

SANITARY SEWER EXTENSION

TAX LOT 1300, NE 1/4 SECTION 11, T2S, R4E, W.M.

CITY OF SANDY

CLACKAMAS COUNTY, OREGON

EXHIBIT G

BENCHMARK:

BENCHMARK NO. 22, A BRASS DISK AT THE SW CORNER OF BLUFF AND SUNSET STREET.

ELEVATION DATUM: NGVD 29, ELEVATION = 899.176

APPLICANT:

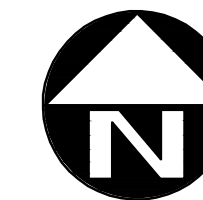
JEFF SAUL
37685 SE OLSON STREET
SANDY, OR 97055
[P] 503-748-4959

CIVIL ENGINEER:

PACIFIC COMMUNITY DESIGN, INC
12564 SW MAIN ST.
TIGARD, OR 97223
[P] 503-941-9484
CONTACT: KC SCHWARTZKOPH, PE



VICINITY MAP



SANITARY SEWER CONSTRUCTION NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM WITH THESE PLANS AND THE APPLICABLE REQUIREMENTS OF THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE CITY OF SANDY.
2. ALL BACKFILL IN THE PUBLIC RIGHT-OF-WAY SHALL BE CRUSHED ROCK.
- MATERIALS:**
 3. POLYVINYL CHLORIDE PIPE (PVC) SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034, SDR 35, AND JOINT TYPE SHALL BE ELASTOMERIC GASKET CONFORMING TO ASTM D-3212.
 4. DUCTILE IRON PIPE SHALL BE CLASS 50 WALL THICKNESS FOR PIPE SIZES UP TO TWELVE INCHES (12"); CLASS 51 WALL THICKNESS FOR PIPE SIZES FOURTEEN INCHES (14") AND LARGER.
 5. MANHOLES TO BE PRECAST CONCRETE SECTIONS WITH MINIMUM INSIDE DIAMETER OF 48-INCHES, CONFORMING TO THE REQUIREMENTS OF ASTM C-478, EXCEPT AS NOTED ON THE PLANS. POURED IN PLACE MANHOLES MAY BE SUBSTITUTED.
- INSTALLATION:**
 6. POLYVINYL CHLORIDE PIPE (PVC) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PVC SEWER PIPE SHALL BE CONNECTED TO CONCRETE MANHOLES BY MEANS OF AN APPROVED COUPLING WITH AN ELASTOMERIC GASKET, AN APPROVED WATERSTOP OR FLEXIBLE SLEEVE. USE OF PORTLAND CEMENT GROUT FOR CONNECTION OF PVC SEWER PIPE TO MANHOLES WILL NOT BE PERMITTED.
 7. AFTER THE CONTRACTOR HAS BACKFILLED THE PIPE ZONE OF THE TRENCH AS REQUIRED, THEY SHALL THEN BACKFILL THE BALANCE OF THE TRENCH, WITH THE TYPE OF BACKFILL SPECIFIED, IN ONE FOOT (1') LAYERS, MECHANICALLY COMPACTING EACH LAYER TO 95% OF MAXIMUM DENSITY IN ROADWAYS AND 85% TO 90% IN ALL OTHER AREAS. MAXIMUM RELATIVE DENSITY SHALL BE DETERMINED PER AASHTO T-180. IN PLACE, DENSITY SHALL BE DETERMINED PER AASHTO T-191, T-205 OR T-238. ANY SUBSEQUENT SETTLEMENT OF THE TRENCH OR DITCH DURING THE GUARANTEE PERIOD SHALL BE CONSIDERED TO BE THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE DISTRICT OR THE OWNER.
 8. SANITARY SEWER PIPE AND APPURTENANCES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH CITY STANDARDS. LEAKAGE TESTS INCLUDE AN AIR TEST OF THE SEWER MAINS AND SERVICE CONNECTIONS AND A WATER EXFILTRATION TEST OR VACUUM TEST OF THE MANHOLES. ANY PORTION OF THE SEWER WHICH FAILS TO PASS THESE TESTS SHALL BE EXCAVATED, REPAIRED OR REALIGNED, AND RETESTED. IN ADDITION TO HYDROSTATIC OR AIR TESTING, SANITARY SEWERS CONSTRUCTED OF PVC SEWER PIPE SHALL BE DEFLECTION TESTED NO LESS THAN 30-DAYS AFTER THE TRENCH BACKFILL AND COMPACTION HAS BEEN COMPLETED. THE TEST SHALL BE CONDUCTED BY PULLING AN APPROVED SOLID POINTED MANDREL 95% OF THE INSIDE DIAMETER THROUGH THE PIPELINE TO A MANHOLE TO MANHOLE BASIS.
 9. UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER, EACH SERVICE CONNECTION SHALL BE LAID IN A SEPARATE TRENCH ON A STRAIGHT LINE AND GRADIENT FROM THE TEE TO THE END OF THE SERVICE CONNECTION. AT THE PROPERTY LINE THE SERVICE CONNECTION SHALL BE AT LEAST 6 FEET BELOW THE GRADE OF THE STREET CENTER LINE. NO SERVICE CONNECTION SHALL BE LAID ON A SLOPE OF LESS THAN TWO PERCENT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE PLANS. THE ENGINEER WILL PROVIDE A CUT STAKE AT THE TERMINAL POINT OF EACH SERVICE CONNECTION. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL USE A GRADING LINE TO LAY THE PIPE AND THE SERVICE CONNECTION SHALL BE INSTALLED WITH THE SAME ACCURACY AS THE MAIN SEWER. EACH SERVICE CONNECTION SHALL BE PLUGGED WITH A RUBBER RING PLUG. A 2 X 4 MARKER PAINTED GREEN SHALL BE PLACED AT THE END OF EACH SERVICE CONNECTION, AND SHALL EXTEND FROM THE END OF THE PIPE TO A POINT ONE FOOT (1') ABOVE THE SURFACE OF THE GROUND. A DETECTABLE GREEN MAGNETIC TAPE ("THORURATEC SAFETY GREEN SANITARY SEWER RIBBON OR EQUAL") WITH THE WORD "SEWER" AT REGULAR INTERVALS SHALL BE PLACED ALONG THE SERVICE CONNECTION FROM THE MAINLINE TEE TO THE GROUND SURFACE.
 10. IN AREAS USED BY VEHICLES (PAVED OR UNPAVED STREETS) THE MANHOLE RIM ELEVATION SHALL MATCH THE FINISHED GRADES. IN OTHER AREAS THE HEIGHT OF THE MANHOLE RIM WILL NORMALLY BE SIX INCHES (6") ABOVE FINISHED GRADE, HIGH-WATER MARK, OR ABOVE TOP OF FUTURE FILL AREAS.
 11. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND DEVICES TO REMOVE AND DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION DURING THE PROCESS OF LAYING THE PIPE. WATER AND DEBRIS SHALL NOT ENTER INTO THE CITY'S SEWER SYSTEM. WATER AND DEBRIS SHALL BE DISPOSED OF IN AN APPROVED MANNER.
 12. THE PROJECT ENGINEER SHALL VERIFY ALL SERVICE LATERALS PRIOR TO PLACEMENT OF BACKFILL.
 13. THE CONTRACTOR SHALL AT ALL TIMES ABIDE BY APPLICABLE SAFETY RULES OF O.S.H.A. AND IN PARTICULAR, THOSE PERTAINING TO ADEQUATE SHORING AND TRENCH PROTECTION.
 14. THE CONTRACTOR SHALL KEEP RECORDS OF ALL CONSTRUCTION THAT DIFFERS FROM THE APPROVED PLANS AND SHALL MAINTAIN "RECORD DRAWINGS" DURING THE CONSTRUCTION PERIOD. "RECORD DRAWINGS" SHALL BE SUBMITTED TO THE ENGINEER AT THE END OF THE PROJECT.
 15. IN ADDITION TO THE OTHER TESTS NOTED, ALL SANITARY SEWER MAINS SHALL BE LAMP TESTED. THESE TESTS SHALL BE CONDUCTED AFTER THE PIPES HAVE BEEN FLUSHED AND CLEANED.
 16. CONTRACTOR SHALL PROTECT SHALLOW LATERALS DURING INSTALLATION OF DRY UTILITIES.
 17. PIPE SLOPES LISTED ARE BASED ON HORIZONTAL LENGTHS FROM CENTER OF STRUCTURE (E.G. MANHOLE) TO CENTER OF STRUCTURE (E.G. MANHOLE). INVERT ELEVATIONS (IES) LISTED AT STRUCTURES ARE BASED ON THE "THEORETICAL" IE AT THE CENTER OF THE STRUCTURE. FIELD STAKING IS BASED ON THESE PIPE SLOPES AND INVERT ELEVATIONS. FOR PIPES WITH STEEP SLOPES AND/OR SHORT PIPE RUNS, THE CONTRACTOR NEEDS TO MAKE ADJUSTMENTS FOR THE ACTUAL SLOPE FROM EDGE OF STRUCTURE TO EDGE OF STRUCTURE AND/OR MAKE SURE PRE-CAST STRUCTURES (E.G. MANHOLE BASE) ACCOMMODATES THE ACTUAL IE AT THE EDGE OF THE STRUCTURE.
 18. SEWER LINES SHALL BE LAID IN A STRAIGHT ALIGNMENT AND A UNIFORM GRADE BETWEEN MANHOLES AND CLEANOUTS. SEWER LINES SHALL BE INSTALLED SO THAT THE PIPE BELL IS POSITIONED AT THE UPSTREAM END OF THE SEWER LINE AND THE PIPE SPIGOT IS POSITIONED AT THE DOWNSTREAM END OF THE SEWER LINE.

SHEET INDEX:

- | | |
|---|---|
| 1 | COVER SHEET |
| 2 | SANITARY SEWER EXTENSION PLAN & PROFILE |
| 3 | SANITARY DETAILS |

ATTENTION:
OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.

THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987

THIS DESIGN COMPLIES WITH ORS 92.044 (7) IN THAT NO UTILITY INFRASTRUCTURE IS DESIGNED TO BE WITHIN ONE (1) FOOT OF A SURVEY MONUMENT LOCATION SHOWN ON SUBDIVISION OR PARTITION PLAT. NO DESIGN EXCEPTIONS NOR FINAL FIELD LOCATION CHANGES SHALL BE PERMITTED IF THAT CHANGE WOULD CAUSE ANY UTILITY INFRASTRUCTURE TO BE PLACES WITHIN THE PROHIBITED AREA.



1ST SUBMITTAL: 05/21/2021

REVISIONS

NO.	DATE	DESCRIPTION
-----	------	-------------

37685 SE OLSEN RD SANITARY SEWER EXTENSION

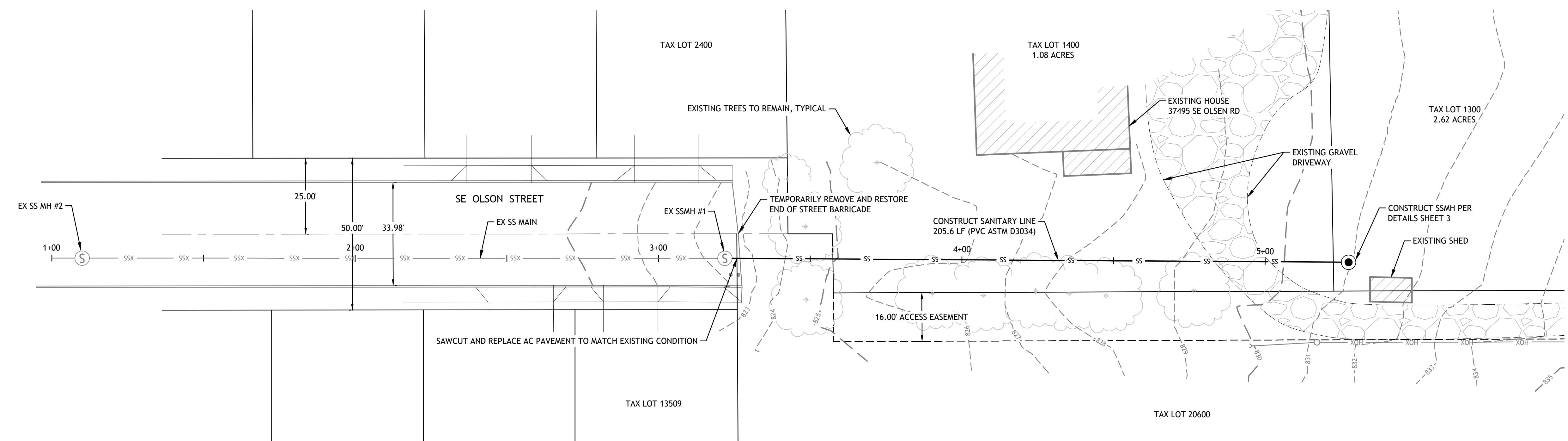


RENEWS: JUNE 30, 2022

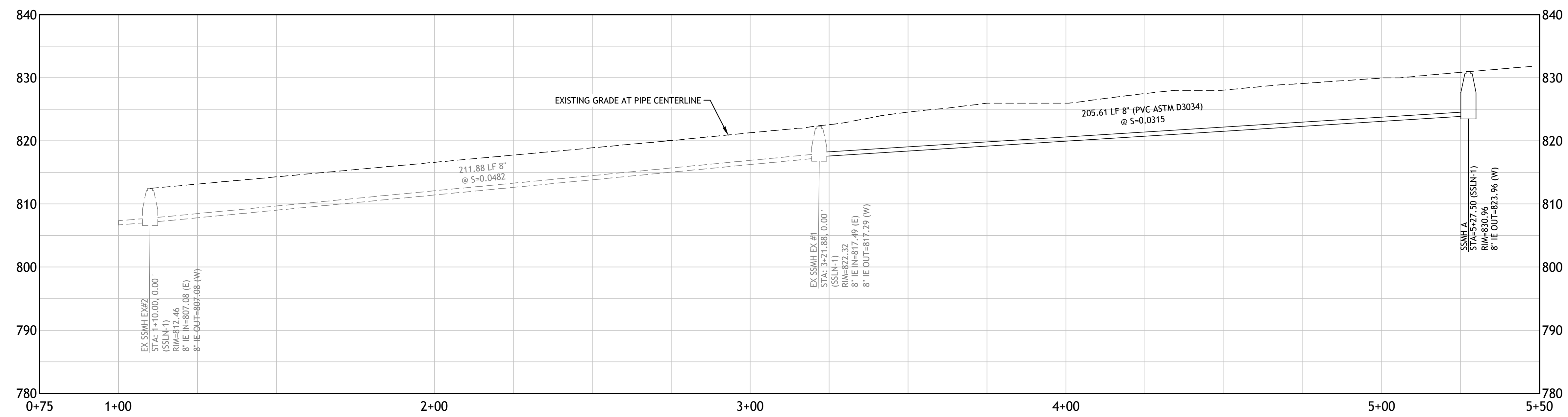
COVER SHEET

PROJECT NO.: 500-058
TYPE: PLANNING
REVIEWED BY: KCS

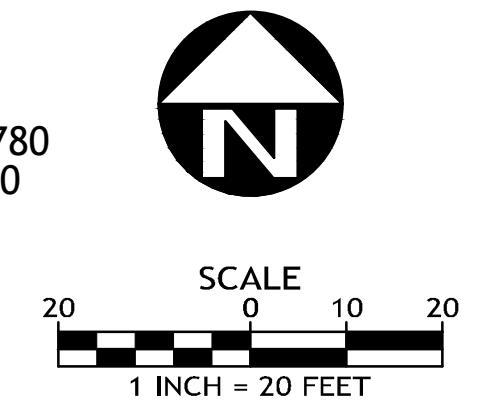
LEGEND		
---	801 - EX 1-FT CONTOUR	
---	805 - EX 5-FT CONTOUR	
---	SS - PROPOSED SANITARY SEWER	
---	XSS - EX SANITARY SEWER	
---	XSD - EX STORM LINE	
---	---	EX PROPERTY LINE
---	---	EX EASEMENT LINE
●	PROPOSED SANITARY MANHOLE	
○	EX SANITARY MANHOLE	
○	EX STORM MANHOLE	
□	EX CATCH BASIN	
○	EX WATER VALVE	



OLSEN RD SEWER EXTENSION - PLAN
SCALE: 1" = 20'



OLSEN RD SEWER EXTENSION - PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



1ST SUBMITTAL: 05/21/2021

REVISIONS		
NO.	DATE	DESCRIPTION

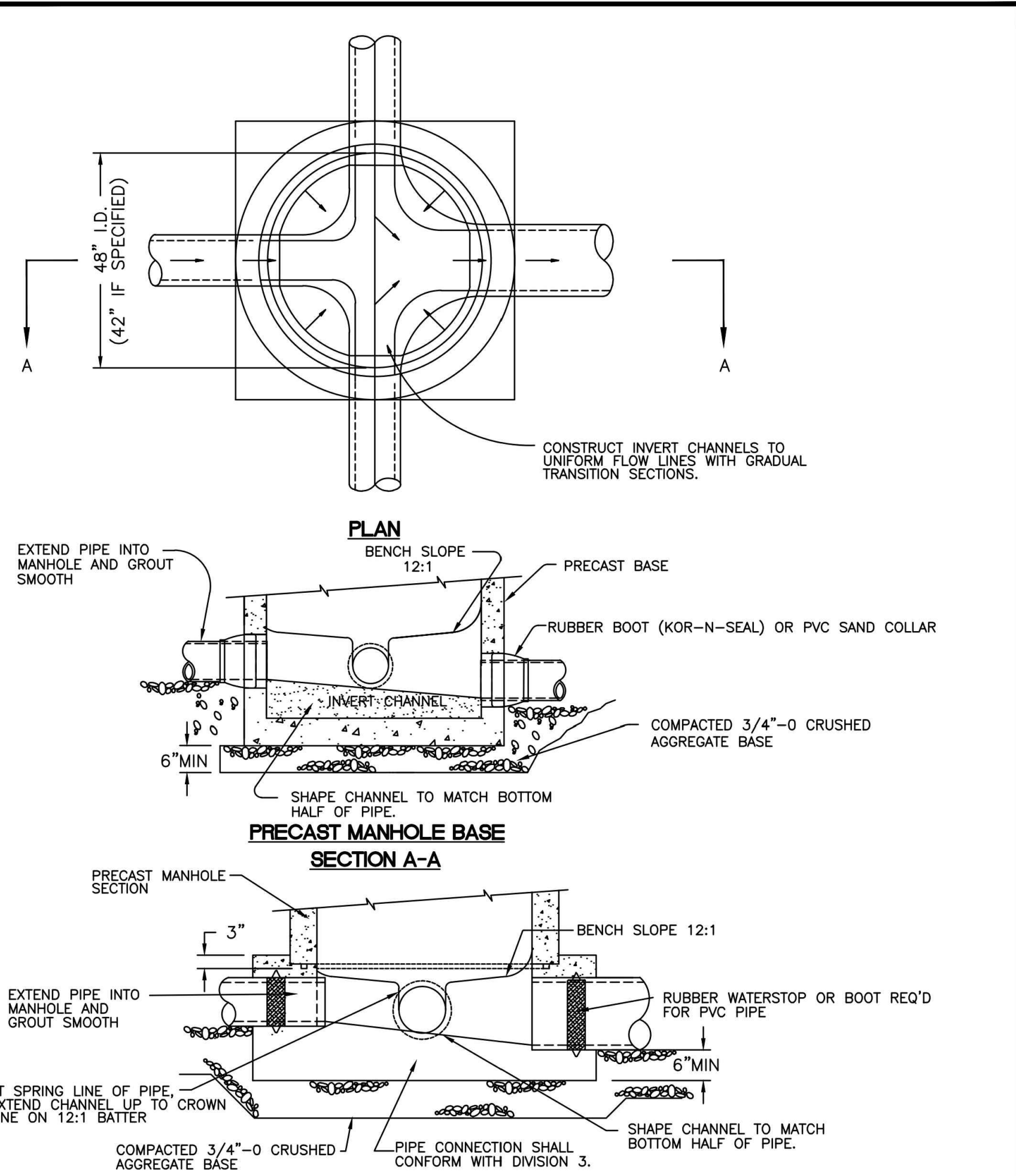
**37685 SE OLSEN RD
SANITARY SEWER
EXTENSION**



**SANITARY
SEWER
EXTENSION**

PROJECT NO.: 500-058
TYPE: PLANNING
REVIEWED BY: KCS

N:\proj\500-058\09 Drawings\04 Civil\Sheets - CD Submittal\500058_3 Sanitary Sewer Extension P&P.dwg - SHEET: 2 May 21, 2021 - 12:54pm Rebecca



CITY OF SANDY

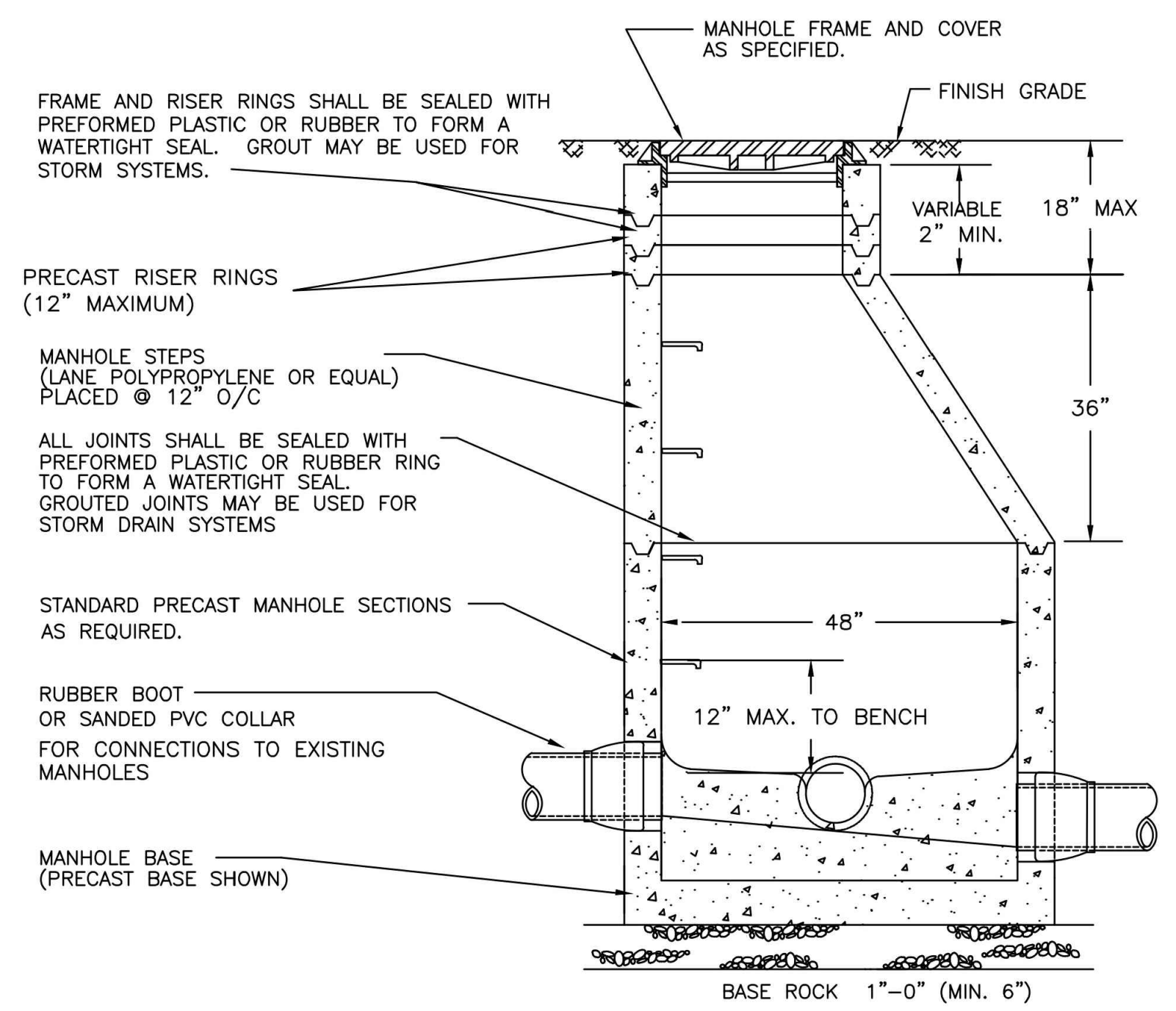
MANHOLE BASE SECTION

DATE: AUG 1996 DRAWING NO. 316

FILENAME: SANDY029.DWG

NOTES:

1. CONCRETE SHALL BE CLASS 3000.
2. CHANNELS SHALL BE CONSTRUCTED TO PROVIDE SMOOTH SLOPES AND RADII TO OUTLET PIPE.
3. BASES MAY BE PRECAST OR POURED IN PLACE.
4. THIS MANHOLE BASE SECTION SHALL BE USED FOR PIPE SIZES UP TO 24".
5. USE RUBBER BOOTS FOR NEW MANHOLE INSTALLATION USE PVC SAND COLLAR FOR EXISTING MANHOLE CONNECTION.



CITY OF SANDY

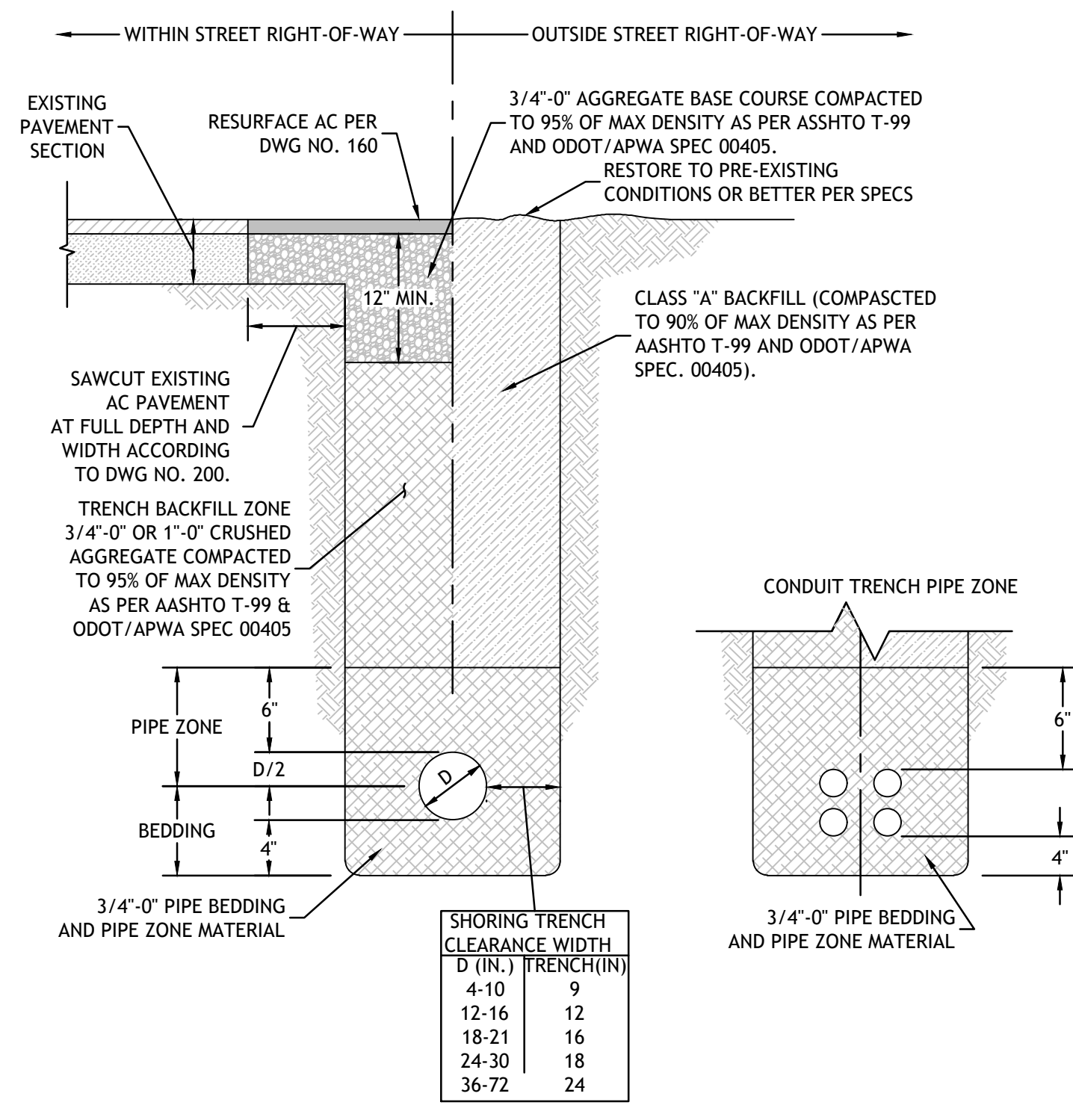
STORM AND SANITARY SEWER MANHOLE

DATE: NOV 1997 DRAWING NO. 315

FILENAME: SANDY028.DWG 7/8/97 406 PM

NOTES:

1. STANDARD PRECAST MANHOLE SECTION DIAMETER SHALL BE 48". USE 42" IF SPECIFIED BY THE ENGINEER.
2. ALL CONNECTING PIPES SHALL HAVE A FLEXIBLE JOINT WITHIN 18" OF MANHOLE WALL (IF BOOT IS NOT USED).
3. SEE MANHOLE BASE SECTION DRAWING FOR BASE DETAILS.
4. MAXIMUM DISTANCE FROM TOP STEP TO FINISH GRADE SHALL NOT EXCEED 24".



TRENCH DETAIL
N.T.S.



1ST SUBMITTAL: 05/21/2021

REVISIONS

NO.	DATE	DESCRIPTION

37685 SE OLSEN RD
SANITARY SEWER
EXTENSION



RENEWS: JUNE 30, 2022

SANITARY
DETAIL
SHEET

PROJECT NO.: 500-058
TYPE: PLANNING
REVIEWED BY: KCS

N:\proj\500-058\09 Drawings\04 Civil\Sheets - CD\Submittal\500058.dwg - SHEET: 3 May 21, 2021 - 12:47pm Rebecca