

SANITARY SEWER NOTES

GENERAL NOTES

1. CONTRACTOR SHALL NOTIFY CLEAN WATER SERVICES PROJECT MANAGER AND INSPECTOR 48 BUSINESS HOURS PRIOR TO START OF CONSTRUCTION AND COMPLY WITH ALL OTHER REQUIREMENTS OF ORS 757.541 TO 757.571.
2. CONTRACTOR SHALL PROVIDE 24 HOUR NOTICE OF WORK RESUMPTION AFTER ANY SHUTDOWN EXCEEDING ONE DAY DURATION EXCEPT FOLLOWING WEEKENDS OR HOLIDAYS
3. ALL CONSTRUCTION AND TESTING OF COMPLETED SANITARY SYSTEMS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF CLEAN WATER SERVICES GENERAL CONDITIONS AND STANDARD SPECIFICATIONS AS SET FORTH BY RESOLUTION & ORDER (R&O 07-20). NO FLOW SHALL BE EXPOSED TO NEW SEWERS UNTIL THE SUCCESSFUL COMPLETION OF ALL TESTING HAS OCCURRED.
4. ALL EROSION CONTROL INSTALLATION AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF CLEAN WATER SERVICES EROSION PREVENTION & SEDIMENT CONTROL TECHNICAL GUIDANCE HANDBOOK.
5. ALL RESTORATIVE PAVING WITHIN STREET RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF WASHINGTON COUNTY UNIFORM STREET DESIGN STANDARDS.
6. ALL TRAFFIC CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS MODIFIED BY THE OREGON SUPPLEMENTS. COST ASSOCIATED WITH IMPLEMENTATION OF TRAFFIC CONTROL, SIGNAGE, OR DEVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. CLEAN WATER SERVICES SHALL PROVIDE CONTRACTOR WITH NECESSARY PERMITS. CONTRACTOR SHALL HAVE A COPY OF PERMIT ONSITE AT ALL TIMES AND COMPLY WITH ALL CONDITIONS STIPULATED IN PERMIT.
8. CONTRACTOR SHALL SUBMIT AND RECEIVE APPROVAL OF TRAFFIC CONTROL PLAN FROM WASHINGTON COUNTY PRIOR TO START OF CONSTRUCTION. FEES ASSOCIATED WITH ANY ROAD CLOSURE REQUEST SHALL BE THE RESPONSIBILITY OF CONTRACTOR.
9. CONTRACTOR SHALL CONFINE CONSTRUCTION OPERATIONS WITHIN PERMANENT EASEMENTS, TEMPORARY CONSTRUCTION EASEMENTS, OR PUBLIC RIGHT-OF-WAY ONLY. IF AREAS OR FEATURES OUTSIDE DESIGNATED CONSTRUCTION ZONES SUSTAIN IMPACT FROM CONTRACTORS ACTIVITIES, CONTRACTOR SHALL RESTORE TO PRE-CONSTRUCTION CONDITION AT NO COST TO CLEAN WATER SERVICES.
10. CONTRACTOR SHALL LIMIT ALL CONSTRUCTION ACTIVITY TO BE WITHIN THE WORK ZONE. NO EQUIPMENT OR SOIL DISTURBANCE ALLOWED OUTSIDE THE WORK ZONE.
11. ALL EXISTING UTILITY LOCATIONS AND DESCRIPTIONS SHOWN ON PLANS HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEY. CLEAN WATER SERVICES CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THIS INFORMATION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF LOCATION AND DEPTH (POTHOLE) OF ALL EXISTING UTILITIES WITHIN CONSTRUCTION ZONE PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL PROMPTLY NOTIFY CLEAN WATER SERVICES OF POTENTIAL CONFLICTS. UNDER THESE TERMS CLEAN WATER SERVICES SHALL BE RESPONSIBLE FOR COST OF REQUIRED RELOCATIONS. IF CONTRACTOR FAILS TO LOCATE ANY KNOWN UTILITY WITHIN CONSTRUCTION ZONE THAT CONFLICTS WITH WORK, CONTRACTOR SHALL CORRECT CONFLICT AT OWN COST. ANY COSTS TO THE CONTRACTOR ARISING FROM COORDINATION WITH UTILITY COMPANY TO RELOCATE UTILITIES SHALL BE CONSIDERED INCIDENTAL TO COST OF PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE DUE CONTRACTOR.

12. CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTS AND CONSTRUCTION STAKING. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST AND COORDINATION TO REPLACE ANY DISTURBED MONUMENTS. CONTRACTOR SHALL NOTIFY CLEAN WATER SERVICES PRIOR TO DISTURBANCE OR REMOVAL OF ANY PERMANENT MONUMENTS TO ALLOW REFERENCING FOR FUTURE REPLACEMENT.
13. CONTRACTOR SHALL RESTORE ALL STREET FEATURES IMPACTED BY CONSTRUCTION. FEATURES SHALL INCLUDE, BUT NOT BE LIMITED TO, PAVEMENT, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, STREET STRIPING, SIGNAGE, MAILBOXES, AND UTILITIES. THIS ALSO APPLIES TO ANY PATHWAYS WITHIN THE WORK ZONE.
14. CONTRACTOR SHALL RESTORE ALL PROJECT-RELATED EASEMENT AREAS AS STIPULATED IN EASEMENT AND CONTRACT DOCUMENTS. CLEAN WATER SERVICES SHALL PROVIDE CONTRACTOR WITH REFERENCE COPY OF ALL EASEMENT AGREEMENT CONDITIONS.
15. CONTRACTOR TO PROTECT AND MAINTAIN ALL STORM WATER FACILITIES AND STRUCTURES INCLUDING OUTFALLS, PIPES, RIPRAP, AND INLETS. ANY DAMAGE TO STORM WATER FACILITIES SHALL BE REPLACED AT CONTRACTORS EXPENSE.
16. CONTRACTOR TO COORDINATE WITH PGE FOR ANY CONSTRUCTION ACTIVITY WITHIN 20 FEET OF THE TRANSMISSION LINES. PGE SAFETY MONITOR MAY BE REQUIRED, CHECK PERMIT REQUIREMENTS.



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NO. REVISIONS

NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER NOTES

PROJECT NUMBER
100215

SHEET NO.
329 OF **349**
SHEET TITLE
CWS-1

REGISTERED PROFESSIONAL
ENGINEER
93676PE

OREGON
JULY 10, 2018
PAUL W. HARMSSEN

EXPIRES: 6/30/2023

Department of
Land Use &
Transportation

MACKEY SPOSITO

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NO. REVISIONS

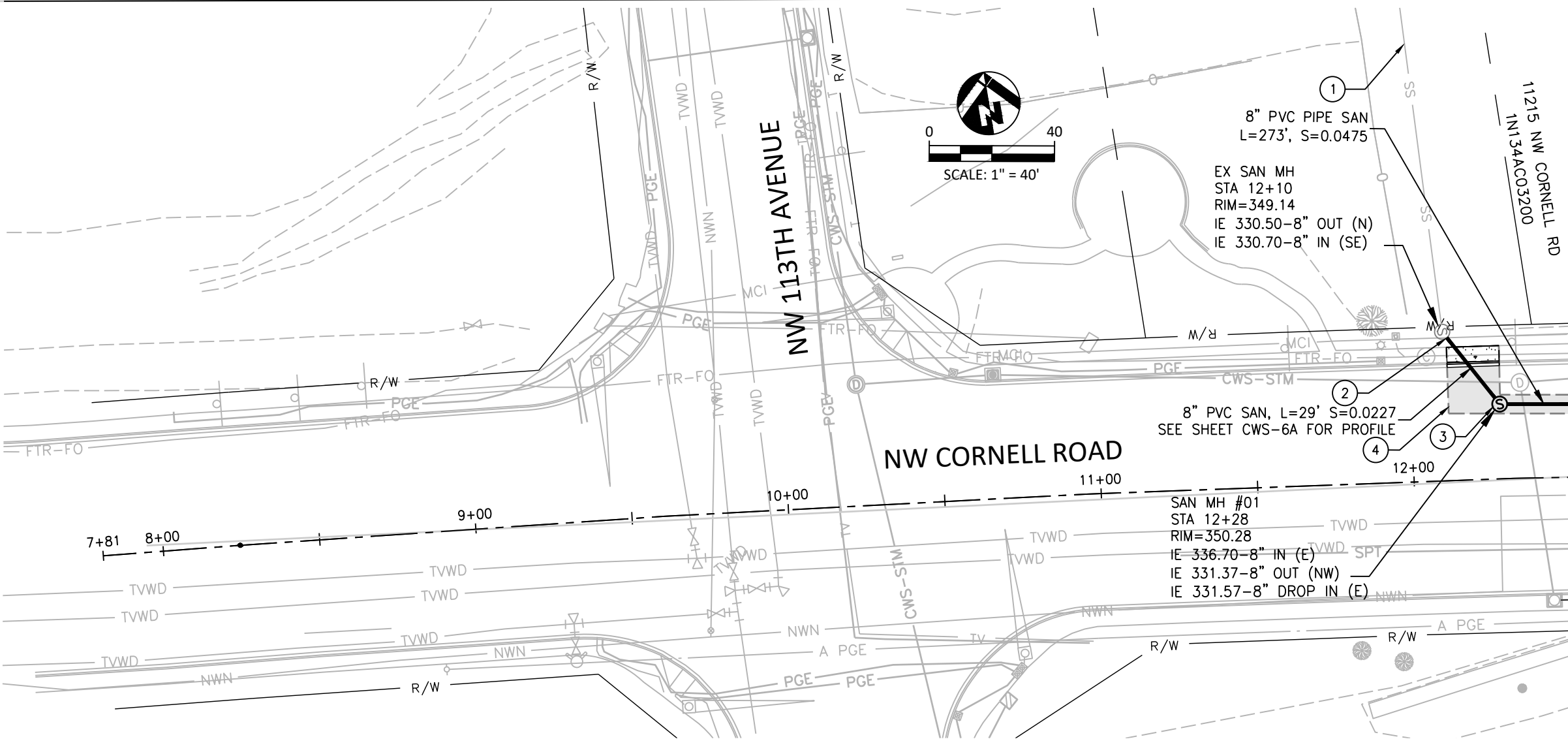
PROJECT NUMBER
100215

SHEET NO.
330 OF 349
SHEET TITLE
CWS-1A

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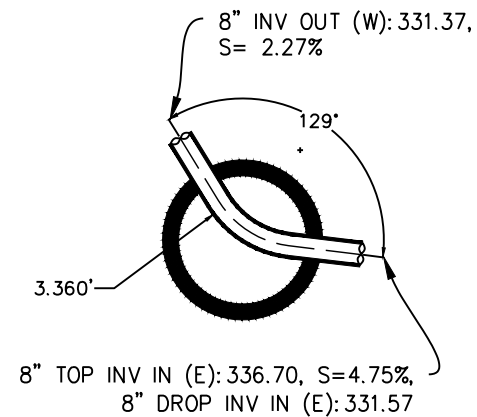
NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER



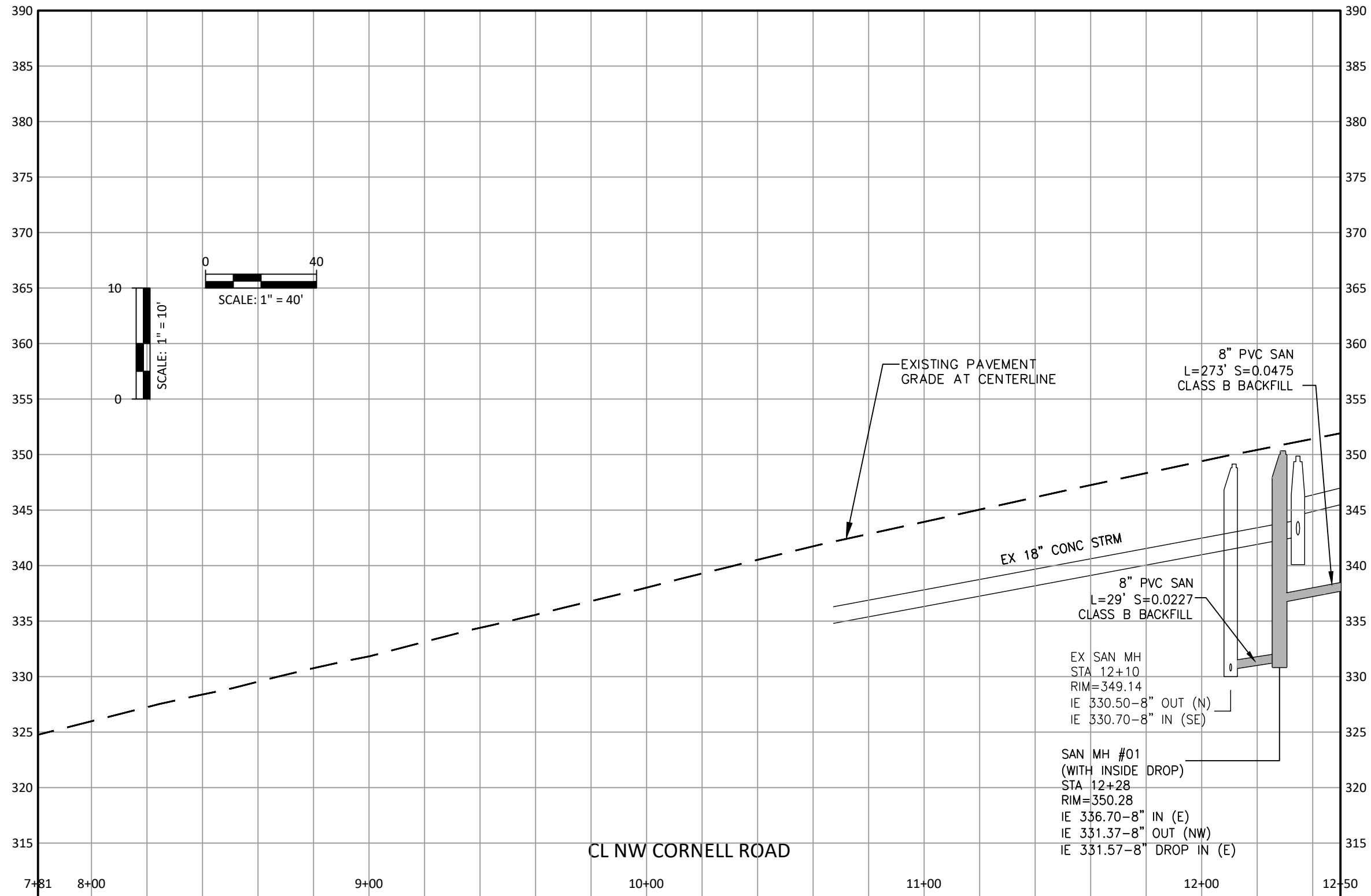
SANITARY SEWER NOTES

- 1 DOWNSTREAM SANITARY SEWER TO BE CONSTRUCTED BY OTHERS PRIOR TO CONSTRUCTION
- 2 STA 12+10 MANHOLE TO BE CORED AND 8 INCH WATERTIGHT CONNECTION INSTALLED PER DETAIL 030 ON SHEET CWS-7B
- 3 INSTALL NEW MANHOLE PER DETAIL 010, 020 ON SHEET CWS-7A. NEW MH TO HAVE 8 INCH INTERNAL DROP SYSTEM INSTALLED PER DETAIL 090 AND THE PLANS PER DETAIL ON SHEET CWS-7C
- 4 SAWCUT ASPHALT, CONSTRUCT TRENCH BACKFILL AND PAVEMENT RESTORATION PER DETAILS 590 AND 600 ON SHEET CWS-7E



MH01 - 48" DIA
Rim: 350.28
NTS

STA 12+50.00 - MATCH LINE
SEE SHEET CWS-2A FOR CONTINUATION



STA 12+50.00 - MATCH LINE
SEE SHEET CWS-2B FOR CONTINUATION

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NO. REVISIONS	
NW CORNELL ROAD NW 102ND AVENUE TO NW 113TH AVENUE WASHINGTON COUNTY	
CWS SANITARY SEWER PROFILE	
PROJECT NUMBER 100215	
SHEET NO. 331 OF 349	
SHEET TITLE CWS-1B	



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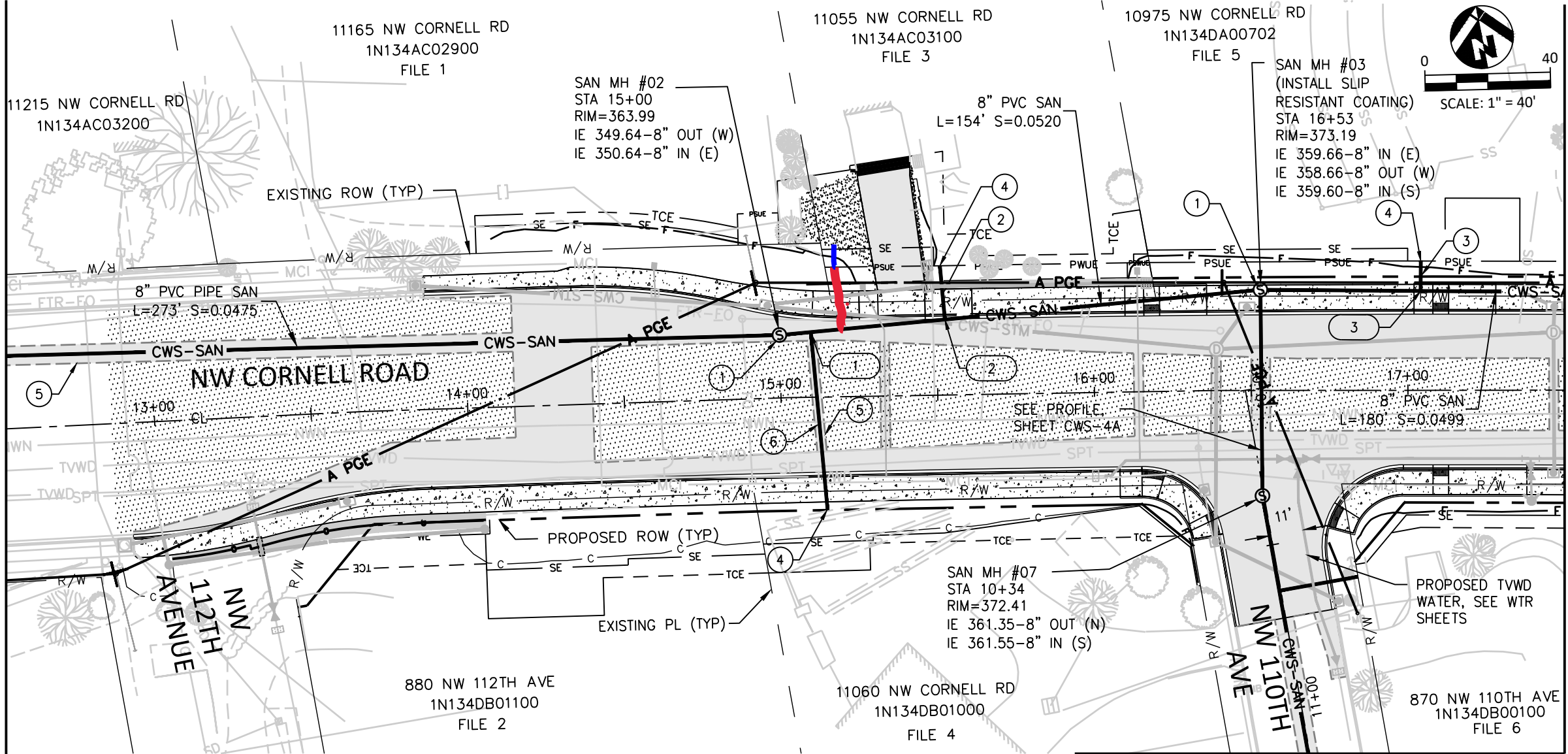
NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER

PROJECT NUMBER
100215

SHEET NO.
332 OF 349
SHEET TITLE
CWS-2A

STA 12+50.00 - MATCH LINE
SEE SHEET CWS-1A FOR CONTINUATION



SEE SHEET CWS-4A FOR CONTINUATION

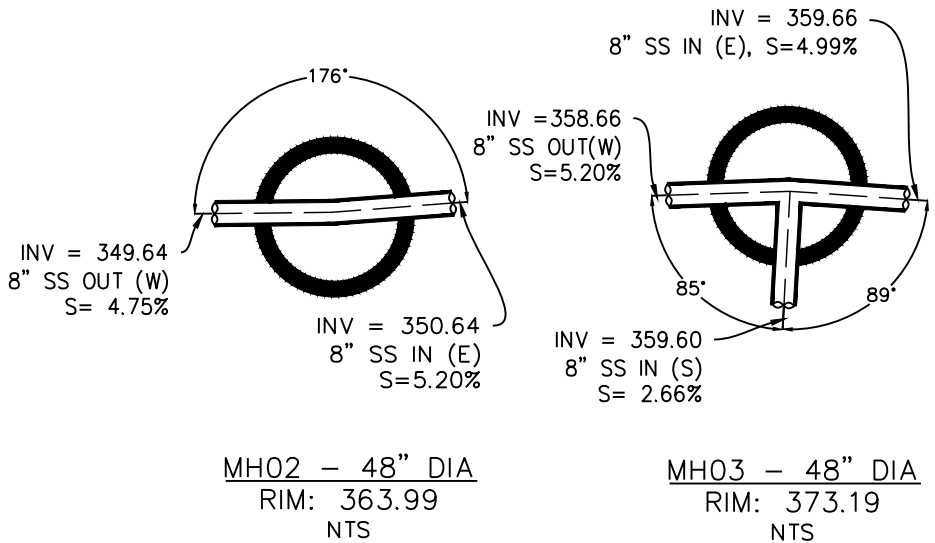
SANITARY SEWER NOTES

1. INSTALL NEW MANHOLE PER DETAIL 010, 020, ON SHEET CWS-7A.
2. 4" PVC SAN L=17' S=0.0200 SEE SHEET CWS-6A FOR PROFILE
3. 4" PVC SAN, L=9' S=-0.0200 SEE SHEET CWS-6A FOR PROFILE
4. INSTALL SANITARY SEWER SERVICE LINE FROM MAIN LINE TO R/W OR EASEMENT LINE AS SHOWN ON PLANS PER DETAIL 520, ON SHEET CWS-7C.
5. SAWCUT ASPHALT, CONSTRUCT TRENCH BACKFILL AND PAVEMENT RESTORATION PER DETAILS 590 AND 600 ON SHEET CWS-7E
6. 4" PVC SAN, L=56' S=-0.1021 SEE SHEET CWS-6A FOR PROFILE

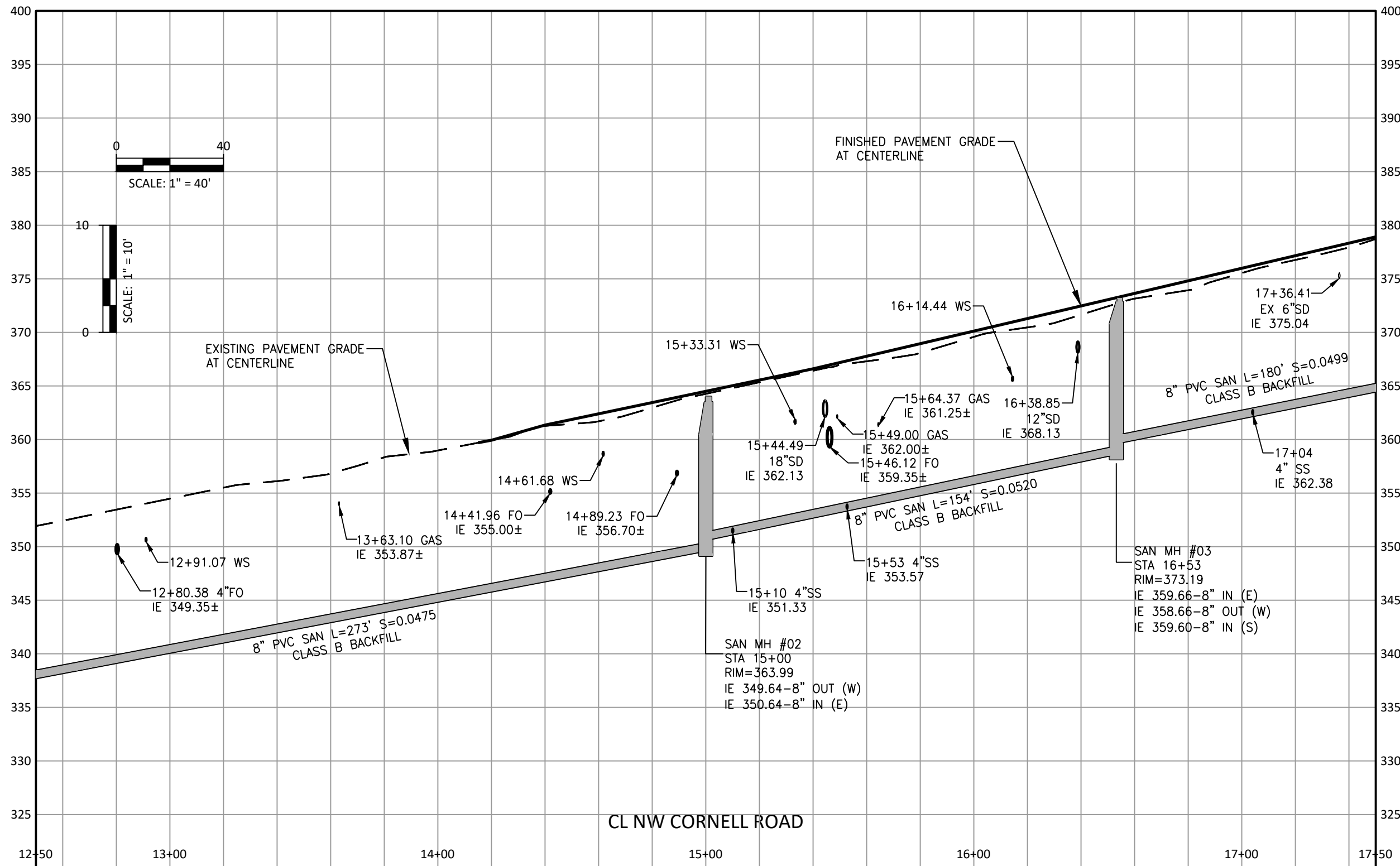
LATERAL DESIGN ELEVATION TABLE
ALIGNMENT A - CORNELL ROAD

NOTE #	TAXLOT	OWNER/ADDRESS	STATION	LOWEST FF	MAX LAT INV ELEV (FT) AT PROP/ESMT LINE (1)	APPROX. INV ELEV (FT) AT SEWER MAIN (2)
1	DB01000	GRYCK 11060 NW CORNELL RD	15+10	368.00	IE 357.08	IE 351.33
2	AC03100	DITRAPANI 11055 NW CORNELL RD	15+53	365.42	IE 353.91	IE 353.57
3	DA00702	FOCHT 10975 NW CORNELL RD	17+04	380.38	IE 362.56	IE 362.38

- (1) ASSUMES 2% SLOPE FROM SEWER MAINLINE TO CONNECTION AT RESIDENTIAL STRUCTURE.
(2) ONLY AN APPROXIMATE CALCULATION BASED ON DESIGN DRAWING, SURVEY CUT/FILL SHALL PROVIDE ACTUAL ELEVATIONS FOR CONSTRUCTION PURPOSES.



STA 12+50.00 - MATCH LINE
SEE SHEET CWS-1B FOR CONTINUATION



STA 17+50.00 - MATCH LINE
SEE SHEET CWS-3B FOR CONTINUATION



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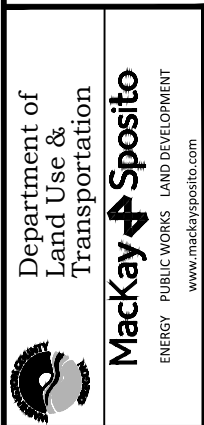
NO. REVISIONS

NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER PROFILE

PROJECT NUMBER
100215

SHEET NO.
333 OF 349
SHEET TITLE
CWS-2B



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NO.	REVISIONS

NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

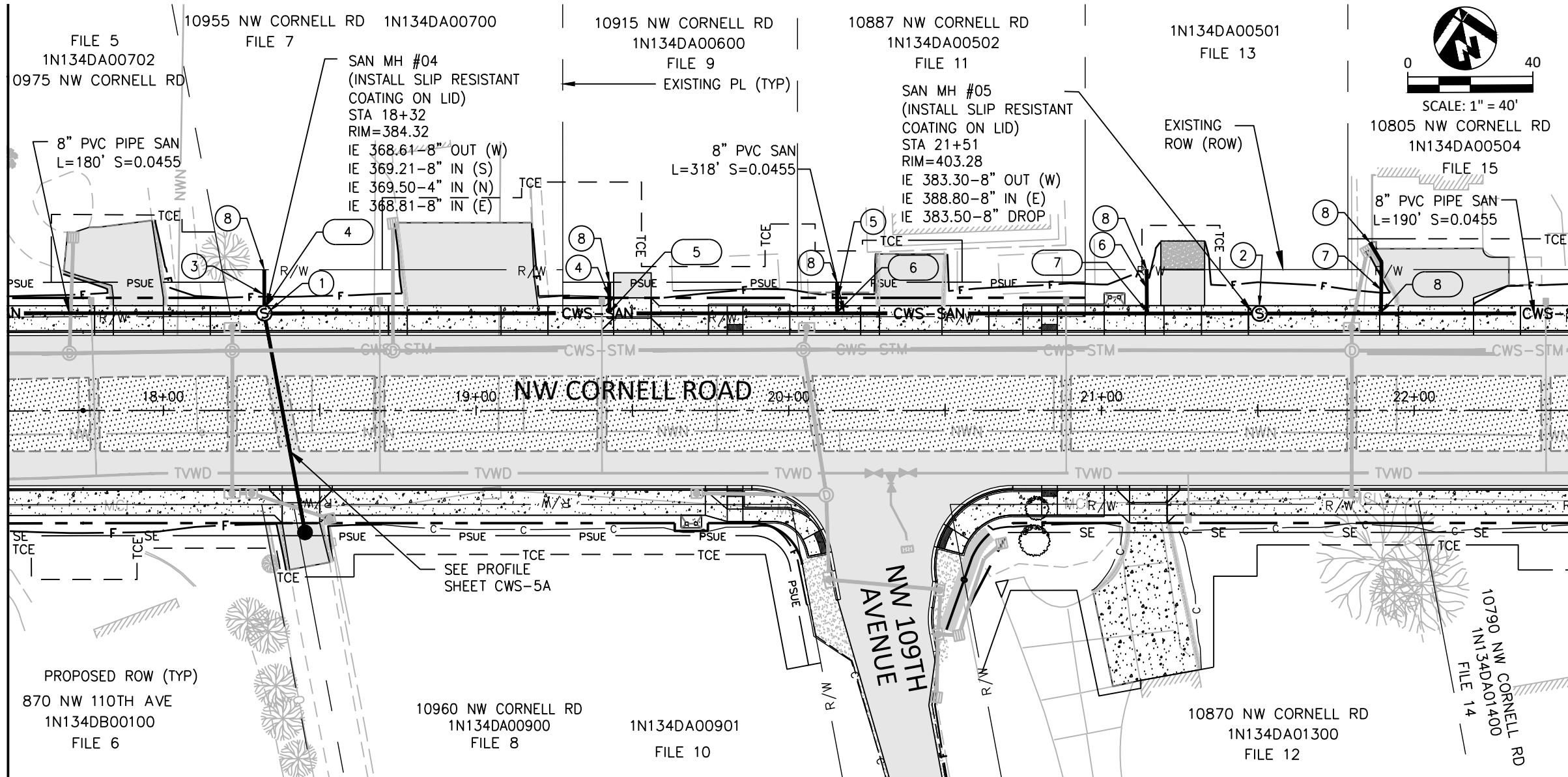
CWS SANITARY SEWER

PROJECT NUMBER
100215

SHEET NO.
334 OF 349

SHEET TITLE
CWS-3A

STA 17+50.00 - MATCH LINE
SEE SHEET CWS-2A FOR CONTINUATION



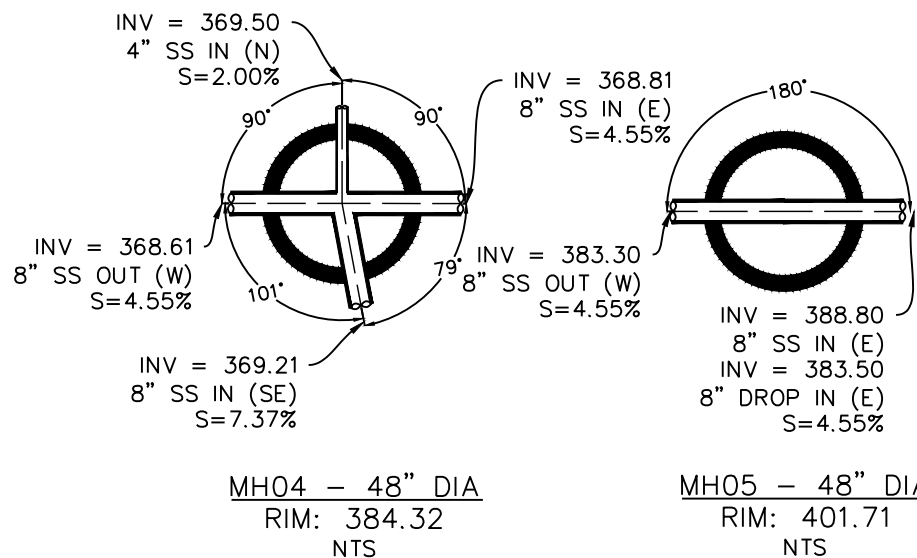
LATERAL DESIGN ELEVATION TABLE
ALIGNMENT A - CORNELL ROAD

NOTE #	TAXLOT	OWNER/ADDRESS	STATION	LOWEST FF	MAX LAT INV ELEV (FT) AT PROP/ESMT LINE (1)	APPROX. INV ELEV (FT) AT SEWER MAIN (2)
4	DA00700	BEOVICH 10955 NW CORNELL RD	18+32	386.98	IE 369.78	IE 369.50
5	DA00600	LY 10915 NW CORNELL RD	19+43	393.46	IE 374.20	IE 374.01
6	DA00502	SHEARS 10887 NW CORNELL RD	20+16	399.75	IE 377.51	IE 377.32
7	DA00501	NGUYEN NO ADDRESS	21+15	390.00	IE 382.10	IE 381.83
8	DA00504	SIMAS 10805 NW CORNELL RD	21+89	406.62	IE 391.19	IE 390.73

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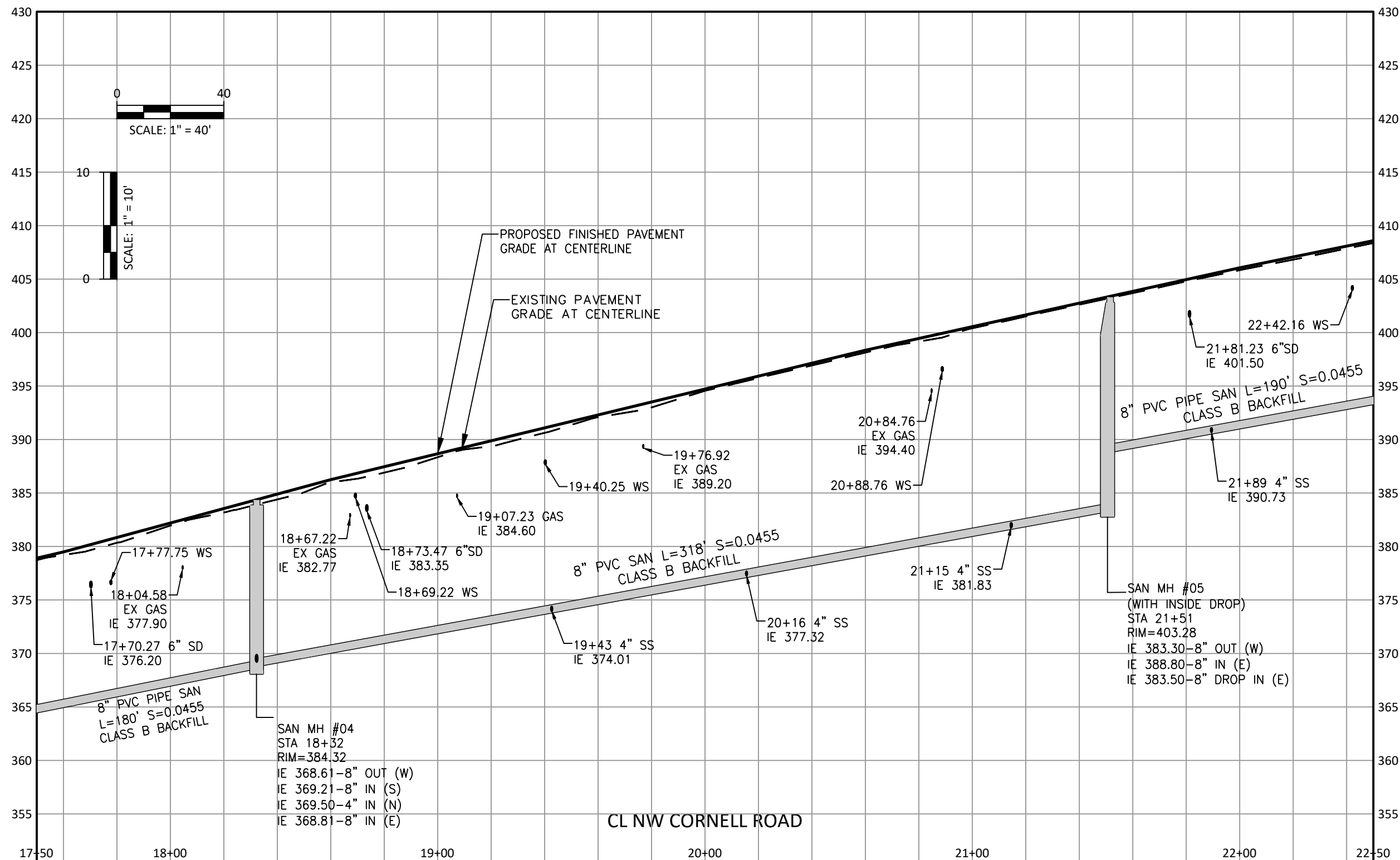
SANITARY SEWER NOTES

- INSTALL NEW MANHOLE PER DETAIL 010, 020, ON SHEET CWS-7A.
- INSTALL NEW MANHOLE PER DETAIL 010, 020, ON SHEET CWS-7A. NEW MH TO HAVE 8" INTERNAL DROP SYSTEM INSTALLED PER DETAIL 090 ON SHEET CWS-7C
- 4" PVC PIPE SAN, L=14' S=0.0200 SEE SHEET CWS-5A FOR PROFILE
- 4" PVC SAN, L=10', S=0.0200 SEE SHEET CWS-6B FOR PROFILE
- 4" PVC SAN, L=10', S=0.0200 SEE SHEET CWS-6B FOR PROFILE
- 4" PVC PIPE SAN, L=14', S=0.0200 SEE SHEET CWS-6B FOR PROFILE
- 4" PVC PIPE SAN, L=23', S=0.0200 SEE SHEET CWS-6B FOR PROFILE
- INSTALL SANITARY SEWER SERVICE LINE FROM MAIN LINE TO R/W OR EASEMENT LINE AS SHOWN ON PLANS PER DETAIL 520, ON SHEET CWS-7C.



STA 22+50.00 - MATCH LINE
SEE SHEET CWS-4A FOR CONTINUATION

STA 17+50.00 - MATCH LINE
SEE SHEET CWS-2B FOR CONTINUATION



STA 22+50.00 - MATCH LINE
SEE SHEET CWS-4B FOR CONTINUATION

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NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

PROJECT NUMBER
100215
SHEET NO.
335 OF 349
SHEET TITLE
CWS-3B

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CWS SANITARY SEWER PROFILE



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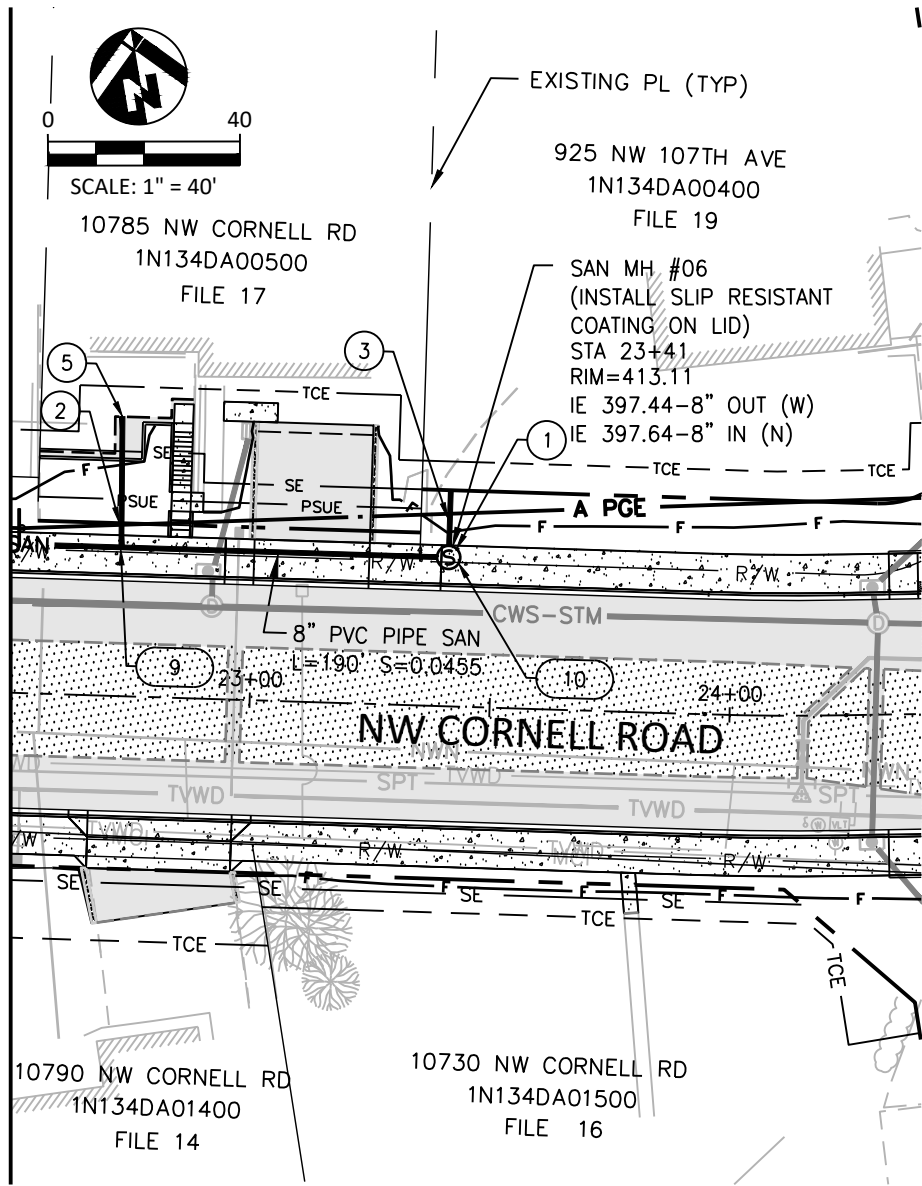
NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER

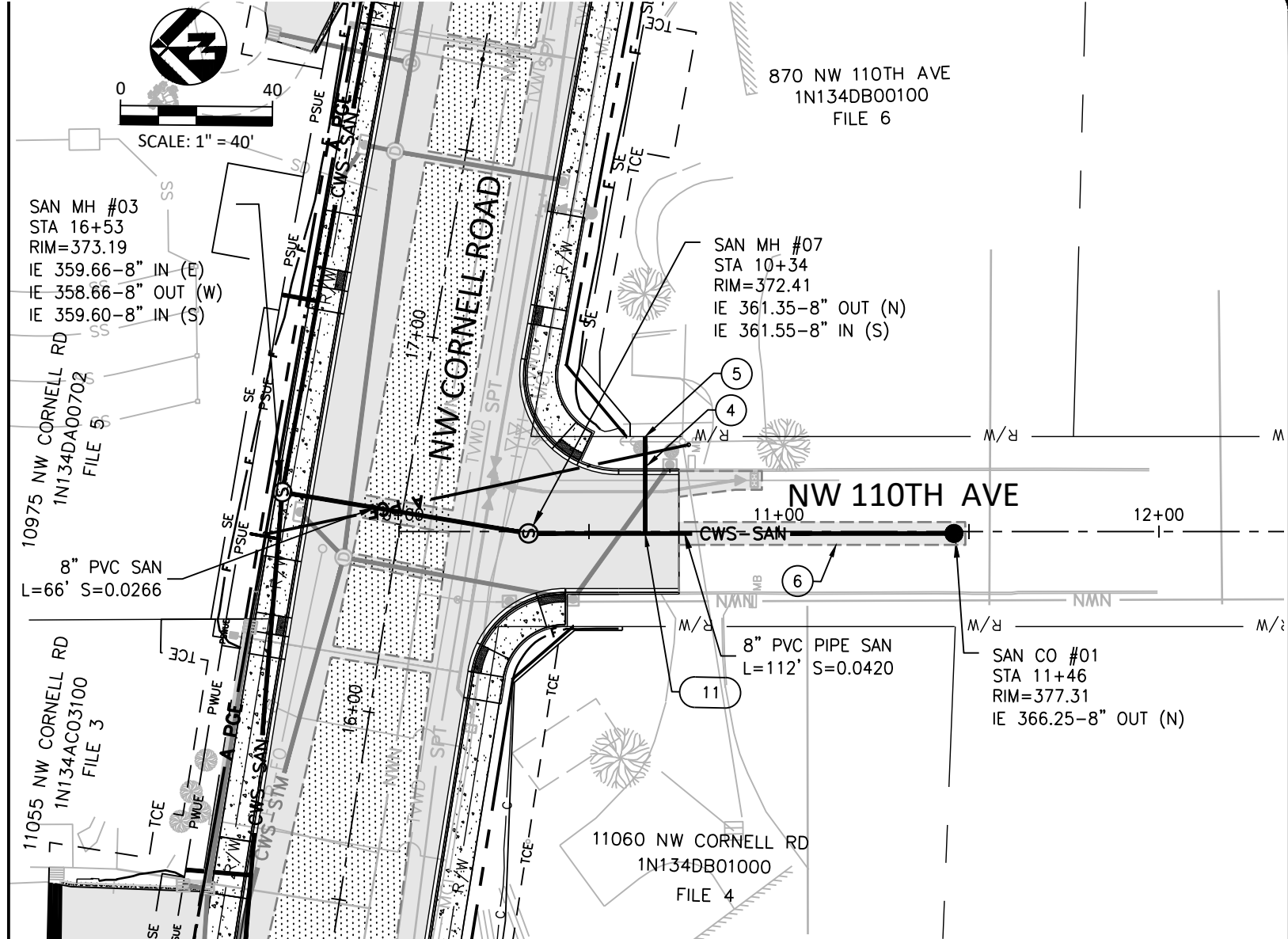
PROJECT NUMBER
100215

SHEET NO.
336 OF 349
SHEET TITLE
CWS-4A

STA 22+50.00 - MATCH LINE
SEE SHEET CWS-3A FOR CONTINUATION



SEE SHEET CWS-2A FOR CONTINUATION



SANITARY SEWER NOTES

- INSTALL NEW MANHOLE PER DETAIL 010, 020, ON SHEET CWS-7A.
- 4" PVC PIPE SAN L=27' S=-0.0200 SEE SHEET CWS-6C FOR PROFILE
- 8" PVC PIPE SAN L=14' S=0.0050 SEE SHEET CWS-6C FOR PROFILE
- 4" PVC PIPE SAN L=25' S=-0.0200 SEE SHEET CWS-6A FOR PROFILE
- INSTALL SANITARY SEWER SERVICE LINE FROM MAIN LINE TO R/W OR EASEMENT LINE AS SHOWN ON PLANS PER DETAIL 520, ON SHEET CWS-7C.
- SAWCUT ASPHALT, CONSTRUCT TRENCH BACKFILL AND PAVEMENT RESTORATION PER DETAILS 590 AND 600 ON SHEET CWS-7E

LATERAL DESIGN ELEVATION TABLE

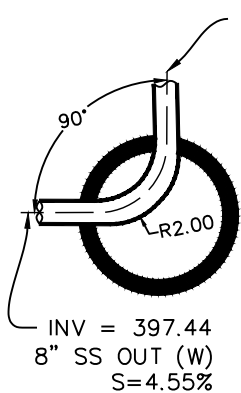
ALIGNMENT A - CORNELL ROAD

NOTE #	TAXLOT	OWNER/ADDRESS	STATION	LOWEST FF	MAX LAT INV ELEV (FT) AT PROP/ESMT LINE (1)	APPROX. INV ELEV (FT) AT SEWER MAIN (2)
9	DA00500	LOPEZ 10785 NW CORNELL RD	22+72	402.24	IE 395.04	IE 394.50
10	DA00400	ENNIS ISMAIL 925 NW 107TH AVE	23+41	410.00	IE 397.71	IE 397.64

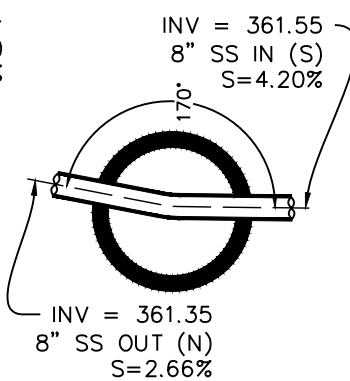
ALIGNMENT A - 110TH STREET

NOTE #	TAXLOT	OWNER/ADDRESS	STATION	LOWEST FF	MAX LAT INV ELEV (FT) AT PROP/ESMT LINE (1)	APPROX. INV ELEV (FT) AT SEWER MAIN (2)
11	DB00100	NEYMA 870 NW 110TH ST	10+65	371.00	IE 363.51	IE 363.01

- (1) ASSUMES 2% SLOPE FROM SEWER MAINLINE TO CONNECTION AT RESIDENTIAL STRUCTURE.
(2) ONLY AN APPROXIMATE CALCULATION BASED ON DESIGN DRAWING, SURVEY CUT/FILL SHALL PROVIDE ACTUAL ELEVATIONS FOR CONSTRUCTION PURPOSES.

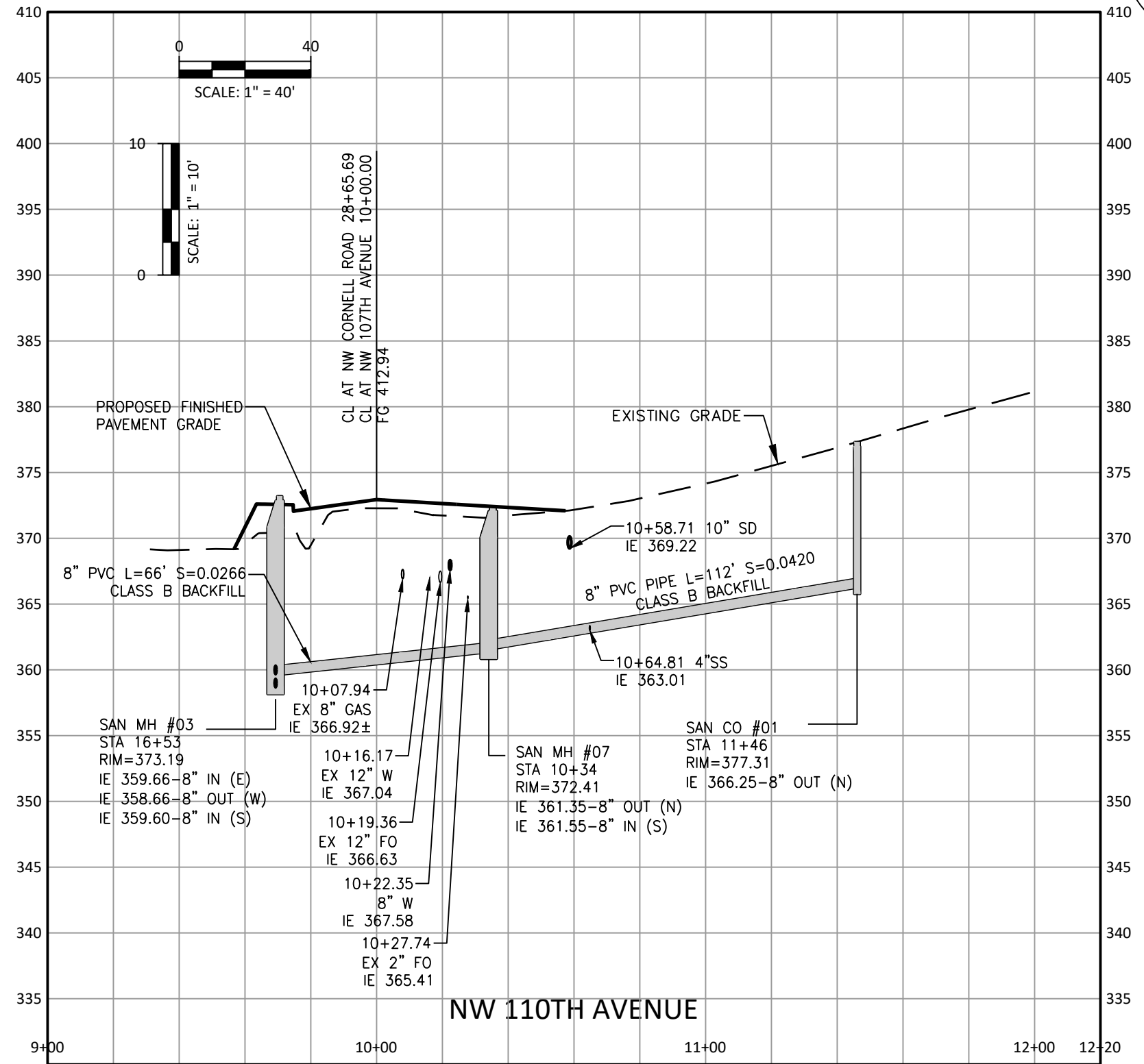
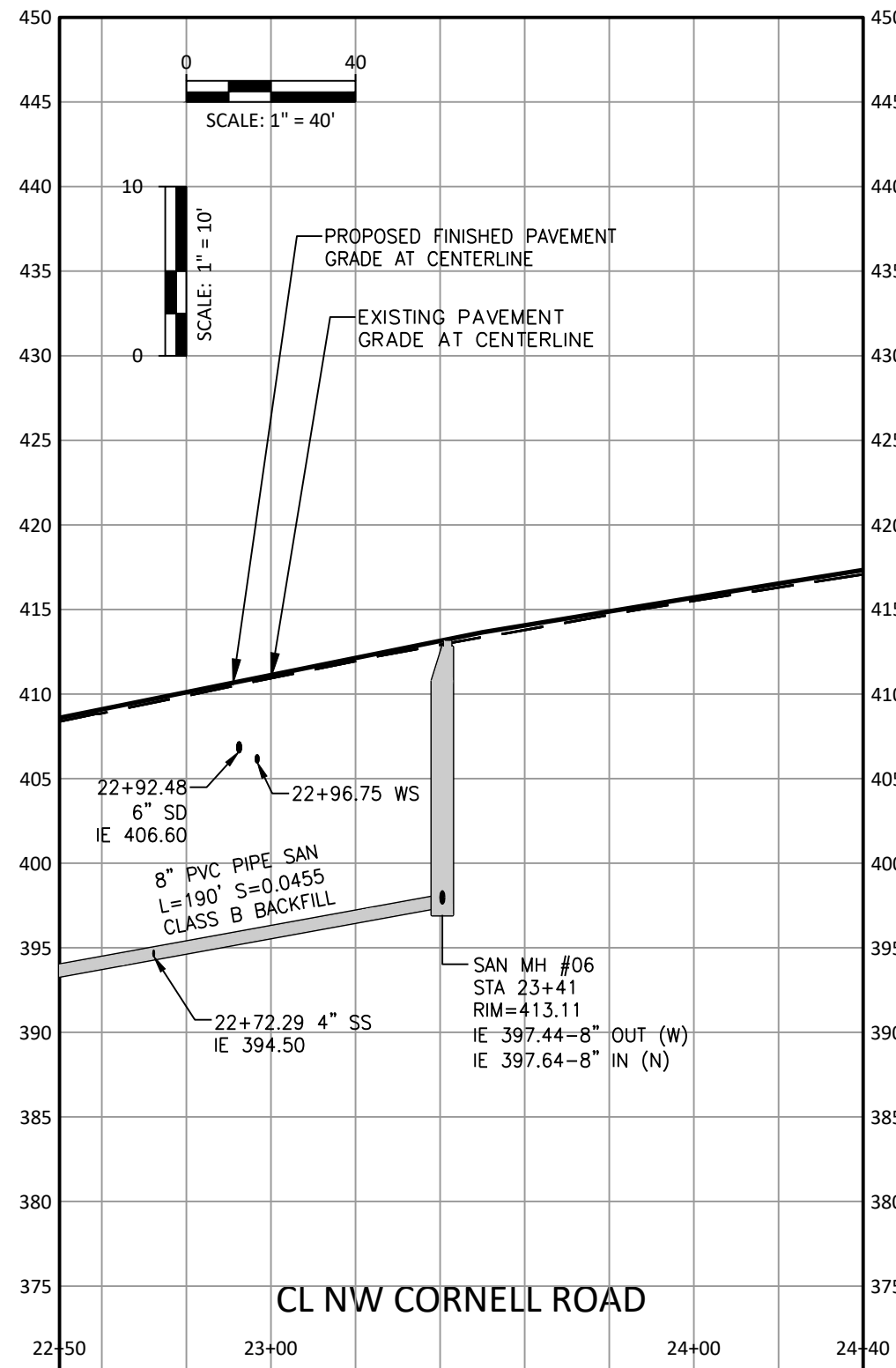


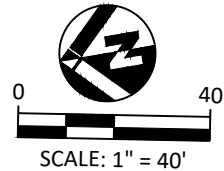
MH06 - 48" DIA
RIM: 413.11
NTS



MH07 - 48" DIA
RIM: 372.41
NTS

STA 22+50.00 MATCH LINE - SEE SHEET CWS-3B FOR CONTINUATION





10955 NW CORNELL RD
1N134DA00700
FILE 7

SAN MH #04
STA 18+32
RIM=384.32
IE 368.61-8" OUT (W)
IE 369.21-8" IN (S)
IE 369.50-4" IN (N)
IE 368.81-8" IN (E)
10975 NW CORNELL RD
1N134DA00702
FILE 5

NW CORNELL ROAD

1N134DA00901
FILE 10

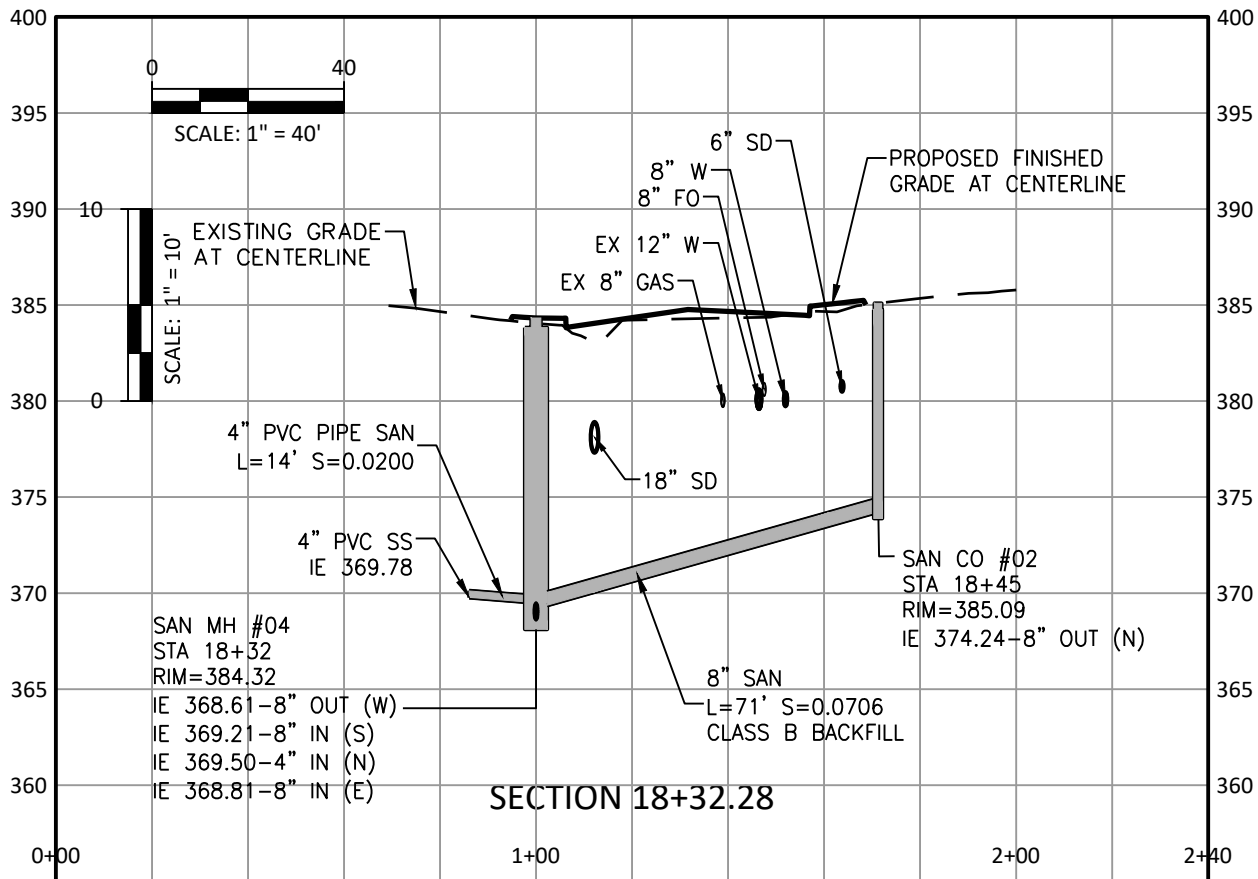
SAN CO #02
STA 18+45
RIM=385.09
IE 374.24-8" OUT (N)

8" PVC PIPE SAN
L=71' S=0.0706

870 NW 110TH AVE
1N134DB00100
FILE 6

SANITARY SEWER NOTES

- 1. INSTALL NEW MANHOLE PER DETAIL 010, 020, ON SHEET CWS-7A.
- 2. 4" PVC PIPE SAN, L=14', S=0.0200
- 3. INSTALL SANITARY SEWER SERVICE LINE FROM MAIN LINE TO R/W OR EASEMENT LINE AS SOWN ON PLANS PER DETAIL 520, ON SHEET CWS-7C.
- 4. INSTALL NEW SEWER CLEANOUT PER DETAIL 500, 510, ON SHEET CWS-7D.



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NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER

PROJECT NUMBER
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SHEET NO.
338 OF 349
SHEET TITLE
CWS-5A



OREGON

JULY 10, 2018
PAUL W. HARMSEN

EXPIRES: 6/30/2023

Department of
Land Use &
Transportation
MacKay & Sposito
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NO. REVISIONS

NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY
CWS SANITARY SEWER PROFILE

PROJECT NUMBER

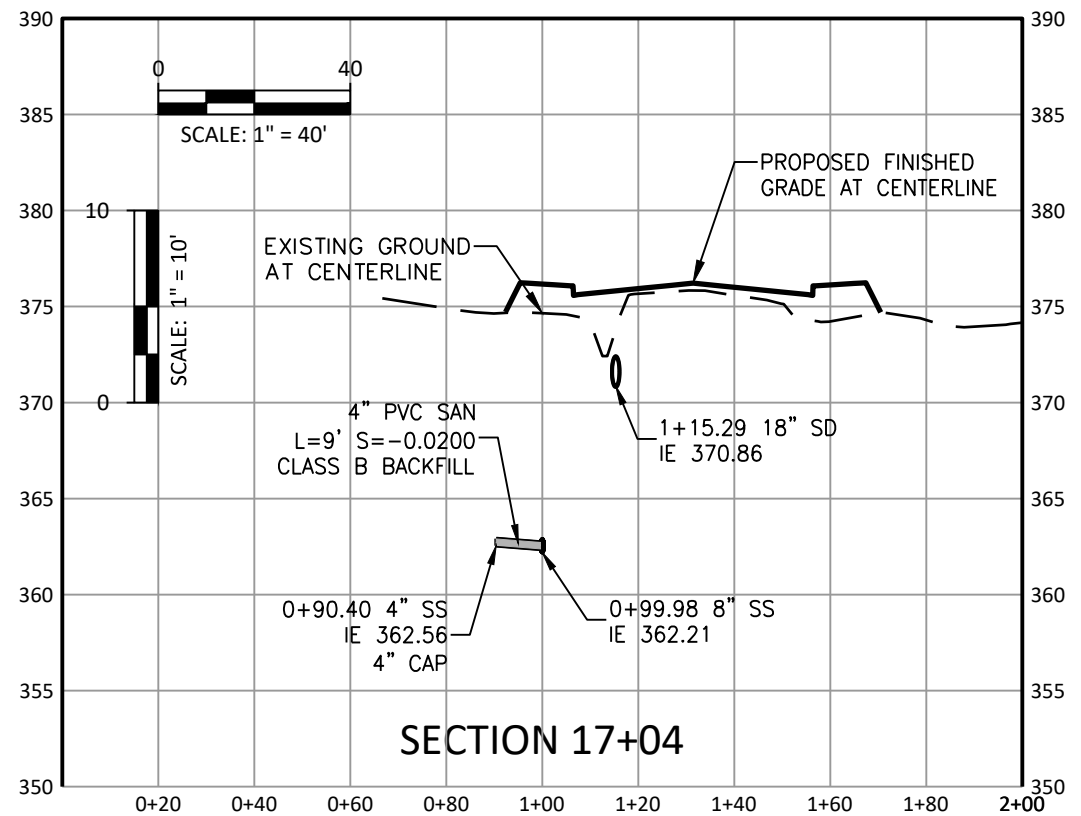
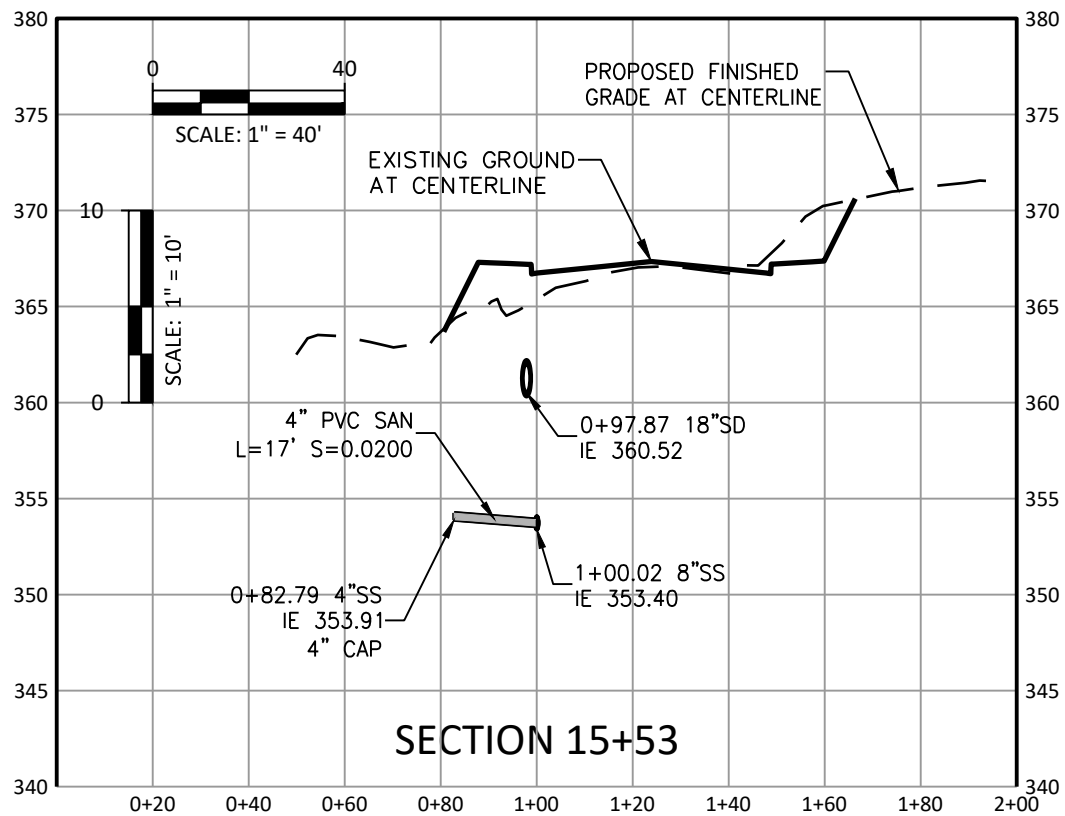
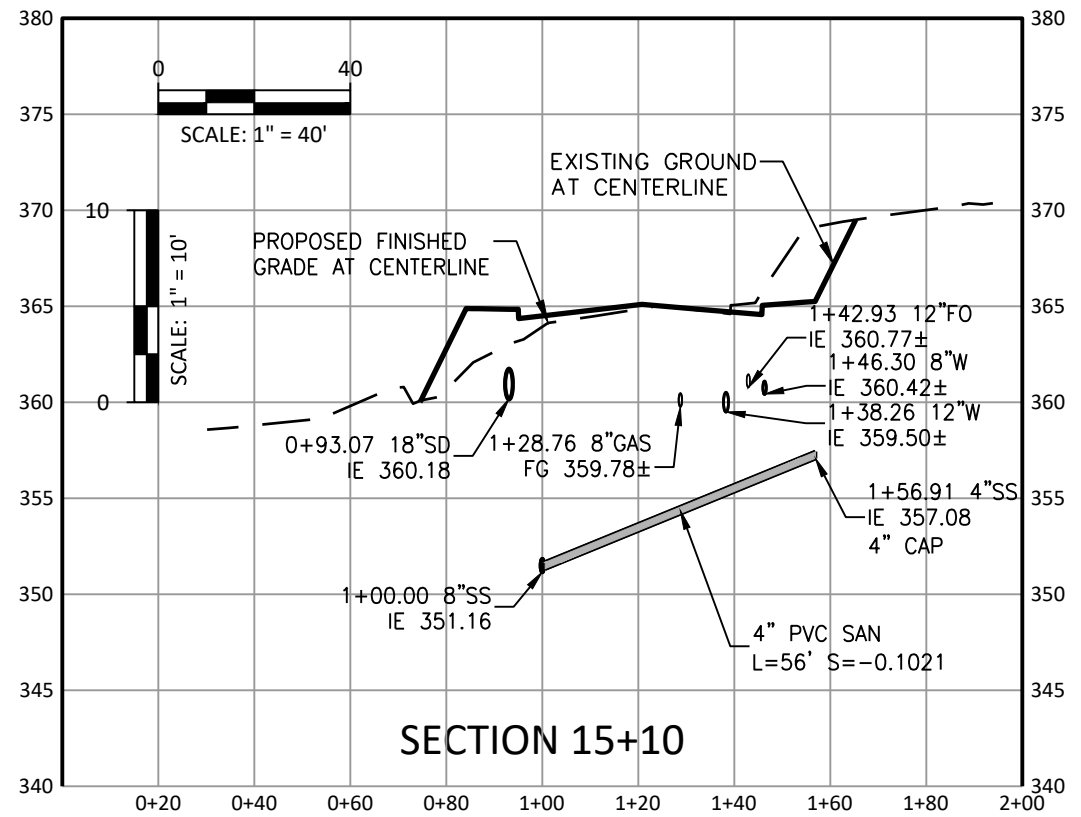
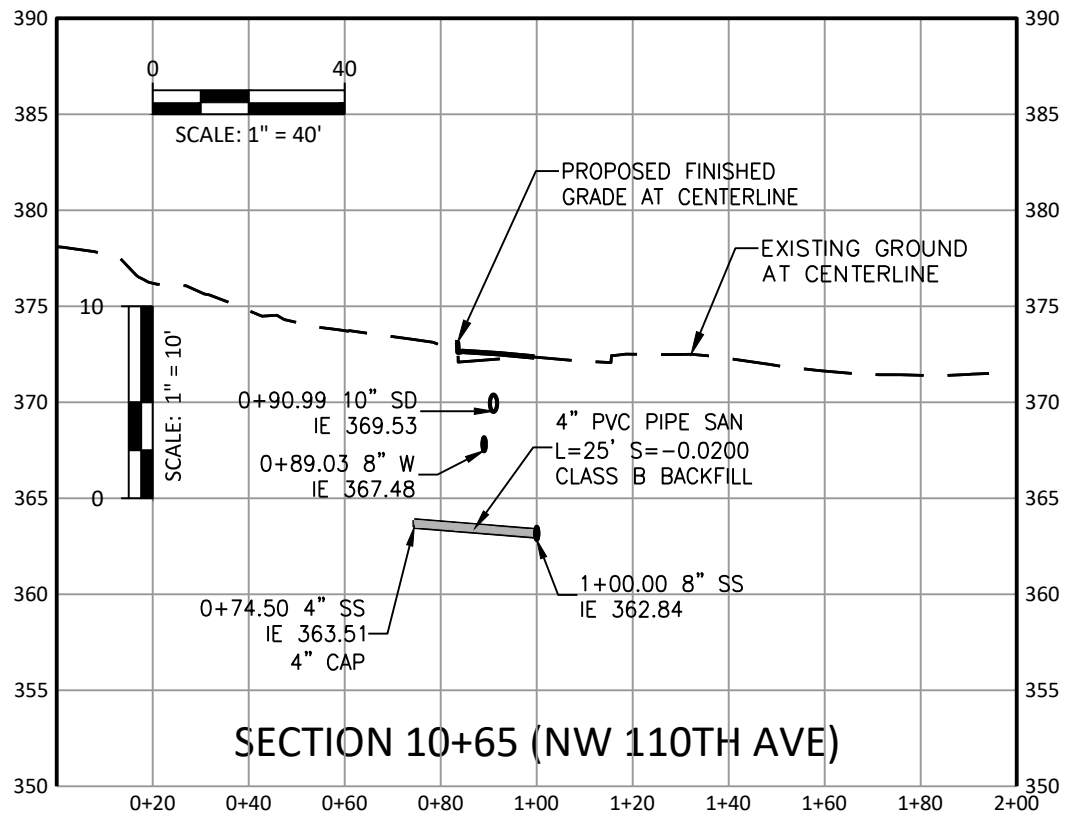
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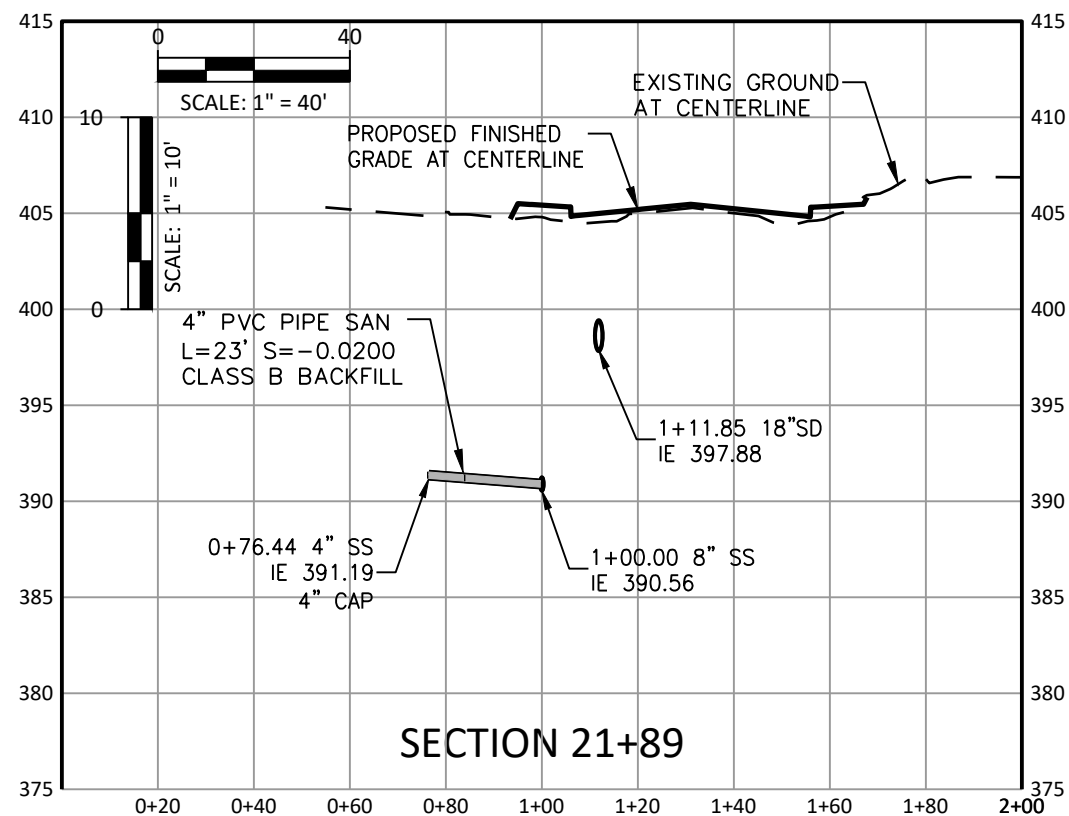
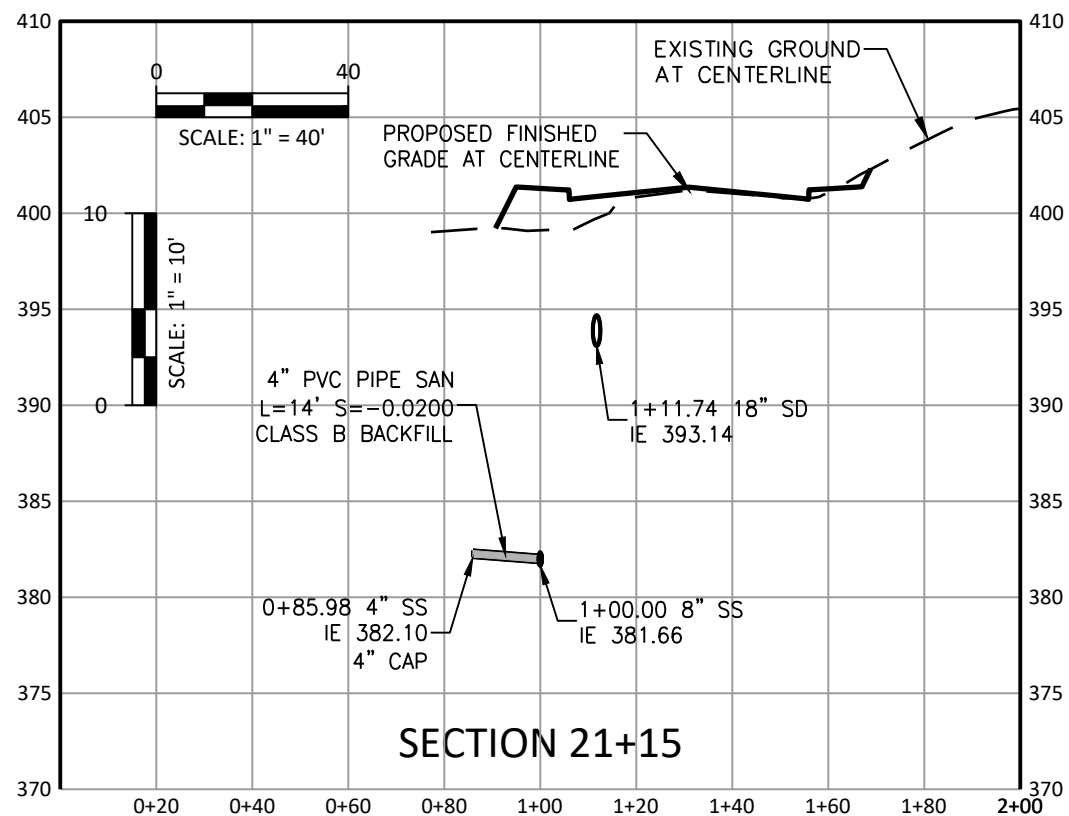
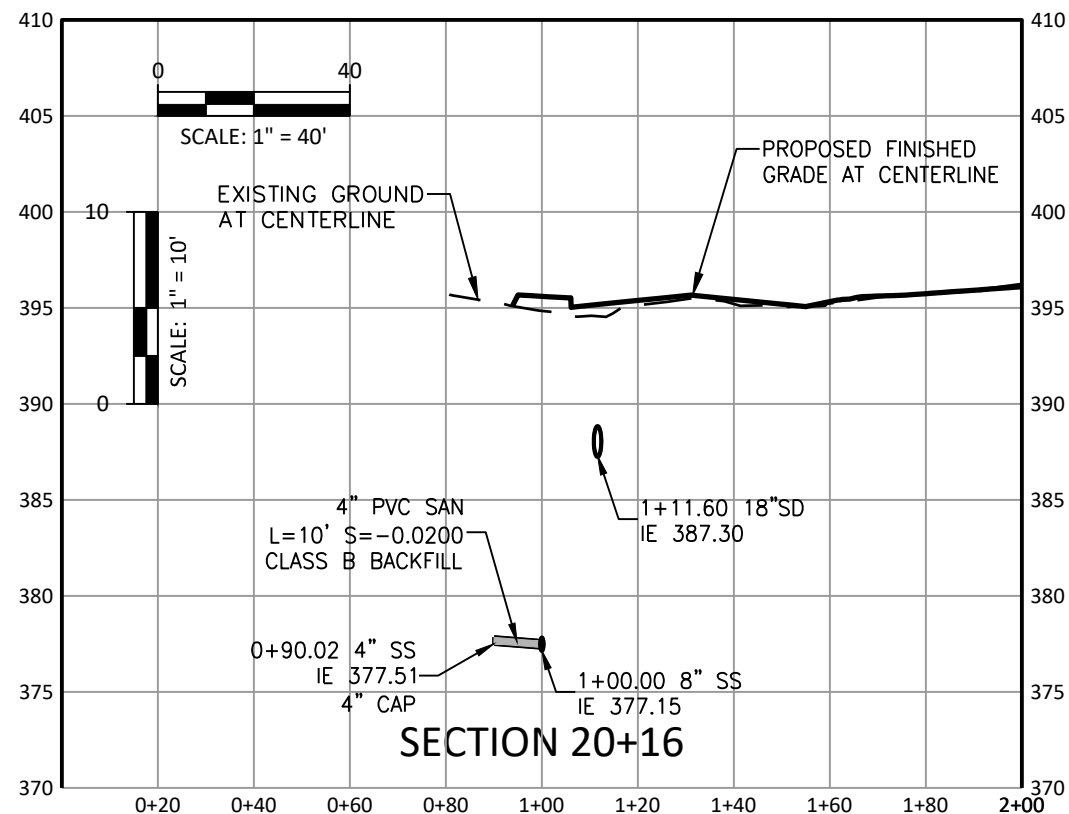
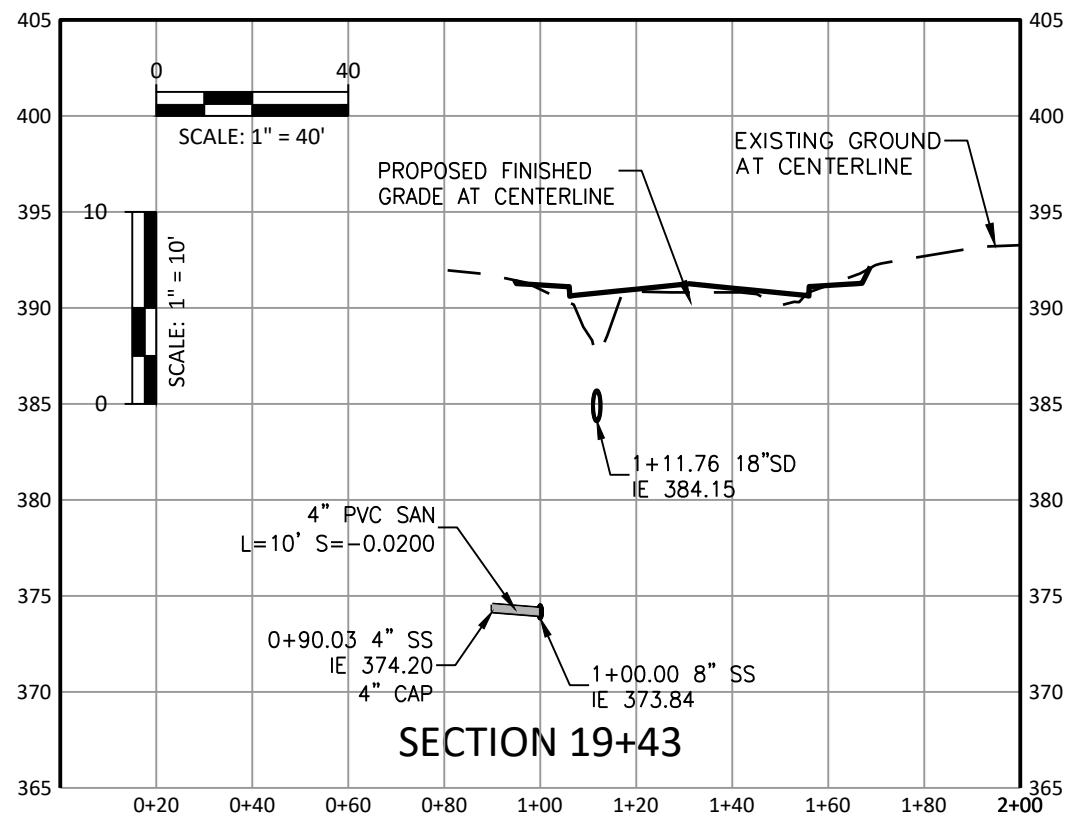
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339 OF 349

SHEET TITLE

CWS-6A







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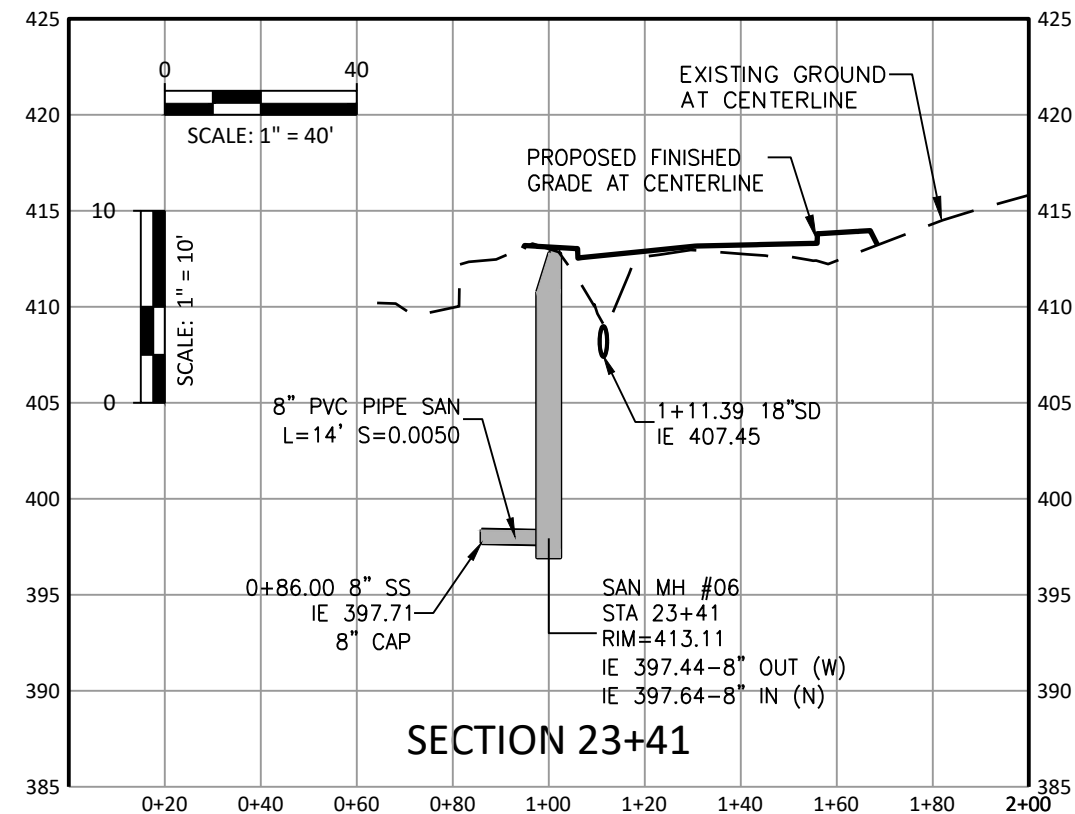
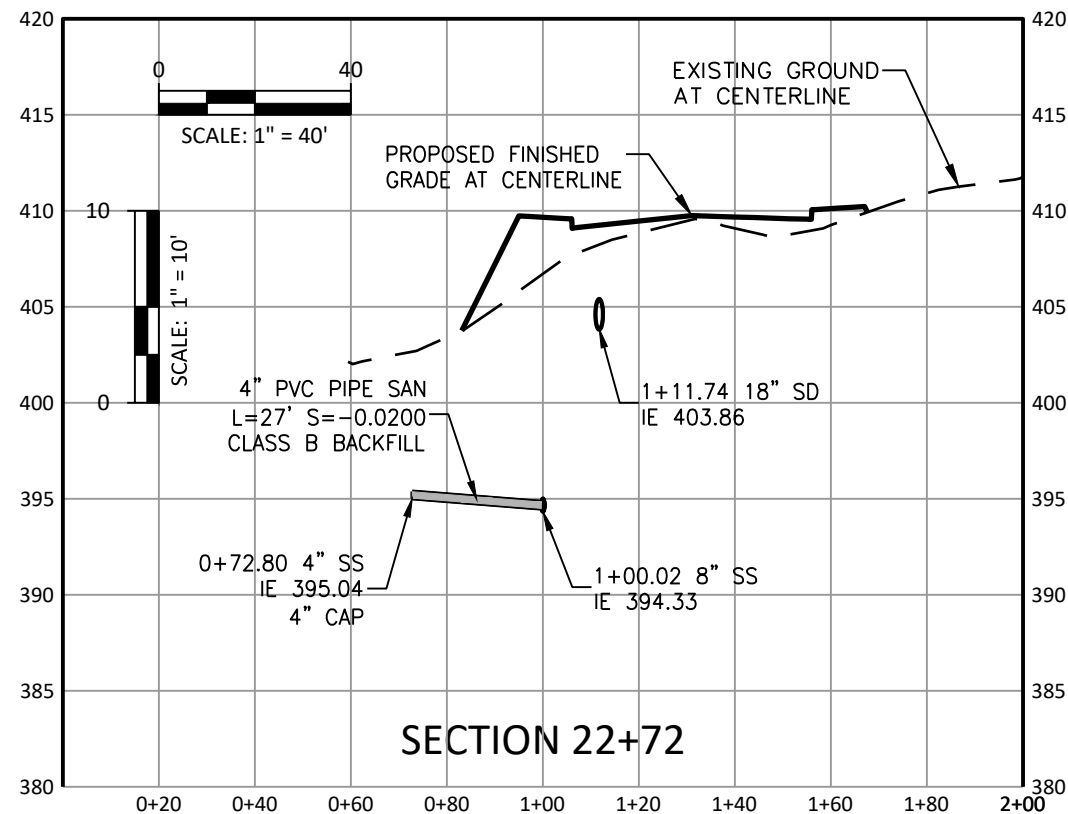
NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

CWS SANITARY SEWER PROFILE

PROJECT NUMBER
100215

SHEET NO.
341 OF **349**

SHEET TITLE
CWS-6C



SEWER DETAILS

Department of
Land Use &
Transportation



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NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

DETAILS

PROJECT NUMBER
100215

SHEET NO.
342 OF 349

SHEET TITLE
CWS-7A

LOCATE FRAME AND COVER OVER LEDGE OF AT LEAST 12" IN WIDTH

8" MIN. BETWEEN KNOCKOUTS

MAXIMUM 27" FROM TOP OF FIRST STEP TO TOP OF CASTING

STANDARD FRAME AND COVER OR WATERTIGHT FRAME AND COVER. SEE STD. DRAWING NO. 110, 120, OR 130 SET FRAME IN NON-SHRINK GROUT

GRADE RINGS (2", 4", OR 6") MAXIMUM 12" SET IN NON-SHRINK GROUT

STANDARD ECCENTRIC 36" CONE

48" MINIMUM

60" MINIMUM

5" MINIMUM

MANHOLE SECTION (VARIABLE HEIGHT)

MANHOLE STEPS SEE STD DRAWING NO. 100

CONSTRUCT CHANNEL AND MIN 12" SHELF IN FIELD

PIPE I.D.

WATERTIGHT SEAL. SEE NOTE 4

12" MINIMUM OF 3/4"-0" COMPACTED BASE MATERIAL

SMOOTH FINISH CHANNEL TO 3/4 VERTICAL HEIGHT OF PIPE

NOTES:

- ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
- SEE STD DRAWING 020 FOR POURED IN PLACE CONCRETE MANHOLE BASE.
- ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
- SEE STD DRAWING 030. ALL PIPE CONNECTIONS TO MANHOLE SHALL BE WATERTIGHT.
- PIPE CONNECTIONS OF 24" OR GREATER SHALL REQUIRE A MANHOLE AND CHANNEL DETAIL.
- PIPE CONNECTIONS OF FOUR OR MORE MAINLINES SHALL REQUIRE A MANHOLE CONNECTION AND CHANNEL DETAIL.
- PROVIDE A MINIMUM OF 8" OF INTACT (UNDISTURBED) MANHOLE WALL BETWEEN PIPE BREAKOUTS AS MEASURED ON THE INSIDE FACE OF THE MANHOLE.
- BREAKOUT OF WALL FOR PIPE SHALL BE 2" MINIMUM AND 4" MAXIMUM CLEAR OF PIPE WALL.
- THIS DETAIL LIMITED TO MAXIMUM INTERIOR DROP OF 12" FOR SANITARY CONNECTION AND 48" FOR STORM CONNECTION.
- WATERTIGHT/TAMPER PROOF MANHOLE FRAME AND COVER SHALL BE USED IN ALL EASEMENT AND OFF STREET AREAS. SEE STD DRAWING 130.

STANDARD MANHOLE

DRAWING NO. 010

REVISED 10-31-19

CleanWater Services

SECTION

BASE

MANHOLE STEPS SEE STD DRAWING NO. 100

48" MINIMUM

5" MINIMUM

6" MIN.

PIPE I.D.

SMOOTH FINISH CHANNEL TO 3/4 VERTICAL HEIGHT OF PIPE.

CONSTRUCT CHANNEL AND MIN 12" SHELF IN FIELD

12" MINIMUM OF 3/4"-0" COMPACTED BASE MATERIAL

48"

5" MINIMUM

SMOOTH FINISH CHANNEL TO 3/4 VERTICAL HEIGHT OF PIPE.

6" MINIMUM OVERLAP.

CONSTRUCT CHANNEL AND MIN 12" SHELF IN FIELD

PIPE I.D.

8" MINIMUM CONCRETE

12" OF 3/4"-0" COMPACTED BASE ROCK

NOTES:

- ALL MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD MANHOLE, DRAWING NO. 010.
- ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 PSI AND A SLUMP OF 2" TO 4".

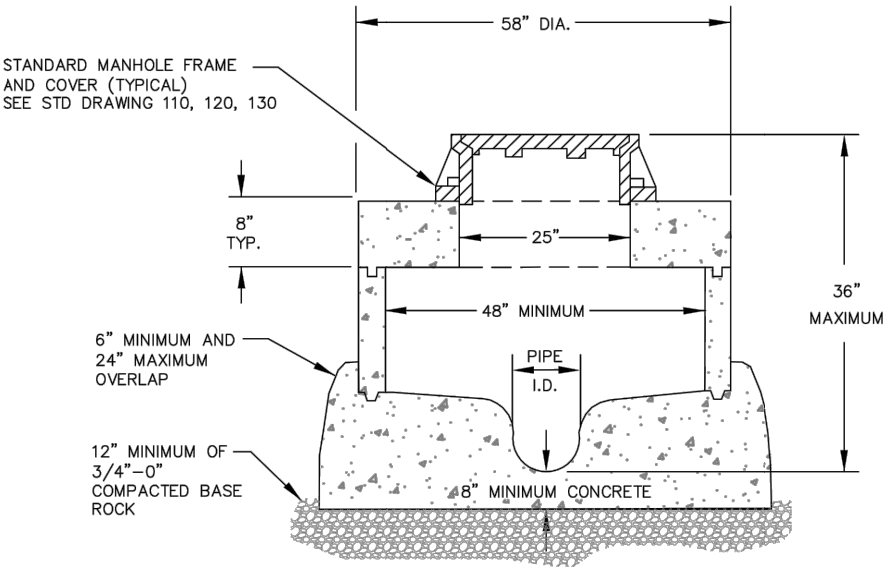
MANHOLE BASE

DRAWING NO. 020

REVISED 11-16

CleanWater Services

SEWER DETAILS

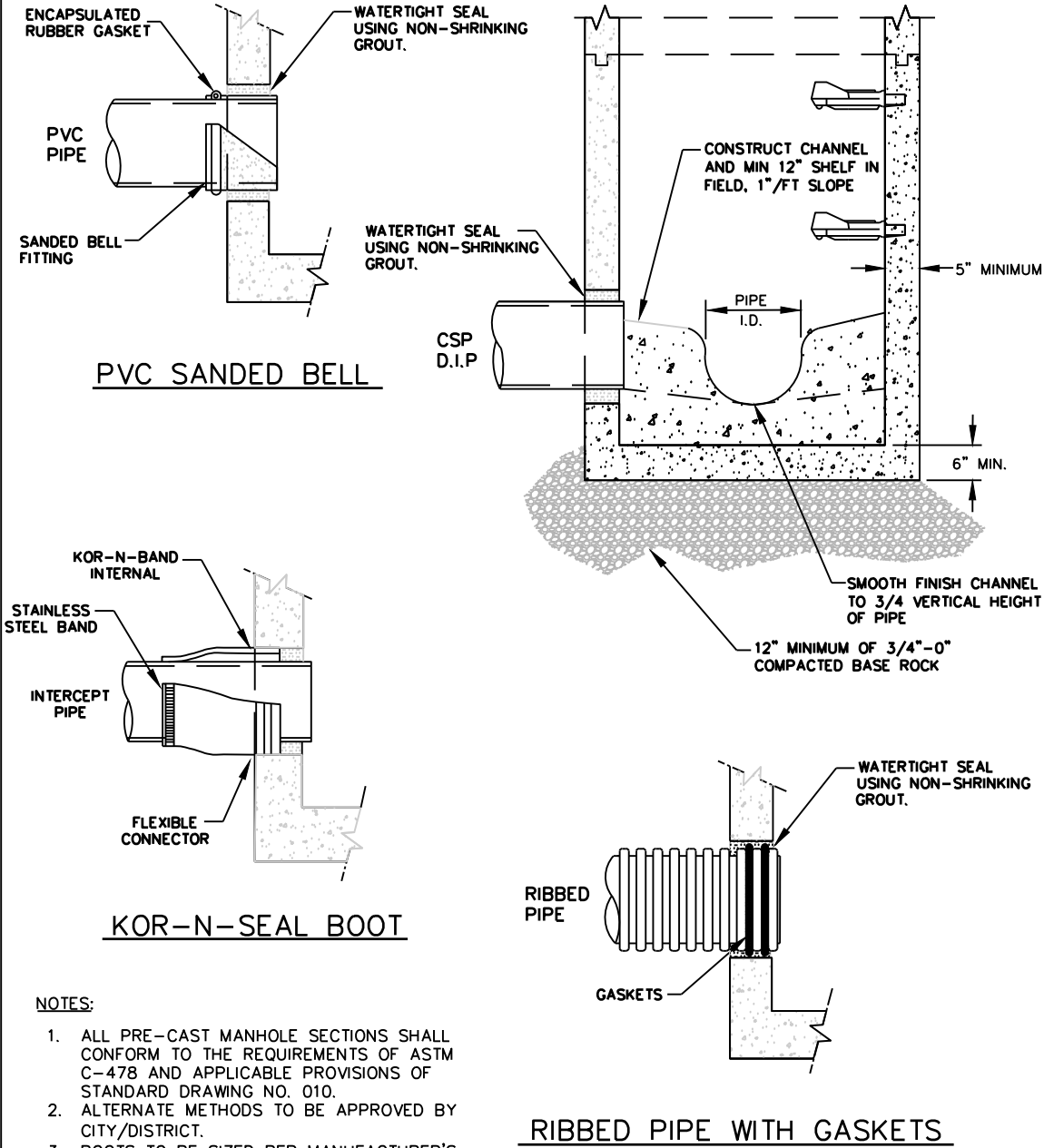


- NOTES:
1. ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-433.
 2. ALL MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD MANHOLE, SEE STD DRAWING NO. 010.
 3. CENTER OPENING FLATTOP REQUIRED.
 4. NO STEPS ALLOWED IN SHALLOW FLATTOP MANHOLE.
 5. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 PSI AND A SLUMP OF 2" TO 4".
 6. SEE DRAWING 030 FOR WATERTIGHT MANHOLE CONNECTIONS.
 7. ALL MANHOLE FLAT TOPS SHALL CONFORM TO ASTM C-478 AND ARE DESIGNED TO MEET H-20 TRAFFIC LOADING.

SHALLOW FLAT TOP
MANHOLE

DRAWING NO. 040

REVISED 10-31-19



- NOTES:
1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD DRAWING NO. 010.
 2. ALTERNATE METHODS TO BE APPROVED BY CITY/DISTRICT.
 3. BOOTS TO BE SIZED PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS.

MANHOLE CONNECTIONS

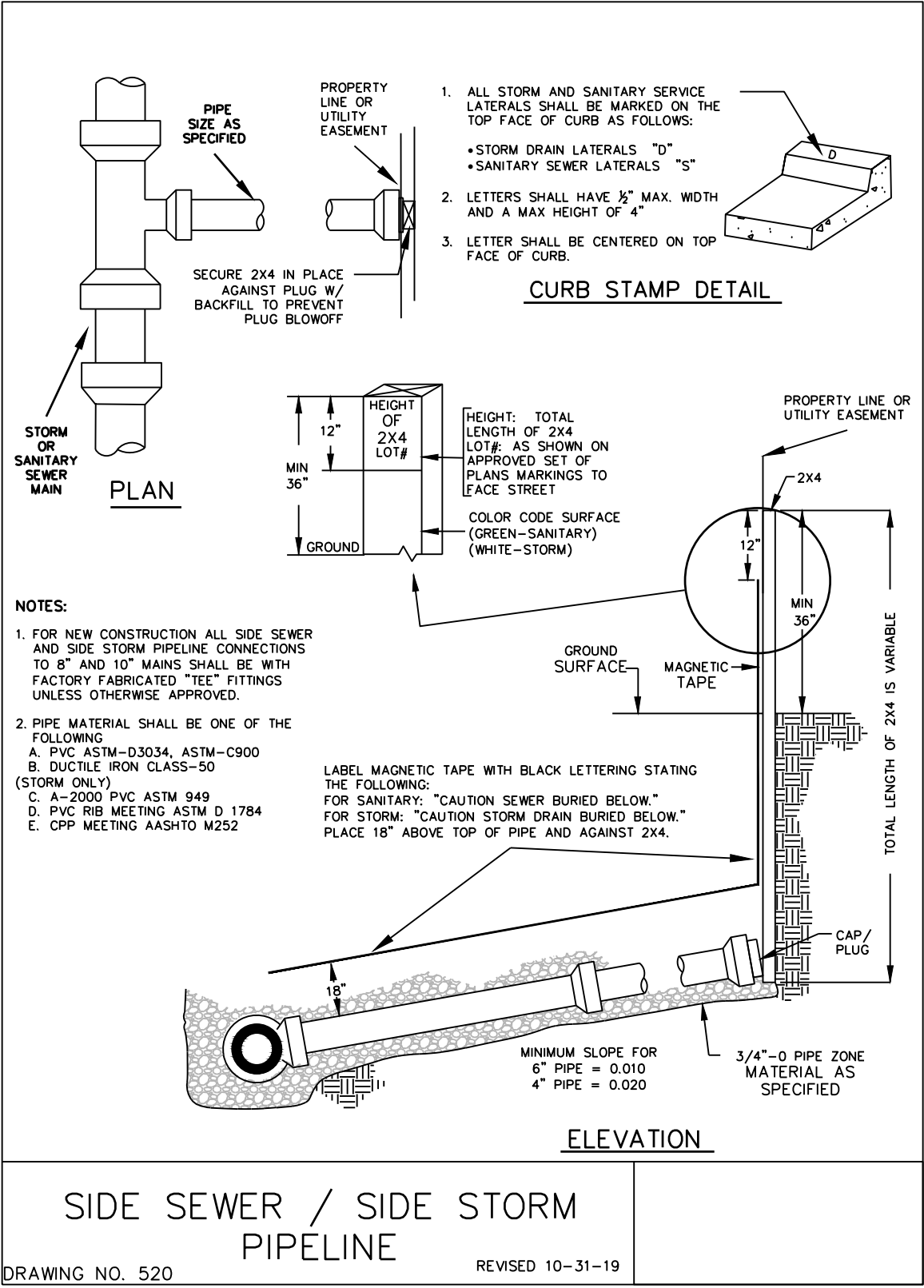
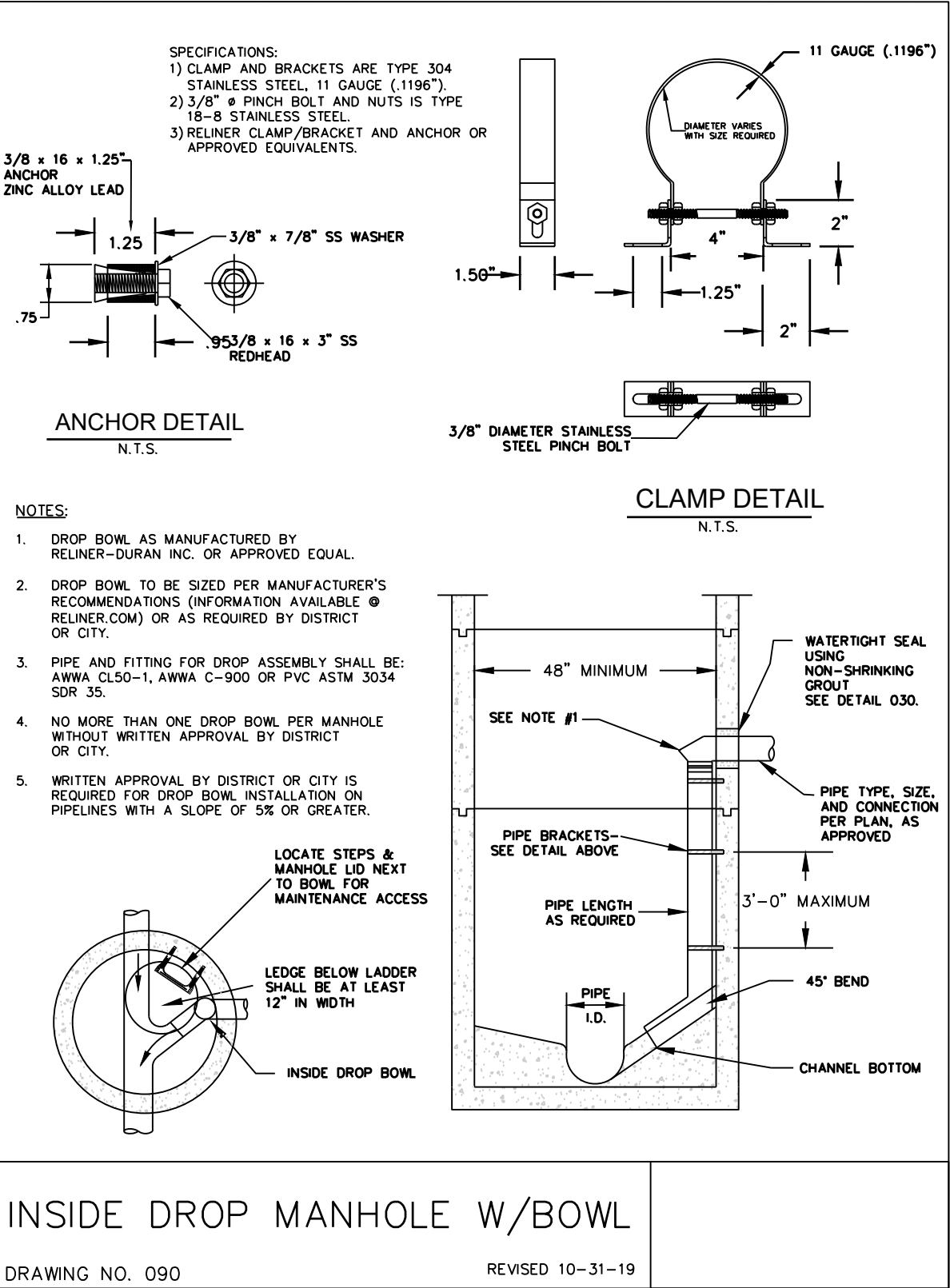
DRAWING NO. 030

REVISED 10-31-19



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NW CORNELL ROAD NW 102ND AVENUE TO NW 113TH AVENUE WASHINGTON COUNTY		DETAILS	
PROJECT NUMBER 100215		SHEET NO. 343 OF 349	
SHEET TITLE CWS-7B			

SEWER DETAILS



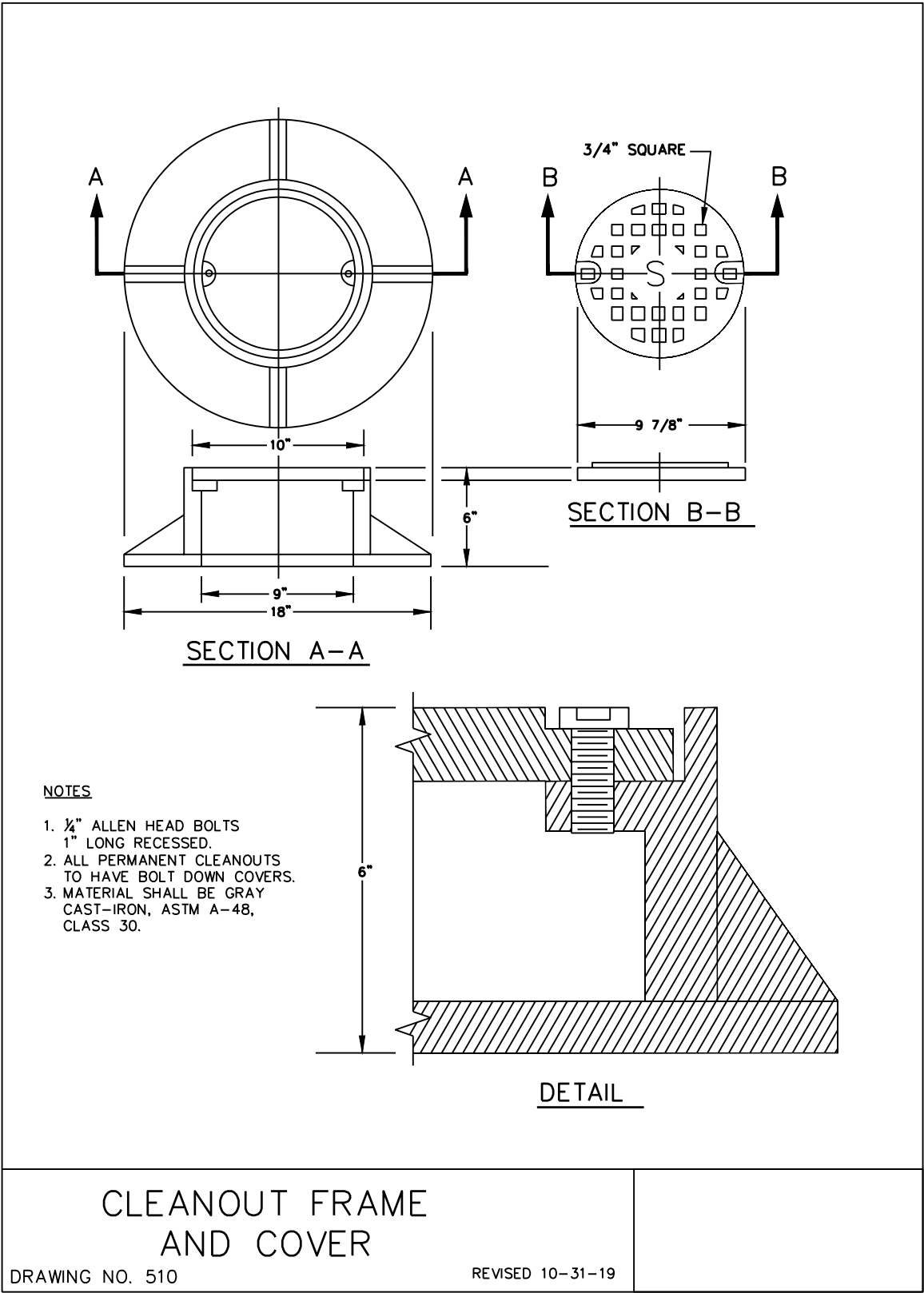
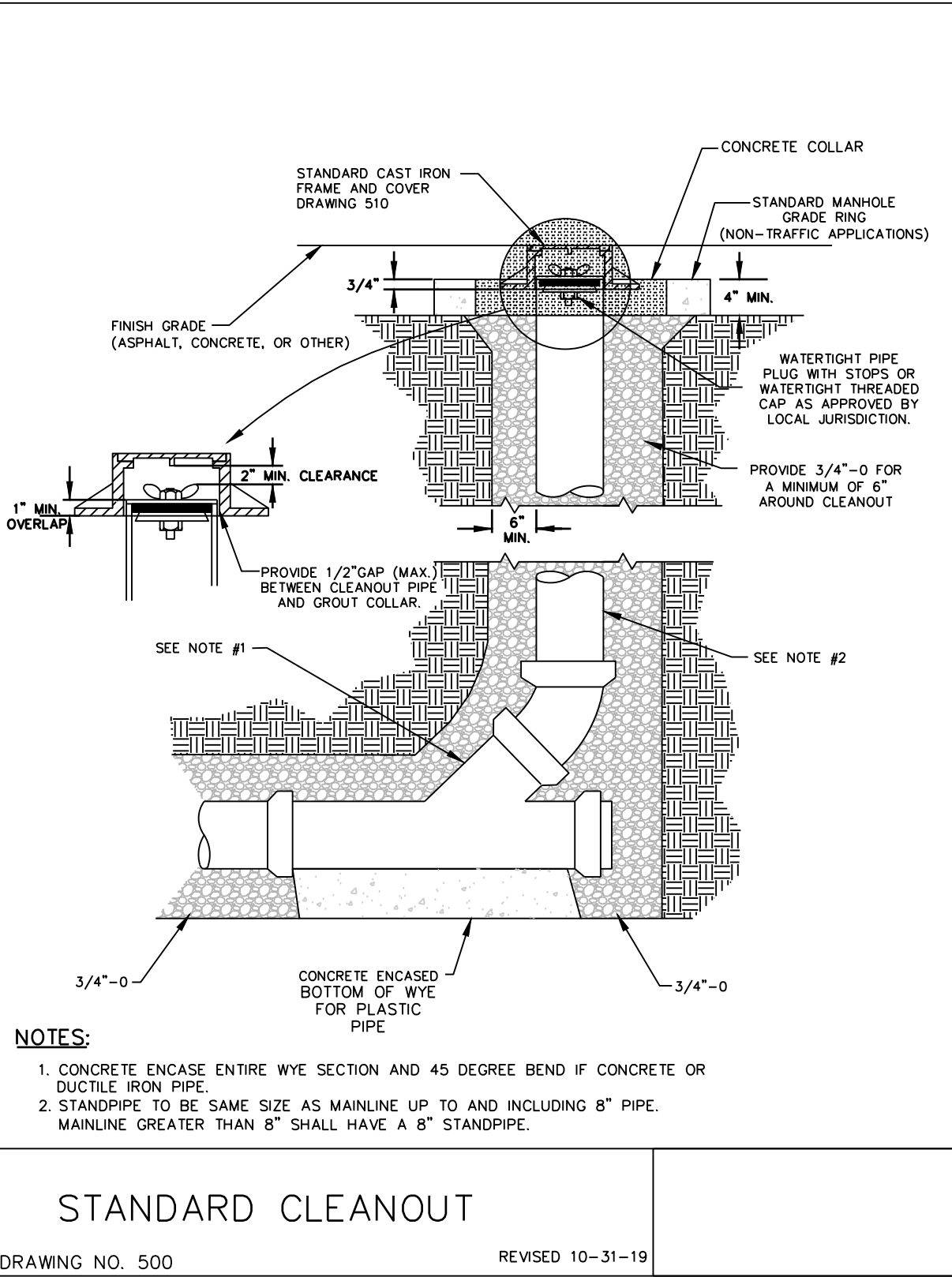
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NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY
DETAILS

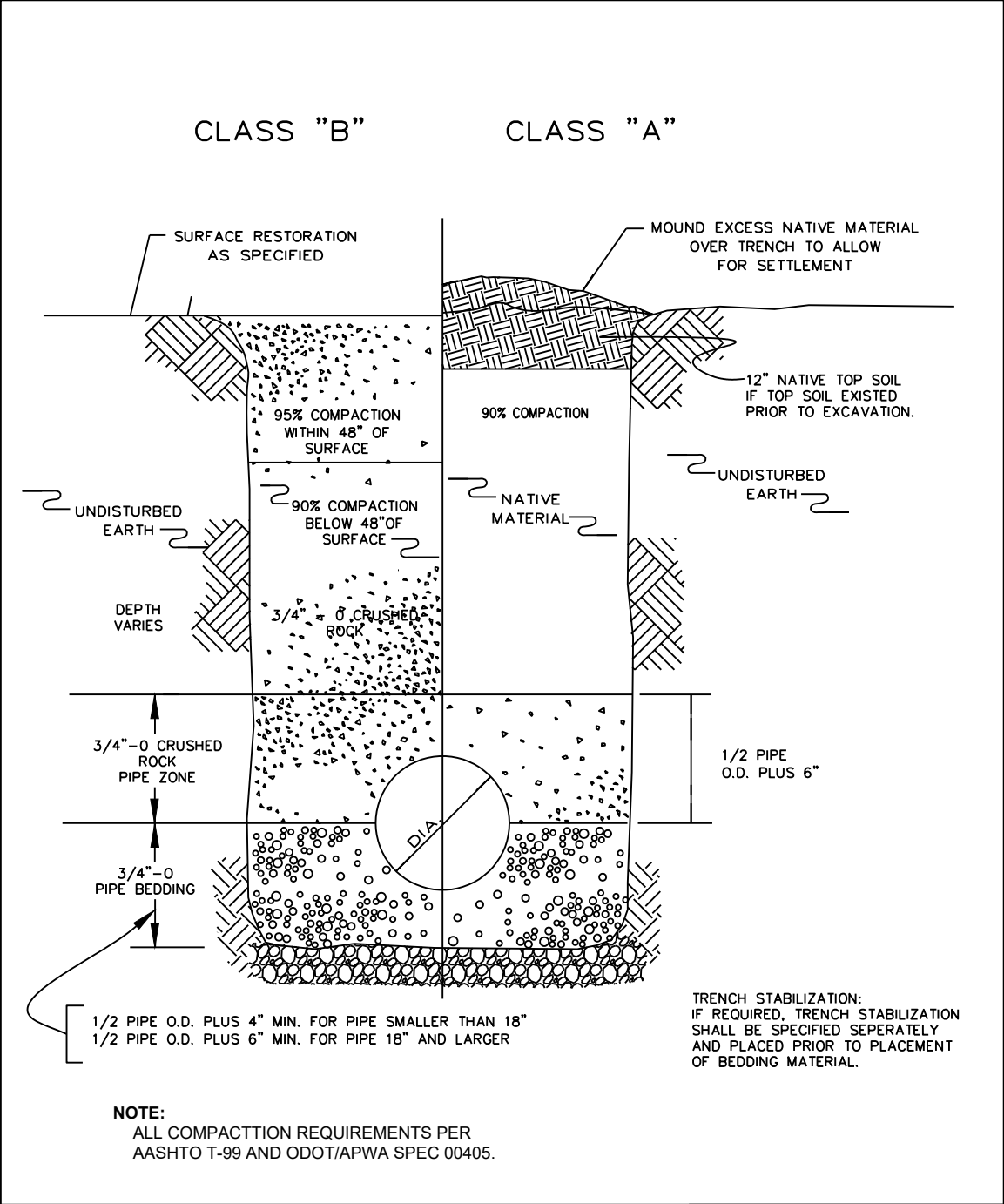
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SHEET NO.
344 OF 349
SHEET TITLE
CWS-7C

SEWER DETAILS



 Department of Land Use & Transportation	PLOT STAMP: 11/10/21 8:27P PHARMSEN CAD: 16890_CWS-7A_CWS-7F.DWG, TAB: CWS-7D PATH: W:\16890\CIVIL\DWG\SHEETS\	NO. REVISIONS	
NW CORNELL ROAD NW 102ND AVENUE TO NW 113TH AVENUE WASHINGTON COUNTY	DETAILS	PROJECT NUMBER 100215	
		SHEET NO. 345 OF 349 SHEET TITLE CWS-7D	

SEWER DETAILS

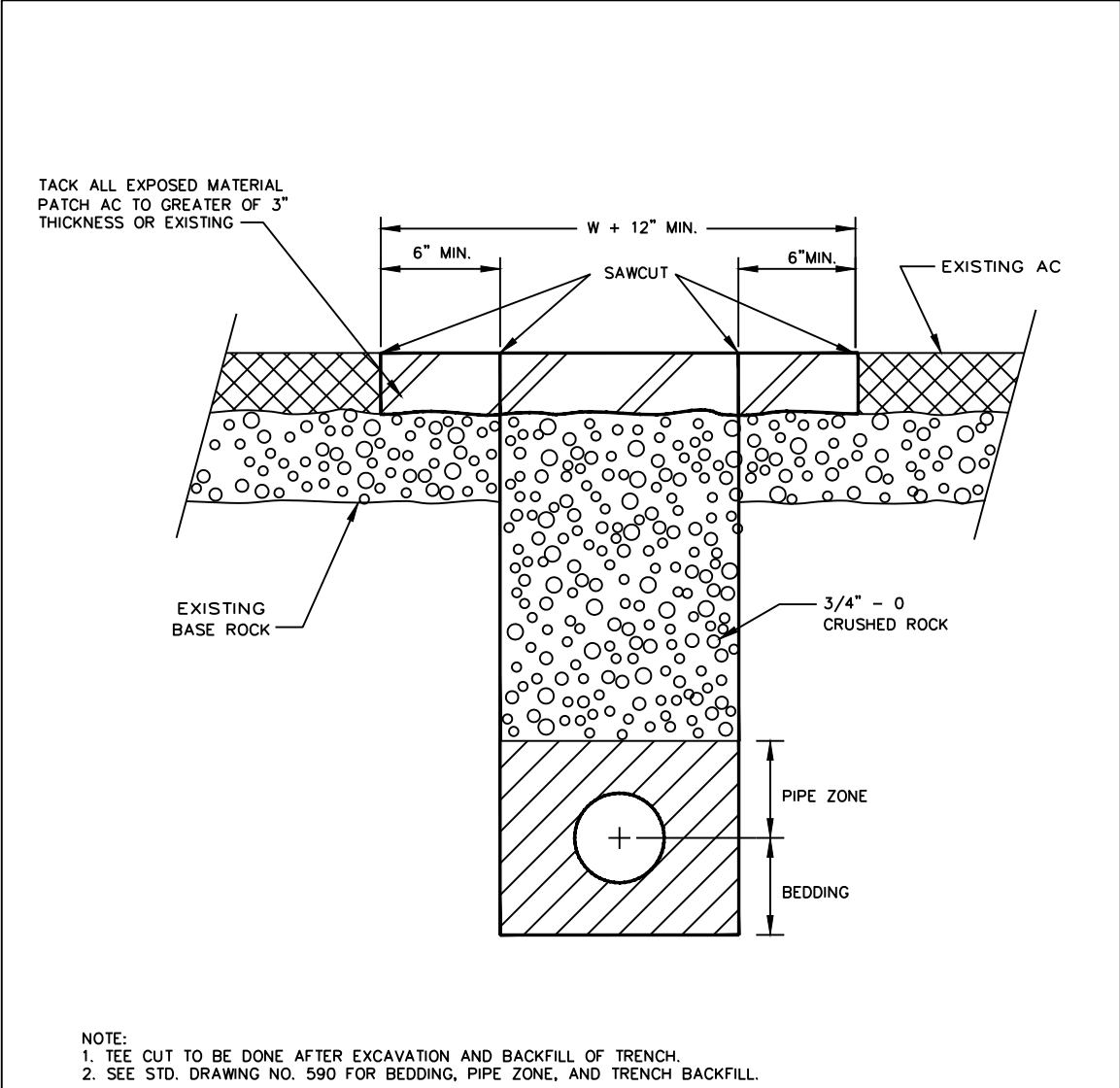


TRENCH BACKFILL
DETAILS

DRAWING NO. 590

REVISED 12-06

CleanWater Services
Our commitment is clear.



T-CUT
ASPHALT DETAILS

DRAWING NO. 600

REVISED 02-03

CleanWater Services
Our commitment is clear.



Department of
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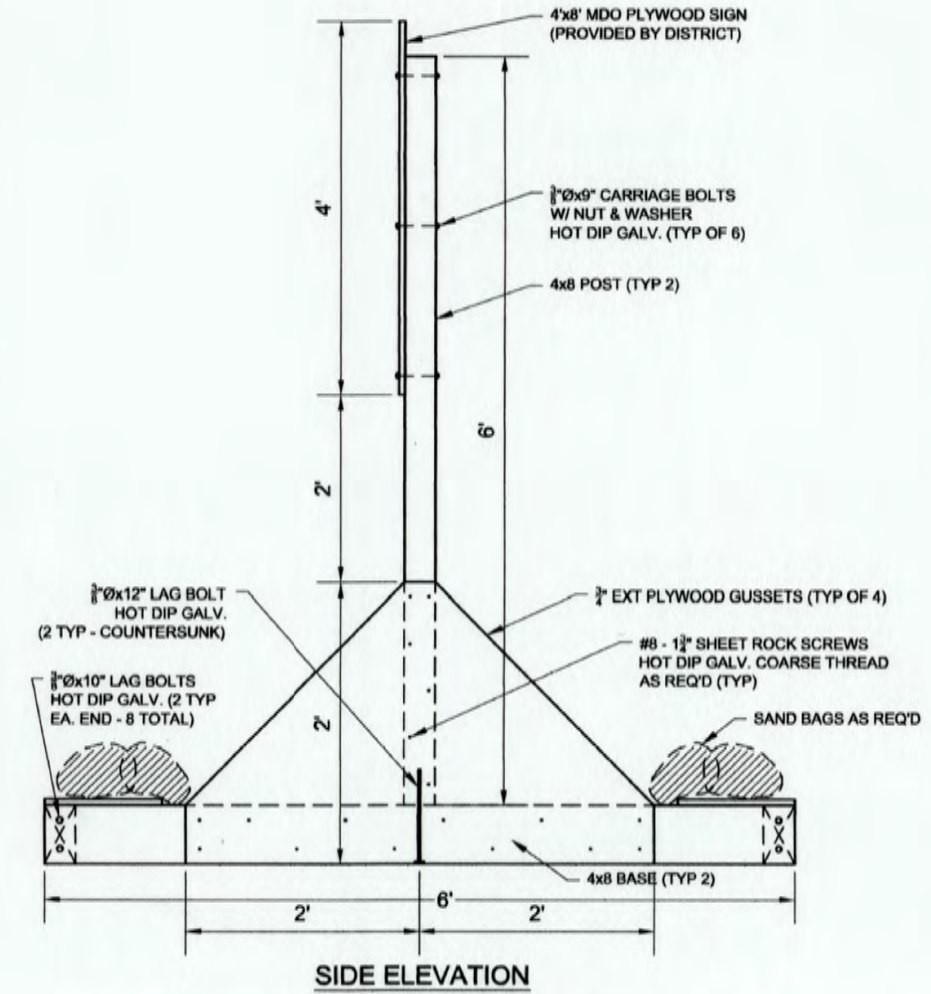
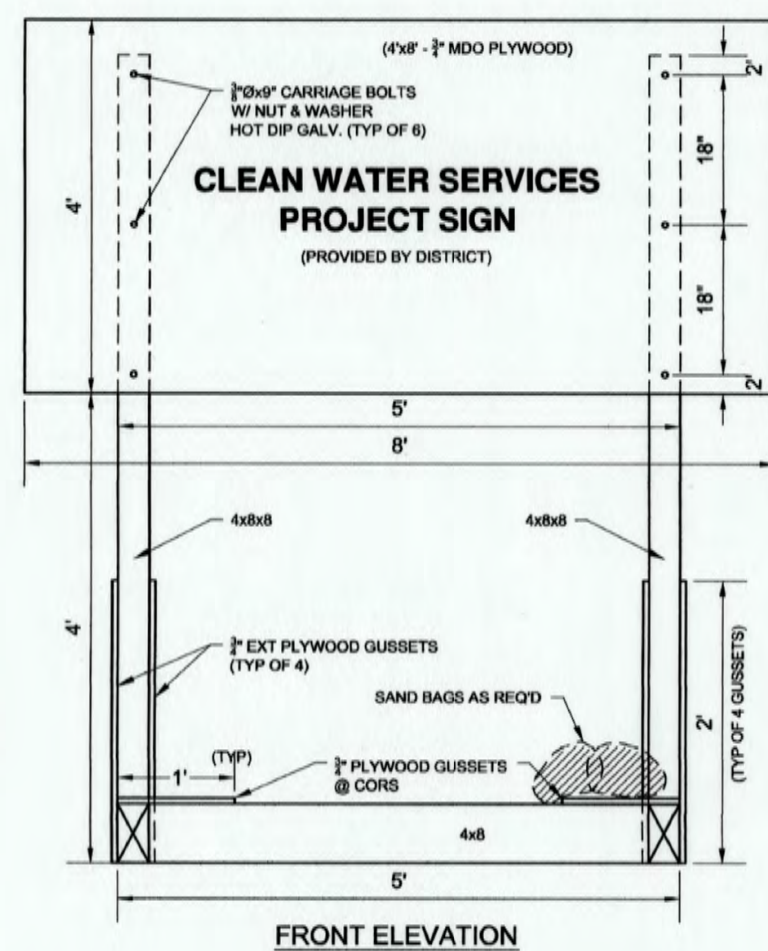
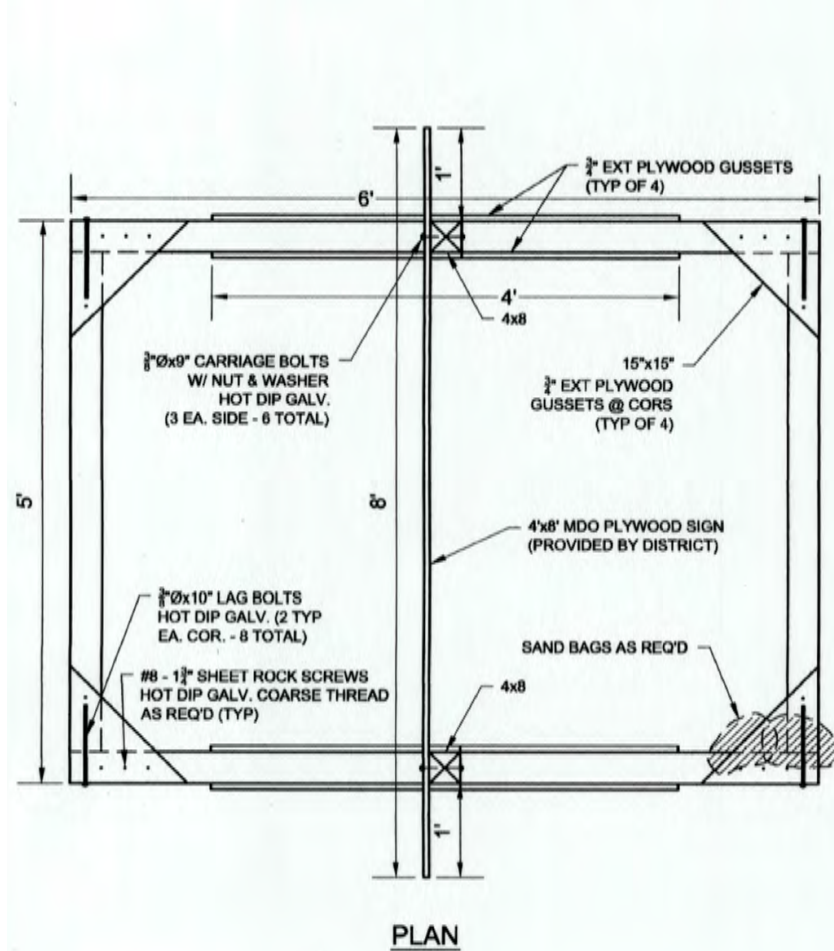
NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

DETAILS

PROJECT NUMBER
100215

SHEET NO.
346 OF 349

SHEET TITLE
CWS-7E



PROJECT SIGN DETAIL

Department of Land Use & Transportation 		PLOT STAMP: 11/10/21 8:27P PHARMSEN CAD: 16890_CWS-7A_CWS-7F.DWG, TAB: CWS-7F PATH: W:\16890\CIVIL\DWG\SHEETS\	
NW CORNELL ROAD NW 102ND AVENUE TO NW 113TH AVENUE WASHINGTON COUNTY		DETAILS	
PROJECT NUMBER 100215		SHEET NO. 347 OF 349 SHEET TITLE CWS-7F	
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SEWER DETAILS

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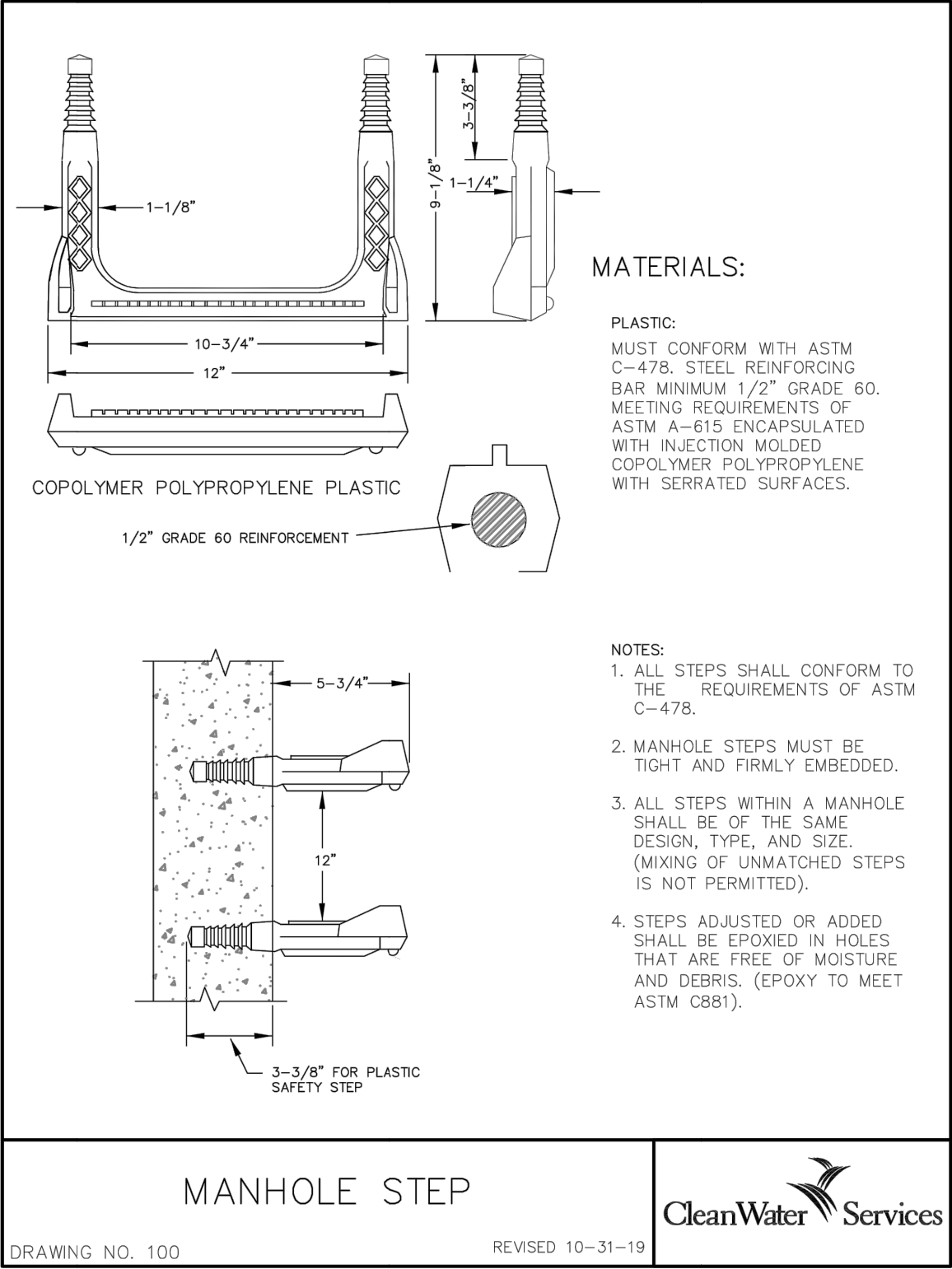
NW CORNELL ROAD
NW 102ND AVENUE TO NW 113TH AVENUE
WASHINGTON COUNTY

DETAILS

PROJECT NUMBER
100215

SHEET NO.
348 OF 349

SHEET TITLE
CWS-7G



MANHOLE STEP

DRAWING NO. 100 REVISED 10-31-19

CleanWater Services

MATERIALS:

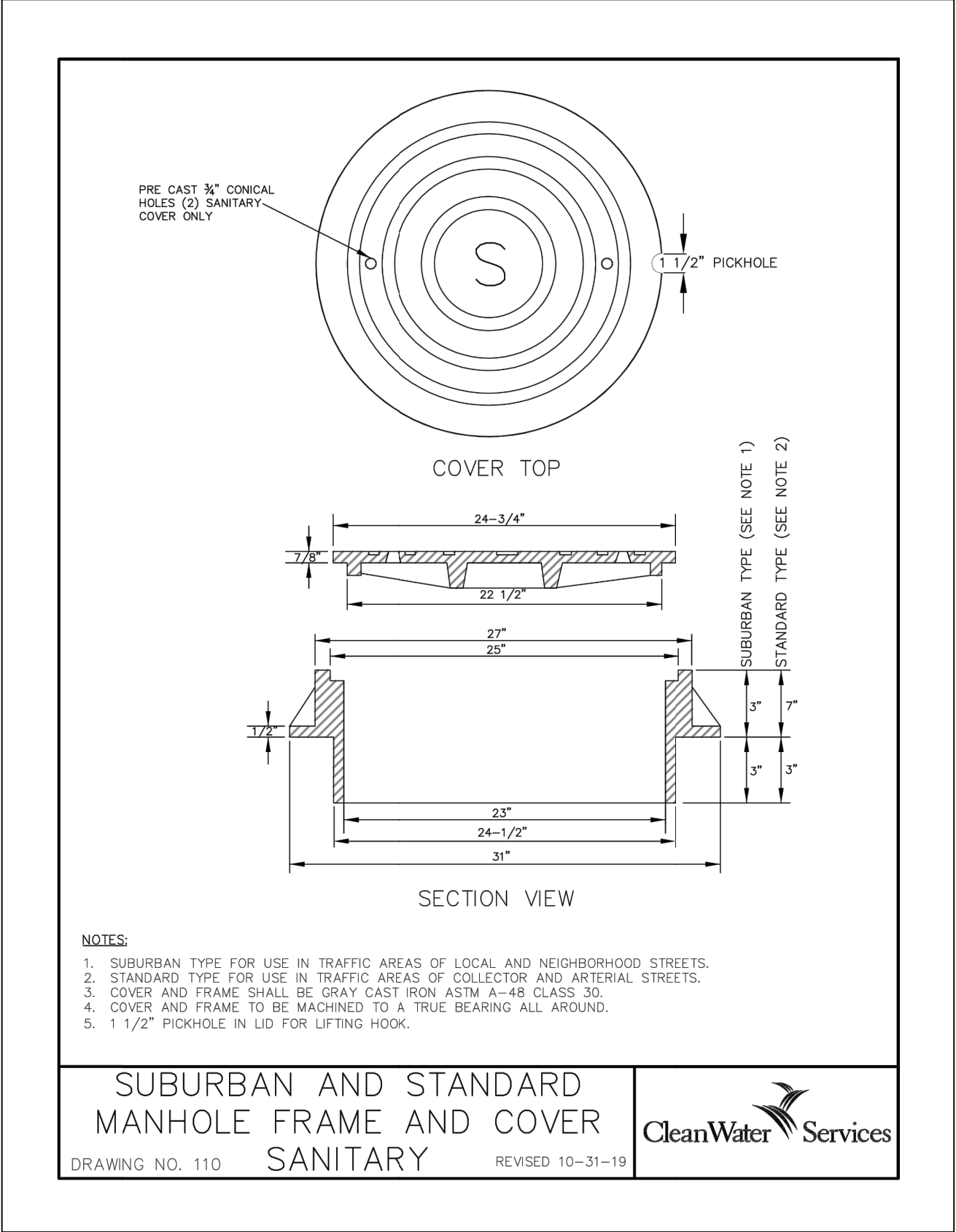
PLASTIC:
MUST CONFORM WITH ASTM C-478. STEEL REINFORCING BAR MINIMUM 1/2" GRADE 60. MEETING REQUIREMENTS OF ASTM A-615 ENCAPSULATED WITH INJECTION MOLDED COPOLYMER POLYPROPYLENE WITH SERRATED SURFACES.

NOTES:

1. ALL STEPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
2. MANHOLE STEPS MUST BE TIGHT AND FIRMLY EMBEDDED.
3. ALL STEPS WITHIN A MANHOLE SHALL BE OF THE SAME DESIGN, TYPE, AND SIZE. (MIXING OF UNMATCHED STEPS IS NOT PERMITTED).
4. STEPS ADJUSTED OR ADDED SHALL BE EPOXIED IN HOLES THAT ARE FREE OF MOISTURE AND DEBRIS. (EPOXY TO MEET ASTM C881).

Dimensions: 1-1/8", 10-3/4", 12", 9-1/8", 3-3/8", 1-1/4", 5-3/4", 12", 3-3/8" FOR PLASTIC SAFETY STEP.

Labels: COPOLYMER POLYPROPYLENE PLASTIC, 1/2" GRADE 60 REINFORCEMENT.



SUBURBAN AND STANDARD MANHOLE FRAME AND COVER SANITARY

DRAWING NO. 110 REVISED 10-31-19

CleanWater Services

COVER TOP

PRE CAST 3/4" CONICAL HOLES (2) SANITARY COVER ONLY

1 1/2" PICKHOLE

SECTION VIEW

Dimensions: 24-3/4", 22 1/2", 27", 25", 23", 24-1/2", 31", 7/8", 1/2", 3", 7", 3", 3".

Labels: SUBURBAN TYPE (SEE NOTE 1), STANDARD TYPE (SEE NOTE 2).

NOTES:

1. SUBURBAN TYPE FOR USE IN TRAFFIC AREAS OF LOCAL AND NEIGHBORHOOD STREETS.
2. STANDARD TYPE FOR USE IN TRAFFIC AREAS OF COLLECTOR AND ARTERIAL STREETS.
3. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48 CLASS 30.
4. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
5. 1 1/2" PICKHOLE IN LID FOR LIFTING HOOK.

SEWER DETAILS

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NW CORNELL ROAD NW 102ND AVENUE TO NW 113TH AVENUE WASHINGTON COUNTY		DETAILS		
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SHEET TITLE CWS-7H				


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