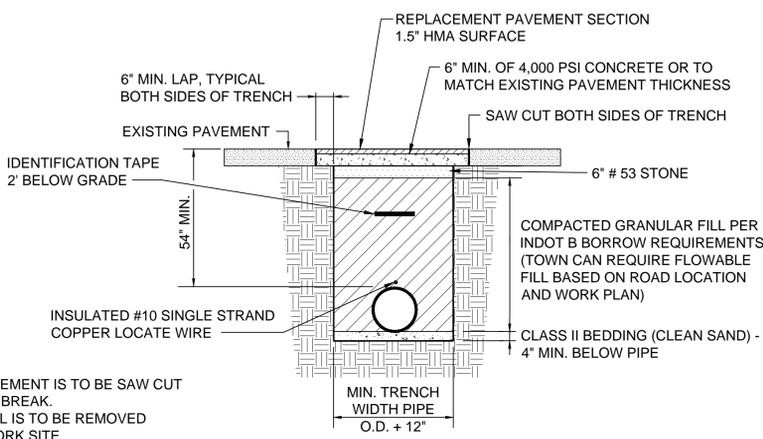


WATER MAIN AND SEWER MINIMUM SEPARATION:
18" VERTICAL SEPARATION
10'-0" HORIZONTAL SEPARATION

WATER MAIN QUALITY PIPE TO BE USED FOR SANITARY OR STORM SEWER IF REQUIRED SEPARATION CANNOT BE MET

MINIMUM CROSSING & SEPARATION REQUIREMENTS FOR WATER AND SANITARY OR STORM SEWER PIPE

NOT TO SCALE

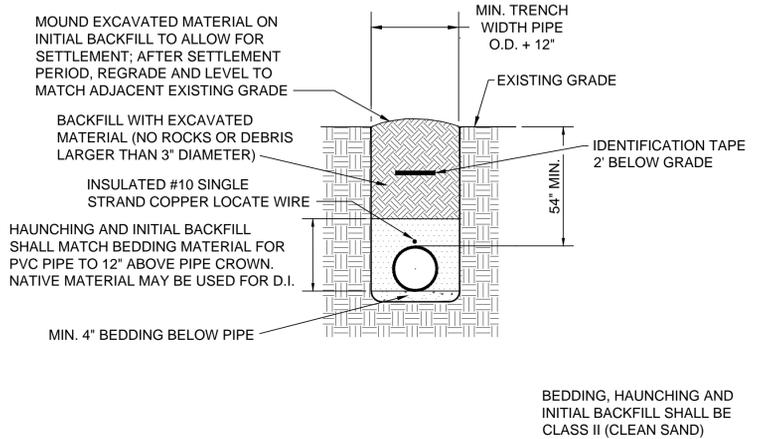


NOTES:

1. EXISTING PAVEMENT IS TO BE SAW CUT FOR A CLEAN BREAK.
2. TRENCH SPOIL IS TO BE REMOVED FROM THE WORK SITE.
3. NEW SURFACE TO BE SLOPED AT SAME RATE AS THE EXISTING SURFACE.
4. GRANULAR FILL SHALL BE PROVIDED WITHIN 5' OF PAVED SURFACE

TYPICAL TRENCH DETAIL FOR D.I. AND PVC C900 PIPE 12" DIA. OR LESS IN PAVED AREAS

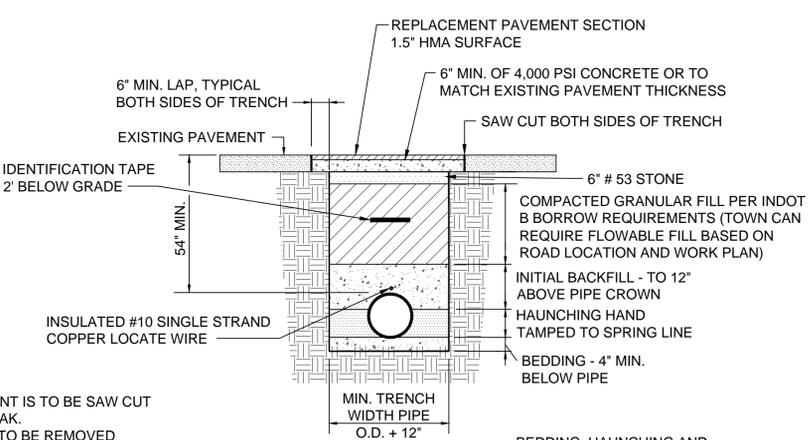
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BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE CLASS II (CLEAN SAND)

TYPICAL TRENCH DETAIL FOR D.I. OR PVC C900 PIPE 12" DIA. OR LESS IN UNPAVED AREAS

NOT TO SCALE

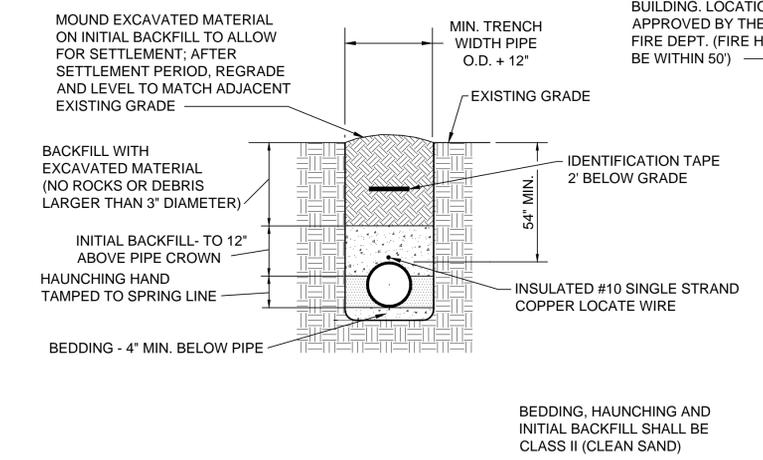


NOTES:

1. EXISTING PAVEMENT IS TO BE SAW CUT FOR A CLEAN BREAK.
2. TRENCH SPOIL IS TO BE REMOVED FROM THE WORK SITE.
3. NEW SURFACE TO BE SLOPED AT SAME RATE AS THE EXISTING SURFACE.
4. GRANULAR FILL SHALL BE PROVIDED WITHIN 5' OF PAVED SURFACE

TYPICAL TRENCH DETAIL FOR D.I. OR PVC C905 PIPE LARGER THAN 12" DIA. IN PAVED AREAS

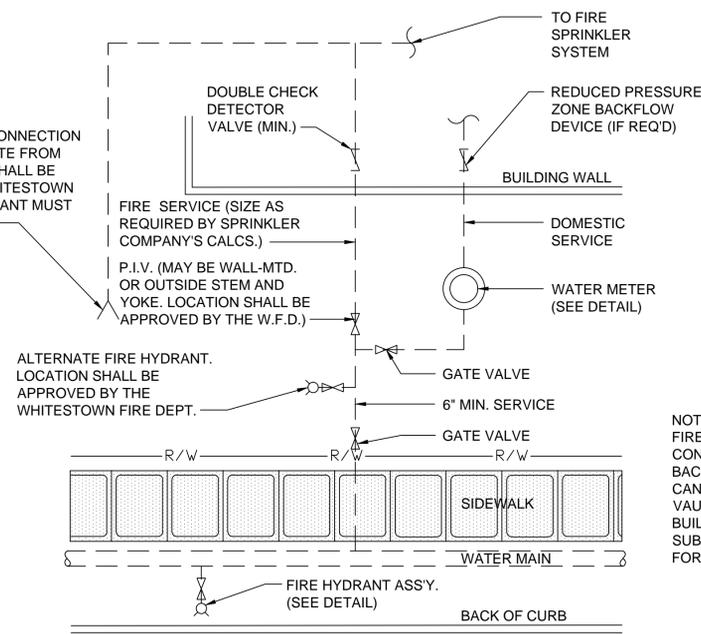
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BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE CLASS II (CLEAN SAND)

TYPICAL TRENCH DETAIL FOR D.I. OR PVC C905 PIPE LARGER THAN 12" DIA. IN UNPAVED AREAS

NOT TO SCALE



NOTE:
FIRE DEPARTMENT CONNECTION, P.I.V. AND BACKFLOW PREVENTER CAN BE LOCATED IN VAULT OUTSIDE BUILDING, IF PREFERRED, SUBMIT SPECIFIC PLAN FOR REVIEW.

FIRE SERVICE CONNECTION DETAIL

NOT TO SCALE

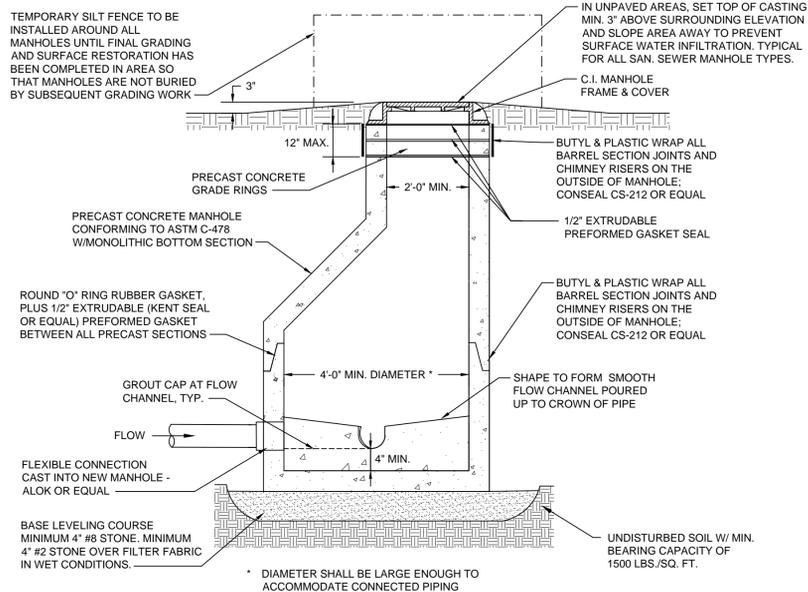


TOWN OF WHITESTOWN STANDARD DETAILS FOR WATER MAINS

NO.	DATE	BY	DESCRIPTION

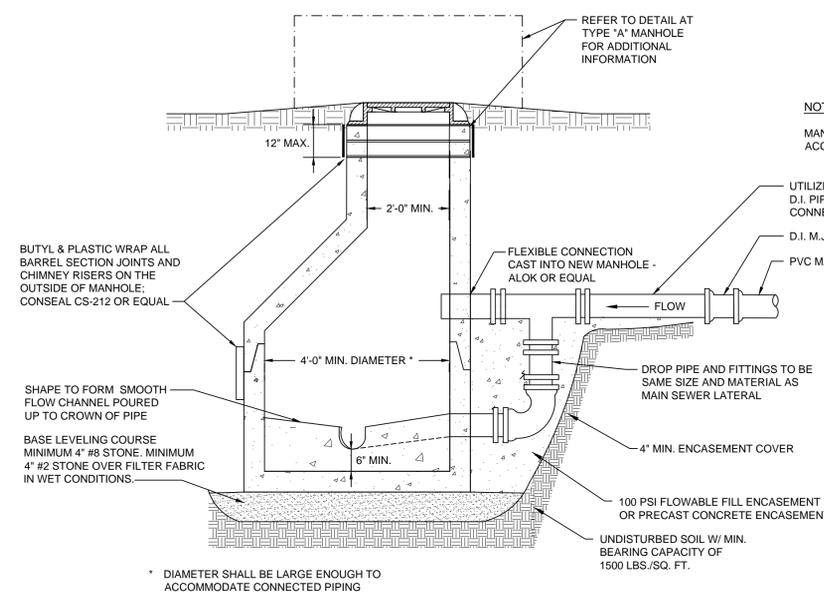
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SHEET NO.

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**TYPE "A" MANHOLE
STANDARD PRECAST MANHOLE**

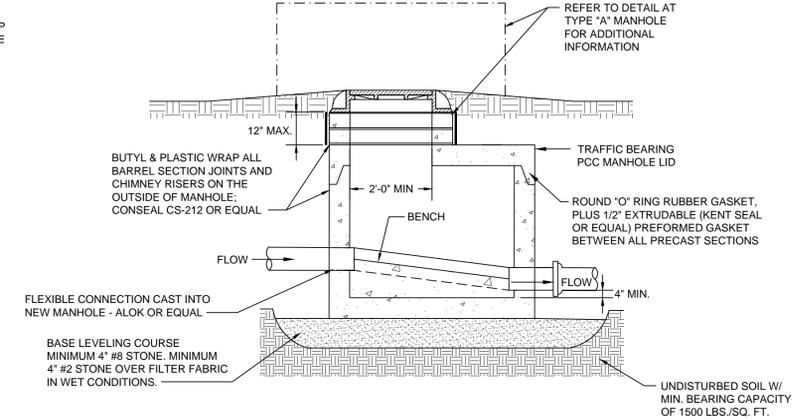
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**TYPE "B" MANHOLE
OUTSIDE DROP MANHOLE CONNECTION**

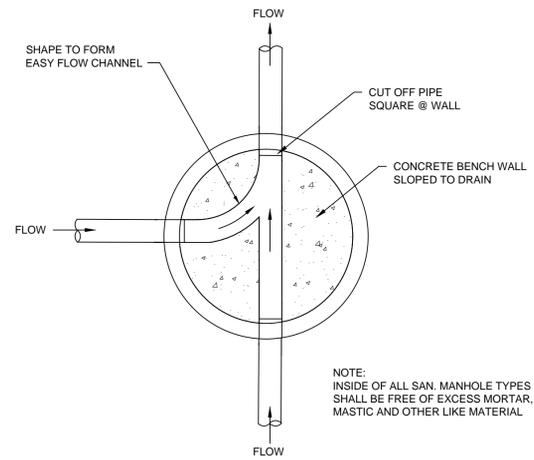
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NOTE:
MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C1244 TAILS



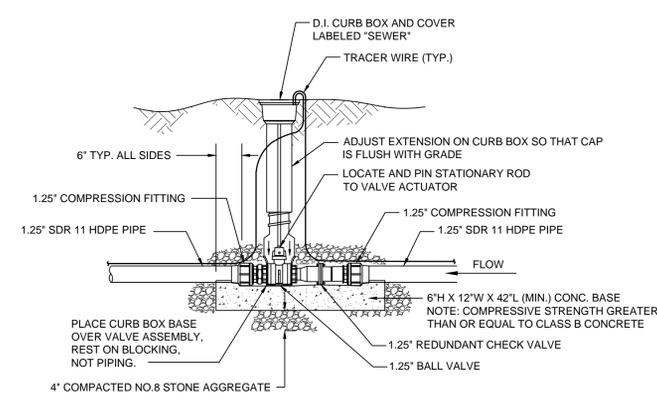
**TYPE "C" MANHOLE
SHALLOW MANHOLE LESS THAN 5'**

NOT TO SCALE



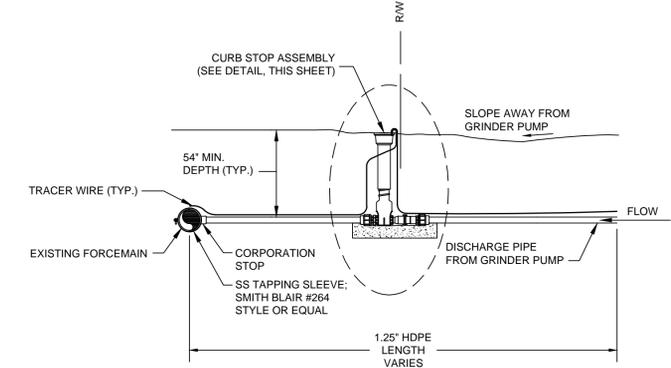
**STANDARD MANHOLE
BENCH WALL**

NOT TO SCALE



CURB STOP ASSEMBLY DETAIL

NOT TO SCALE



**GRINDER PUMP
FORCEMAIN TAP DETAIL**

NOT TO SCALE

NOTE:
1. GRINDER PUMP INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS
2. TAP TO BE COMPLETED BY CONTRACTOR. TOWN TO WITNESS TAP. 48 HOURS NOTICE REQUIRED.

CASTING SCHEDULE

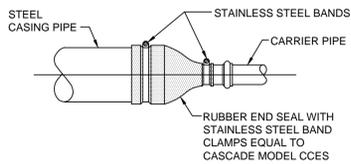
NEENAH FOUNDRY COMPANY FRAME AND COVER R1772-C	EAST JORDAN IRON WORKS FRAME AND COVER 1022-3
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"THE WORDS 'SANITARY SEWER' SHALL BE CAST INTO THE COVER WITH 2" LETTER HEIGHT, HEAVY DUTY, SOLID, AND THE COVER SHALL BE SELF SEALING WITH NON-PENETRATING PICK HOLES

TABLE OF STEEL CASING SIZES

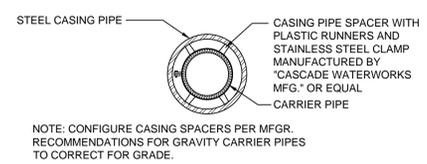
CASING DIAMETER IN INCHES	WALL THICKNESS (WITH PROTECTIVE COATING) IN INCHES	WALL THICKNESS (WITHOUT PROTECTIVE COATING) IN INCHES
12"	0.188"	0.250"
16"	0.219"	0.281"
18"	0.250"	0.312"
20"	0.281"	0.344"
24"	0.312"	0.375"
30"	0.406"	0.469"
36"	0.469"	0.532"

- NOTES**
- CASING SHALL BE WELDED STEEL PIPE, NEW AND UNUSED MATERIAL IN ACCORDANCE WITH ASTM A-139; MINIMUM YIELD STRENGTH = 35,000 PSI.
 - CASING SPACERS REQUIRED. MAXIMUM 10'-0" SPACING FOR DUCTILE IRON CARRIER PIPES. MAXIMUM SPACING FOR PVC CARRIES PIPES SHALL BE 6'-0". FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PLACEMENT AND SPACING.
 - THE INSIDE DIAMETER OF THE CASING SHALL BE A MINIMUM OF SIX (6) INCHES LARGER THAN THE LARGEST DIAMETER OF THE CARRIER PIPE JOINT.
 - THE ABOVE GIVEN CASING SIZES DO NOT APPLY TO RAILROAD CROSSINGS. CONTACT SPECIFIC RAILROAD FOR REQUIREMENTS.



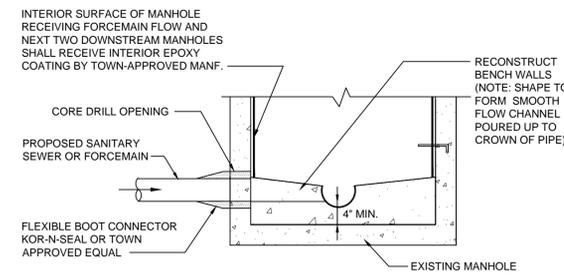
CASING END SEAL DETAIL

NOT TO SCALE



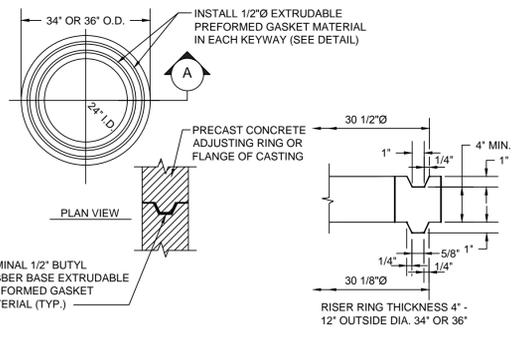
**CENTERING CARRIER PIPE WITH
CASING SPACER (PRESSURE PIPES)**

NOT TO SCALE



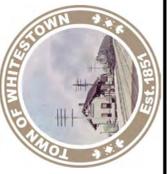
EXISTING MANHOLE CONNECTION DETAIL

NOT TO SCALE



PRECAST ADJUSTING RING

NOT TO SCALE

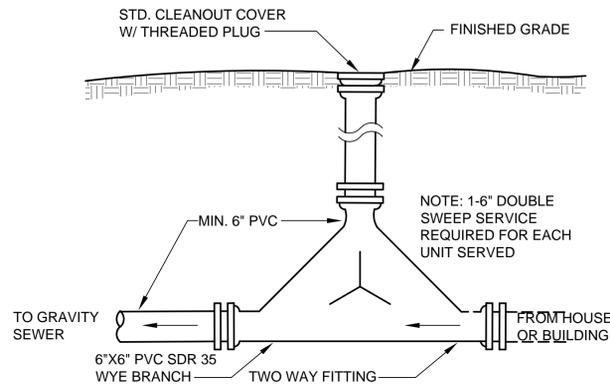


**TOWN OF WHITESTOWN
STANDARD DETAILS FOR SANITARY SEWERS**

REVISIONS

NO.	DATE	DESCRIPTION

DATE: _____
SCALE: N.T.S.
SHEET NO. _____

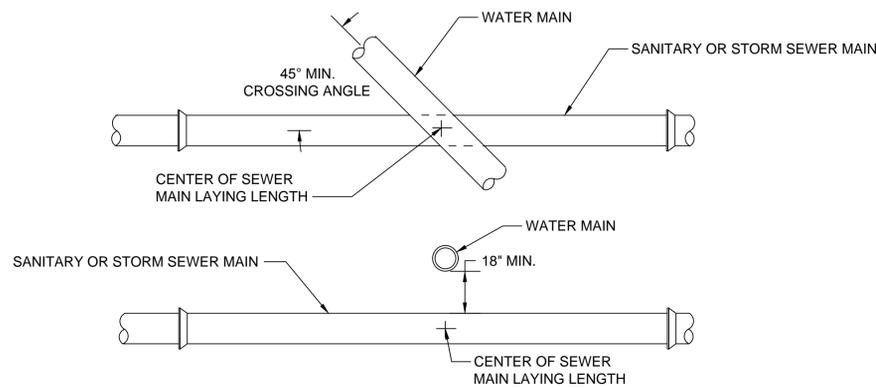


DOUBLE SWEEP CLEANOUT DETAIL

NOT TO SCALE

GENERAL NOTES FOR CLEANOUTS:

- CLEANOUTS SHALL BE INSTALLED NO MORE THAN A MAX. 10'-0" FROM OUTSIDE FACE OF BUILDING FOUNDATION WALL AND EVERY 100'-0" MAX. THEREAFTER OR WHERE SERVICE LATERAL CHANGES DIRECTION BEFORE REACHING MAIN SANITARY SEWER LINE.
- CLEANOUT PLUGS SHALL NOT BE COVERED WITH CEMENT PLASTER, OR ANY OTHER PERMANENT FINISHING MATERIAL, WHERE IT IS NECESSARY TO CONCEAL A CLEAN OUT PLUG, A COVERING PLATE OR ACCESS DOOR SHALL BE PROVIDED WHICH WILL PERMIT READY ACCESS TO THE PLUG.



MINIMUM CROSSING & SEPARATION REQUIREMENTS FOR WATER AND SANITARY OR STORM SEWER PIPE

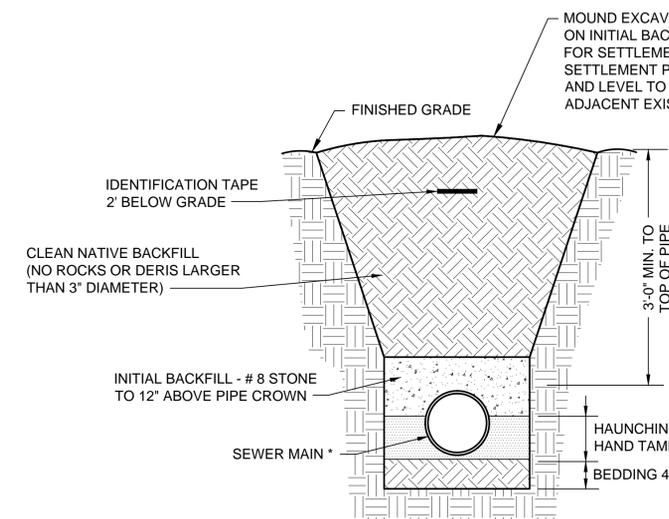
NOT TO SCALE

WATER MAIN AND SEWER MINIMUM SEPARATION:
18" VERTICAL SEPARATION
10'-0" HORIZONTAL SEPARATION

WATER MAIN QUALITY PIPE TO BE USED FOR SANITARY OR STORM SEWER IF REQUIRED SEPARATION CANNOT BE MET

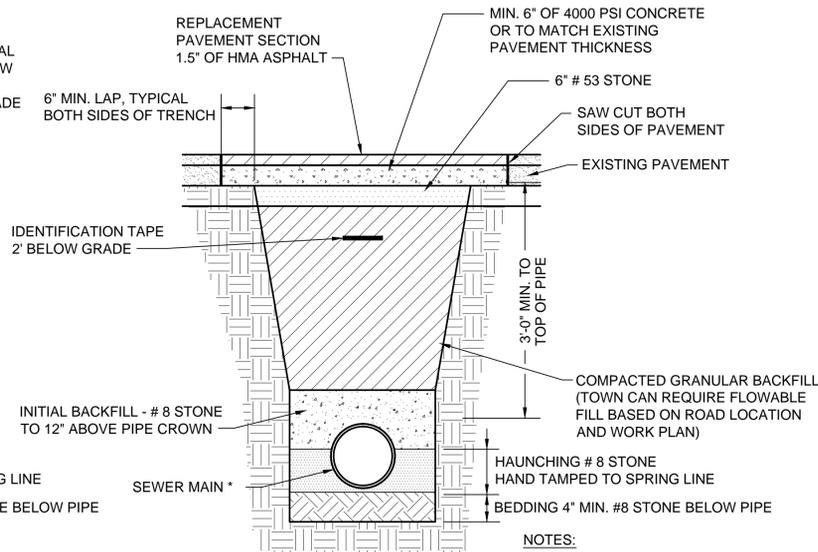
SANITARY SEWER TESTING:

- ALL GRAVITY SANITARY SEWERS SHALL BE TESTED AS FOLLOWS (SEE SPECIFICATIONS):
 - ALL MAINS SHALL BE TESTED FOR DEFLECTION WITH A GO-NO-GO MANDREL TEST CONDUCTED 30 DAYS AFTER BACKFILL.
 - ALL MAINS SHALL BE TESTED FOR LEAKAGE WITH A LOW-PRESSURE AIR TEST.
 - TELEVISION INSPECTION - SEWER SHALL BE FLOODED PRIOR TO INSPECTION.
- ALL FORCEMAIN SHALL BE SUBJECT TO HYDROSTATIC TEST PRIOR TO BEING PLACED INTO OPERATION (SEE SPECIFICATIONS FOR REQUIREMENTS)



SEWER TRENCH UNPAVED AREAS

NOTE: FORCEMAINS ARE TO BE INSTALLED PER THE TYPICAL TRENCH DETAILS FOR WATER MAINS (SEE SHEET 3)



SEWER TRENCH UNDER PAVEMENT

* SDR 26 OR DUCTILE IRON USED FOR SEWER DEEPER THAN 15'.

TYPICAL GRAVITY SANITARY SEWER TRENCH DETAILS

NOT TO SCALE

NOTES:

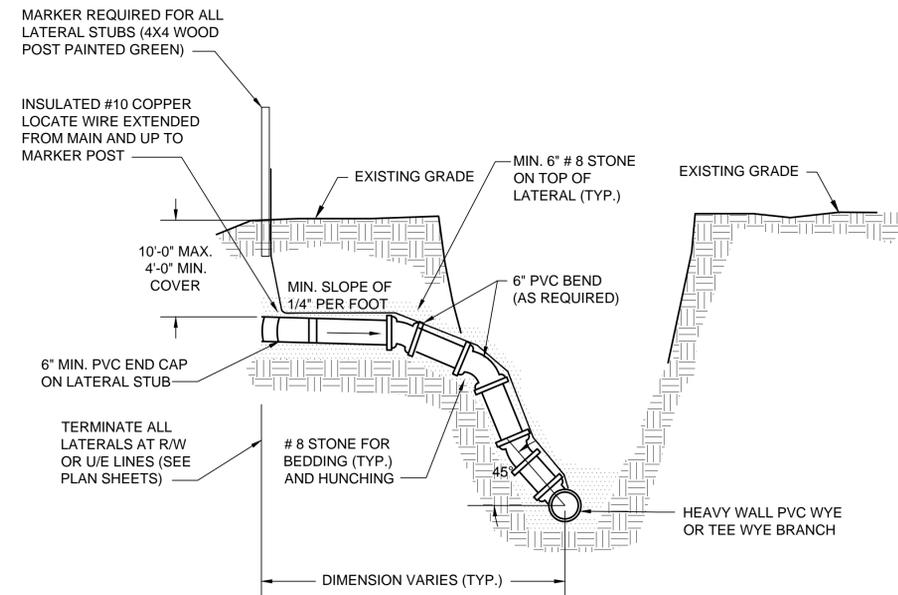
- EXISTING PAVEMENT IS TO BE SAW CUT FOR A CLEAN BREAK.
- TRENCH SPOIL IS TO BE REMOVED FROM THE WORK SITE.
- NEW SURFACE TO BE SLOPED AT SAME RATE AS THE EXISTING SURFACE.
- GRANULAR FILL TO BE USED WITHIN 5' OF ALL PAVED AREAS.

FORCE MAIN LOCATION WIRE:

#10 SINGLE STRAND COPPER LOCATION WIRE w/ 45 mil HMWPE COATING IS REQUIRED OVER ALL FORCE MAIN PIPE. INSTALL FORCE MAIN POST MARKER WITH TERMINAL CONNECTION EVERY 400'. FORCE MAIN MARKER SHALL BE EQUIVALENT TO HANDLEY INDUSTRIES MODEL PMP 7CE WITH LID C2. WIRE MUST BE CONTINUOUS BETWEEN MARKERS.

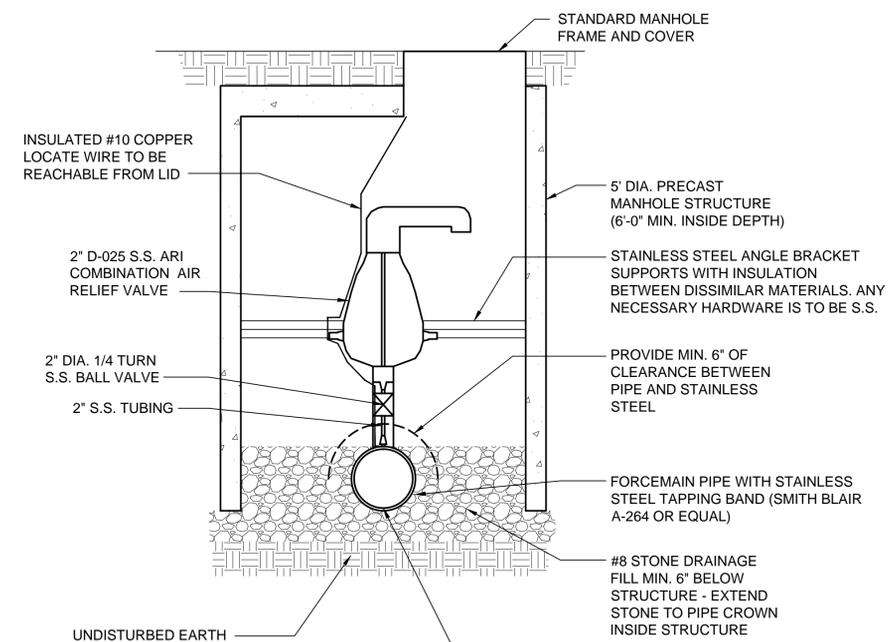
NOTES:

- ROAD CURB TO BE STAMPED WITH AN "S" TO INDICATE SANITARY SEWER LOCATION.
- FINISHED FLOOR ELEVATION OF ADJACENT BUILDINGS SHALL BE SET A MINIMUM OF 6" HIGHER THAN THE RIM ELEVATION OF THE UPSTREAM MANHOLE OF THE CONNECTED SEWER MAIN TO PREVENT SANITARY BACKUPS. OTHERWISE, BACKFLOW PREVENTION MUST BE PROVIDED ON THE SERVICE CONNECTIONS.



SANITARY SEWER SERVICE CONNECTIONS

NOT TO SCALE



NOTE: IF MORE THAN ONE AIR RELIEF VALVE IS INSTALLED WITH A FORCEMAIN, THE DEVELOPER SHALL PROVIDE ONE SPARE AIR RELIEF VALVE TO THE TOWN OF WHITESTOWN.

AIR RELEASE VALVE AND BOX DETAIL

NOT TO SCALE



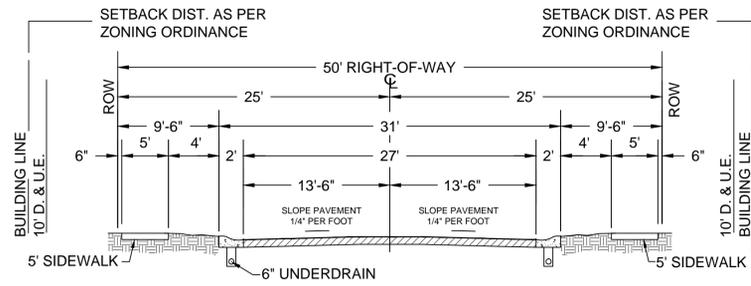
**TOWN OF WHITESTOWN
STANDARD DETAILS FOR SANITARY SEWERS**

NO.	DATE	BY	DESCRIPTION

DATE: _____

SCALE: NONE

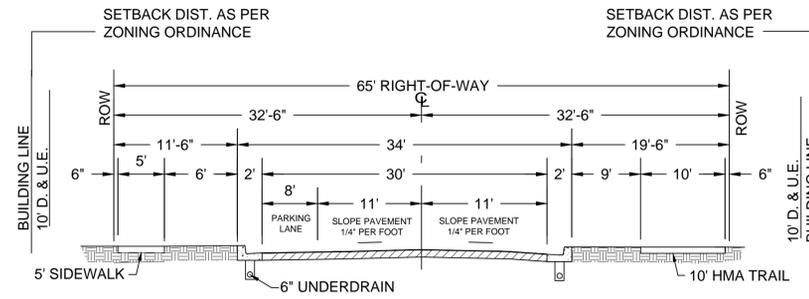
SHEET NO.



NOTE:
TWO 13'-6" MOVING LANES WITH NO PARKING LANE AS SHOWN ABOVE.
ALTERNATIVE, TWO 11'-0" MOVING LANES WITH ONE 8'-0" PARKING LANE.

LOCAL STREET OR CUL-DE-SAC

NOT TO SCALE

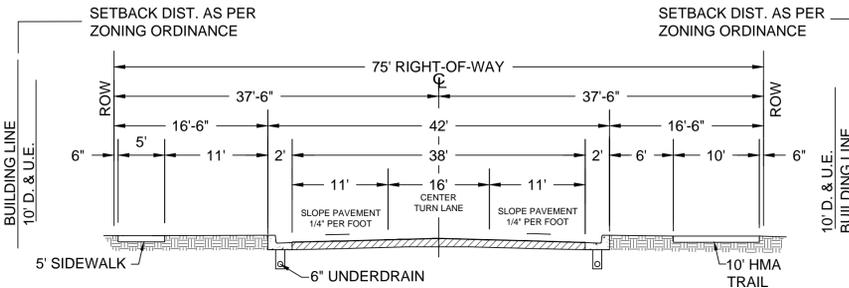


NOTE: TWO 11'-0" MOVING LANES AND ONE 8'-0" PARKING LANE AS SHOWN ABOVE.

MINOR COLLECTOR STREET

NOT TO SCALE

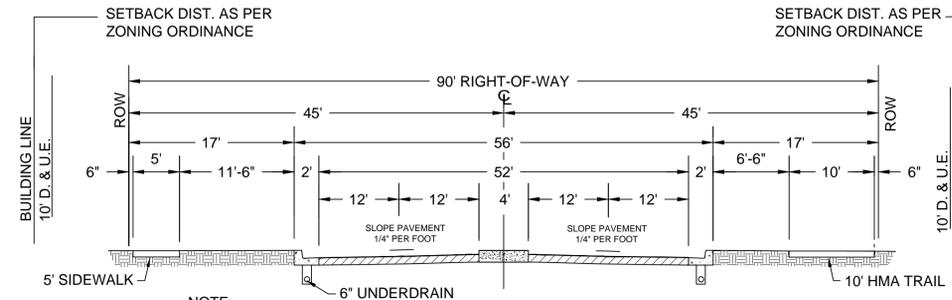
NOTE: PEDESTRIAN RAMPS
AT INTERSECTIONS SHALL MEET A.D.A.
(AMERICAN DISABILITY ACT) SPECIFICATIONS.



NOTE:
THREE MOVING LANES WITH NO PARKING LANES AS SHOWN ABOVE.
TWO OUTSIDE LANES OF 11'-0" EACH, CENTER LANE 16'-0" TOTAL, 12'-0" TURN LANE WITH
4'-0" DIVING CURB (INTERMITTENT AS NEEDED).
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

MAJOR COLLECTOR STREET

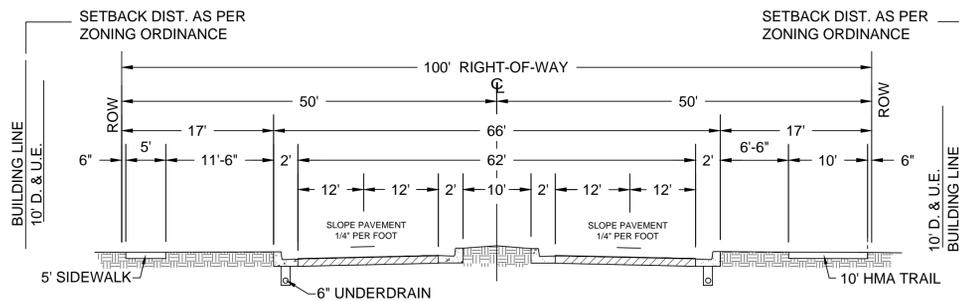
NOT TO SCALE



NOTE:
FOUR 12'-0" MOVING LANES, 4'-0" CENTER CURBS, NO PARKING LANES AS SHOWN ABOVE
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

MINOR ARTERIAL STREET

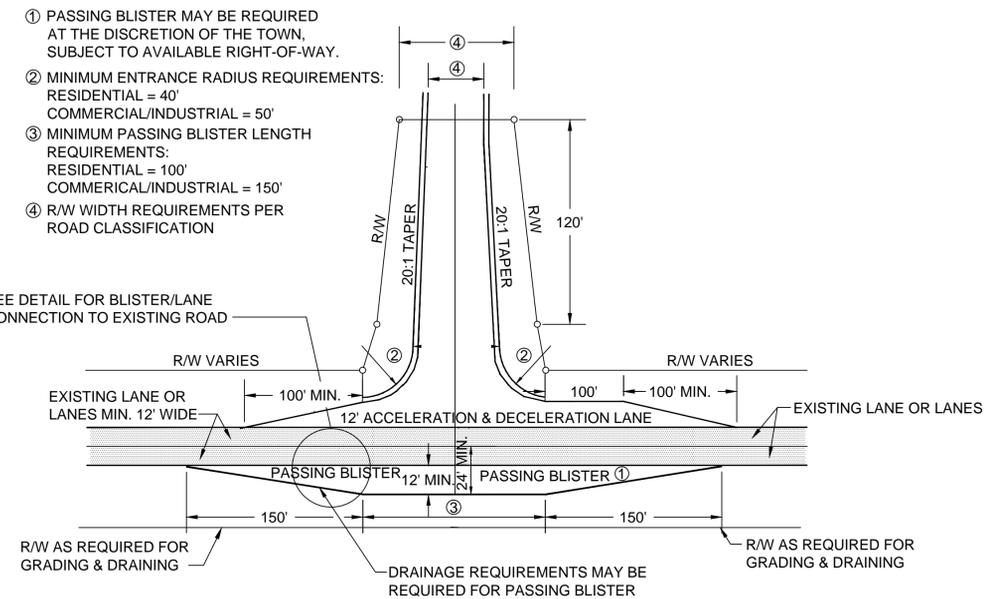
NOT TO SCALE



NOTE:
INSTALL 12'-0" MOVING LANES, 10'-0" GRASS MEDIAN WITH OCCASIONAL CENTER TURN LANES
AND/OR CROSS-OVERS, NO PARKING LANES AS SHOWN ABOVE.
BOULEVARD HAS POTENTIAL TO BECOME FIVE-LANE ARTERIAL IF WARRANTED.
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

MAJOR ARTERIAL STREET

NOT TO SCALE



- ① PASSING BLISTER MAY BE REQUIRED AT THE DISCRETION OF THE TOWN, SUBJECT TO AVAILABLE RIGHT-OF-WAY.
- ② MINIMUM ENTRANCE RADIUS REQUIREMENTS:
RESIDENTIAL = 40'
COMMERCIAL/INDUSTRIAL = 50'
- ③ MINIMUM PASSING BLISTER LENGTH REQUIREMENTS:
RESIDENTIAL = 100'
COMMERCIAL/INDUSTRIAL = 150'
- ④ R/W WIDTH REQUIREMENTS PER ROAD CLASSIFICATION

NOTE:
THIS DRAWING REPRESENTS THE MINIMUM REQUIREMENTS FOR A PUBLIC ROAD ENTRANCE.
LARGER AND/OR LONGER ACCELERATION AND DECELERATION LANES MAY BE REQUIRED WHEN
DEEMED NECESSARY BY THE TOWN OF WHITESTOWN TO ADEQUATELY SERVE THE ANTICIPATED
TYPES AND VOLUMES OF TRAFFIC. LENGTH OF ACCELERATION AND DECELERATION LANES MAY BE
MODIFIED WHEN WARRANTED AT THE DISCRETION OF THE PLANNING COMMISSION.

MINIMUM PUBLIC ROAD TO PUBLIC ROAD ENTRANCE REQUIREMENTS

NOT TO SCALE



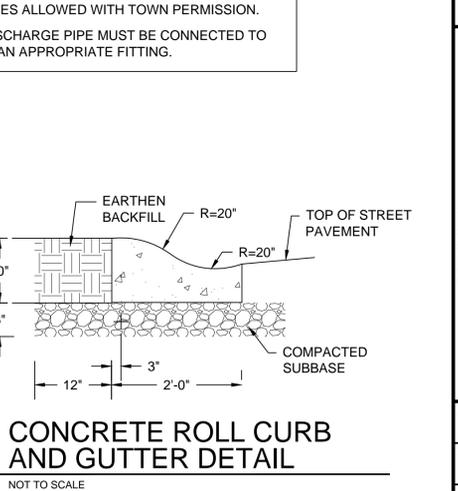
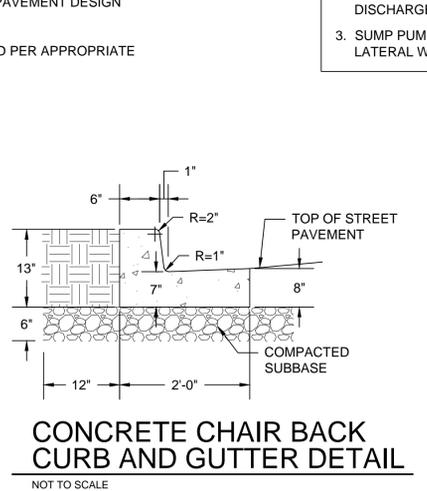
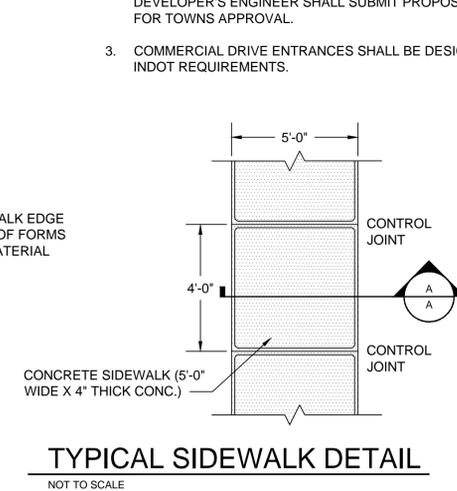
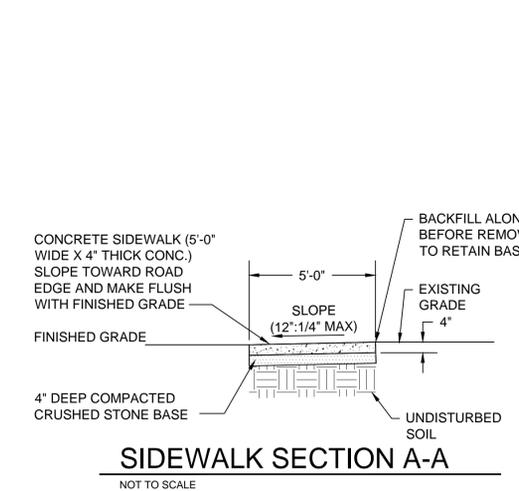
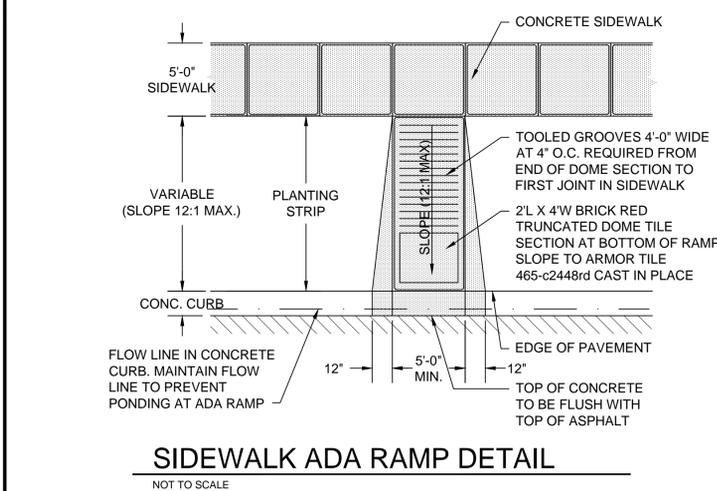
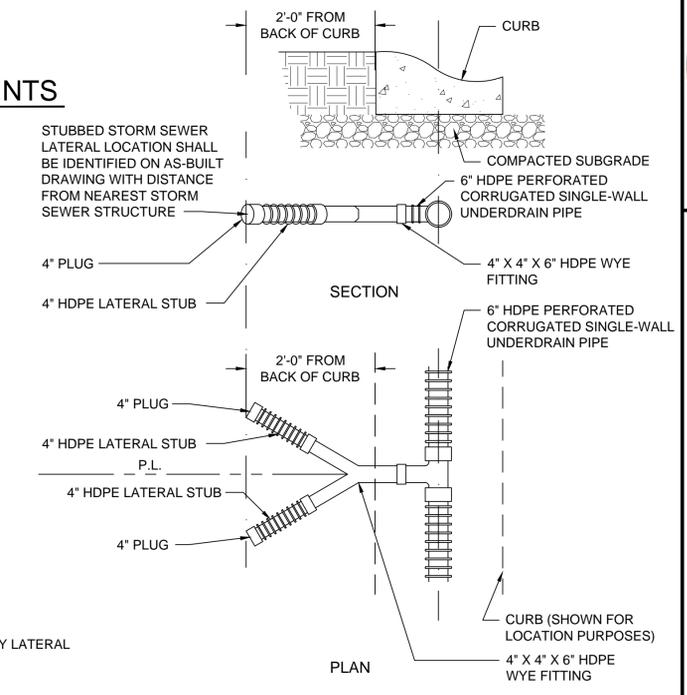
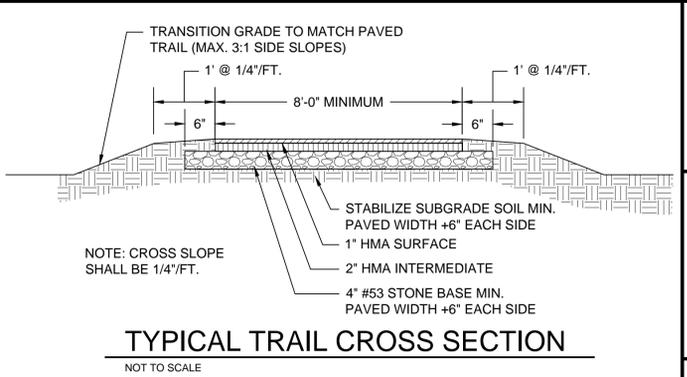
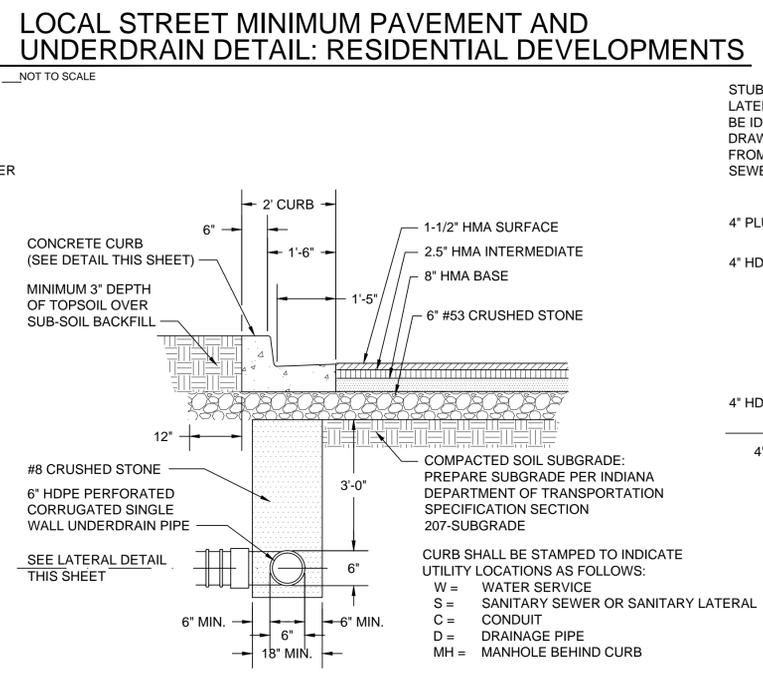
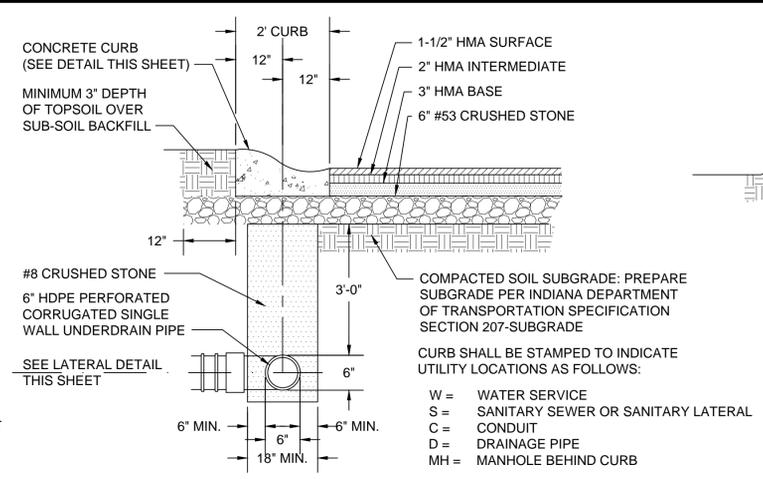
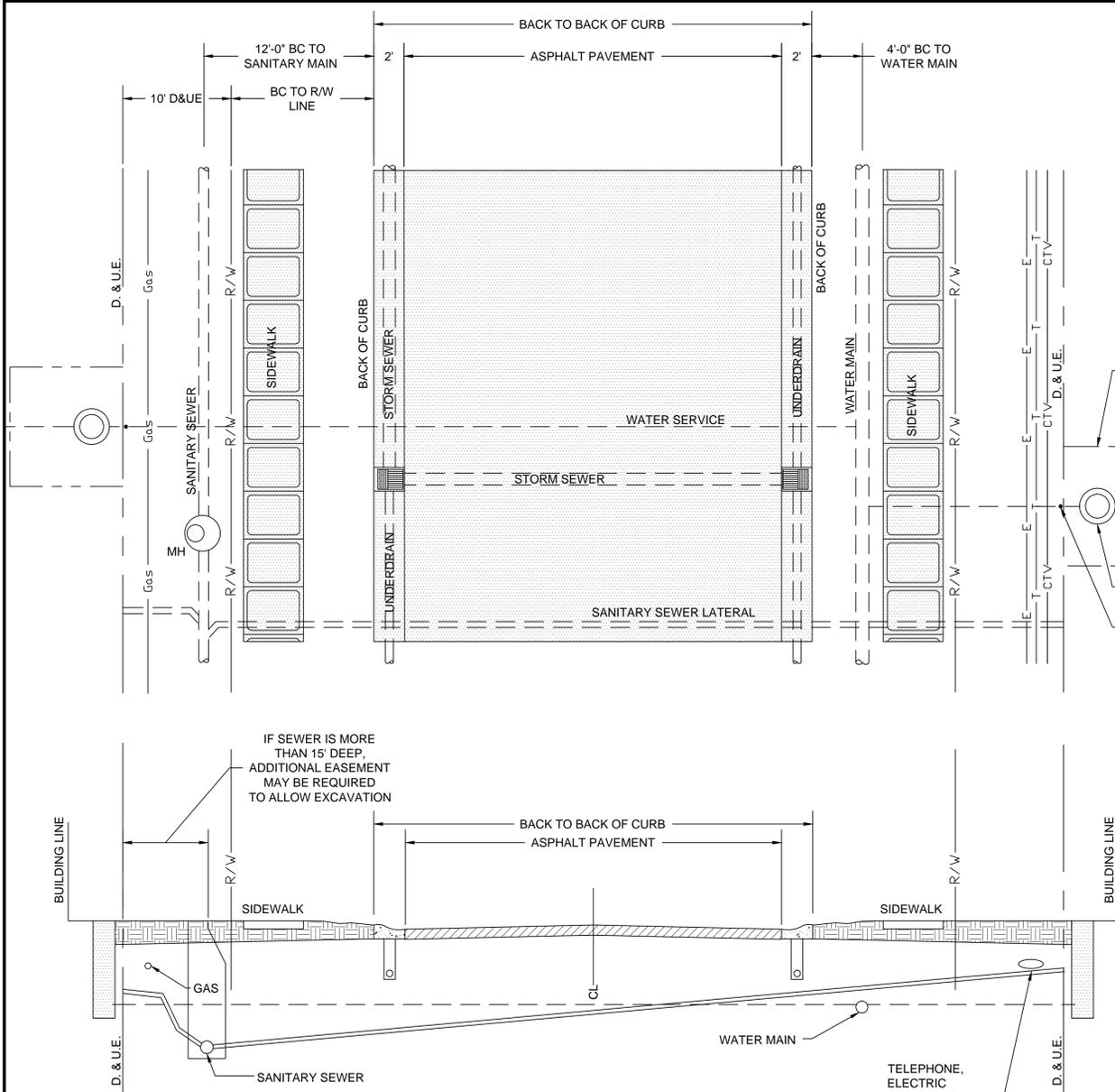
TOWN OF WHITESTOWN STREET DESIGN STANDARDS

NO.	REVISIONS	DATE	BY

DATE: _____

SCALE: N.T.S

SHEET NO.



NOTES:

1. DEVELOPER'S ENGINEER SHALL VERIFY PAVEMENT DESIGN BASED ON SOILS INVESTIGATION IN THE AREA OF CONSTRUCTION.
2. FOR STREETS WITH HIGHER CLASSIFICATIONS THAN LOCAL, DEVELOPER'S ENGINEER SHALL SUBMIT PROPOSED PAVEMENT DESIGN FOR TOWNS APPROVAL.
3. COMMERCIAL DRIVE ENTRANCES SHALL BE DESIGNED PER APPROPRIATE INDOT REQUIREMENTS.



TOWN OF WHITESTOWN STREET DESIGN STANDARDS

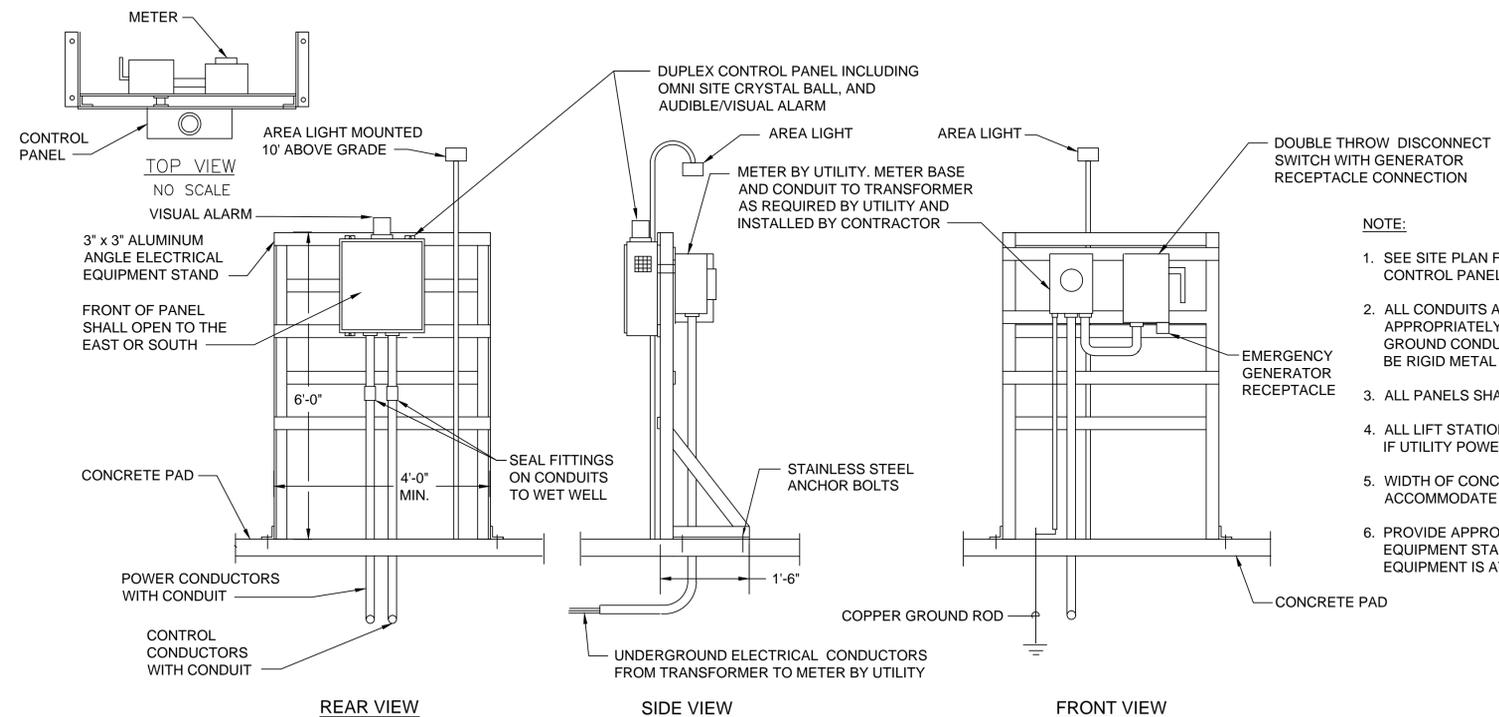
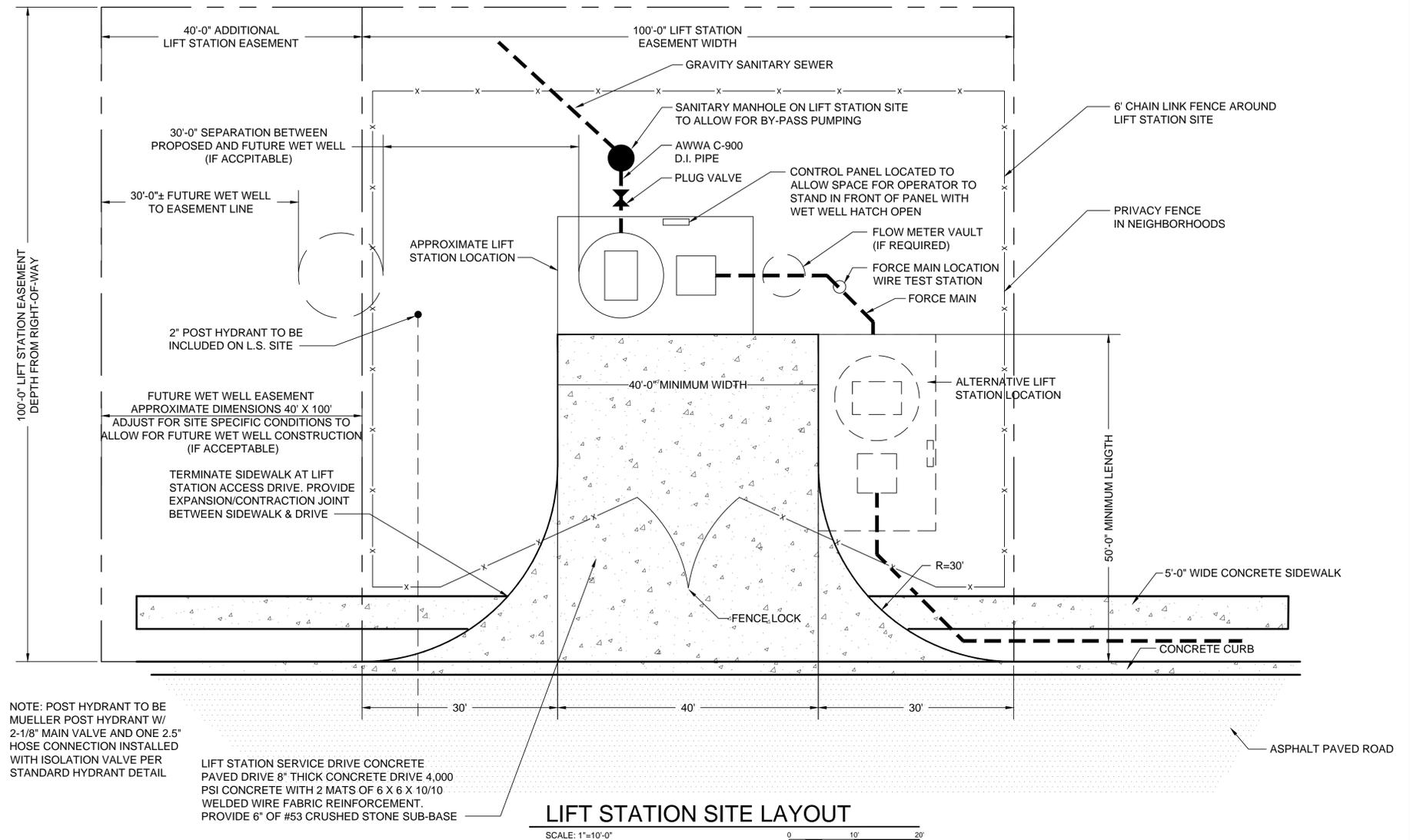
NO.	DATE	BY	DESCRIPTION

SCALE: N.T.S.

LIFT STATION DESIGN DATA

DESCRIPTION	LIFT STATION ID NO. LS1
	INITIAL DESIGN
NUMBER OF DWELLINGS	
GALLONS PER DAY PER RESIDENCE	
TOTAL AVERAGE DAILY FLOW (GPD)	
TOTAL AVERAGE FLOW (GPM)	
PEAK FLOW RATE (GPM)	
PUMP FLOW RATE (GPM) * FUTURE	
FORCE MAIN DIAMETER (IN.)	
FORCE MAIN LENGTH (FT.)	
FORCE MAIN VELOCITY (FT./SEC.)	
C' VALUE	
FORCE MAIN HEAD LOSS (FT.)	
FORCE MAIN LIFT (FT.)	
PUMP WEAR ALLOWANCE (FT.)	
FITTING MINOR LOSSES (FT.)	
TOTAL DYNAMIC HEAD (FT.)	
MANUFACTURER & MODEL NUMBER	
PUMP HORSEPOWER	
PUMP SPEED (RPM)	
IMPELLER DIAMETER (IN.)	
POWER SUPPLY	
NEMA STARTER SIZE	
CHECK VALVE SIZE (IN.)	
PLUG VALVE SIZE (IN.)	
VALVE VAULT DIMENSIONS	
VALVE VAULT ACCESS HATCH SIZE	
WETWELL INSIDE DIAMETER (FT.)	
WETWELL DEPTH (FT.)	
WETWELL ACCESS HATCH SIZE	
VISUAL LIGHT & AUDIBLE ALARM	
EMERGENCY GENERATOR MALE END CONNECTION	
BUILT-IN EMERGENCY GENERATOR TRANSFER SWITCH	
TOP OF LIFT STATION ELEVATION	
NORTH INVERT ELEVATION	
SOUTH INVERT ELEVATION	
EAST INVERT ELEVATION	
WEST INVERT ELEVATION	
BOTTOM OF LIFT STATION ELEVATION	
HIGH LEVEL ALARM ELEVATION	
LAG PUMP ON ELEVATION	
LEAD PUMP ON ELEVATION	
BOTH PUMPS OFF ELEVATION	
VOL. BETWEEN OFF & LEAD PUMP ON (GAL.)	
DETENTION TIME @ TOTAL AVERAGE FLOW (MIN.)	

NOTE: DEVELOPER SHALL COMPLETE AND SUBMIT ABOVE TABLE TO TOWN OF WHITESTOWN WHEN PLANNING A LIFT STATION.



- NOTE:
- SEE SITE PLAN FOR EXACT LOCATION OF CONTROL PANEL EQUIPMENT
 - ALL CONDUITS AND WIRING TO BE SIZED APPROPRIATELY BY DESIGN ENGINEER. ABOVE GROUND CONDUITS TO 18" BELOW GRADE SHALL BE RIGID METAL CONDUIT.
 - ALL PANELS SHALL BE NEMA 4X STAINLESS STEEL
 - ALL LIFT STATIONS SHALL BE 3PHASE, 460 VOLT IF UTILITY POWER IS AVAILABLE.
 - WIDTH OF CONCRETE PAD AS REQUIRED TO ACCOMMODATE PANELS PROVIDED.
 - PROVIDE APPROPRIATE BRACING SO THAT EQUIPMENT STAND IS STURDY ONCE ALL EQUIPMENT IS ATTACHED.



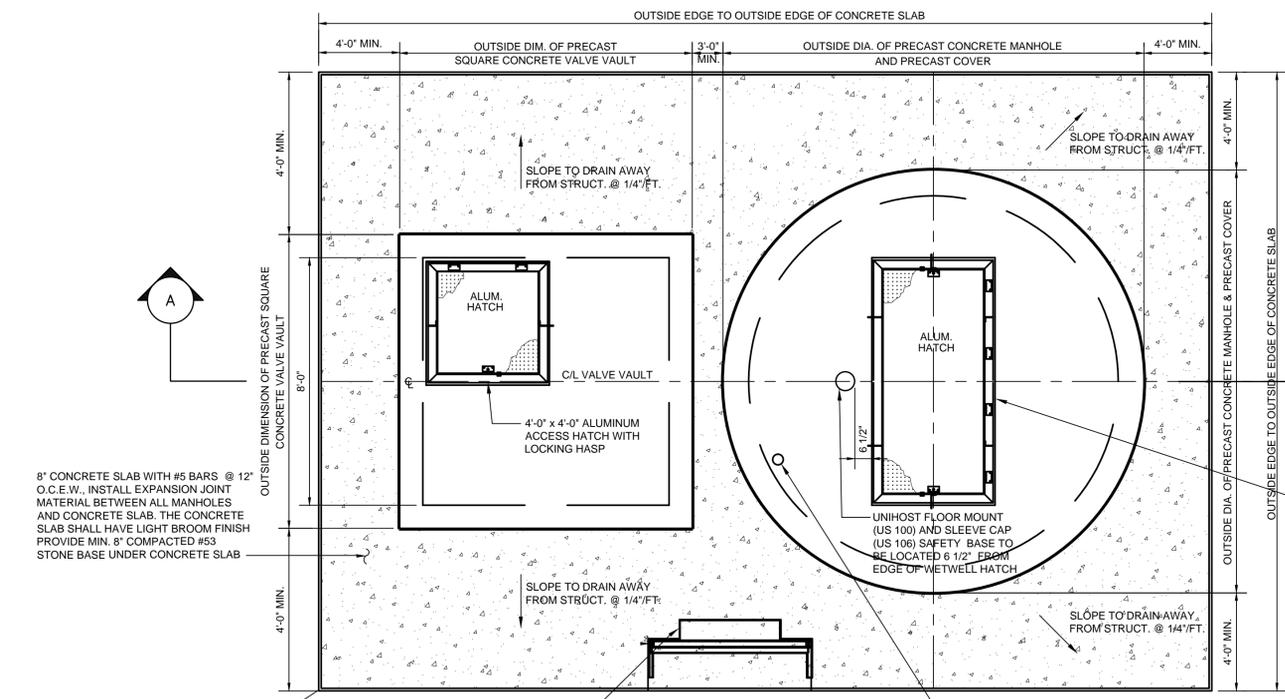
TOWN OF WHITESTOWN LIFT STATION LAYOUT AND ELECTRICAL DIAGRAM

NO.	REVISIONS	DATE	BY

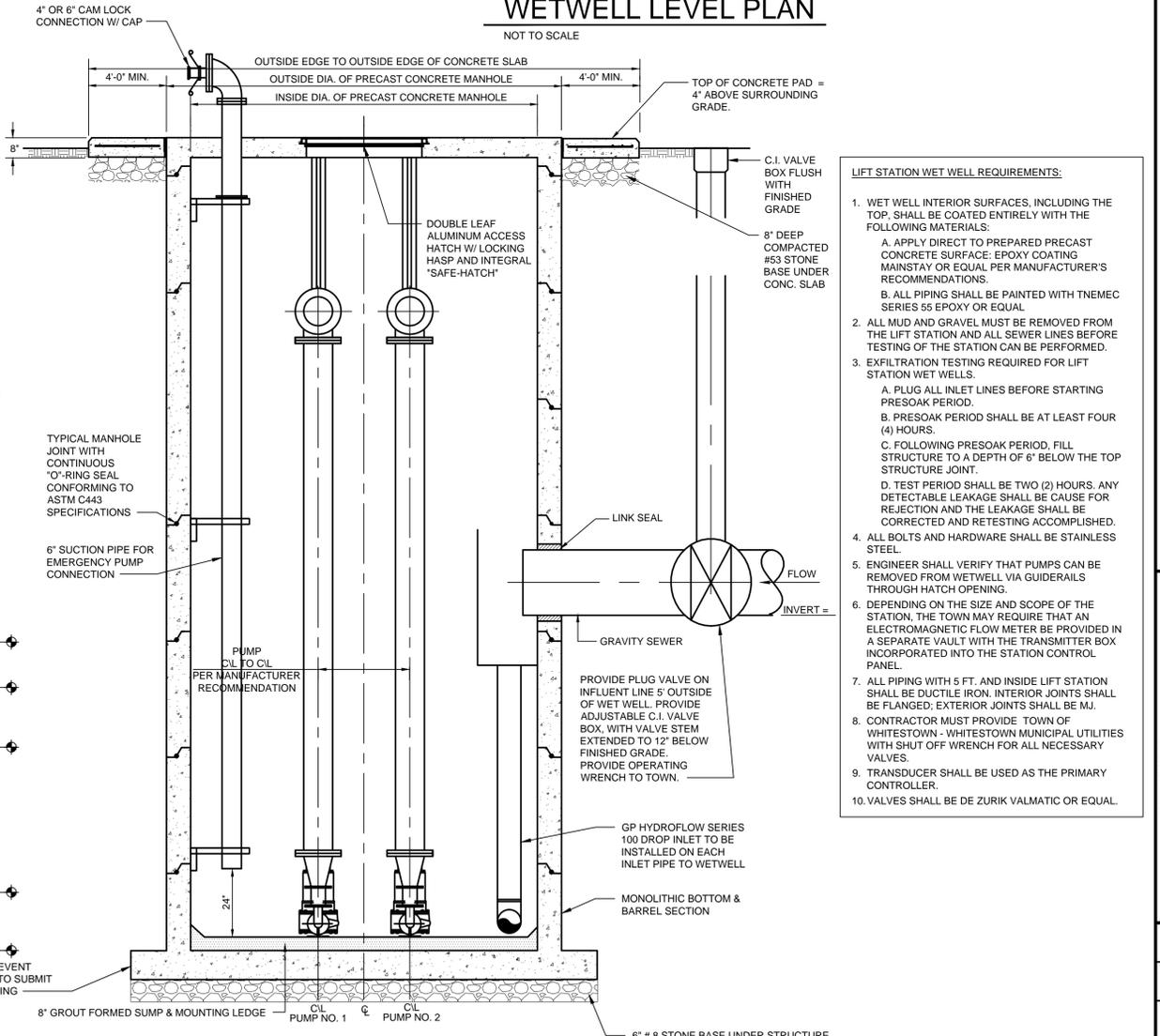
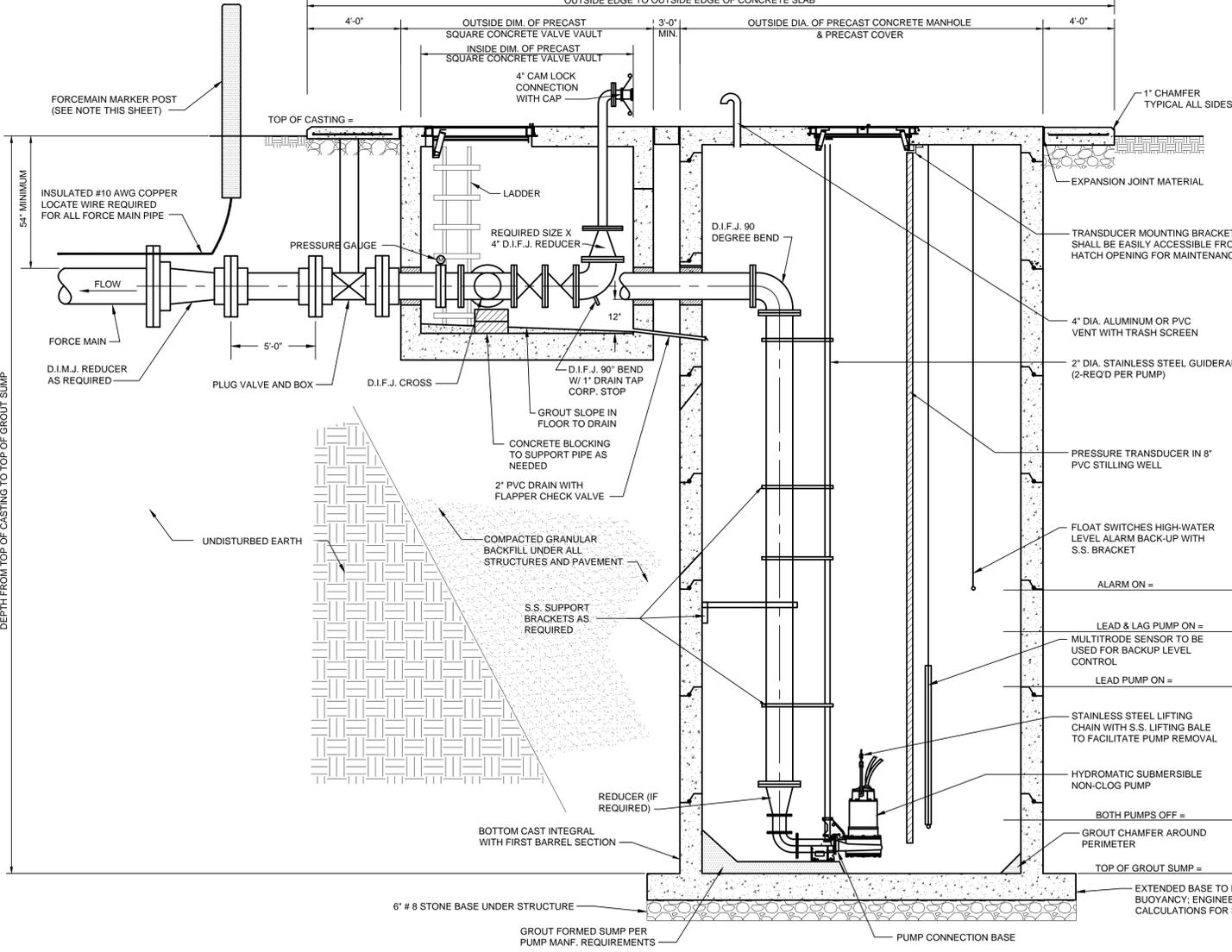
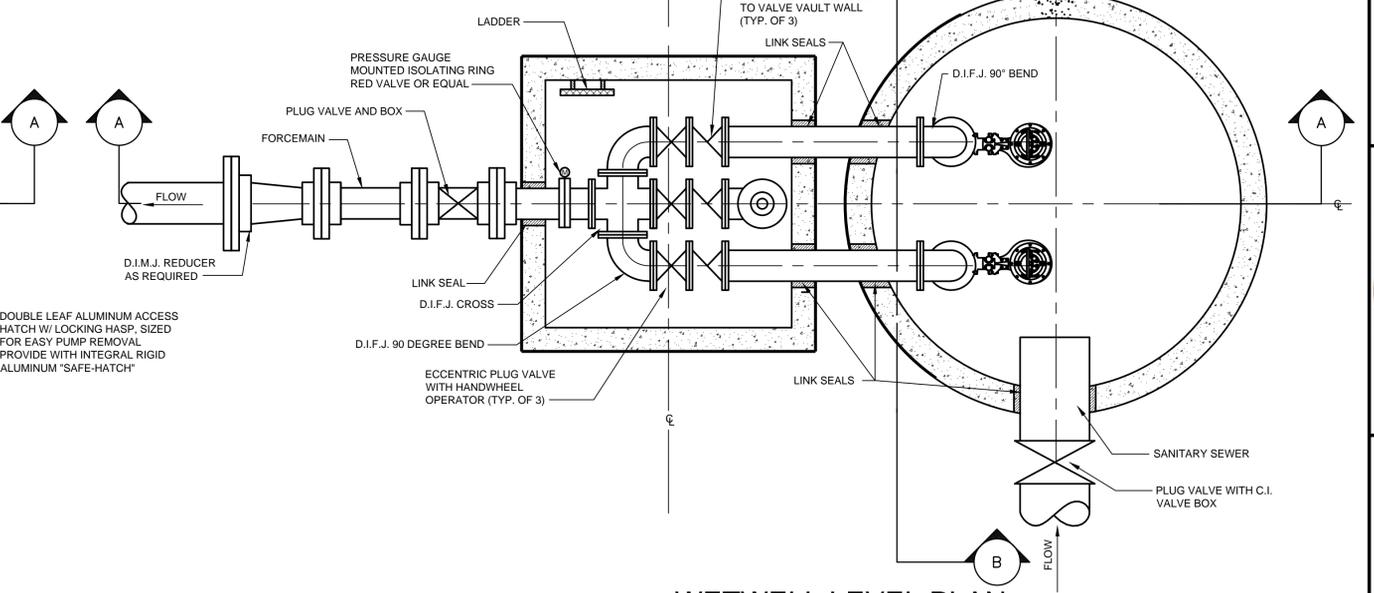
SCALE: 1"=10'



TOWN OF WHITESTOWN
LIFT STATION GENERAL CONFIGURATION



FORCE MAIN LOCATION WIRE SHALL BE TERMINATED AT A FORCE MAIN MARKER POST INSTALLED ADJACENT TO THE VALVE VAULT. THE POST MARKER SHALL PROVIDE A TERMINAL CONNECTION POINT FOR FORCE MAIN LOCATION WIRE CONNECTION. FORCE MAIN MARKERS WITH TERMINAL CONNECTIONS TO LOCATION WIRE SHALL BE INSTALLED ALONG FORCE MAIN ROUTE WITH MAXIMUM 400 L.F. SPACING. LOCATION WIRE SHALL BE CONTINUOUS BETWEEN LOCATION MARKERS (NO SPLICING). COORDINATE MARKER LOCATIONS WITH THE TOWN OF WHITESTOWN. STATION SHALL BE EQUIVALENT TO HANDLE INDUSTRIES MODEL PMP 7CE WITH LID C2. THE FOLLOWING INFORMATION SHALL BE CLEARLY PRINTED ON FORCE MAIN MARKER POST: "TOWN OF WHITESTOWN", "SANITARY SEWER LINE BURIED BELOW", "EMERGENCY CONTACT 317-733-8584" AND "CAUTION SEWER PIPELINE". CONTRACTOR SHALL LOCATE ALL PIPE IN PRESENCE OF TOWN OF WHITESTOWN REPRESENTATIVE FOLLOWING COMPLETION OF CONSTRUCTION.



- LIFT STATION WET WELL REQUIREMENTS:**
- WET WELL INTERIOR SURFACES, INCLUDING THE TOP, SHALL BE COATED ENTIRELY WITH THE FOLLOWING MATERIALS:
 - APPLY DIRECT TO PREPARED PRECAST CONCRETE SURFACE. EPOXY COATING MAINSTAY OR EQUAL PER MANUFACTURER'S RECOMMENDATIONS.
 - ALL PIPING SHALL BE PAINTED WITH TNEPEC SERIES 55 EPOXY OR EQUAL.
 - ALL MUD AND GRAVEL MUST BE REMOVED FROM THE LIFT STATION AND ALL SEWER LINES BEFORE TESTING OF THE STATION CAN BE PERFORMED.
 - EXFILTRATION TESTING REQUIRED FOR LIFT STATION WET WELLS.
 - PLUG ALL INLET LINES BEFORE STARTING PRESOAK PERIOD.
 - PRESOAK PERIOD SHALL BE AT LEAST FOUR (4) HOURS.
 - FOLLOWING PRESOAK PERIOD, FILL STRUCTURE TO A DEPTH OF 6' BELOW THE TOP STRUCTURE JOINT.
 - TEST PERIOD SHALL BE TWO (2) HOURS. ANY DETECTABLE LEAKAGE SHALL BE CAUSE FOR REJECTION AND THE LEAKAGE SHALL BE CORRECTED AND RETESTING ACCOMPLISHED.
 - ALL BOLTS AND HARDWARE SHALL BE STAINLESS STEEL.
 - ENGINEER SHALL VERIFY THAT PUMPS CAN BE REMOVED FROM WETWELL VIA GUIDERAILS THROUGH HATCH OPENING.
 - DEPENDENT ON THE SIZE AND SCOPE OF THE STATION, THE TOWN MAY REQUIRE THAT AN ELECTROMAGNETIC FLOW METER BE PROVIDED IN A SEPARATE VAULT WITH THE TRANSMITTER BOX INCORPORATED INTO THE STATION CONTROL PANEL.
 - ALL PIPING WITH 5 FT. AND INSIDE LIFT STATION SHALL BE DUCTILE IRON. INTERIOR JOINTS SHALL BE MJ.
 - CONTRACTOR MUST PROVIDE TOWN OF WHITESTOWN - WHITESTOWN MUNICIPAL UTILITIES WITH SHUT OFF WRENCH FOR ALL NECESSARY VALVES.
 - TRANSDUCER SHALL BE USED AS THE PRIMARY CONTROLLER.
 - VALVES SHALL BE DE ZURIK VALMATIC OR EQUAL.

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NO.	REVISIONS	DATE	BY

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SHEET NO.