

GENERAL UTILITY (SEWER) NOTES:

- SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT NEW CASTLE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, SPECIAL PROVISIONS, SUPPLEMENTAL SPECIFICATIONS, STANDARD DETAILS, AND THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES OR STRICTER STANDARDS IDENTIFIED BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN APPROVAL AND ACCEPTANCE OF THE SANITARY SEWER SYSTEM BY NEW CASTLE COUNTY UPON COMPLETION OF CONSTRUCTION. AS-BUILT PLANS, SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR OR PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE MUST BE SUBMITTED TO NEW CASTLE COUNTY BEFORE FINAL ACCEPTANCE.
- BEFORE AND DURING CONSTRUCTION, THE CONTRACTOR MUST HAVE IN HIS POSSESSION ON SITE, A SET OF CONSTRUCTION PLANS BEARING NEW CASTLE COUNTY'S STAMP OF APPROVAL.
- THE CONTRACTOR SHALL NOT PLACE, PLANT, PUT, OR SET ANY STRUCTURE WITHIN THE NEW CASTLE COUNTY SANITARY SEWER EASEMENT.
- SANITARY SEWER IS TO BE PUBLICLY OWNED AND MAINTAINED.
- CONSTRUCTION SHALL NOT DEVIATE FROM THE PLANS AND SPECIFICATIONS APPROVED BY NEW CASTLE COUNTY WITHOUT WRITTEN PERMISSION FROM NEW CASTLE COUNTY'S DEPARTMENT OF SPECIAL SERVICES.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, THESE PLANS, AND THE NEW CASTLE COUNTY DRAINAGE CODE, AS AMENDED.
- PRIOR TO NEW CASTLE COUNTY MAKING A FINAL INSPECTION, THE FOLLOWING ITEMS MUST BE COMPLETED:
 - ALL MANHOLES MUST BE BROUGHT TO GRADE AND HAVE CONCRETE COLLARS INSTALLED.
 - BENCHES AND CHANNELS MUST BE COMPLETED IN ALL MANHOLES.
 - ALL MANHOLES AND SEWER PIPES MUST BE CLEANED AND FLUSHED.
 - AS-BUILT DRAWINGS (SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR OR PROFESSIONAL ENGINEER IN DELAWARE) WITH ONE (1) MYLAR AND THREE (3) SETS OF PRINTS MUST BE SUBMITTED TO NEW CASTLE COUNTY.
- MANHOLE COVER(S) ON PRIVATELY OWNED AND MAINTAINED SEWER SYSTEMS SHALL NOT BE LABELED "NEW CASTLE COUNTY"

SUGGESTED SEQUENCE OF CONSTRUCTION:

- CONTACT CHUCK RUTTER OF NEW CASTLE COUNTY DEPARTMENT OF SPECIAL SERVICES (48 HOURS NOTICE AT 302-395-5756) PRIOR TO ANY EXCAVATION OR ACTIVITY INVOLVING SANITARY SEWER CONSTRUCTION, PUMP STATION CONSTRUCTION OR LATERAL TIE-IN'S TO EXISTING LINES. THE CONTRACTOR SHALL PROVIDE EMERGENCY CONTACT NAME AND TELEPHONE NUMBER.
- PROVIDE EROSION AND SEDIMENT CONTROL MEASURES, SEE CS-55.
- ESTABLISH MINIMUM GRADING AS SHOWN ON UR-02, UR-03, AND CROSS SECTION SHOWN ON DT-12.
- INSTALL PIPE AND MANHOLES BETWEEN MH 1 AND MH 5 AS APPROVED BY NEW CASTLE COUNTY.
- TEST PIPE AND MANHOLES IN ACCORDANCE WITH CONTRACT DOCUMENTS AND NEW CASTLE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, IN THE PRESENCE OF A NEW CASTLE COUNTY INSPECTOR.
- PLUG EXISTING 24-INCH SEWER AT EXISTING MH 435-108. DUE TO LOW FLOWS BYPASS PUMPING MAY NOT BE REQUIRED. IF REQUIRED SEE BYPASS PUMPING NOTES, THIS SHEET. CONTRACTOR SHALL COORDINATE WITH NEW CASTLE COUNTY TO CONFIRM FLOWS. CONTRACTOR SHALL NOT PLUG EXISTING 24-INCH SEWER FOR MORE THAN 10 HOURS WITHOUT BYPASS PUMPING AND SHALL CONTINUOUSLY OBSERVE UPSTREAM CONDITIONS TO ENSURE CONTINUOUS UNINTERRUPTED SERVICE AND SYSTEM DOES NOT SURCHARGE.
- INSTALL PIPE FROM MH 1 TO EXISTING MH 435-108.
- TEST PIPE AND MANHOLES IN ACCORDANCE WITH CONTRACT DOCUMENTS AND NEW CASTLE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, IN THE PRESENCE OF A NEW CASTLE COUNTY INSPECTOR.
- REMOVE PLUG AT EXISTING MH 435-108.
- PLUG EXISTING 24-INCH SEWER AT EXISTING MH 435-106. DUE TO LOW FLOWS BYPASS PUMPING MAY NOT BE REQUIRED. IF REQUIRED SEE BYPASS PUMPING NOTES, THIS SHEET. CONTRACTOR SHALL COORDINATE WITH NEW CASTLE COUNTY TO CONFIRM FLOWS. CONTRACTOR SHALL NOT PLUG EXISTING 24-INCH SEWER FOR MORE THAN 10 HOURS WITHOUT BYPASS PUMPING AND SHALL CONTINUOUSLY OBSERVE UPSTREAM CONDITIONS TO ENSURE CONTINUOUS UNINTERRUPTED SERVICE AND SYSTEM DOES NOT SURCHARGE.
- INSTALL MH 6 AND INSTALL 24-INCH SEWER BETWEEN MH 5 AND MH 6.
- TEST PIPE AND MANHOLES IN ACCORDANCE WITH CONTRACT DOCUMENTS AND NEW CASTLE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, IN THE PRESENCE OF A NEW CASTLE COUNTY INSPECTOR.
- REMOVE PLUG AT MH 435-106.
- REMOVE EXISTING 24-INCH SEWER BETWEEN MH 6 AND MH 435-108.
- COMPLETE MINIMUM GRADING (UR-03) AND INSTALL TURF TRAIL.
- CERTIFICATES OF OCCUPANCY WILL NOT BE ISSUED UNTIL THE AS-BUILT DRAWINGS HAVE BEEN RECEIVED, REVIEWED, AND APPROVED AND THE SANITARY SEWER CONSTRUCTION HAS BEEN ACCEPTED BY NEW CASTLE COUNTY (SEE GENERAL NOTE 2).

BYPASS PUMPING NOTES (IF REQUIRED):

- CONTRACTOR SHALL NOTIFY MR. CHUCK RUTTER OF NEW CASTLE COUNTY SPECIAL SERVICES AT (302) 395-5756 OF PROPOSED PUMP-AROUND METHOD AND SCHEDULE AT LEAST 48 HOURS IN ADVANCE OF INTENDED START OF BYPASS PUMPING. THE CONTRACTOR SHALL DETERMINE TO THE SATISFACTION OF NEW CASTLE COUNTY THAT THIS OPTION WILL NOT RESULT IN SURCHARGING THE UPSTREAM SEWER OR CAUSE FLOODING OF BACKFLOW IN BASEMENTS.
- SEWAGE FLOW IN EXISTING SEWER IS TO BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. AT NO TIME WILL IT BE PERMITTED FOR SEWAGE TO BE DISCHARGED ONTO THE GROUND OR INTO ANY STREAMS. ALL COSTS TO MAINTAIN FLOW SHALL BE INCIDENTAL TO THE ITEM 753522 - INSTALLING SANITARY SEWER, PVC 24".
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FLOODING OR DAMAGE THAT MAY RESULT FROM THIS OPERATION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY PUMPS, SUCTION AND DISCHARGE PIPING, PLUGS AND APPURTENANCES TO DIVERT THE FLOW OF SEWAGE AROUND THE PIPE SECTION. THE BYPASS PUMPING SYSTEM SHALL BE OF SUFFICIENT CAPACITY TO TRANSPORT THE DESIGN FLOW NOTED ON THESE CONTRACT DRAWINGS. THE CONTRACTOR WILL BE RESPONSIBLE FOR FURNISHING THE NECESSARY LABOR AND SUPERVISION TO SET UP AND OPERATE THE BYPASS PUMPING SYSTEM. STATIONARY EQUIPMENT (PUMPS, COMPRESSORS, ELECTRIC GENERATOR, ETC.) ENGINES SHALL BE CRITICALLY SILENCED WITH EXHAUST SILENCERS AND INSULATED ENCLOSURES. THE BYPASS PUMPING SYSTEM SHALL BE FURNISHED AND INSTALLED AS TO PREVENT SPILLS FROM THE PUMPS AND PIPING. ANY SPILLAGE THAT OCCURS SHALL BE IMMEDIATELY CLEANED UP, AND THE SPILL AREA RETURNED TO A CLEAN AND SANITARY CONDITION. THE LOCATION OF THE BYPASS PUMPING DISCHARGE MUST BE APPROVED IN ADVANCE BY NEW CASTLE COUNTY SEWER.
- FLOW CONTROL PRECAUTIONS: WHEN FLOW IN A SANITARY SEWER LINE IS PLUGGED, SUFFICIENT PRECAUTIONS MUST BE TAKEN TO PROTECT THE SANITARY SEWER LINE AND ADJACENT PROPERTY OWNERS FROM OVERFLOW DAMAGE THAT MIGHT RESULT FROM THE SANITARY SEWER DISCHARGE.
- DESIGN FLOW FOR PUMP AROUND SYSTEMS IS BASED ON FLOW DATA PROVIDED BY NEW CASTLE COUNTY. PUMPING SYSTEM AT EXISTING MANHOLE 435-106 AND EXISTING MANHOLE 435-108 SHALL BE DESIGNED FOR 10,000 gpd. FLOW SHALL BE CONFIRMED WITH NEW CASTLE COUNTY BEFORE BYPASS PUMPING EQUIPMENT IS ORDERED.
- PUMP DISCHARGE, PIPING SHALL BE SUPPORTED OVER STREAM OR CULVERT AS REQUIRED DURING CONSTRUCTION ACTIVITIES.

DRAFT
NOT FOR BIDDING
AUGUST 2015

STAKEOUT INFORMATION - 24" GRAVITY SEWER						
FROM MH NO.	TO MH NO.	AZIMUTH	CENTER TO CENTER LENGTH (FT)	MH NO.	NORTHING	EASTING
EX. 435-108	1	197° 33' 49"	51.40	1	555437.81	586191.25
	2	186° 17' 49"	246.91	2	555192.39	586164.17
	3	96° 28' 19"	244.88	3	555164.79	586407.48
	4	92° 44' 6"	269.42	4	555151.94	586676.60
	5	125° 57' 13"	184.68	5	555043.50	586826.10
	6	69° 30' 13"	34.5	6	555055.58	586858.42
	435-106	309° 52' 15"	19.78			

The sanitary sewer design concept has been reviewed and approved for compliance with the New Castle County Standard Specifications and the Ten State Standards. This review and approval is limited solely to the issue of compliance with the aforementioned standards and specifications, and New Castle County shall not be responsible for any other aspect or matter related to the design or installation of the proposed sanitary sewer. *Dale The 1/4/13*

The sanitary sewer design concept has been reviewed and approved for compliance with the New Castle County Standard Specifications and the Ten State Standards. This review and approval is limited solely to the issue of compliance with the aforementioned standards and specifications, and New Castle County shall not be responsible for any other aspect or matter related to the design or installation of the proposed sanitary sewer. *Dale The 12/27/11*

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ENGINEERS - ARCHITECTS - PLANNERS EST. 1916

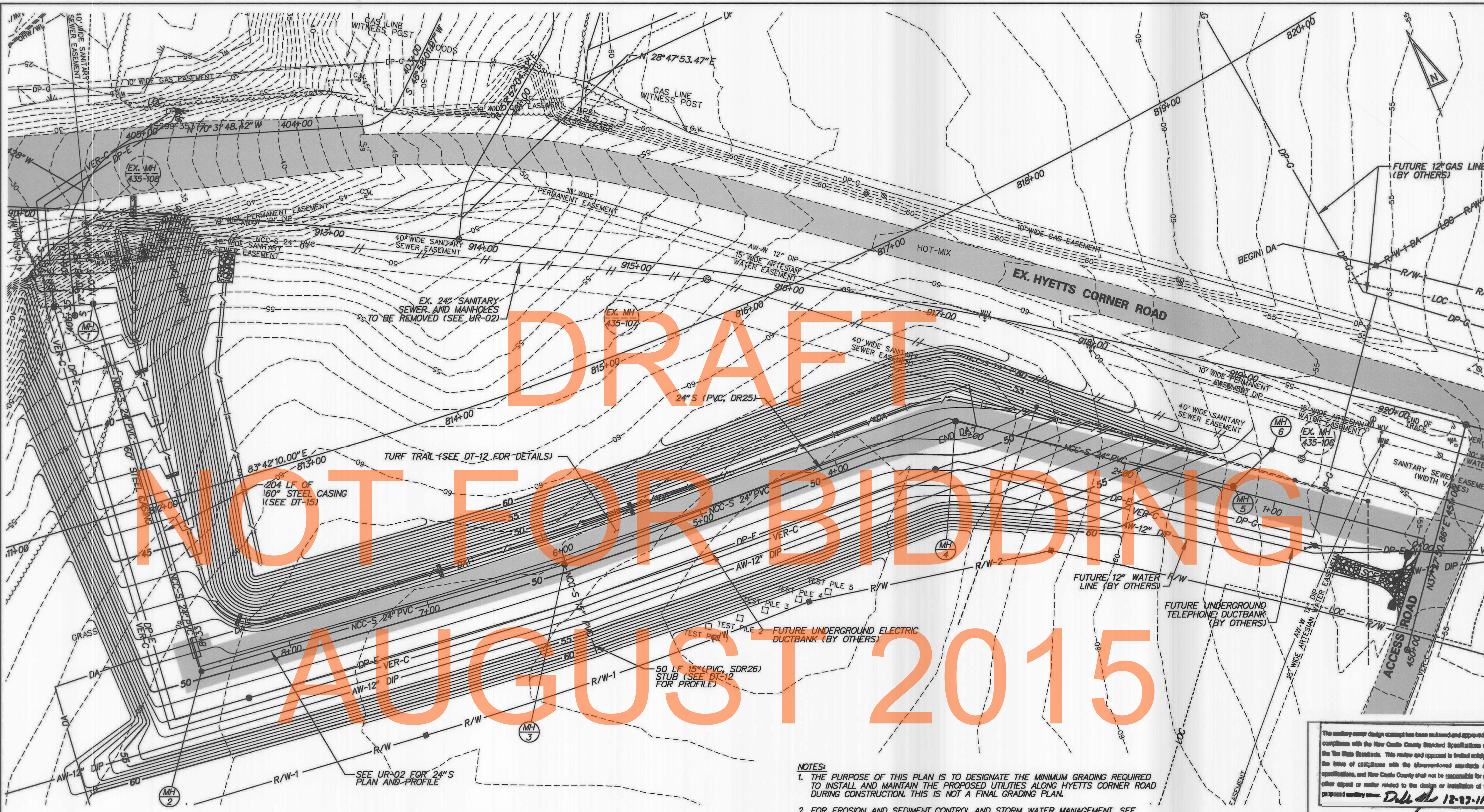
JRW
RECOMMENDED

12/13/2011
DATE

SEAL
UR-01

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<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS	<p>US 301, SR 896 TO SR 1</p>	CONTRACT	BRIDGE NO.	<p>UTILITY RELOCATION GENERAL NOTES AND STAKEOUT</p>	SHEET NO.	
				T20091308		DESIGNED BY: J.A.S. / K.A.H.	770
				COUNTY		CHECKED BY: J.M.M.	TOTAL SHT. S.
				NEW CASTLE			875



DRAFT
NOT FOR BIDDING
AUGUST 2015

- NOTES:**
1. THE PURPOSE OF THIS PLAN IS TO DESIGNATE THE MINIMUM GRADING REQUIRED TO INSTALL AND MAINTAIN THE PROPOSED UTILITIES ALONG HYETTS CORNER ROAD DURING CONSTRUCTION. THIS IS NOT A FINAL GRADING PLAN.
 2. FOR EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT, SEE CS-07 AND CS-55.

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Date: 12-23-11

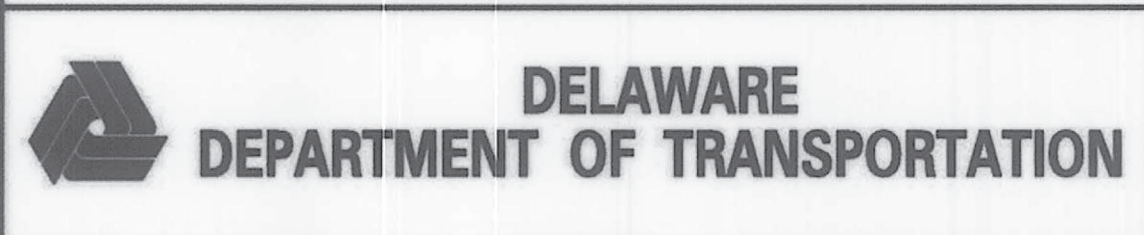
PLAN

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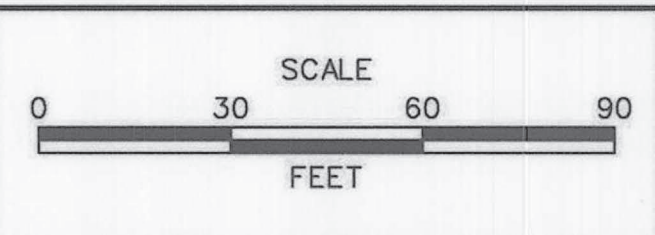
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ADDENDUMS / REVISIONS

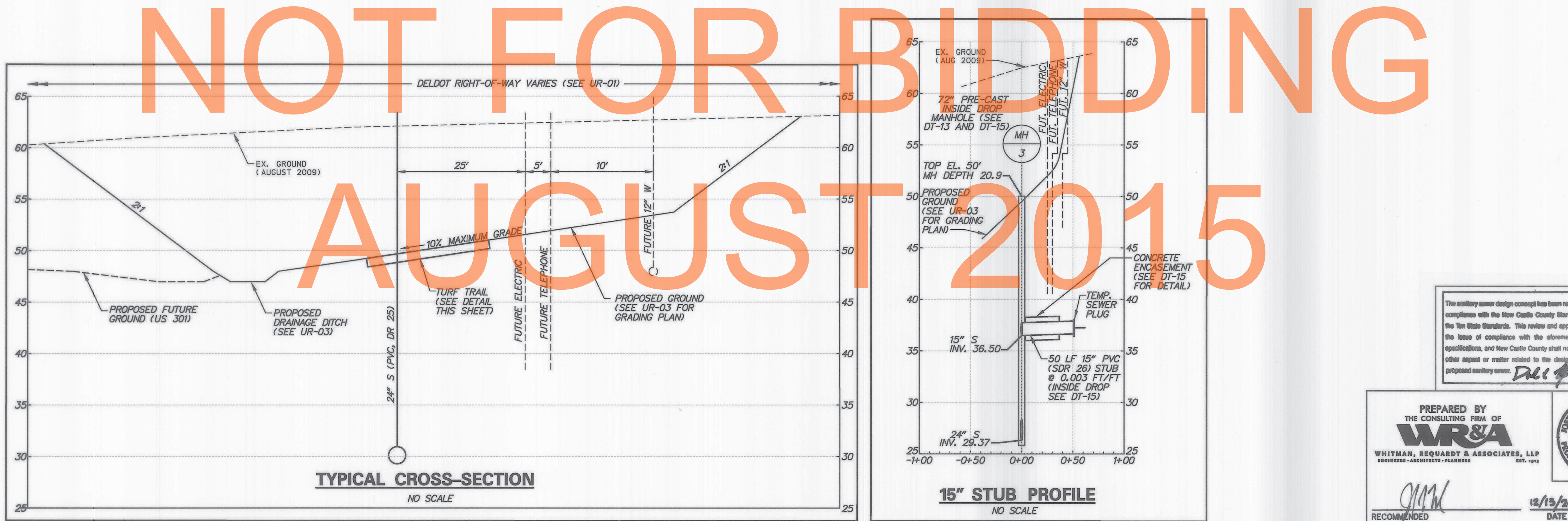
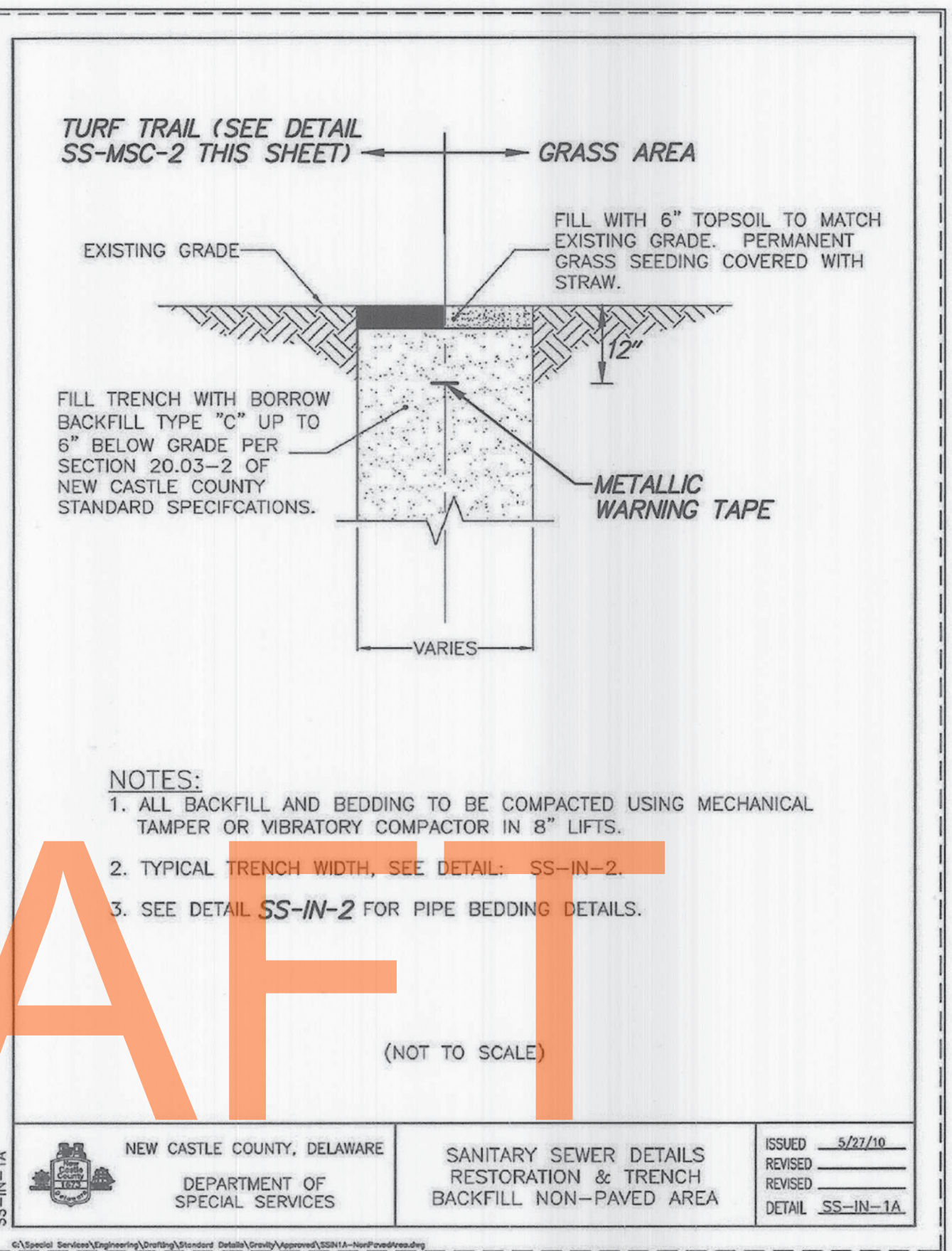
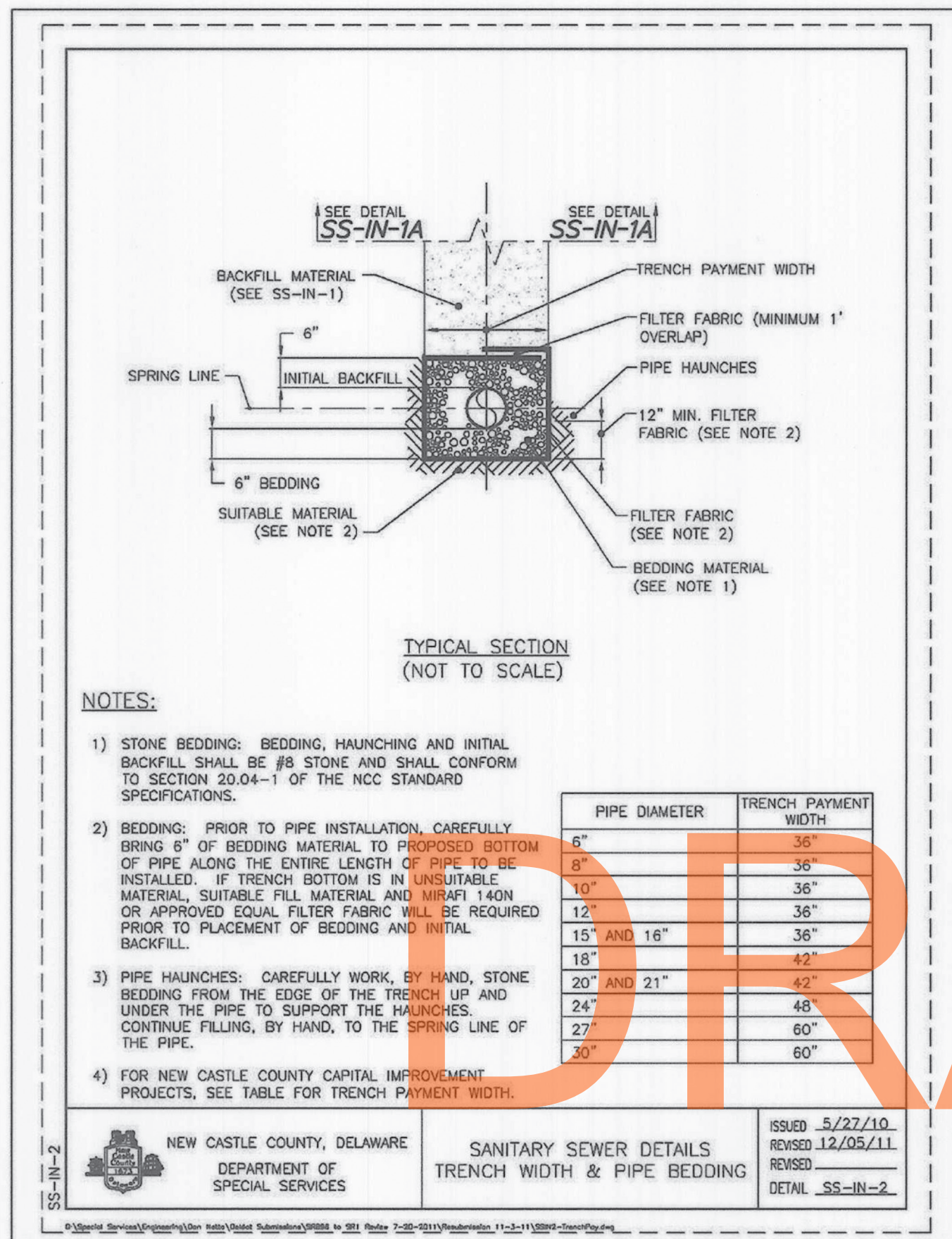
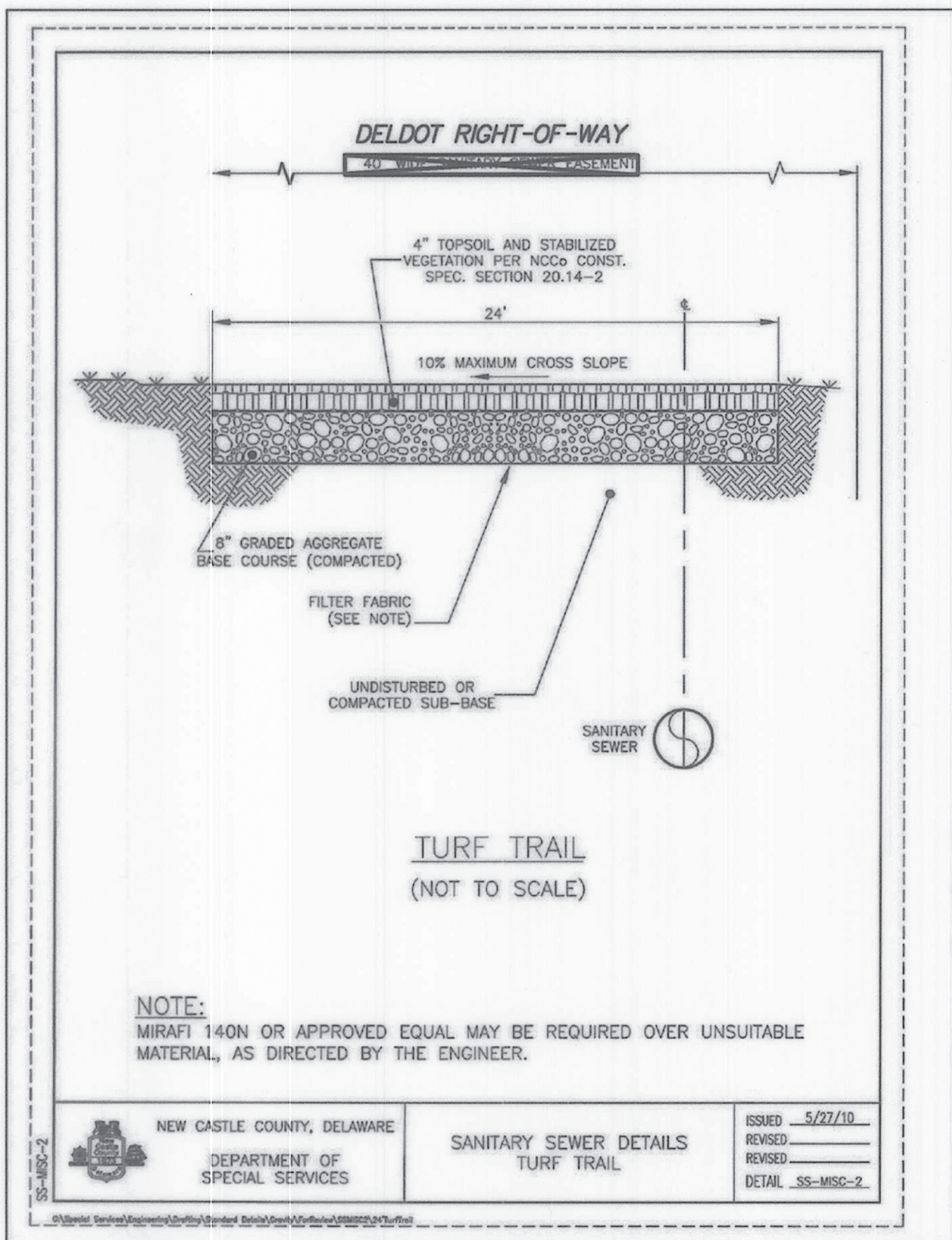


**US 301,
SR 896 TO SR 1**

CONTRACT T200911308	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: J.A.S. CHECKED BY: J.M.M.

UTILITY RELOCATION GRADING PLAN	SHEET NO. 772
	TOTAL SHTS. 875

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ADDENDUMS / REVISIONS

NOT TO SCALE

US 301,
SR 896 TO SR 1

CONTRACT T200911308	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: J.A.S. / K.A.H.
	CHECKED BY: J.M.M.

UTILITY CONSTRUCTION DETAILS	SHEET NO. 773
	TOTAL SHTS. 875

SELF SEALING MANHOLE FRAME & COVER (SEE NCC DETAIL SS-MH-9 ON AND NOTE 5 THIS SHEET)

MANHOLE RISER SECTION (SEE NCC DETAIL SS-MH-5, DT-14)

PRECAST GRADE RING (SEE NCC DETAIL SS-MH-7, DT-14)

BENTONITE IMPREGNATED MASTIC TAPE (SEE SPECIFICATIONS)

INTERNAL AND EXTERNAL COATING (SEE SPECIFICATIONS)

MANHOLE STEPS OR LADDER (SEE NOTE 6)

MIN. CIRC REINF PER ASTM C 478

O-RING JOINT PER ASTM C 478

RISERS IN 1', 2', 3' OR 4' LENGTHS - 5000 PSICONC (FIRST RISER UNDER 48" DIA. TAPER SHALL BE 1' IN LENGTH)

MIN. CIRCUMFERENTIAL REINFORCING (72" OR 96" TAPER) $A_s = 0.28$ SQ IN/FT

MIN. CIRC REINF PER ASTM C76 - 66T TABLE III, WALL B

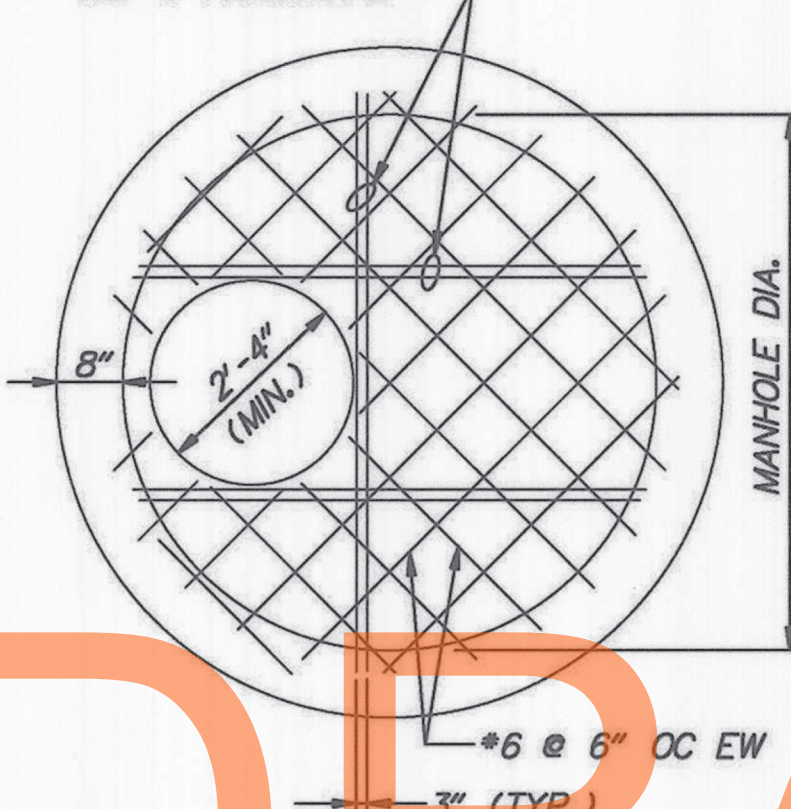
TOP OF SLOPED BENCH (ELEV @ CROWN OF LARGEST PIPE)

8" STONE BEDDING (SEE NCC STANDARD SPECIFICATIONS SECTION 20.04-01)

4000 PSICONC FOR INVERT

MIN. SLAB REINF $A_s = 0.39$ SQ IN/FT EW

(2) #6 ADDITIONAL



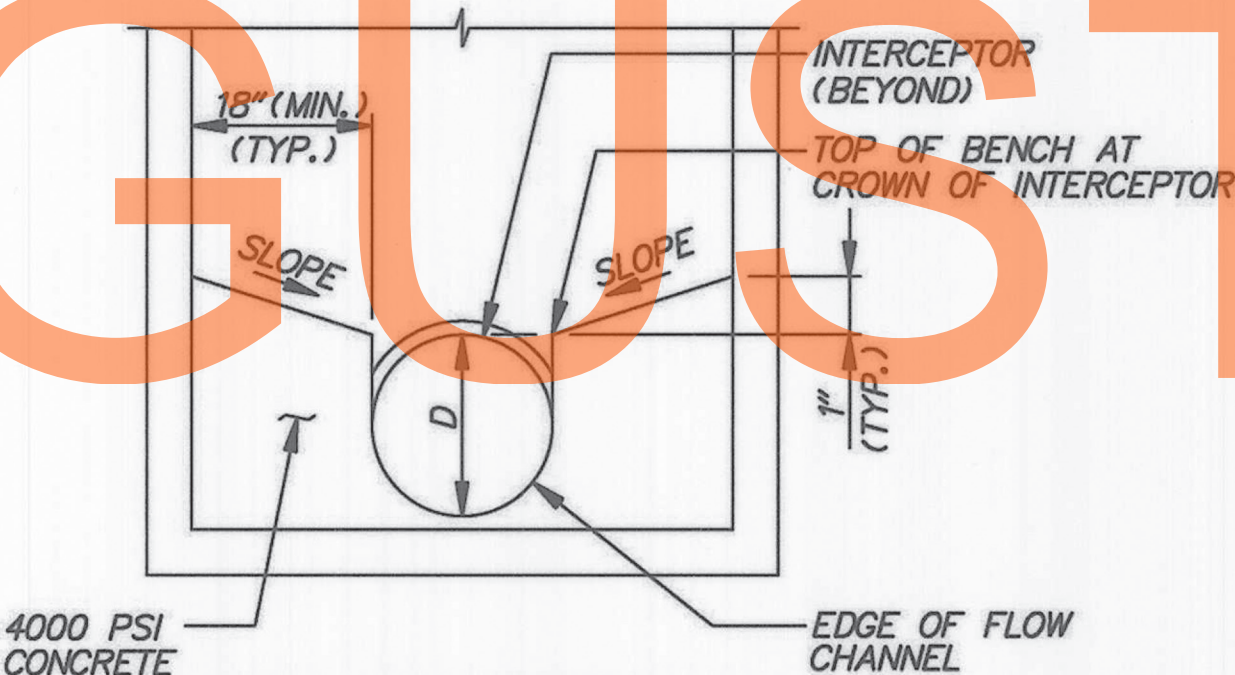
SLAB REINFORCEMENT FOR PRECAST MANHOLE
NO SCALE

NOT FOR BIDDING

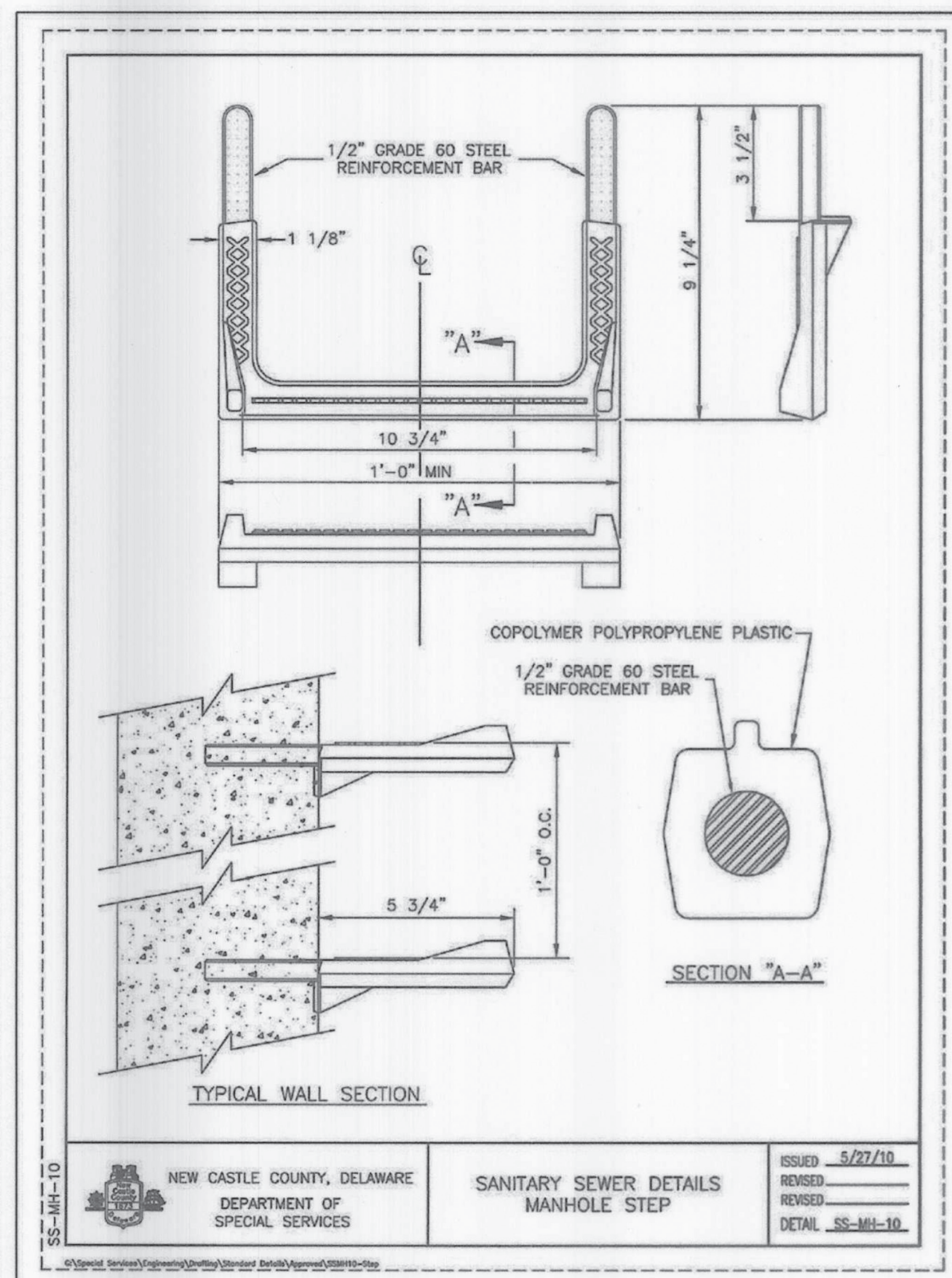
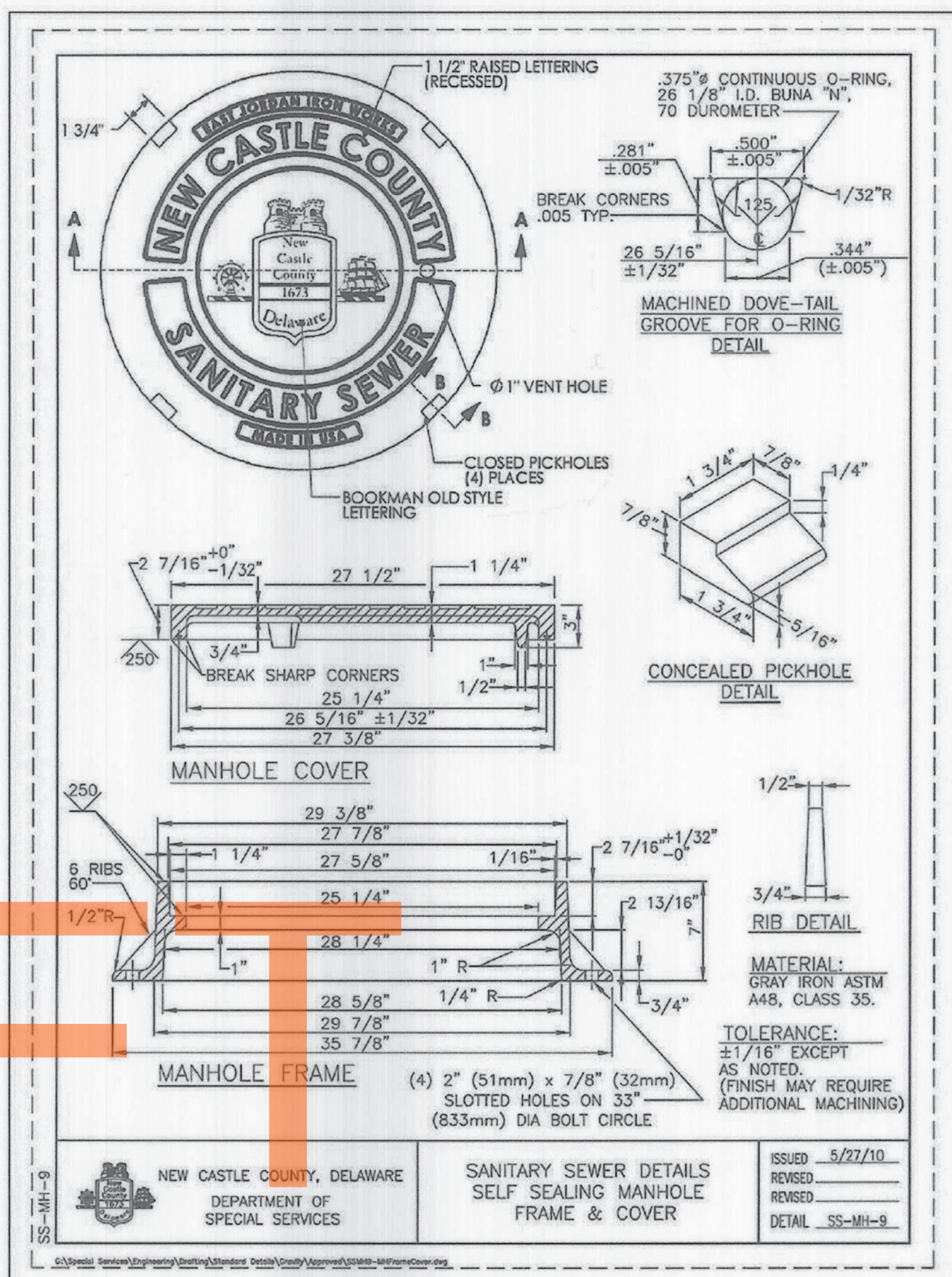
AUGUST 2015

NOTES:

1. UNLESS OTHERWISE NOTED, MANHOLE TAPERS, RISERS, AND BASES SHALL BE FURNISHED IN STRICT ACCORDANCE WITH ASTM DESIGNATION C478 (LATEST) FOR PRECAST REINFORCED CONCRETE MANHOLES.
2. MANHOLE SHALL BE OF 5,000 PSI PRECAST CONCRETE.
3. MANHOLE STEPS SHALL BE SPACED AS SHOWN IN A SINGLE VERTICAL ALIGNMENT. THE STEPS SHALL NOT BE STAGGERED.
4. PRECAST UNIT SHALL BE CAPABLE OF SUPPORTING HIGHWAY LIVE LOADS (H20) AS DEFINED BY AASHTO.
5. MANHOLE FRAME AND COVER SHALL BE SET 6-INCHES ABOVE FINAL GRADE IN ALL NON-IMPROVED AREAS. SEE NCC DETAIL SS-MH-9 (THIS SHEET) FOR FRAME AND COVER AND SS-MH-5 (DT-14) FOR RISER SECTION IN NON PAVED-AREA.
6. FALL PROTECTION LADDER SHALL BE REQUIRED FOR ALL MANHOLES GREATER THAN 20 FEET DEEP MEASURED FROM THE TOP OF FRAME AND COVER TO LOWEST PIPE INVERT. SEE NCC DETAIL SS-MH-10 (THIS SHEET) FOR MANHOLE STEP AND DT-14 FOR FALL PROTECTION LADDER.



TYPICAL SECTION MANHOLE BENCH DETAIL
NO SCALE



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Del 12-23-11

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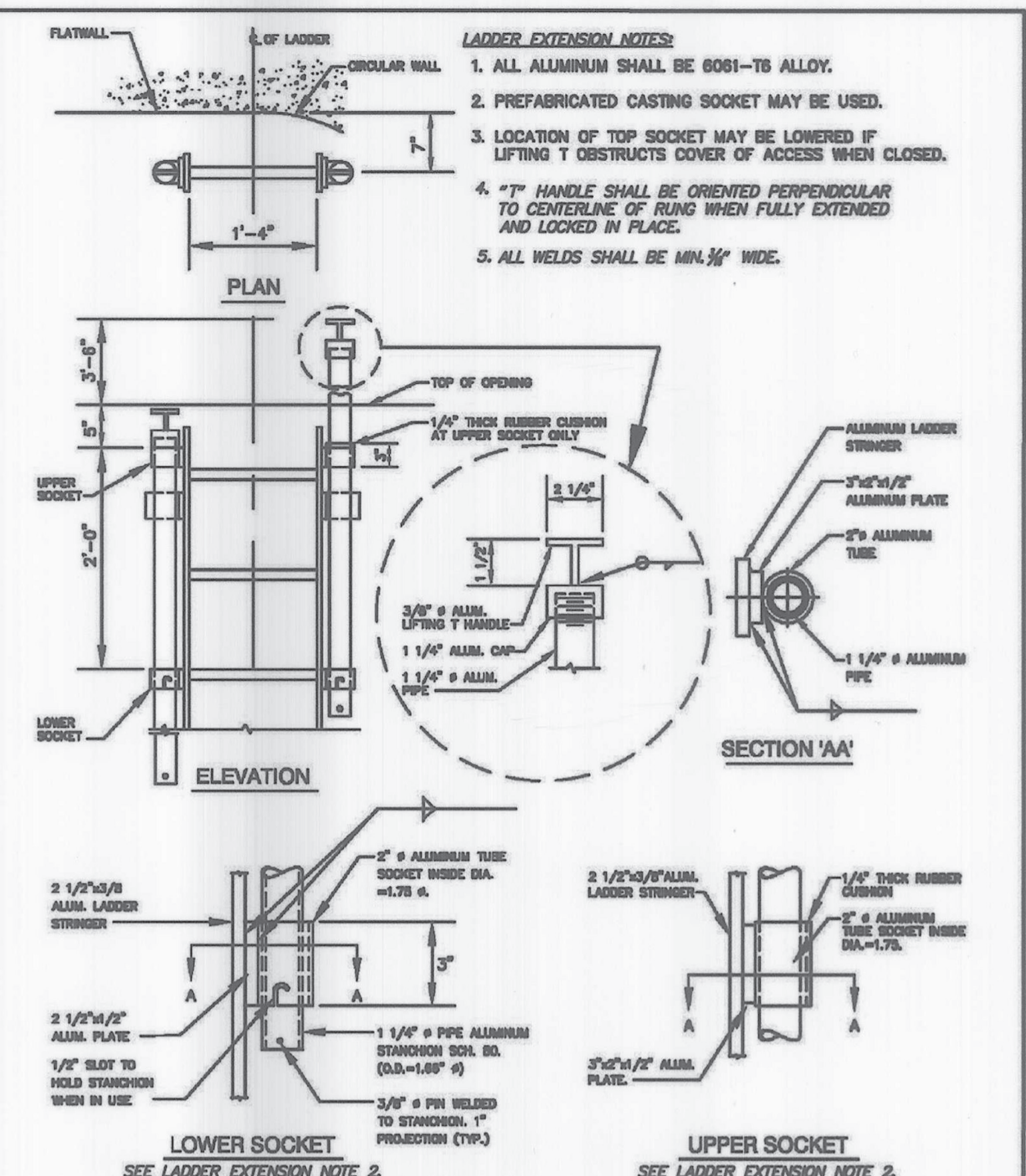
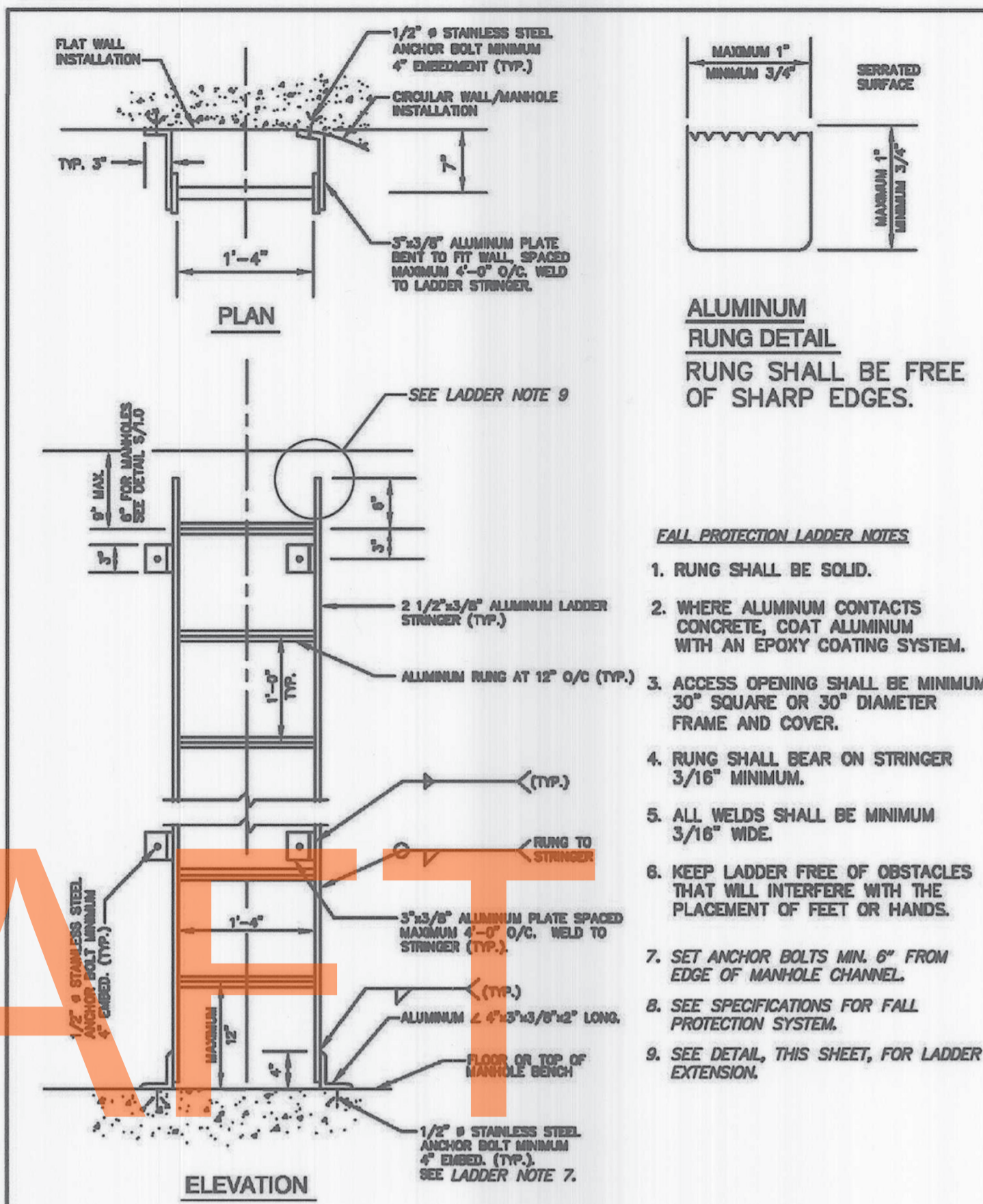
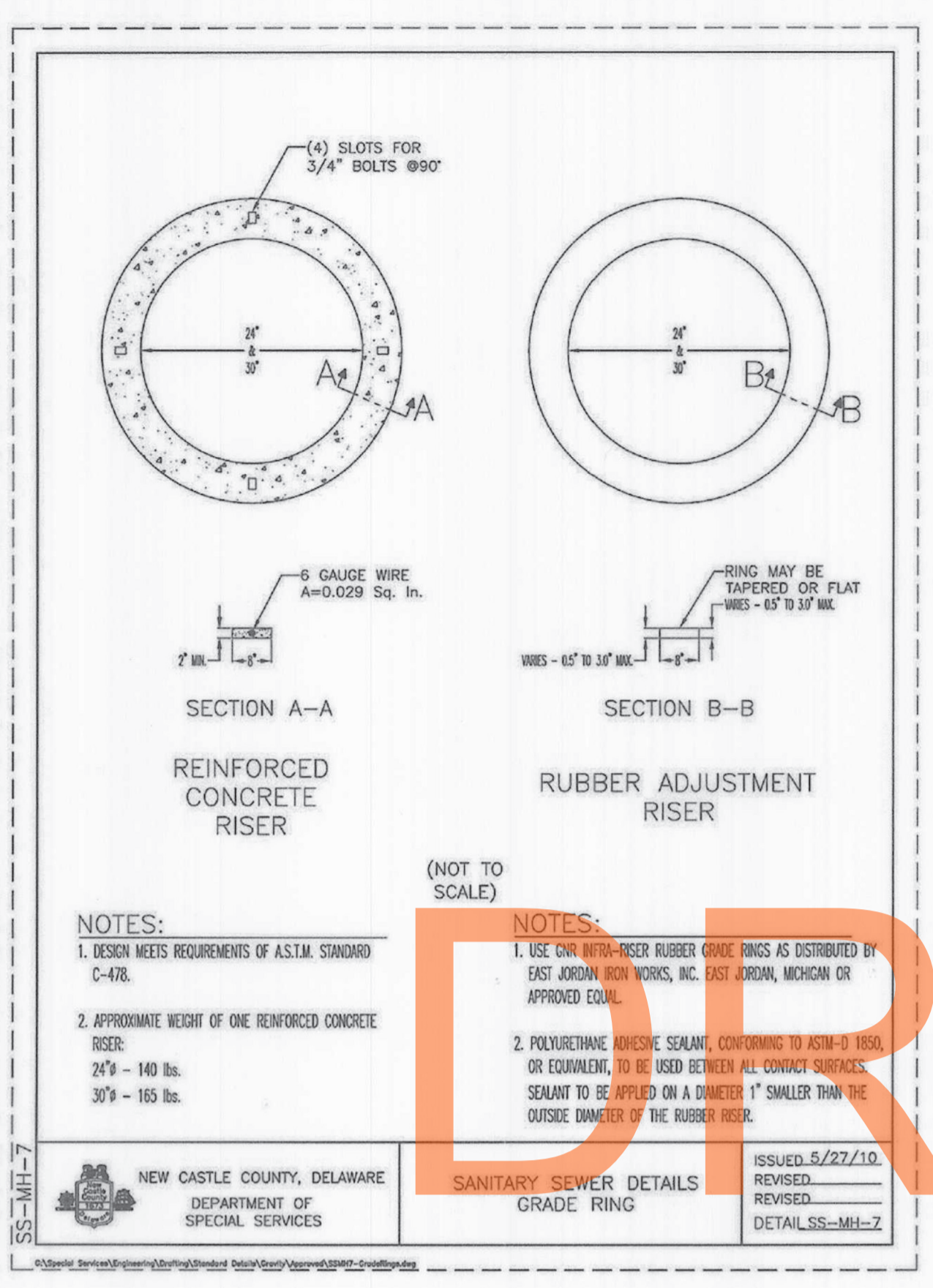
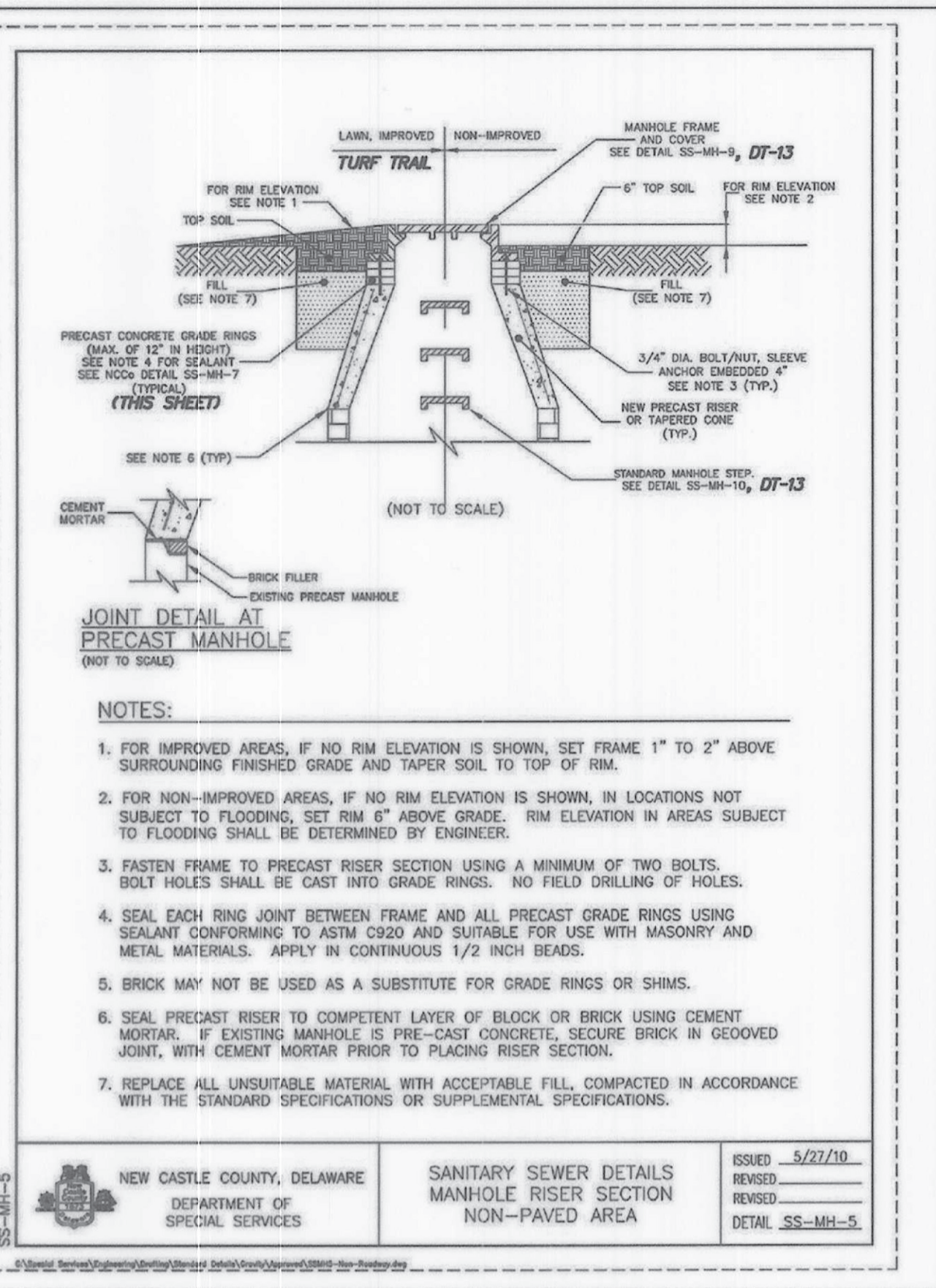
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RECOMMENDED *JMW* DATE: 12/13/2011

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<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301, SR 896 TO SR 1	CONTRACT	BRIDGE NO.	UTILITY CONSTRUCTION DETAILS	SHEET NO.
					T20091308		
				COUNTY	CHECKED BY: J.M.M.	TOTAL SHTS.	875
				NEW CASTLE			



FALL PROTECTION LADDER AND EXTENSION DETAIL
NO SCALE
*INSTALLED ON ALL MANHOLES 20-FOOT DEEP OR GREATER, SEE SPECIFICATIONS

NOT FOR BIDDING
AUGUST 2015

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Dale P. 12-23-11

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12/13/2011
DATE
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UR-06

ADDENDUMS / REVISIONS

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**US 301,
SR 896 TO SR 1**

CONTRACT T20091308	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: J.A.S. / K.A.H. CHECKED BY: J.M.M.

UTILITY CONSTRUCTION DETAILS	
SHEET NO. 775	TOTAL SHTS. 875

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