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WILLOW PINES CONSTRUCTION DRAWINGS

WAUKEE, IOWA

OWNER / APPLICANT

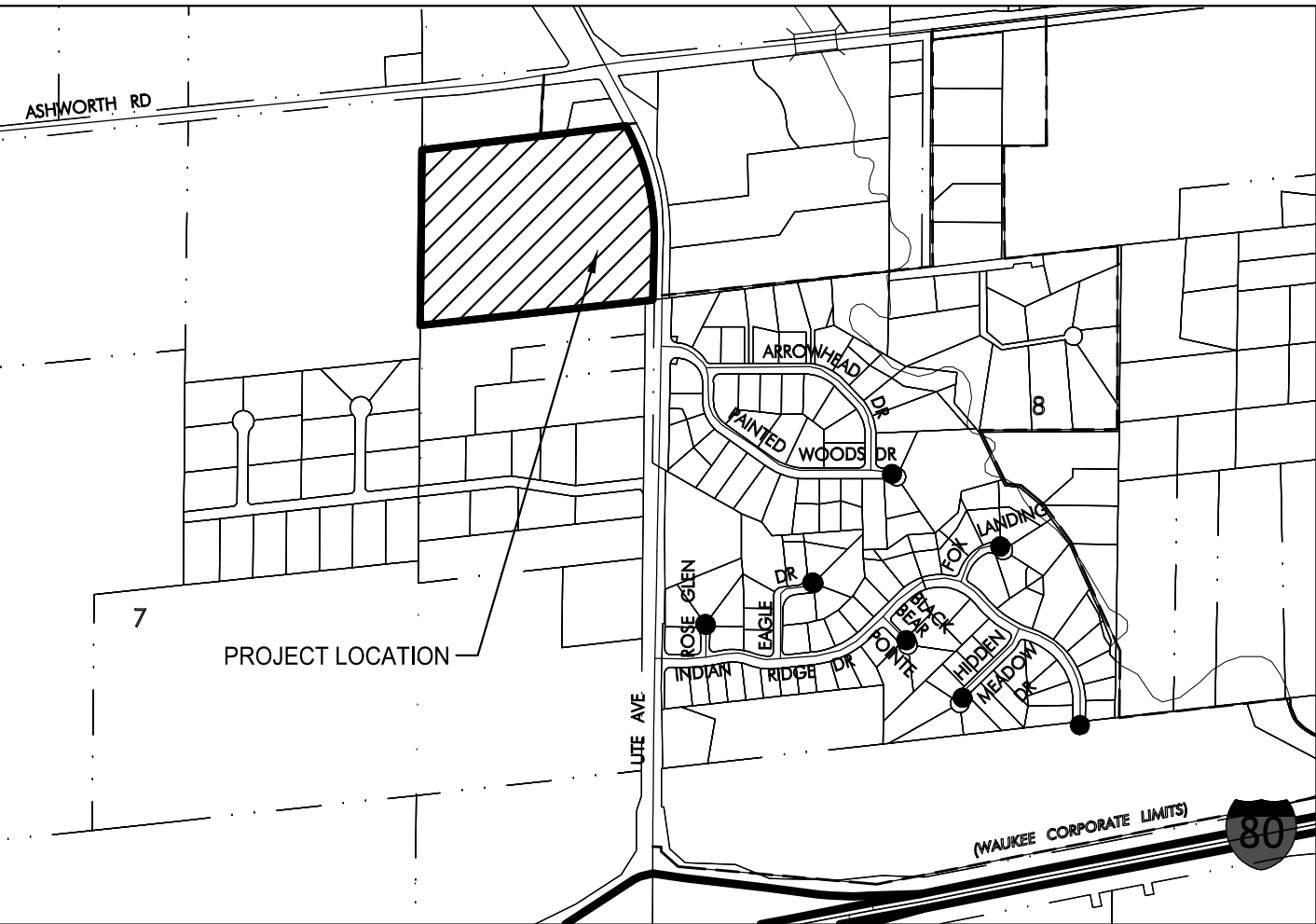
WILLOW PINES, LLC
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NORWALK, IA 50211
(515)360-5063
davidbriht2@aol.com
ATTN: DAVID ALBRIGHT

ENGINEER/SURVEYOR/PROJECT MANAGER

MCCLURE ENGINEERING
1360 NW 121ST STREET
CLIVE, IOWA 50325
(515) 964-1229
cschafbuch@mccresults.com
ATTN: CASEY SCHAFBUCH

ZONING

PROPOSED - R-1 SINGLE FAMILY RESIDENTIAL
FRONT YARD SETBACK: 30 FEET
SIDE YARD SETBACK: 15 FEET (7' min.)
REAR YARD SETBACK: 30 FEET



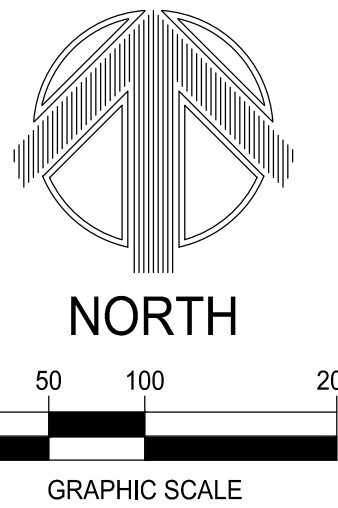
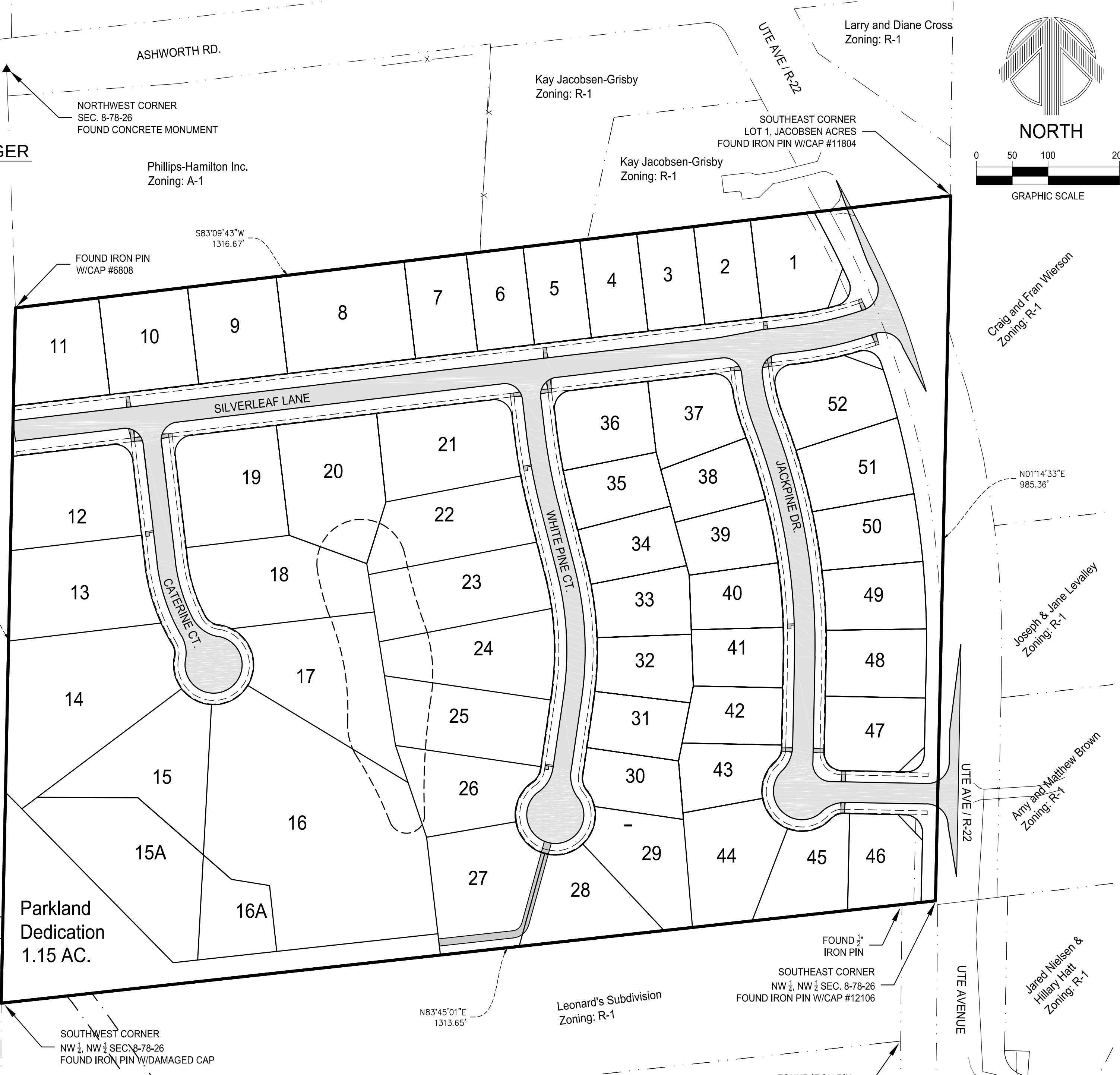
VICINITY MAP - NTS



1-800-292-8989
www.iowaonecall.com



ALL CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH IOWA STATEWIDE URBAN DESIGN STANDARD AND SPECIFICATIONS FOR PUBLIC IMPROVEMENTS AND THE WAUKEE STANDARD SPECIFICATIONS EXCEPT WHERE ALTERED OR AMENDED BY THE CITY OF WAUKEE.

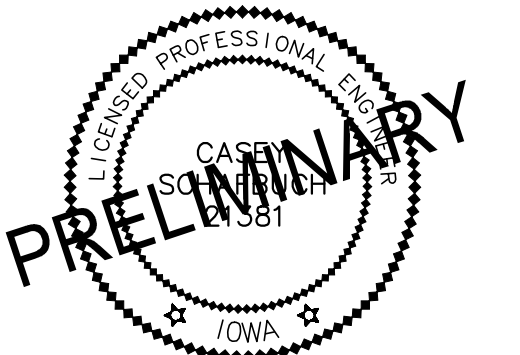


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I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

DATE:
CASEY SCHAFBUCH, PE NO. 21381

MY LICENSE RENEWAL DATE IS
DECEMBER 31, 2015

PAGES OR SHEETS COVERED BY
THIS SEAL:

WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA
2213008
JULY 2013

REVISIONS
10/22/2013
2/7/2014
2/25/2014
3/28/2014

ENGINEER
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FIELD BOOK NO.
-

DRAWING NO.
GN-01
SHEET NO.
01 / 36

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2013 STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) AND THE CITY OF WAUKEE STANDARD SPECIFICATIONS FOR SUBDIVISIONS, CURRENT AT THE COMMENCEMENT OF CONSTRUCTION.

2. AT LEAST ONE WEEK PRIOR TO ANY CONSTRUCTION WITHIN PUBLIC R.O.W./EASEMENT AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, THE CONTRACTOR SHALL CONTACT THE WAUKEE ENGINEERING DEPARTMENT AND MCCLURE ENGINEERING.

3. ALL CONSTRUCTION WITHIN PUBLIC R.O.W./EASEMENTS, AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, SHALL COMPLY WITH SUDAS CONSTRUCTION SPECIFICATIONS FOR SUBDIVISIONS AND CITY OF WAUKEE STANDARDS.

4. THE CONTRACTOR IS RESPONSIBLE FOR SETTING UP A PRE-CONSTRUCTION CONFERENCE WITH THE CITY OF WAUKEE ENGINEERING DEPARTMENT AT LEAST 5 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

5. THE CONTRACTOR SHALL VERIFY THE LOCATION AND PROTECT ALL UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY AND THE OWNER.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING THE AS-BUILT LOCATION OF ALL SANITARY SEWER, SUMP, AND WATER MAIN SERVICES TO THE CITY OF WAUKEE ENGINEERING DEPARTMENT.

7. ANY FIELD TILE THAT ARE INTERCEPTED DURING UTILITY CONSTRUCTION SHOULD BE RECONNECTED AND INCLUDED IN AS-BUILT DRAWINGS.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING TRAFFIC CONTROL IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

9. ALL DIMENSIONS TO BACK-OF-CURB UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE FIELD VERIFIED.

10. ALL ACCESSIBLE RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE W/THE ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG), PROWAG, AND IOWA CODE. ACCESSIBLE RAMPS, INSTALLED BY OTHERS, FOR DESIGNATED BIKE TRAILS SHALL HAVE BRICK-RED DETECTABLE WARNING PANELS.

11. ALL SLOPES SHALL CONFORM WITH PROWAG AND ADAAG STANDARDS.

12. ALL PUBLIC SIDEWALK/TRAILS, PEDESTRIAN CROSSINGS, AND MAILBOX PADS SHALL BE CONSTRUCTED AS PART OF THIS SITE PLAN.

13. STAKING BY CERTIFIED ENGINEER OR LAND SURVEYOR, VERIFICATION BY CONTRACTOR, AND OBSERVANCE BY WAUKEE ENGINEERING DEPARTMENT AT 515-987-4363 SHALL BE DONE PRIOR TO PLACEMENT OF ANY CONCRETE RAMPS.

14. CONTRACTOR SHALL PROVIDE SUBMITTALS OF ALL PROPOSED CONSTRUCTION MATERIALS PRIOR TO CONSTRUCTION

15. ANY PROPOSED CHANGES TO PLAN SET DURING CONSTRUCTION ARE TO RECEIVE WRITTEN APPROVAL FROM THE CITY OF WAUKEE ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CHANGES THAT HAVE BEEN MADE THAT HAVE NOT RECEIVED WRITTEN PERMISSION.

16. CERTAIN CONSTRUCTION OPERATIONS MAY REQUIRE THE COLLABORATION WITH GEOTECHNICAL TECHNICIAN UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER. SEE TEAM SERVICES "SUBSURFACE EXPLORATION," DATED OCTOBER 1,2013.

GRADING NOTES:

1. ALL SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.

2. ALL DIMENSIONS TO BACK-OF-CURB UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE FIELD VERIFIED.

3. CURB INTAKE RIM ELEVATIONS = PAVING TOP OF CURB ELEVATIONS.

4. CONTRACTOR TO ADJUST ALL TOP OF CASTING ELEVATIONS WITHIN THE PROJECT LIMITS TO THE FINAL ELEVATIONS SHOWN ON THE PLANS.

5. ALL SPOT ELEVATIONS ARE TO THE TOP OF FINISHED GRADE, UNLESS OTHERWISE NOTED.

6. ALL SLOPES IN UNPAVED AREAS SHALL BE GRADED TO DRAIN AT 2% MINIMUM.

7. THE HOLDER OF THE GENERAL PERMIT #2 SHALL BE RESPONSIBLE FOR THE SPREADING OF A MINIMUM OF 4 INCHES OF TOPSOIL AND PROVIDE THE CITY OF WAUKEE ENGINEERING DEPARTMENT WRITTEN VERIFICATION UPON COMPLETION.

UTILITY NOTES:

1. ALL UTILITIES ARE PUBLIC UNLESS NOTED OTHERWISE.

2. CONTRACTOR TO ADJUST ALL TOP OF CASTING ELEVATIONS WITHIN THE PROJECT LIMITS TO THE FINAL ELVATIONS SHOWN ON THE PLANS.

3. ALL UTILITY SERVICES, INCLUDING ELECTRIC, TELEPHONE, AND CABLE TO BE UNDERGROUND.

4. ALL CONNECTIONS TO EXISTING PUBLIC SEWER MANHOLES SHALL BE CORE DRILLED AND USE LINKSEAL.

UTILITY NOTES (CONT):

5. ALL STORM AND SANITARY SEWER IS TO BE CLEANED AND VIDEO INSPECTED. A COPY OF ALL VIDEO IS TO BE PROVIDED TO THE CITY OF WAUKEE ENGINEERING DEPARTMENT.

SANITARY SEWER:

1. ALL 4" AND 6" SANITARY SEWER SERVICES SHALL BE SDR 23.5 IN ACCORDANCE WITH SUDAS SPECIFICATIONS.

2. MANHOLE STEPS ARE REQUIRED IN ALL SANITARY SEWER MANHOLES.

3. MANHOLE COVERS SHALL HAVE RAISED DIAMOND ROUGHNESS PATTERN AND CONFORM WITH WAUKEE STANDARD SPECIFICATIONS.

STORM SEWER:

1. OWNER SHALL BE RESPONSIBLE FOR ALL ON-SITE PRIVATE STORM SEWER AND PRIVATE STORM WATER DETENTION / RETENTION AREAS.

2. ALL INTAKE CASTINGS SHALL HAVE PHASE 2 ENVIRONMENTAL SYMBOLOGY OR TEXT.

WATER MAIN:

1. PIPE MATERIALS SHALL BE AWWA C900 CLASS 150 PVC.

2. HYDRANTS, MANHOLE COVERS, AND VALVE BOXES SHALL BE SET TO CONFORM TO FINISHED PAVEMENT ELEVATIONS.

3. HYDRANTS TO WATROUS WB-67-250 PRODUCTS.

4. WATER MAIN TO HAVE 6' BURY, TYP. EXCEPT AT CRITICAL CROSSINGS.

5. ALL VALVES SHALL HAVE A VALVE BOX ADAPTER INSTALLED TO MAINTAIN ALIGNMENT.

6. THE CONTRACTOR SHALL WORK WITH THE CITY OF WAUKEE WHEN OPERATING EXISTING VALVES. WATER SHALL NOT BE TURNED ON WITHOUT PRIOR APPROVAL.

7. WATER CAN NOT BE USED BY THE CONTRACTOR UNLESS IT IS PART OF THE PURIFICATION PROCESS OF THE NEW MAIN. WATER NEEDED FOR ANY REASON AFTER BACTERIA TESTING HAS BEEN COMPLETED AND PASSED WILL NEED PRIOR APPROVAL FROM THE CITY OF WAUKEE.

8. ALL WATER MAIN CONNECTIONS AND VALVING SHALL CONFORM TO WAUKEE STANDARD SPECIFICATIONS.

9. ALL WATER SERVICES SHALL CONFORM TO WAUKEE STANDARD SPECIFICATIONS.

10. CONTRACTOR SHALL NOTIFY WAUKEE ENGINEERING DEPARTMENT ONE (1) WEEK PRIOR TO CONSTRUCTION OF WATER MAIN.

11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE WAUKEE STANDARD SPECIFICATIONS.

12. THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK OF ALL SUBCONTRACTOR(S) INVOLVED IN THE PROJECT.

13. CONTACT WAUKEE ENGINEERING DEPARTMENT (515-987-4363) A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO ANY PLANNED WEEKEND OR HOLIDAY WORK.

14. THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF AN APPROVED BACKFLOW PREVENTION ASSEMBLIES) FOR CONTAINMENT IN ALL NEW CONSTRUCTION.

15. ALL HYDRANTS SHALL UTILIZE A STORZ FITTING.

PLANTING NOTES:

1. TYPE 2 EROSION CONTROL MIXTURE SHALL BE USED ALL DISTURBED AREAS WITHIN CONSTRUCTION LIMITS NOT COVERED BY PAVING, PLANTINGS OR OTHERWISE NOTED. PLANTING AND RIGHT OF WAY AREAS SHALL BE HYDRO-SEEDED, WITH TYPE 1 SEED MIX.

2. REPAIR ALL EXISTING TURF AREAS WHICH ARE DISTURBED DURING CONSTRUCTION AT NO COST TO THE OWNER. REPAIR, GRADE AND SOD AREAS AS SPECIFIED FOR NEW SODDING.

3. PLANT QUANTITIES ARE FOR INFORMATION ONLY; DRAWING SHALL PREVAIL IF CONFLICT OCCURS.

4. CONTRACTOR SHALL PLACE SHREDDED HARDWOOD MULCH AROUND ALL TREES TO A MINIMUM DEPTH OF 3 INCHES.

5. BACKFILL TO TOP OF CURB. (MINUS 1 1/2"FOR SOD, IF REQUIRED)

6. FINAL GRADES TO BE APPROVED BY LANDSCAPE ARCHITECT.

7. ALL DEBRIS SPILLED ON THE PUBLIC R.O.W. OR ADJACENT PROPERTY SHALL BE PICKED UP BY THE CONTRACTOR AT THE END OF EACH WORK DAY.

8. PROVIDE SHREDDED HARDWOOD MULCH IN ALL SHRUB BEDS. WALNUT PRODUCT PROHIBITED.

9. ANY ESTABLISHED LAWNS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED WITH SOD AND BE WATERED.



THE CONTRACTOR SHALL NOTIFY IOWA ONE CALL NO LESS THAN 48 HRS. IN ADVANCE OF ANY DIGGING OR EXCAVATION.

WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

GENERAL LEGEND

EXISTING / PROPOSED		EXISTING / PROPOSED		EXISTING / PROPOSED	
	SANITARY SEWER MAIN		SANITARY SEWER MANHOLE		BOLLARD (BUMPER POST)
	SANITARY SEWER SERVICE		SANITARY SEWER CLEANOUT		ROADWAY SIGN
	SANITARY SEWER FORCE MAIN		AIR RELEASE MANHOLE/DRAIN MANHOLE		MAILBOX
	STORM SEWER MAIN OR CULVERT		STORM SEWER MANHOLE		WELL
	SECONDARY STORM SEWER MAIN		STORM SEWER CLEANOUT		DECIDUOUS TREE
	SECONDARY STORM SEWER SERVICE		STORM SEWER INTAKE		EVERGREEN TREE
	WATER MAIN		STORM SEWER BEEHIVE INTAKE		SHRUB OR BUSH
	WATER SERVICE		FLARED END SECTION		TREE OR SHRUB LINE
	UNDERGROUND ELECTRIC		FIRE HYDRANT		STUMP
	OVERHEAD ELECTRIC		WATER VALVE		MONITORING WELL
	UNDERGROUND TELEPHONE		WATER VALVE MANHOLE		SOIL BORINGS
	UNDERGROUND FIBER OPTIC		CURB STOP		FLAG POLE
	UNDERGROUND CABLE TV		WATER METER MANHOLE		SATELLITE DISH
	GAS MAIN OR SERVICE		YARD HYDRANT		SLOPE INDICATORS
	CONTOUR LINES INTERMEDIATE		ELECTRIC MANHOLE / VAULT		CONTROL POINT
	CONTOUR LINES INDEX		ELECTRIC PEDESTAL / TRANSFORMER		BENCH MARK
	PROPERTY LINE / LOT LINE		OUTDOOR ELECTRIC POWER OUTLET		SECTION CORNER
	SECTION LINE		POWER POLE		IRON PIN SET
	EASEMENT		POWER POLE w/ STREET LIGHT		IRON PIN FOUND
	GUARD RAIL		STREET LIGHT POLE		DRAWING NUMBER
	FIELD FENCE		GUY WIRE		
	CHAIN LINK FENCE		TRAFFIC SIGNAL		
	WOODEN FENCE		TRAFFIC SIGNAL BOX		
	ROAD CENTERLINE		TRAFFIC SIGNAL MANHOLE / VAULT		
	GRADING LIMITS		RAILROAD CROSSING SIGNAL		
	CONSTRUCTION LIMITS		TELEPHONE MANHOLE / VAULT		
	AG LINE		TELEPHONE PEDESTAL		
	WATERWAY FLOWLINE		CABLE TV MANHOLE / VAULT		
	TOP OF SLOPE		CABLE TV PEDESTAL		
	BOTTOM OF SLOPE		GAS VALVE		
	SILT FENCE				

UTILITY COMPANIES

SERVICE	SUPPLIER	PHONE
GAS	WAUKEE PUBLIC WORKS DEPARTMENT 805 UNIVERSITY AVENUE WAUKEE, IA 50263 CONTACT: JOHN GIBSON	515-987-4363
TELEPHONE	CENTURYLINK 2103 EAST UNIVERSITY DES MOINES, IA 50312 CONTACT: TOM STURMER	303-664-8090
ELECTRIC	MID-AMERICAN ENERGY CO. 500 EAST COURT AVENUE DES MOINES, IA 50309 CONTACT: NORM TRENTMANN	515-252-6621
CABLE TV	MEDIACOM CABLE 2205 INGERSOL AVENUE DES MOINES, IA 50312 CONTACT: PAUL MAY	515-246-2252
WATER	WAUKEE PUBLIC WORKS 805 UNIVERSITY WAUKEE, IA 50263 CONTACT: JOHN GIBSON	515-987-4363
	XENIA RURAL WATER DISTRICT 23998 141ST STREET BOUTON, IA 50039 CONTACT: MARK CARRAN	515-676-2117
SEWER	CITY OF WAUKEE ENGINEERING DEPARTMENT 805 UNIVERSITY AVENUE WAUKEE, IA 50263	515-283-4950
ALL	IOWA ONE-CALL	800-292-8989

EXISTING UTILITIES NOTE

THESE EXISTING UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGING THEM. NO CLAIMS WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. PAYMENT WILL BE ALLOWED FOR UNCHARTED UTILITIES PER THE SPECIFICATIONS.



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GENERAL NOTES

WILLOW PINES CONSTRUCTION DRAWINGS

WAUKEE, IOWA

2213008

JULY 2013

REVISIONS
10/22/2013
2/7/2014
2/25/2014
3/28/14

ENGINEER

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DRAWING NO.

GN-02

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SHEET NO.

02 / 36

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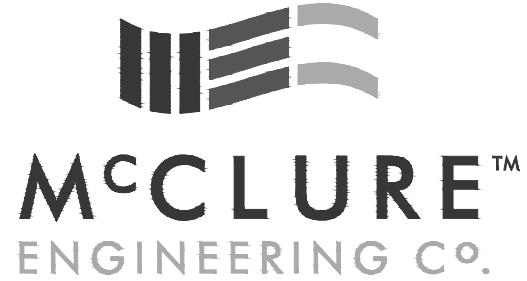
ESTIMATED GRADING ITEM QUANTITIES			
Item No.	Item	Unit	Total
1	CLEARING AND GRUBBING	AC	21
2	TOPSOIL, ON-SITE	CY	17000
3	EXCAVATION, CLASS 10	CY	82000
4	SUBGRADE PREPARATION	SY	13385
5	COMPACTION TESTING	LS	1
6	REMOVAL OF DRIVEWAY	SY	1300
7	SPECIAL SUBGRADE PREPARATION FOR RECREATIONAL TRAIL	SY	390
8	PAVEMENT REMOVAL	SY	145
9	STABILIZED CONSTRUCTION ENTRANCE	TON	65
10	DEMOLITION WORK	LS	1

ESTIMATED UTILITY ITEM QUANTITIES			
Item No.	Item	Unit	Total
11	TRAFFIC CONTROL	LS	1
12	TRENCH COMPACTION TESTING	LS	1
13	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC TRUSS, 8"	LF	4032
14	SANITARY SEWER GRAVITY MAIN, TRENCHLESS, PVC (RESTRAINED JOINT), 8"	LF	42
15	SANITARY SEWER SERVICE STUB, PVC, 4"	EA	52
16	STORM SEWER, TRENCHED, RCP, 15"	LF	1883
17	STORM SEWER, TRENCHED, RCP, 18"	LF	400
18	STORM SEWER, TRENCHED, RCP, 21"	LF	504
19	STORM SEWER, TRENCHED, RCP, 24"	LF	490
20	STORM SEWER, TRENCHED, RCP, 27"	LF	208
21	STORM SEWER, TRENCHED, RCP, 30"	LF	159
22	STORM SEWER, TRENCHED, RCP, 33"	LF	365
23	PIPE APRON, RCP, 15"	EA	1
24	PIPE APRON, RCP, 18"	EA	4
25	PIPE APRON, RCP, 24"	EA	2
26	PIPE APRON, RCP, 27"	EA	1
27	PIPE APRON, RCP, 30"	EA	1
28	FOOTING FOR CONCRETE PIPE APRON	EA	9
29	PIPE APRON GUARD	EA	9
30	SUBDRAIN COLLECTOR, PVC, 6"	LF	2210
31	SUBDRAIN COLLECTOR, PVC, 8"	LF	448
32	SUBDRAIN CLEANOUT, PVC, 8"	EA	6
33	STORM SEWER SERVICE STUB, PVC, 2"	EA	52
34	WATER MAIN, TRENCHED, PVC, 8"	LF	3732
35	FITTING, 8"	EA	11
36	WATER SERVICE STUB, COPPER, 1"	EA	52
37	VALVE, GATE, 8"	EA	10
38	TAPPING SLEEVE AND VALVE ASSEMBLY, 12"	EA	2
39	FIRE HYDRANT ASSEMBLY	EA	13
40	MANHOLE TYPE SW-301, 48"	EA	22
41	MANHOLE TYPE SW-401, 48"	EA	7
42	INTAKE TYPE SW-501	EA	5
43	INTAKE TYPE SW-503	EA	7
44	INTAKE TYPE SW-505	EA	5
45	INTAKE TYPE SW-506	EA	2
46	INTAKE TYPE SW-513, 4'	EA	2
47	DROP CONNECTION	EA	0
48	CONNECTION TO EXISTING SANITARY MANHOLE	EA	1
49	CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING, TYPE 1	AC	16
50	CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING, TYPE 2	AC	5
51	LANDSCAPING	LS	1
52	TEMPORARY RECP, TYPE 2.D	SQ	250
53	RIP RAP, EROSION STONE	TON	40
54	RIP RAP, CLASS D	TON	140
55	SEDIMENT BASIN, OUTLET STRUCTURE, 12"	EA	1
56	SEDIMENT BASIN, REMOVAL OF SEDIMENT	LS	1
57	SEDIMENT BASIN, REMOVAL OF STRUCTURE	EA	1
58	SILT FENCE OR SILT FENCE DITCH CHECK	LF	6000
59	SILT FENCE OR SILT FENCE DITCH CHECK, REMOVAL OF SEDIMENT	LF	6000
60	SILT FENCE OR SILT FENCE DITCH CHECK, REMOVAL OF DEVICE	LF	6000
61	EROSION CONTROL MULCHING, CONVENTIONAL	AC	17.5
62	INLET PROTECTION DEVICE, DROP IN	EA	19
63	INLET PROTECTION DEVICE, MAINTENANCE	EA	19
64	CONCRETE WASHOUT PIT	EA	4

ESTIMATED PAVING ITEM QUANTITIES			
Item No.	Item	Unit	Total
65	PAVEMENT, PCC, 7"	SY	10490
66	PAVEMENT, PCC, 8" WITH CD BASKETS	SY	1250
67	PCC PAVEMENT SAMPLES AND TESTING	LS	1
68	RECREATIONAL TRAIL, PCC, 6"	SY	275
69	SIDEWALK, PCC, 5"	SY	110
70	DETECTABLE WARNING PANELS	SY	23
71	RECREATIONAL TRAIL ASSURANCE TESTING	LS	1
72	MAILBOX PADS	EA	3

GRADING ITEM REFERENCE INFORMATION	
Data listed below is for informational purpose only and shall not constitute a basis for any extra work orders.	
Item No.	Description
1	THE MOST RECENT EDITION OF THE WAUKEE STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS SHALL APPLY TO ALL WORK PERFORMED ON THIS PROJECT EXCEPT AS MODIFIED HEREIN. CLEARING AND GRUBBING A. CLEAR AND GRUB ALL AREAS AFFECTED BY GRADING AND UTILITY CONSTRUCTION. THE CONTRACTOR SHALL FIELD VERIFY CLEARING AND GRUBBING NEEDS PRIOR TO BIDDING. INCLUDES REMOVAL OF ANY FIELD FENCE WITHIN THE CONSTRUCTION LIMITS. B. ALL MATERIAL THAT IS REMOVED FROM THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
2	TOPSOIL, ON-SITE A. STRIP AND SALVAGE THE TOP 6" OF TOPSOIL ON ALL DISTURBED AREAS. RESPREAD TO A DEPTH OF 4". SHRINKAGE ON RESPREAD IS ASSUMED TO BE 45%. B. TOPSOIL TO BE RESPREAD SHALL BE FREE OF ROCK AND DEBRIS AND BE SUITABLE FOR THE GROWTH OF GRASS.
3	EXCAVATION, CLASS 10 A. REFER TO FIG. 2010.2 FOR DESIGNATION OF ROADWAY EARTHWORK ITEMS DETAILS. B. EXCAVATION INCLUDES ALL WORK NECESSARY TO ACHIEVE THE GRADES AS SHOWN IN THE PLANS. C. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED. D. SHRINKAGE WAS ASSUMED TO BE 20%. E. QUANTITIES: CUT 82000 CY FILL + SHRINK 82000 CY TOTAL 0 CY
4	SUBGRADE PREPARATION A. REFER TO FIG. 2010.2 FOR DESIGNATION OF ROADWAY EARTHWORK ITEMS DETAILS.
5	COMPACTION TESTING A. PROVIDE ALL TEST RESULTS TO THE ENGINEER, OWNER, AND CITY OF WAUKEE.
6	REMOVAL OF DRIVEWAY A. REMOVED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
7	SPECIAL SUBGRADE PREPARATION FOR RECREATIONAL TRAIL
8	PAVEMENT REMOVAL
9	STABILIZED CONSTRUCTION ENTRANCE A. REFER TO FIG. 9040.20 FOR STABILIZED CONSTRUCTION ENTRANCE DETAILS.
10	DEMOLITION WORK A. INCLUDES BUT IS NOT LIMITED TO ANY REMAINING BUILDING MATERIAL, FOOTINGS OR FOUNDATIONS, CONCRETE PADS, SEPTIC SYSTEMS AND SEPTIC LATTERAL FIELDS. B. ALL DEMOLISHED MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR.

UTILITY ITEM REFERENCE INFORMATION	
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11	THE MOST RECENT EDITION OF THE WAUKEE STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS SHALL APPLY TO ALL WORK PERFORMED ON THIS PROJECT EXCEPT AS MODIFIED HEREIN. TRAFFIC CONTROL A. A PARTIAL LANE CLOSURE WILL BE REQUIRED TO INSTALL BOTH CONNECTIONS TO UTE AVE. B. PROVIDE FLAGGERS AS NEEDED.
12	TRENCH COMPACTION TESTING A. PROVIDE ALL TEST RESULTS TO THE ENGINEER AND OWNER.
13	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC TRUSS, 8" A. REFER TO FIG. 3010.101 FOR TRENCH BEDDING AND BACKFILL ZONE DETAILS. B. REFER TO FIG. 3010.103 FOR FLEXIBLE GRAVITY PIPE TRENCH BEDDING. C. SANITARY SEWER SHALL BE TELEVISED PRIOR TO PAVING. PROVIDE TO CITY IN DVD FORMAT.
14	SANITARY SEWER GRAVITY MAIN , TRENCHLESS, PVC (RESTRAINED JOINT), 8" A. SANITARY SEWER SHALL BE TELEVISED PRIOR TO PAVING. PROVIDE TO CITY IN DVD FORMAT.
15	SANITARY SEWER SERVICE STUB, PVC, 4" A. REFER TO FIG. 3010.101 FOR TRENCH BEDDING AND BACKFILL ZONE DETAILS. B. REFER TO FIG. 4010.201 FOR SANITARY SEWER SERVICE STUB DETAILS.
16	STORM SEWER, TRENCHED, RCP, 15"
17	STORM SEWER, TRENCHED, RCP, 18"
18	STORM SEWER, TRENCHED, RCP, 21"
19	STORM SEWER, TRENCHED, RCP, 24"
20	STORM SEWER, TRENCHED, RCP, 27"
21	STORM SEWER, TRENCHED, RCP, 30"
22	STORM SEWER, TRENCHED, RCP, 33" A. REFER TO FIG. 3010.101 FOR TRENCH BEDDING AND BACKFILL ZONE DETAILS. B. REFER TO FIG. 3010.102 FOR RIGID GRAVITY PIPE TRENCH BEDDING.



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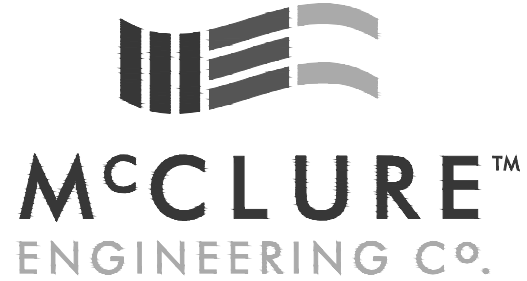
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	THE MOST RECENT EDITION OF THE WAUKEE STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS SHALL APPLY TO ALL WORK PERFORMED ON THIS PROJECT EXCEPT AS MODIFIED HEREIN.
23	PIPE APRON, RCP, 15"
24	PIPE APRON, RCP, 18"
25	PIPE APRON, RCP, 24"
26	PIPE APRON, RCP, 27"
27	PIPE APRON, RCP, 30" A. THE LAST THREE SECTIONS OF PIPE AND APRON SHALL BE CONNECTED WITH PIPE CONNECTORS. PIPE CONNECTORS SHALL BE CONSIDERED INCIDENTAL.
28	FOOTING FOR CONCRETE PIPE APRON A. REFER TO FIG. 4030.221 FOR RCP APRON SECTION FOOTING DETAILS. B. FOOTINGS REQUIRED FOR ALL PIPE APRONS
29	PIPE APRON GUARD A. PIPE APRON GUARDS REQUIRED ON ALL PIPE APRONS.
30	SUBDRAIN COLLECTOR, PVC, 6"
31	SUBDRAIN COLLECTOR, PVC, 8"
32	SUBDRAIN CLEANOUT, PVC, 8"
33	STORM SEWER SERVICE STUB, PVC, 2"
34	WATER MAIN, TRENCHED, PVC, 8" A. REFER TO FIG. 3010.101 FOR TRENCH BEDDING AND BACKFILL ZONE DETAILS. B. REFER TO FIG. 3010.104 FOR PRESSURE PIPE TRENCH BEDDING DETAILS. C. REFER TO FIG. 5010.101 FOR THRUST BLOCK DETAILS. D. REFER TO FIG. 5010.102 FOR TRACER SYSTEM DETAILS.
35	FITTING, MJ, 8"
36	WATER SERVICE STUB, COPPER, 1"
37	VALVE, GATE, 8"
38	TAPPING SLEEVE AND VALVE ASSEMBLY, 12"
39	FIRE HYDRANT ASSEMBLY A. REFER TO FIG. 5020.201 FOR FIRE HYDRANT ASSEMBLY DETAILS.
40	MANHOLE TYPE SW-301, 48" A. REFER TO FIG. 6010.301 FOR SW-301 - CIRCULAR SANITARY SEWER MANHOLE DETAILS. B. REFER TO FIG. 6010.306 FOR CHIMNEY SEALS DETAILS. EXTERNAL OUTSIDE PAVEMENT, INTERNAL WITHIN PAVEMENT C. REFER TO FIG. 6010.601 FOR CASTINGS FOR SANITARY SEWER MANHOLE DETAILS. TYPE B CASTINGS REQUIRED FOR ALL MANHOLES IN PAVEMENT. TYPE A FOR ALL MANHOLES NOT IN PAVEMENT.
41	MANHOLE TYPE SW-401, 48" A. REFER TO FIG. 6010.401 FOR SW-401 - CIRCULAR STORM SEWER MANHOLE DETAILS. B. REFER TO FIG. 6010.602 FOR STORM SEWER MANHOLE DETAILS. TYPE F CASTINGS REQUIRED FOR ALL MANHOLES IN PAVEMENT. TYPE E CASTINGS REQUIRED FOR ALL MANHOLES NOT IN PAVEMENT.
42	INTAKE TYPE SW-501 A. REFER TO FIG. 6010.501 FOR SW-501 - SINGLE GRATE INTAKE DETAILS. B. REFER TO FIG. 6010.514 FOR BOXOUT FOR GRATE INTAKE DETAILS. C. REFER TO FIG. 6010.603 FOR CASTINGS FOR GRATE INTAKE DETAILS. TYPE R CASTINGS REQUIRED.
43	INTAKE TYPE SW-503 A. REFER TO FIG. 6010.503 FOR SW-503 - SINGLE GRATE WITH MANHOLE DETAILS. B. REFER TO FIG. 6010.514 FOR BOXOUT FOR GRATE INTAKE DETAILS. C. REFER TO FIG. 6010.603 FOR CASTINGS FOR GRATE INTAKE DETAILS. TYPE R CASTINGS REQUIRED. D. REFER TO FIG. 6010.602 FOR CASTINGS FOR STORM SEWER MANHOLE DETAILS. TYPE E CASTING REQUIRED.
44	INTAKE TYPE SW-505 A. REFER TO FIG. 6010.505 FOR SW-505 - DOUBLE GRATE INTAKE DETAILS. B. REFER TO FIG. 6010.514 FOR BOXOUT FOR GRATE INTAKE DETAILS. C. REFER TO FIG. 6010.603 FOR CASTINGS FOR GRATE INTAKE DETAILS. TYPE R CASTINGS REQUIRED.
45	INTAKE TYPE SW-506 A. REFER TO FIG. 6010.506 FOR SW-506 - DOUBLE GRATE INTAKE WITH MANHOLE DETAILS. B. REFER TO FIG. 6010.514 FOR BOXOUT FOR GRATE INTAKE DETAILS. C. REFER TO FIG. 6010.603 FOR CASTINGS FOR GRATE INTAKE DETAILS. TYPE R CASTINGS REQUIRED. D. REFER TO FIG. 6010.602 FOR CASTINGS FOR STORM SEWER MANHOLE DETAILS. TYPE E CASTING REQUIRED.
46	INTAKE TYPE SW-513, 4' A. REFER TO FIG. 6010.513 FOR SW-513 - OPEN-SIDED AREA INTAKE DETAILS. B. REFER TO FIG. 6010.602 FOR CASTINGS FOR STORM SEWER MANHOLE DETAILS. TYPE G CASTING REQUIRED. C. REFER TO PLANS FOR SIDES WITH INLET OPENINGS AND CONFIGURATION.
47	DROP CONNECTION A. REFER TO WAUKEE STANDARD SPECIFICATION DRAWING #13 FOR DROP CONNECTION FOR SANITARY SEWER MANHOLE DETAILS.
48	CONNECTION TO EXISTING SANITARY MANHOLE
49-50	CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING TYPE 1 SEEDING TO BE USED WITHIN THE RIGHT OF WAY TYPE 2 SEEDING TO BE USED IN ALL OTHER DISTURBED AREAS

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51	LANDSCAPING A. REFER TO PLANTING SCHEDULE ON SHEET LA-01 FOR DETAILS.
52	TEMPORARY RECP, TYPE 2.D A. REFER TO FIG. 9040.3 FOR ROLLED EROSION CONTROL PRODUCT (RECP) INSTALLATION ON SLOPES DETAILS. B. SEE SHEET GR-01 FOR INSTALLATION LOCATION
53	RIP RAP, EROSION STONE
54	RIP RAP, CLASS D A. REFER TO FIG. 9040.10 FOR RIP RAP APRON FOR PIPE OUTLET ONTO FLAT GROUND DETAILS. B. REFER TO FIG. 9040.11 FOR RIP RAP APRON FOR PIPE OUTLET INTO CHANNEL DETAILS. C. PLACE CLASS E REVETMENT A MINIMUM OF 1.5' THICK. INSTALL ENGINEERING FABRIC UNDER ALL RIP RAP. ENGINEERING FABRIC SHALL BE CONSIDERED INCIDENTAL.
55	SEDIMENT BASIN, OUTLET STRUCTURE, 12"
56	SEDIMENT BASIN, REMOVAL OF SEDIMENT
57	SEDIMENT BASIN, REMOVAL OF STRUCTURE A. REFER TO FIG. 9040.13 FOR SEDIMENT BASIN WITHOUT EMERGENCY SPILLWAY DETAILS. B. REFER TO FIG. 9040.15 FOR SEDIMENT BASIN DEWATERING DEVICE (PERFORATED RISER) DETAILS. C. REFER TO FIG. 9040.16 FOR ANTI-VORTEX DEVICE DETAILS. D. REFER TO FIG. 9040.17 FOR ANTI-SEEP COLLAR DETAILS.
58	SILT FENCE OR SILT FENCE DITCH CHECK
59	SILT FENCE OR SILT FENCE DITCH CHECK, REMOVAL OF SEDIMENT
60	SILT FENCE OR SILT FENCE DITCH CHECK, REMOVAL OF DEVICE A. REFER TO FIG. 9040.19 FOR SILT FENCE DETAILS.
61	EROSION CONTROL MULCHING, CONVENTIONAL A. EROSION CONTROL MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS IN THE EVENT THAT FINAL SEEDING CANNOT BE COMPLETED WITHIN THE SEEDING PERIOD.
62	INLET PROTECTION DEVICE, DROP IN A. INSTALL SILT FENCE AROUND ALL INTAKES AFTER INSTALLATION AND PRIOR TO PAVING. SILT FENCE TO BE PAID PER LINEAR FOOT. B. INLET PROTECTION REQUIRED FOR ALL INTAKES AFTER PAVING. C. REMOVE INLET PROTECTION DEVICES PRIOR TO OPENING THE STREET TO TRAFFIC. REMOVAL SHALL BE CONSIDERED INCIDENTAL.
63	INLET PROTECTION DEVICE, MAINTENANCE A. REMOVE ALL ACCUMULATED SEDIMENT.
64	CONCRETE WASHOUT PIT A. BID INCLUDES CONSTRUCTION OR DELIVERY OF CONCRETE WASHOUT PITS, VACUUM SERVICE, CLEANOUT AND REMOVAL OF WASHOUT PITS. B. DISPOSAL OF ALL WASHOUT MATERIAL SHALL BE CONSIDERED INCIDENTAL.

PAVING ITEM REFERENCE INFORMATION	
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65	PAVEMENT, PCC, 7"
66	PAVEMENT, PCC, 8" WITH CD BASKETS A. REFER TO FIG. 7010.101 FOR JOINT DETAILS. B. REFER TO FIG. 7010.102 FOR PCC CURB DETAILS. C. REFER TO FIG. 7010.103 FOR MANHOLE BOXOUTS IN PCC PAVEMENT DETAILS. D. TYPICAL TRANSVERSE JOINT SPACING IS 15.
67	PCC PAVEMENT SAMPLES AND TESTING
68	RECREATIONAL TRAIL, PCC, 6" A. REFER TO FIG. 7030.204 FOR GENERAL SIDEWALK DETAILS.
69	SIDEWALK, PCC, 5" A. REFER TO FIG. 7030.201 FOR CLASSES OF SIDEWALK DETAILS. B. REFER TO FIG. 7030.202 FOR CURB DETAILS FOR CLASS A SIDEWALK. (CLASS A SIDEWALK ONLY) C. REFER TO FIG. 7030.204 FOR GENERAL SIDEWALK DETAILS. D. REFER TO FIG. 7030.205 FOR CURB RAMP OUTSIDE OF INTERSECTION DETAILS. E. REFER TO FIG. 7030.206 FOR CURB RAMP WITHIN INTERSECTION RADIUS FOR CLASS A SIDEWALK DETAILS. F. REFER TO FIG. 7030.207 FOR CURB RAMPS WITHIN INTERSECTION RADIUS FOR CLASS B OR C SIDEWALK.
70	DETECTABLE WARNING PANELS
71	RECREATIONAL TRAIL ASSURANCE TESTING
72	MAILBOX PADS



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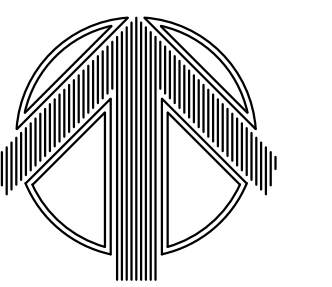
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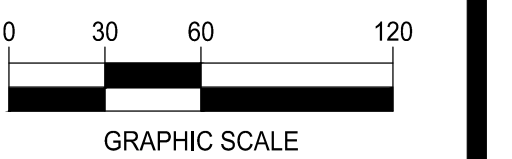
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EXISTING CONDITIONS/
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NORTH



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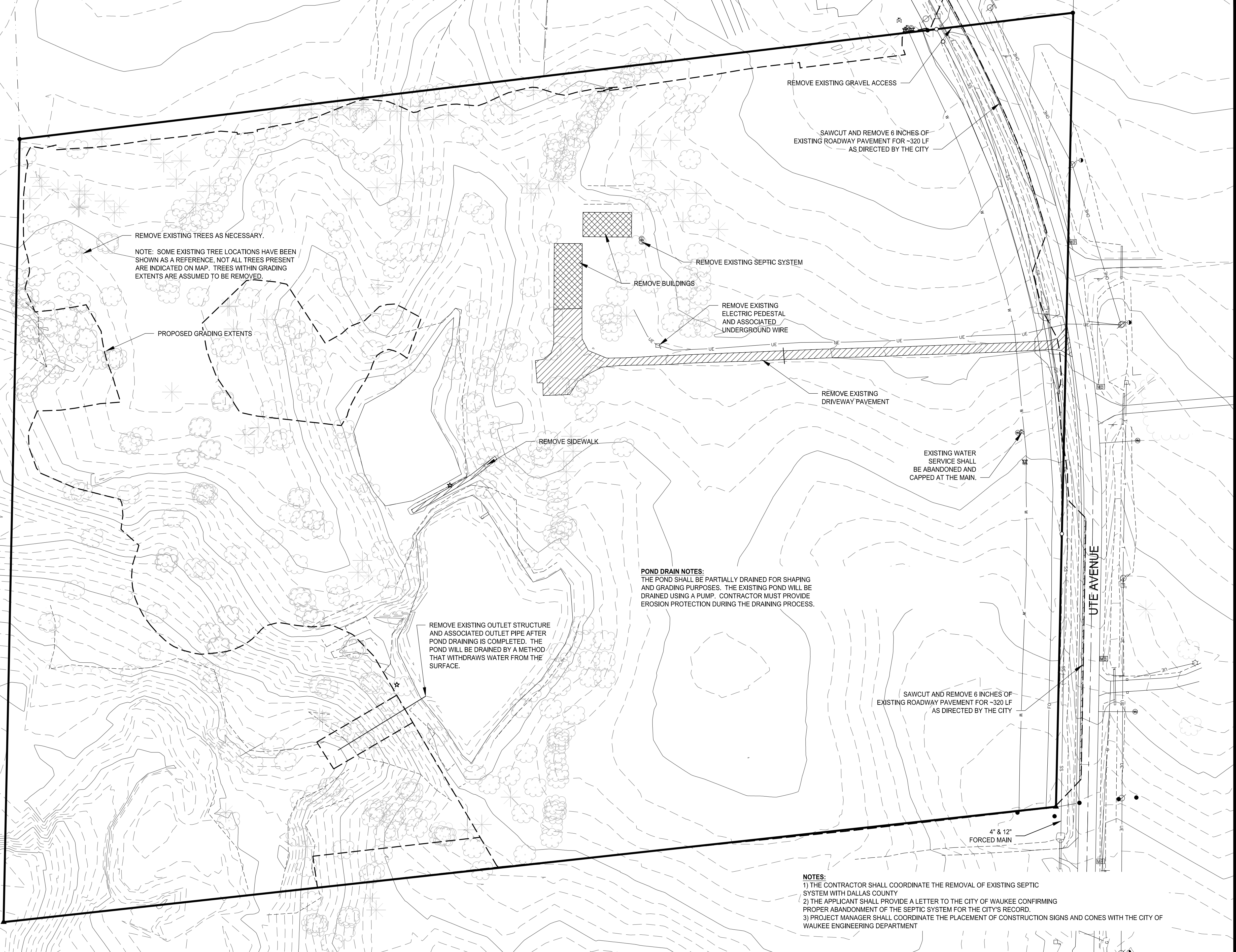
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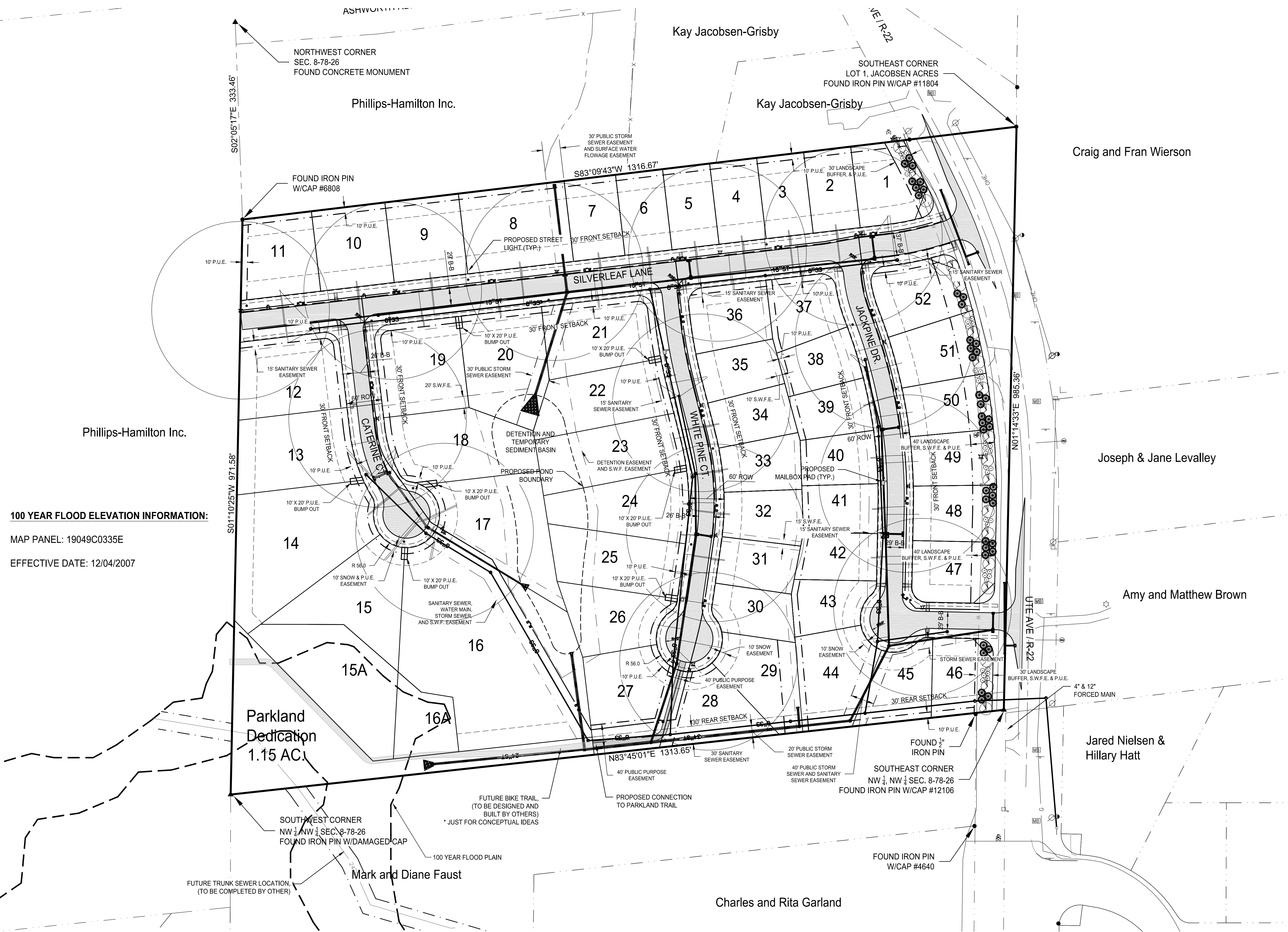
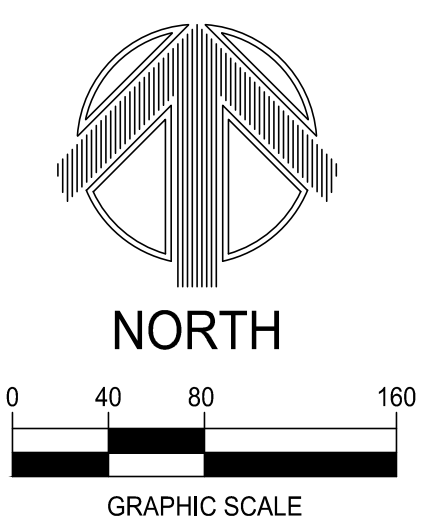
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POND DRAIN NOTES:
THE POND SHALL BE PARTIALLY DRAINED FOR SHAPING AND GRADING PURPOSES. THE EXISTING POND WILL BE DRAINED USING A PUMP. CONTRACTOR MUST PROVIDE EROSION PROTECTION DURING THE DRAINING PROCESS.

REMOVE EXISTING OUTLET STRUCTURE AND ASSOCIATED OUTLET PIPE AFTER POND DRAINING IS COMPLETED. THE POND WILL BE DRAINED BY A METHOD THAT WITHDRAWS WATER FROM THE SURFACE.

NOTES:
1) THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF EXISTING SEPTIC SYSTEM WITH DALLAS COUNTY
2) THE APPLICANT SHALL PROVIDE A LETTER TO THE CITY OF WAUKEE CONFIRMING PROPER ABANDONMENT OF THE SEPTIC SYSTEM FOR THE CITY'S RECORD.
3) PROJECT MANAGER SHALL COORDINATE THE PLACEMENT OF CONSTRUCTION SIGNS AND CONES WITH THE CITY OF WAUKEE ENGINEERING DEPARTMENT



100 YEAR FLOOD ELEVATION INFORMATION:
MAP PANEL: 19049C0335E
EFFECTIVE DATE: 12/04/2007



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GRADING & EROSION CONTROL PLAN



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POLLUTION PREVENTION PLAN

EROSION CONTROL CONTACT
TBD

PROJECT AREA DESCRIPTION

This project is for the construction of site improvements generally referred to as the Willow Pines. The site is located at 32149 Ute Avenue in Waukee, Iowa.

EXISTING SITE CONDITIONS

The existing site is primarily pasture/prairie area including mature trees, a two-tier pond, and 2 outbuildings.

AREA DISTURBED BY CONSTRUCTION ACTIVITY

This site contains 29.27 acres, of which approximately 21 acres will be disturbed by construction activity as a part of this plan set. Construction activity will be located throughout the entire site.

NATURE OF CONSTRUCTION ACTIVITY

Construction activity will generally consist of Rough Grading, Paving, Pavement Backfill, Storm Sewer, Sanitary Sewer, Water Main, Final Grading and Home Building.

RUNOFF COEFFICIENT

The runoff coefficient following complete construction including building and site development is expected to be 0.65.

SITE MAP

A proposed grading map can be found within this plan set.

RECEIVING WATERS

Natural and manmade waterways to a tributary to Sugar Creek.

No on-site receiving waters.

CONTROLS

Controls will generally consist of those specific items as depicted on the site map and are the responsibility of the owner. Responsibility for these controls may be delegated to a contractor at the discretion of the owner at any time during the project. Further, this SWPPP is to be updated if any of the controls set forth in this plan are not effective or are not currently being used on site. Following is a sequence of construction and the corresponding erosion control methods that are to be used.

SEQUENCE OF CONSTRUCTION ACTIVITIES AND STABILIZATION PRACTICE

1. PRIOR TO ANY WORK ON SITE

Silt fence is to be installed around intakes before any work on site is started. Also a construction staging area is to be constructed on site in a location that is minimally affected by stormwater runoff. This is the location that all construction materials shall be stored. A description of the materials anticipated on site can be found in this Pollution Prevention Plan. Also the contractor is to install a temporary gravel entrance/exit drive to minimize the amount of dirt tracking into the street.

2. CLEARING & GRUBBING

Verify all silt fencing is in place and in good working order. Clearing and Grubbing is to occur only if rough grading is to commence in 21 days or less of this phase. Clear all areas that will be affected by construction activity. No materials are to be buried on site. All waste materials are to be disposed of as outlined in this SWPPP.

3. ROUGH GRADING

Verify all perimeter silt fencing is in place and in good working order following clearing and grubbing. Construction of any diversion dikes and/or silt basins are to be constructed first to prevent any erosion from leaving the site. After completion of rough grading, all interior silt fence or other erosion control measure is to be installed. Any area that is not to be disturbed during utility construction or paving to be permanently seeded within 14 days of completion of rough grading.

4. SANITARY SEWER CONSTRUCTION

Verify all silt fencing and other erosion control measures are in place and in good working order following rough grading. Install sanitary sewer and place permanent seeding on any areas that are not to be disturbed by future construction activity.

5. WATER MAIN CONSTRUCTION

Verify all silt fencing and other erosion control measures are in place and in good working order following sanitary sewer construction. Install water main and place permanent seeding on any areas that are not to be disturbed by future construction activity. Any water main flushings will be directed so that all discharges pass through the silt basin, if one is constructed.

6. STORM SEWER CONSTRUCTION

Verify all silt fencing and other erosion control measures are in place and in good working order following water main construction. Install storm sewer and place permanent seeding on any areas that are not to be disturbed by future construction activity. Storm outlets shall be protected using rip-rap and engineering fabric. Protect all storm sewer inlets from any erosion infiltration into the storm sewer with a steel plate or other approved method.

7. PAVING CONSTRUCTION

Verify all silt fencing and other erosion control measures are in place and in good working order following utility construction. Construct all curb and gutter, intakes, and manholes, preparing for final curb backfill. Protect all storm sewer intakes with an approved erosion control method which are to be left in place until final stabilization is reached. Below grade inlet protection devices shall be installed until the completion of paving.

8. FINAL GRADING

Check to make sure all silt fencing and other erosion control measures are in place and in good working order following utility construction. Remove all interior erosion control measures long enough to complete final grading, being sure to reinstall all measures until final stabilization is met. Once seeding has been completed all erosion control measures can be removed and the silt basin can be cleaned out and removed.

STABILIZATION AND STRUCTURAL PRACTICES

1. STORM WATER MANAGEMENT

Storm water drainage will be provided by storm sewer and a wet-bottom detention basin. The temporary sediment basin will be located at the same place as the detention basin. The detention area will release at the 5 year - 24 hour pre-developed rate. The areas that are not developed will be graded at the slopes as shown on the SWPPP/Grading Plan and shall have permanent seeding or landscaping upon final grading. All pipe outlets will be stabilized with rip-rap and engineering fabric to reduce erosion at the pipe outlet.

2. PERMANENT STABILIZATION PRACTICES

Permanent seeding and planting of all disturbed areas by seeding, fertilizing, and mulching shall be completed after final grading is finished. This shall occur in a time of year that is appropriate for seed germination. All vegetation in areas not disturbed during to construction is to be maintained.

3. PERMANENT STRUCTURAL PRACTICES

Outlet protection of all storm sewer outlets using rip-rap and engineering fabric will be utilized. Curb and gutter on all paving and a storm sewer system will be used to collect storm water and a detention area will be used to release the storm water at pre developed levels. An orifice plate will be used to detain per city requirements. Orifice detail is located on page DT-04, it will be located at INT-508.

4. TEMPORARY STABILIZATION PRACTICES

If construction activity ceases after strip and stockpiling for more than 21 days, temporary seed and mulching shall be placed no more than 14 days after construction ceases. Silt fence may be used to temporarily check flows on site and help protect intakes and manholes on site. Any area where flows go offsite, silt fence shall be placed on the perimeter of the site prior to any grading taking place. Frequent watering of the grade on site shall also be practiced to minimize dust pollution on site.

5. TEMPORARY STRUCTURAL PRACTICES

A combination of silt fences, sediment traps and/or other sediment trapping measures may be used. Temporary sediment traps may be used for areas around 2.5 acres in size.

Prior to final stabilization, the proposed detention basin is to be used as a temporary sediment basin. A temporary standpipe as shown in these plans is to be used to retain sediment on site in the basin area and will be utilized as a dewatering device. A standpipe detail can be found on sheet DT-07. Sediment basin location can be found on GR-01. Upon final stabilization, the sediment is to be removed from the basin, the temporary standpipe removed and then the basin can be final seeded.

6. Other controls

All disposal of construction materials and wastes shall follow all local, State and Federal regulations for disposal of such materials. The contractor is also responsible for the construction and maintenance of a temporary gravel entrance into the project to minimize the amount of offsite tracking from the site. The bordering streets shall be inspected daily and any tracking shall be cleaned up immediately. Any trucks hauling material into or out of the site shall be covered by a tarpaulin to reduce any material spillage.

MAINTENANCE /INSPECTION

All site controls shall be maintained in good working order by the contractor until final stabilization is reached for the specific area a control has been placed for. Maintenance shall be done as required following site inspections, and shall be accomplished within a 24 hour period from notice. All maintenance shall be recorded in the Log Book. The Log Book will be located inside the production trailer on site. Following are maintenance and inspection practices to be used on this project:

1. All erosion control measures shall be kept in good working order; if a repair is necessary, it will be initiated within 24 hours of the report.
2. Sediment buildup shall be removed when the sediment height is $\frac{3}{4}$ the height of silt fence or higher.
3. Silt fence will be inspected for accumulation of sediment, fence tears, proper fence attachment and that fence posts are securely attached to the ground.
4. The sediment basin, if present, shall be inspected for sediment buildup and sediment shall be removed when it reaches 10% of the design capacity or after the job is complete.
5. Any diversion dikes that are used shall be inspected and any breaches shall be corrected immediately.
6. Temporary and permanent seeding and planting shall be inspected for healthy growth, bare spots and any washouts.
7. A maintenance inspection report will be made after each inspection and will be recorded in the inspection log for the project.
8. The contractor is responsible for selecting a qualified inspector to complete the inspection and reports as outlined. This person is to be knowledgeable in the erosion control methods being used in this project and shall be capable of assessing the effectiveness of these erosion control methods on site as well as the maintenance practices required for these methods.

INVENTORY FOR POLLUTION PREVENTION PLAN

The materials or substances listed below are expected to be present on site during construction of this project.

1. Concrete
2. Detergents
3. Paints (enamel and latex)
4. Tar
5. Fertilizers
6. Petroleum Based Products
7. Cleaning Solvents
8. Wood
9. Masonry Block
10. Roofing Shingles
11. Solids and Construction Wastes
12. Pesticides
13. Concrete Curing Substances

MATERIAL MANAGEMENT PRACTICES

Following are the material management practices that are to be used on site to reduce the risk of spill or other accidental exposure of materials and substances to storm water runoff.

GOOD HOUSEKEEPING

1. Store only enough product onsite to complete theproject.
2. All materials that are to be stored onsite shall be kept in a neat and orderly manner in their appropriate containers, clearly marked and under a roof if possible.
3. Products are to be kept in their original manufacturer's container with the original manufacturer's label.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of the contents of a products container will be used up before disposing of the the manufacturer's container.
6. Manufacturers' recommendations for proper use and disposal shall be followed.
7. The site superintendent will inspect the site for proper use and disposal of materials every day.

HAZARDOUS MATERIALS

The following practices are to be used to reduce the risk associated with the use of hazardous materials:

1. Products will be kept in their original containers unless the containers are not re-sealable.
2. Original labels and material safety data will be saved for future reference.
3. If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

PRODUCT SPECIFIC PRACTICES

1. **Petroleum Products:** All on site vehicles will be monitored for leaks and shall receive regular preventative maintenance to reduce the chance of material leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used on site will be applied according to manufacturer's specifications. Any on site petroleum storage tanks shall be located on an impervious surface and shall be maintained to prevent any leakage.
2. **Fertilizers:** Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to any storm water. Storage of fertilizers shall be in its original manufacturer's container and under a covered shed whenever possible. Contents of any partially used bag or container shall be placed into re-sealable bags or containers when not being used.
3. **Agricultural Activities:** Runoff from agricultural lands may contain chemicals including herbicides, pesticides, fungicides, and fertilizers. Existing farming erosion measures shall be left in place where feasible to help reduce the effects of these runoffs.
4. **Paints, Paint Solvents and Cleaning Solvents:** All containers will be tightly sealed and stored when not in use. Excess paint will not be discharged to the storm sewer system or into any drainage ditch. Excess paint will be properly disposed of according to manufacturer's or local and State regulations.
5. **Concrete Wastes:** Concrete trucks will be allowed to washout or discharge surplus concrete at specified location on site that will minimize the potential for storm water contact with these materials. The waste concrete shall either be disposed of as non-hazardous wastes or broken up and used on site in appropriate manner, per EPA Minimum BMP requirements.
6. **Solid and Construction Wastes:** A construction dumpster is to be located on site in the designated staging area. All waste construction debris and materials are to be placed into the dumpster on site and are not to be buried on site. This dumpster is to be emptied once a week or as construction needs required.
7. **Sanitary Wastes:** A portable restroom facility is to be located in the designated staging area at all times unless an approved equid is available. Wastes shall be collected and disposed of as required by all local, State, and Federal regulations.

SPILL CONTROL PRACTICES

The contractor is responsible for the training of all personnel in proper use and spill cleanup of all materials used in the work they are completing. If a spill occurs, no storm water contact will be allowed and the spill is to be cleaned up immediately. If storm water contact does occur, the storm water is to be contained on site and disposed of in a manner that meets all local, State, and Federal regulations. In the case of a material spill the following practices will be followed:

1. Manufacturer's recommended methods for spill cleanup will be clearly posted on site and site personnel will be made aware of the cleanup procedures and the location of the cleanup supplies.
2. Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but are not limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
3. All spills will be contained and cleaned up immediately after discovery.
4. The spill are will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury during the spill cleanup.
5. Spills of toxic or hazardous materials will be reported to all appropriate State and local government agencies regardless of size. The job contractor is responsible for contacting the EPA if any spills are of a size that is larger than the quantities outlined by federal regulations. (EPA National Response Center: 1-800-424-8802 or 1-202-426-2675).
6. If the spill exceeds reportable quantity, the SWPPP will be modified in no less than 5 calendar days days from the inspection reports recording and shall reflect all the changes in erosion control measures that were enacted due to this spill. Also the SWPPP shall record a description of the release, an explanation of why the spill occurred, a description of measures enacted to prevent any future spills and/or release of materials and method of spill cleanup used and procedures of disposal of the material.
7. The site superintendent is responsible for day-to-day site operations and will be the spill prevention and cleanup coordinator. He or she will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer on site if one is present.

NON-STORM WATER DISCHARGES

It is expected that the following non-storm water discharges will or possibly will occur from the site during construction. By IDNR standards these discharges cannot come into contact with pollutants either before or after discharge onto the site. All discharges will be directed to the sediment basin on site if one is used.

1. Water from water main flushing
2. Water from any vehicle and/or building wash downs excluding any detergents.
3. Pavement wash waters where no spills or leaks of toxic or hazardous materials have occurred.
4. Uncontaminated groundwater from de-watering excavation.
5. Water used to fight fires on site.
6. Foundation or footing drains where the discharge has not been exposed to contaminants.
7. Irrigation sprinklers
8. Air conditioning condensate.

DISCHARGES FROM ASPHALT AND CONCRETE PLANTS

No asphalt or concrete plants are anticipated for this project site.

CERTIFICATION STATEMENTS

I certify, under penalty of law, that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the owner and other contractors and subcontractors signing such certifications, to the Iowa Department of Natural Resources NPDES General Permit No. 2 for "Storm Water Discharge Associated with Industrial Activity for Construction Activities" at the identified site. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Iowa, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Signed:

Company:

Address:

Phone #:

Date:

Signed:

Company:

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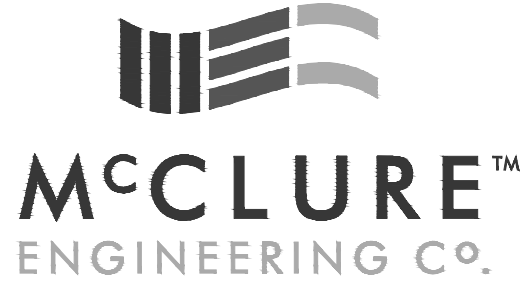
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PLAN CHECKLIST

- ___ Drainage Patterns
- ___ Approximate Slopes after Major Grading
- ___ Area of Soil Disturbance
- ___ Outline of areas which won't be disturbed
- ___ Location of major structural and non-structural controls
- ___ Areas where stabilization practices are expected to occur
- ___ Surface Waters
- ___ Storm water discharge locations



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STORM WATER
MANAGEMENT
PLAN

WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA

2213008

JULY 2013

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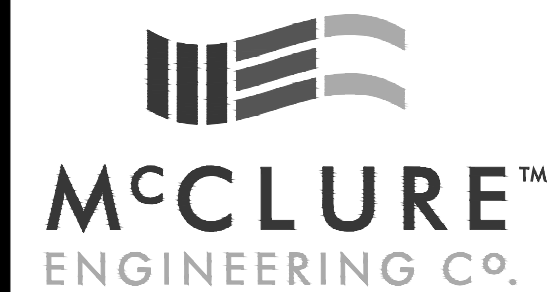
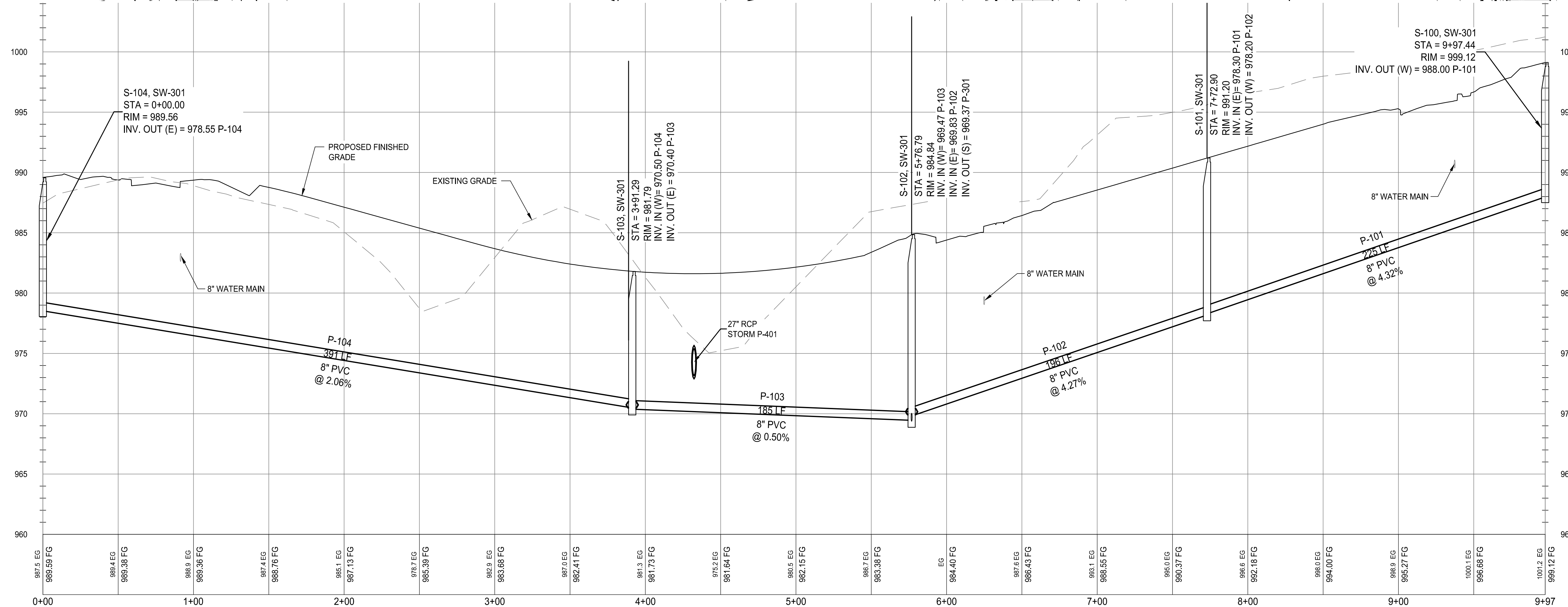
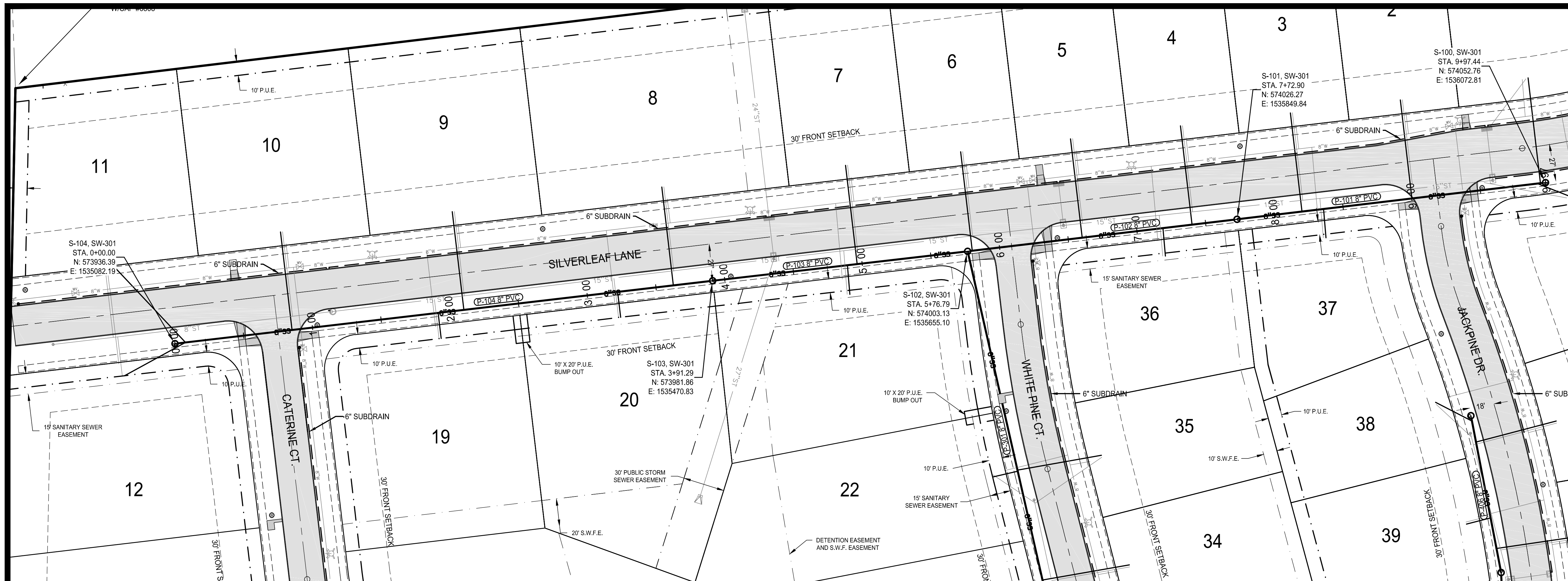
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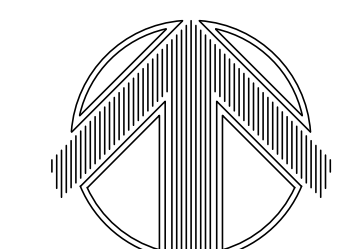
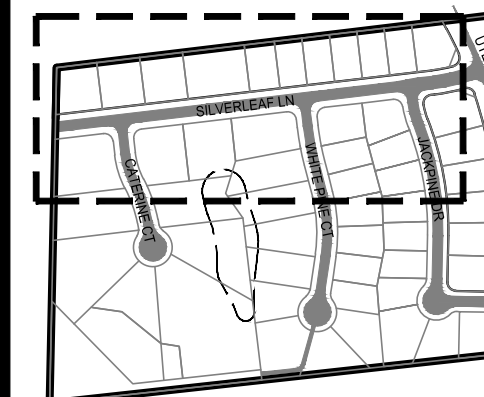
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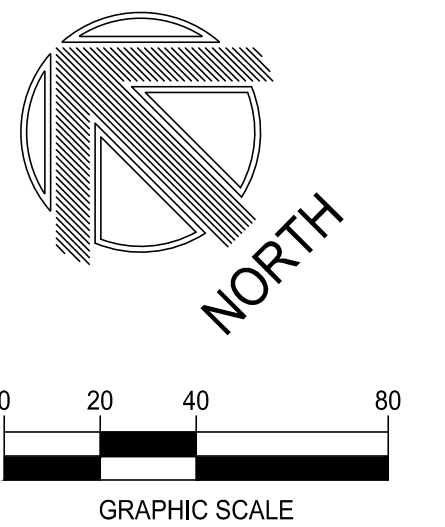
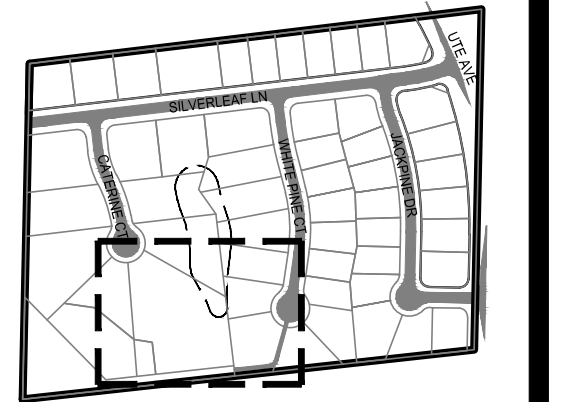
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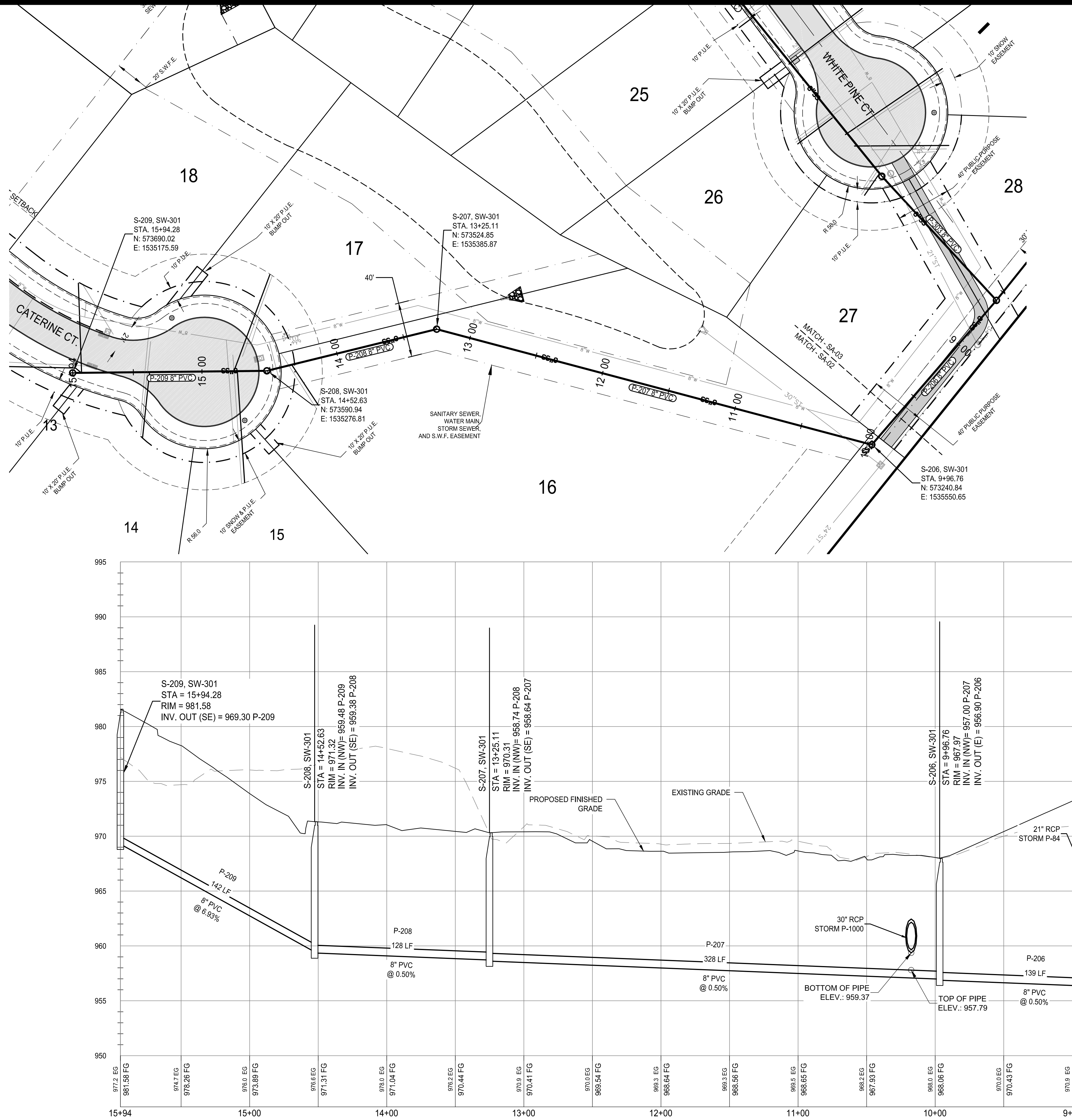


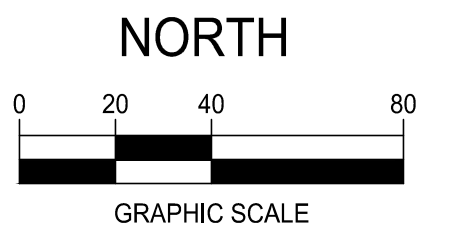
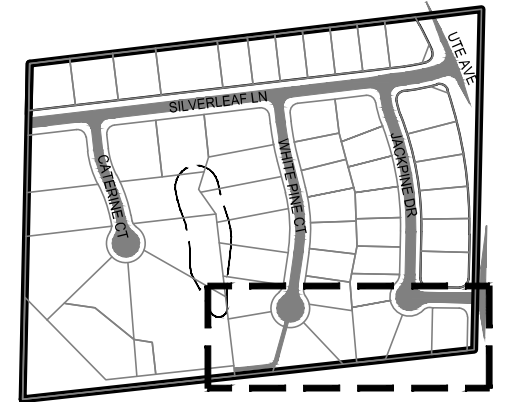
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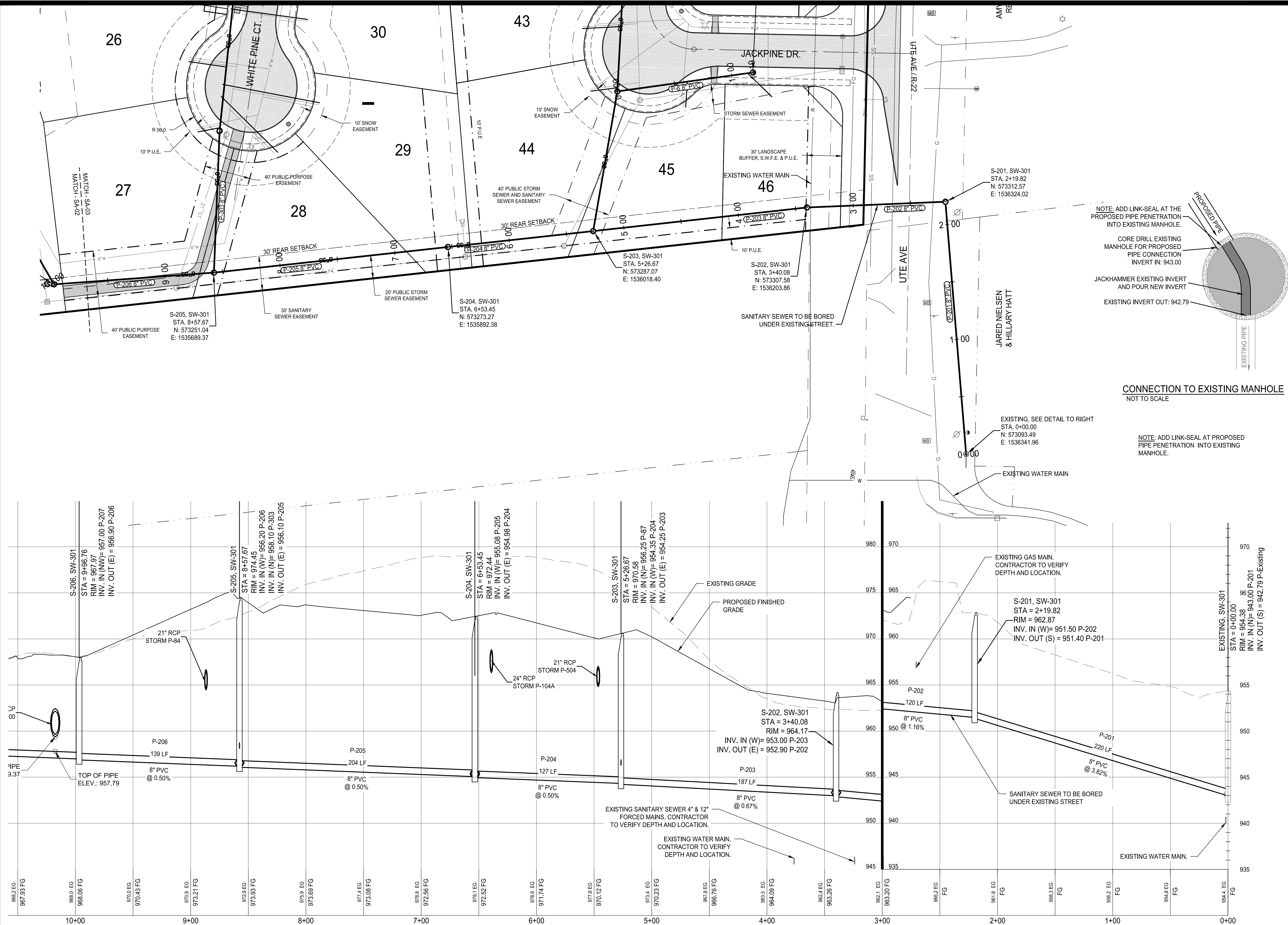
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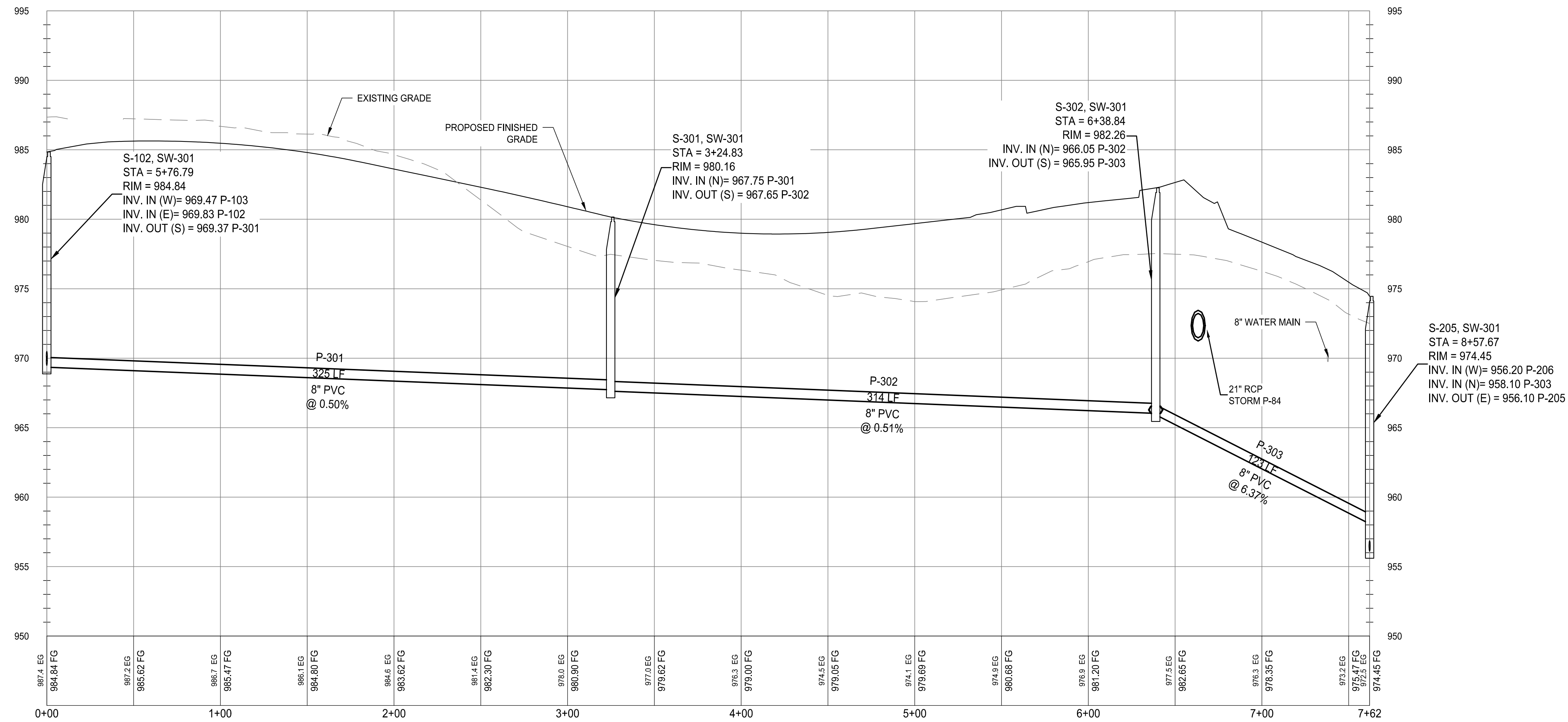
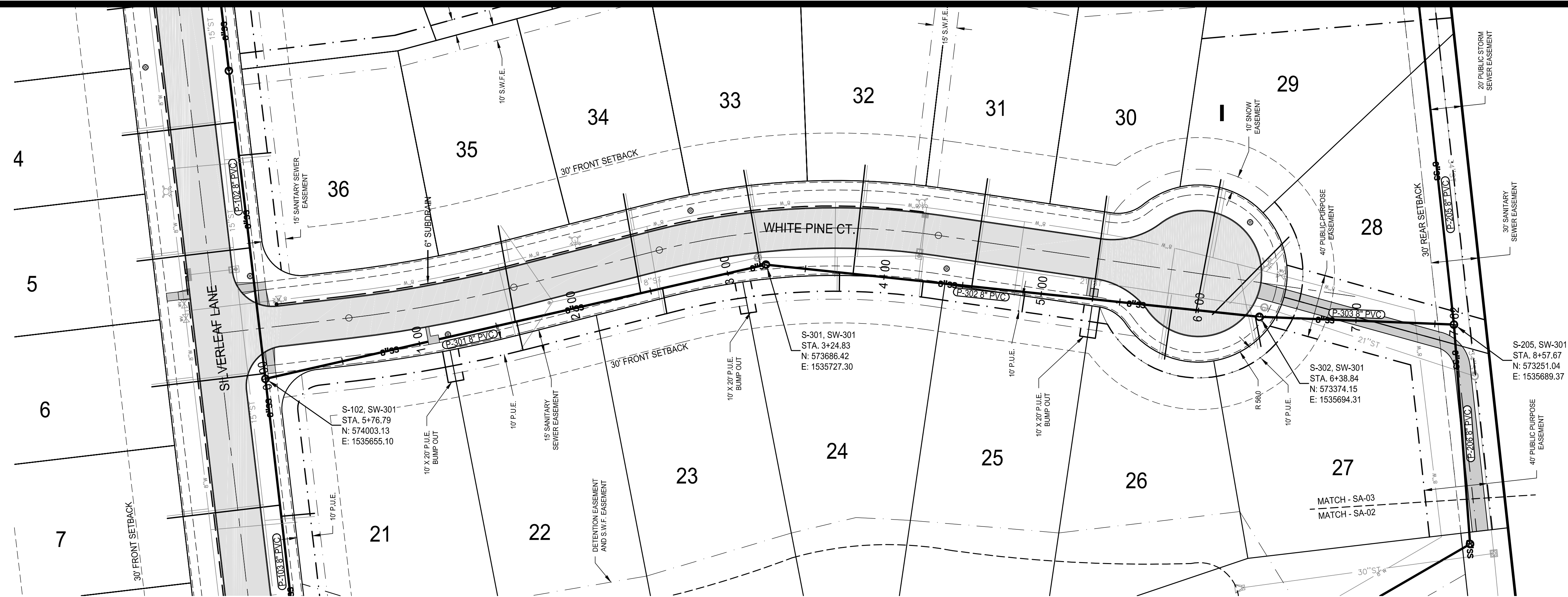
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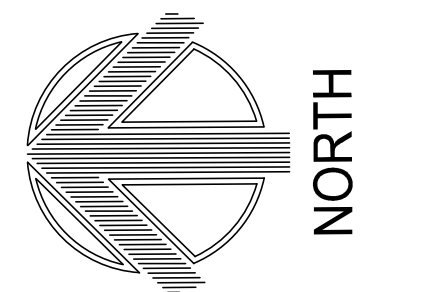
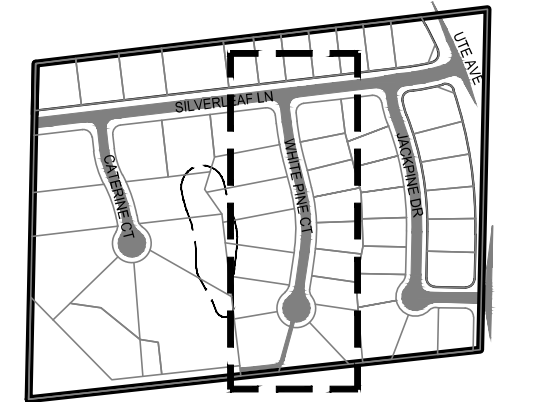
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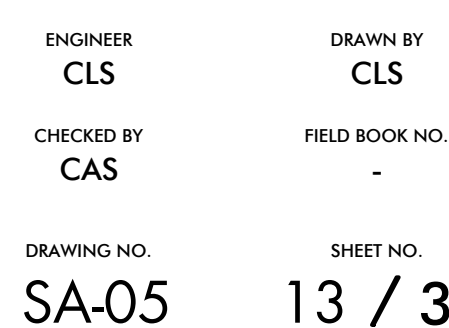
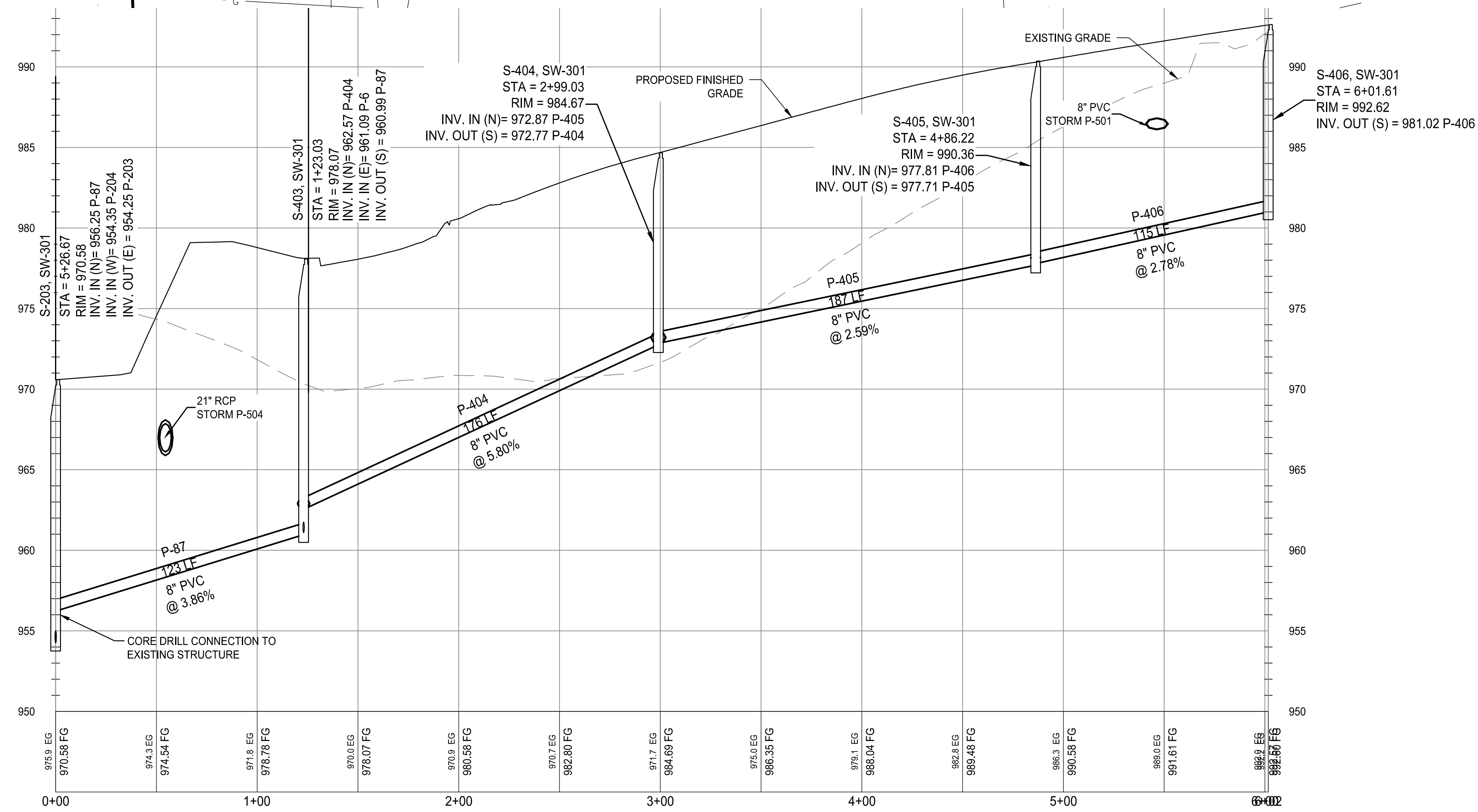
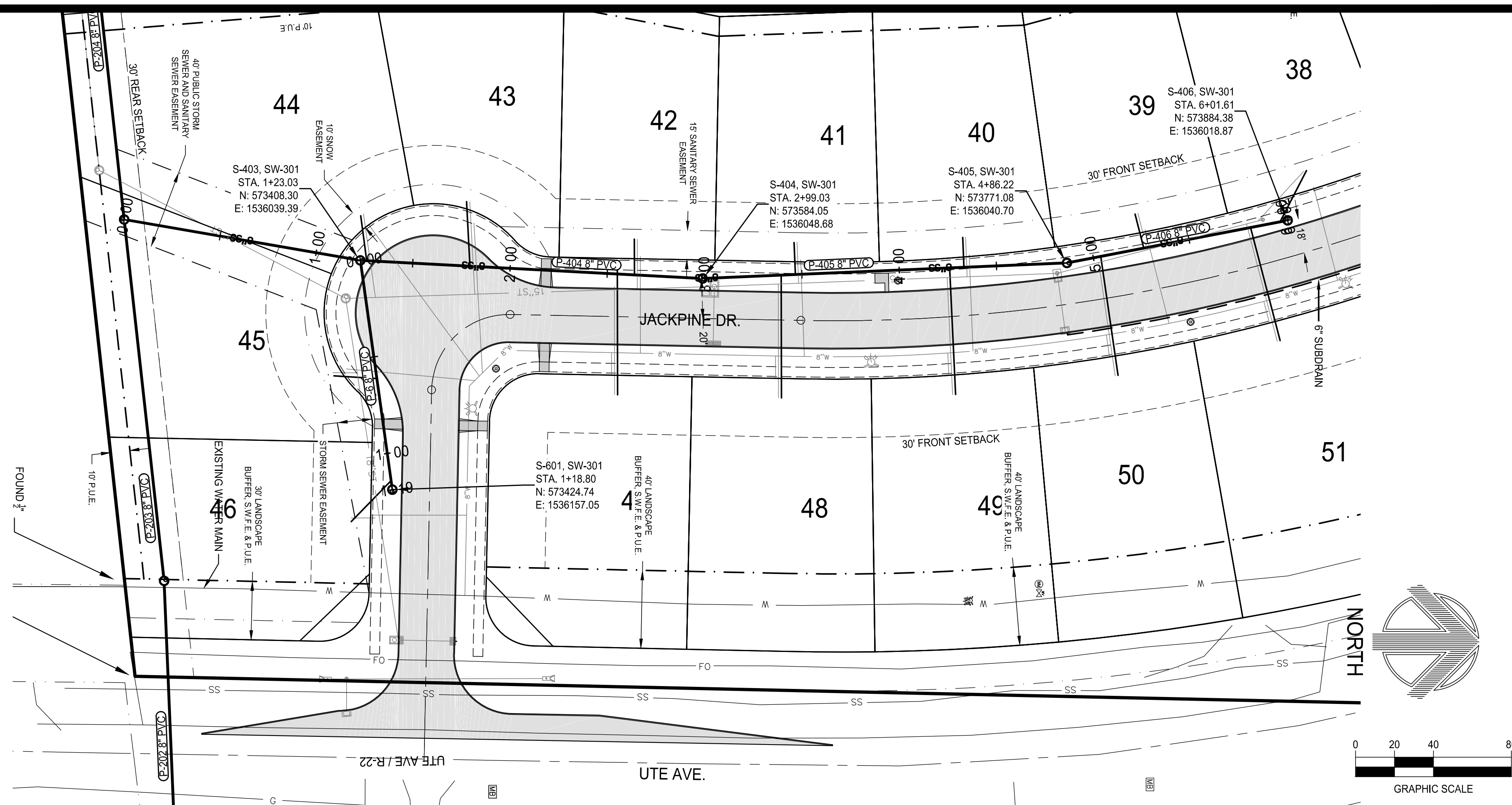
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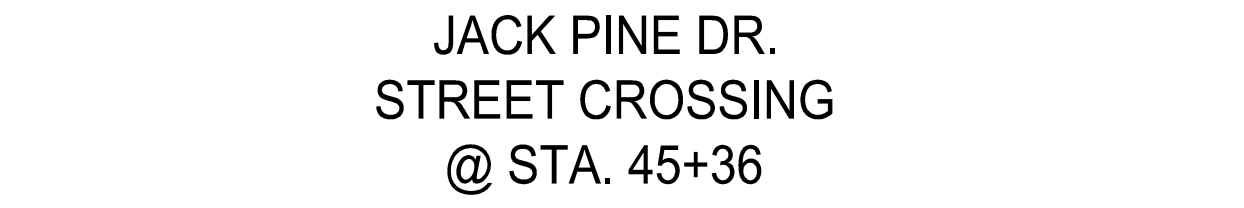
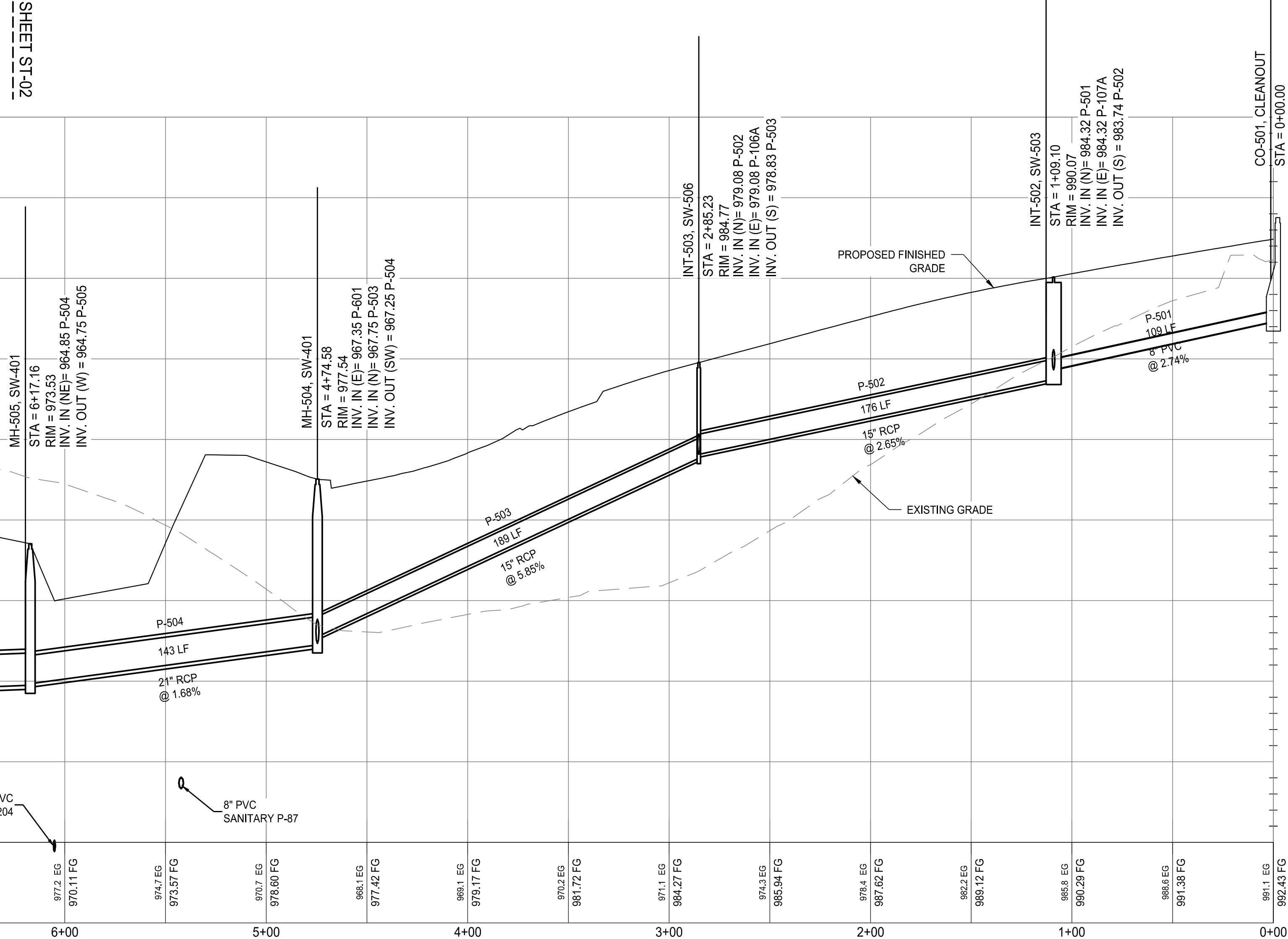
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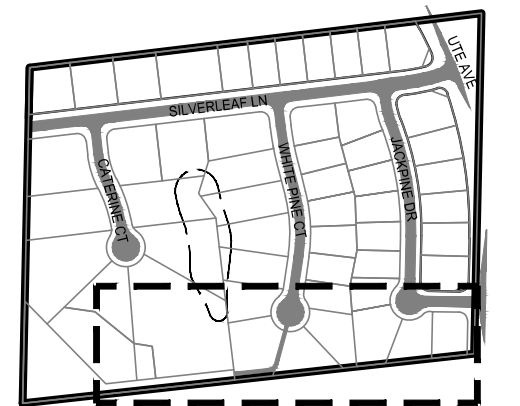
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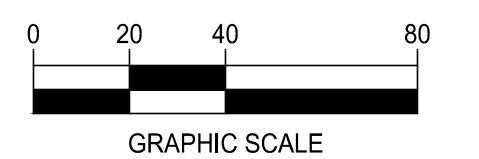
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NORTH



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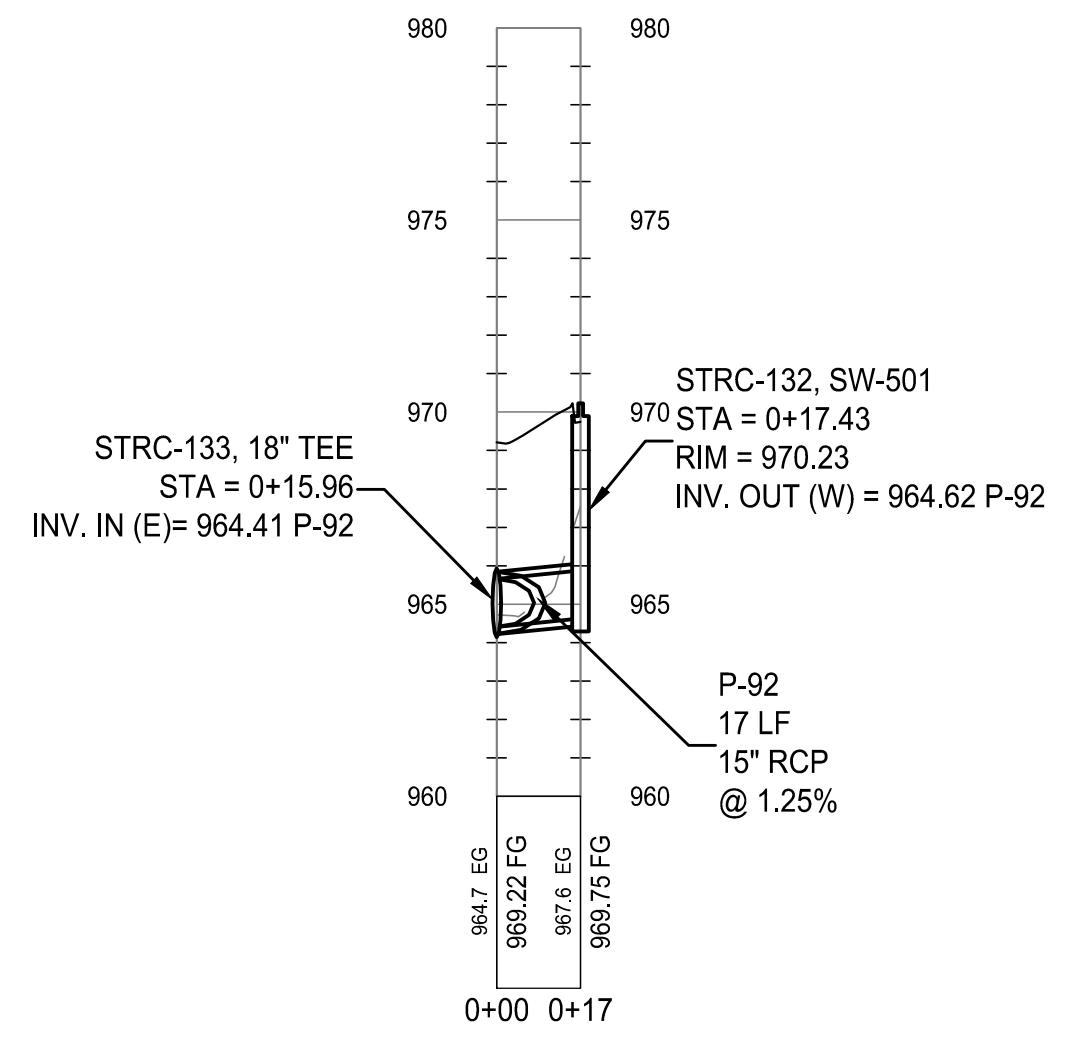
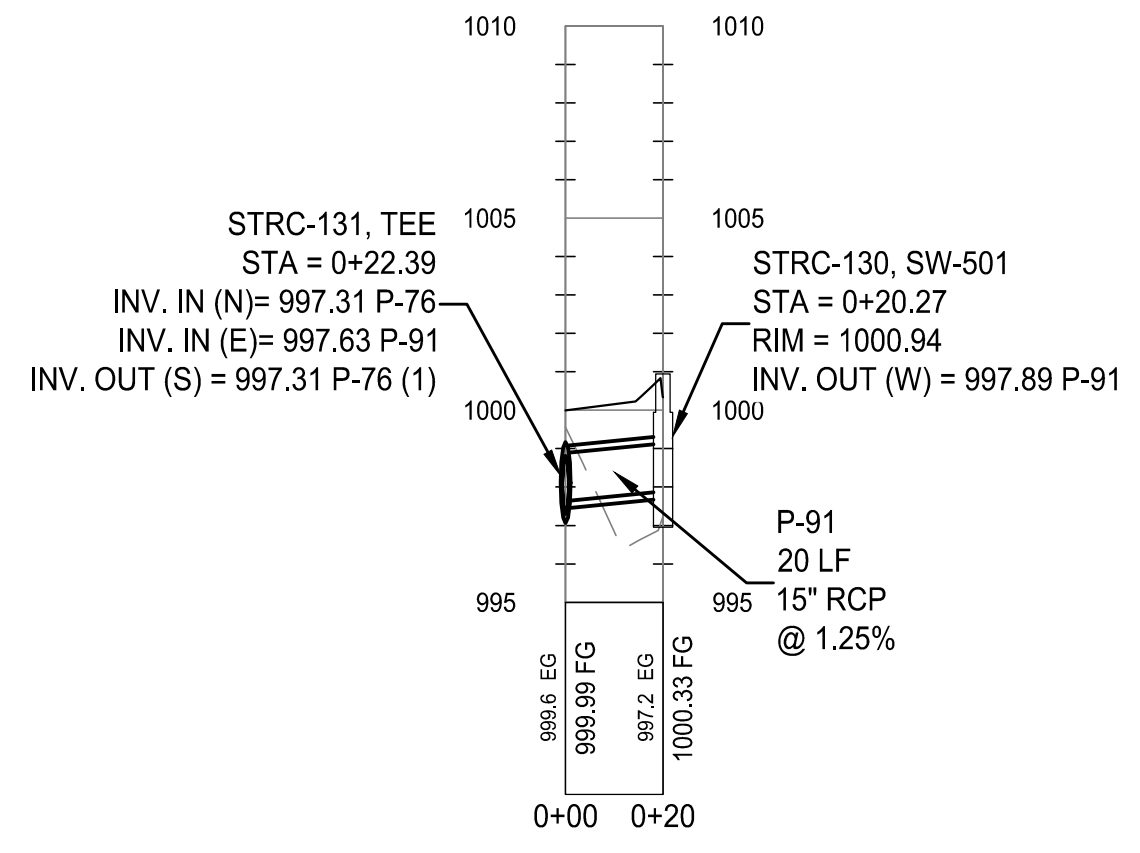
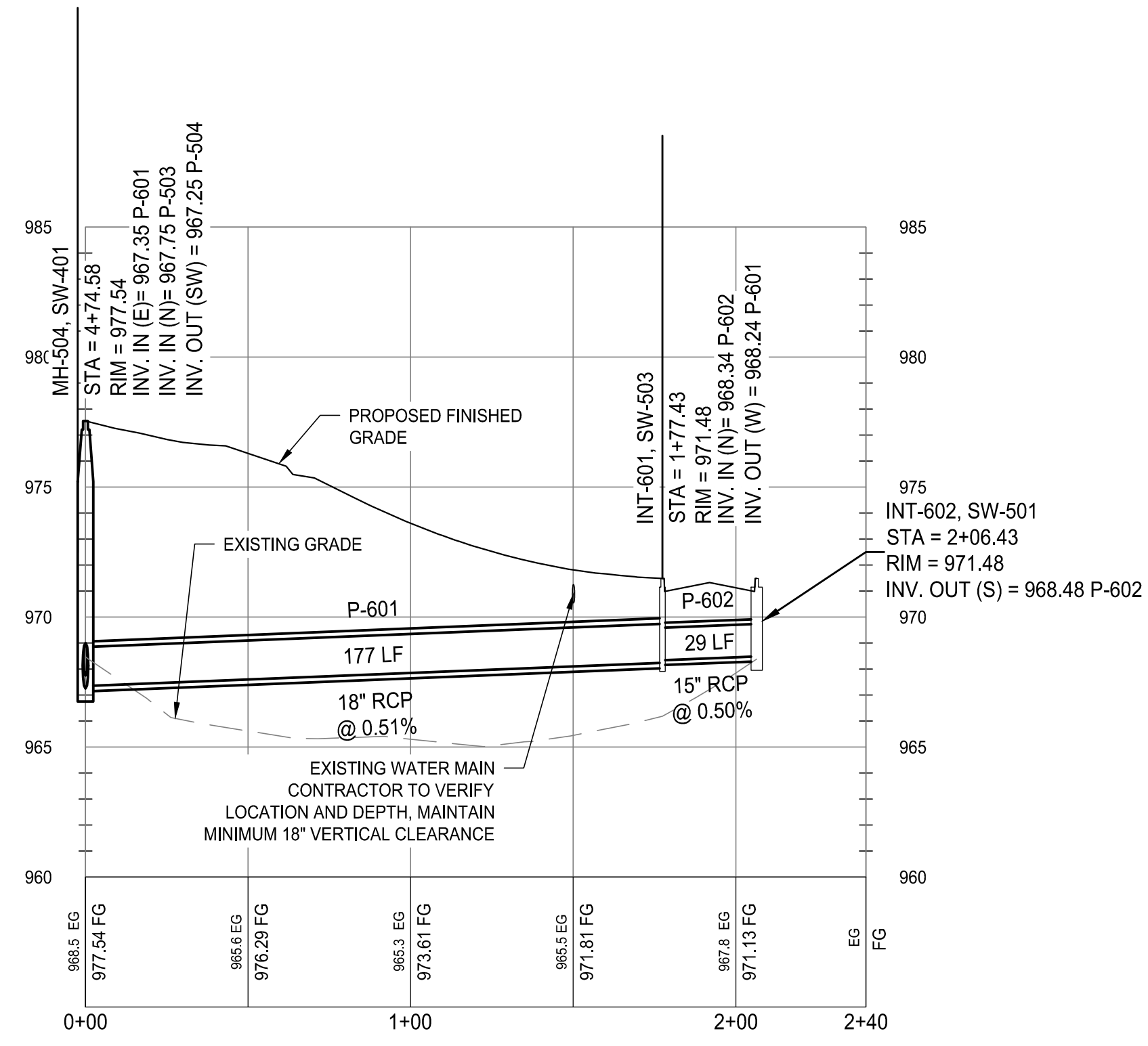
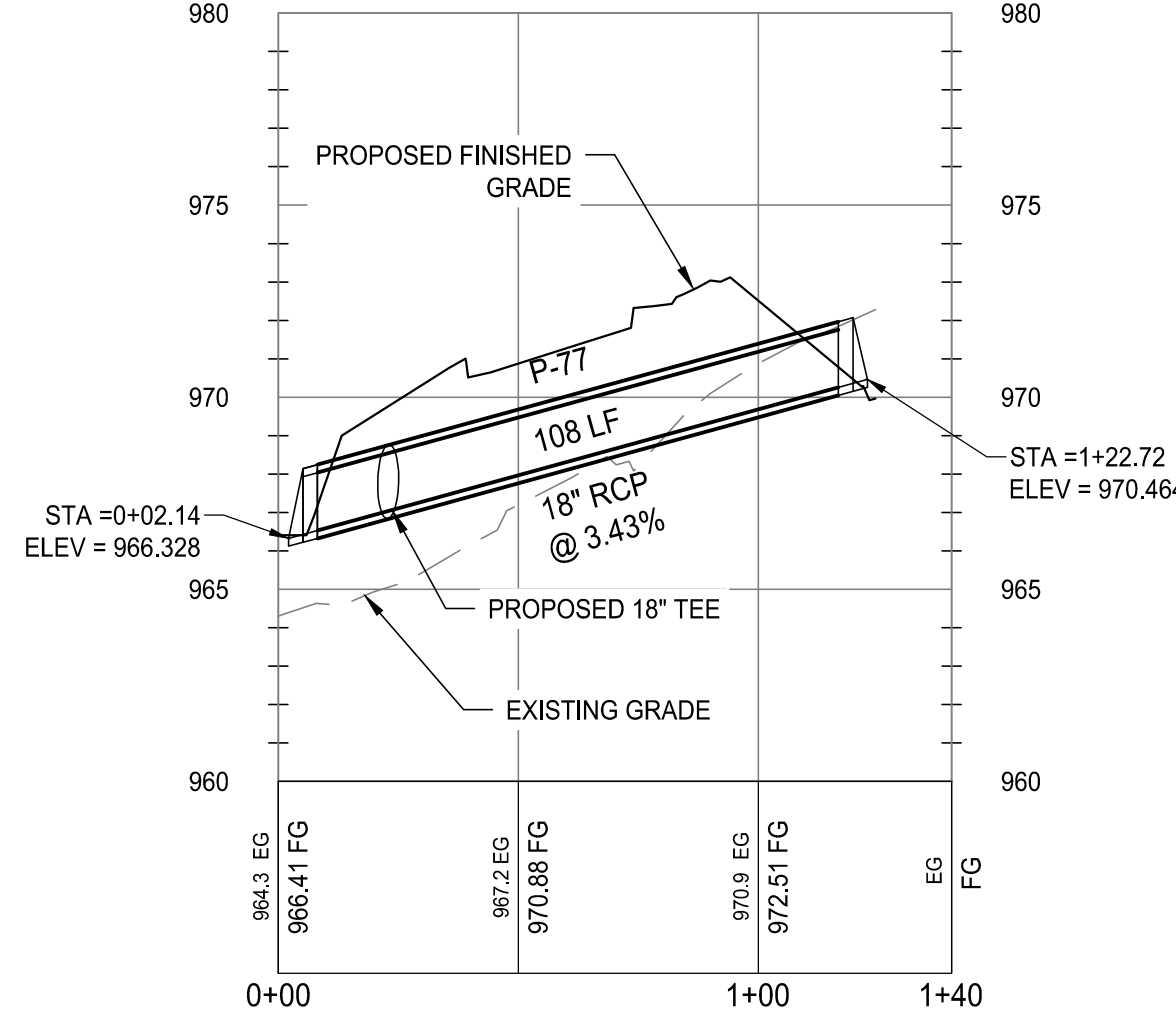
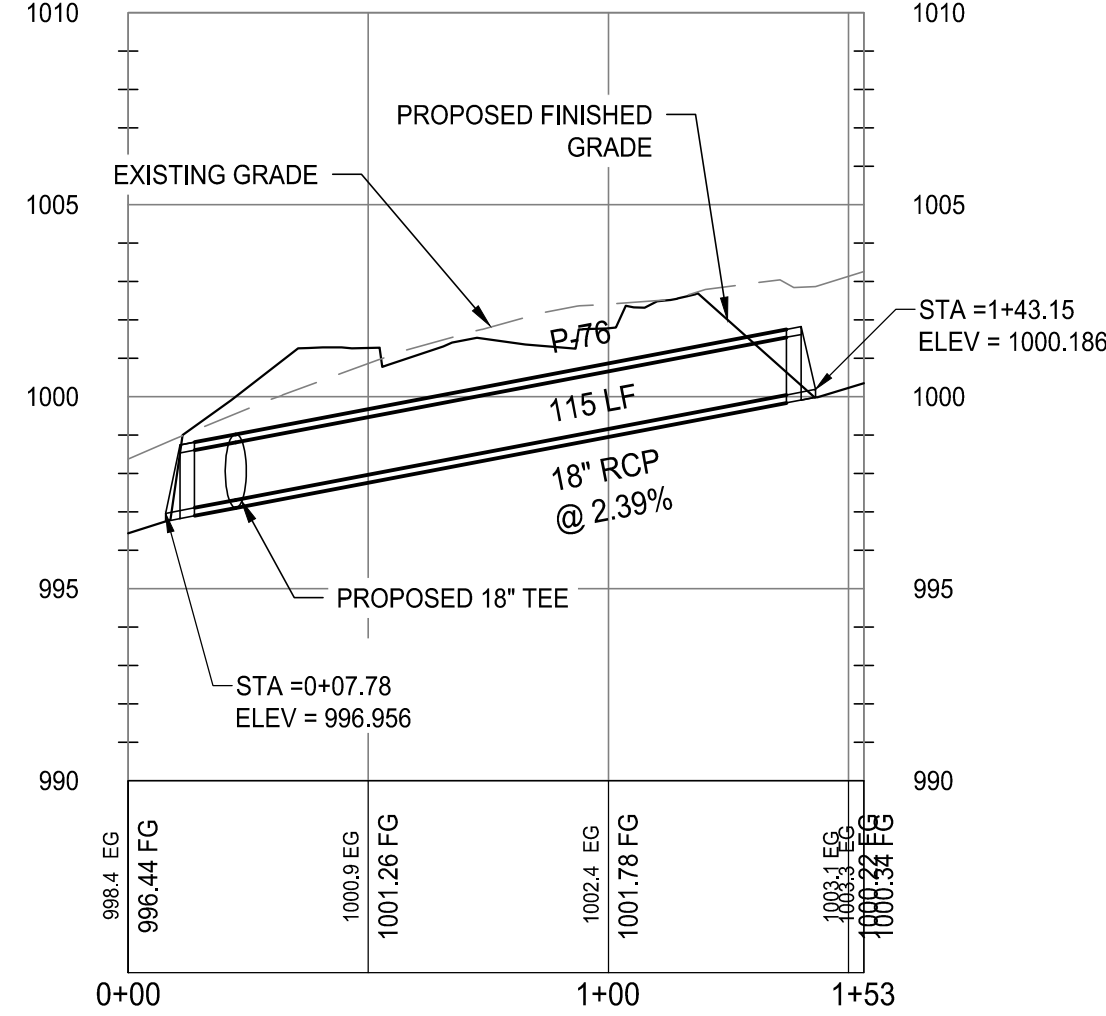
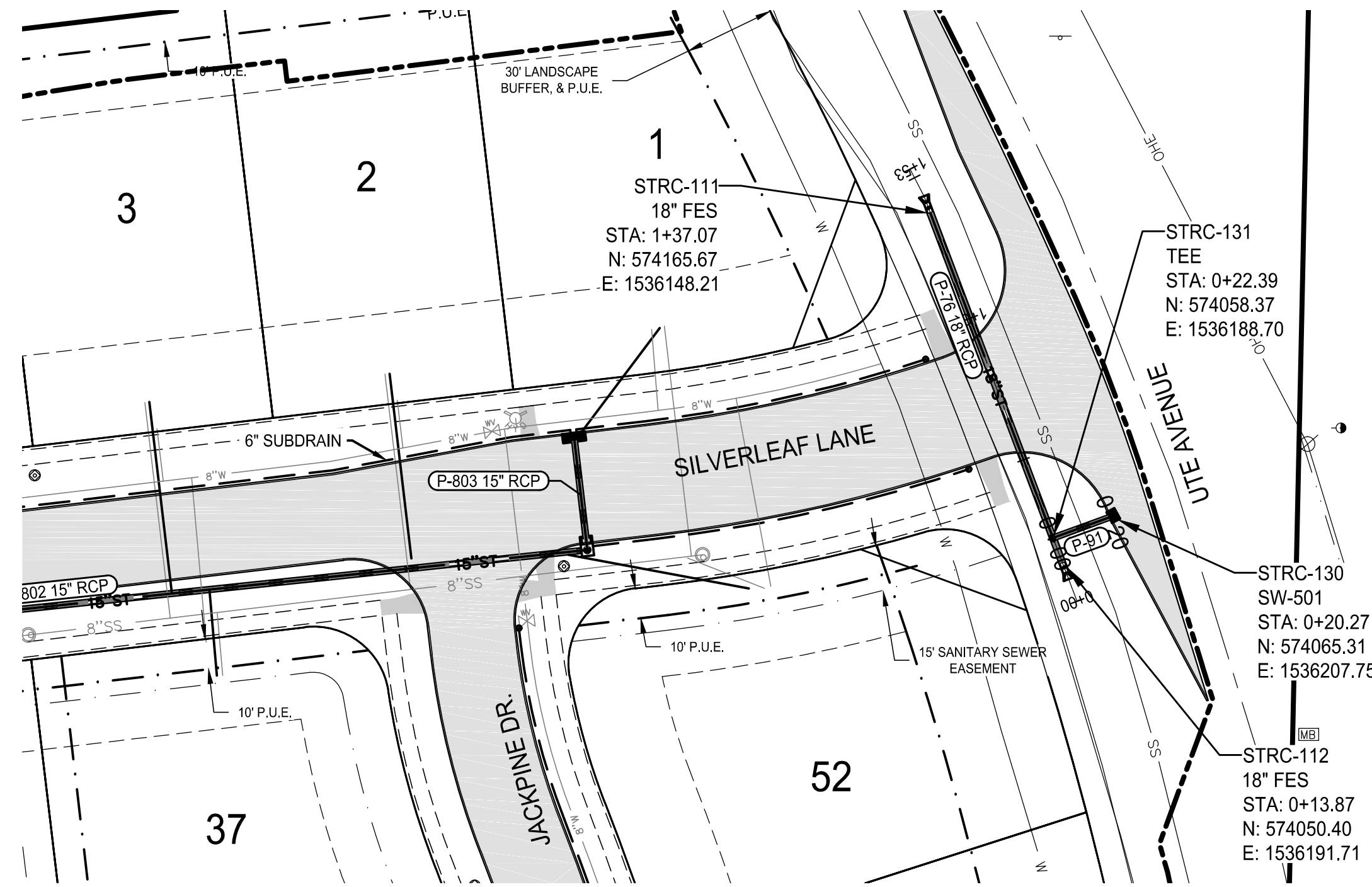
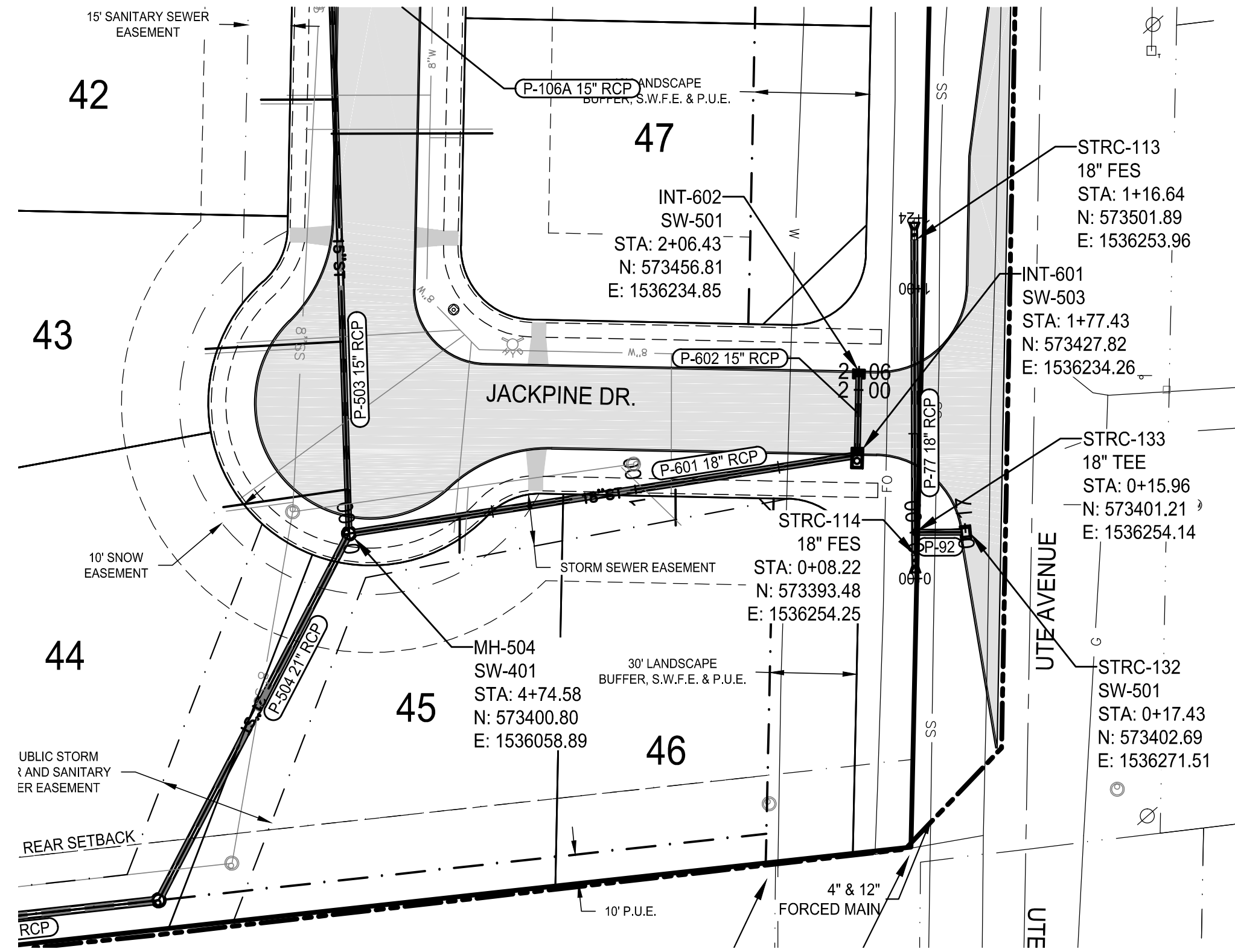
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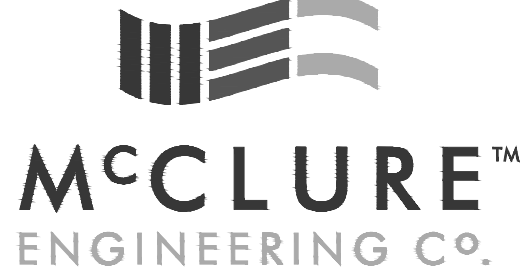
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SOUTH COLLECTOR STORM SEWER PLAN & PROFILE



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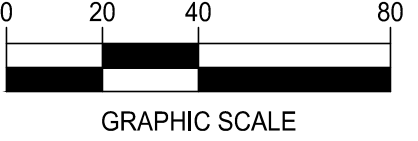
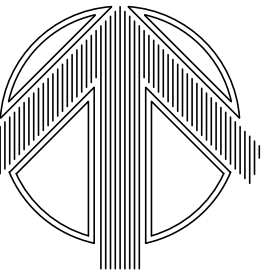
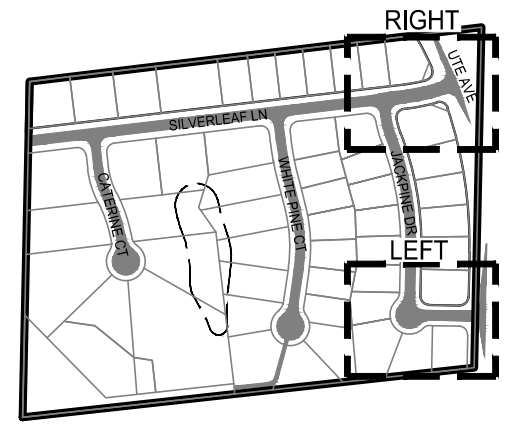
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STORM SEWER
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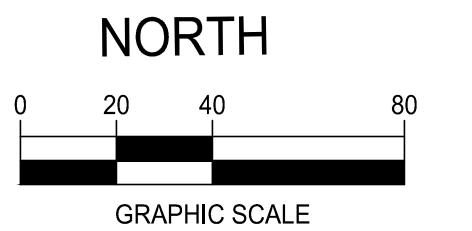
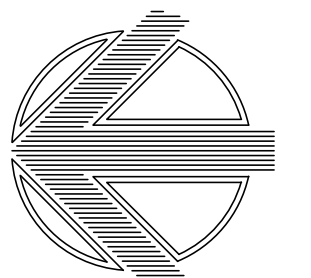
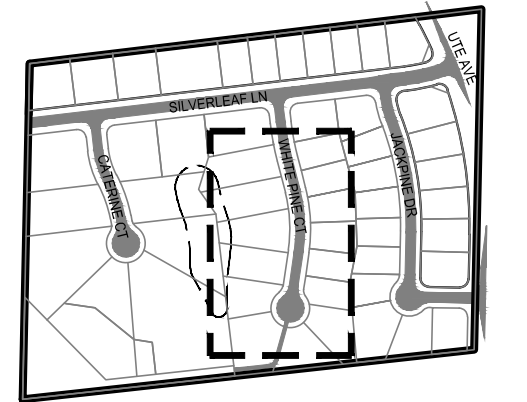
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WHITE PINE
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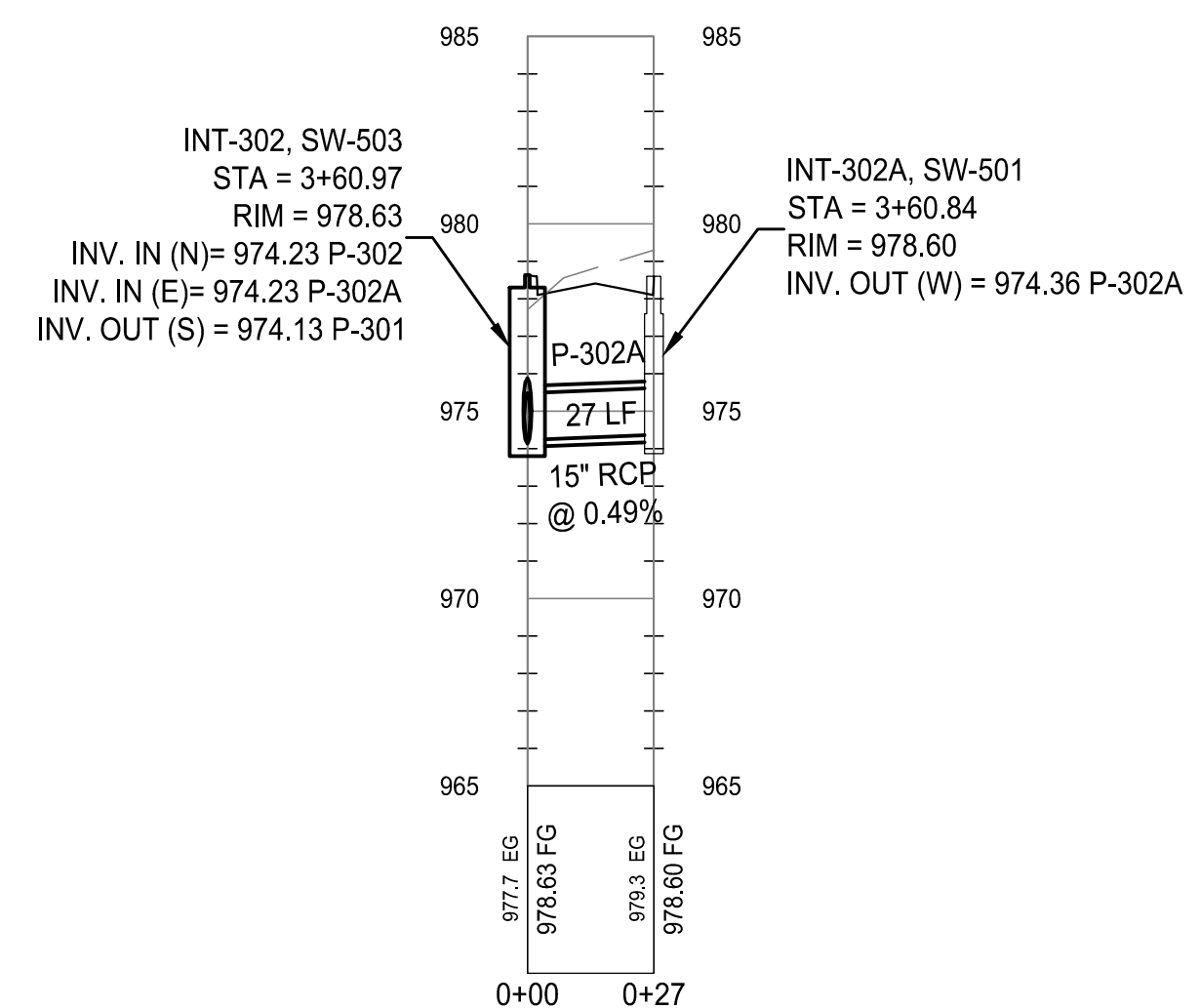
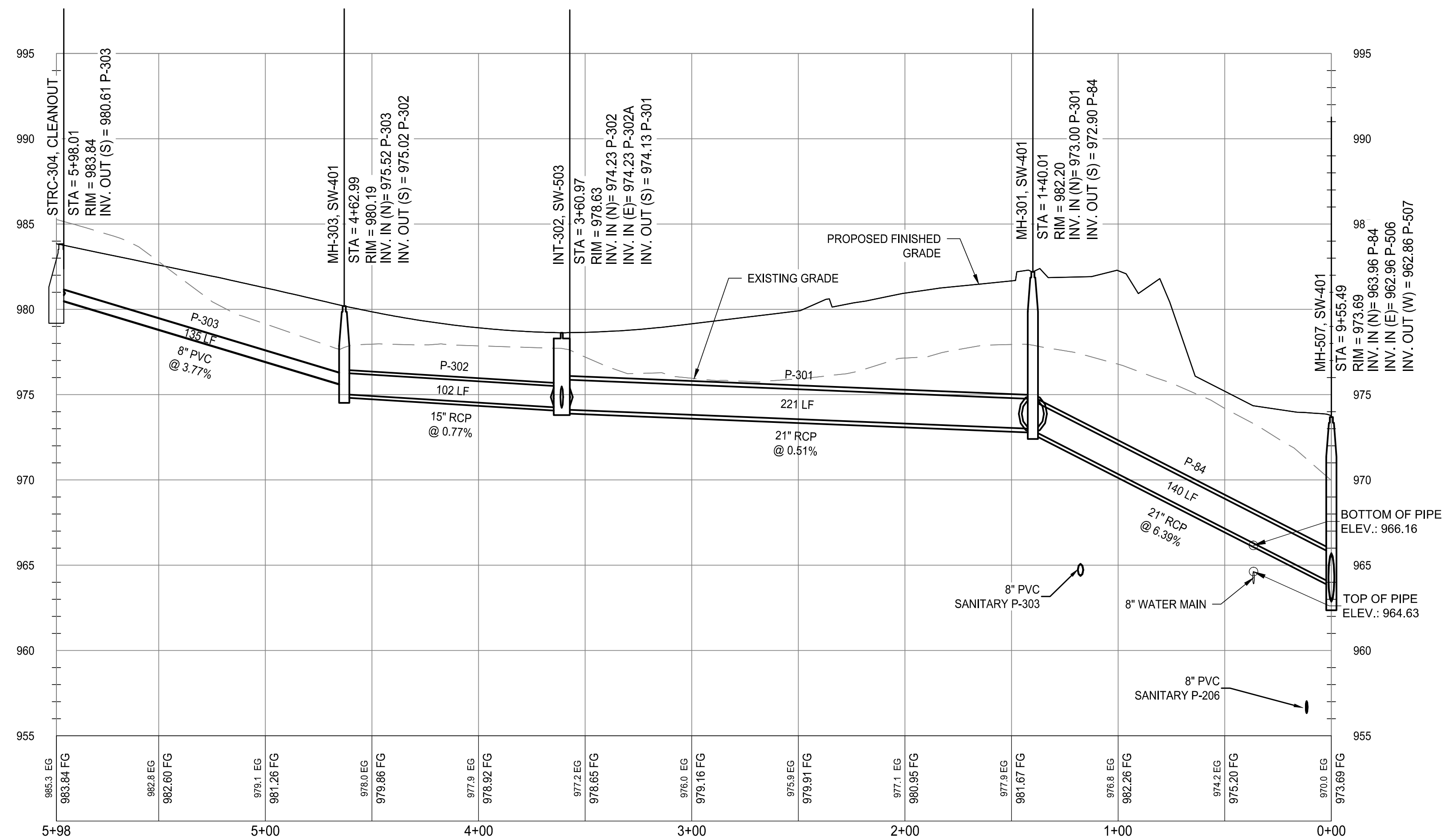
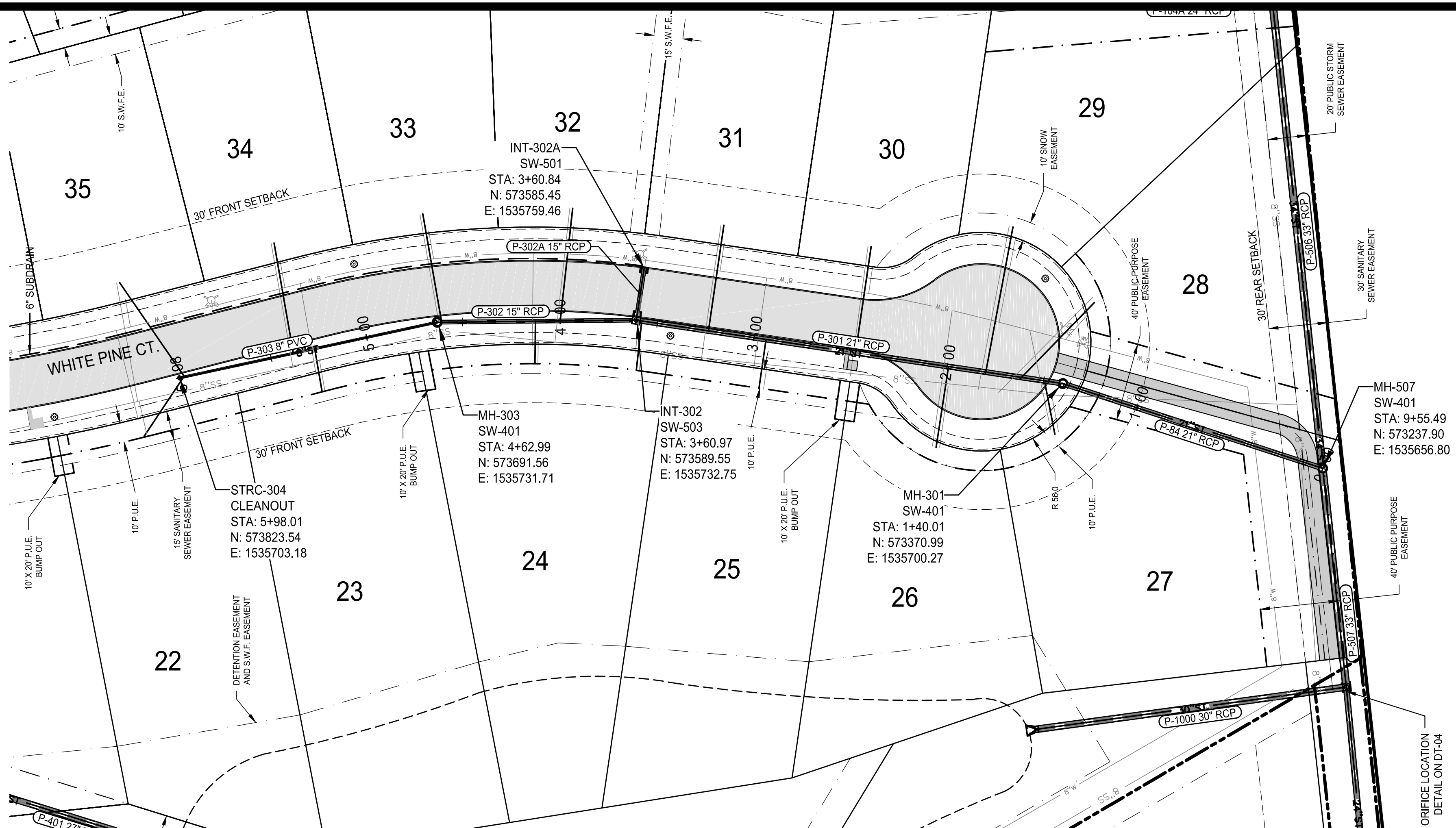


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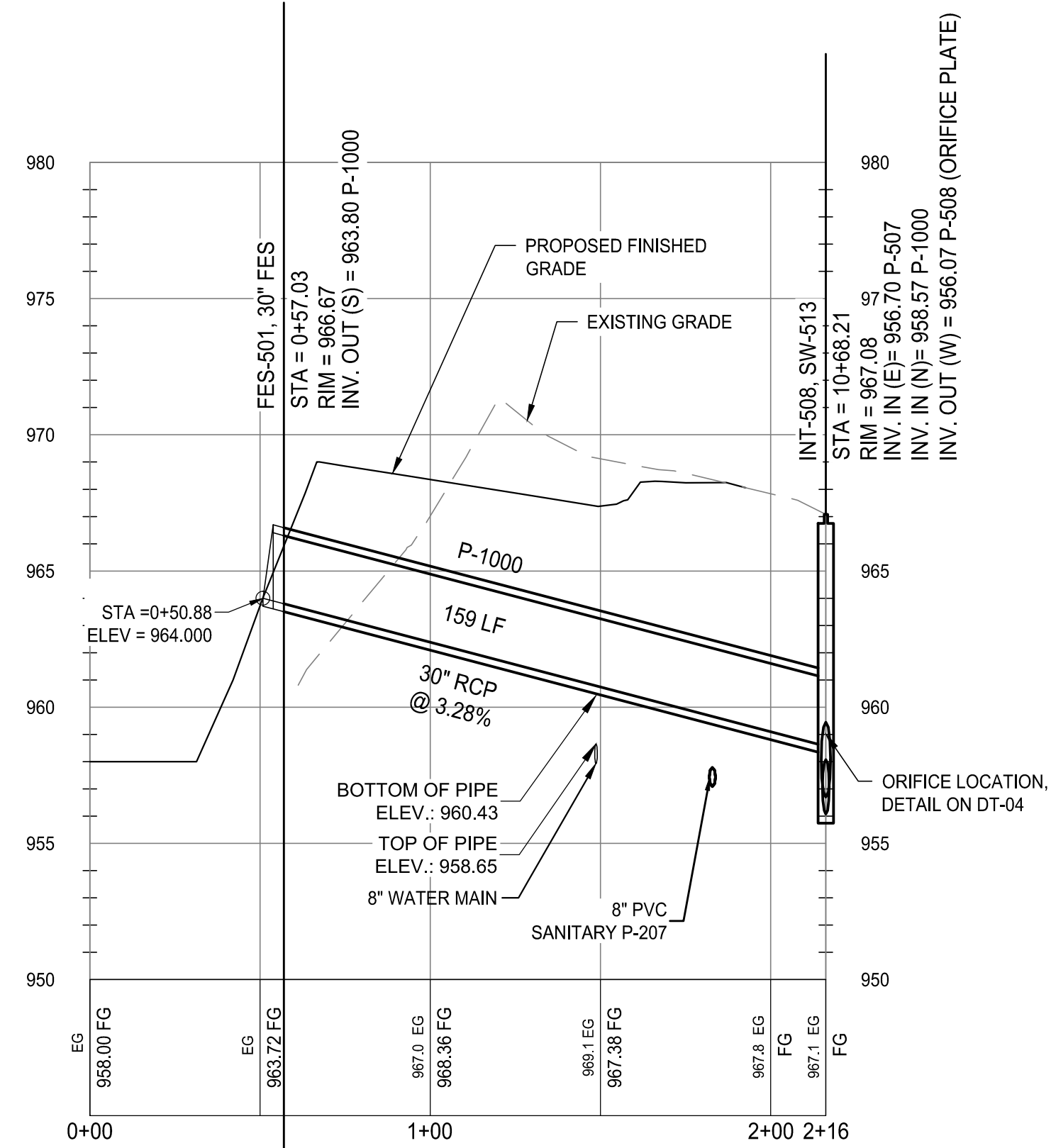
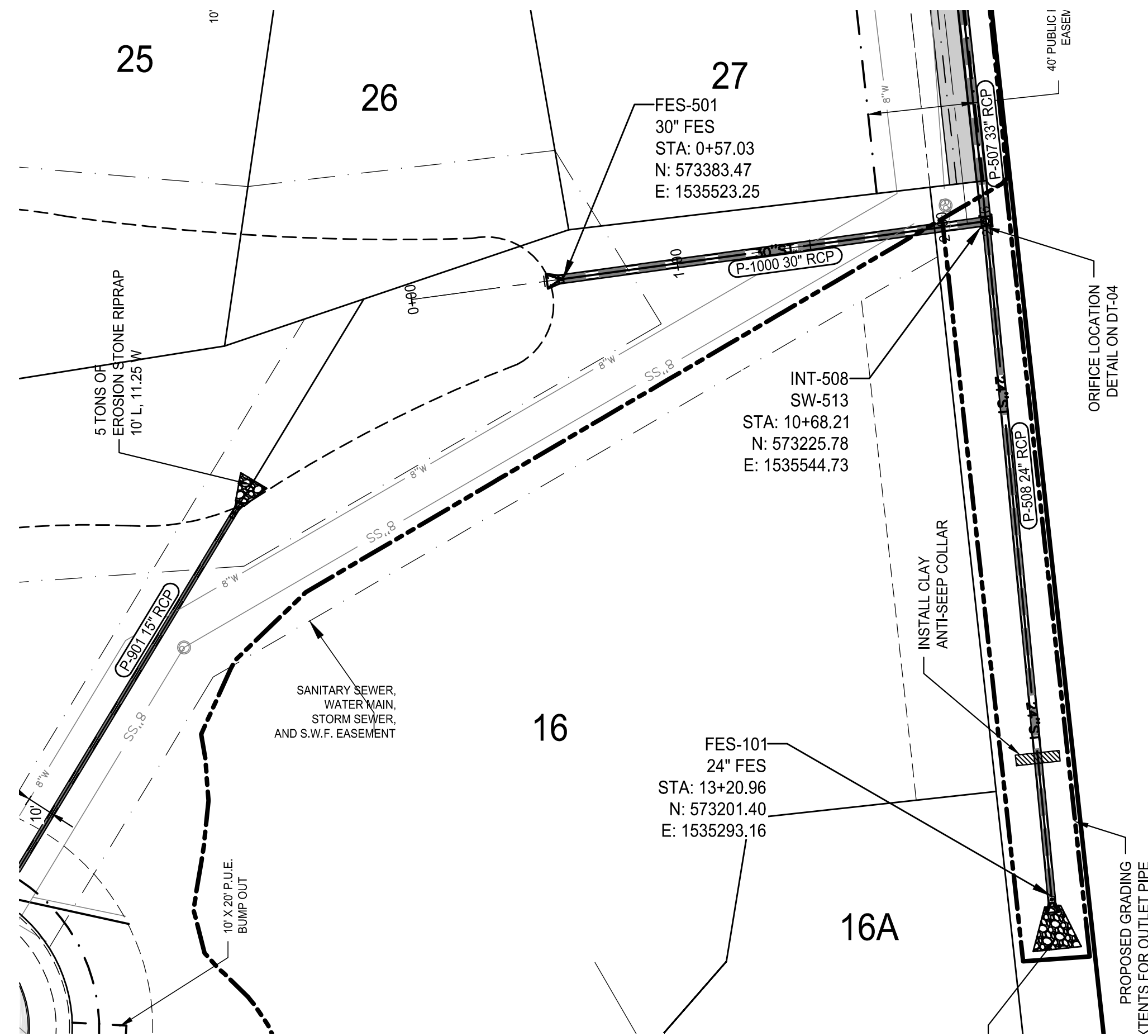
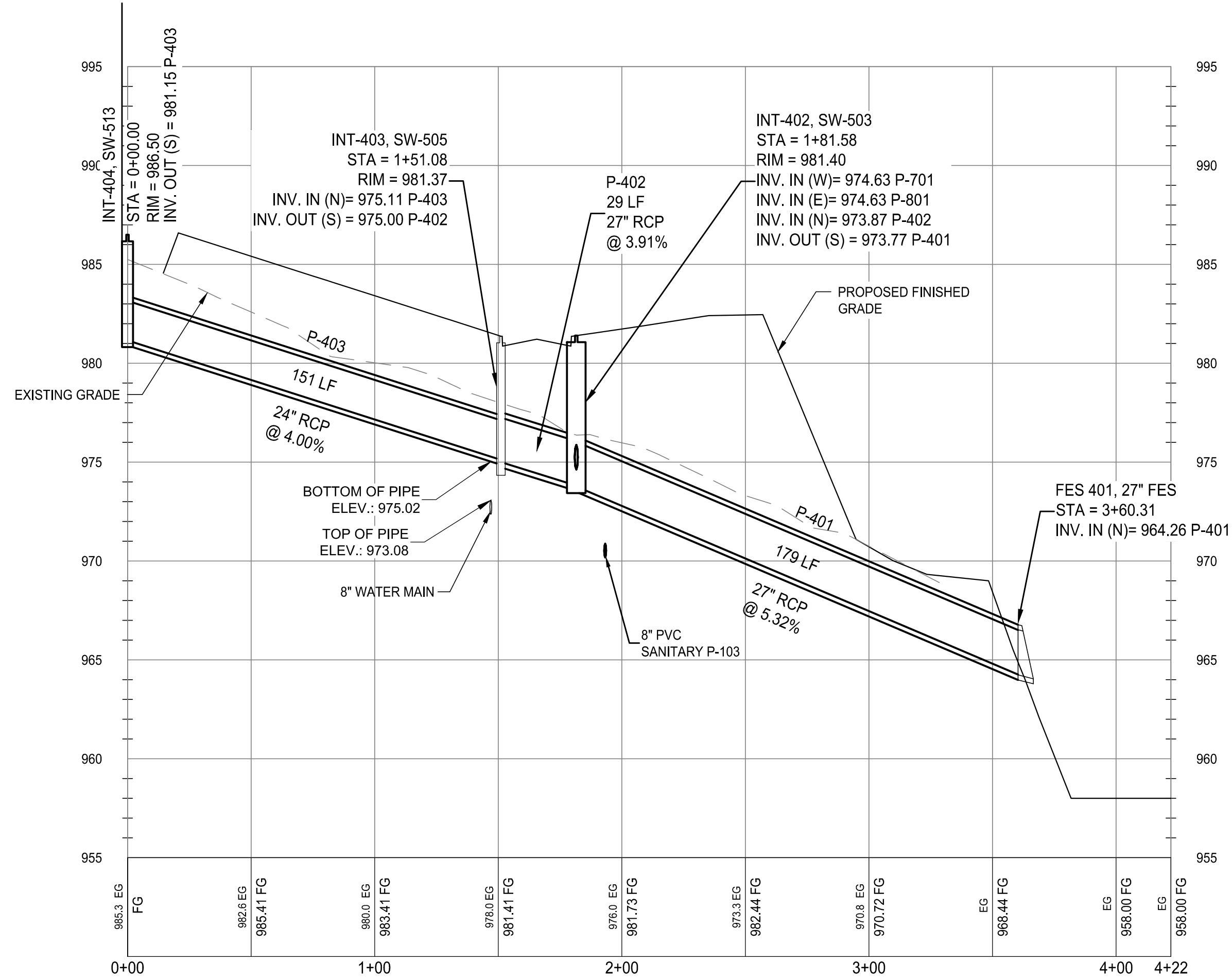
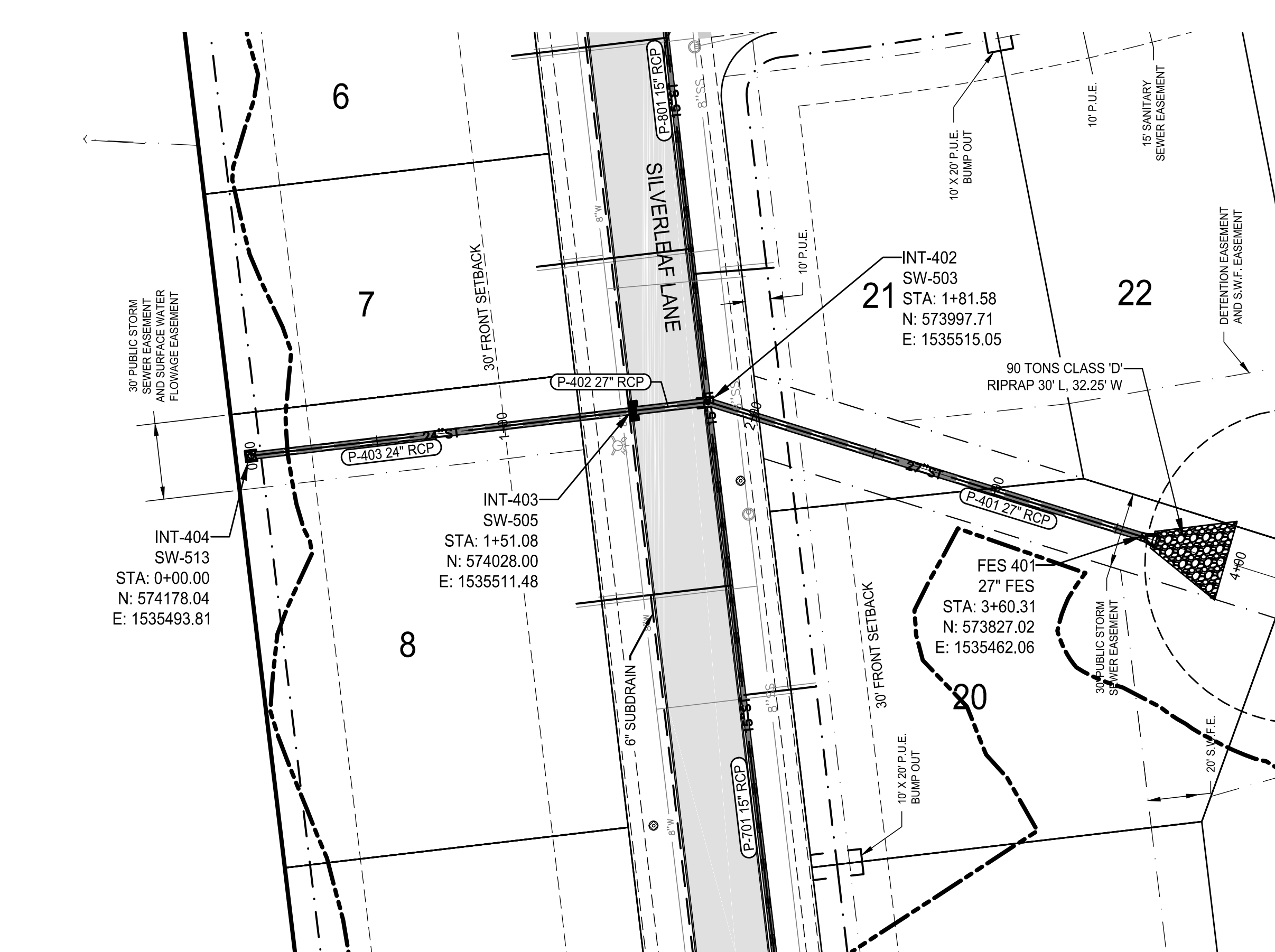
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FIELD BOOK NO.
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DRAWING NO.
ST-04
SHEET NO.
17 / 36



WHITE PINE CT.
STREET CROSSING
@ STA. 32+77

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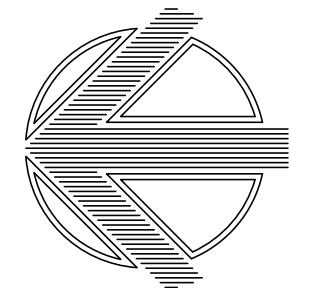
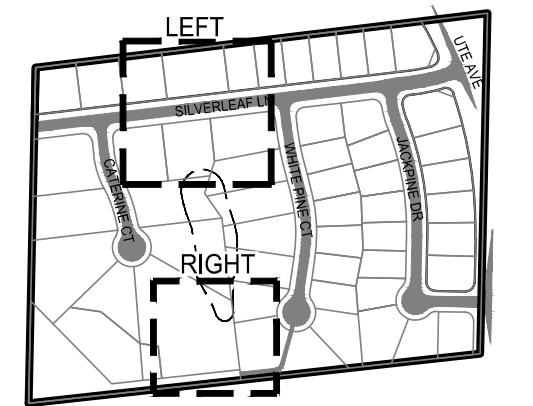
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fax 515-964-2370

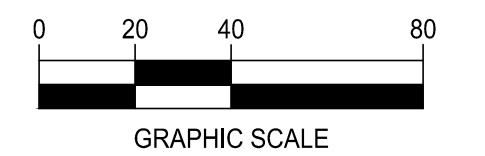
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POND INLET & OUTLET
STORM SEWER
PLAN & PROFILE



NORTH



WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA
2213008
JULY 2013

REVISIONS
10/22/2013
2/7/2014
2/25/2014
3/28/14

ENGINEER
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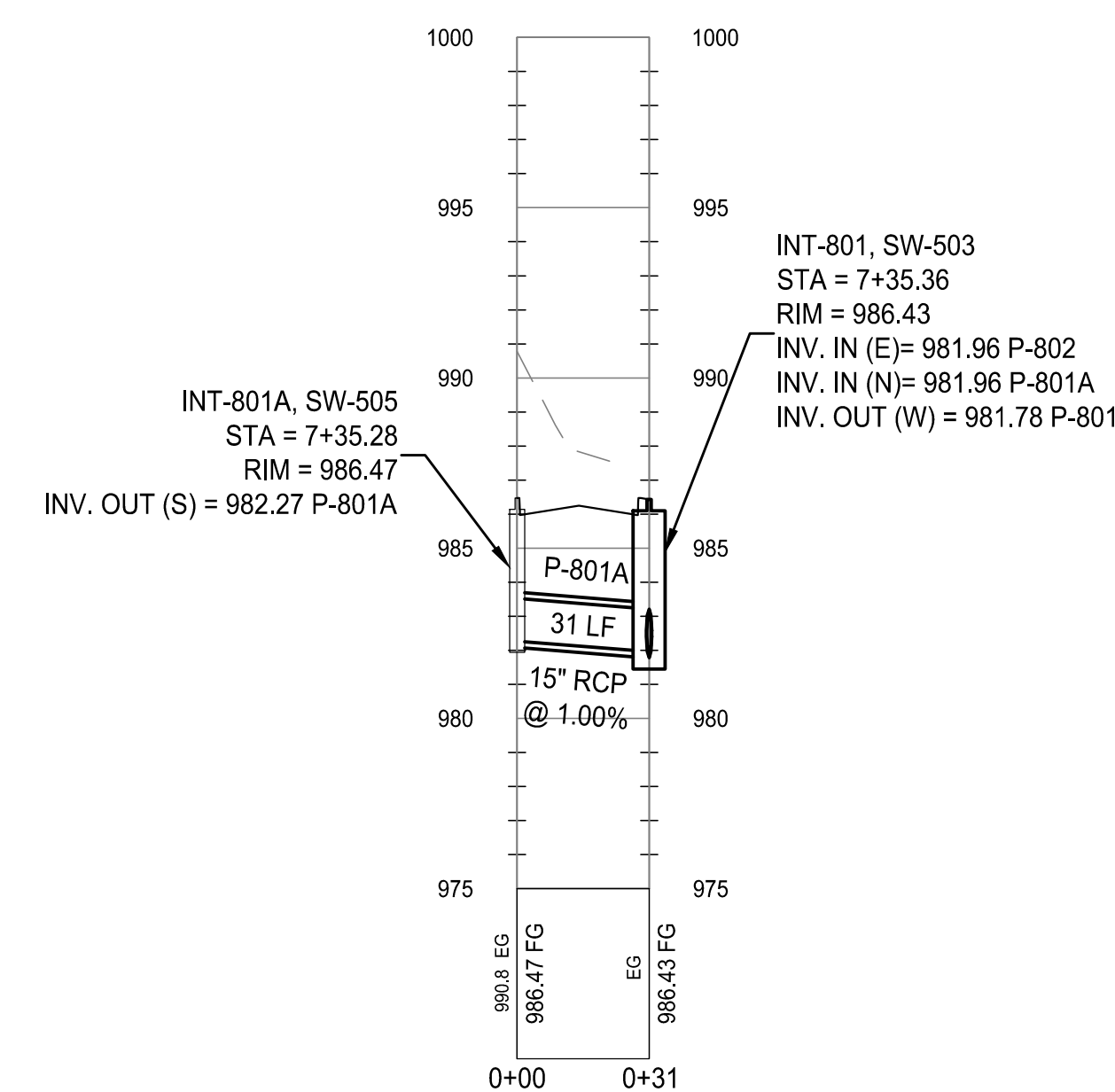
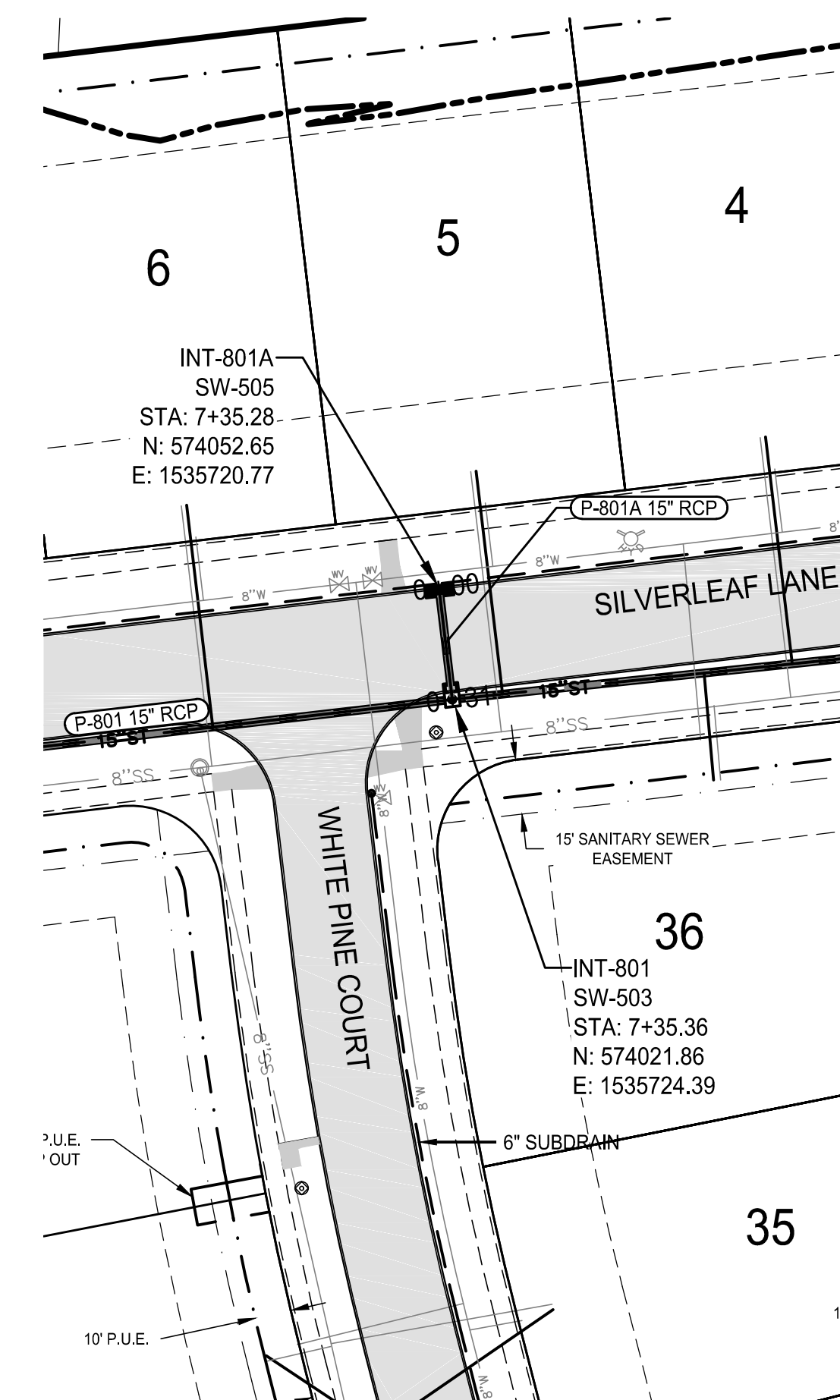
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18 / 36





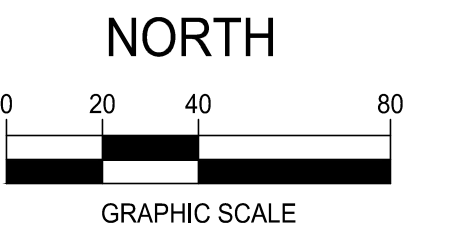
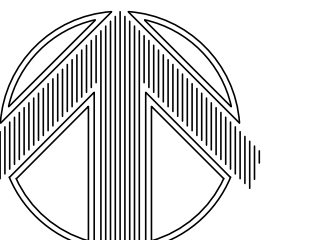
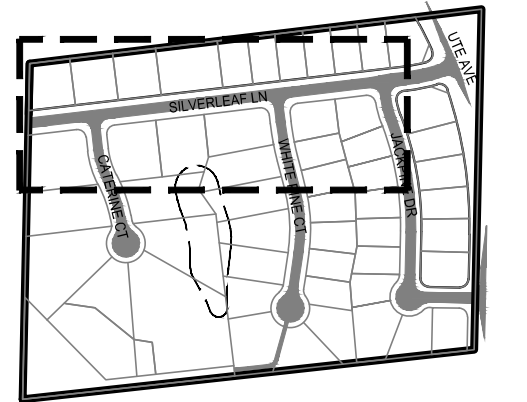
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STORM SEWER
PLAN & PROFILE



WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA
2213008
JULY 2013

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2/7/2014
2/25/2014
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ENGINEER
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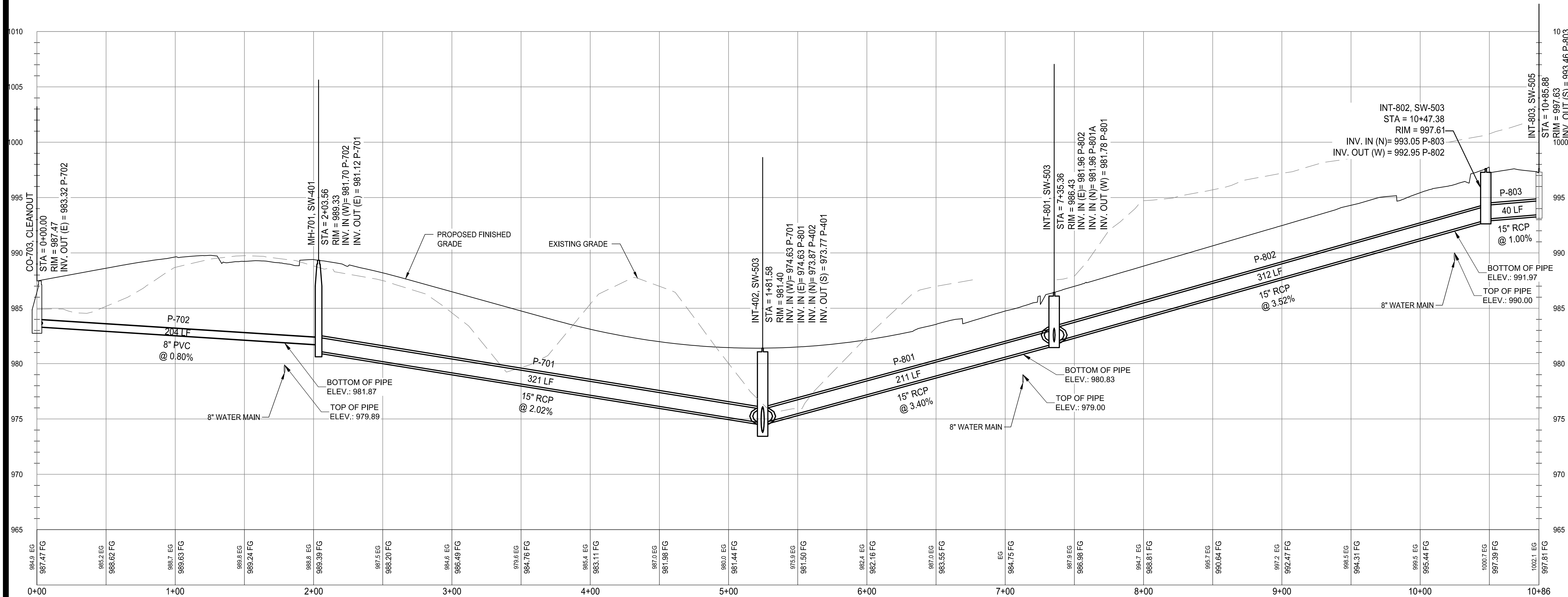
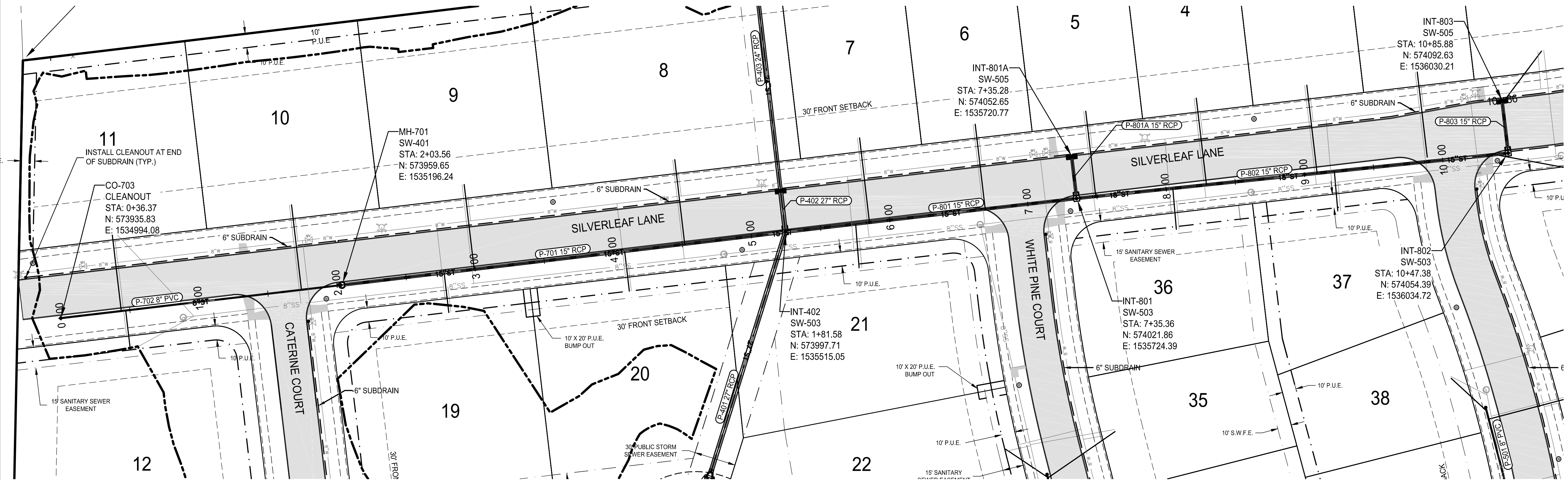
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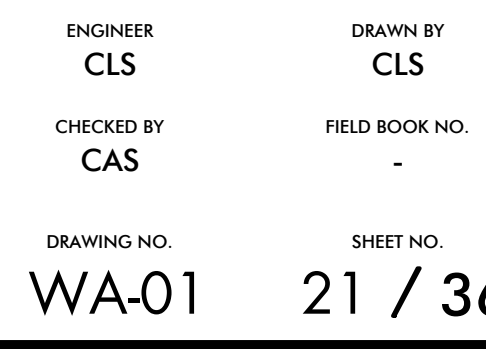
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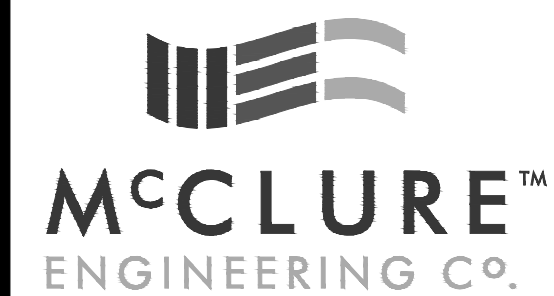
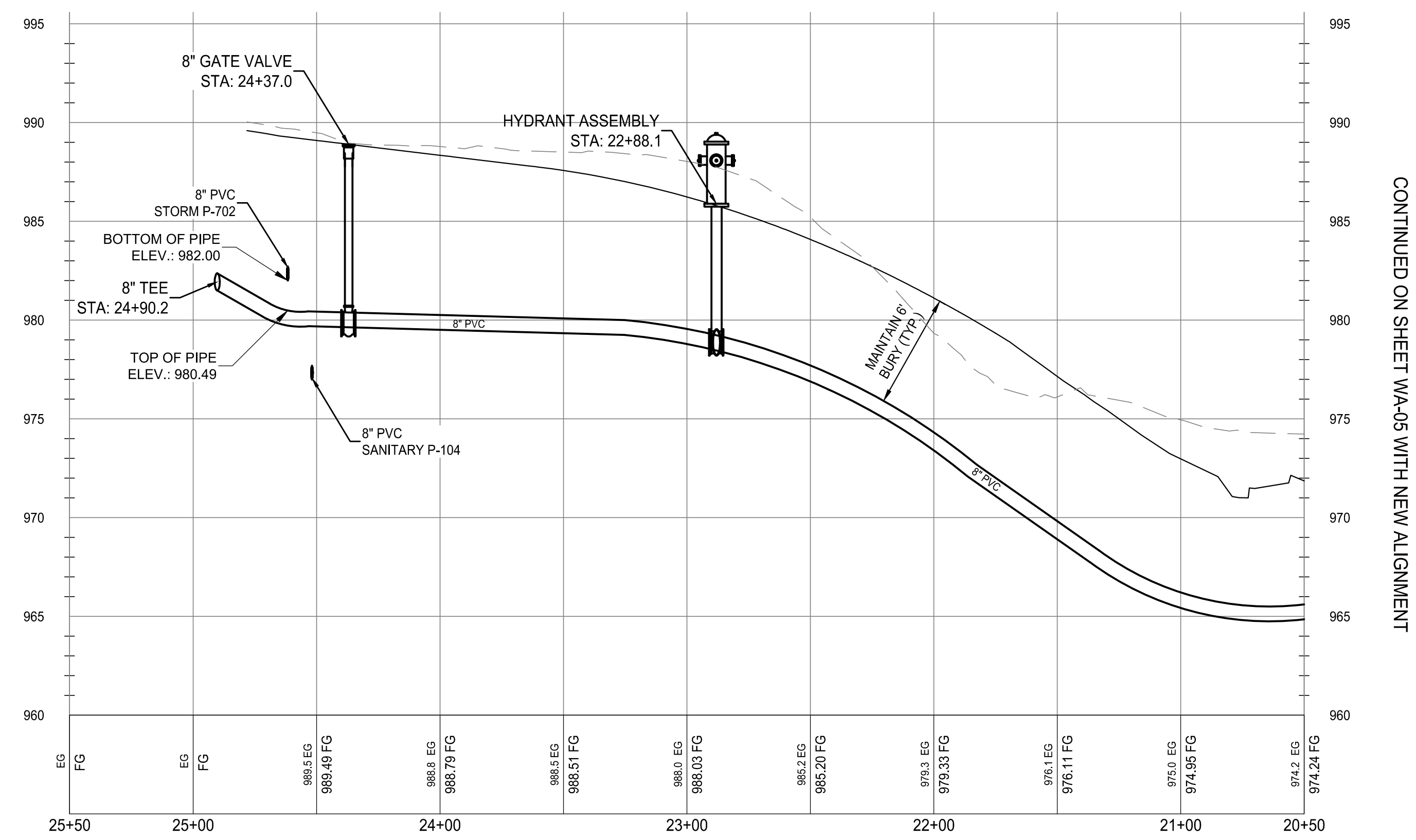
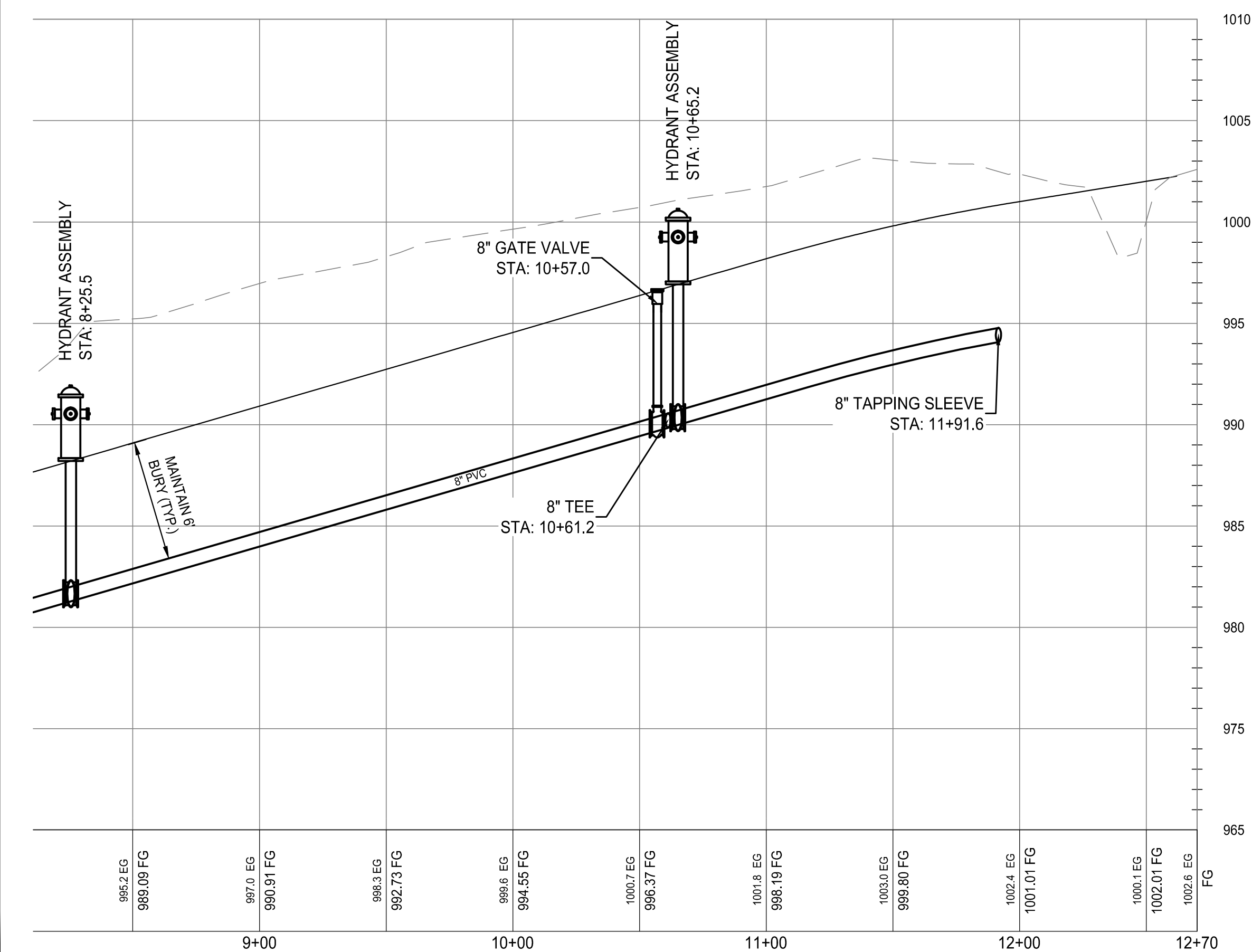
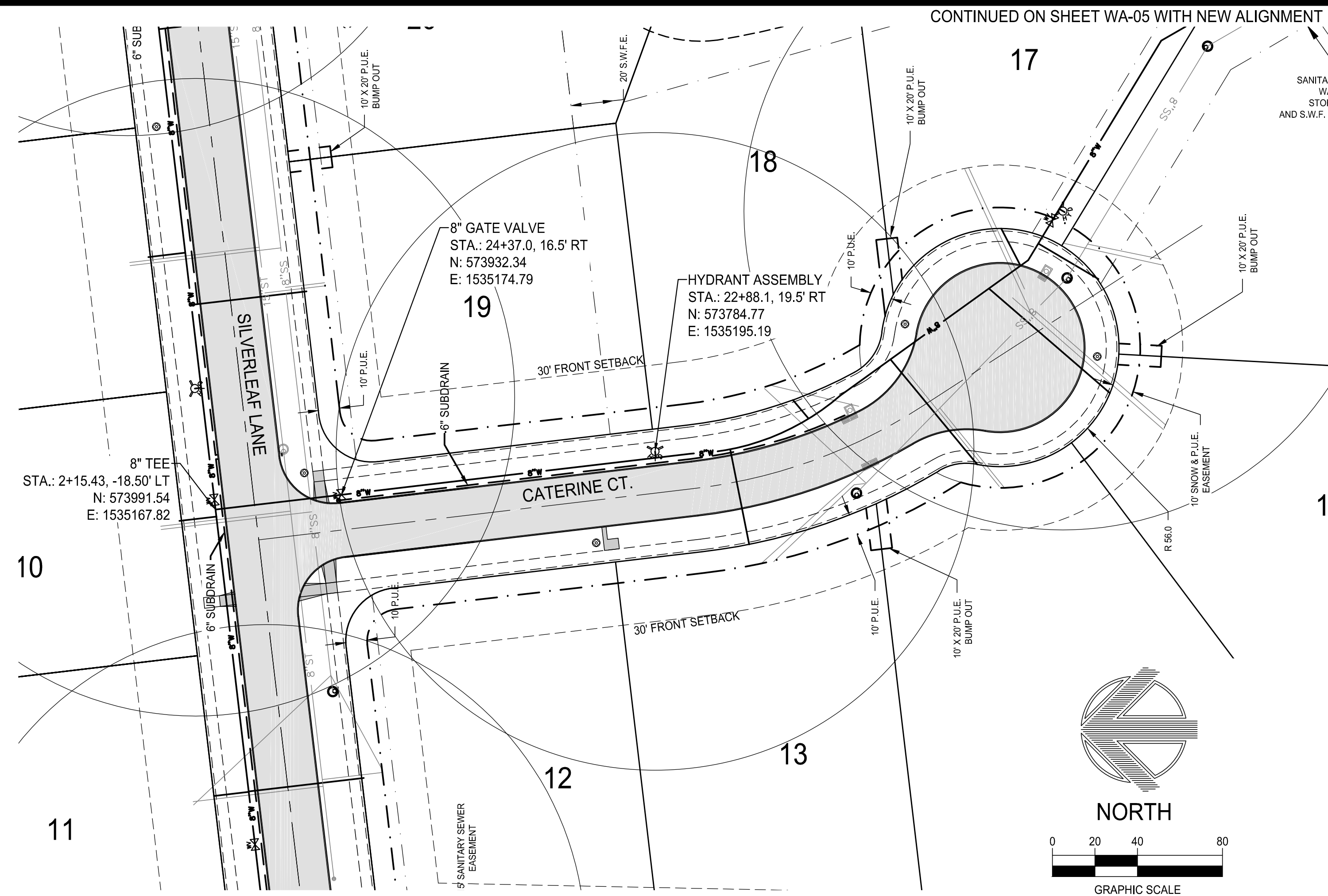
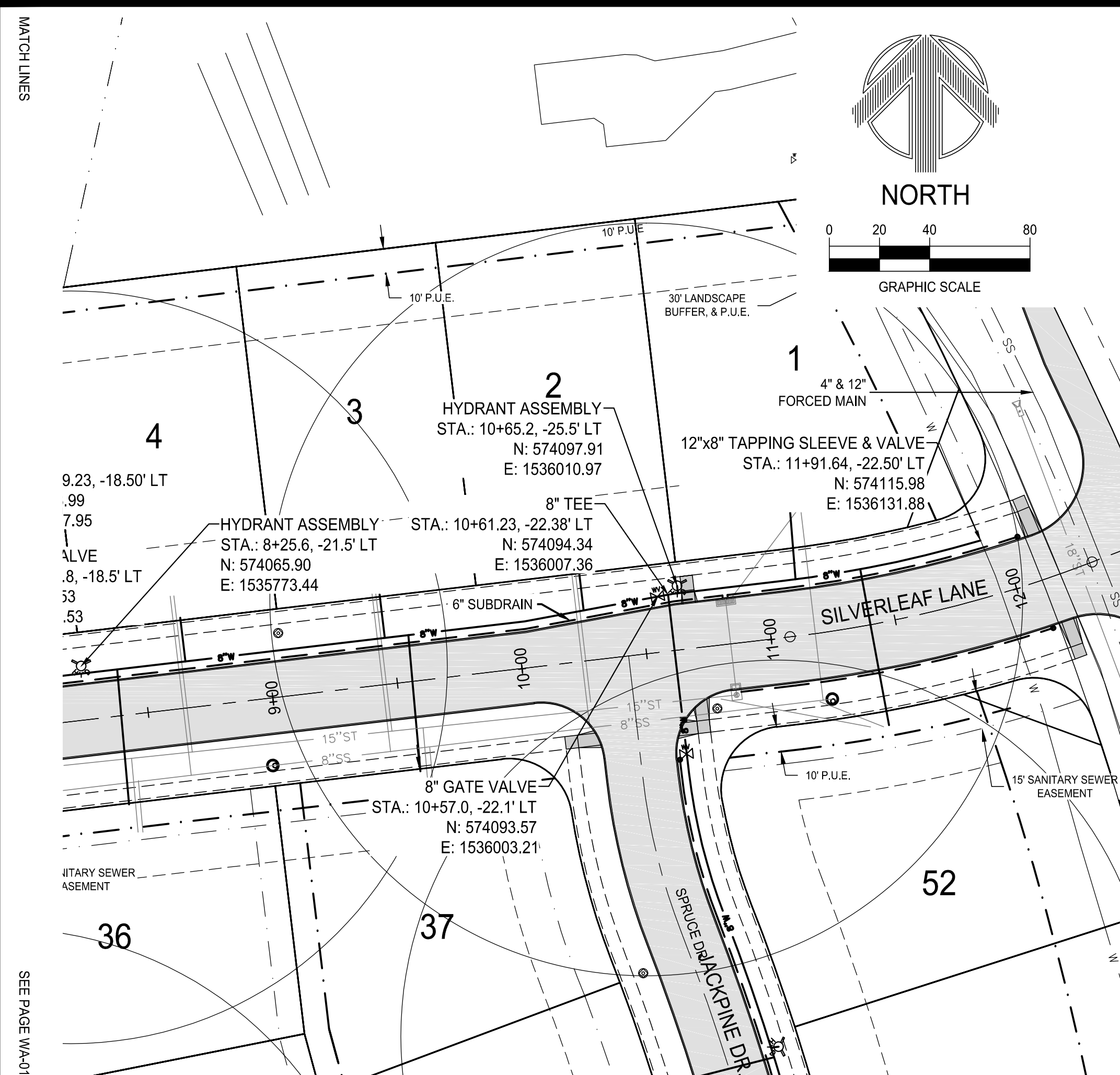
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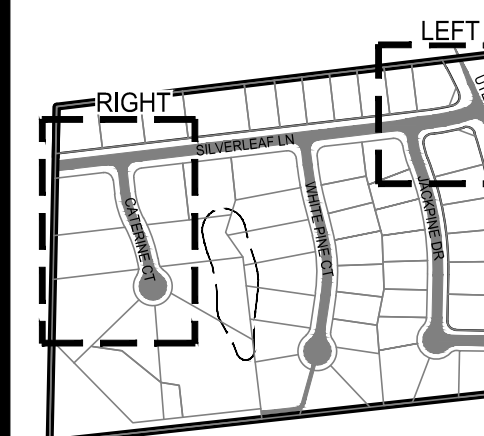




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CATERINE CT.
WATER MAIN
PLAN & PROFILE



WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA
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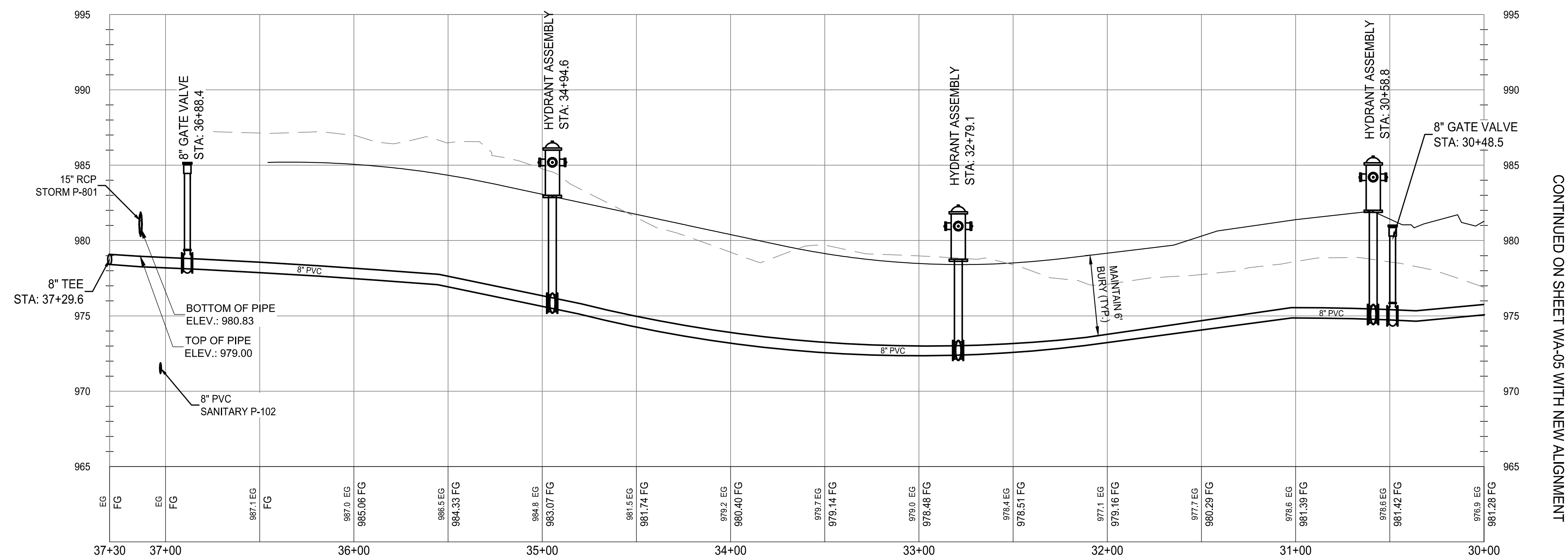
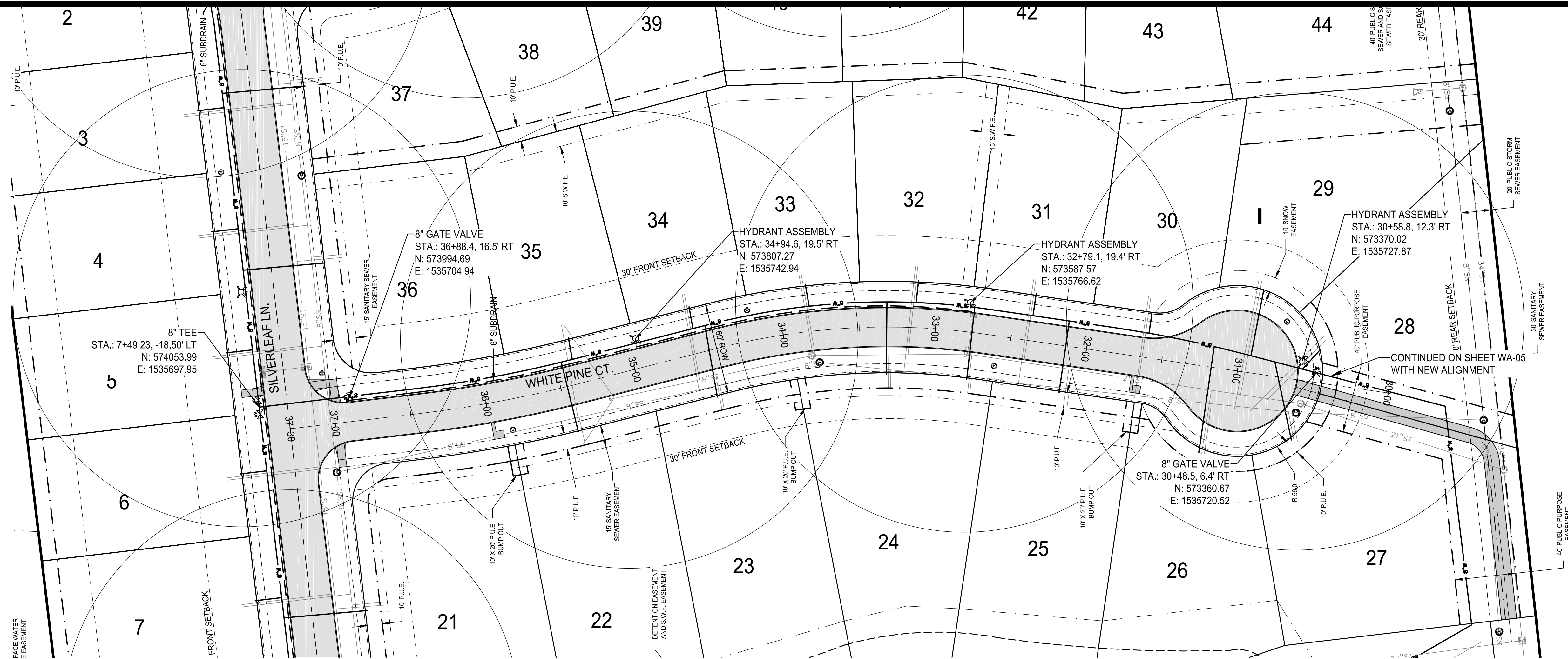
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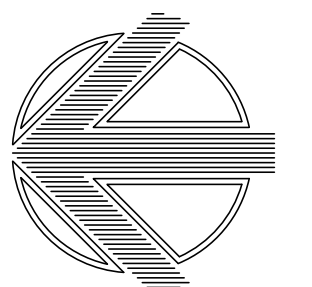
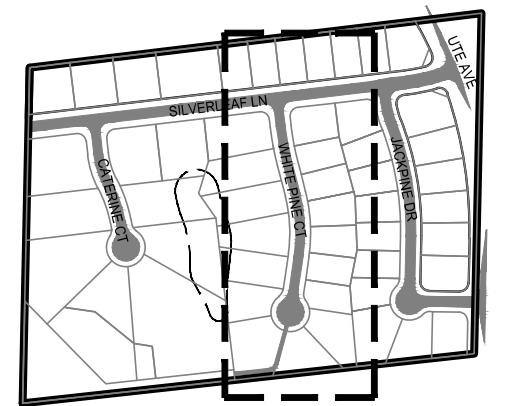
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WHITE PINE CT.
WATER MAIN
PLAN & PROFILE



0 20 40 80
GRAPHIC SCALE

WILLOW PINES
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DRAWINGS
WAUKEE, IOWA
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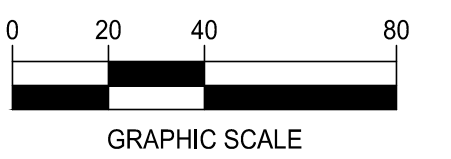
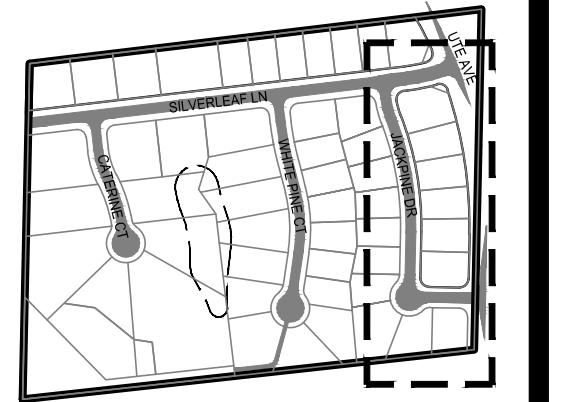
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WATER MAIN
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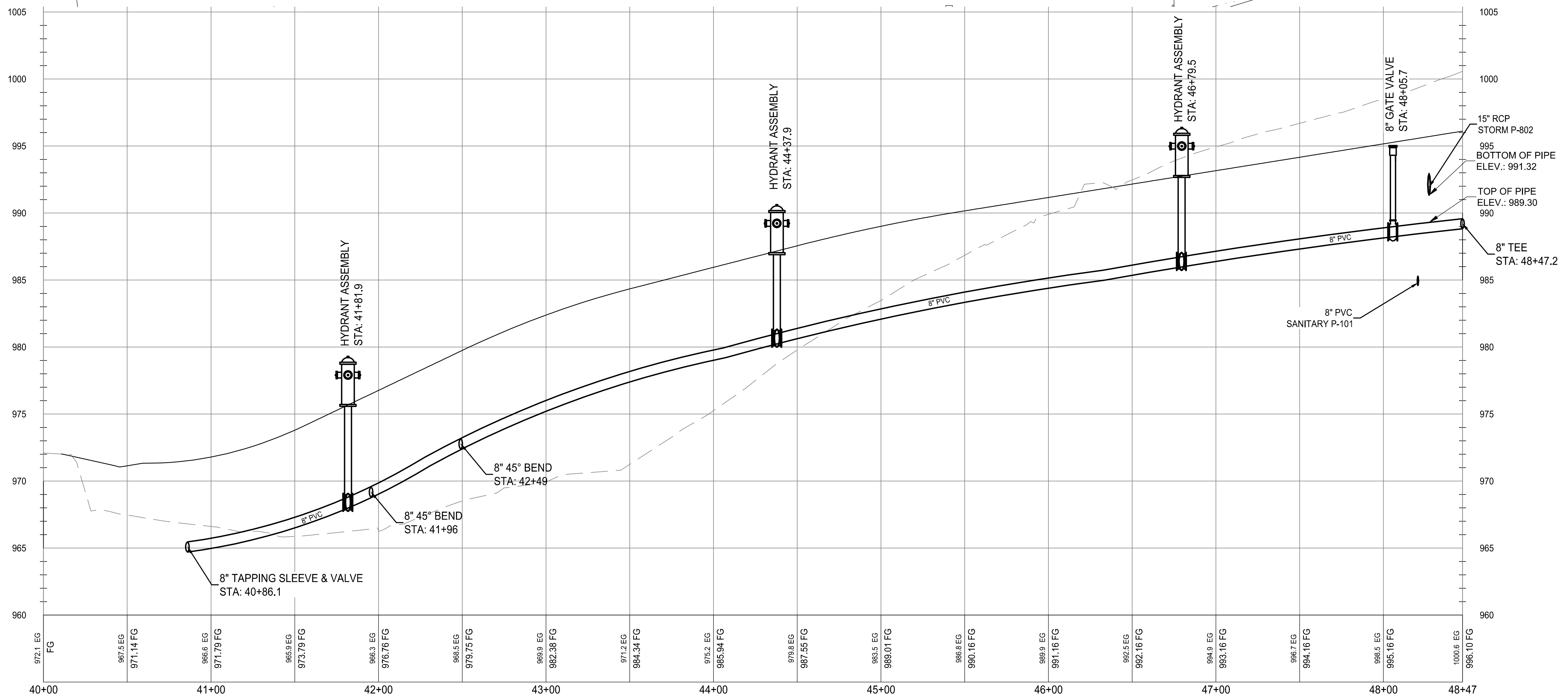
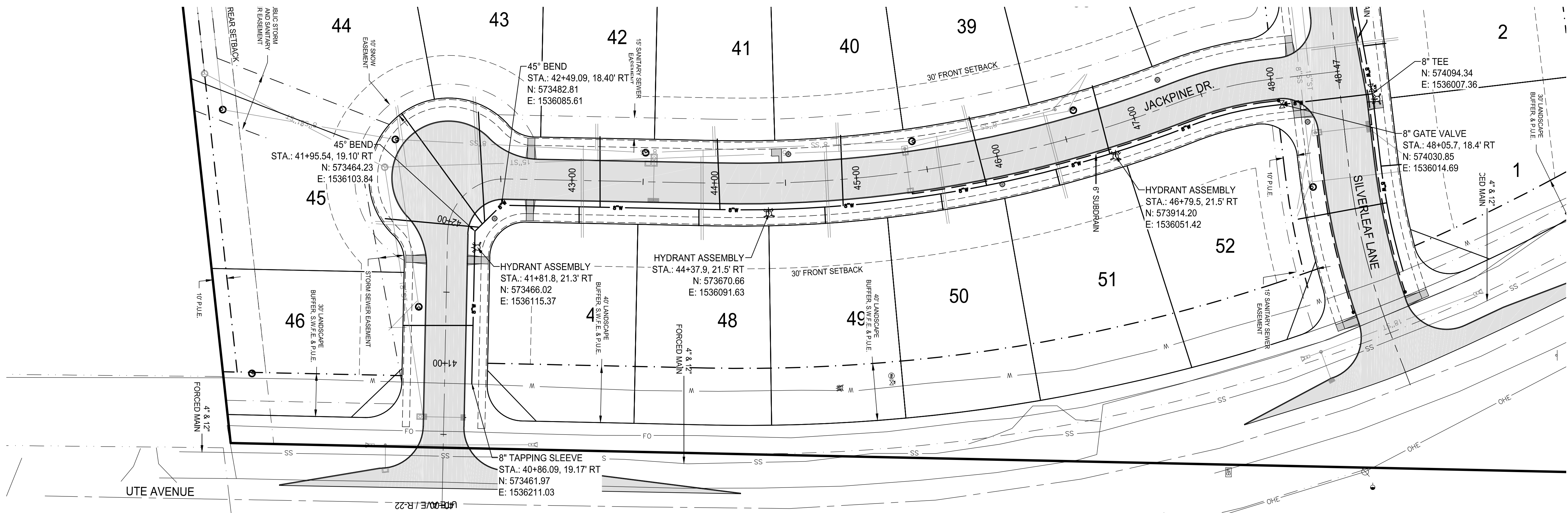


WILLOW PINES
CONSTRUCTION
DRAWINGS
WAUKEE, IOWA
2213008
JULY 2013

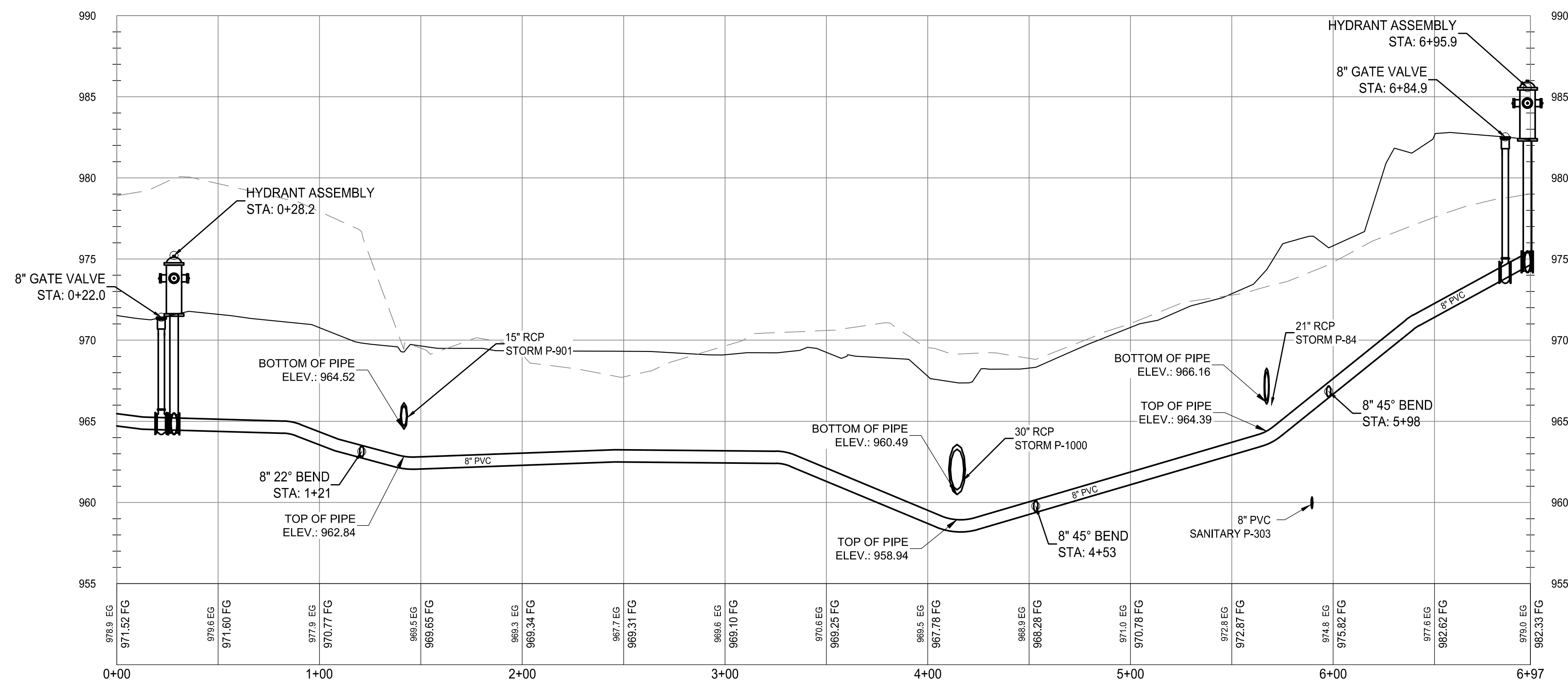
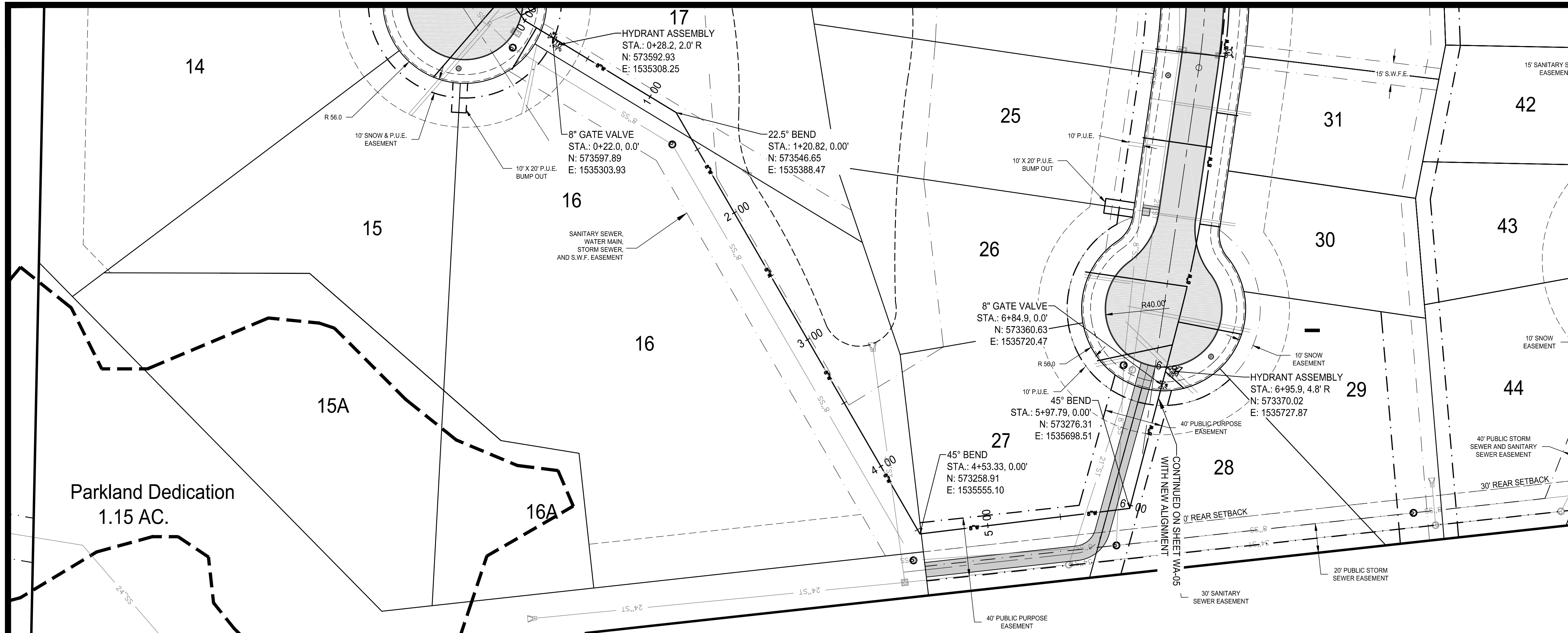
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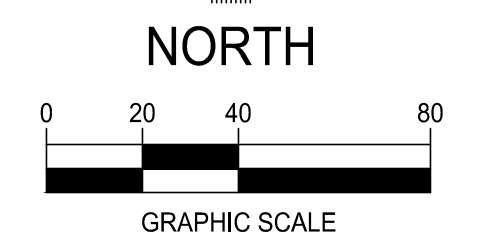
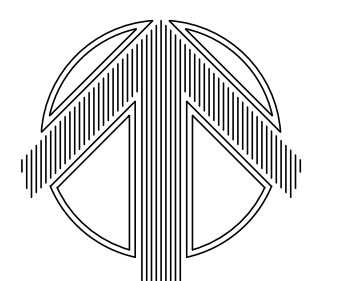
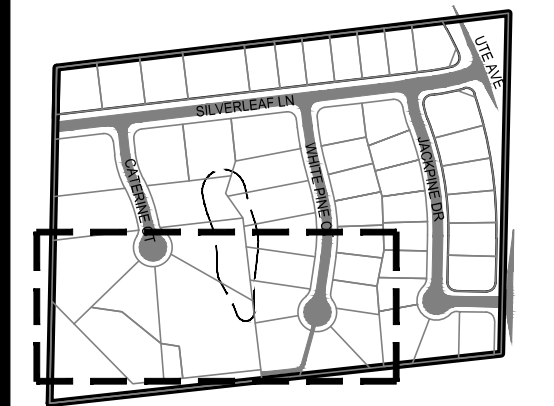
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LOOPING
WATER MAIN
PLAN & PROFILE



WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA
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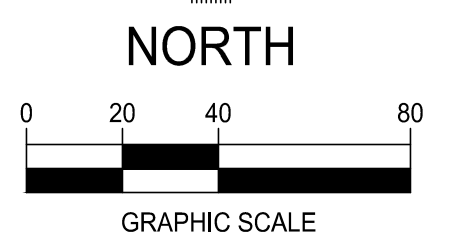
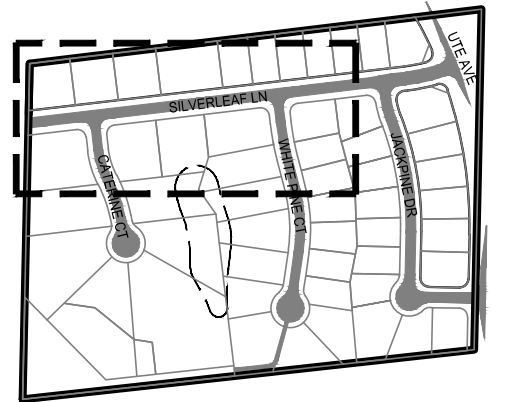
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SILVERLEAF LN.
PAVING
PLAN & PROFILE



**WILLOW PINES
CONSTRUCTION
DRAWINGS**

WAUKEE, IOWA
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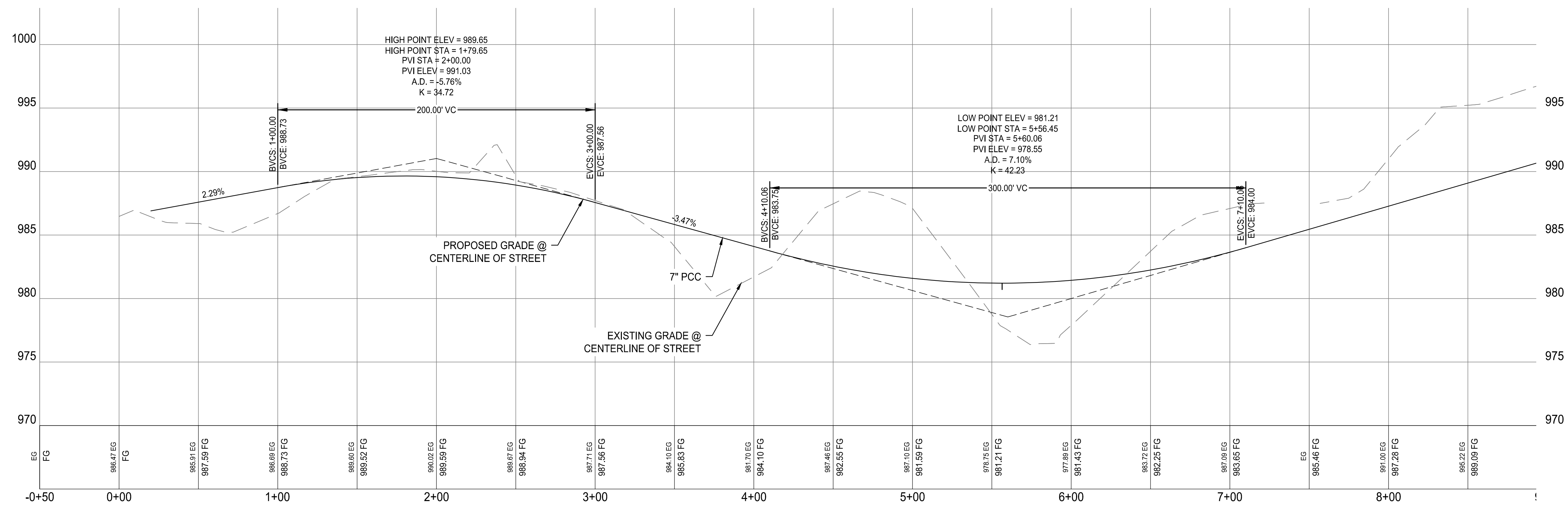
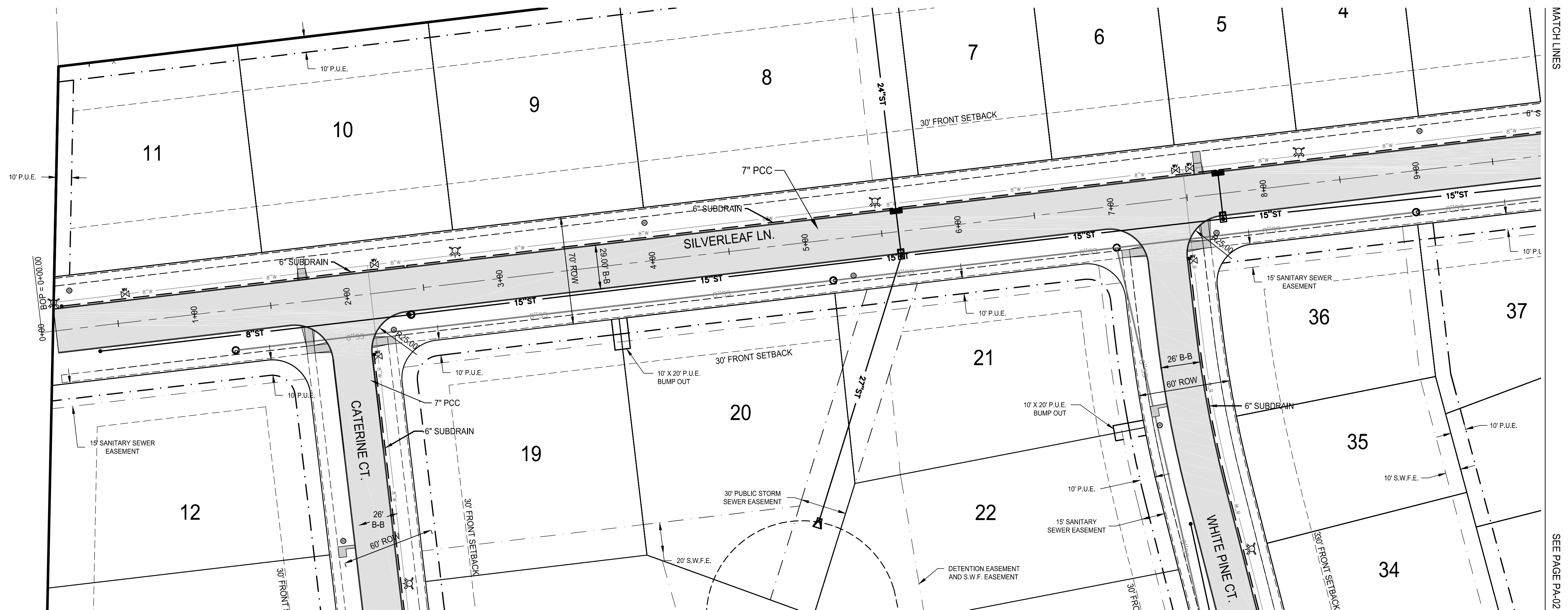
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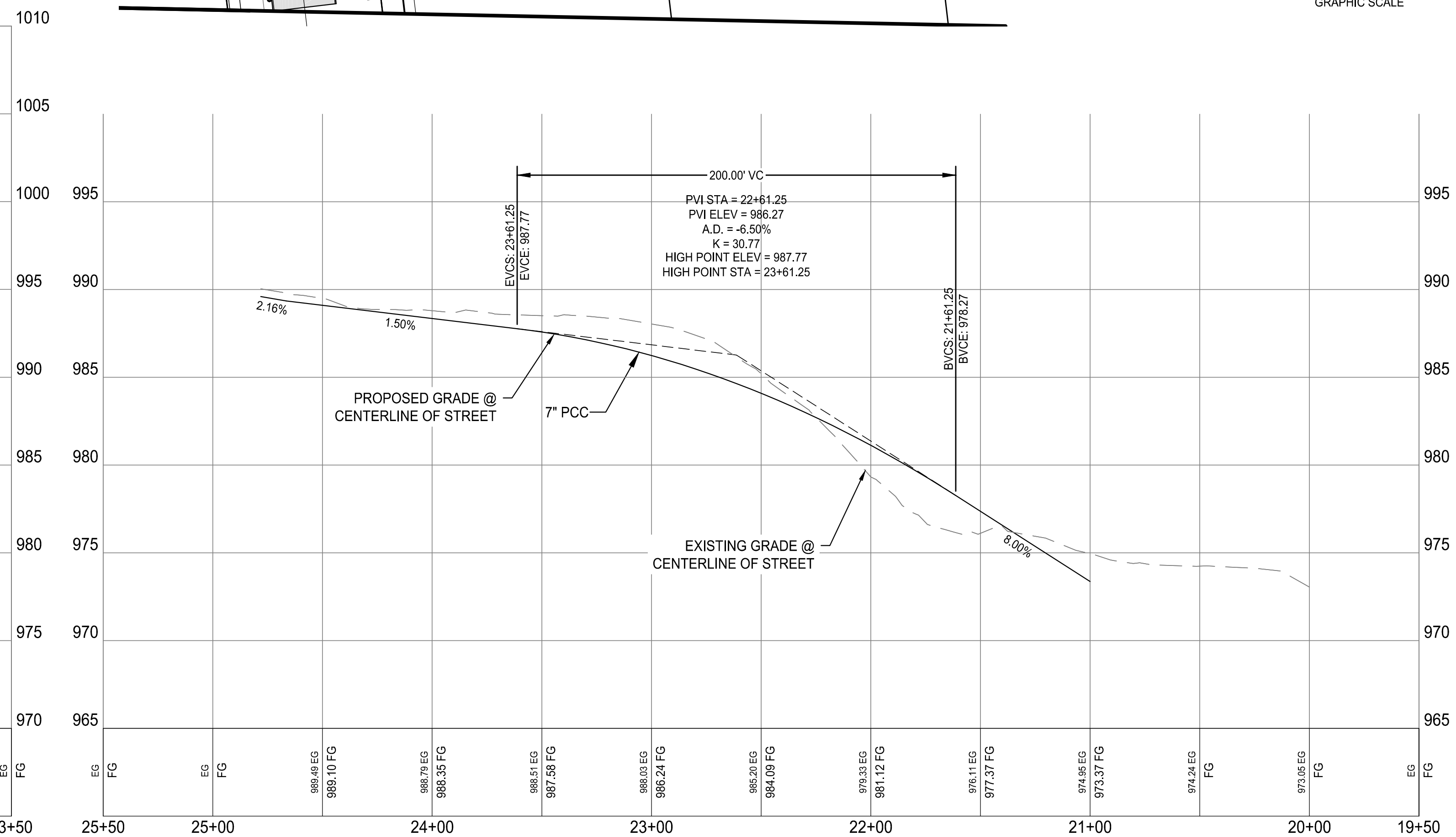
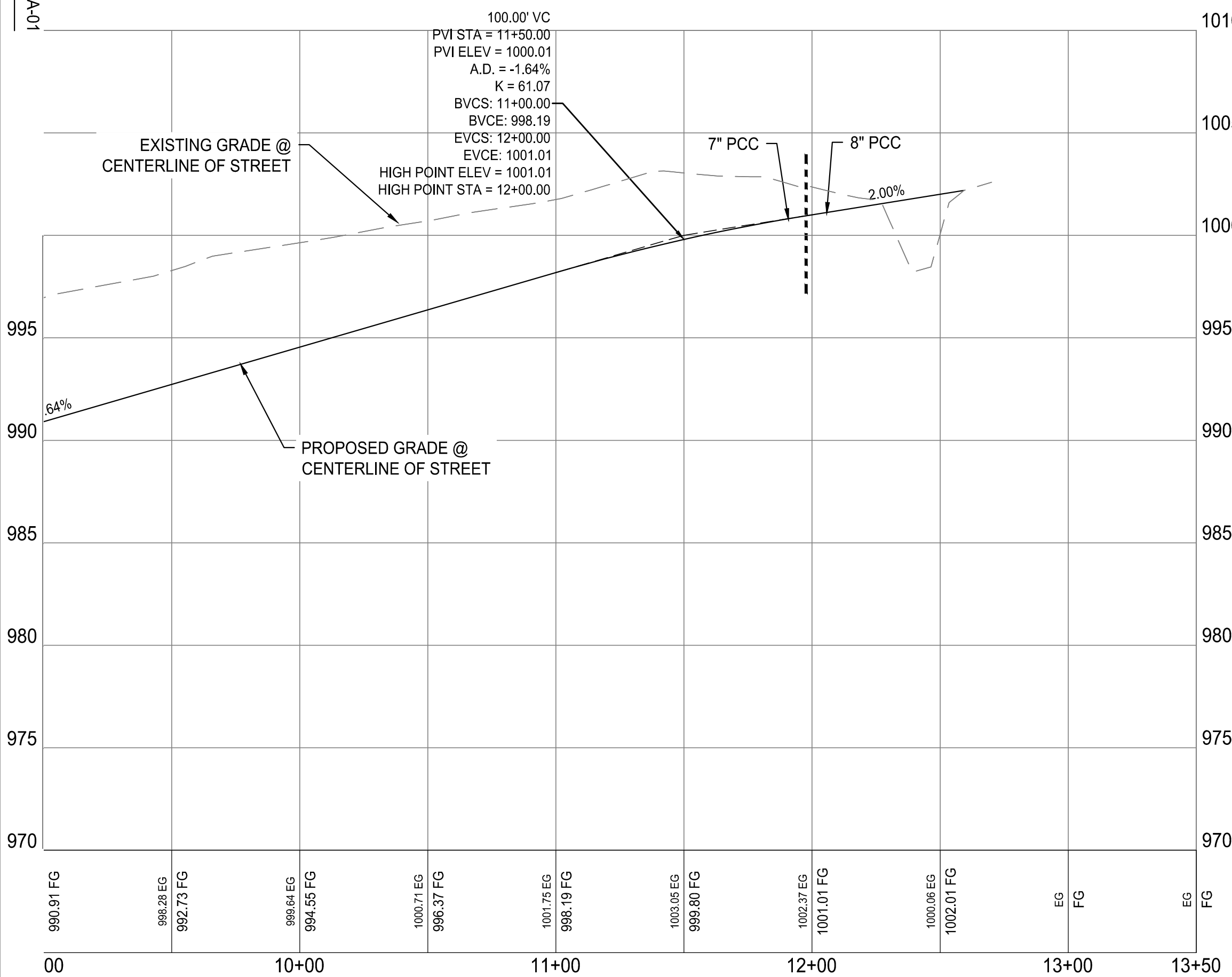
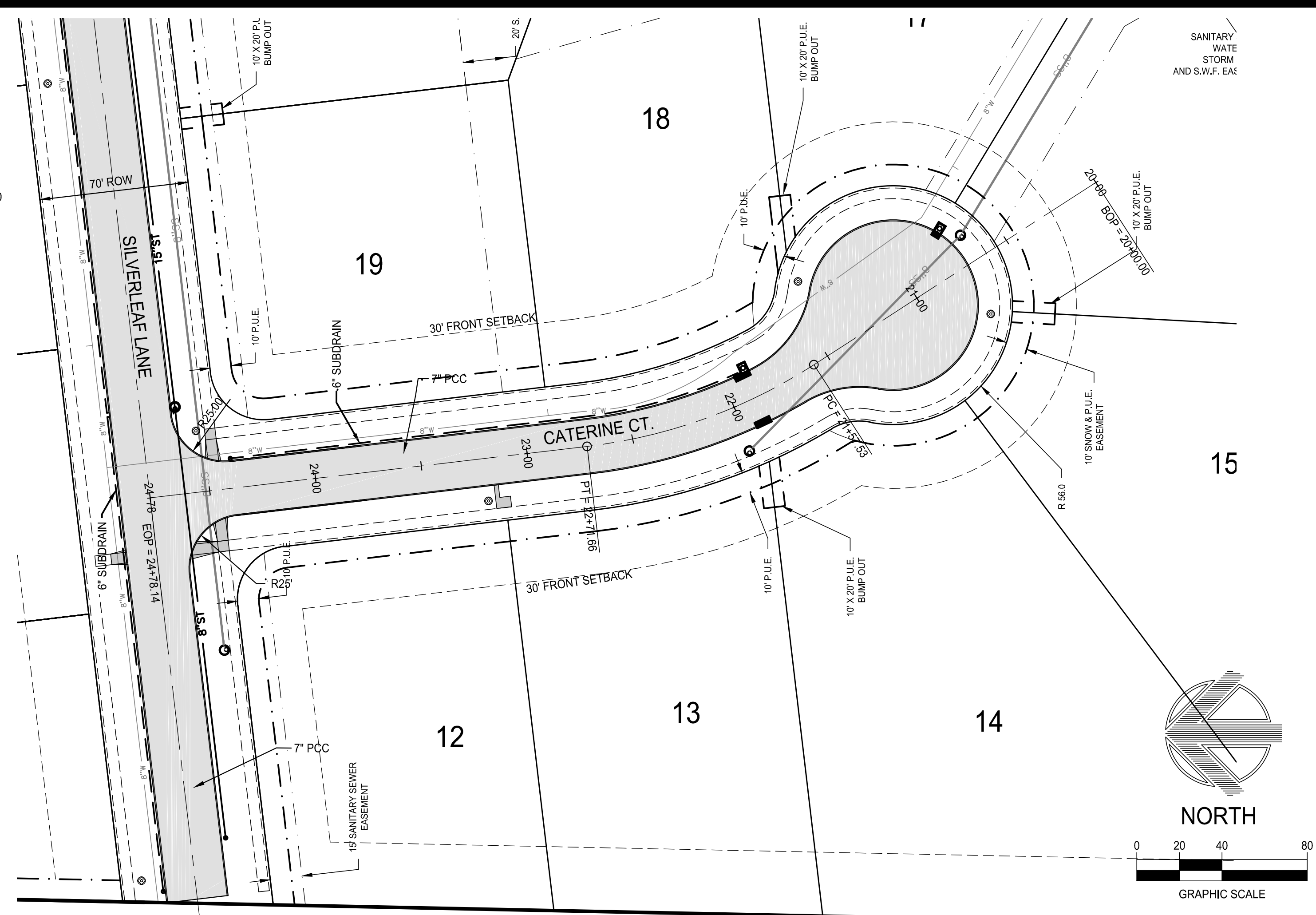
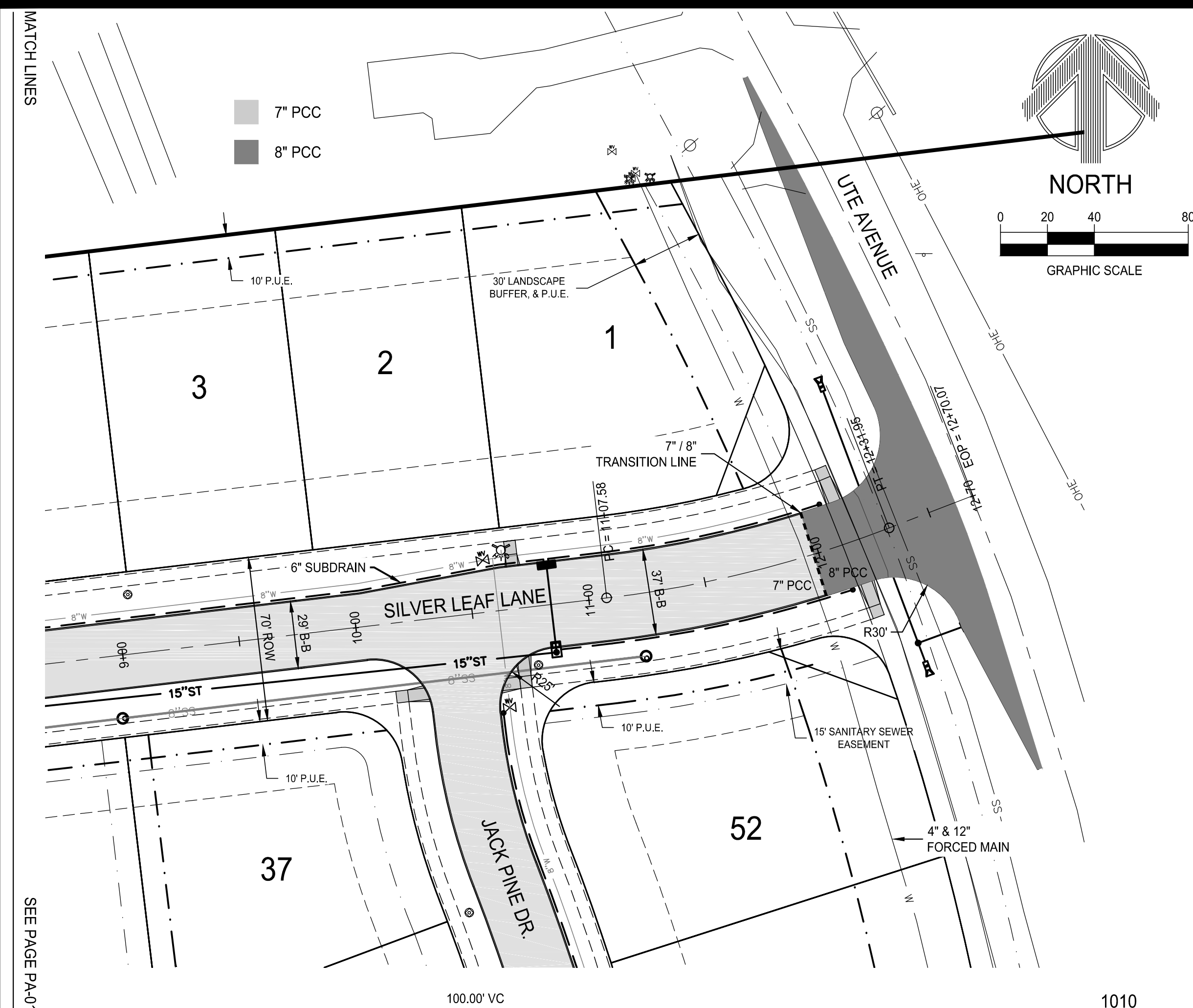
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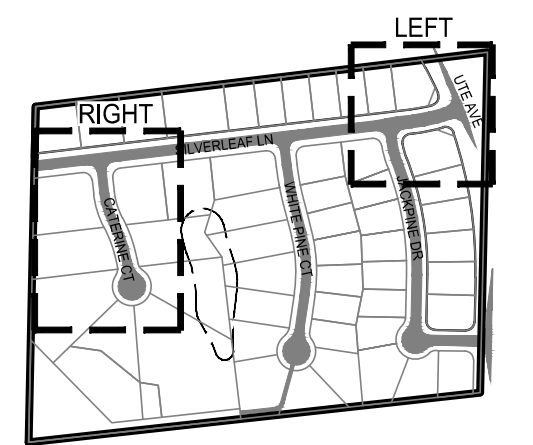
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WAUKEE, IOWA
2213008
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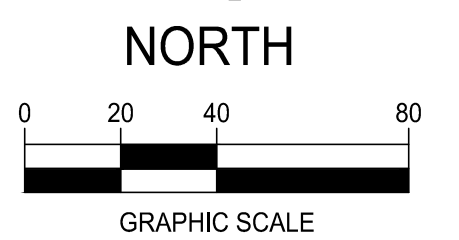
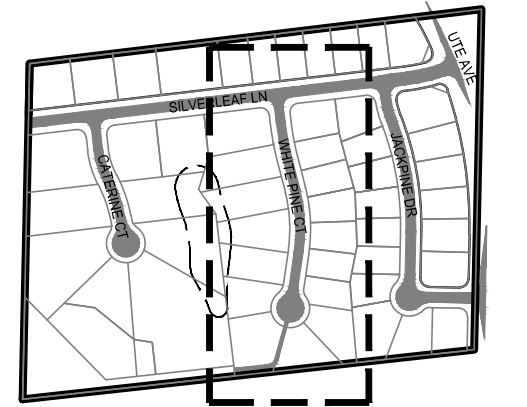
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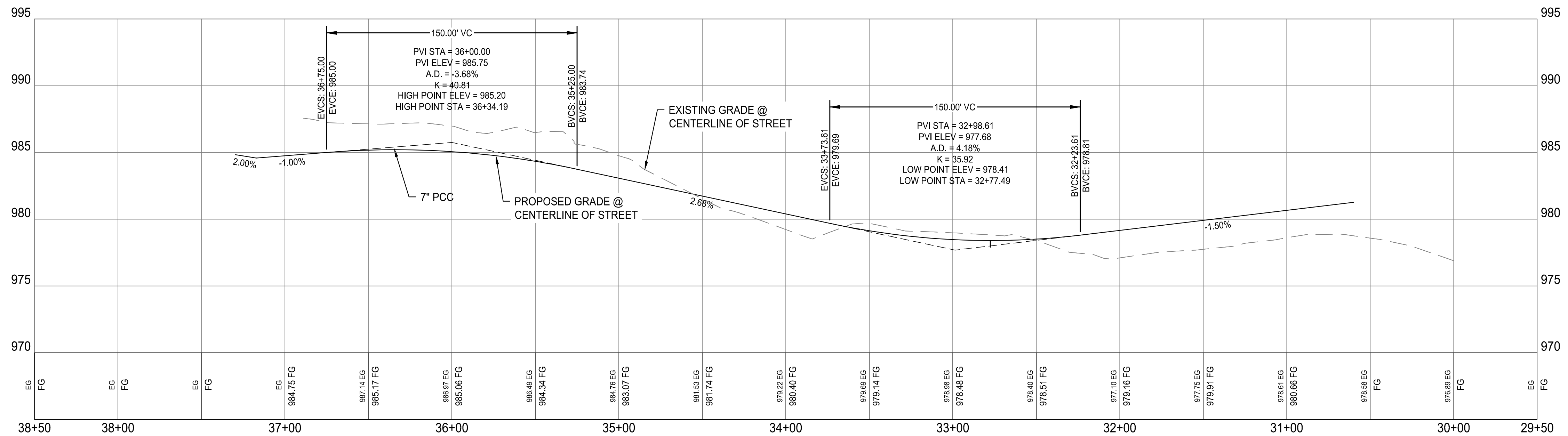
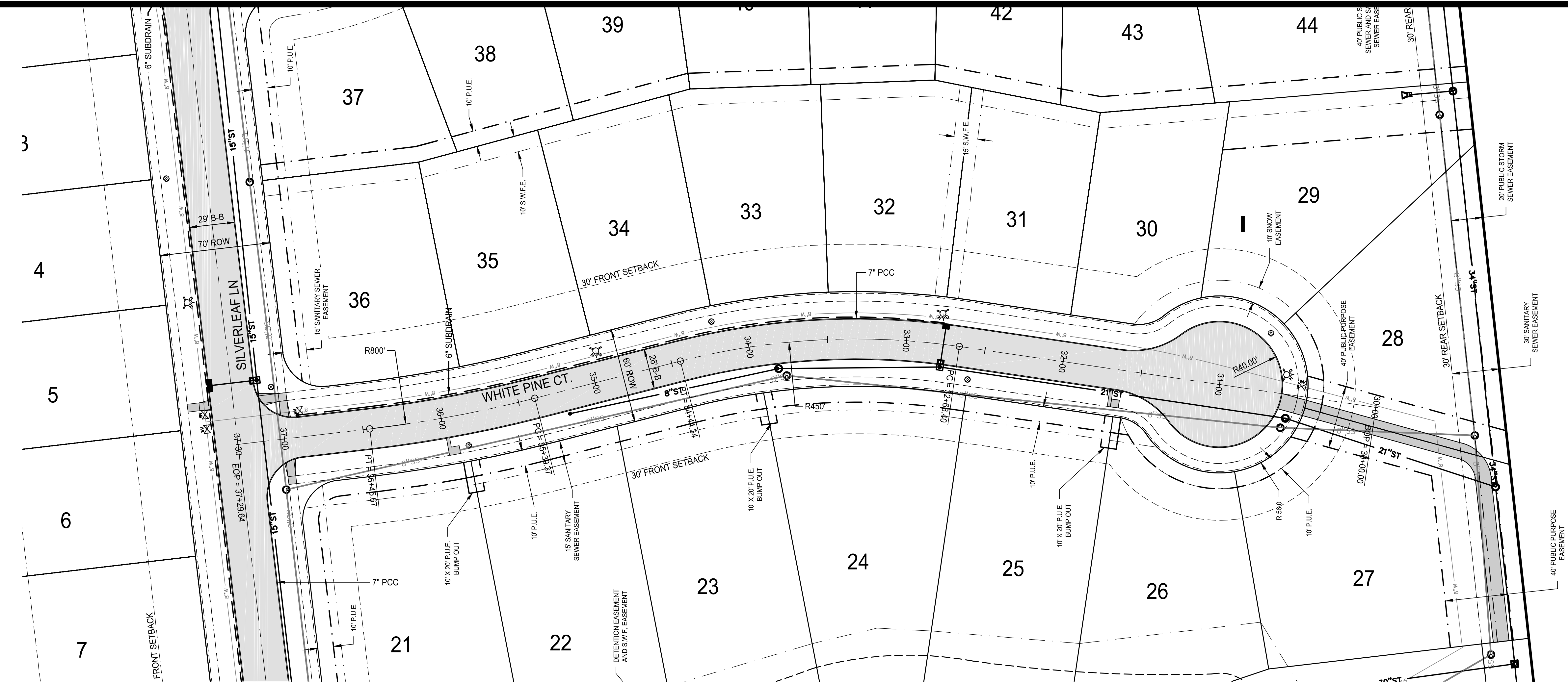
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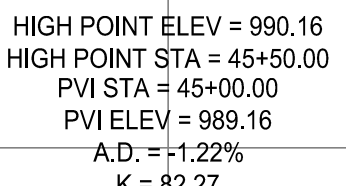


WILLOW PINES
CONSTRUCTION
DRAWINGS
WAUKEE, IOWA
2213008
JULY 2013

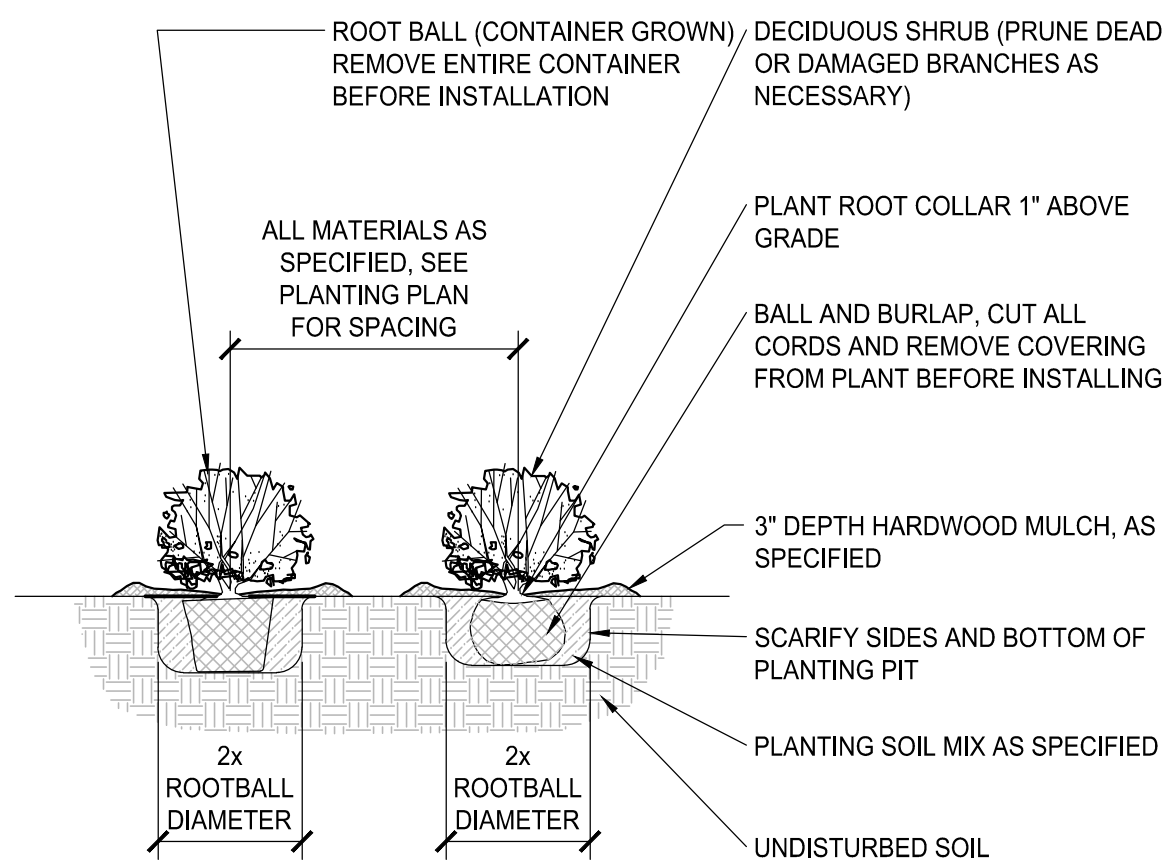
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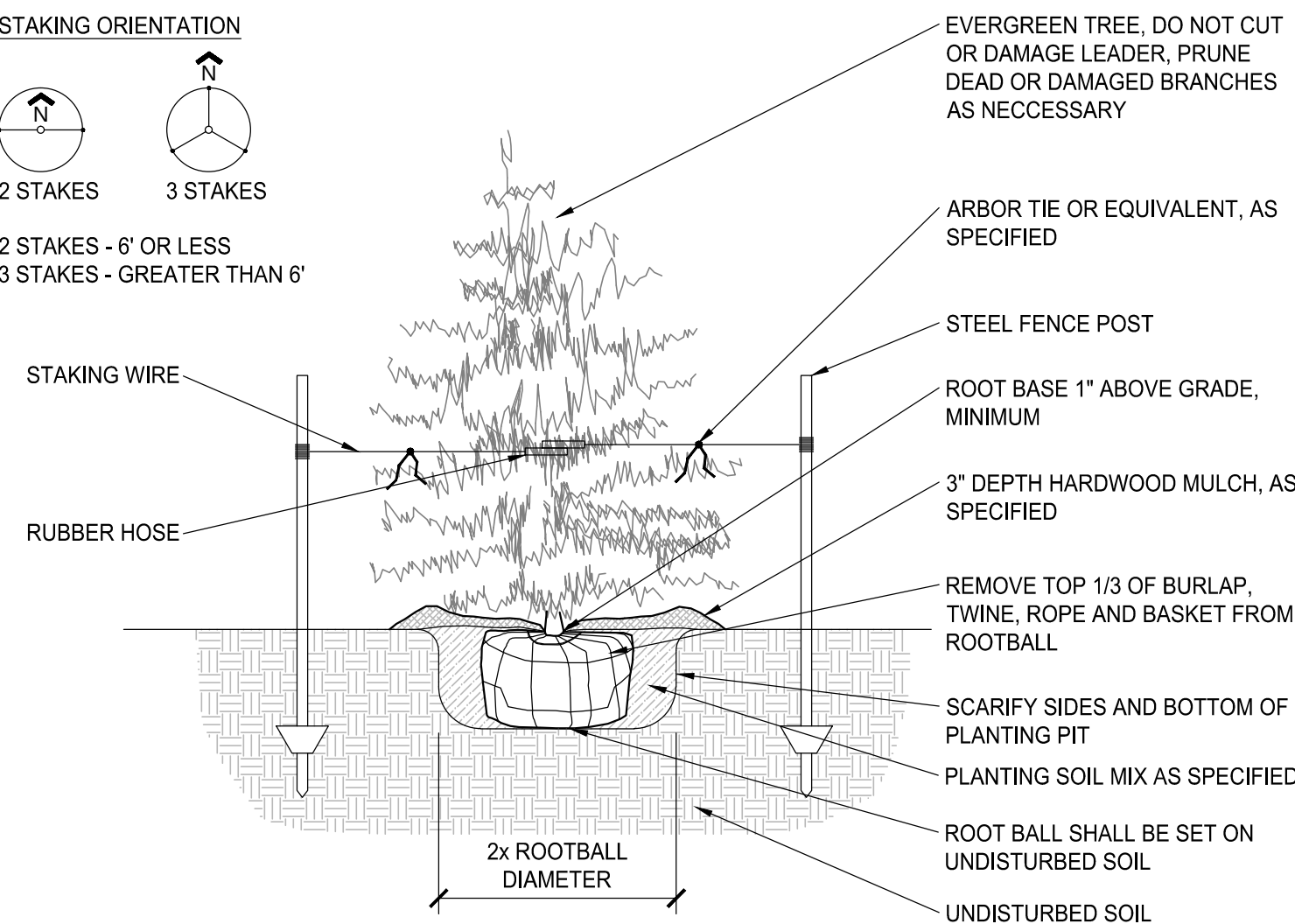
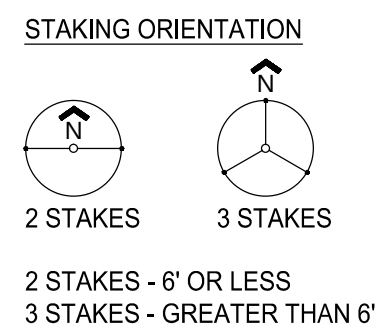




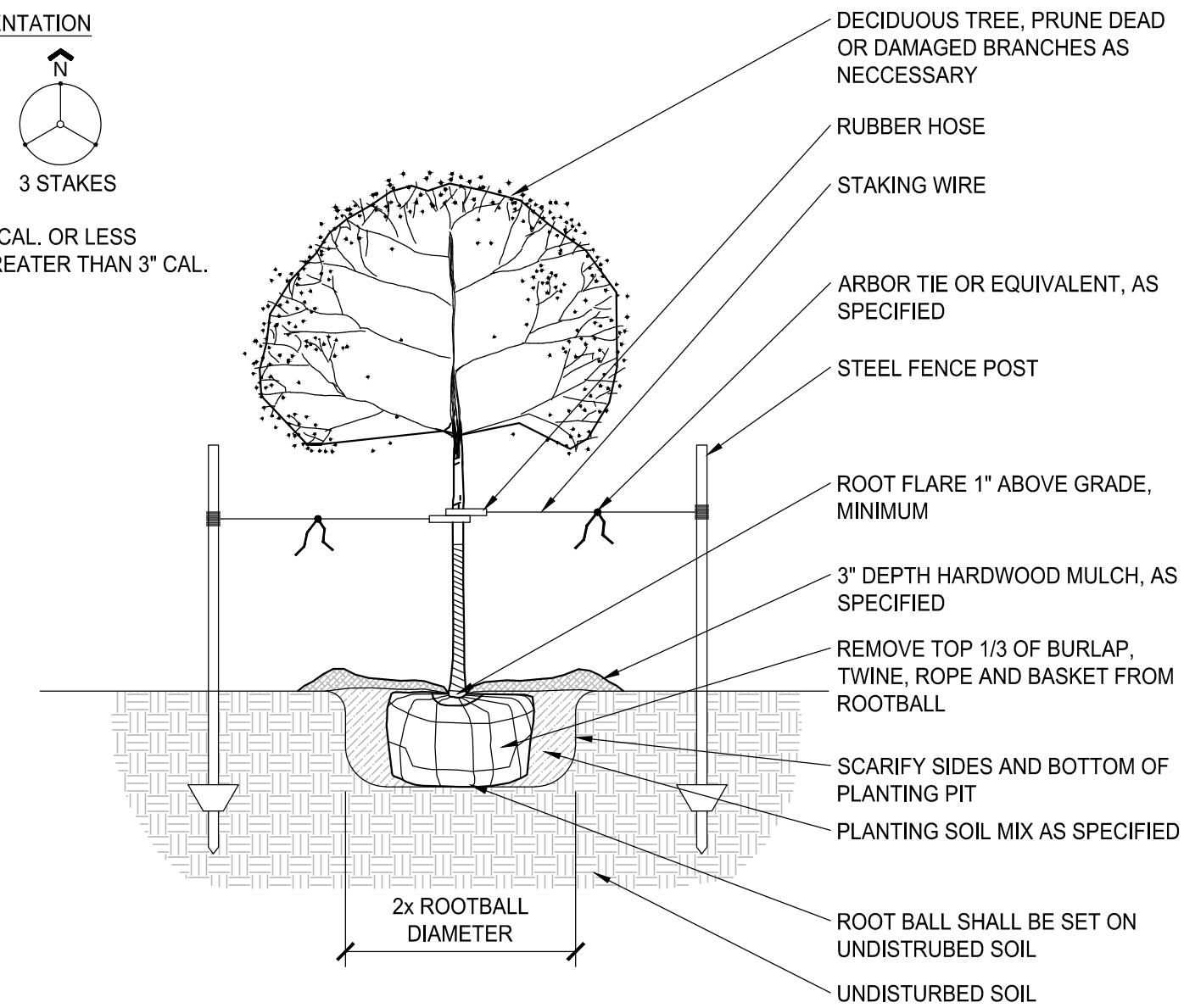
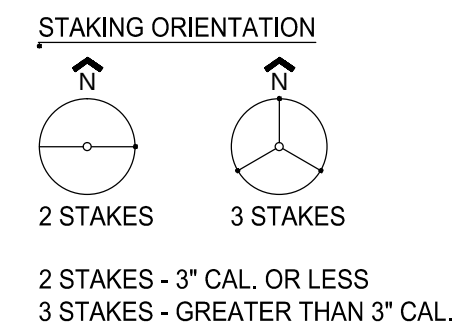
SHEET NO.
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1 DETAIL: SHRUB PLANTING
1/2" = 1'-0"



2 DETAIL: EVERGREEN TREE PLANTING
1/2" = 1'-0"



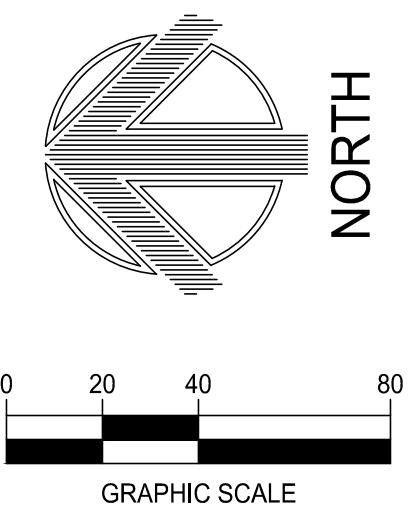
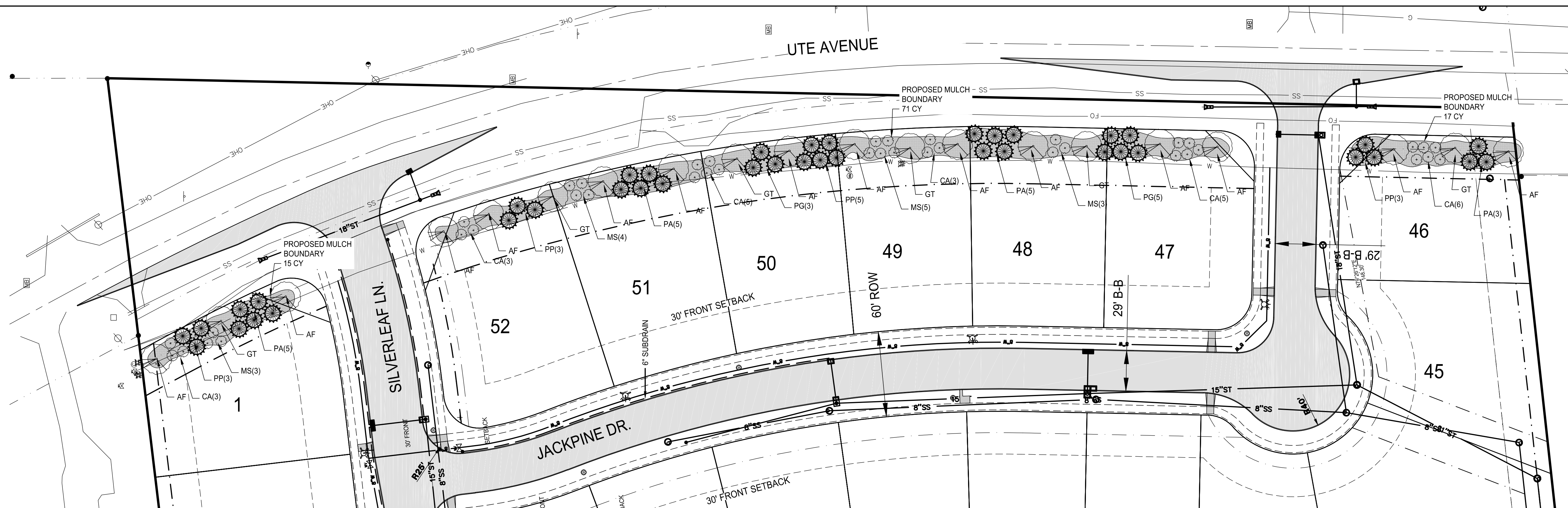
3 DETAIL: DECIDUOUS TREE PLANTING
1/2" = 1'-0"

Key	Botanical Name	Common Name	Size	Condition	Qty
Deciduous Overstory Trees					
AF	Acer x freemanii 'Jeffersred'	Autumn Blaze Maple	8'	B&B	14
GT	Gleditsia triacanthos 'nemis' Skyline	Skyline Honeylocust	8'	B&B	6
TOTAL					20
Deciduous Ornamental Trees					
CA	Crataegus ambigua	Russian Hawthorn	6' Clump	B&B	25
MS	Malus 'Spring Snow'	Spring Snow Crabapple	6'	B&B	15
TOTAL					40
Evergreen Trees					
PA	Picea abies	Norway Spruce	6'	B&B	23
PG	Picea glauca	Black Hills Spruce	6'	B&B	8
PP	Picea pungens	Blue Spruce	6'	B&B	9
TOTAL					40

LANDSCAPE PLAN NOTES:

1. PLANT QUANTITIES ARE FOR INFORMATION ONLY; DRAWING SHALL PREVAIL IF CONFLICT OCCURS. CONTRACTOR IS RESPONSIBLE FOR CALCULATING OWN QUANTITIES AND BASING BID ACCORDINGLY.
2. CONTRACTOR SHALL PLACE SHREDDED HARDWOOD BARK MULCH AROUND ALL TREES AND IN ALL PLANTING BEDS TO A DEPTH OF 3". WALNUT PRODUCTS ARE PROHIBITED.
3. KIND, SIZE AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK, ANSI 260-2004, OR MOST RECENT EDITION.
4. THE CONTRACTOR SHALL REPORT SUBSURFACE SOIL OR DRAINAGE PROBLEMS TO THE LANDSCAPE ARCHITECT.
5. THE CONTRACTOR SHALL SHOW PROOF OF PROCUREMENT, SOURCES, QUANTITIES AND VARIETIES FOR ALL SHRUBS, PERENNIALS, ORNAMENTAL GRASSES WITHIN 21 DAYS FOLLOWING THE AWARD OF CONTRACT. TIMELY PROCUREMENT OF ALL PLANT MATERIAL IS ESSENTIAL TO THE SUCCESSFUL COMPLETION AND INITIAL ACCEPTANCE OF THE PROJECT.
6. SUBSTITUTIONS SHALL ONLY BE ALLOWED WHEN THE CONTRACTOR HAS EXHAUSTED ALL SOURCES FOR THE SPECIFIED MATERIAL, AND HAS PROVEN THAT THE SPECIFIED MATERIAL IS NOT AVAILABLE. THE CONTRACTOR MUST PROVIDE NAME AND VARIETY OF SUBSTITUTION TO THE LANDSCAPE ARCHITECT AND CITY FOR APPROVAL PRIOR TO TAGGING OR PLANTING. SUBSTITUTIONS SHALL BE NEAREST EQUIVALENT SIZE OF VARIETY OF PLANT HAVING SAME ESSENTIAL CHARACTERISTICS.
7. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, SOUND, HEALTHY, VIGOROUS AND FREE FROM INSECTS, DISEASE AND INJURIES, WITH HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES. SIZES SHALL BE EQUAL TO OR EXCEEDING SIZES INDICATED ON THE PLANT SCHEDULE. THE CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITY AS SHOWN ON DRAWINGS.
8. STAKE OR PLACE ALL PLANTS IN FIELD AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT FOR APPROVAL BY THE OWNER PRIOR TO PLANTING.
9. ALL DISTURBED AREAS NOT OTHERWISE COVERED BY BUILDING, PAVEMENT, AND LANDSCAPE BEDS SHALL BE SODDED WITH KENTUCKY BLUEGRASS SOD AS APPROVED BY LANDSCAPE ARCHITECT AND OWNER.
10. LANDSCAPE ARCHITECT USED FOR DESIGN: ZACH HEITZMAN, GREEN BEAN LANDSCAPES, (515)-339-2085, greenbeanlandscapes@gmail.com.

25' BUFFER PLANT REQUIREMENTS	BUFFER LENGTH = 1000 LF
1 OVERSTORY / 50 LF OF BUFFER	1000 LF / 50 LF X 1 OVERSTORY = 20 OVERSTORY
2 EVERGREENS / 50 LF OF BUFFER	1000 LF / 50 LF X 2 EVERGREEN = 40 EVERGREEN
2 ORNAMENTAL / 50 LF OF BUFFER	1000 LF / 50 LF X 2 ORNAMENTAL = 40 ORNAMENTAL



**WILLOW PINES
CONSTRUCTION
DRAWINGS**
WAUKEE, IOWA
2213008
JULY 2013

REVISIONS
10/22/2013
2/7/2014
2/25/2014
3/28/14

ENGINEER
CLS

CHECKED BY
CAS

DRAWN BY
CLS

FIELD BOOK NO.
-

DRAWING NO.
LA-01

SHEET NO.
30 / 36

McCLURETM
ENGINEERING CO.

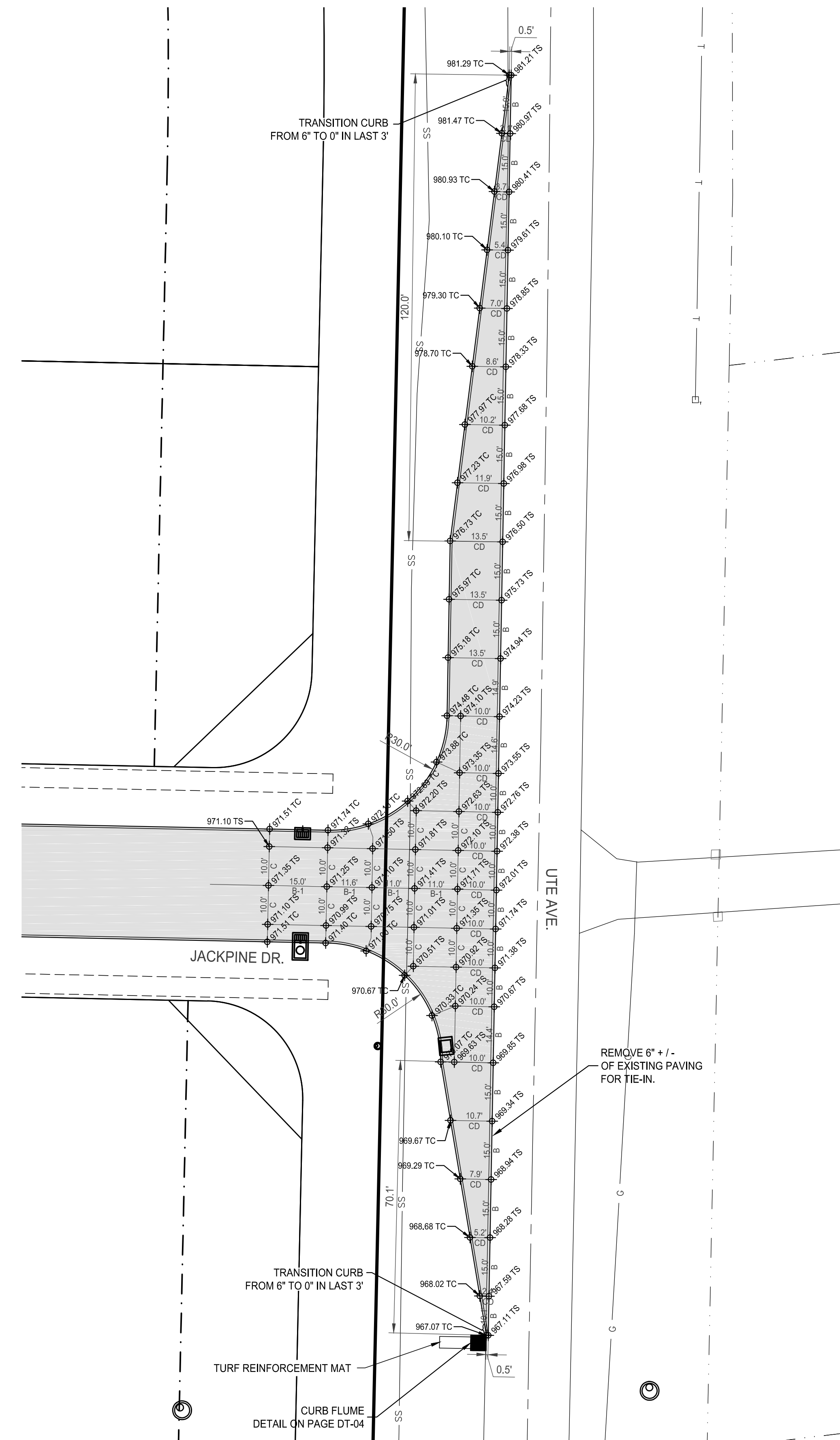
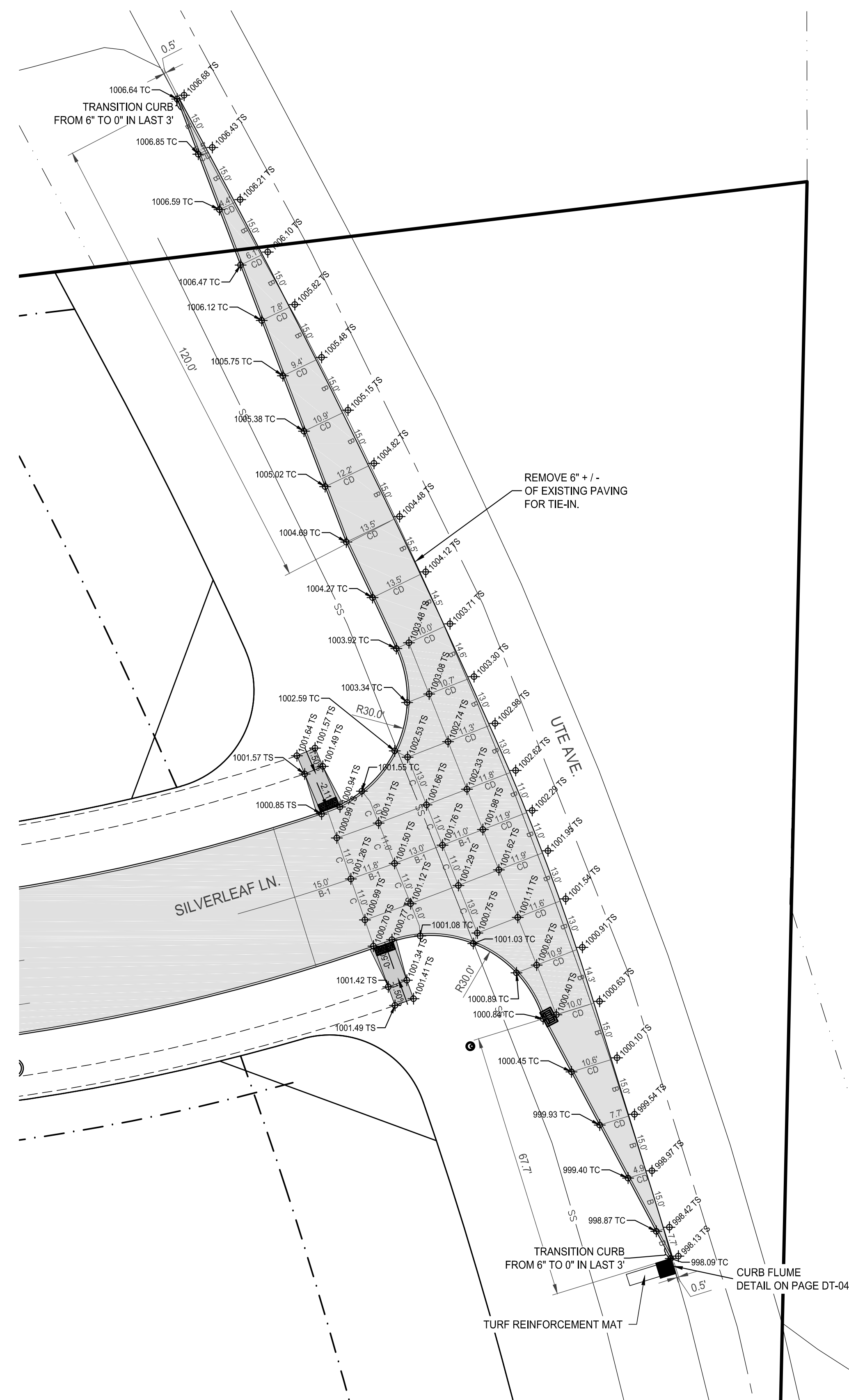
building strong communities.

1360 NW 121ST. Street
Clive, Iowa 50325
515-964-1229
fax 515-964-2370

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LANDSCAPE PLAN



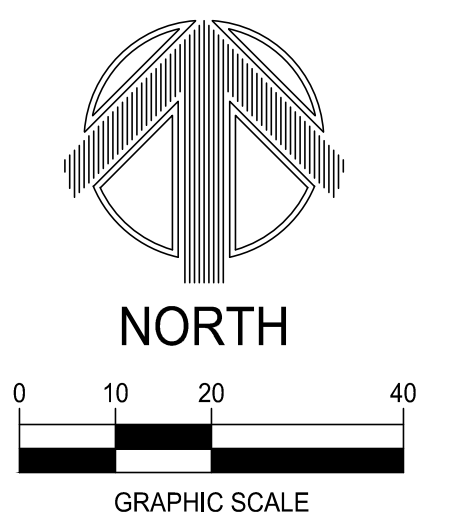
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UTE AVENUE
INTERSECTION JOINT
DETAILS



WILLOW PINES
CONSTRUCTION
DRAWINGS

WAUKEE, IOWA
2213008
JULY 2013

REVISIONS
10/22/2013
2/7/2014
2/25/2014
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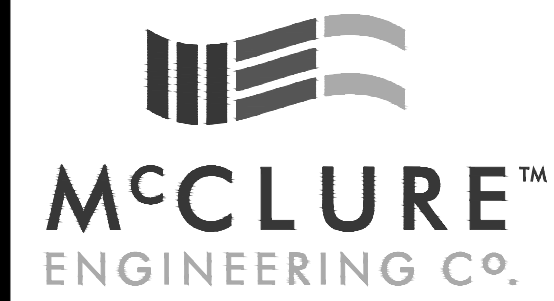
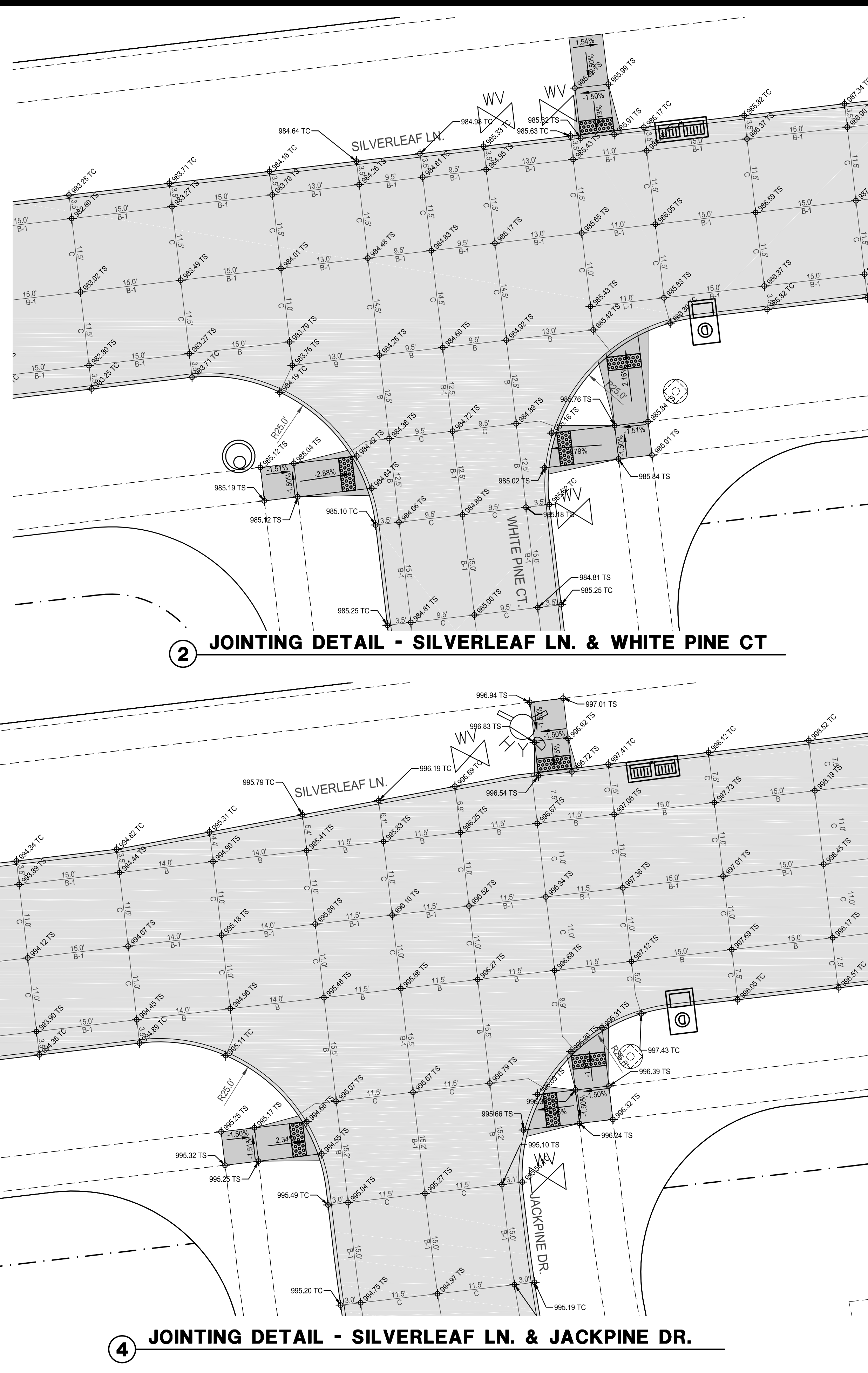
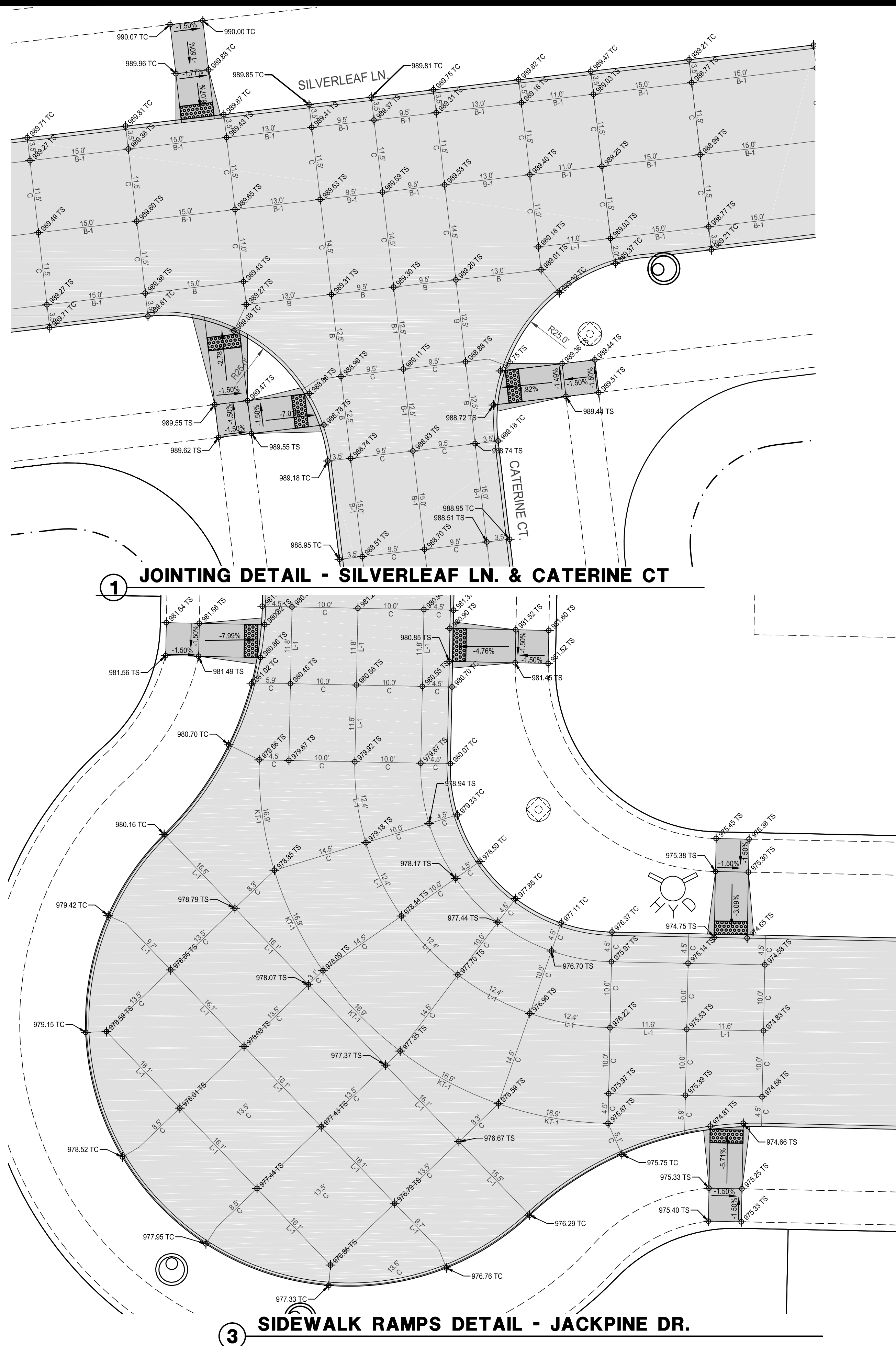
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DT-01

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FIELD BOOK NO.
 -

SHEET NO.
31 / 36

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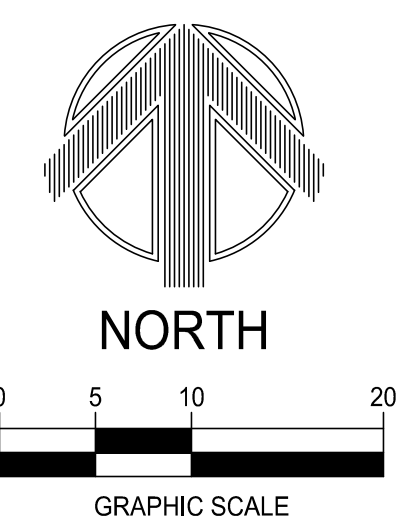
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SILVERLEAF LANE
INTERSECTION JOINTING
DETAILS



WILLOW PINES
CONSTRUCTION
DRAWINGS
WALUKEE, IOWA
2213008
JULY 2013

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10/22/2013
2/7/2014
2/25/2014
3/28/14

ENGINEER
CLS

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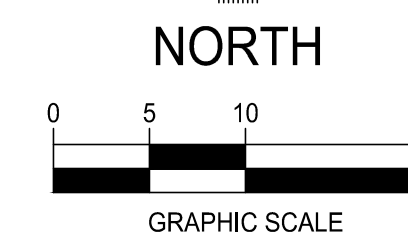
CHECKED BY
CAS

FIELD BOOK NO.
-

DRAWING NO.
DT-02

SHEET NO.
32 / 36

CUL-DE-SAC JOINTING
DETAILS



WILLOW PINES
CONSTRUCTION
DRAWINGS
WAUKEE, IOWA
2213008
JULY 2013

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2/25/2014
3/28/14

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CLS

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DRAWING NO.
DT-03

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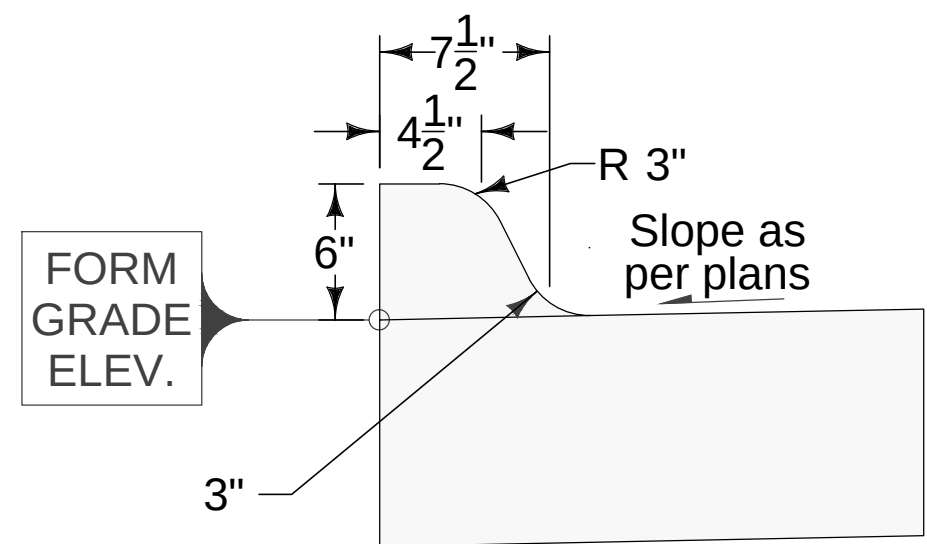
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SHEET NO.

33 / 36

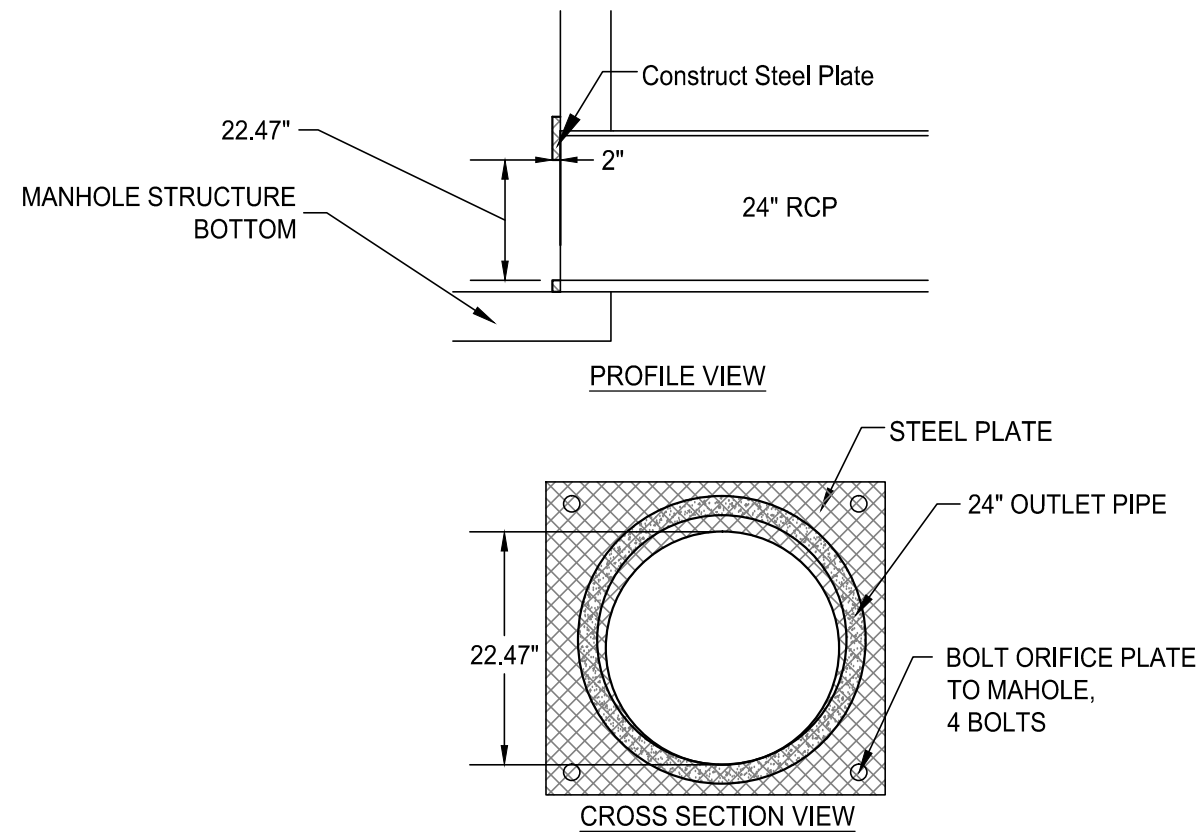
1 JOINTING DETAIL - CATERINE CT. CUL-DE-SAC

2 JOINTING DETAIL - WHITE PINE CT. CUL-DE-SAC

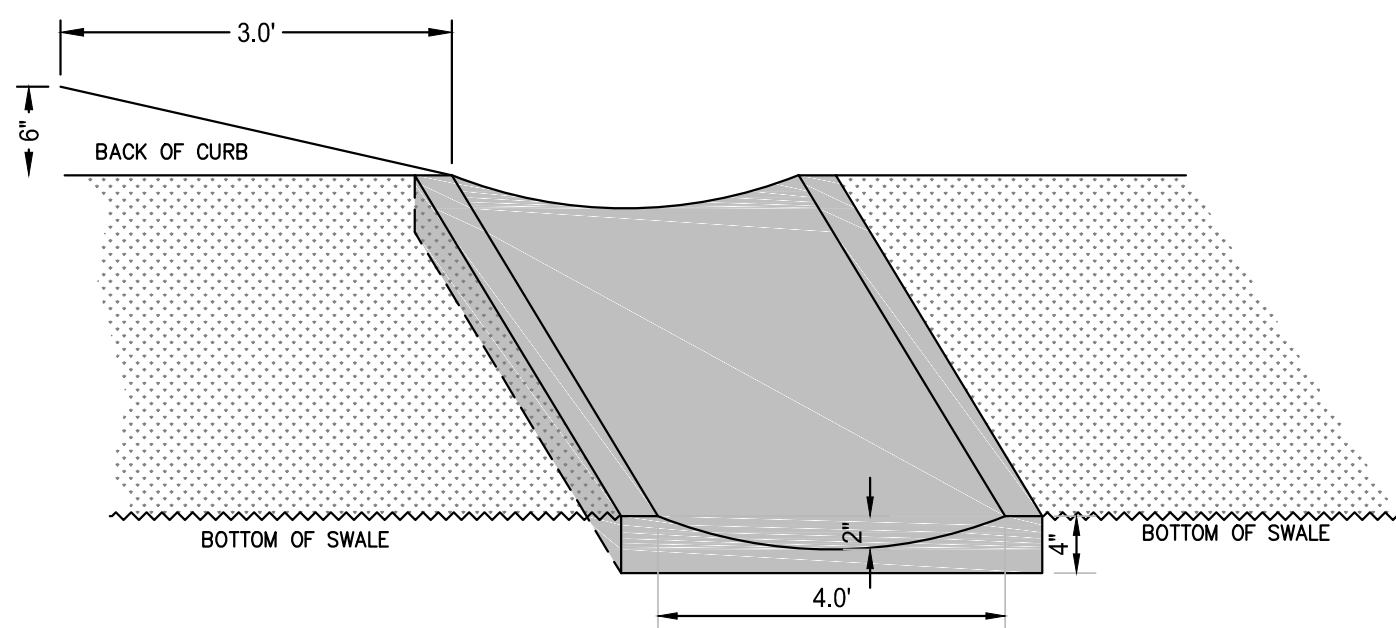


6" STANDARD CURB

2 6" STANDARD CURB (SUDAS 7010.102)
NOT TO SCALE



6 PIPE ORIFICE DETAIL



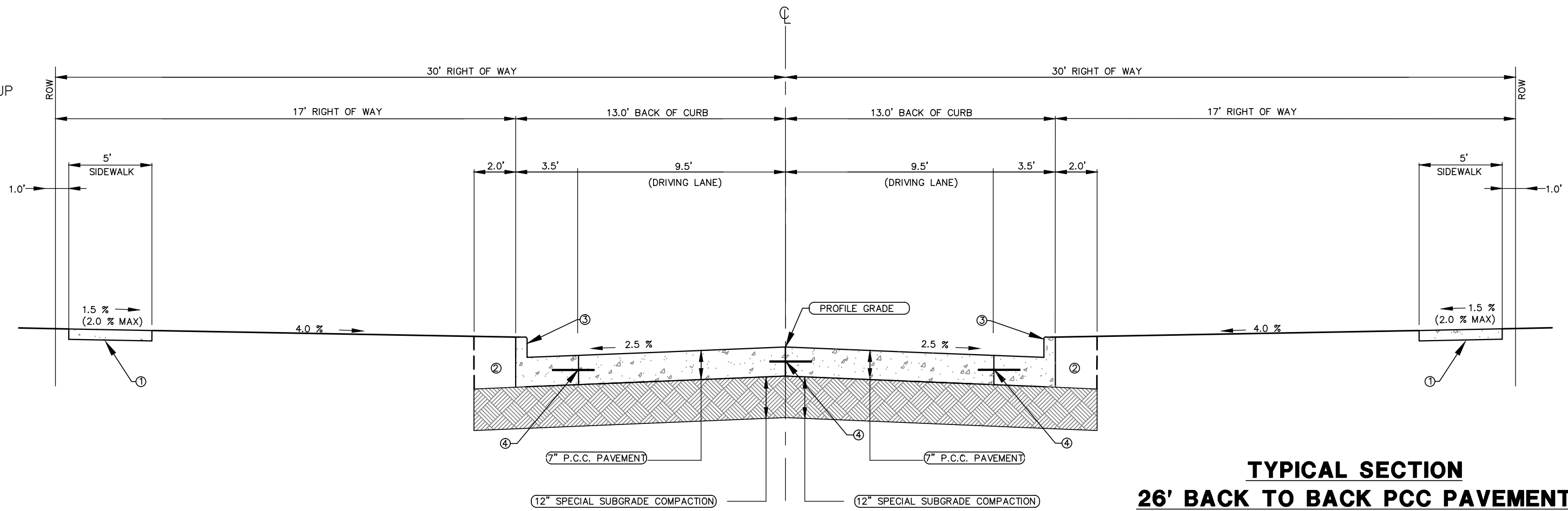
CURB CUT FLUME DETAIL

NOT TO SCALE

- 1. CONTRACTOR RESPONSIBLE FOR SIDEWALK RAMPS UP TO AND INCLUDING THE 'COMMON SQUARE'.
- 2. EXCAVATE AND BACKFILL 2.0'.
- 3. 6" STANDARD CURB
- 4. B OR B-1 JOINT

NOTE:

1. NORMAL SECTIONS SHOWN MAY BE APPROPRIATELY MODIFIED FOR AREAS SPECIFICALLY DESIGNATED BY THE ENGINEER SUCH AS INTERSECTIONS. REFER TO OTHER DRAWINGS FOR DETAILS.

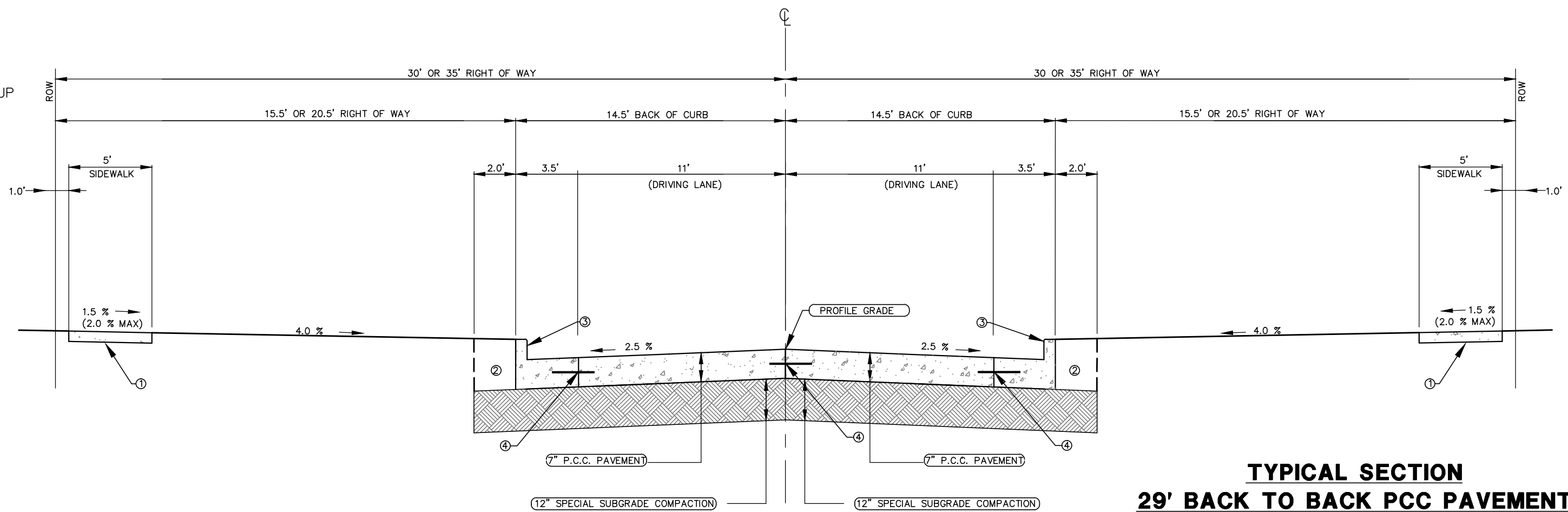


TYPICAL SECTION
26' BACK TO BACK PCC PAVEMENT
NO SCALE

- 1. CONTRACTOR RESPONSIBLE FOR SIDEWALK RAMPS UP TO AND INCLUDING THE 'COMMON SQUARE'.
- 2. EXCAVATE AND BACKFILL 2.0'.
- 3. 6" STANDARD CURB
- 4. B OR B-1 JOINT

NOTE:

1. NORMAL SECTIONS SHOWN MAY BE APPROPRIATELY MODIFIED FOR AREAS SPECIFICALLY DESIGNATED BY THE ENGINEER SUCH AS INTERSECTIONS. REFER TO OTHER DRAWINGS FOR DETAILS.

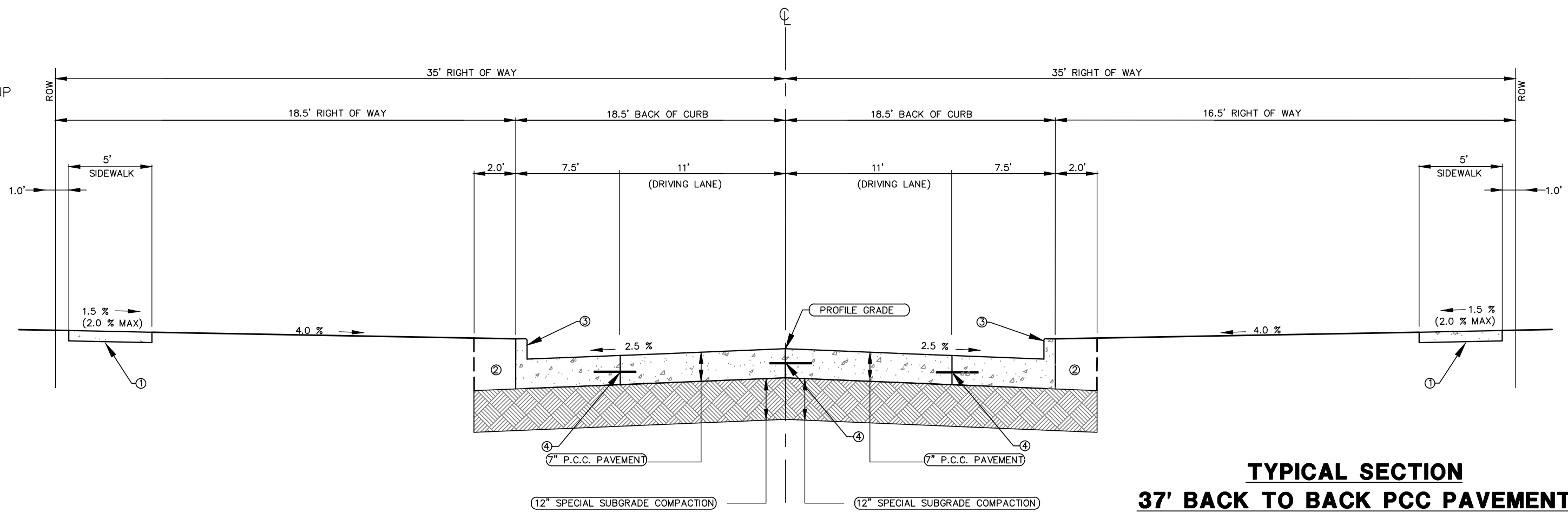


TYPICAL SECTION
29' BACK TO BACK PCC PAVEMENT
NO SCALE

- 1. CONTRACTOR RESPONSIBLE FOR SIDEWALK RAMPS UP TO AND INCLUDING THE 'COMMON SQUARE'.
- 2. EXCAVATE AND BACKFILL 2.0'.
- 3. 6" STANDARD CURB
- 4. B OR B-1 JOINT

NOTE:

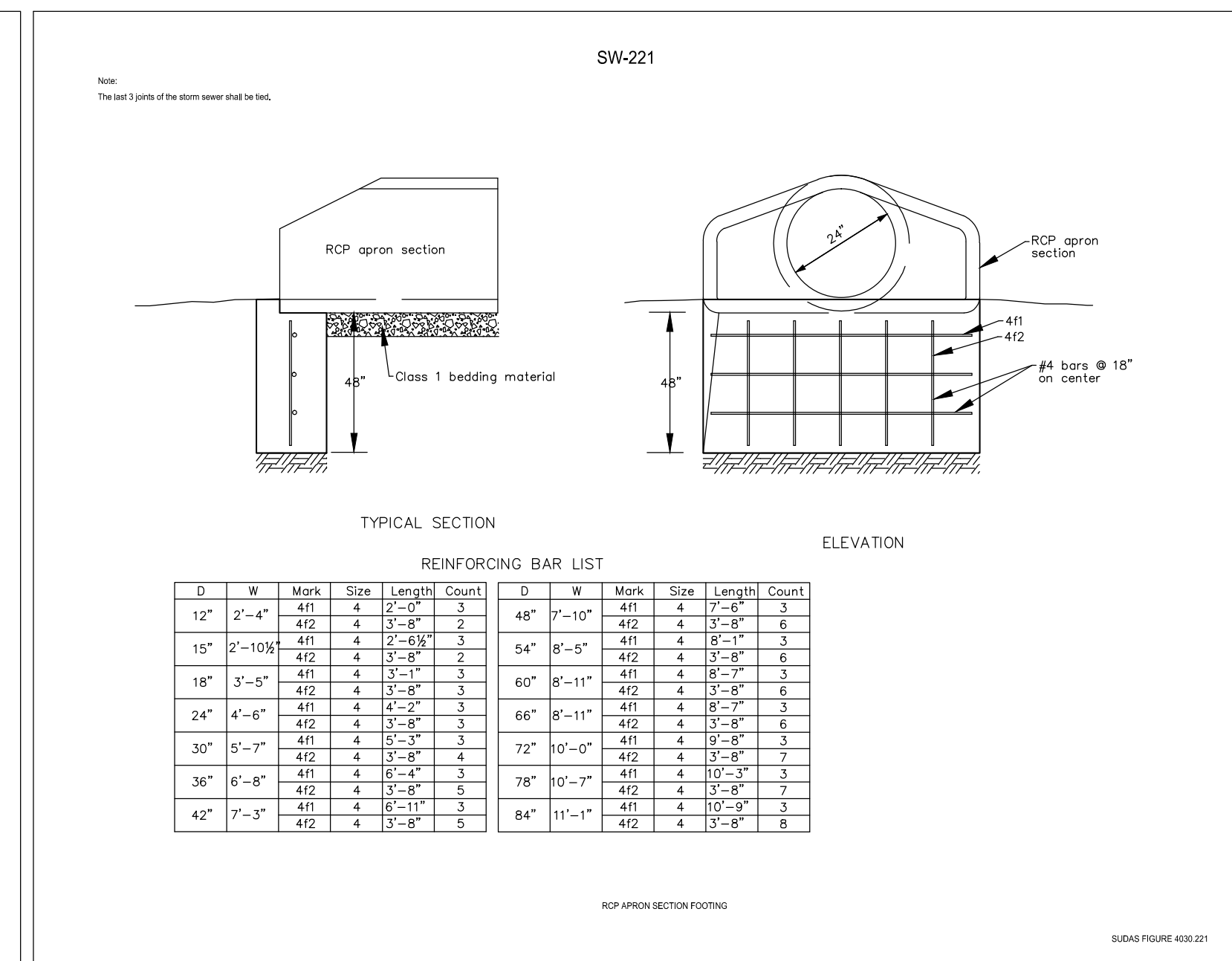
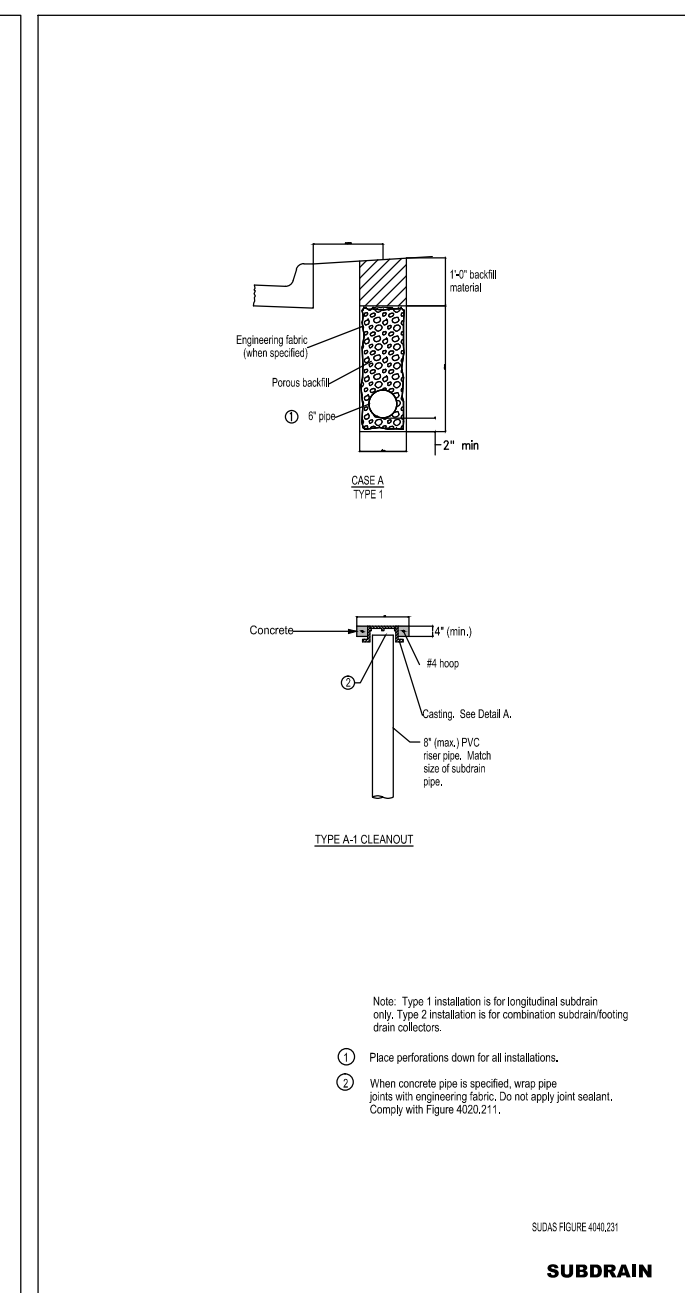
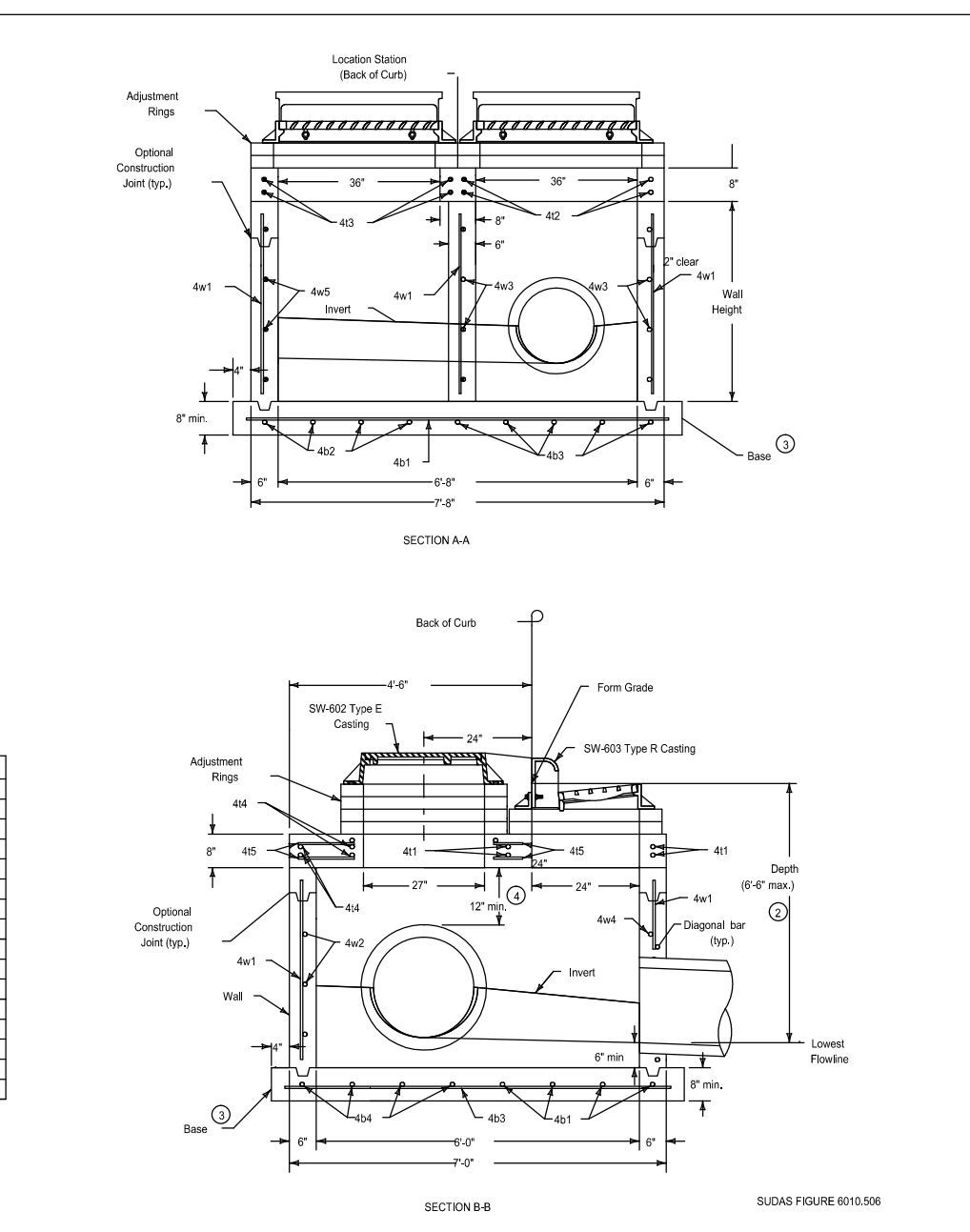
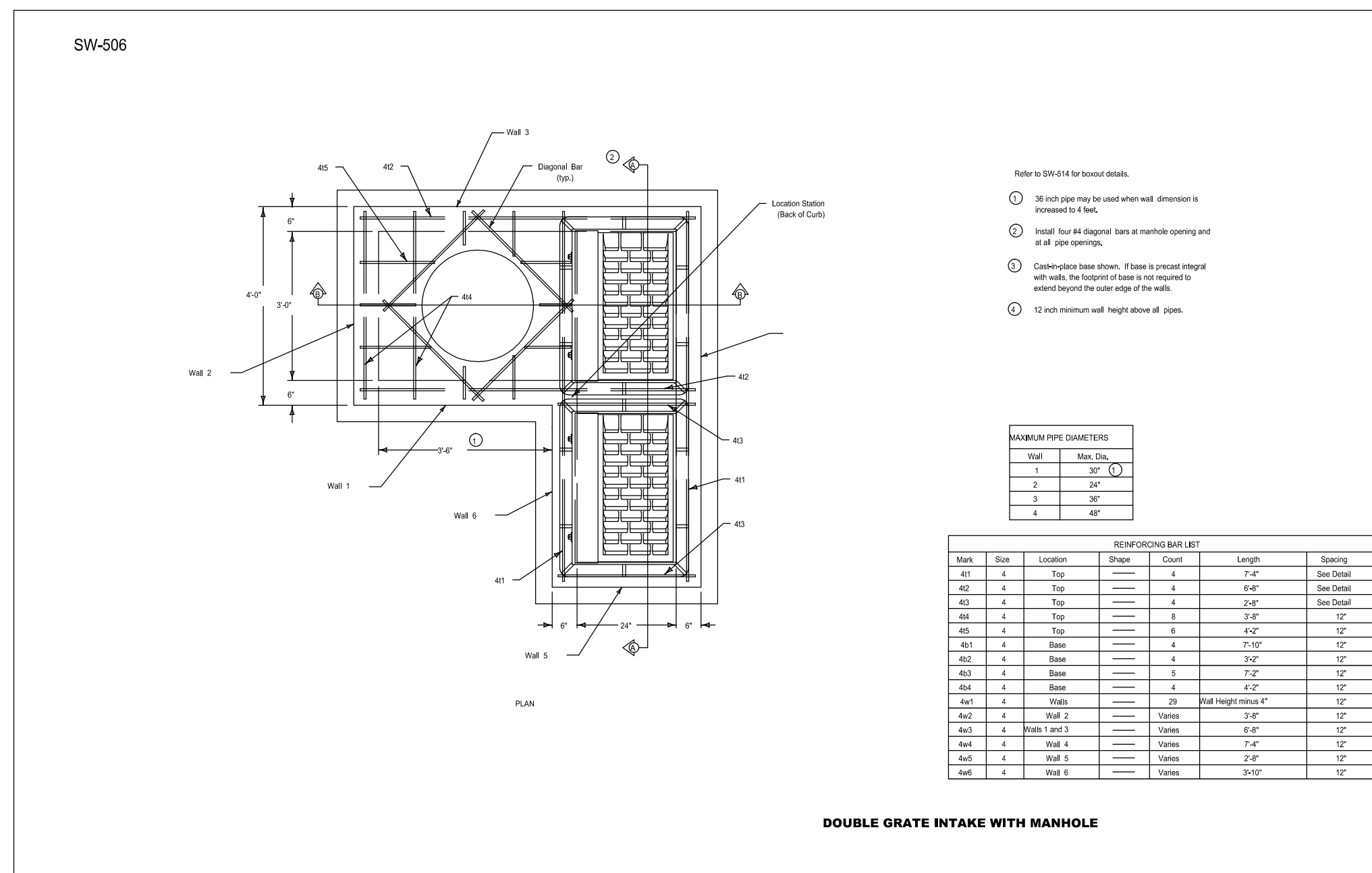
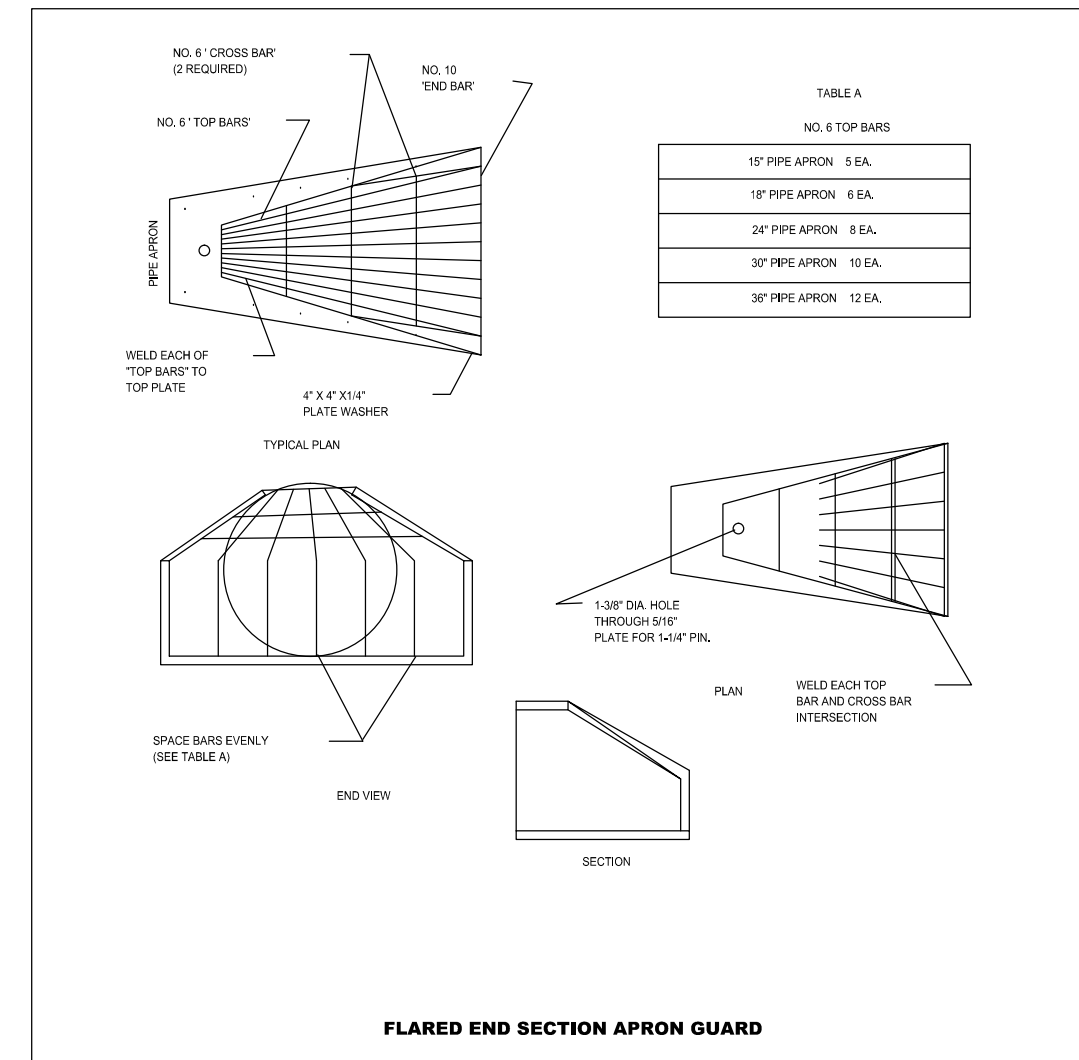
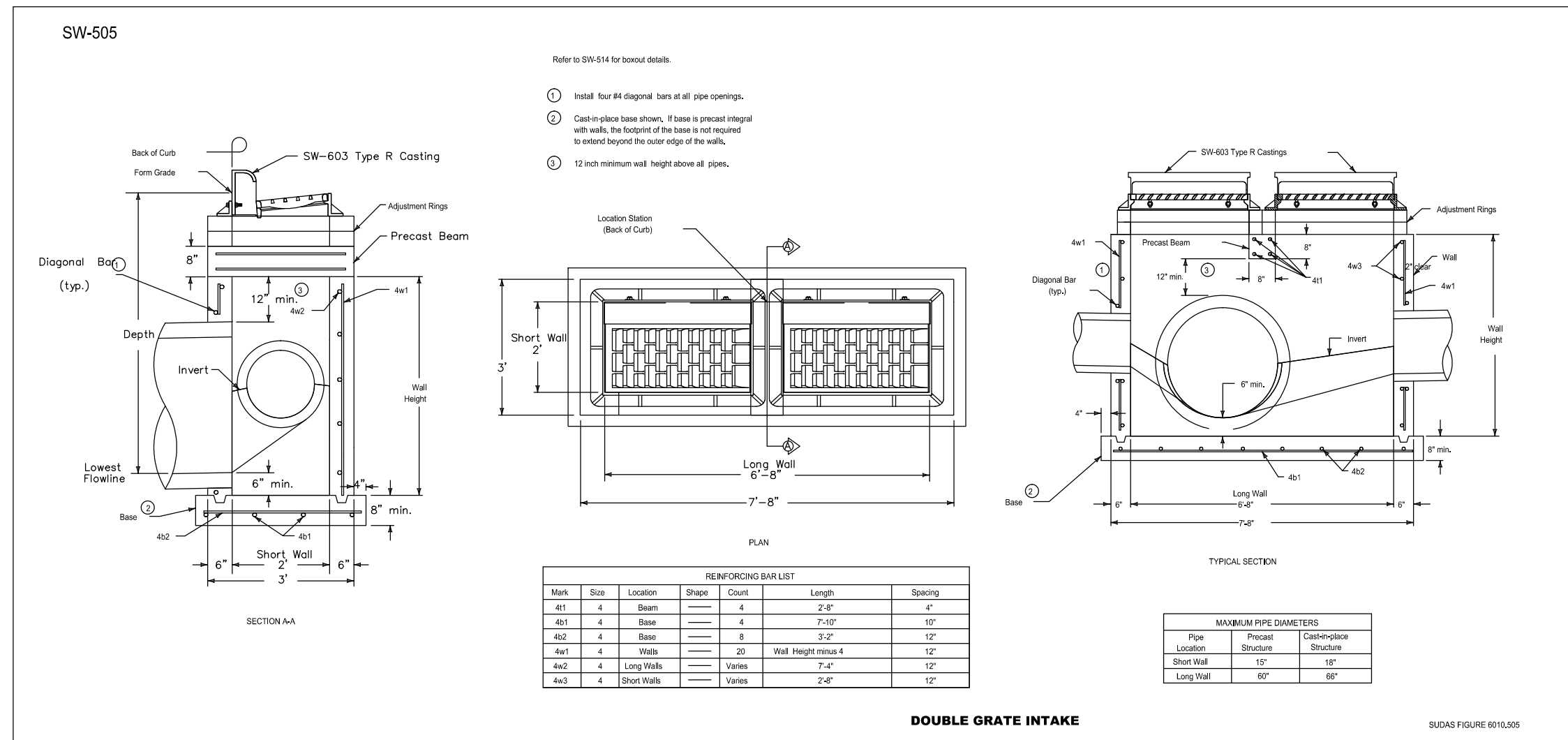
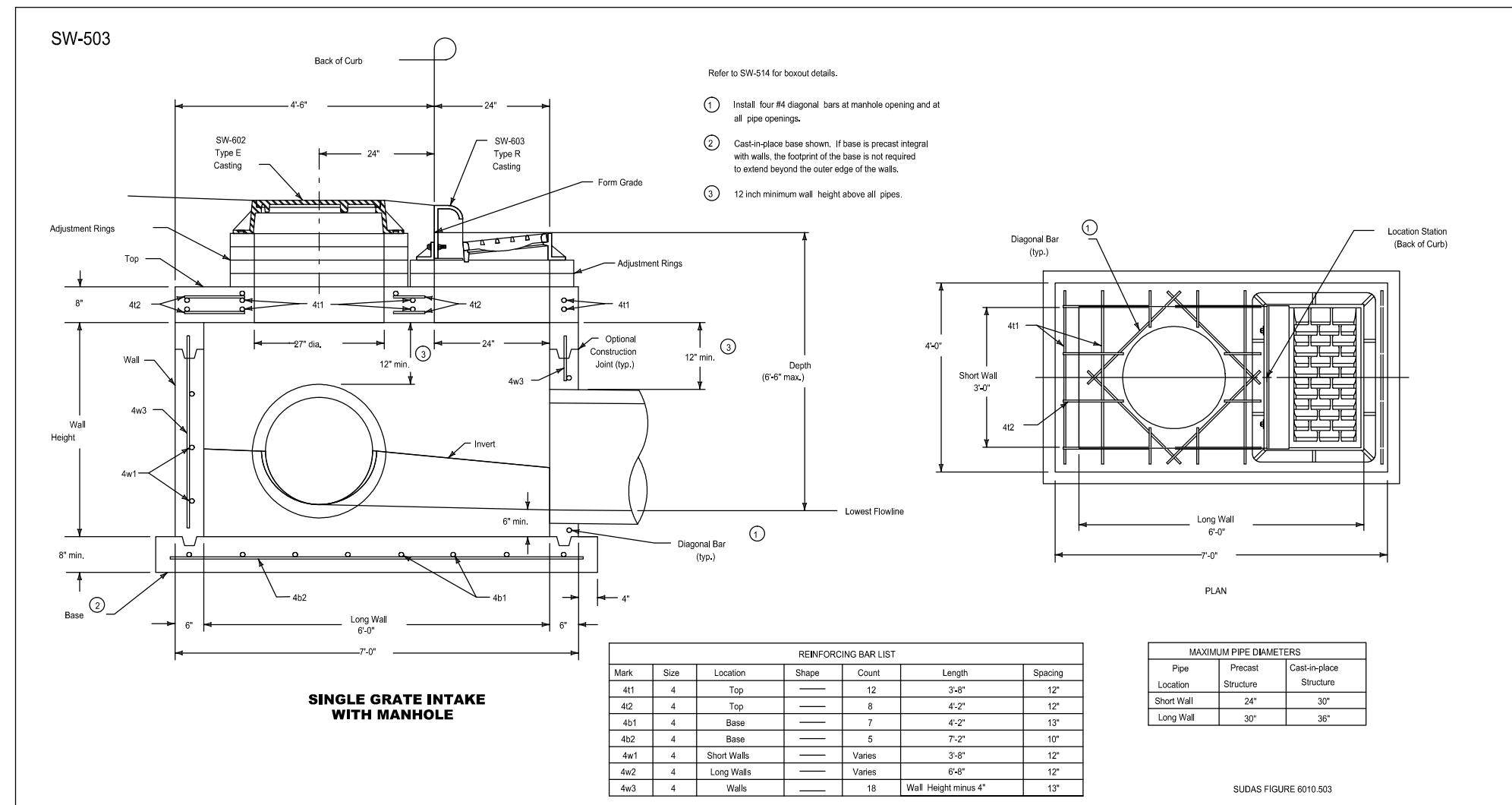
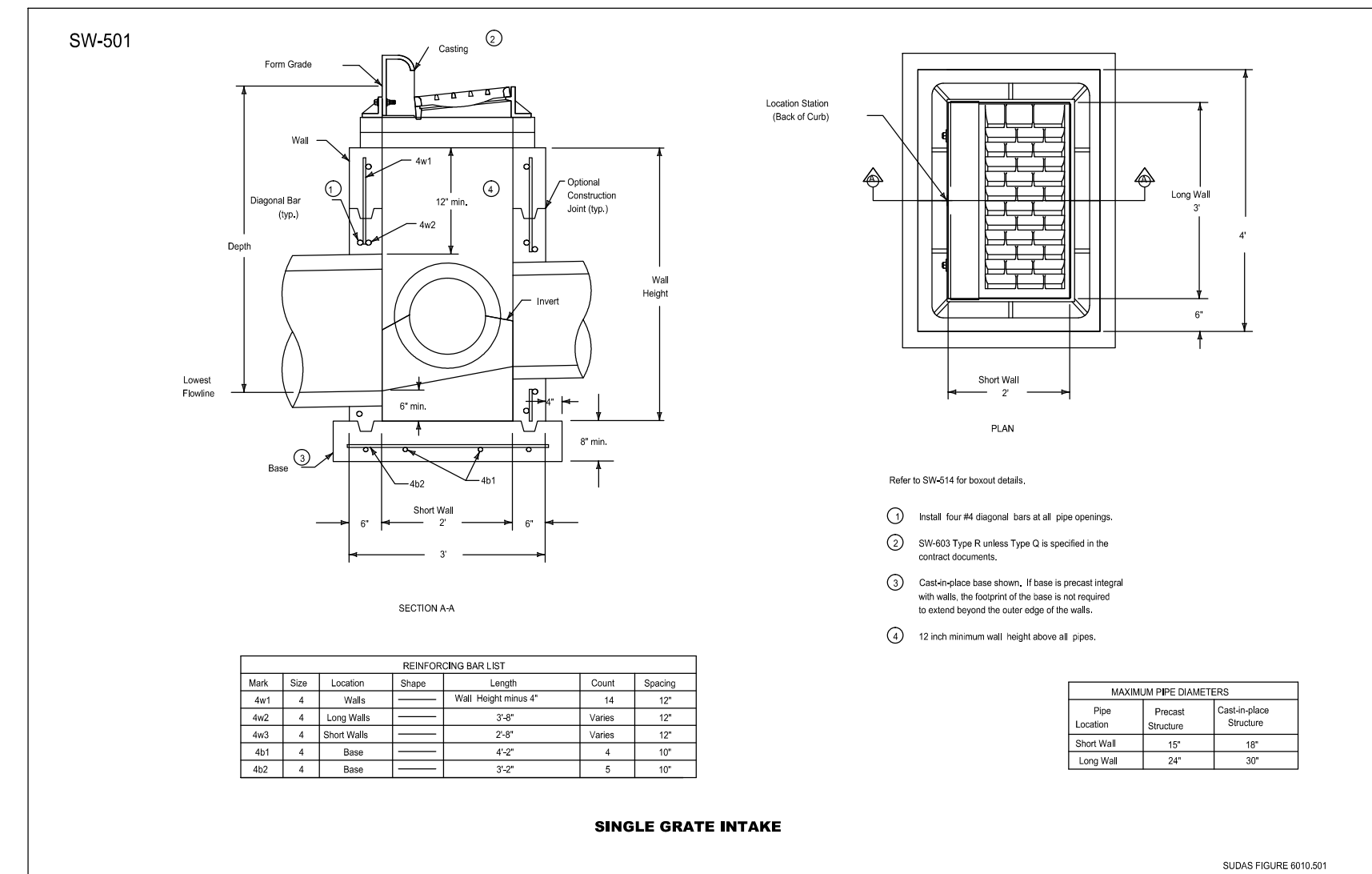
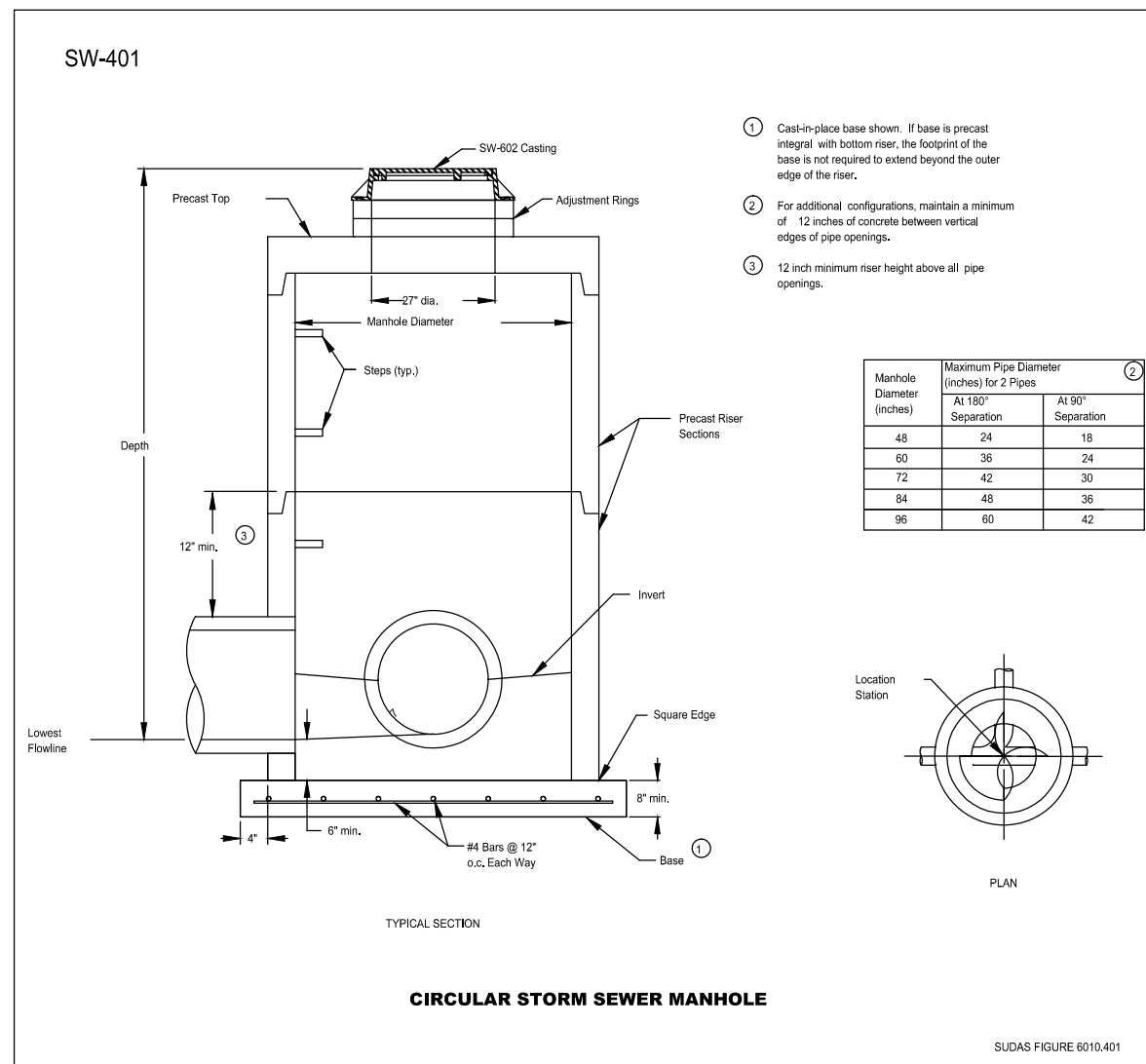
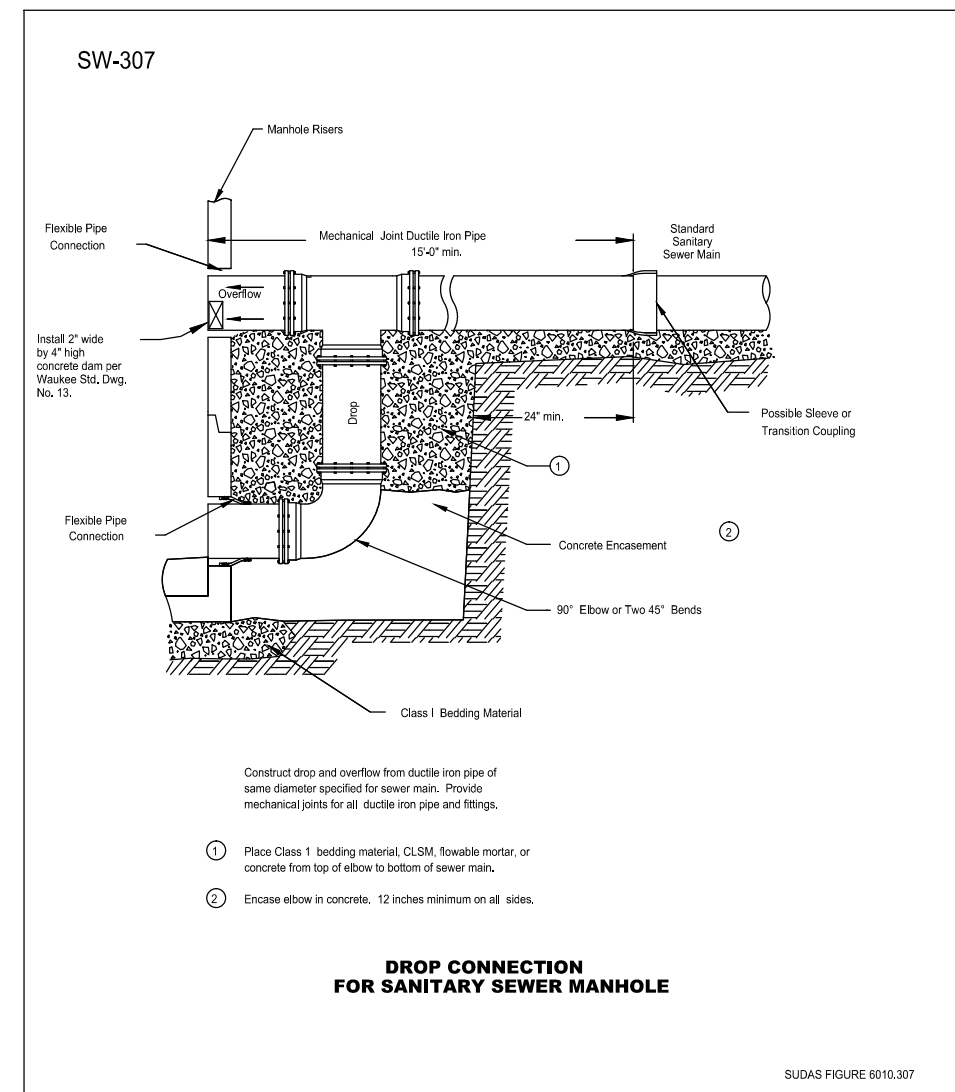
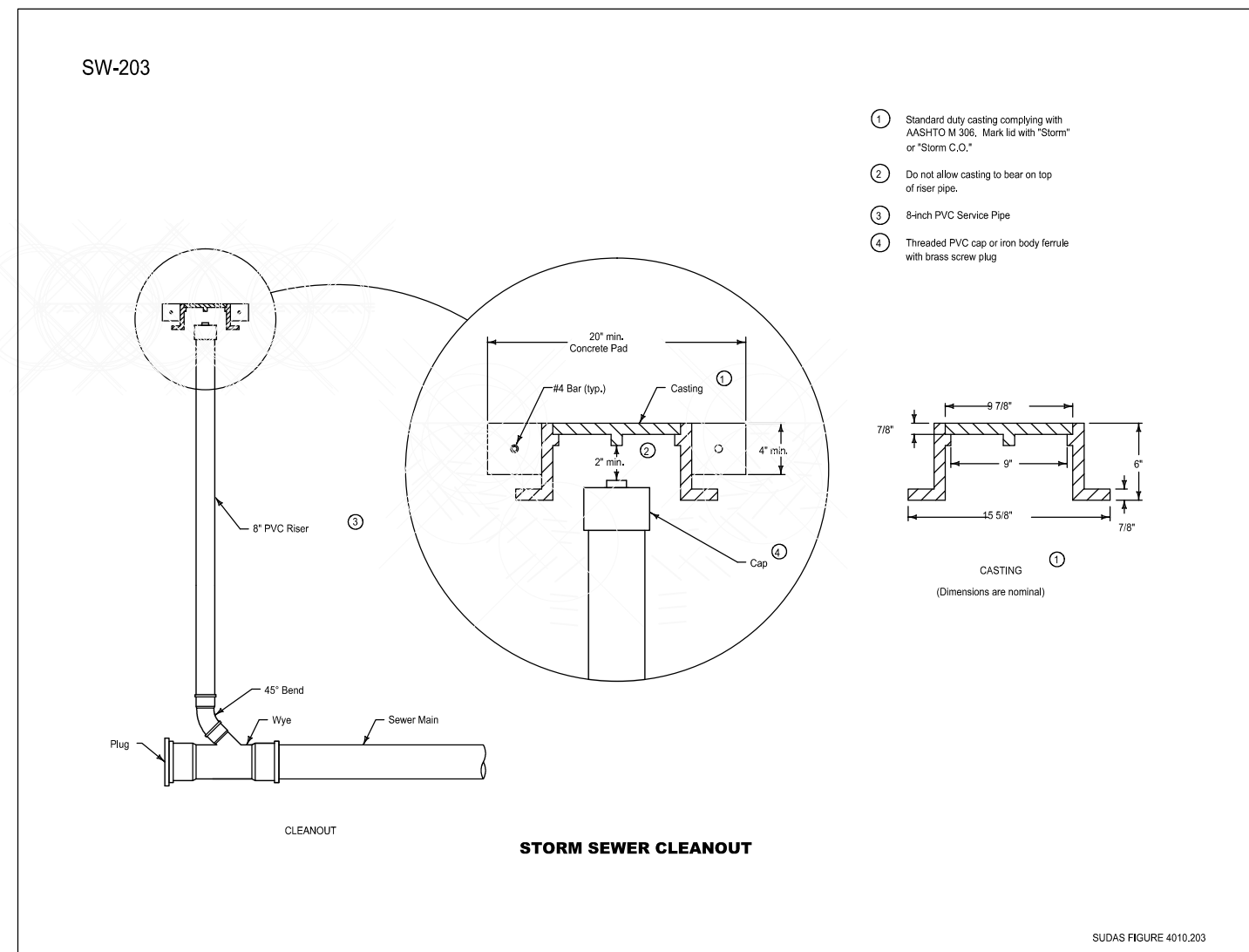
1. NORMAL SECTIONS SHOWN MAY BE APPROPRIATELY MODIFIED FOR AREAS SPECIFICALLY DESIGNATED BY THE ENGINEER SUCH AS INTERSECTIONS. REFER TO OTHER DRAWINGS FOR DETAILS.

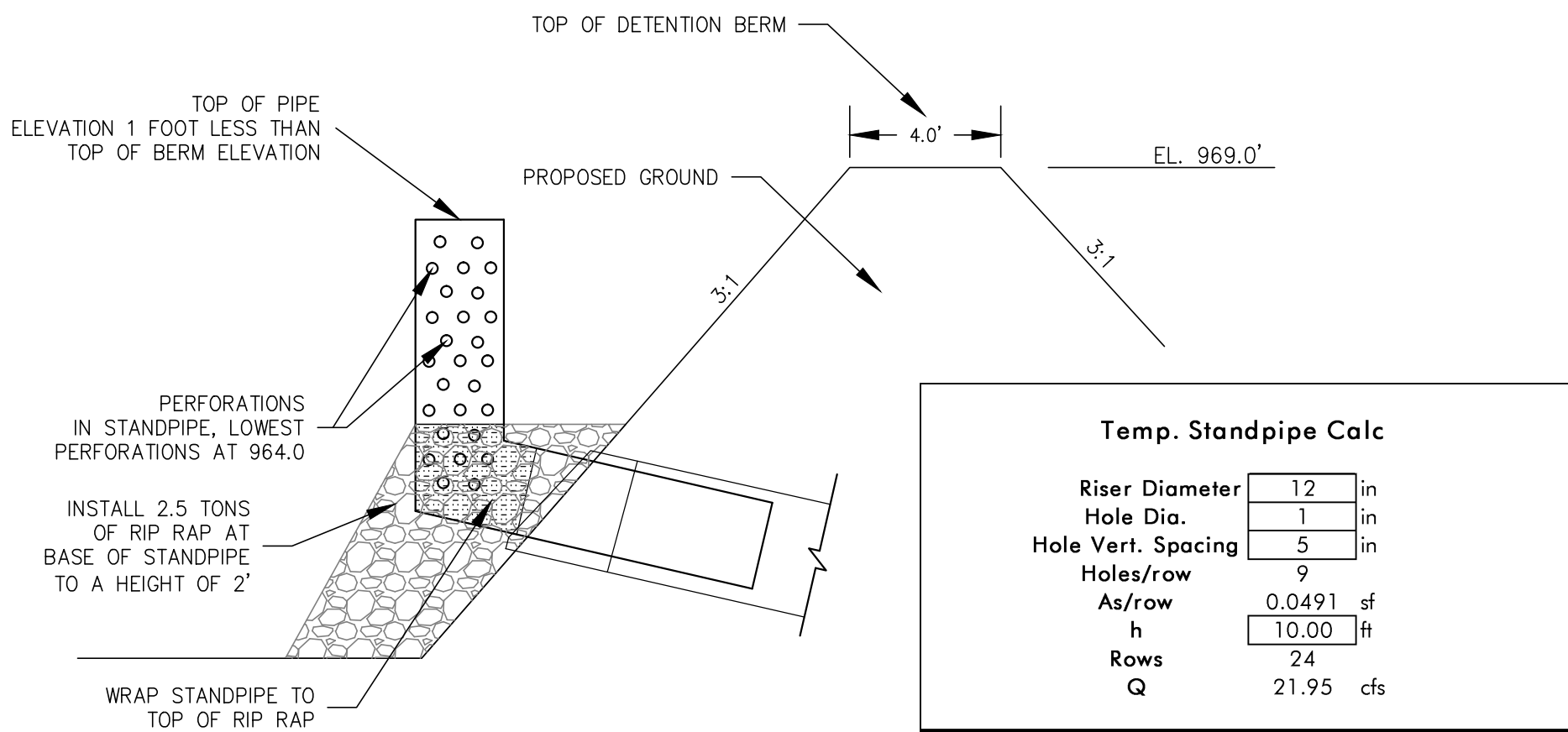


TYPICAL SECTION
37' BACK TO BACK PCC PAVEMENT
NO SCALE

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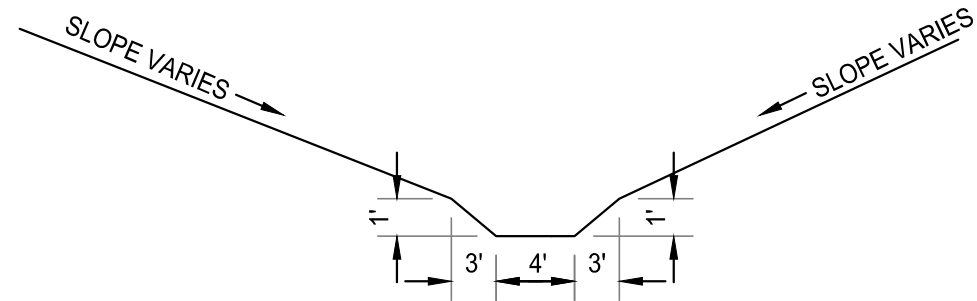




1 TEMP. DETENTION BASIN STANDPIPE

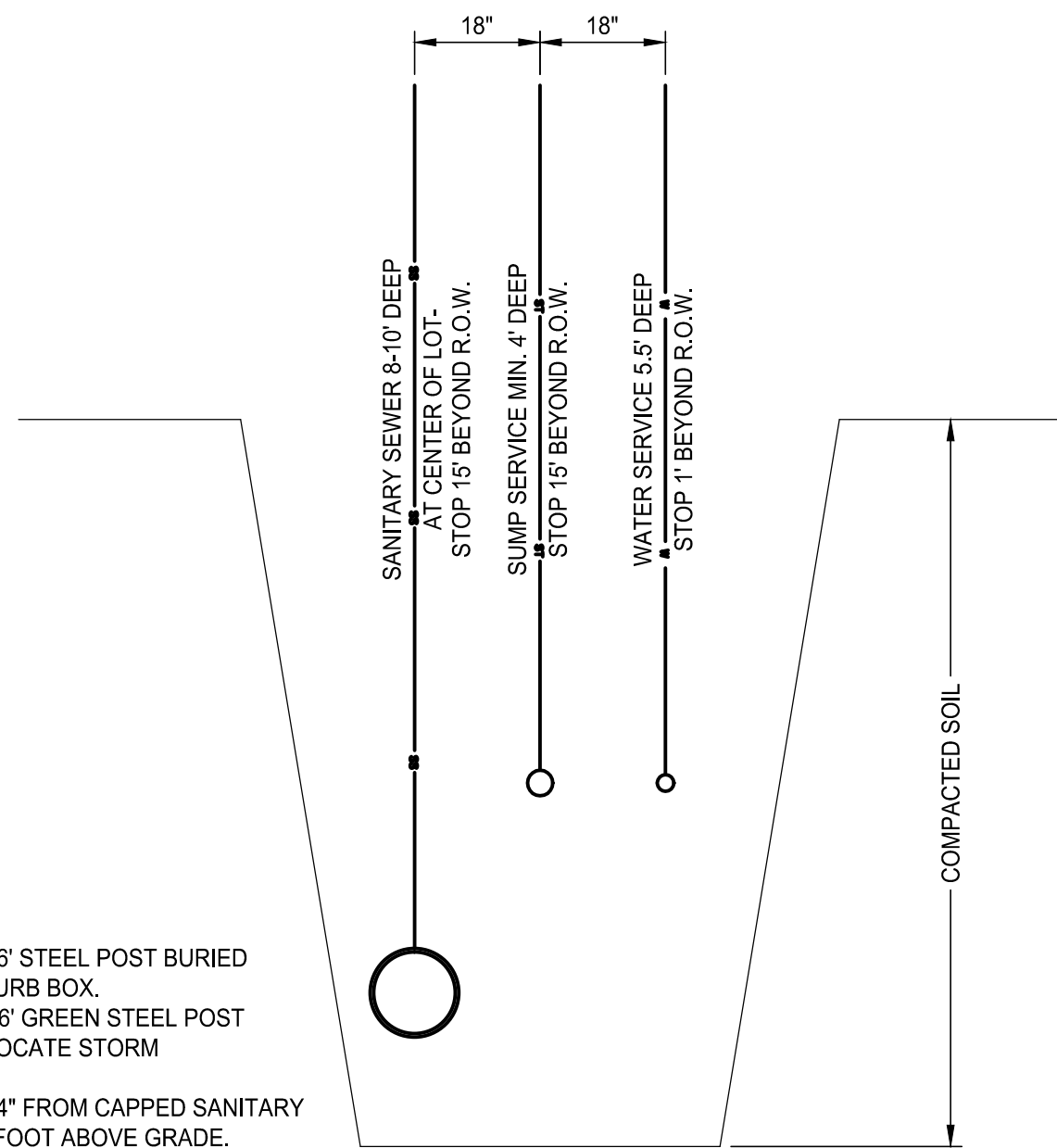
NOT TO SCALE

NOTES:
STANDPIPE TO REMAIN IN PLACE UNTIL VEGETATION IN
SURROUNDING DISTURBED AREAS HAS BEEN ESTABLISHED.



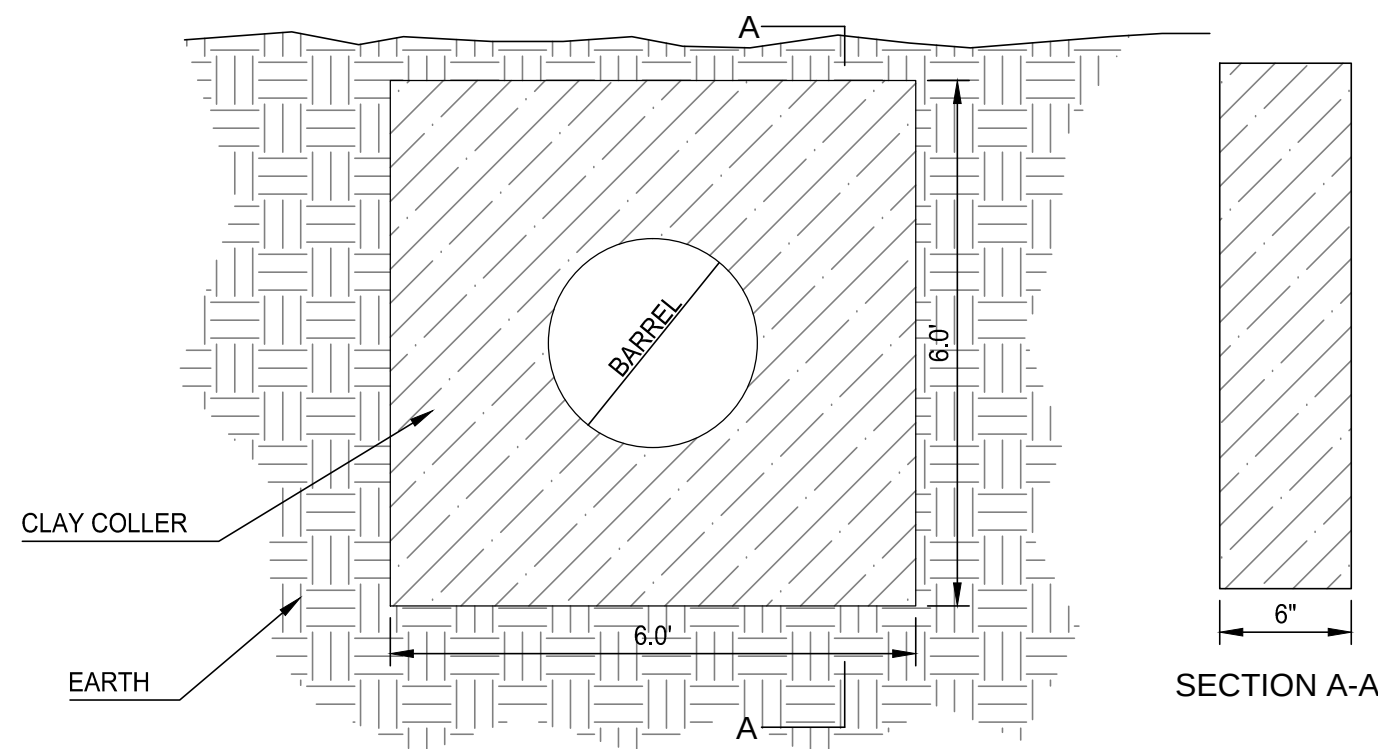
2 TYPICAL DRAINAGE SWALE

SCALE = NTS



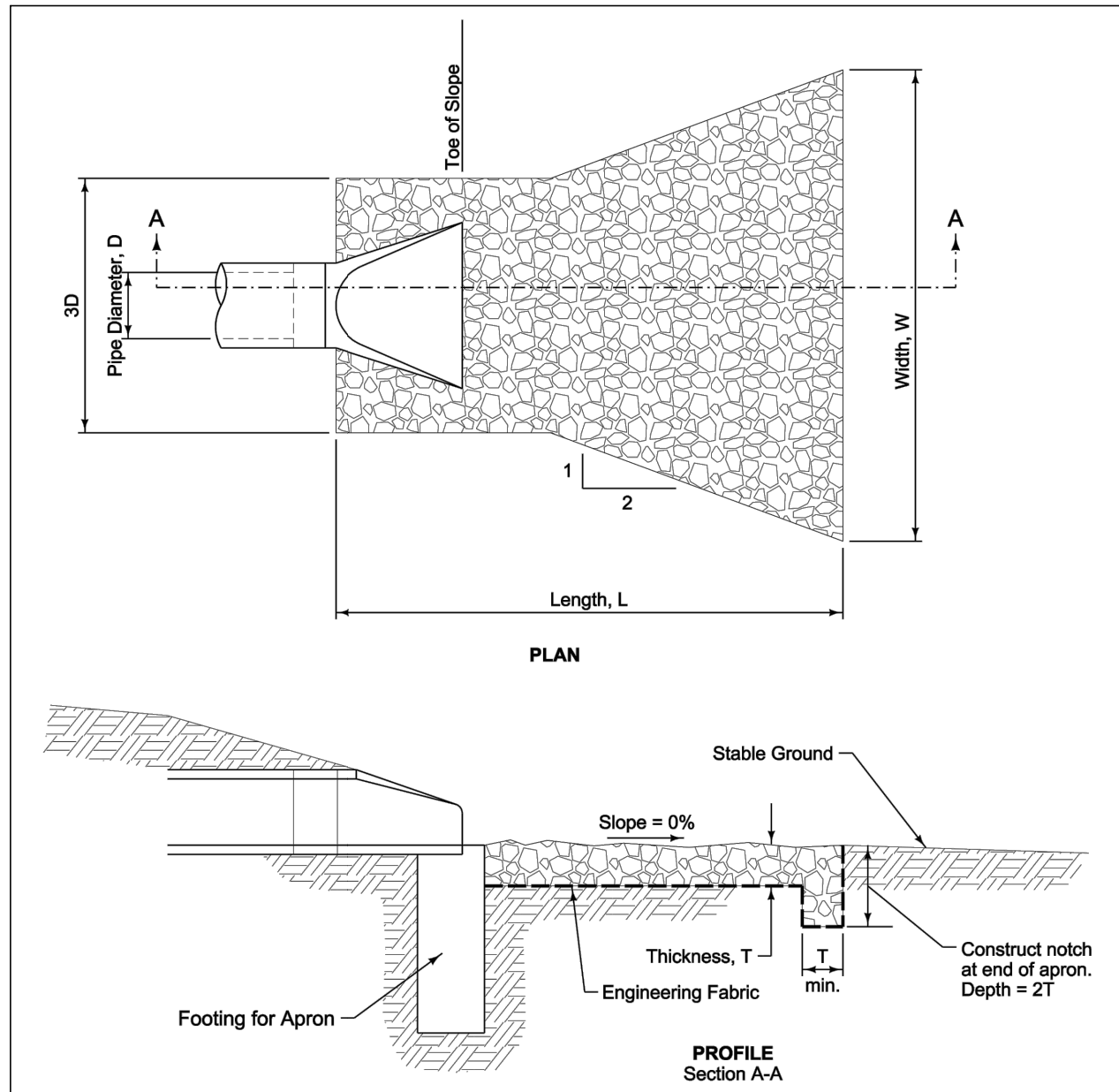
3 TYPICAL UTILITY SERVICE LAYOUT

NOT TO SCALE



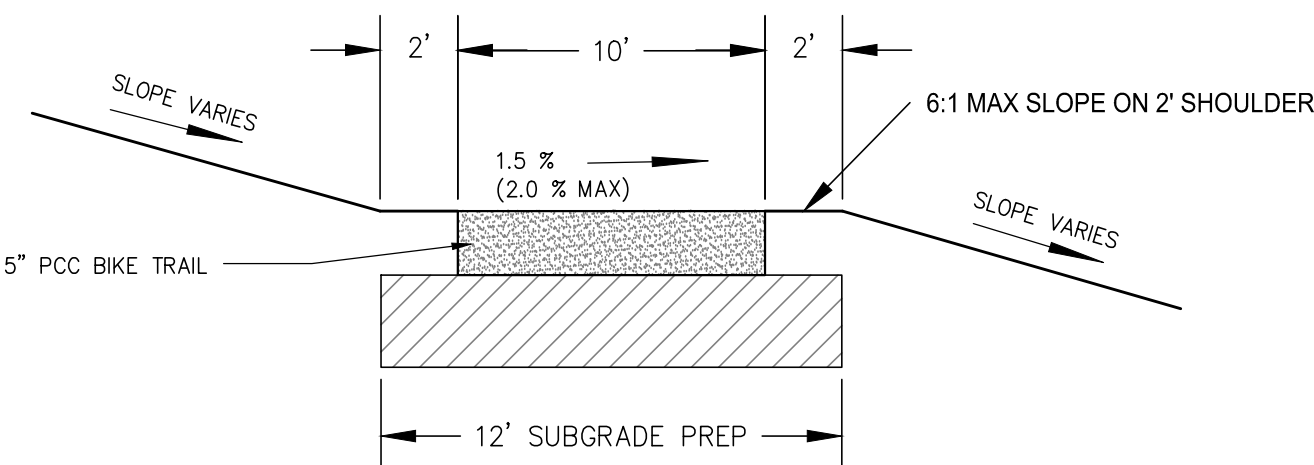
4 CLAY ANTI-SEEP PIPE COLLAR

NOT TO SCALE



5 RIP-RAP DETAIL

NOT TO SCALE



10' BIKE PATH CROSS SECTION

NO SCALE

