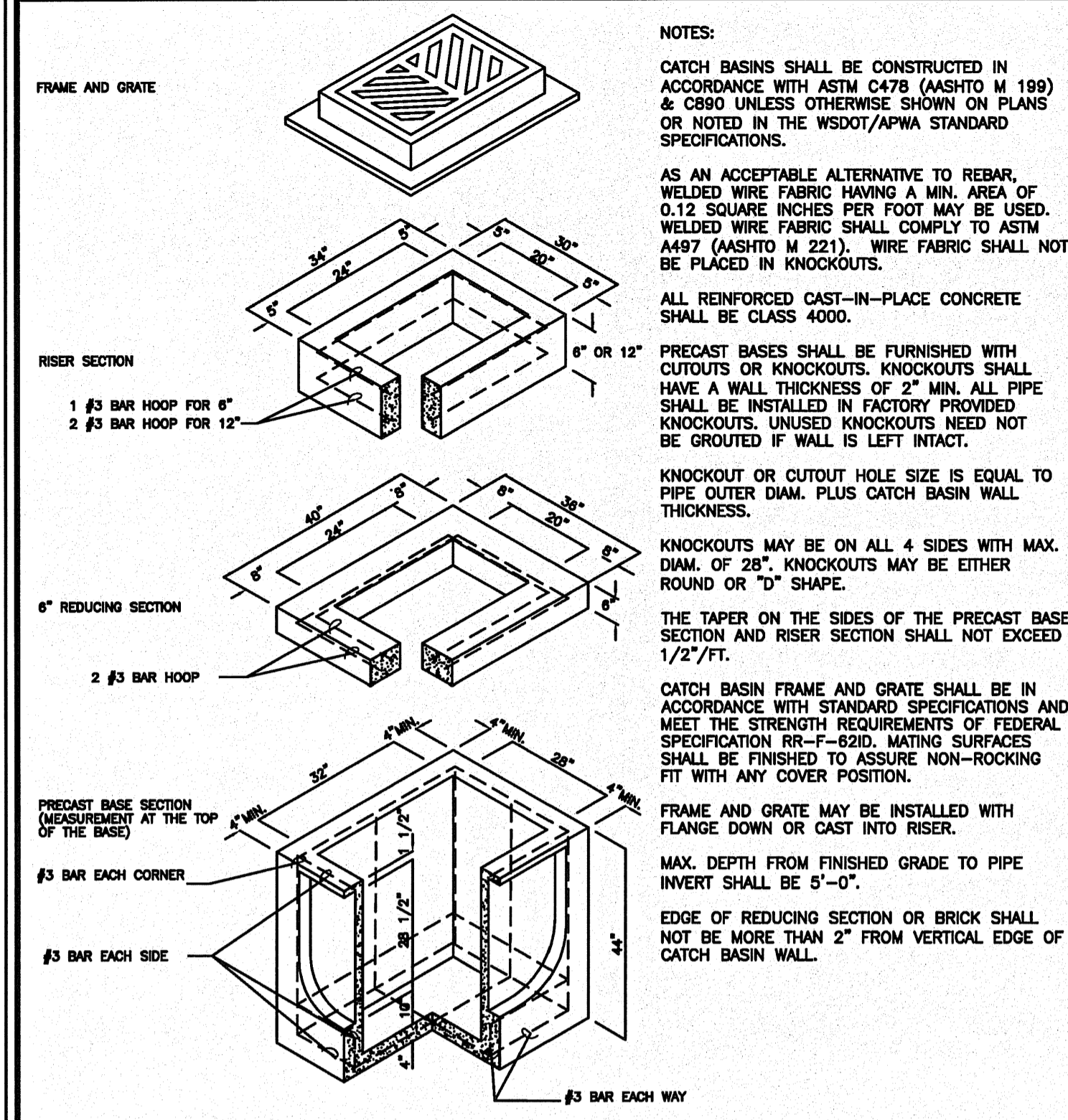


PORTION OF THE SW 1/4 OF THE NW 1/4 OF SEC. 33, TWN. 24N., RGE. 5E., W.M.



**NOTES:**

CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (ASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.

AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (ASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.

ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.

PRECAST BASES SHALL BE FURNISHED WITH CUTOUPS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUDED IF WALL IS LEFT INTACT.

KNOCKOUT OR CUTOUP HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.

KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAM. OF 28". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.

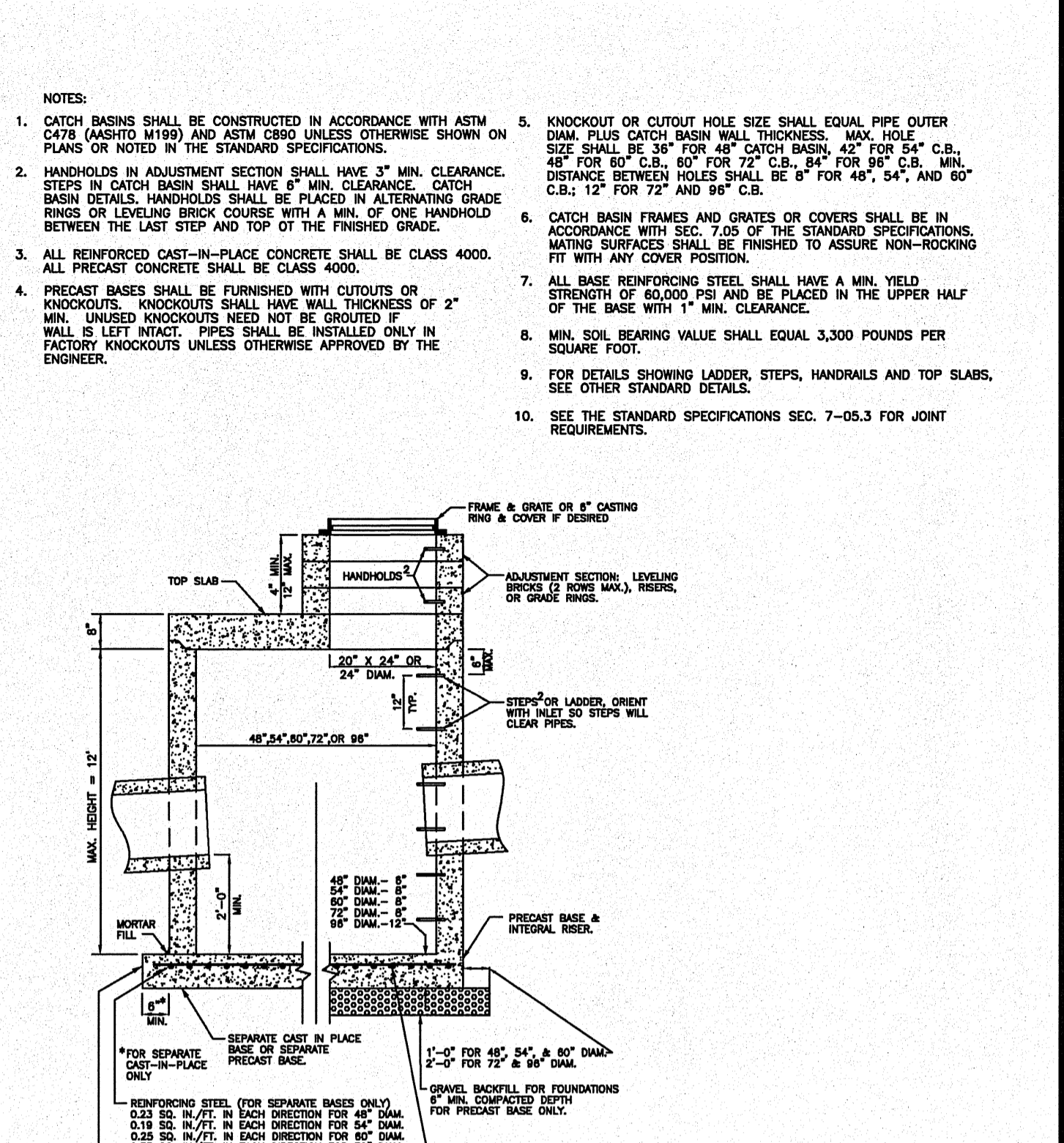
THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2%.

CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-820. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.

FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.

MAX. DEPTH FROM FINISHED GRADE TO PIPE INVERT SHALL BE 5'-0".

EDGE OF REDUCING SECTION OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.



**NOTES:**

- CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (ASHTO M199) AND ASTM C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
- HANDHOLES IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 6" MIN. CLEARANCE. CATCH BASIN DETAILS, HANDHOLES SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND TOP OF THE FINISHED GRADE.
- ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUPS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUDED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- KNOCKOUT OR CUTOUP HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS. MAX. HOLE SIZE SHALL BE 36" FOR 48" CATCH BASIN, 42" FOR 54" C.B., 48" FOR 60" C.B., 50" FOR 72" C.B., 54" FOR 84" C.B., MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" C.B.; 12" FOR 72" AND 84" C.B.
- CATCH BASIN FRAMES AND GRATES OR COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 OF THE STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
- ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
- MIN. SOIL BEARING VALUE SHALL EQUAL 3,000 POUNDS PER SQUARE FOOT.
- FOR DETAILS SHOWING LADDERS, STEPS, HANDRAILS AND TOP SLABS, SEE OTHER STANDARD DETAILS.
- SEE THE STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.

**CITY OF NEWCASTLE**  
CATCH BASIN - TYPE 1L

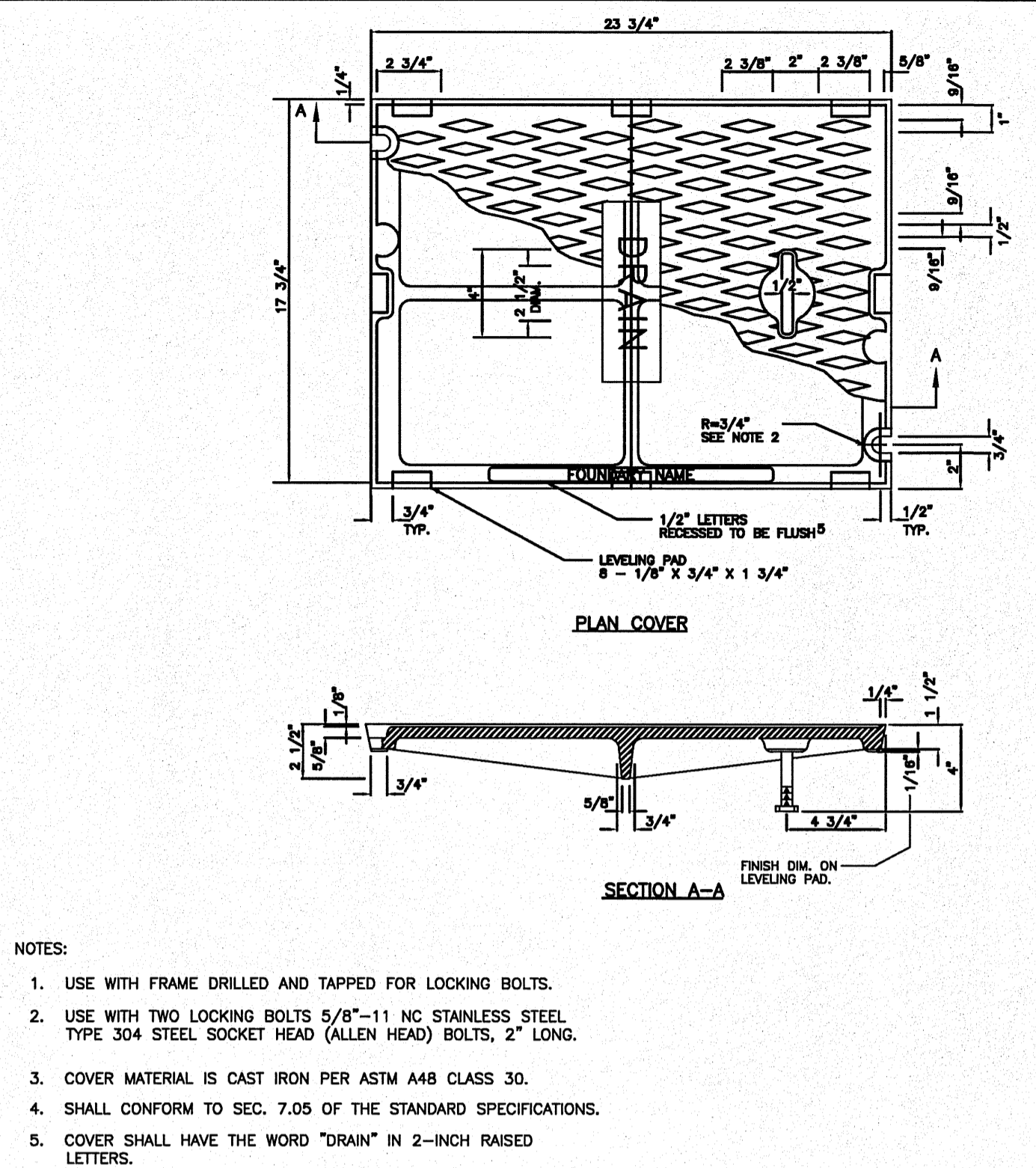
APPROVED: **ROGER KUYKENDALL, P.E.** 8/1/2000 DATE  
BY CITY

DWG. NO. SW-2

**CITY OF NEWCASTLE**  
CATCH BASIN TYPE 2  
48", 54", 60", 72", & 96"

APPROVED: **ROGER KUYKENDALL, P.E.** 8/1/2000 DATE  
BY CITY

DWG. NO. SW-3



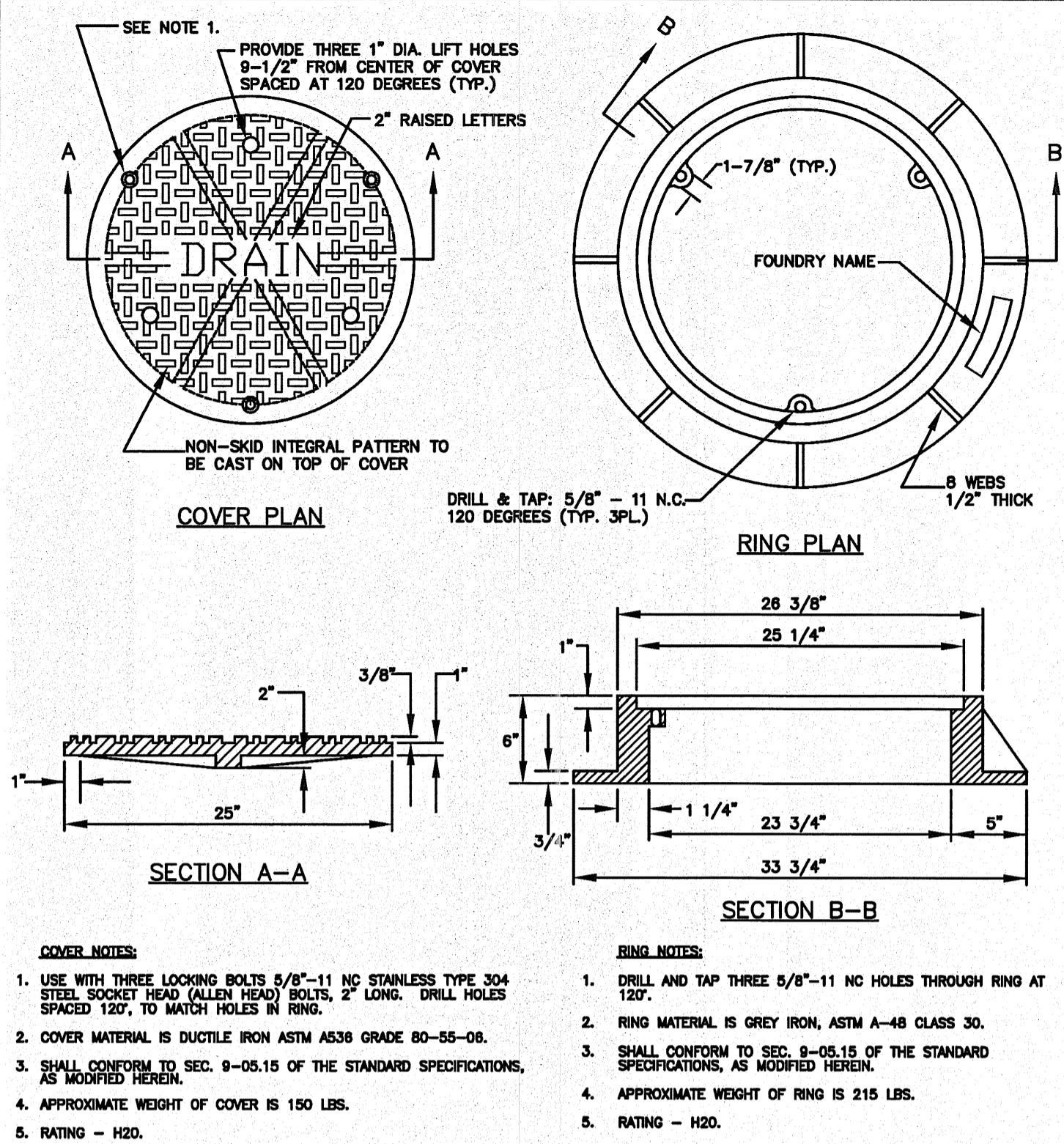
**NOTES:**

- USE WITH FRAME DRILLED AND TAPPED FOR LOCKING BOLTS.
- USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS STEEL TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG.
- COVER MATERIAL IS CAST IRON PER ASTM A48 CLASS 30.
- SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
- COVER SHALL HAVE THE WORD "DRAIN" IN 2-INCH RAISED LETTERS.

**CITY OF NEWCASTLE**  
SOLID STORM DRAIN COVER

APPROVED: **ROGER KUYKENDALL, P.E.** 8/1/2000 DATE  
BY CITY

DWG. NO. SW-4



**COVER NOTES:**

- USE WITH THREE LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. DRILL HOLES SPACED 120° TO MATCH HOLES IN RING.
- COVER MATERIAL IS DUCTILE IRON PER ASTM A538 GRADE 60-55-08.
- SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS, AS MODIFIED HEREIN.
- APPROXIMATE WEIGHT OF COVER IS 150 LBS.
- RATING - H20.

**RING NOTES:**

- DRILL AND TAP THREE 5/8"-11 NC HOLES THROUGH RING AT 120°.
- RING MATERIAL IS GREY IRON, ASTM A-48 CLASS 30.
- SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS, AS MODIFIED HEREIN.
- APPROXIMATE WEIGHT OF RING IS 215 LBS.
- RATING - H20.

**CITY OF NEWCASTLE**  
24" BOLT-LOCKING MANHOLE RING & COVER

APPROVED: **ROGER KUYKENDALL, P.E.** 8/1/2000 DATE  
BY CITY

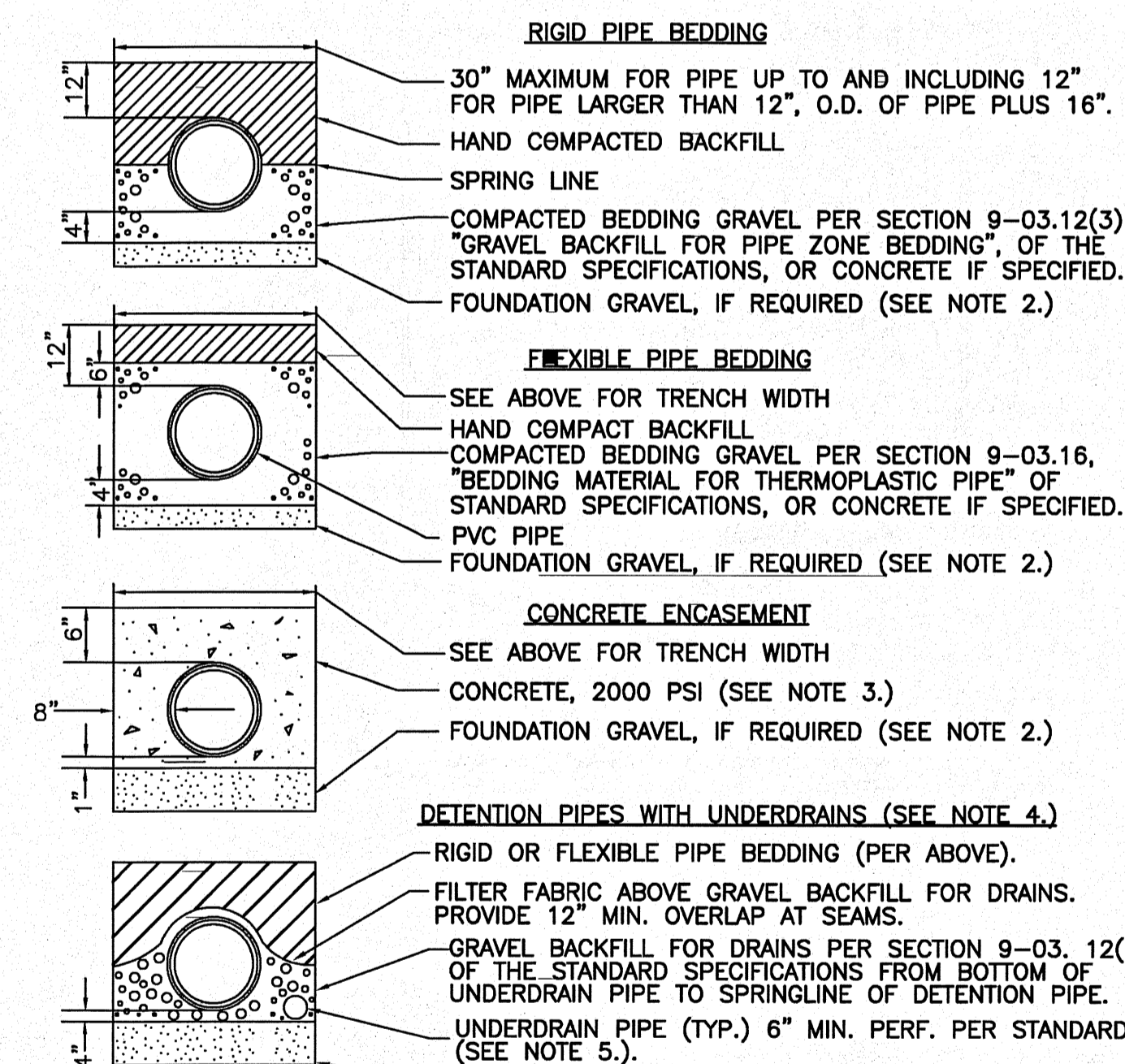
DWG. NO. SW-19

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEWCASTLE MUNICIPAL CODE (NMC), NEWCASTLE PUBLIC WORKS STANDARDS, AND THE CITY OF NEWCASTLE'S CONDITIONS OF APPROVAL. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO THE CITY.
- THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THE NEWCASTLE DEPARTMENT OF PUBLIC WORKS ENGINEERING REVIEW CHECKLIST. SOME ELEMENTS MAY HAVE BEEN OVERLOOKED OR MISSED BY THE PLAN REVIEWER. ANY VARIANCE FROM ADOPTED STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
- APPROVAL OF THIS ROAD, GRADING, AND DRAINAGE PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION (E.G., DOMESTIC WATER CONVEYANCE, SEWER CONVEYANCE, GAS, ELECTRICAL, ETC.).
- BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRECONSTRUCTION MEETING MUST BE HELD BETWEEN THE PUBLIC WORKS DEPARTMENT, COMMUNITY DEVELOPMENT DEPARTMENT, THE APPLICANT, AND THE APPLICANT'S CONSTRUCTION REPRESENTATIVE.
- A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- CONSTRUCTION NOISE SHALL BE LIMITED IN ACCORDANCE WITH NMC; NORMALLY THIS IS 7A.M. TO 7 P.M. ON WEEKDAYS AND 9 A.M. TO 6 P.M. ON WEEKENDS AND LEGAL HOLIDAYS.
- IT SHALL BE THE APPLICANT'S/CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS NECESSARY BEFORE INITIATING OFFSITE WORK WITHIN THE ROAD RIGHT-OF-WAY.
- FRANCHISED UTILITIES OR OTHER INSTALLATIONS THAT ARE NOT SHOWN ON THESE APPROVED PLANS SHALL NOT BE CONSTRUCTED UNLESS A PERMIT HAS BEEN ISSUED BY THE CITY OF NEWCASTLE OR ITS DESIGNATED REPRESENTATIVE AGENCY.
- DATUM SHALL BE NAVD 1988 UNLESS OTHERWISE APPROVED BY THE CITY.
- GROUNDWATER SYSTEM CONSTRUCTION SHALL BE WITHIN A RIGHT-OF-WAY OR APPROPRIATE DRAINAGE EASEMENT, BUT NOT UNDERNEATH THE ROADWAY SECTION, UNLESS SPECIFICALLY APPROVED BY THE CITY. ALL GROUNDWATER SYSTEMS MUST BE CONSTRUCTED IN ACCORDANCE WITH SECTION B1 3.02 OF THE APWA STANDARD SPECIFICATIONS.
- ALL UTILITY TRENCHES SHALL BE BACKFILLED AND COMPACTED TO 95 PERCENT MAXIMUM DENSITY, MODIFIED PROCTOR.
- ALL ROADWAY SUBGRADE SHALL BE BACKFILLED AND COMPACTED TO 95 PERCENT MAXIMUM DENSITY (WSDOT 2-06.3).
- OPEN CUTTING OF EXISTING ROADWAYS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH THE NEWCASTLE PUBLIC WORKS STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. SECTION 1-07.23, "TRAFFIC CONTROL," OF THE STANDARD SPECIFICATIONS SHALL APPLY IN ITS ENTIRETY.
- CALL UNDERGROUND UTILITY LOCATE LINE 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

DRAINAGE NOTES

- ALL FEES, BONDING, AND PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO THE CITY PRIOR TO THE PRECONSTRUCTION MEETING.
- ALL STORM MAINS AND RETENTION/DETENTION AREAS SHALL BE STAKED FOR GRADE AND ALIGNMENT BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK, AND CURRENTLY LICENSED IN THE STATE OF WASHINGTON TO DO SO.
- STORM DRAIN PIPELINES SHALL BE INSTALLED TO THE FAR PROPERTY LINE(S) TO SERVE ADJACENT TRIBUTARY AREAS A MAY BE WARRANTED. THEY SHALL BE APPROPRIATELY SIZED TO ACCOMMODATE FLOWS AS FURTHER IDENTIFIED HEREIN. PIPES SHALL BE DESIGNED TO FACILITATE A MINIMUM 2 FEET/SECOND FLOW UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT 7-02.3(1). THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL, AND ANY REQUIRED PIPE BEDDING TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.
- STEEL PIPE SHALL BE GALVANIZED AND HAVE ASPHALT TREATMENT #1 OR BETTER INSIDE AND OUTSIDE.
- ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK SHALL HAVE SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.
- ALL CATCH BASIN GRATES SHALL CONFORM TO CITY OF NEWCASTLE DRAWINGS, AND SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS" AND "PROPERTY OF CITY OF NEWCASTLE".
- ALL DRIVEWAY CULVERTS LOCATED WITHIN THE RIGHT-OF-WAY SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH. CULVERTS SHALL HAVE BEVELED END SECTIONS TO MATCH THE SIDE SLOPE (SEE CITY OF NEWCASTLE DRAWINGS).
- ROCK FOR EROSION PROTECTION FOR ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO A DEPTH OF ONE FOOT, AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4"-8" ROCK/40-70% PASSING; 2"-4" ROCK/30-40% PASSING; AND 2" MINUS ROCK/10-20% PASSING. INSTALLATION SHALL BE IN ACCORDANCE WITH CITY OF NEWCASTLE DRAWINGS.
- DRAINAGE OUTLETS (STUB-OUTS) SHALL BE PROVIDED FOR EACH INDIVIDUAL LOT OR BUILDING, EXCEPT FOR THOSE LOTS APPROVED FOR INFILTRATION BY THE CITY. STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
  - EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO SERVICE ALL FUTURE ROOF DOWNSPOUTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAIN NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE FLOWING, POSITIVE DRAINAGE TO AN APPROVED STORMWATER CONVEYANCE SYSTEM OR AN APPROVED OUTFALL LOCATION.
  - OUTLETS ON EACH LOT SHALL BE MARKED WITH A FIVE FOOT HIGH, 2"x4" STAKE MARKED "STORM" OR "DRAIN". THE STUB-OUT SHALL EXTEND ABOVE SURFACE LEVEL, BE VISIBLE, AND BE SECURED TO THE STAKE.
  - PIPE MATERIAL SHALL BE A MINIMUM OF 4 INCHES IN DIAMETER, PERFORATED, SMOOTH INTERIOR, RIGID DRAIN PIPE. A METALLIC TRACER WIRE SHALL BE ATTACHED THE ENTIRE LENGTH OF THE PIPE.
  - INDIVIDUAL LOTS STUB-OUTS MAY CONNECT DIRECTLY TO THE ROADWAY STORM DRAINAGE SYSTEM, PROVIDED, THAT SAID CONNECTION IS MADE THROUGH USE OF A MANUFACTURED TEE SPECIFICALLY FOR THIS PURPOSE. IF STUB-OUTS MUST PASS ACROSS INDIVIDUAL LOTS, THEY SHALL BE LOCATED IN DRAINAGE EASEMENTS.
  - THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO UTILITIES (E.G., POWER, GAS, PHONE, CABLE).
  - ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOMEOWNER.



**NOTES:**

- COMPACTED CRUSHED SURFACING TOP COURSE PER SECTION 9-03.9(3), "CRUSHED SURFACING", OF THE STANDARD SPECIFICATIONS CAN ALSO BE USED AS BEDDING GRAVEL.
- EXCAVATE UNSTABLE MATERIAL DOWN TO FIRM SOIL AND REPLACE WITH FOUNDATION GRAVEL PER SECTION 9-03.9(1), "BALLAST", OF THE STANDARD SPECIFICATIONS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING PIPE TO PREVENT FLOTATION DURING CONCRETE PLACEMENT.
- WHEN THE DESIGN OF TANKS OR PIPES DOES NOT TAKE INTO ACCOUNT BUOYANCY, UNDERDRAINS SHALL BE PROVIDED.
- PROVIDE CLEANOUTS ON UNDERDRAIN PIPE, EVERY 100 FEET, AND AT BENDS OR JUNCTIONS.

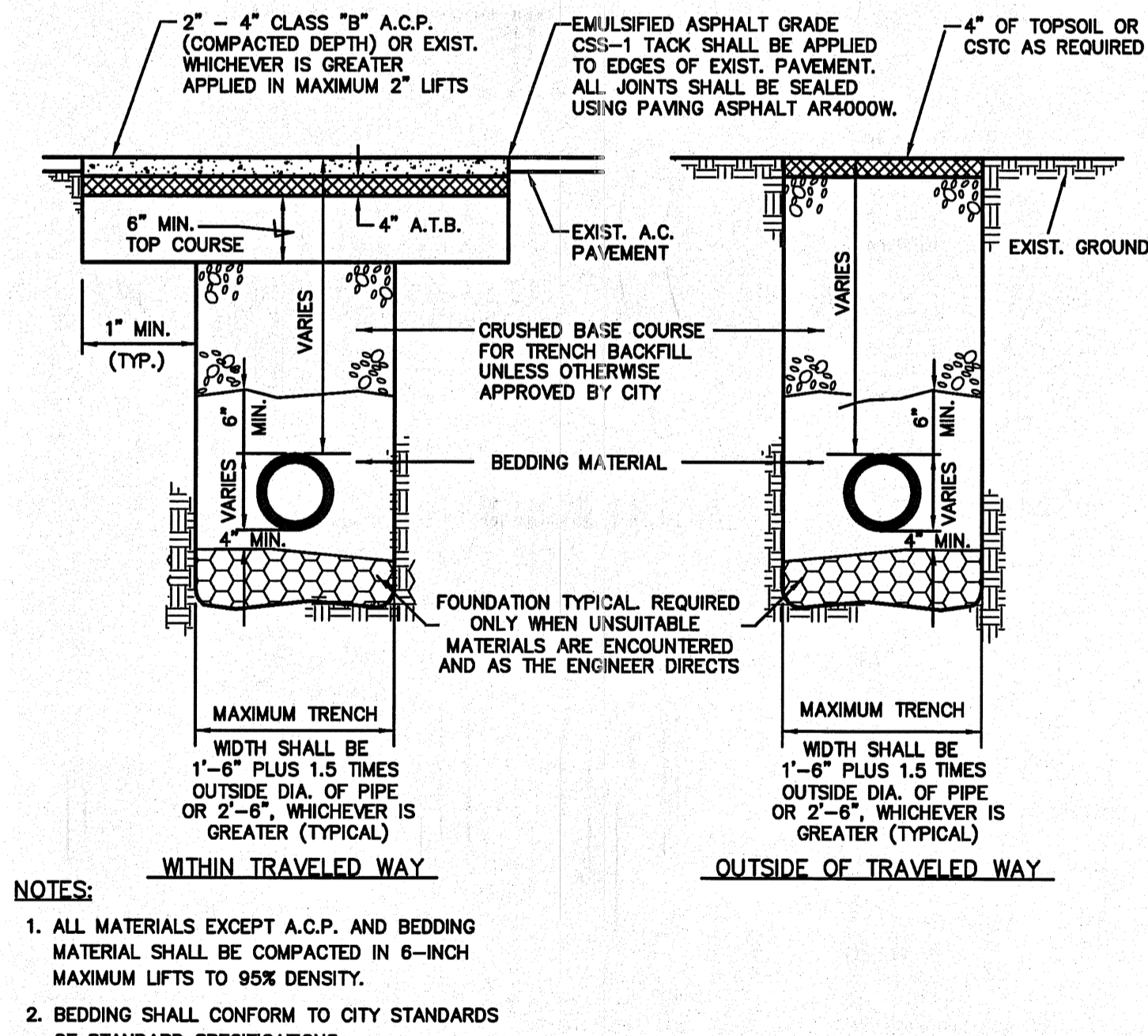
**CITY OF NEWCASTLE**  
PIPE BEDDING DETAIL

APPROVED: **ROGER KUYKENDALL, P.E.** 8/1/2000 DATE  
BY CITY

DWG. NO. SW-14

STRUCTURAL NOTES

- THESE PLANS ARE APPROVED FOR STANDARD ROAD AND DRAINAGE IMPROVEMENTS ONLY. PLANS FOR STRUCTURES SUCH AS BRIDGES, VAULTS, ROCKERIES AND RETAINING WALLS REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
- ROCKERIES ARE CONSIDERED TO BE A METHOD OF BANK STABILIZATION AND EROSION CONTROL. ROCKERIES SHALL NOT BE CONSTRUCTED TO SERVE AS RETAINING WALLS. ALL ROCKERIES IN THE CITY SHALL BE CONSTRUCTED IN ACCORDANCE TO THE CITY OF NEWCASTLE DRAWINGS.



**NOTES:**

- ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY.
- BEDDING SHALL CONFORM TO CITY STANDARDS OF STANDARD SPECIFICATIONS.
- COMPACTING: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 95% IN UNPAVED AREA, AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
- ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY STANDARDS.
- KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR.

**CITY OF NEWCASTLE**  
TRENCH - PAVEMENT RESTORATION

APPROVED: **ROGER KUYKENDALL, P.E.** 8/1/2000 DATE  
BY CITY

DWG. NO. ST-32

REFERENCE NUMBER:  
APPLICANT NAME:  
PROPOSED PROJECT:  
LOCATION:  
SHEET 05 OF 15



15445 53RD AVE. S.  
SEATTLE, WA 98188  
PHONE: (206) 431-7970  
FAX: (206) 388-1648  
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**Pacific Engineering Design, LLC**  
Civil Engineering and Planning Consultants

**CITY OF NEWCASTLE**

**LAWRENCE PARK**  
CITY OF NEWCASTLE  
12835 NEWCASTLE WAY, SUITE 200  
NEWCASTLE, WA 98056-1316  
PHONE: (425) 649-4444

PROJECT NO.: 12025  
DRAWN BY: ENM  
ISSUE DATE: 01-25-2013  
SHEET REV.:

**CITY OF NEWCASTLE**  
TRENCH - PAVEMENT RESTORATION

180 REGULATORY DETAILS  
**C05**  
SHEET 05 OF 15

CITY OF NEWCASTLE  
INSTALL AN 18" STORM LINE ALONG THE WEST PROPERTY LINE OF PARCELS 334630-0309, 0311, 0312, 0327 AND 0325.  
NEWCASTLE, KING COUNTY, WASHINGTON  
DATE: DECEMBER 31, 2012