TOWN OF WHITESTOWN
BOONE COUNTY, INDIANA

STANDARD DETAILS

ADOPTED AUGUST 14, 2012

UPDATED MAY, 2015

TOWN OF WHITESTOWN - STAFF

TOWN MANAGER	-	DAX NORTON
PUBLIC WORKS DIRECTOR	-	JASON LAWSON
TOWN CLERK	-	AMANDA ANDREWS
POLICE CHIEF	-	DENNIS ANDERSON
FIRE CHIEF	-	JOSH WESTRICH

TOWN OF WHITESTOWN - COUNCIL

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

TOWN HALL - (317) 769-6557

UTILITY OFFICE - (317) 733-8584

DRAWING INDEX

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WATER MAIN GENERAL NOTES

1. WATER MAINS TO BE EITHER DUCTILE IRON, CLASS 350 PER AWWA C151, DOUBLE CEMENT MORTAR LINED, OR PVC C900, DR14. JOINTS SHALL BE PUSH ON ELASTOMERIC TYPE. SEE SPECIFICATIONS FOR MORE DETAILS.
2. ALL FITTINGS TO BE DUCTILE IRON, CLASS 350 (AWWA C153) MECHANICAL JOINT (AWWA C111) WITH RESTRAINED OR LOCK JOINT. THRUST BLOCKS NOT ACCEPTABLE.
3. TERMINATE LOCATION WIRE AT WATER MAIN GATE VALVE WITH TERMINAL CONNECTION.
4. LOCATION WIRE SHALL BE COLORED BLUE FOR WATER AND GREEN FOR SANITARY SEWER. JOINTS IN LOCATE WIRES SHALL BE OVERHAND KNOTTED AND SOLDERED THEN COVERED WITH A WATER PROOF SEAL.
5. 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.
6. VALVES AND FIRE HYDRANTS SHALL BE PROVIDED AT MAXIMUM 600' INTERVALS ALONG WATER MAINS.
7. ALL WATER MAINS PROVIDING FIRE SERVICE SHALL BE MIN. 6" DIAMETER.
8. IN UNDEVELOPED AREAS, WATER MAIN MARKER POSTS MAY BE REQUIRED AT 400' INTERVALS OR AS REQUIRED FOR LINE OF SIGHT. HANDLEY INDUSTRIES OR EQUAL.

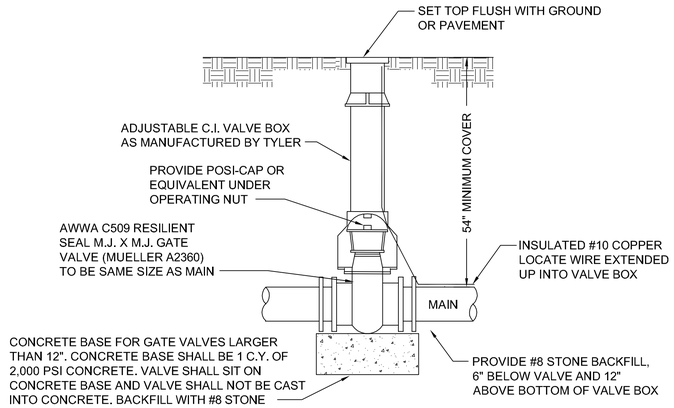
WATER METER SETTING SCHEDULE						
STYLE	SINGLE 5/8"	DOUBLE 5/8"	SINGLE 3/4"	DOUBLE 3/4"	SINGLE 1"	SINGLE 1 1/2"-2"
INLET	3/4" COMP.	1" COMP.	3/4" COMP.	1" COMP.	1" COMP.	1 1/2"-2" COMP.
OUTLET	3/4" COMP.	3/4" COMP.	3/4" COMP.	3/4" COMP.	1" COMP.	1 1/2"-2" COMP.

WATER METER AND SERVICE NOTES:

1. ALL 1"-2" TAPS TO PVC PIPE WILL USE A SMITH BLAIR #317 STYLE EPOXY COATED DUCTILE IRON SERVICE SADDLE WITH DOUBLE STAINLESS STEEL BANDS OR APPROVED EQUAL. 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 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.
10. THE DEVELOPER SHALL SUBMIT FIXTURE UNIT FLOW AND PRESSURE LOSS CALCULATIONS FOR THE TOWN'S REVIEW AND APPROVAL FOR ANY PLANNED MULTI-FAMILY, COMMERCIAL, OR INDUSTRIAL CONNECTION.

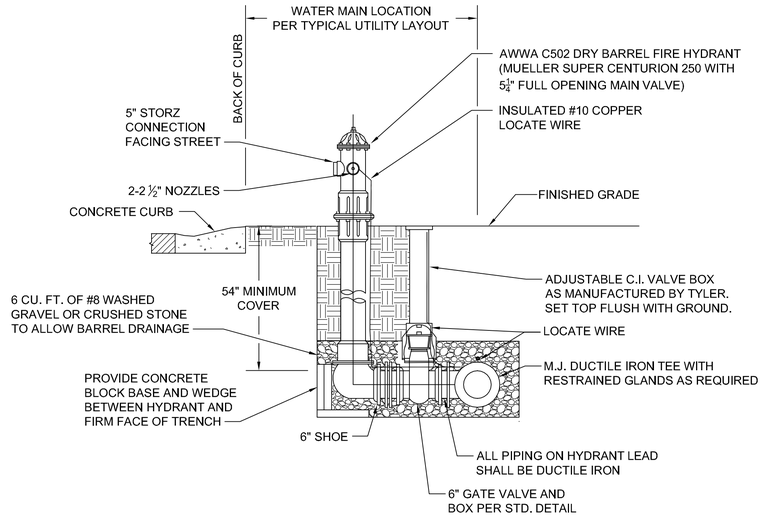
WATER METERS FOR COMMERCIAL MECHANICAL ROOMS

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, BUT SHALL GENERALLY BE MOUNTED HORIZONTALLY WITH PIPING CONFIGURED SIMILAR TO THE VAULT DETAIL ON SHEET 2. 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. MEANS OF ACCESS FOR THE TOWN SHALL BE PROVIDED TO INDOOR METERS AT ALL TIMES.



TYPICAL GATE VALVE & VALVE BOX

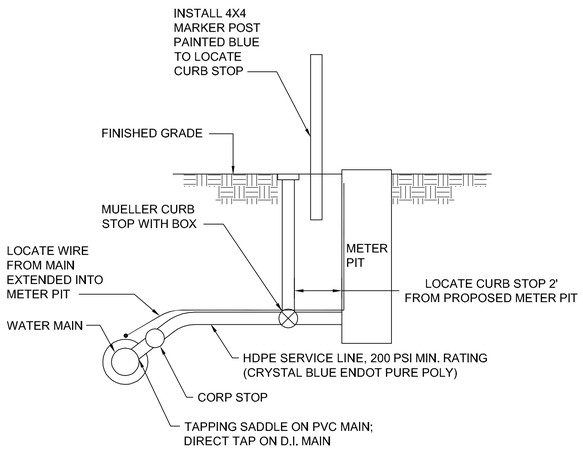
NOT TO SCALE



STANDARD FIRE HYDRANT

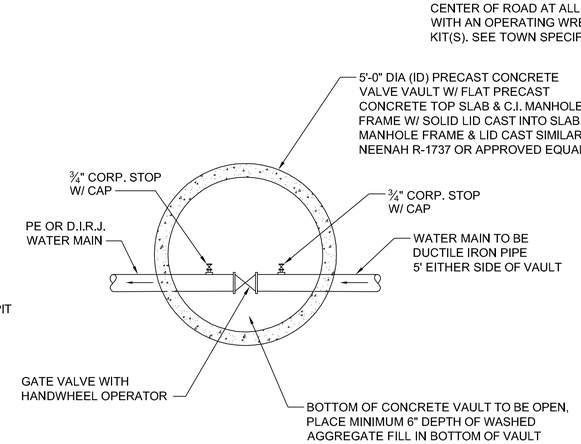
NOT TO SCALE

NOTE:
SNOWPLOWABLE BLUE REFLECTORS SHALL BE INSTALLED IN CENTER OF ROAD AT ALL FIRE HYDRANTS; PROVIDE TOWN WITH AN OPERATING WRENCH AND TRAFFIC DAMAGE REPAIR KIT(S). SEE TOWN SPECIFICATIONS.



WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



LEAK DETECTION METER DETAIL

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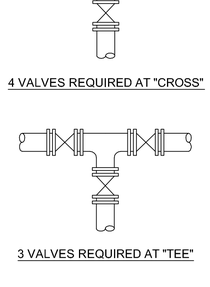
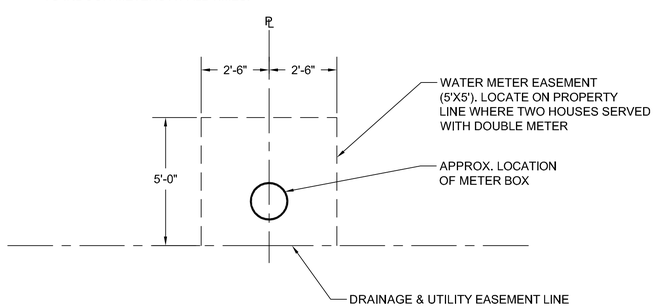


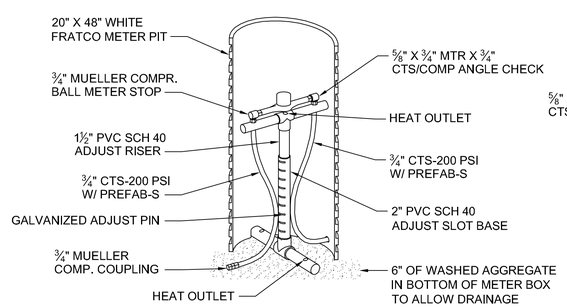
VALVE DETAILS AT INTERSECTIONS

NOT TO SCALE

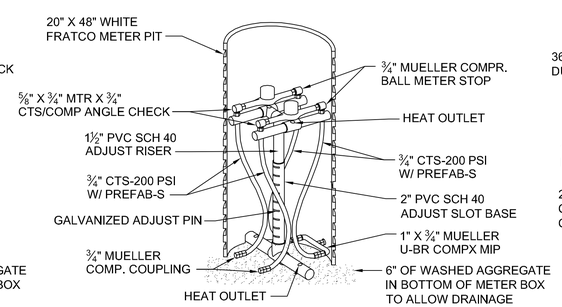


METER PIT EASEMENT DIAGRAM

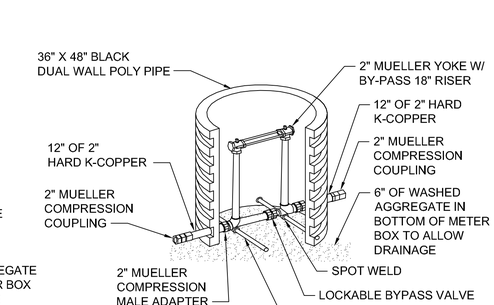
NOT TO SCALE



TZ PRODUCTS SINGLE METER BOX



TZ PRODUCTS DOUBLE METER BOX



TZ PRODUCTS 2" SINGLE METER BOX

METER BOX AND METER SETTING

NOT TO SCALE

TOWN OF WHITESTOWN
STANDARD DETAILS FOR WATER MAINS

REVISIONS

NO.	DESCRIPTION	DATE	BY

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SCALE CHECK:

DATE:

SCALE: N.T.S.

SHEET NO. 1

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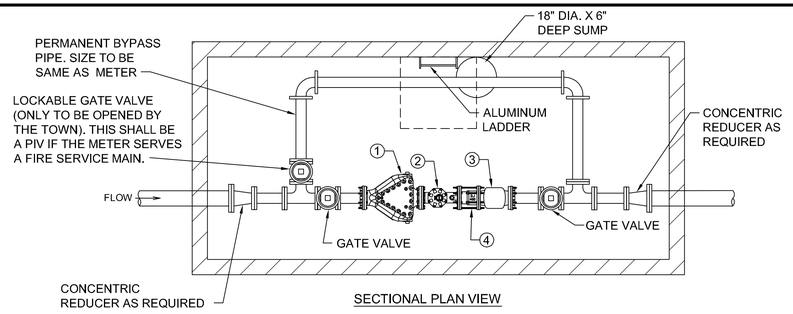
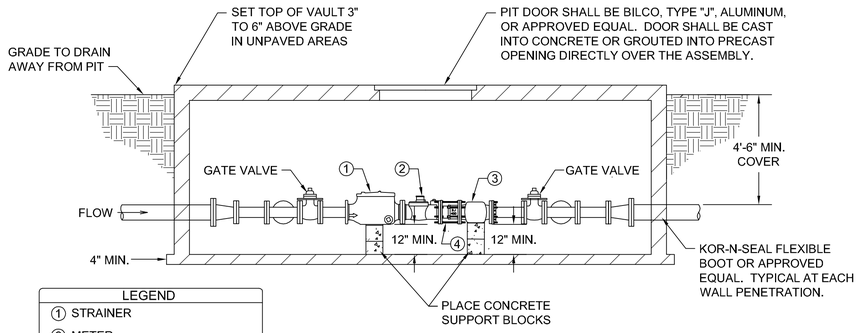


SECTIONAL PLAN VIEW



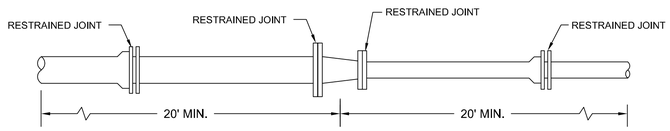
LEGEND
1. STRAINER
2. METER
3. CHECK VALVE
4. DISMANTLING JOINT ROMAC DJ400 OR DJ405. (SET AT NOMINAL LENGTH)

METER ASSEMBLY 3"-10" METER INSTALLATION

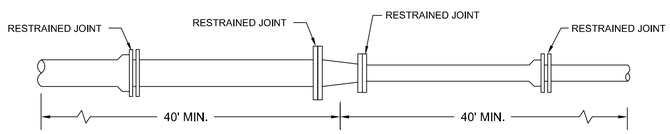
NOT TO SCALE

NOTES:

1. VAULT IS A GENERAL REPRESENTATION ONLY. THE DEVELOPER'S ENGINEER SHALL SUBMIT A SPECIFIC VAULT DETAIL FOR THE PLANNED FACILITY.
2. ALL METER ASSEMBLIES SHALL BE SPECIFIED BY THE TOWN OF WHITESTOWN. THE DEVELOPER'S ENGINEER SHALL PROVIDE FIXTURE UNIT FLOW AND PRESSURE LOSS CALCULATIONS FOR THE TOWN'S REVIEW AND ACCEPTANCE TO ALLOW A PROPER METER TO BE SELECTED.
3. EACH METER VAULT SHALL BE EQUIPPED WITH A DOOR MOUNTED ELECTRONIC DEVICE FOR USE WITH A RADIO 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.
7. INTERIOR PIPING SHALL BE D.I.F.L.



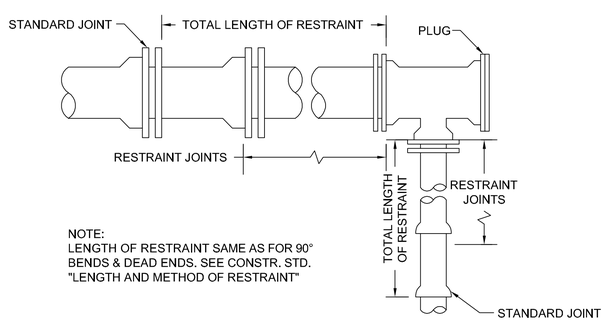
REDUCERS, LARGER PIPE DIAMETER IS 8" OR SMALLER



REDUCERS, LARGER PIPE DIAMETER IS 12" OR LARGER

RESTRAINING REDUCERS-DETAIL

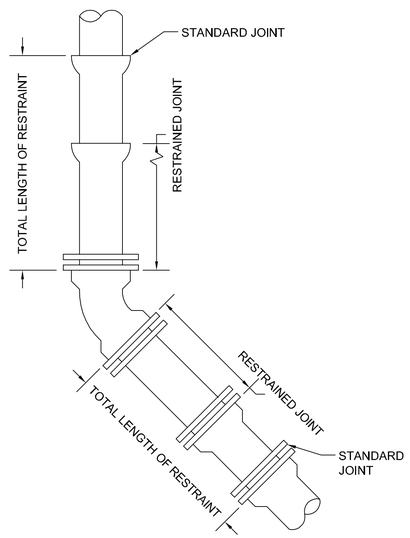
NOT TO SCALE



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

RESTRAINT OF TEES-DETAIL

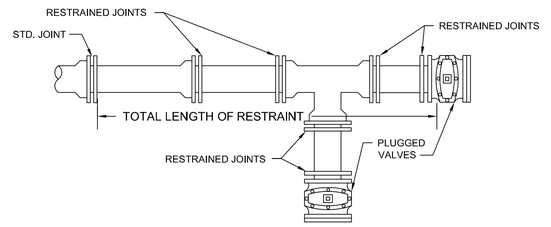
NOT TO SCALE



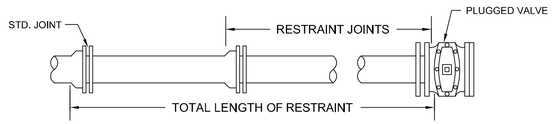
NOTE:
SEE CONSTR. STD. FOR "LENGTH AND METHOD OF RESTRAINT"

RESTRAINT OF BENDS-DETAIL

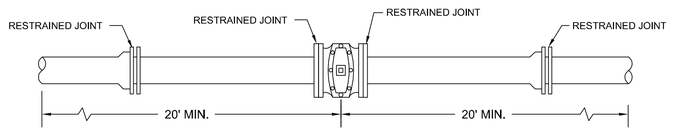
NOT TO SCALE



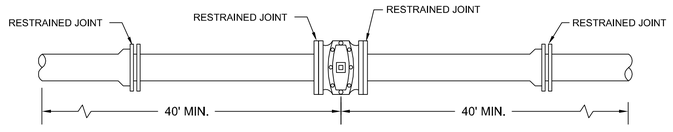
DEAD ENDS OF TEES



DEAD ENDS OF MAINS



VALVES (NON-DEAD END) 8" AND SMALLER



VALVES (NON-DEAD END) 12" AND LARGER

RESTRAINING VALVES-DETAIL

NOT TO SCALE

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 10 LOWER	11 UPPER 10 LOWER	10 UPPER 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 10 LOWER	15 UPPER 10 LOWER	10 UPPER 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 12 LOWER	20 UPPER 10 LOWER	11 UPPER 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 17 LOWER	31 UPPER 10 LOWER	15 UPPER 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 22 LOWER	39 UPPER 11 LOWER	20 UPPER 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 20 LOWER	22 UPPER 10 LOWER	11 UPPER 10 LOWER	

1. CONTRACTOR SHALL INSTALL RJDI 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 RJDI LIMITS MUST BE RESTRAINED AT EACH JOINT.

RESTRAINT JOINT TABLES

NOT TO SCALE

WHITESTOWN

TOWN OF WHITESTOWN
STANDARD DETAILS FOR WATER MAINS

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

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SHEET NO. 2

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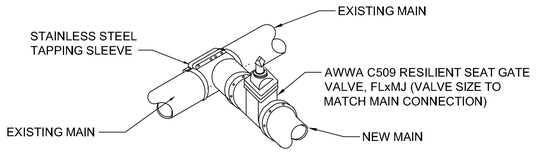
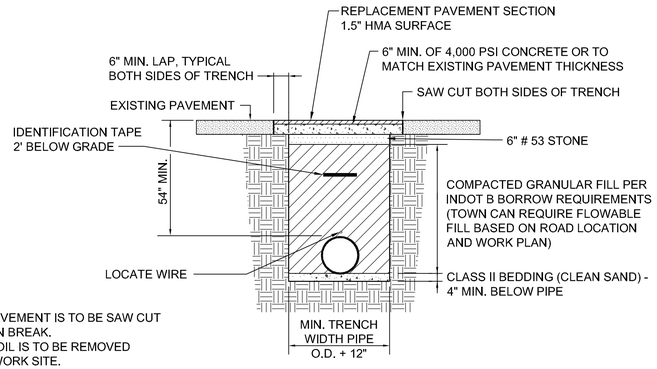


NOTE:

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

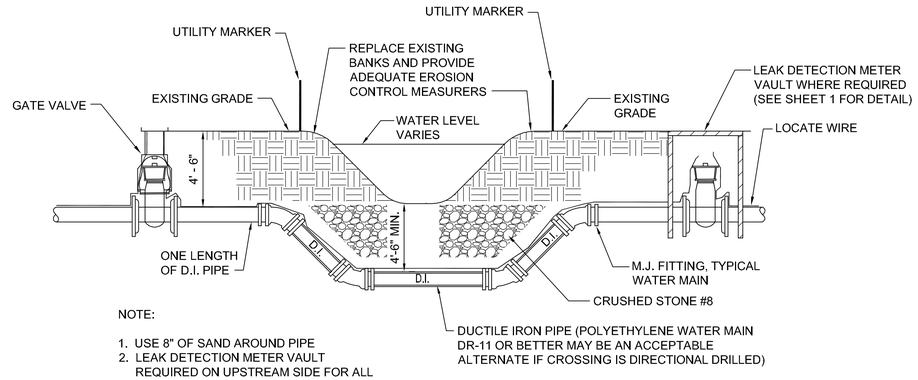
WET TAP TO EXISTING MAIN

NOT TO SCALE



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

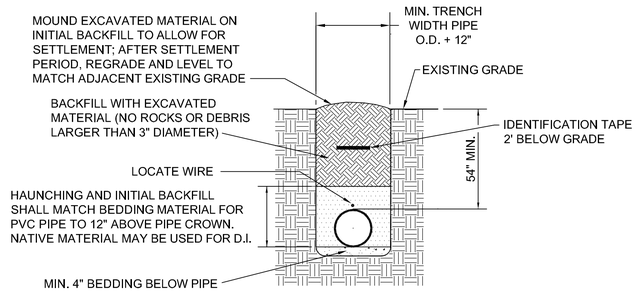


NOTE:

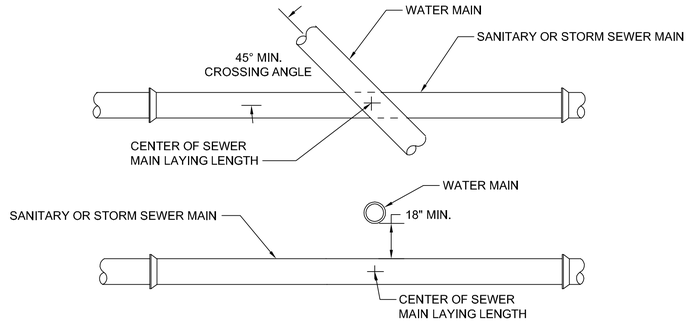
1. USE 8" OF SAND AROUND PIPE
2. LEAK DETECTION METER VAULT REQUIRED ON UPSTREAM SIDE FOR ALL CREEK CROSSINGS GREATER THAN 15' IN WIDTH (SEE DETAIL SHEET 2)

CREEK CROSSING DETAIL

NOT TO SCALE



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



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

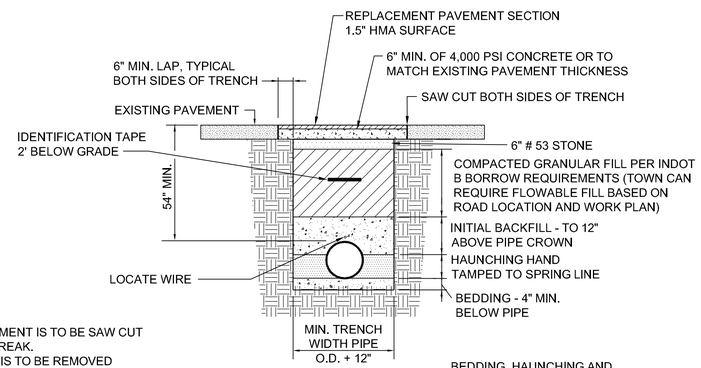
NOT TO SCALE

NOTES FOR FIRE SERVICES AND OTHER PRIVATE MAINS

1. PRIVATE FIRE SERVICE MAINS SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER EITHER BEYOND THE SHUT-OFF VALVE LOCATED AT THE R/W/EASEMENT LINE OR BEYOND THE METER.
2. MULTI-UNIT RESIDENTIAL COMPLEXES MAY BE SERVED WITH A COMMON MAIN FOR FIRE AND DOMESTIC SERVICE, MASTER-METERED AT THE ENTRANCE TO THE PROPERTY, WITH FIRE DEPARTMENT CONNECTIONS FOR EACH BUILDING. A FIRE-SERVICE-RATED METER SHALL BE REQUIRED FOR SUCH A CONFIGURATION.
3. ALL PRIVATE MAINS SHALL BE CONSTRUCTED TO MEET OR EXCEED THE SAME STANDARDS AS PUBLIC MAINS IN ADDITION TO ANY APPLICABLE STANDARDS OF THE NFPA, AND SHALL BE HYDROSTATIC TESTED AND DISINFECTED PRIOR TO BEING PLACED INTO SERVICE.
4. THE OWNER SHALL REPAIR ANY LEAKS ON PRIVATE MAINS WITHIN 48 HOURS OF THEIR DISCOVERY. IF THE REPAIR IS NOT COMPLETED WITHIN THIS TIME, THE UTILITY CAN FIX THE LEAK AND CHARGE THE OWNER FOR THE COST OF REPAIRS OR SHUT OFF SERVICE UNTIL THE REPAIR IS MADE.
5. THE DEVELOPER'S ENGINEER SHALL SUBMIT DESIGN CALCULATIONS OF THE PLANNED SYSTEM FOR THE TOWN'S REVIEW.
6. AN APPROVED BACK FLOW PREVENTION DEVICE SHALL BE REQUIRED AT THE CONNECTION TO THE MAIN IF THERE ARE ANY POTENTIAL CROSS CONNECTION SOURCES WITHIN THE PRIVATE MAIN SYSTEM.
7. BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL SHALL COMPLY WITH 327IAC 8-10.

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

NOT TO SCALE



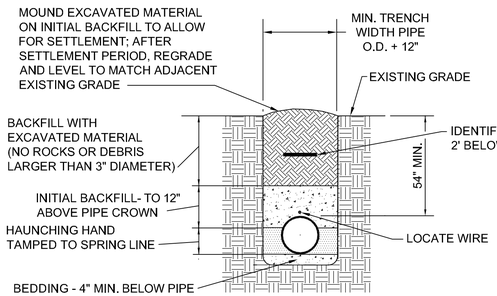
NOTES:

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

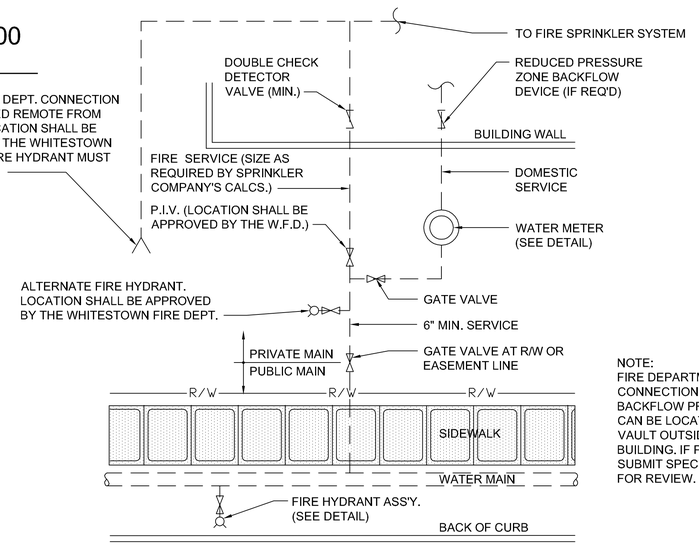
BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE CLASS II (CLEAN SAND)

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

NOT TO SCALE



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



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

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

NOT TO SCALE

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

NOT TO SCALE

FIRE SERVICE CONNECTION DETAIL

NOT TO SCALE

WHITESTOWN

TOWN OF WHITESTOWN
STANDARD DETAILS FOR WATER MAINS

REVISIONS

NO.	DESCRIPTION	DATE	BY

THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

SCALE CHECK

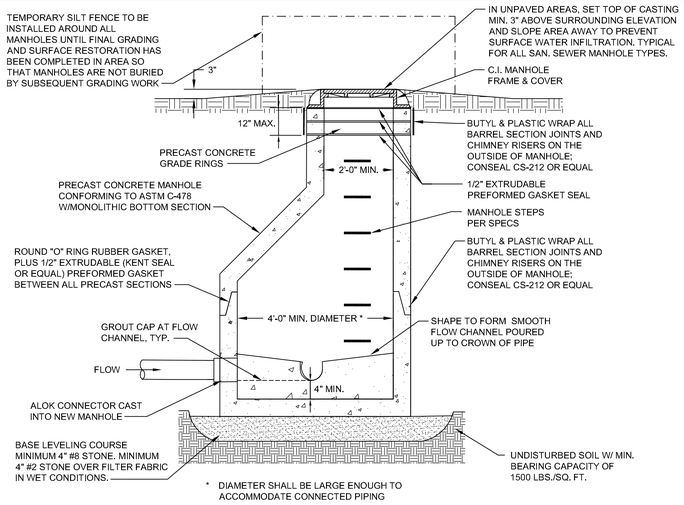
DATE:

SCALE: N.T.S.

SHEET NO. 3

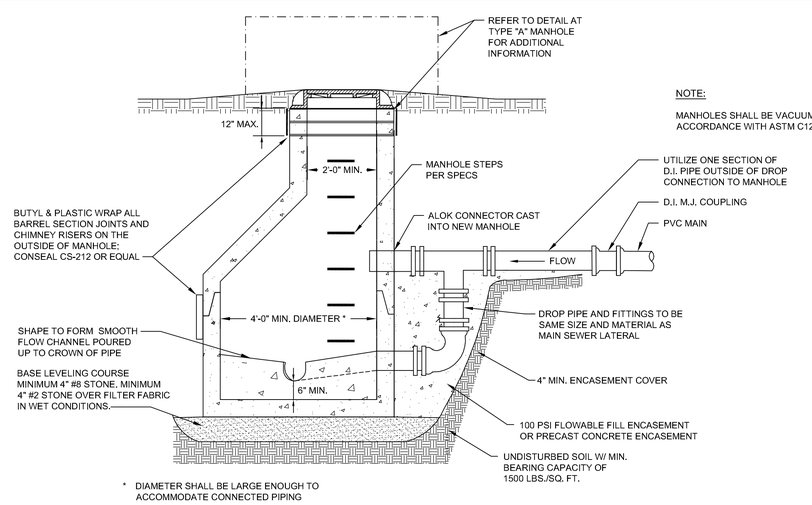
PRINTED: 5/1/2015 @ 8:28AM

FILE NAME: L:\AutoCAD Resources\Indy Sanitary\Client Standards\Whitestown - 12040\9\Details 2015\SHEET_03_WATER.dwg



TYPE "A" MANHOLE
STANDARD PRECAST MANHOLE

NOT TO SCALE

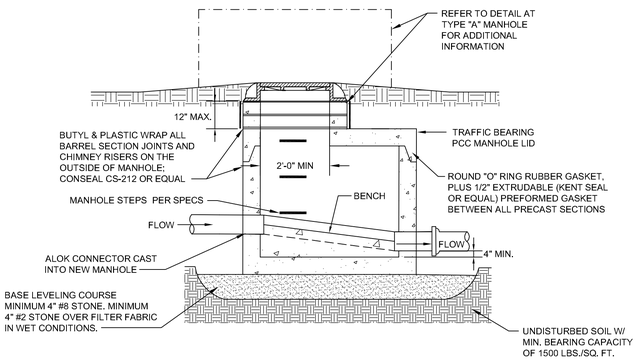


NOTE:

MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C1244TAILS

TYPE "B" MANHOLE
OUTSIDE DROP MANHOLE CONNECTION

NOT TO SCALE



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

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.

GRINDER PUMP
FORCEMAIN TAP DETAIL

NOT TO SCALE

CASTING SCHEDULE

NEENAH FOUNDRY COMPANY	EAST JORDAN IRON WORKS
FRAME AND COVER R1772-C	FRAME AND COVER 1022-3

*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

CASING END SEAL DETAIL

NOT TO SCALE

CENTERING CARRIER PIPE WITH
CASING SPACER (PRESSURE PIPES)

NOT TO SCALE

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

1. CASING SHALL BE WELDED STEEL PIPE, NEW AND UNUSED MATERIAL IN ACCORDANCE WITH ASTM A-139; MINIMUM YIELD STRENGTH = 35,000 PSI.
2. 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.
3. THE INSIDE DIAMETER OF THE CASING SHALL BE A MINIMUM OF SIX (6) INCHES LARGER THAN THE LARGEST DIAMETER OF THE CARRIER PIPE JOINT.
4. THE ABOVE GIVEN CASING SIZES DO NOT APPLY TO RAILROAD CROSSINGS. CONTACT SPECIFIC RAILROAD FOR REQUIREMENTS.

EXISTING MANHOLE CONNECTION DETAIL

NOT TO SCALE

PRECAST ADJUSTING RING

NOT TO SCALE

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TOWN OF WHITESTOWN
STANDARD DETAILS FOR SANITARY SEWERS

REVISIONS

NO.	DESCRIPTION	DATE	BY

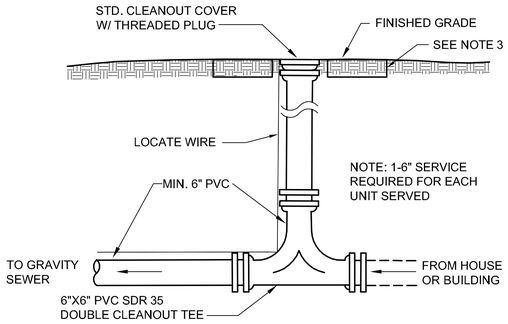
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

SCALE CHECK:

DATE:

SCALE: N.T.S.

SHEET NO. 4



DOUBLE SWEEP CLEANOUT DETAIL

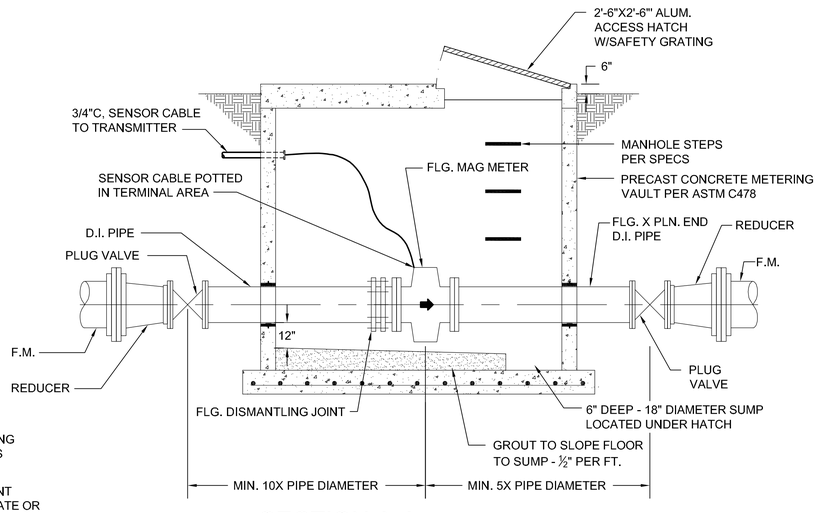
NOT TO SCALE

GENERAL NOTES FOR CLEANOUTS:

1. 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.

2. 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.

3. ON COMMERCIAL AND INDUSTRIAL INSTALLATIONS A 2 FT. X 2 FT. X 4 IN. THICK CONCRETE PAD WITH CAST IRON CLEANOUT COVER (NEENAH R1974 OR EQUAL) SHALL BE PROVIDED AT GRADE IN BOTH PAVED AND UNPAVED AREAS. THE STANDARD PVC THREADED PLUG SHALL BE PROVIDED BELOW THE CAST IRON LID.



SECTION A-A

NOT TO SCALE

SANITARY SEWER TESTING:

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

NOTES:

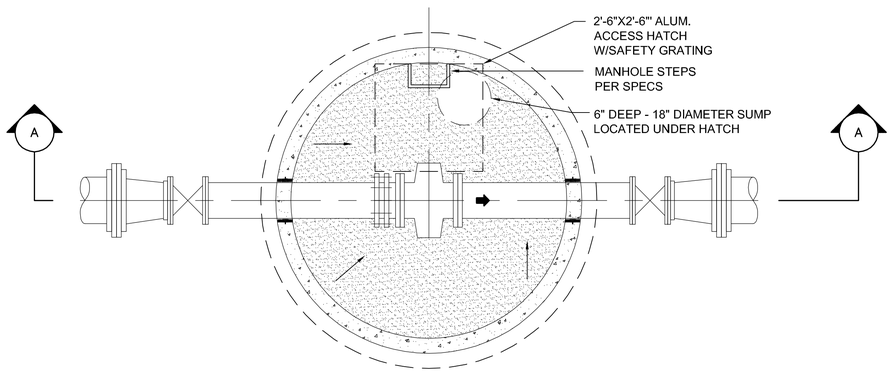
1. ROAD CURB TO BE STAMPED WITH AN "S" TO INDICATE SANITARY SEWER LOCATION.
2. FINISHED FLOOR ELEVATION OF ADJACENT BUILDINGS SHALL BE SET A MINIMUM OF 6" HIGHER THAN THE RIM ELEVATION OF THE UPSTREAM MANHOLE OF THE CONNECTED SEWER MAIN TO PREVENT SANITARY BACKUPS. OTHERWISE, BACKFLOW PREVENTION MUST BE PROVIDED ON THE SERVICE CONNECTIONS.
3. SAMPLE STATION MANHOLES AND GREASE TRAPS SHALL BE INCLUDED ON ALL COMMERCIAL AND INDUSTRIAL SERVICE CONNECTIONS.

FORCE MAIN LOCATION WIRE AND MARKERS:

LOCATION WIRE TO BE INSTALLED ON ALL UNDERGROUND PIPE; COLORED GREEN FOR SANITARY SEWER. 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. ALL JOINTS SHALL BE OVERHAND KNOTTED AND SOLDERED THEN COVERED WITH A WATER PROOF SEAL.

OPEN CUT PIPE INSTALLATION REQUIRES ONE #12 AWG HIGH-STRENGTH COPPER CLAD, STEEL CONDUCTOR LOCATE WIRE.

DIRECT DRILL / BORE PIPE INSTALLATION REQUIRES TWO #12 AWG EXTRA HIGH-STRENGTH COPPER CLAD, STEEL CONDUCTOR LOCATE WIRES (SEE TOWN SPECIFICATIONS).



DETAIL MAG METER VAULT

NOT TO SCALE

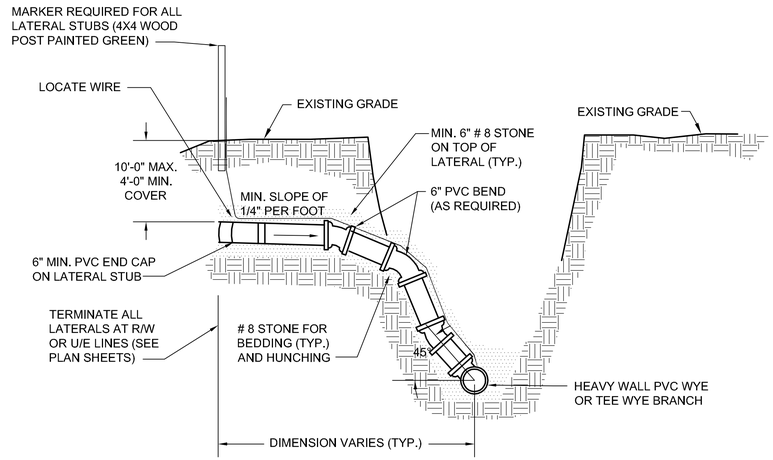
FLOW METER NOTES:

METER REQUIRED ON LIFT STATION DISCHARGES. DETAILS TO BE COORDINATED AND APPROVED WITH TOWN. SEE SHEETS 9 AND 10 FOR LIFT STATION DETAILS.

CONTRACTOR SHALL INSTALL MAG METER AND FORCEMAIN IN A MANNER TO ENSURE FULL PIPE FLOW/SUBMERGENCE AT ALL TIMES FOR PROPER MAG METER OPERATION.

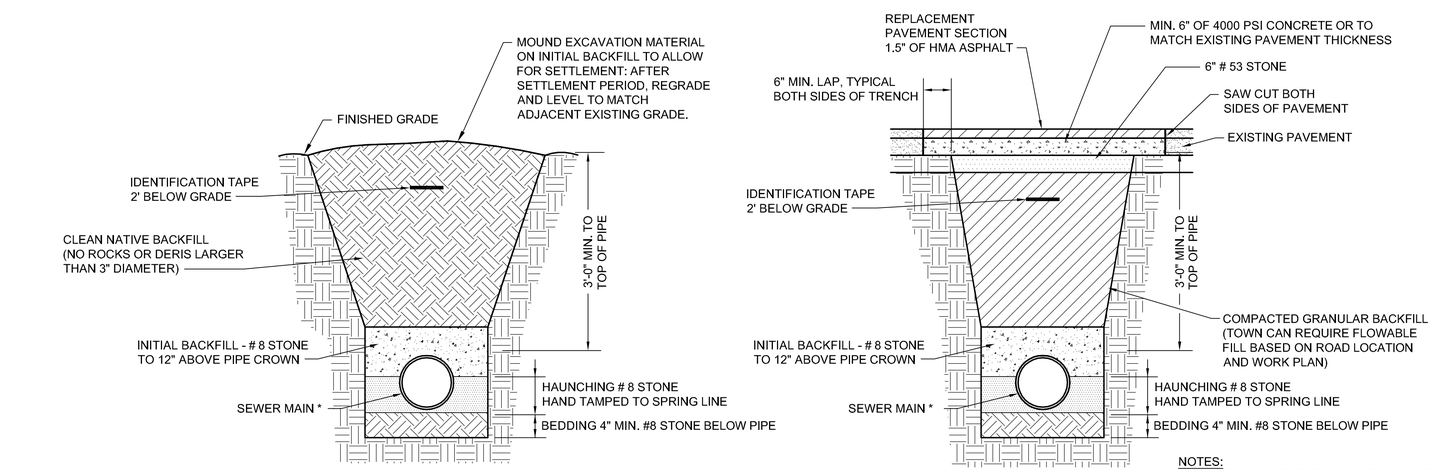
PROVIDE A SPOOL PIECE TO REPLACE MAGMETER BODY IF REMOVAL IS REQUIRED FOR REPAIR/REPLACEMENT.

CONTRACTOR SHALL INSTALL MAG METER VAULT IN A MANNER TO ENSURE THAT A MINIMUM DISTANCE OF 10 PIPE DIAMETER UP STREAM AND 5 PIPE DIAMETER DOWN STREAM OF THE MAG METER IS FREE FROM BENDS AND OTHER APPURTANCES.



SANITARY SEWER SERVICE CONNECTIONS

NOT TO SCALE



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

SEWER TRENCH
UNPAVED AREAS

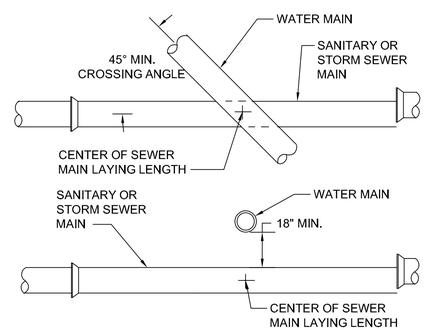
* SDR 26 OR DUCTILE IRON USED FOR SEWER DEEPER THAN 15'.

SEWER TRENCH
UNDER PAVEMENT

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 TO BE USED WITHIN 5' OF ALL PAVED AREAS.

TYPICAL GRAVITY SANITARY SEWER TRENCH DETAILS

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

TOWN OF WHITESTOWN
STANDARD DETAILS FOR SANITARY SEWERS

REVISIONS

NO.	DESCRIPTION	DATE	BY

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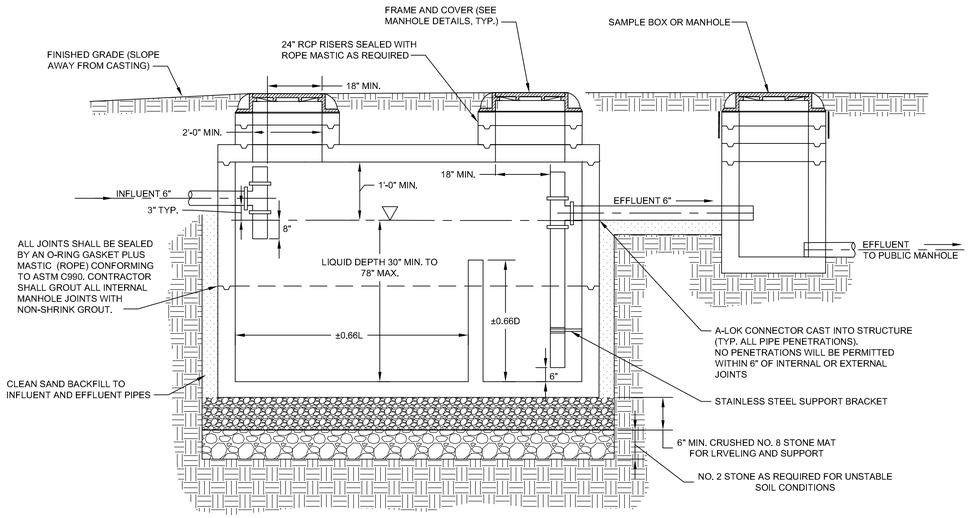
SHEET NO. 5

PRINTED: 5/19/2015 @ 2:09PM

FILE NAME: I:\AutoCAD Resources\Indy Sanitary\Client Standards\Whitestown - 120409\Details 2015\SHEET_05_SANSEWER.dwg

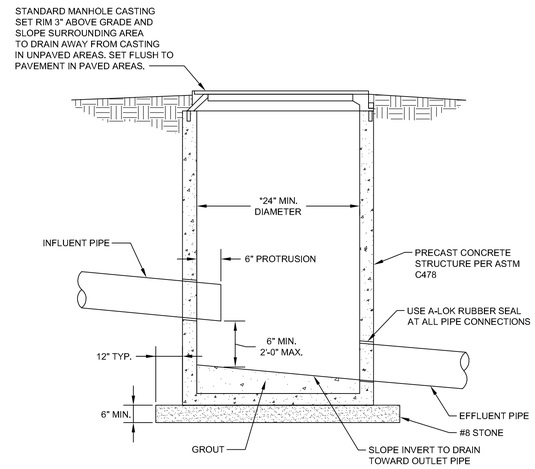
NOTES:

1. GREASE TRAP SHALL CONFORM TO ASTM 858 UTILIZING 4000 PSI CONCRETE. STRUCTURE SHALL BE DESIGNED TO SUPPORT LOADING IN PLANNED LOCATION.
2. EXTERIOR INSTALLATION MUST BE CONCRETE. STEEL GREASE TRAPS SHALL ONLY BE INSTALLED INSIDE BUILDING.
3. CONTRACTOR MAY SUPPLY GREASE TRAP AS MANUFACTURED BY ZURN SERIES Z-1170 OR JAY R. SMITH MANUFACTURING COMPANY SERIES 8000 IF INTERIOR INSTALLATION UTILIZED.
4. GREASE TRAPS MUST BE SIZED ACCORDING TO THE INDIANA STATE BOARD OF HEALTH BULLETIN S.E. 13, "ON-SITE WATER SUPPLY AND WASTEWATER DISPOSAL FOR PUBLIC AND COMMERCIAL ESTABLISHMENT" SECTION 501 "GREASE TRAPS" AND PER LOCAL REQUIREMENTS OR CODES. THE SIZING METHOD FOR ALL STRUCTURES MUST BE APPROVED BY THE TOWN.
5. SHOP DRAWINGS MUST BE SUBMITTED TO THE UTILITY ENGINEER FOR REVIEW AND APPROVAL.
6. TOP OF CASTING SHALL EXTEND 3" MIN. ABOVE FINISHED GRADE.
7. SAMPLE BOX SHALL BE PER TOWN STANDARDS.
8. INTERIOR PIPING SHALL BE 6" (MIN.) PVC.



GREASE TRAP DETAIL

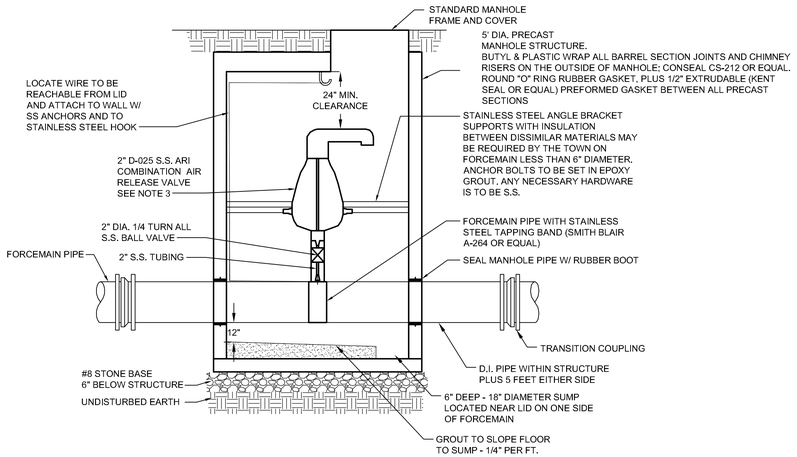
NOT TO SCALE



*NOTE:
WHERE DEPTH OF STRUCTURES EXCEEDS 4'-0", A 4FT. DIAMETER MANHOLE SHALL BE PROVIDED, THE PIPING CONFIGURATION SHALL BE THE SAME. MANHOLE STEPS SHALL BE INCLUDED.

SAMPLE STATION MANHOLE INSTALLATION DETAIL

NOT TO SCALE



NOTES:
1. IF MORE THAN ONE AIR RELEASE VALVE IS INSTALLED WITH A FORCEMAIN, THE DEVELOPER SHALL PROVIDE ONE SPARE AIR RELEASE VALVE TO THE TOWN OF WHITESTOWN.
2. AIR RELEASE VALVES MUST BE INSTALLED AT ALL HIGH SPOTS IN PRESSURE PIPE.
3. THE DESIGN ENGINEER SHALL VERIFY ARV SIZING REQUIRED FOR THE FORCE MAIN SYSTEM BEING PLANNED

AIR RELEASE VALVE VAULT DETAIL

NOT TO SCALE

TOWN OF WHITESTOWN
STANDARD DETAILS FOR SANITARY SEWERS

REVISIONS

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SHEET NO. 6

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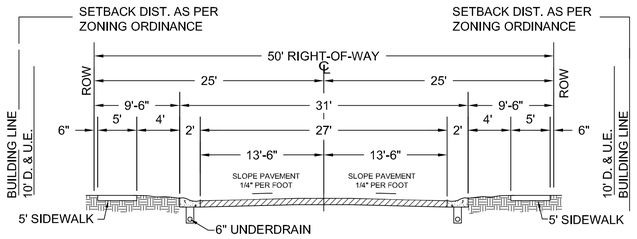
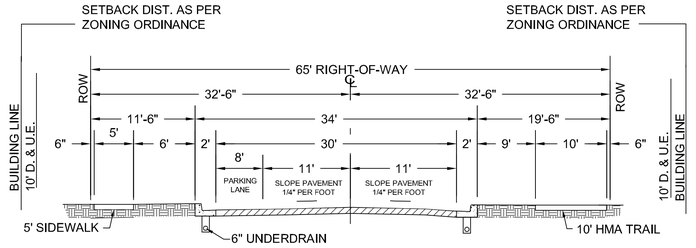


NOTE:
TWO 13'-6" MOVING LANES WITH NO PARKING LANE AS SHOWN ABOVE.
ALTERNATIVE, TWO 11'-0" MOVING LANES WITH ONE 8'-0" PARKING LANE.

LOCAL STREET OR CUL-DE-SAC

NOT TO SCALE

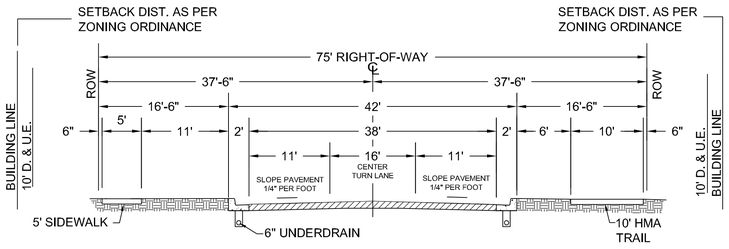
NOTE: PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET A.D.A. (AMERICAN DISABILITY ACT) SPECIFICATIONS.



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

MINOR COLLECTOR STREET

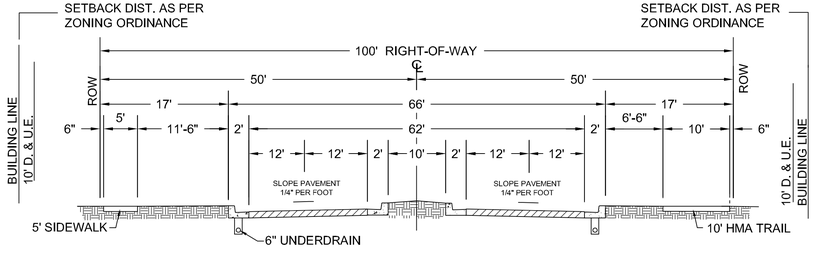
NOT TO SCALE



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

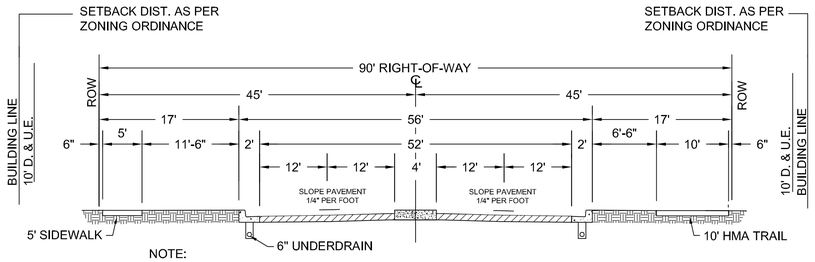
NOT TO SCALE



NOTE:
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

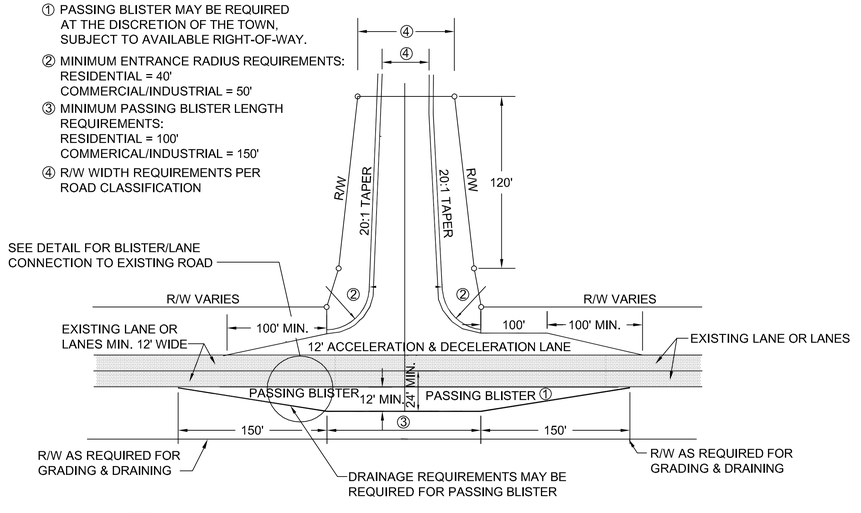


NOTE:
FOUR 12'-0" MOVING LANES, 4'-0" CENTER CURBS, NO PARKING LANES AS SHOWN ABOVE
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

MINOR ARTERIAL STREET

NOT TO SCALE

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'
COMMERICAL/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

REVISIONS

NO.	DESCRIPTION	DATE	BY

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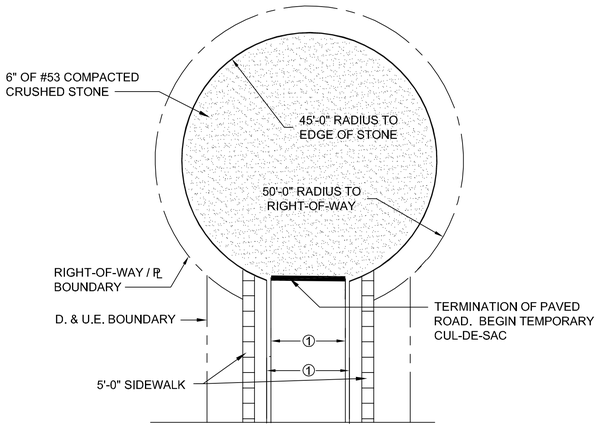
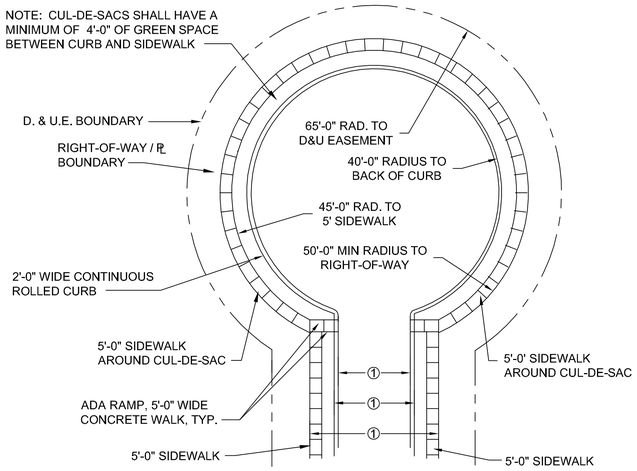


NOTE:
DESIGN AND CONSTRUCTION OF TEMPORARY CUL-DE-SACS MUST PROVIDE APPROPRIATE DRAINAGE TO PREVENT PONDING.

① R/W AND ROAD WIDTH REQUIREMENTS PER ROAD CLASSIFICATION

TEMPORARY CUL-DE-SAC

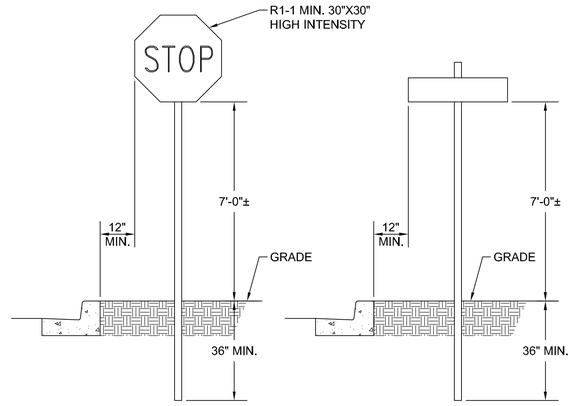
NOT TO SCALE



① R/W AND ROAD WIDTH REQUIREMENTS PER ROAD CLASSIFICATION

RESIDENTIAL CUL-DE-SAC TURNAROUNDS

NOT TO SCALE



STOP SIGN

STREET NAME SIGN

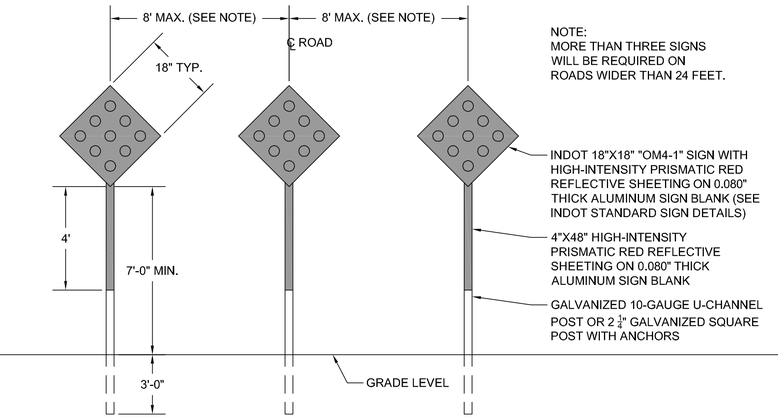
NOTE: STREET NAME SIGNS TO BE LOCATED AT ALL STREETS.

STREET SIGNAGE DETAILS

NOT TO SCALE

TRAFFIC CONTROL AND SIGNAGE NOTES:

1. THE CONTRACTOR/DEVELOPER SHALL PROVIDE AND INSTALL ALL STREET NAME AND ROAD SIGNS PER CURRENT INDOT STANDARDS AND TOWN OF WHITESTOWN DETAILS. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE CURRENT INDIANA MUTCD.
2. MATERIALS SHALL BE FREE OF BURRS, PITS AND BLEMISHES, AND SHALL PRESENT A SMOOTH CLEAN SURFACE.
3. SIGN BLANKS SHALL MEET INDOT SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
4. ALL STREET SIGNS SHALL HAVE GREEN BACKGROUND WITH WHITE LETTERS, NUMBERS AND BORDERS ON EXTRUDED ALUMINUM BLADES.
5. THE STREET NAME LETTERS TO BE ENGINEER GRADE: 9" BLADES WITH 6" NUMBERS, 6" CAPITAL LETTERS AND 4.5" LOWER-CASE LETTERS ON ALL STREETS.
6. STOP SIGNS SHALL BE MIN. 30" HIGH INTENSITY.
7. SIGN BOLTS TO BE PER INDOT SPECIFICATIONS. BOLTS SHALL BE THEFT PROOF.
8. SPEED LIMIT SIGNS SHALL BE 24"X30" HIGH INTENSITY OR ENGINEER GRADE.
9. SIGN POST SHALL BE GALVANIZED U-CHANNEL (3LBS/FT), DRIVEN INTO THE GROUND. NO EXCAVATION SHALL BE DONE TO PLACE SIGNS.
10. LARGER SIGNS MAY BE NEEDED FOR ROAD CLASSIFICATIONS GREATER THAN LOCAL PER INDIANA MUTCD REQUIREMENTS.

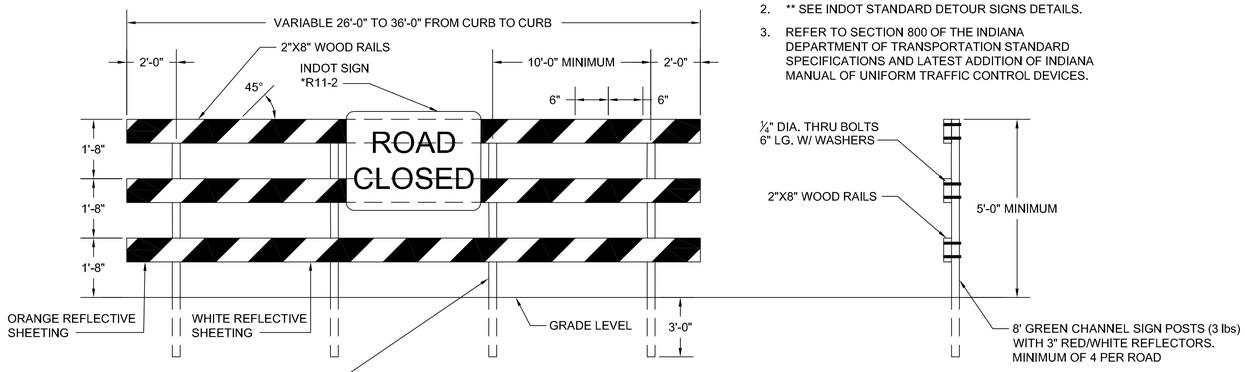


NOTE:
MORE THAN THREE SIGNS WILL BE REQUIRED ON ROADS WIDER THAN 24 FEET.

NOTE:
END OF ROADWAYS (DEAD-ENDS) MUST HAVE CUL-DE-SAC OR HAMMERHEAD TURN-AROUND SUFFICIENT FOR FIRE TRUCKS.

END OF ROADWAY DETAIL

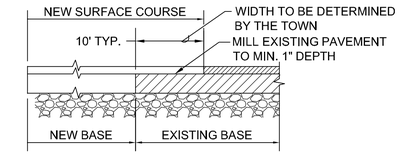
NOT TO SCALE



NOTES:
1. LOCATION OF BARRICADE AS PER PLANS.
2. ** SEE INDOT STANDARD DETOUR SIGNS DETAILS.
3. REFER TO SECTION 800 OF THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND LATEST ADDITION OF INDIANA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

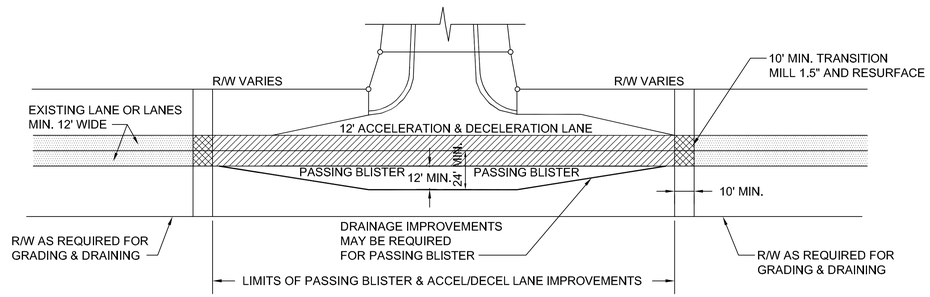
STANDARD BARRICADE

NOT TO SCALE



CONNECTION TO EXISTING STREETS

NOT TO SCALE



ROADWAY IMPROVEMENT REQUIREMENTS AT PRIVATE ENTRANCE:

THE MAIN ROAD SHALL BE RECONSTRUCTED FOR THE ENTIRE LENGTH OF THE PASSING BLISTER AND ACCEL/DECEL LANE IMPROVEMENTS. SAW CUT EXISTING ASPHALT PAVEMENT AT THE LIMITS OF CONSTRUCTION OF THE ACCEL/DECEL LANES AND PASSING BLISTER. ALL EXISTING ASPHALT PAVEMENT SHALL BE REMOVED THROUGH THE LENGTH OF WIDENING. PREPARE SUBGRADE FOR NEW PASSING BLISTER, ACCELERATION & DECELERATION LANES, AND MAIN ROADWAY ACCORDING TO THE REQUIREMENTS OF THE TOWN OF WHITESTOWN STANDARD DETAILS.

ASPHALT PAVING OF THE PASSING BLISTER AND ACCELERATION AND DECELERATION LANES SHALL MEET THE MINIMUM REQUIREMENTS OF THE TOWN OF WHITESTOWN. ASPHALT PAVING OF THE MAIN ROAD LANES SHALL MEET THE MINIMUM REQUIREMENTS OF THE TOWN OF WHITESTOWN FOR ROADWAY PAVING, OR MATCH THE DEPTH OF EXISTING ASPHALT, WHICHEVER IS GREATER.

MILL EXISTING ROAD 1.5" DEEP A MINIMUM OF 10' BEYOND THE ROADWAY REPLACEMENT LIMITS AT EACH END. CONTINUE 1.5" HMA SURFACE PAVING OVER THE MILLED AREA TO PROVIDE A SMOOTH TRANSITION BETWEEN NEW AND EXISTING ASPHALT PAVEMENT. CURBING SHALL BE EXTENDED THE ENTIRE LENGTH OF THE ACCELERATION AND DECELERATION LANES. IMPROVEMENTS SHALL BE MADE AS NECESSARY TO PROVIDE APPROPRIATE DRAINAGE WHERE THE PASSING BLISTER IS CONSTRUCTED. ADDITIONAL RIGHT OF WAY SHALL BE ACQUIRED AS NECESSARY TO CONSTRUCT PROPER DRAINAGE IMPROVEMENTS AT PASSING BLISTER.

REQUIRED ON ALL ARTERIAL AND COLLECTOR STREETS AT THE TOWN'S DISCRETION.

ROADWAY IMPROVEMENTS AT NEW DEVELOPMENT ENTRANCES

NOT TO SCALE

TOWN OF WHITESTOWN
STREET DESIGN STANDARDS

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE:

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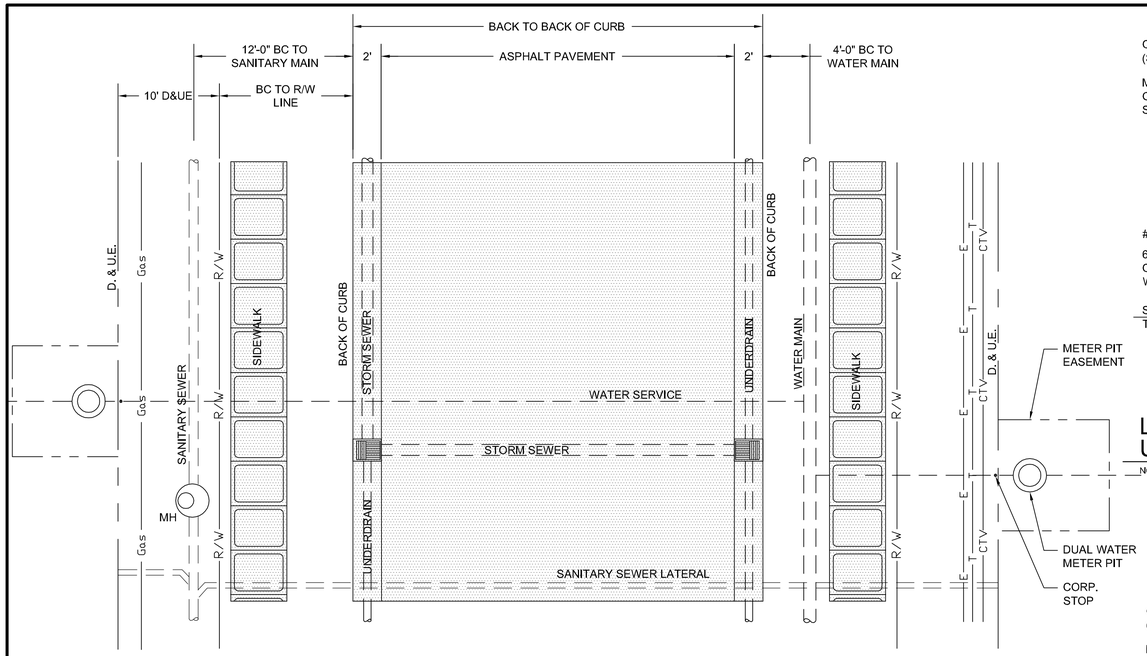
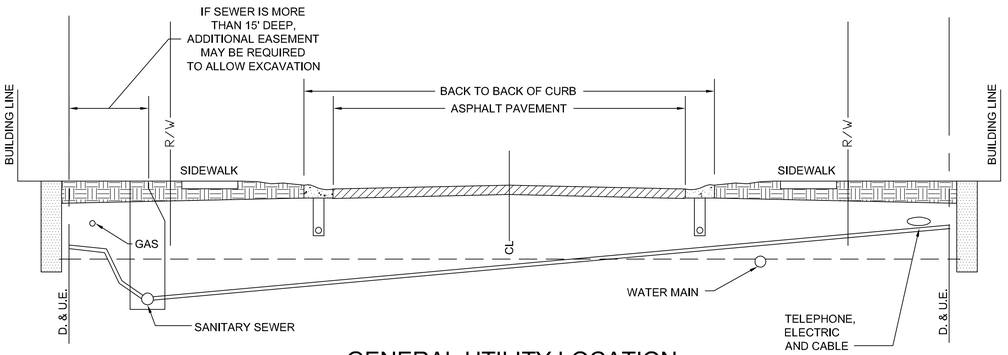
SHEET NO. 8

PRINTED: 5/1/2015 @ 8:40AM

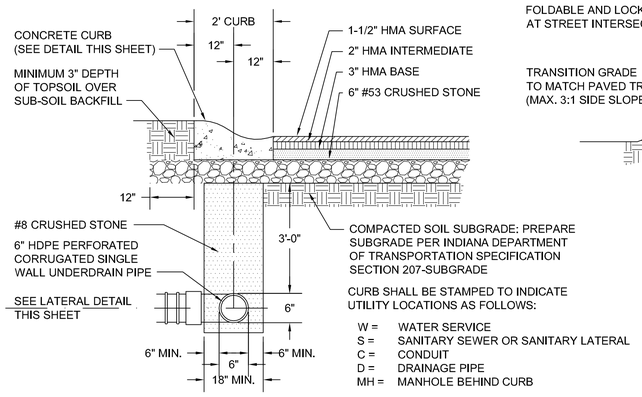
FILE NAME: L:\AutoCAD Resources\Indy Sanitary\Client Standards\Whitestown - 120409\Details 2015\SHEET_08_ROAD-DETS.dwg





GENERAL UTILITY LOCATION PLAN AND SECTION

NOT TO SCALE

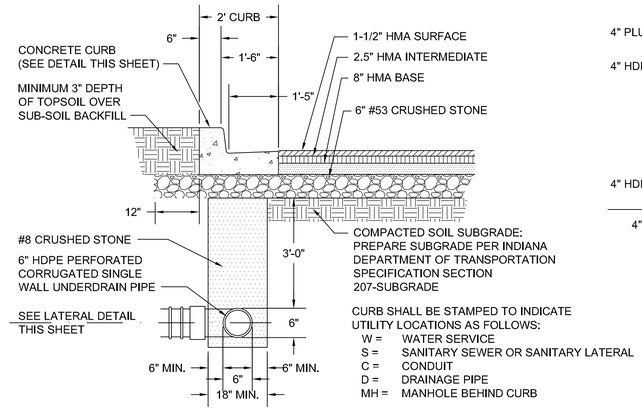


CURB SHALL BE STAMPED TO INDICATE UTILITY LOCATIONS AS FOLLOWS:

W = WATER SERVICE
S = SANITARY SEWER OR SANITARY LATERAL
C = CONDUIT
D = DRAINAGE PIPE
MH = MANHOLE BEHIND CURB

LOCAL STREET MINIMUM PAVEMENT AND UNDERDRAIN DETAIL: RESIDENTIAL DEVELOPMENTS

NOT TO SCALE

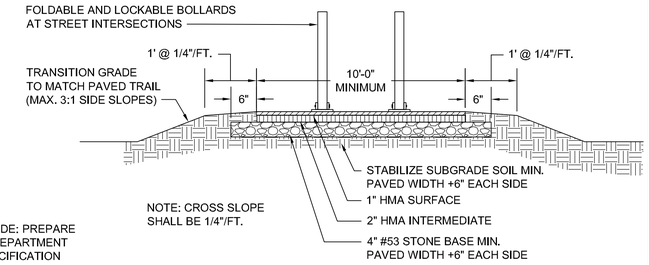


CURB SHALL BE STAMPED TO INDICATE UTILITY LOCATIONS AS FOLLOWS:

W = WATER SERVICE
S = SANITARY SEWER OR SANITARY LATERAL
C = CONDUIT
D = DRAINAGE PIPE
MH = MANHOLE BEHIND CURB

LOCAL STREET MINIMUM PAVEMENT AND UNDERDRAIN DETAIL: COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

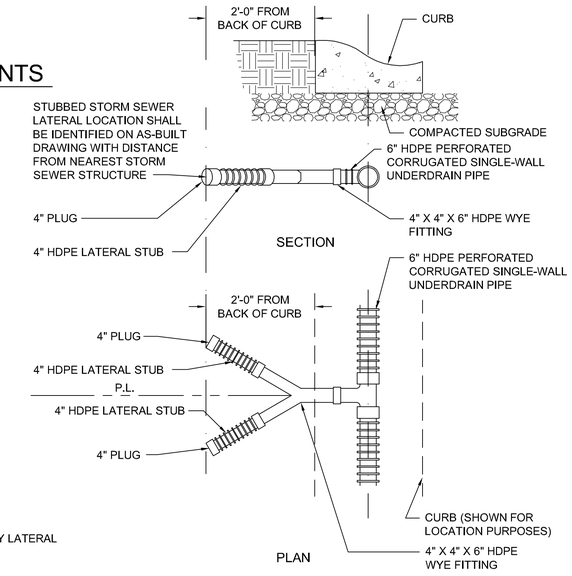
NOT TO SCALE



* BOLLARDS SHALL HAVE BREAKAWAY FEATURE THAT ALLOWS THEM TO BE COLLAPSED WITH THE BUMPER OF AN EMERGENCY VEHICLE.

TYPICAL TRAIL CROSS SECTION

NOT TO SCALE



STORM SEWER LATERAL CONNECTION AT ROAD UNDERDRAIN

NOT TO SCALE

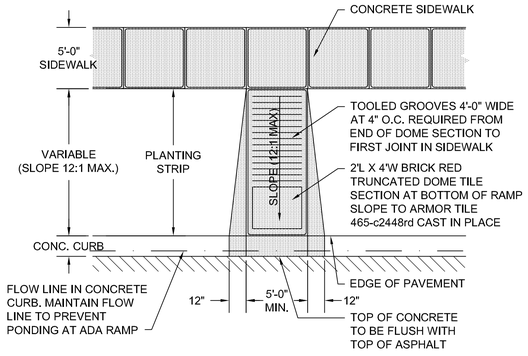
NOTE: ONLY ALLOWED WHERE REAR YARD DRAIN CONNECTION IS NOT POSSIBLE

STORM SEWER LATERAL REQUIREMENTS:

1. ROUTE ALL PROPERTY LATERALS TO REAR YARD STORM SEWERS WHEN POSSIBLE.
2. ALL SUMP PUMP DISCHARGE PIPES SHALL BE CONNECTED TO STORM SEWER SYSTEM. "DAY-LIGHTING" OF SUMP PUMP DISCHARGE PIPES ALLOWED WITH TOWN PERMISSION.
3. SUMP PUMP DISCHARGE PIPE MUST BE CONNECTED TO LATERAL WITH AN APPROPRIATE FITTING.

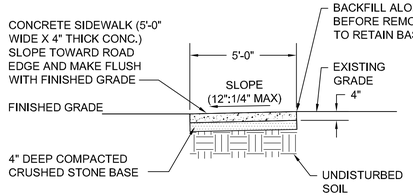
NOTES:

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.



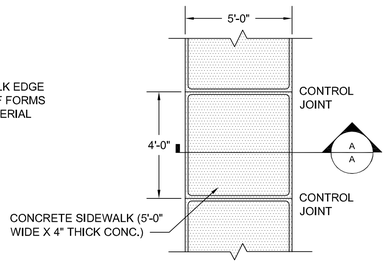
SIDEWALK ADA RAMP DETAIL

NOT TO SCALE



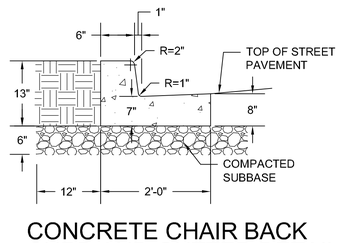
SIDEWALK SECTION A-A

NOT TO SCALE



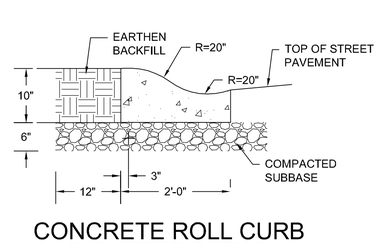
TYPICAL SIDEWALK DETAIL

NOT TO SCALE



CONCRETE CHAIR BACK CURB AND GUTTER DETAIL

NOT TO SCALE



CONCRETE ROLL CURB AND GUTTER DETAIL

NOT TO SCALE

TOWN OF WHITESTOWN
STREET DESIGN STANDARDS

REVISIONS

NO.	DESCRIPTION	DATE

THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

SCALE CHECK: 1" = 8"

DATE:

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SHEET NO. 9

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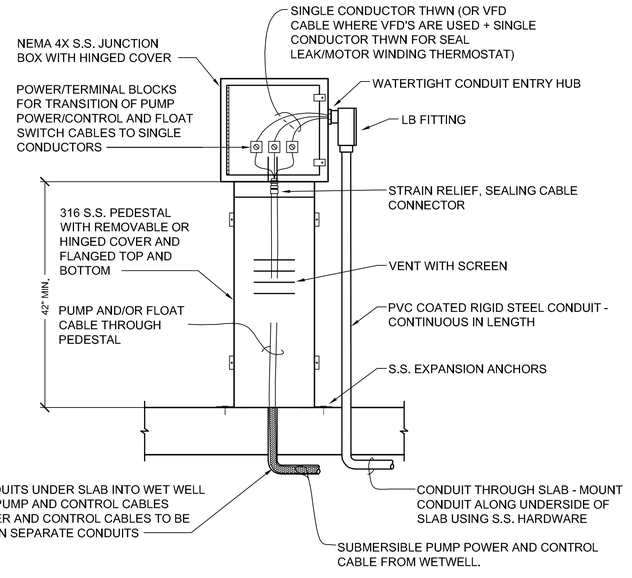
FILE NAME: L:\AutoCAD Resources\Indy Sanitary\Client Standards\Whitestown - 120409\Details 2015\SHEET_09_ROAD DETS.dwg

LIFT STATION DESIGN DATA

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

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

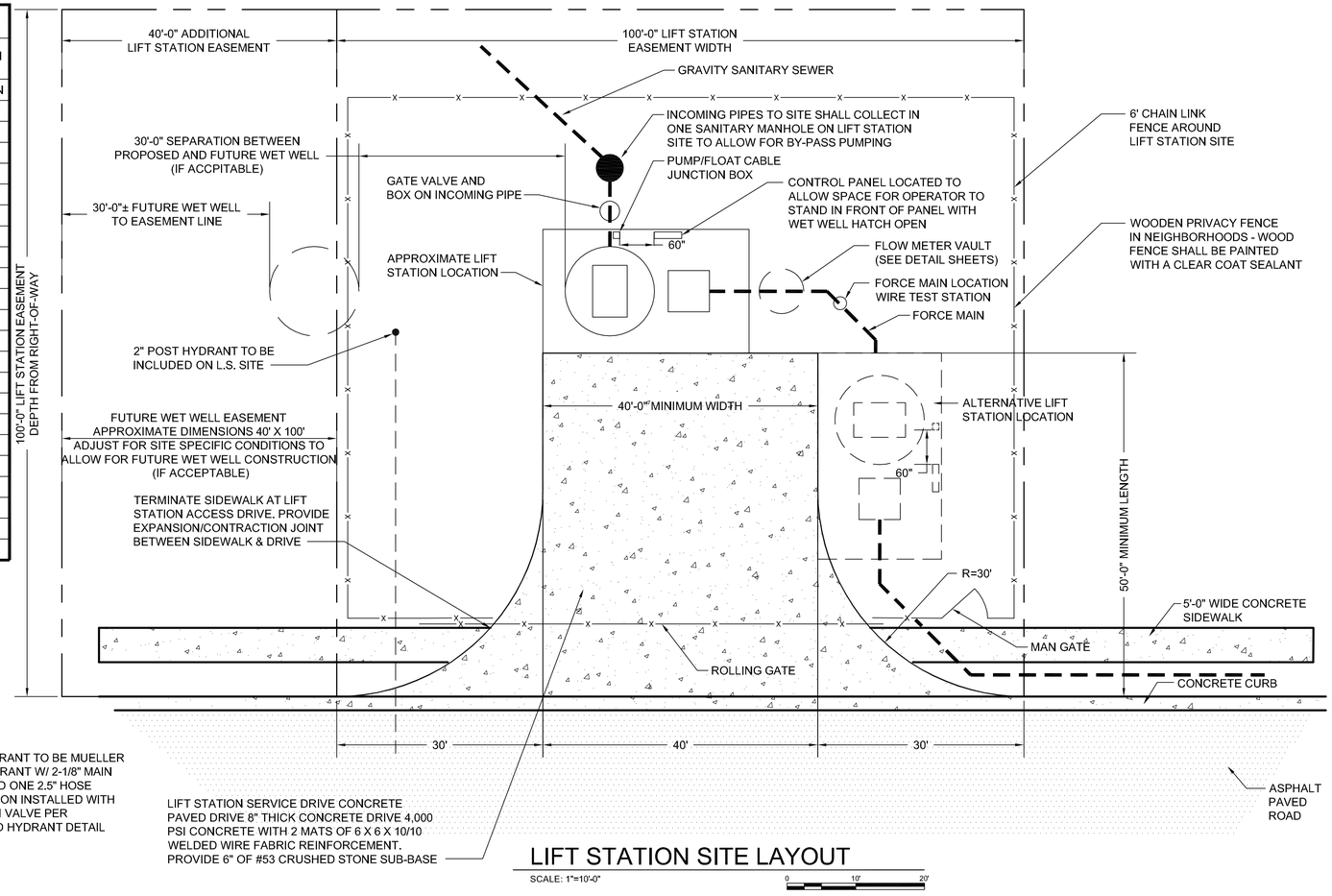


NOTES:

1. JUNCTION BOX SHALL BE SIZED AS REQUIRED TO ACCOMODATE POWER/TERMINAL BLOCKS AND NUMBER OF CABLES.
2. PROVIDE ADEQUATE POWER AND TERMINAL BLOCKS FOR TRANSITION OF PUMP POWER/CONTROL OR FLOAT CABLES TO SINGLE CONDUCTORS.
3. CONVERT MULTITRODE FACTORY CABLE TO 24 STRAND/12 CONDUCTOR CABLE (GARLAND PART NO. TEM134802008) AT JUNCTION BOX AND EXTEND 12 CONDUCTOR CABLE IN 1" C TO PUMP CONTROL PANEL.
4. PROVIDE STRAIN RELIEF CABLE GRIP AND SEALING CABLE CONNECTORS FOR ALL CABLES ENTERING WETWELL.
5. SEALING CONNECTORS SHALL BE RATED FOR CLASS I, DIVISION 2, GROUP D HAZARDOUS LOCATIONS AND SHALL BE HAWKE 710, OR EQUAL.
6. GROUND LUG IS NOT SHOWN, BUT IS REQUIRED.
7. CONTRACTOR SHALL PROVIDE CONDUIT UNDER SLAB TO ALLOW ROUTING OF PUMP POWER/CONTROL CABLES, TRANSDUCER CABLE AND CAPACITANCE PROBE FROM WETWELL TO JUNCTION BOX.
8. CONTRACTOR SHALL FURNISH AND INSTALL SEALING CONNECTORS FOR PUMP POWER/CONTROL CABLE, TRANSDUCER CABLE AND LEVEL SENSING PROBE CABLE.
9. MANUFACTURER SUPPLIED CABLE FROM PRESSURE TRANSDUCER TO JUNCTION BOX.

PUMP/FLOAT CABLE WETWELL JUNCTION BOX

NOT TO SCALE

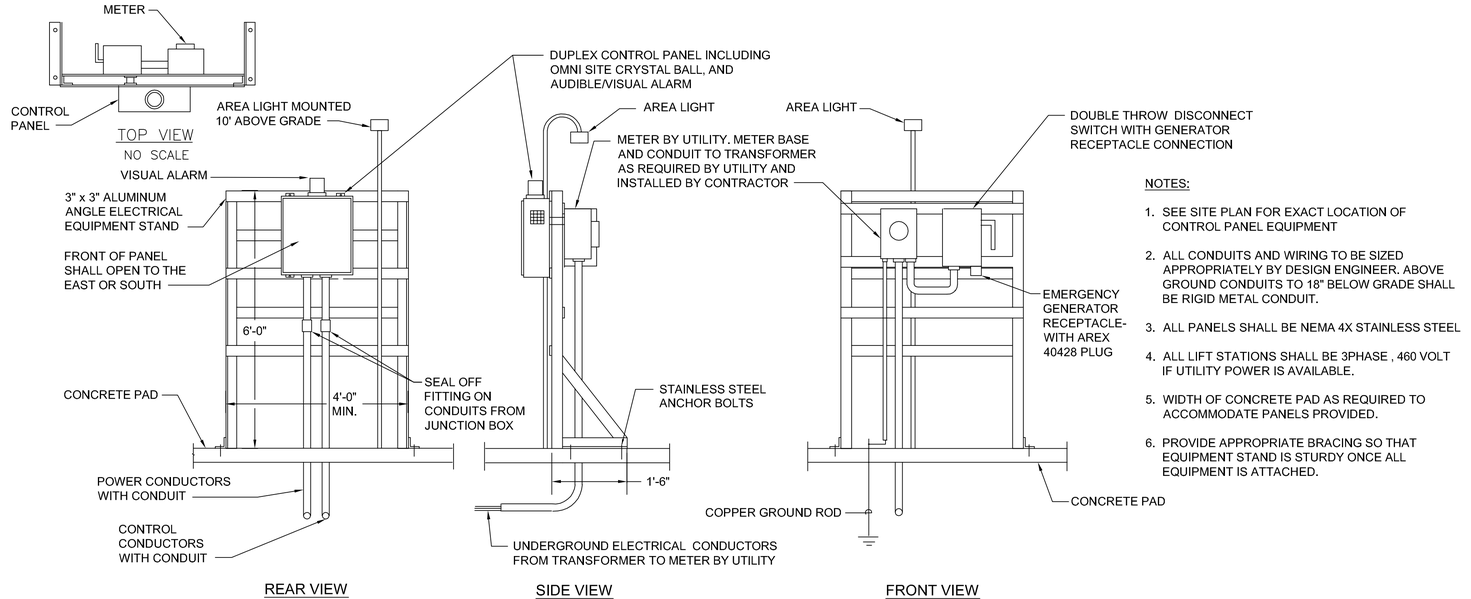


NOTE:
POST HYDRANT TO BE MUELLER POST HYDRANT W/ 2-1/8" MAIN VALVE AND ONE 2.5" HOSE CONNECTION INSTALLED WITH ISOLATION VALVE PER STANDARD HYDRANT DETAIL

LIFT STATION SERVICE DRIVE CONCRETE PAVED DRIVE 8" THICK CONCRETE DRIVE 4,000 PSI CONCRETE WITH 2 MATS OF 6 X 6 X 10/10 WELDED WIRE FABRIC REINFORCEMENT. PROVIDE 6" OF #53 CRUSHED STONE SUB-BASE

LIFT STATION SITE LAYOUT

SCALE: 1"=10'-0"



NOTES:

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

ELECTRICAL DIAGRAM

NOT TO SCALE

TOWN OF WHITESTOWN
LIFT STATION LAYOUT AND
ELELECTRICAL DIAGRAM

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

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SHEET NO. 10

PRINTED: 5/20/2015 @ 11:03AM

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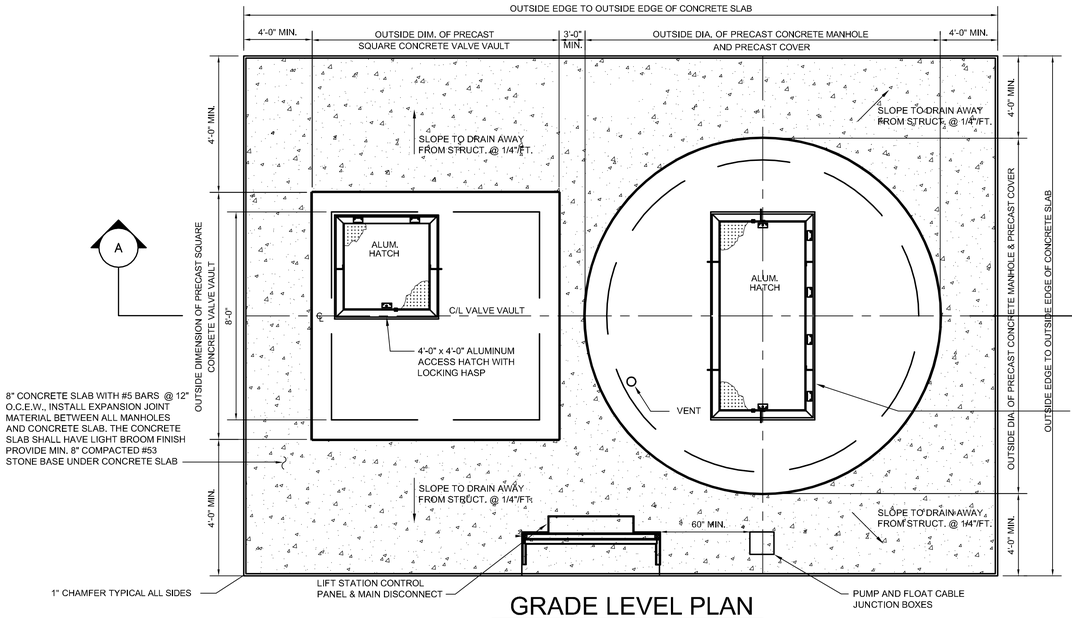
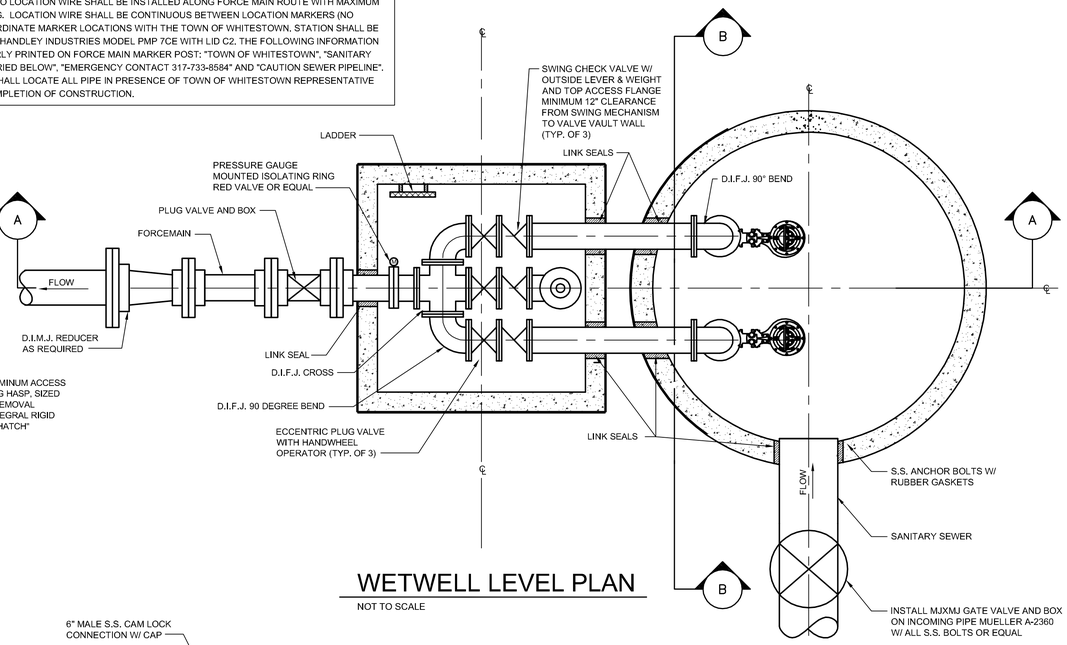
FORCE MAIN LOCATION WIRE SHALL BE TERMINATED AT A FORCE MAIN MARKER POST INSTALLED ADJACENT TO THE VALVE VAULT. THE POST MARKER SHALL PROVIDE A TERMINAL CONNECTION POINT FOR FORCE MAIN LOCATION WIRE CONNECTION. FORCE MAIN MARKERS WITH TERMINAL CONNECTIONS TO LOCATION WIRE SHALL BE INSTALLED ALONG FORCE 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 HANDLEY 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.



GRADE LEVEL PLAN

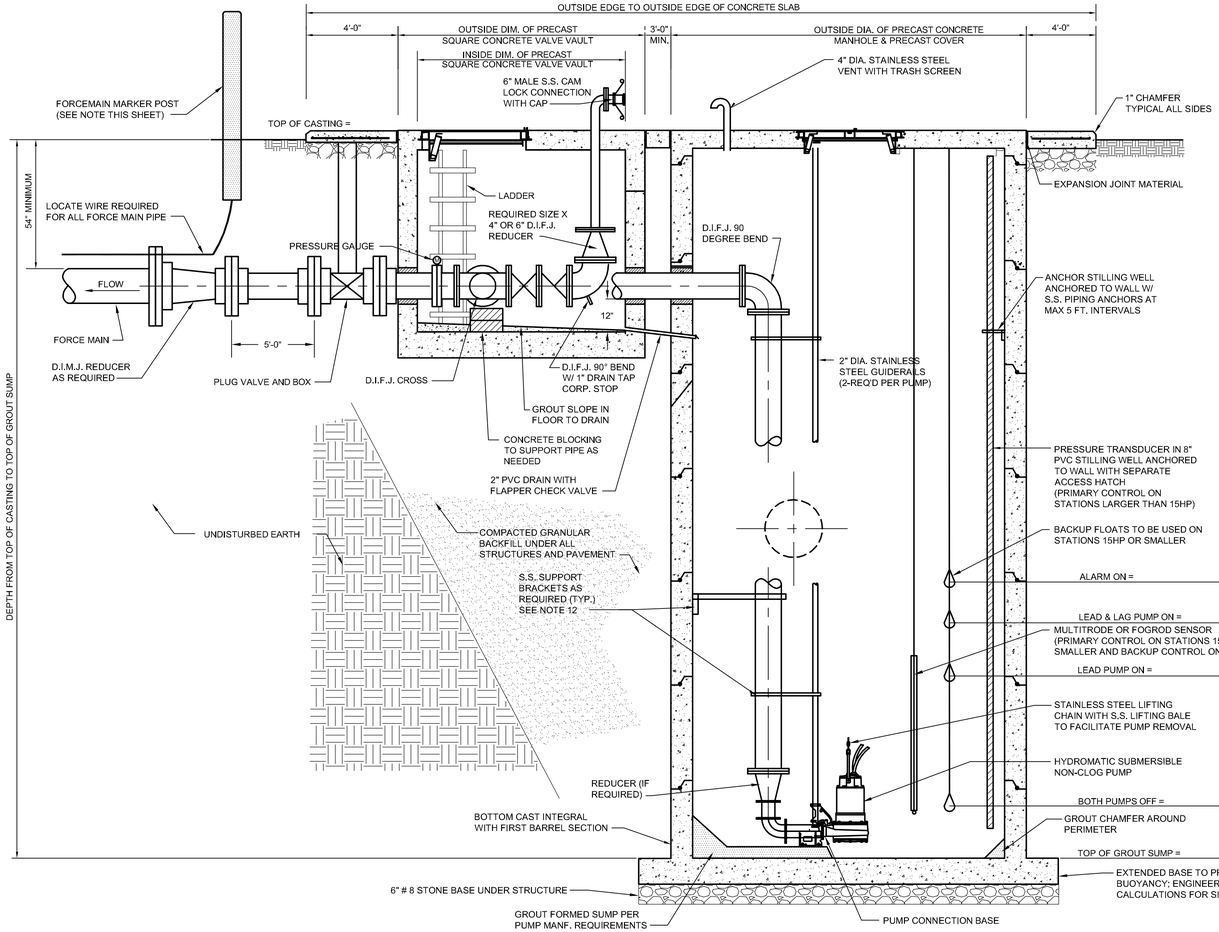
NOT TO SCALE

DOUBLE LEAF ALUMINUM ACCESS HATCH W/ LOCKING HASP, SIZED FOR EASY PUMP REMOVAL PROVIDE WITH INTEGRAL RIGID ALUMINUM "SAFE-HATCH"



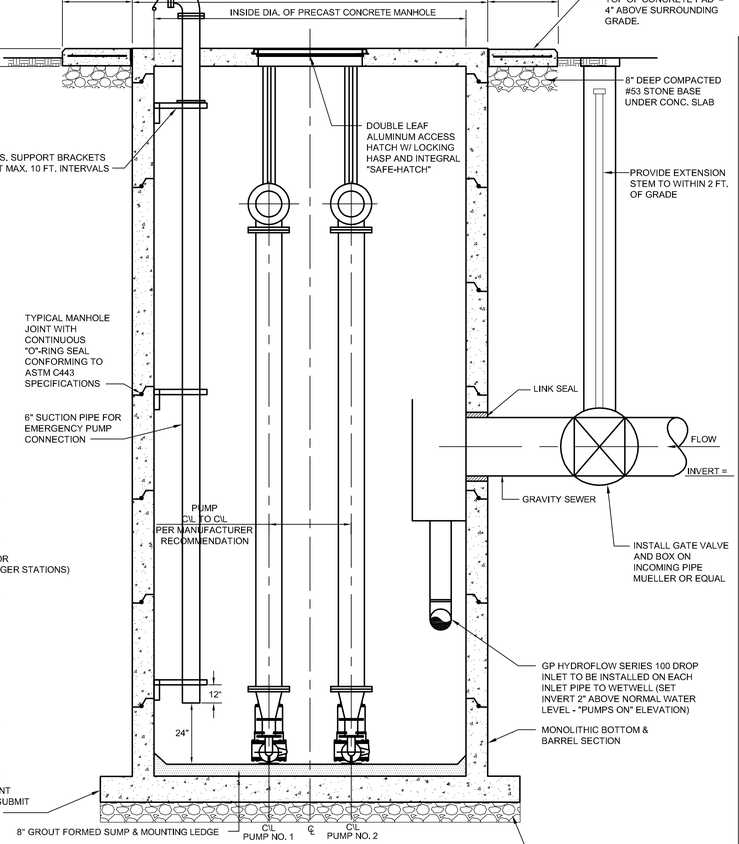
WETWELL LEVEL PLAN

NOT TO SCALE



SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

LIFT STATION REQUIREMENTS:

1. WET WELL INTERIOR SURFACES, INCLUDING THE TOP, SHALL BE COATED ENTIRELY WITH THE FOLLOWING MATERIALS:
   A. APPLY DIRECT TO PREPARED PRECAST CONCRETE SURFACE: EPOXY COATING MAINSTAY OR EQUAL PER MANUFACTURER'S RECOMMENDATIONS.
   B. ALL PIPING SHALL BE PAINTED WITH;
   1ST COAT - TNEMEC N14013 POTAPOX PLUS
   4.0 - 6.0 MILS
   2ND COAT - TNEMEC HIGH BUILD TNEME-TAR
   16.0 - 20.0 MILS
   OR EQUAL
2. THE VALVE VAULT PIPING AND VALVES AS WELL AS ABOVE GRADE PIPING SHALL BE PAINTED AS FOLLOWS:
   1ST COAT - TNEMEC 91 H2O HYDRO ZINC
   2.5 - 3.5 MILS
   2ND COAT - TNEMEC N69 HIGH BUILD
   EPOXOLINE II
   4.0 - 6.0 MILS
   3RD COAT - SAME AS 2ND
   2.0-3.0 MILS
3. ALL MUD AND GRAVEL MUST BE REMOVED FROM THE LIFT STATION AND ALL SEWER LINES BEFORE TESTING OF THE STATION CAN BE PERFORMED.
4. EXFILTRATION TESTING REQUIRED FOR LIFT STATION WET WELLS.
   A. PLUG ALL INLET LINES BEFORE STARTING PRESOAK PERIOD.
   B. PRESOAK PERIOD SHALL BE AT LEAST FOUR (4) HOURS.
   C. FOLLOWING PRESOAK PERIOD, FILL STRUCTURE TO A DEPTH OF 6" BELOW THE TOP STRUCTURE JOINT.
   D. TEST PERIOD SHALL BE TWO (2) HOURS. ANY DETECTABLE LEAKAGE SHALL BE CAUSE FOR REJECTION AND THE LEAKAGE SHALL BE CORRECTED AND RETESTING ACCOMPLISHED.
5. ALL BOLTS AND HARDWARE SHALL BE STAINLESS STEEL.
6. ENGINEER SHALL VERIFY THAT PUMPS CAN BE REMOVED FROM WETWELL VIA GUIDE RAILS THROUGH HATCH OPENING.
7. DEPENDING 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.
8. ALL PIPING WITH 5 FT. AND INSIDE LIFT STATION SHALL BE DUCTILE IRON, INTERIOR JOINTS SHALL BE FLANGED; EXTERIOR JOINTS SHALL BE MJ.
9. CONTRACTOR MUST PROVIDE TOWN OF WHITESTOWN - WHITESTOWN MUNICIPAL UTILITIES WITH SHUT OFF WRENCH FOR ALL NECESSARY VALVES.
10. TRANSDUCER SHALL BE USED AS THE PRIMARY CONTROLLER.
11. VALVES SHALL BE DE ZURIK VALMATIC OR EQUAL.
12. ANCHOR PUMP DISCHARGE PIPE TO WALL AT MID POINT. IF LENGTH EXCEEDS 20FT., PROVIDE 2 ANCHOR BRACKETS EVENLY SPACED. ANCHOR GUIDE RAILS PER MANUFACTURES RECOMMENDATIONS.

WHITESTOWN

TOWN OF WHITESTOWN
LIFT STATION GENERAL CONFIGURATION

REVISIONS

NO.	DESCRIPTION	DATE
		BY

THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

SCALE CHECK:

DATE:

SCALE: N.T.S.

SHEET NO. 11

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