

CONSTRUCTION DRAWINGS FOR PUBLIC IMPROVEMENTS

THE SHOPS AT KETTLESTONE NORTH

PLAT 4 (AS-BUILTS)

WAUKEE

STORM WATER POLLUTION PREVENTION PLAN

SITE DESCRIPTION

Location: Part Sec. 4, T28N, R26W.
 Nature of Construction Activity: Commercial development.
 Area: Total site area = 71.12 acres
 Site area affected = 7.12 acres
 Runoff coefficient = 0.80 (rational method)
 Approximate slopes anticipated = 3:1, or flatter.
 Runoff from this project will flow into unimproved ditches which will flow into the Sugar Creek & Fox Creek.

Erosion and sediment controls

- Stabilization practices
 - Existing vegetation is preserved whenever possible.
 - Permanent seeding and/or sodding.
- Structural practices
 - Silt fences
 - Drainage swales
 - Rock outlet protection (riprap)
- Storm water management
 - Infiltration of runoff onsite.
 - Velocity dissipation devices at discharge locations to provide non-errosive velocity flows.
- Waste disposal
 - All building material wastes must be removed from the site.
 - Off-site vehicle tracking of sediments shall be minimized.

MAINTENANCE

Maintain effective operating conditions of all protective measures identified in this plan.

- Silt fencing is cleaned when they have lost 50% of their capacity.
- Drainage swales remain undisturbed.
- Rock outlet protection (riprap) remains intact.
- Clean spilled debris at the end of each work day & prior to a rain event.

INSPECTIONS

Qualified personnel shall inspect disturbed areas of the construction site that have not been finally stabilized at least once every seven calendar days.

- Inspect site for evidence of, or the potential of, pollutants entering the drainage system from stored materials.
- Observe erosion and sediment controls to ensure that they are operating correctly.
- Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.
- Inspect discharge locations to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.
- Any modifications to the plan as a result of an inspection shall be implemented within 7 calendar days of the inspection. If the permittee determines that making these changes at the construction site or to the plan less than 72 hours after the inspection is impracticable, the permittee shall document in the plan why it is impracticable and indicate an estimated date by which the changes will be made.
- An inspection report shall be prepared and retained as part of the prevention plan until project termination; this report will contain the following:
 - A summary of the scope of the inspection.
 - Qualifications of the personnel making the inspection.
 - Major observations relating to the implementation of the prevention plan.
 - Any actions taken.
 - Signature.

NON-STORM WATER DISCHARGES

Water main flushing

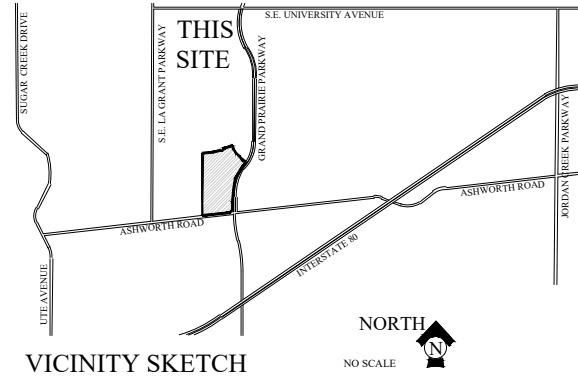
- Flushed water will be dechlorinated and discharged into the storm sewer system where, when discharged, it will undergo erosion and sediment controls consisting of:
 - Rock outlet protection (riprap)
 - Silt fencing
 - Existing vegetation

CONTRACTORS

The grading contractor shall have the responsibility of implementing the measures contained in this plan.

EROSION & POLLUTION CONTROL NOTES

1. THE SUBCONTRACTOR RESPONSIBLE FOR EROSION AND POLLUTION CONTROL SHALL CARRY OUT THE MEASURES DETAILED ON THIS PLAN.
2. CONTROLS MUST BE IN GOOD OPERATING CONDITION UNTIL THE CONSTRUCTION ACTIVITY IS COMPLETE AND FINAL STABILIZATION HAS BEEN REACHED.
3. THE SUBCONTRACTOR SHALL INSPECT THE SITE AT MINIMUM ONCE EVERY 7 DAYS. ALL DISTURBED AREAS OF THE SITE, AREAS OF MATERIAL STORAGE, LOCATIONS WHERE VEHICLES ENTER/EXIT THE SITE. ALL OF THE EROSION AND SEDIMENT CONTROLS THAT ARE IDENTIFIED AS PART OF THIS PLAN AND ACCESSIBLE DISCHARGE LOCATIONS MUST BE INSPECTED.
4. THE SUBCONTRACTOR IS TO TAKE NECESSARY ACTIONS TO CORRECT DEFICIENCIES FOUND DURING INSPECTIONS AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN 7 DAYS AFTER THE INSPECTION IN WHICH THE DEFICIENCY WAS FOUND.
5. THE SUBCONTRACTOR SHALL KEEP LOG AND PREPARE WEEKLY REPORTS DETAILING THE INSPECTIONS AND MEASURES TAKEN TO CORRECT ANY AND ALL DEFICIENCIES FOUND IN THE EROSION AND POLLUTION CONTROL MEASURES. THE REPORTS SHALL CONFORM TO THE STANDARDS SET BY THE IOWA DEPARTMENT OF NATURAL RESOURCES. COPIES OF THESE REPORTS SHALL BE FORWARDED TO THE DEVELOPER, THE CITY OF WAUKEE STORM WATER COORDINATOR, AND TO COOPER CRAWFORD & ASSOCIATES, L.L.C.
6. DURING CONSTRUCTION, IF IT BECOMES EVIDENT THAT A DISTURBED AREA WILL NOT BE DISTURBED FOR 14 DAYS, IT SHALL BE STABILIZED IMMEDIATELY.
7. PERMANENT SEEDING TO BE DONE IMMEDIATELY AFTER FINAL GRADING.
8. ANY FAILED AREAS OF SEEDING/MULCHING SHALL BE REAPPLIED.
9. ANY SOIL OR SPILL WASHED, TRACKED OR DROPPED ONTO ADJOINING RIGHT-OF-WAYS AND PROPERTY WILL BE CLEANED UP BY THE OWNER/CONTRACTOR BY THE END OF THE DAY AND PRIOR TO A RAIN EVENT.
10. SILT FENCING TO BE INSPECTED ONCE A WEEK. LOOK FOR UNDERCUTTING AND FAILURES IN FABRIC. REPLACE/REPAIR AS NECESSARY.
11. ADDITIONAL SILT FENCING (TO THAT SHOWN ON THIS PLAN) MAY BE REQUIRED IN AREAS WHERE EROSION IS EVIDENT.
12. SILT FENCING TO BE CLEANED UP WHEN THEY HAVE LOST 50% OF THEIR CAPACITY.
13. ALL INTAKES SHALL HAVE SILT FENCING PRIOR TO PAVING AND INLET FILTERS AFTER PAVING. BELOW GRADE INLET PROTECTION REQUIRED FOR ALL PUBLIC STREETS. THESE FILTERS REMAIN IN PLACE UNTIL THE SITE HAS A PERMANENT PERENNIAL GROUND COVER.
14. ALL INTAKES SHALL BE COVERED DURING CONSTRUCTION TO PREVENT SEDIMENTATION DEPOSITS WITHIN THE STORM SEWER.
15. IN THE EVENT THAT SEEDING/MULCHING DOES NOT OCCUR PRIOR TO WINTER, ALL DISTURBED AREAS WILL BE MULCHED.
16. TEMPORARY SEDIMENT BASINS SHALL REMAIN IN PLACE UNTIL THE ENTIRE SITE HAS SUBSTANTIAL STABILIZATION OF ALL DISTURBED AREAS TO MEET IDNR REQUIREMENTS FOR NOD.
17. ALL PERIMETER EROSION CONTROLS/SILT FENCE SHALL REMAIN IN PLACE, AND BE MAINTAINED, UNTIL UPSTREAM AREAS ARE STABILIZED.
19. SEDIMENT SHOULD BE REMOVED FROM THE TEMPORARY SEDIMENT BASIN WHEN SEDIMENT ACCUMULATES TO ONE HALF OF THE WET STORAGE VOLUME.
20. TRASH SHOULD BE REMOVED FROM THE BASIN, AND THE RISER PIPE SHOULD BE CLEARED OF DEBRIS AS NEEDED PER WEEKLY INSPECTIONS.
21. TEMPORARY SEEDING AND MULCHING WILL CONSIST OF TYPE 4 SEED MIXTURE PER SUDAS TABLE 9010.09. PERMANENT SEEDING WILL COMPLY WITH TYPE 1 SEED MIXTURE (SUDAS TABLE 9010.06).



GRADING NOTES

1. ALL DIMENSIONS ARE TO BACK OF CURB, OUTSIDE OF BUILDING WALL, AND TO PROPERTY LINES.
2. THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING FACILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL PUBLIC AND/OR PRIVATE UTILITIES SERVING THE AREA TO DETERMINE THE PRESENT EXTENT AND EXACT LOCATION OF THEIR FACILITIES BEFORE BEGINNING WORK.
3. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK. THE CONTRACTOR SHALL NOTIFY THE PROPER UTILITY IMMEDIATELY UPON BREAKING OR DAMAGE TO ANY UTILITY LINE OR APPURTENANCE, OR THE INTERRUPTION OF THEIR SERVICE. HE SHALL NOTIFY THE PROPER UTILITY INVOLVED. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.
4. STRIP TOPSOIL FROM ALL AREAS WHICH ARE TO BE FILLED OR CUT.
5. PRESERVE EXISTING TOPSOIL WHERE FEASIBLE.
6. ALL AREAS TO RECEIVE FILL TO BE BENCHED.
7. PREPARE BOTTOM OF BENCH FOR FILL BY DISING TO A DEPTH OF 6-INCHES.
8. ALL SITE GRADING FILL SHALL BE COMPACTED TO A DENSITY THAT IS NOT LESS THAN 95% STANDARD PROCTOR.
9. THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE BETWEEN 0-4%
10. MAINTAIN ALL CUT AND FILL AREAS FOR SURFACE DRAINAGE AT ALL TIMES.
11. FINAL GRADES WITHIN PAVED AREAS SHALL BE WITHIN 0.1" OF PLAN GRADE.
12. A MINIMUM OF ONE FOOT OF COMPACTED COHESIVE SUBGRADE SHALL BE PROVIDED BENEATH ALL PAVEMENTS.
13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF WAUKEE STANDARD SPECIFICATIONS AND THE 2018 STATEWIDE URBAN DESIGN AND SPECIFICATIONS.
14. EXISTING TREES WILL BE SAVED TO THE EXTENT POSSIBLE TO ACCOMMODATE GRADING, UTILITY AND STREET CONSTRUCTION.
15. ALL WORK WITHIN PUBLIC R.O.W., CONNECTION TO PUBLIC IMPROVEMENTS, AND ALL WORK ASSOCIATED WITH PUBLIC IMPROVEMENTS SHALL COMPLY WITH WAUKEE STANDARD SPECIFICATIONS INCLUDING ALL APPLICABLE PERMITS AND THE 2018 STATEWIDE URBAN DESIGN AND SPECIFICATIONS.

WATER MAIN CROSSING ALTERNATIVES

STORM SEWER ALTERNATIVES:

IF THE STORM SEWER CROSSES ABOVE A WATER MAIN OR CROSSES LESS THAN 18 INCHES BELOW A WATER MAIN...

...THE STORM SEWER CAN BE CONSTRUCTED OF REINFORCED CONCRETE PIPE (RCP) WITH A FLEXIBLE O-RING GASKET JOINT RATED AT 13 PSI OR GREATER. THIS PROTECTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE NORMAL DISTANCE FROM THE WATER TO THE SEWER IS AT LEAST TEN FEET.

SANITARY SEWER ALTERNATIVE:

THE REQUIREMENTS WILL REMAIN THE SAME AS IN CHAPTER 12 OF IOWA WASTE WATER FACILITIES DESIGN STANDARD.

PAVING THICKNESS

S.E. ESKER RIDGE DRIVE - 8-INCH NON REINFORCED W/ CD BASKETS

S.E. PARKVIEW CROSSING DRIVE - 8-INCH NON REINFORCED W/ CD BASKETS

SHEET INDEX

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5	SANITARY
7-8	WATER
9-11	STORM
12-14	PAVING
15-18	DETAILS

LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	PLAT BOUNDARY
---	---	SANITARY SEWER & SIZE
---	---	STORM SEWER & SIZE
---	---	WATER MAIN & SIZE
---	---	SANITARY SERVICE 4"
---	---	STORM SERVICE 1 1/2"
---	---	WATER SERVICE 1"
○	●	MANHOLE
□	□	STORM INTAKE
△	△	FIRE HYDRANT
▽	▽	VALVE
▽	▽	FLARED END SECTION

NOTES

1. ONE WEEK PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY:
 - A. WAUKEE ENGINEERING DEPARTMENT
 - B. ARAC, L.L.C.
 - C. COOPER CRAWFORD & ASSOCIATES, L.L.C.
 - D. IOWA ONE-CALL
2. THE CONTRACTOR SHALL CONTACT ONE CALL TO 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 OWNER.
3. ALL TRENCH BACKFILL SHALL BE 95% STANDARD PROCTOR DENSITY. THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE BETWEEN 0-4%.
4. THE CONTRACTOR SHALL REPAIR & RECONNECT ALL FIELD TILE INTERCEPTED DURING CONSTRUCTION AND AS BUILT LOCATIONS TO BE PROVIDED TO THE CITY OF WAUKEE ENGINEERING DEPARTMENT.
5. STRIP TOP SOIL FROM ALL AREAS WHICH ARE TO BE FILLED OR CUT.
6. MAINTAIN ALL CUT AND FILL AREAS FOR SURFACE DRAINAGE AT ALL TIMES.
7. FINAL GRADES WITHIN THE STREET RIGHT-OF-WAY AND ALL DRAINAGE AREAS SHALL BE WITHIN .1" OF PLAN GRADE.
8. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL SILT FENCES.
9. ALL AREAS WHICH ARE DISTURBED SHALL BE SEEDED WITH SUDAS EROSION CONTROL MIX, FERTILIZED, AND MULCHED.
10. INSTALL SILT FENCES AS SHOWN.
11. ADDITIONAL SILT FENCES OR OTHER SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED IF EROSION EXISTS.
12. THE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING THE CITY OF WAUKEE WITH THE UTILITY LOCATION.
13. THE CONTRACTOR SHALL MARK UTILITY SERVICES ENDS WITH A 6" STEEL POST.
14. MARK END OF SERVICE LOCATIONS W/ STEEL POST PAINTED:
 - SANITARY - RED
 - STORM - GREEN
 - WATER - BLUE
15. THE CONTRACTOR SHALL VERIFY THE UTILITY LOCATES.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING THE AS-BUILT LOCATION OF ALL SERVICES. PROVIDE A COPY TO THE CITY OF WAUKEE.
17. ALL SANITARY SEWER SERVICES AND 8-INCH STUB-OUTS SHALL BE CAPPED.
18. PROVIDE SANITARY SEWER SERVICE RISER AS REQUIRED BY THE CITY OF WAUKEE.
19. PLUMBING CONTRACTOR SHALL VERIFY SERVICE STUB-OUT ELEVATIONS ON LOTS PRIOR TO HOUSE CONSTRUCTION TO ENSURE BASEMENT FLOOR ELEVATIONS WILL PROVIDE ADEQUATE FALL IN SERVICE PIPE (2% MINIMUM SLOPE).
20. ALL FIRE HYDRANTS SHALL BE 3' FROM WATER MAIN EXCEPT WHERE CONFLICTS WITH SIDEWALKS OCCUR.
21. CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION THAT FIRE HYDRANTS WILL HAVE 12-INCH CLEARANCE FROM THE HYDRANT TO THE SIDEWALK.
22. HYDRANTS, MANHOLE COVERS, AND VALVE BOXES SHALL BE SET TO CONFORM TO FINISHED PAVEMENT ELEVATIONS.
23. WATER MAIN TO HAVE 5.5' BURY TYPICAL EXCEPT AT CRITICAL CROSSINGS.
24. ALL INTAKES SHALL HAVE TYPE 'V' CASTINGS.
25. ALL ELEVATIONS ARE PROPOSED FINISHED GRADE AT TOP OF CURB UNLESS OTHERWISE NOTED.
26. ALL REINFORCED STEEL SHALL BE EPOXY COATED.
27. SUBGRADE TO BE 12-INCH THICK EARTH COMPACTED TO 95% MAX. DENSITY WITH MOISTURE CONTENT BETWEEN 0-4%
28. USE I.D.O.T. C-4 MIX ON ALL STREETS.
29. DURING SUBGRADE PREPARATION, IN FILL AREAS, GRADE SHALL BE PROOF-ROLLED PRIOR TO PLACEMENT OF ONE FOOT SUB-GRADE AND COMPACTION. NOTIFY SOILS ENGINEER TO PROVIDE ON-SITE INSPECTION OF PROCESS.
30. STORM SEWER AND SANITARY SEWER SHALL BE CLEANED AND TELEVIEWED PRIOR TO PAVING. THE CITY OF WAUKEE ENGINEERING DEPARTMENT SHALL WITNESS ALL CLEANING AND TELEVIEWING AND COPIES OF THE REPORT AND VIDEOS SHOULD BE PROVIDED TO THE CITY OF WAUKEE ENGINEERING DEPARTMENT. ALL SANITARY SEWER MANHOLES ARE TO BE VACUUM TESTED.
31. ALL DISTURBED AREAS WITHIN EXISTING STREET RIGHT-OF-WAY OR ON PRIVATE PROPERTY SHOULD BE SODDED. ALL SODDED AREAS ARE TO BE WATER UNTIL ESTABLISHED.
32. THE CITY OF WAUKEE SHALL BE NOTIFIED 48 HOURS PRIOR TO WATERMAIN SHUTDOWN.
33. ALL DISTURBED PROPERTY PINS AND SECTION CORNERS TO BE RESET BY A LICENSED LAND SURVEYOR.
34. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A LIST OF CONSTRUCTION MATERIALS TO THE WAUKEE PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF CONSTRUCTION.
35. IT IS THE ENGINEER'S RESPONSIBILITY TO INCLUDE MINIMUM OPENING ELEVATIONS ON THE AS-BUILT DRAWINGS FOR THE PLAT.
36. CONSTRUCTION STAKING TO BE DONE BY A LICENSED ENGINEER OR LAND SURVEYOR.
37. ANY CHANGES PROPOSED TO THE PLAN SET DURING CONSTRUCTION TO RECEIVE WRITTEN APPROVAL FROM THE CITY OF WAUKEE ENGINEERING DEPARTMENT. THE CONTRACTOR IS RESPONSIBLE FOR ANY CHANGES MADE DURING CONSTRUCTION THAT HAVE NOT RECEIVED WRITTEN PERMISSION FROM THE CITY OF WAUKEE ENGINEERING DEPARTMENT.
38. THE CITY OF WAUKEE ENGINEERING DEPARTMENT TO BE NOTIFIED BY THE CONTRACTOR 48 HOURS PRIOR TO ANY WEEKEND OR HOLIDAY WORK BEING SCHEDULED.
39. CONNECTIONS TO EXISTING SANITARY MANHOLES SHALL BE CORE DRILLED AND USE A LINK SEAL.
40. FIRE HYDRANTS ARE TO HAVE 4-INCH STORZ FITTINGS, THIS INCLUDES ALL EXISTING.
41. ALL UTILITIES WILL BE IN COMPLIANCE WITH SUDAS & IDNR REQUIREMENTS.
42. ALL CONSTRUCTION SHALL COMPLY WITH THE WAUKEE STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS AND SUDAS 2018.
43. ALL UTILITIES SHALL BE TESTED TO CITY OF WAUKEE STANDARDS AND THE CITY OF WAUKEE ENGINEERING DEPARTMENT SHALL WITNESS ALL TESTING.
44. A PRECONSTRUCTION MEETING SHALL BE SCHEDULED WITH THE CITY OF WAUKEE ENGINEERING DEPARTMENT AT LEAST 1 WEEK PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
45. EXECUTE CAUTION WHEN WORKING ADJACENT TO 15' PUE ALONG GRAND PRAIRIE PARKWAY - TRENCH IS FILLED WITH MAN SAND AND WALL SHOULD BE PROTECTED FROM DAMAGE OR COLLAPSE.
46. AT STORM SEWER & WATER MAIN CROSSINGS LOCATE ONE FULL LENGTH OF SEWER PIPE OF WATER MAIN MATERIAL OR REINFORCED CONCRETE PIPE (RCP) WITH FLEXIBLE O-RING GASKET JOINTS SO BOTH JOINTS ARE AS FAR AS POSSIBLE FROM THE WATER MAIN.
47. SCOUR STOP WILL BE INSTALLED BY A CERTIFIED INSTALLER.
48. SIDEWALKS & RAMPS ARE TO BE DESIGNED & INSTALLED PER THE LATEST PROWAG & ADA REQUIREMENTS - STAKING WILL BE DONE BY ENGINEER.
49. IN THE EVENT OF SAW CUTTING OR CONCRETE GRINDING STORM SEWERS AND DRAINAGE WAYS WILL NEED TO BE PROTECTED FROM SLURRY.

OWNER
 ARAC, LLC
 16350 BOSTON PKWY
 CLIVE, IA 50325
 PH. 515-988-5878

DEVELOPER
 ARAC, LLC
 16350 BOSTON PKWY
 CLIVE, IA 50325
 PH. 515-988-5878

QUANTITIES

SANITARY
 276 L.F. 8-INCH SANITARY (PVC TRUSS PIPE)

WATER

3,738	L.F. 8-INCH C900 WATERMAIN
15	EA. HYD., TEE, & 6-INCH VALVE
8	EA. 8-INCH VALVE
1	EA. 8"X8"X8" CROSS
1	EA. 16"X16"X8" TAPPING TEE
1	EA. BLOW OFF HYDRANT

STORM SEWER

123	L.F. 65X40-INCH RCP CLASS III ARCH PIPE
306	L.F. 24-INCH RCP CLASS III
199	L.F. 21-INCH RCP CLASS III
1,327	L.F. 18-INCH RCP CLASS III
1,016	L.F. 15-INCH RCP CLASS III
5,355	LF TYPE CASE A TYPE 1 PAVEMENT SUBDRAIN
6	EA. TYPE 'SW-401' MANHOLE
9	EA. TYPE 'SW-505' INTAKE
9	EA. TYPE 'SW-506' INTAKE
2	EA. 65X40-INCH F.E.S. (ARCH PIPE)
1	EA. 15-INCH F.E.S.
65	TON CLASS 'E' RIP-RAP

PAVING

13,489	S.Y. 8-INCH NR P.C.C. (W/ CD BASKETS)
14,398	S.Y. SUBGRADE PREP
2,540	LF. 10' WIDE (6-INCH P.C.C. TRAIL)
6	EA. COMMON SQUARE
10	EA. LANE ARPINGS (DURABLE PAINT)
1000	LF. LANE STRIPING/DURABLE PAINT

OTHER

CERTIFICATION

E-MAIL: BCOOPER@COOPER-CRAWFORD.COM

	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.
	BRADLEY R. COOPER, IOWA LICENSE NO. 12980 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2019 PAGES OR SHEETS COVERED BY THIS SEAL: Sheets 1-18

COOPER CRAWFORD & ASSOCIATES, L.L.C. CIVIL ENGINEERS

475 S. 50th STREET, SUITE 800, WEST DES MOINES, IOWA 50265
 PHONE: (515) 224-1344 FAX: (515) 224-1345

DATE: 4-20-2016
 REVISIONS: 9-06-2017
 3-12-2018
 4-20-2018

CC
1921

AS-BUILTS:

COVER SHEET
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

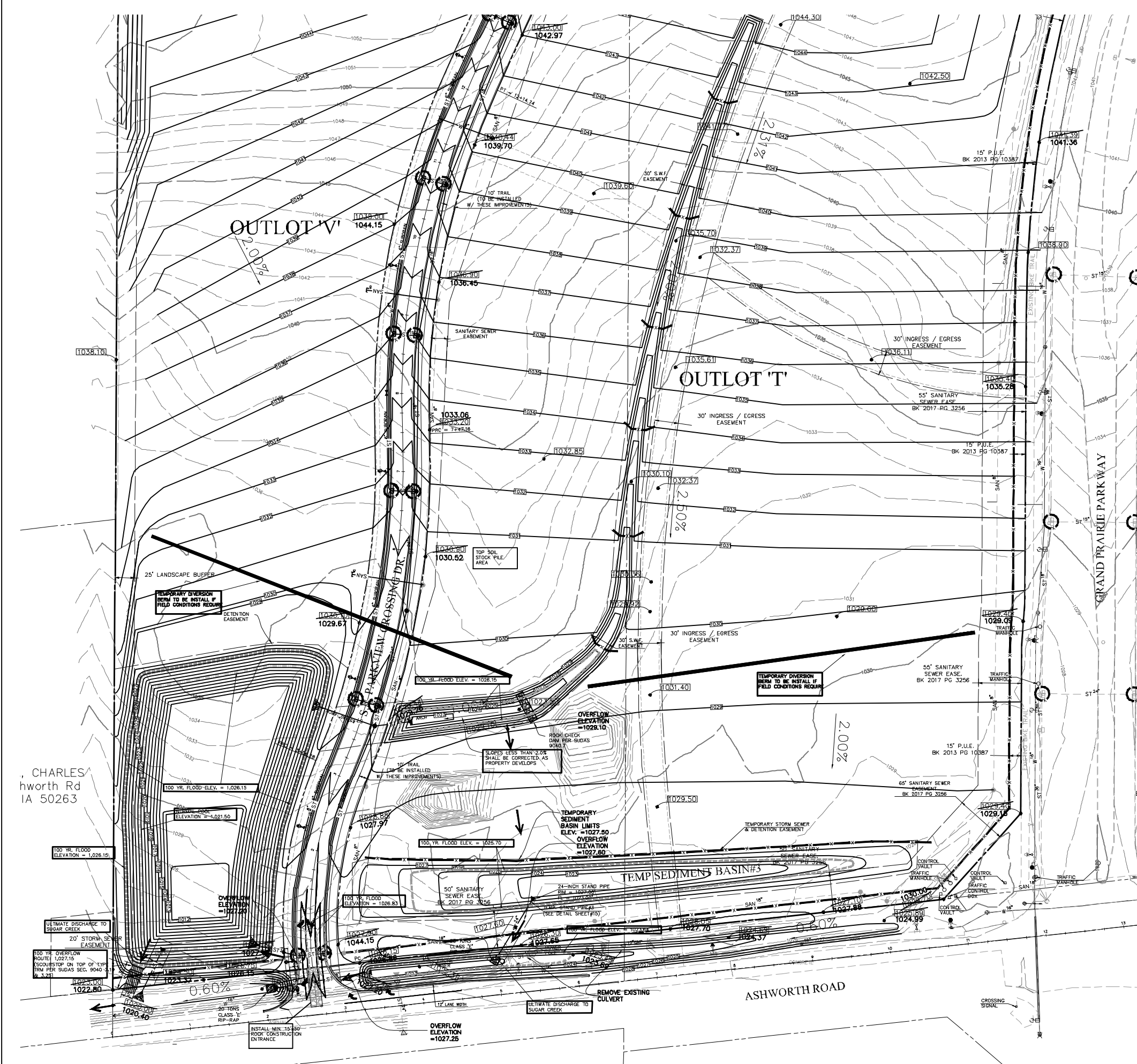
SHEET
 1 OF 18

APPROVED FOR CONSTRUCTION BY CITY OF WAUKEE: 05-21-2018

GRADING QUANTITIES

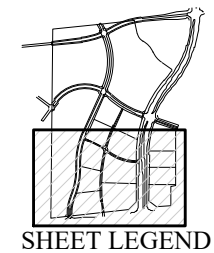
5,900 L.F. SILT FENCE OR APPROVED FILTER SOCK
 28 EA. INLET DROP PROTECTION
 3,132,231 S.F. TEMPORARY STABILIZATION (TYPE 4 SEED MIX PER SUDAS TABLE 9010.09)

NOTE SOME CONTROLS SHOWN ARE REFERENCED FROM PLAT 1 FOR CONTINUATION WITH PLAT 4 CONSTRUCTION



LEGEND

---	EXISTING/PROPOSED	---	PLAT BOUNDARY
---	SAN 15"	---	SANITARY SEWER & SIZE
---	ST 15"	---	STORM SEWER & SIZE
---	W 15"	---	WATER MAIN & SIZE
---		---	SANITARY SERVICE 4"
---		---	STORM SERVICE 1 1/2"
---		---	WATER SERVICE 1"
○	MANHOLE	○	STORM INTAKE
●	FIRE HYDRANT	▽	VALVE
▲	FLARED END SECTION		



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 PHONE: (515) 224-1344 FAX: (515) 224-1345

DATE: 4-20-2016 JOB NUMBER
 REVISIONS: 9-06-2017 3-12-2018 4-20-2018
 APPROVED: X-XX-XX INITIALS: AS-BUILT:

SCALE: 1"=60'

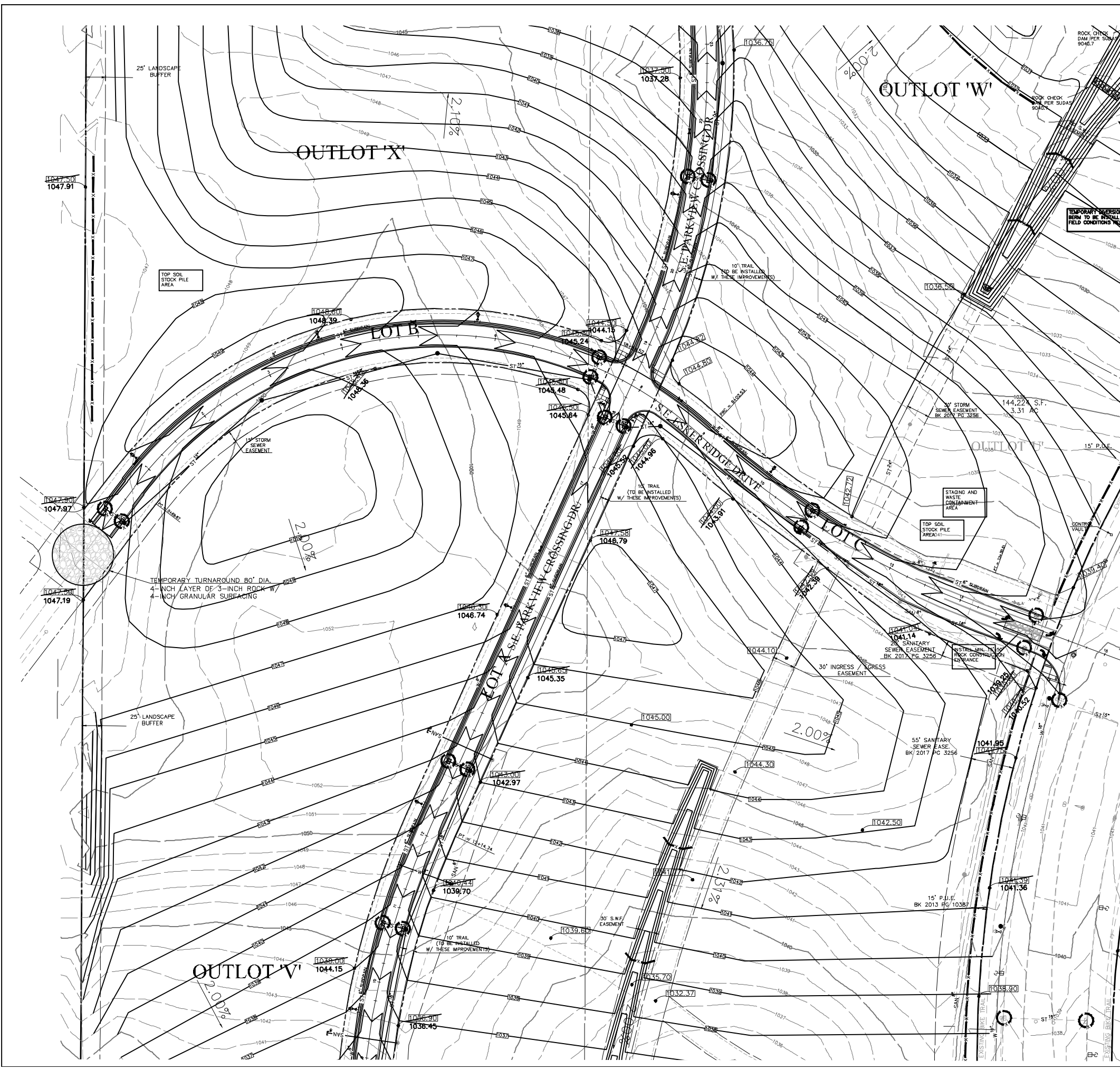
GRADING & EROSION CONTROL PLAN
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

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SHEET
2 OF 18



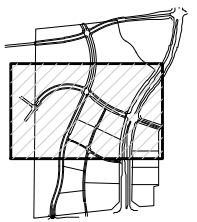
CHARLES Ashworth Rd
 IA 50263



GRADING QUANTITIES

- 5,900 L.F. SILT FENCE OR APPROVED FILTER SOCK
- 28 E.A. INLET DROP PROTECTION
- 3,132,231 S.F. TEMPORARY STABILIZATION (TYPE 4 SEED MIX PER SUDAS TABLE 9010.09)

NOTE SOME CONTROLS SHOWN ARE REFERENCED FROM PLAT 1 FOR CONTINUATION WITH PLAT 4 CONSTRUCTION



- LEGEND**
- EXISTING/PROPOSED
 - PLAT BOUNDARY
 - SAN 12" SANITARY SEWER & SIZE
 - ST 18" STORM SEWER & SIZE
 - W 8" WATER MAIN & SIZE
 - SANITARY SERVICE 4"
 - STORM SERVICE 1 1/2"
 - WATER SERVICE 1"
 - MANHOLE
 - STORM INTAKE
 - FIRE HYDRANT
 - VALVE
 - FLARED END SECTION

SHEET LEGEND

COOPER CRAWFORD & ASSOCIATES, L.L.C.
 CIVIL ENGINEERS

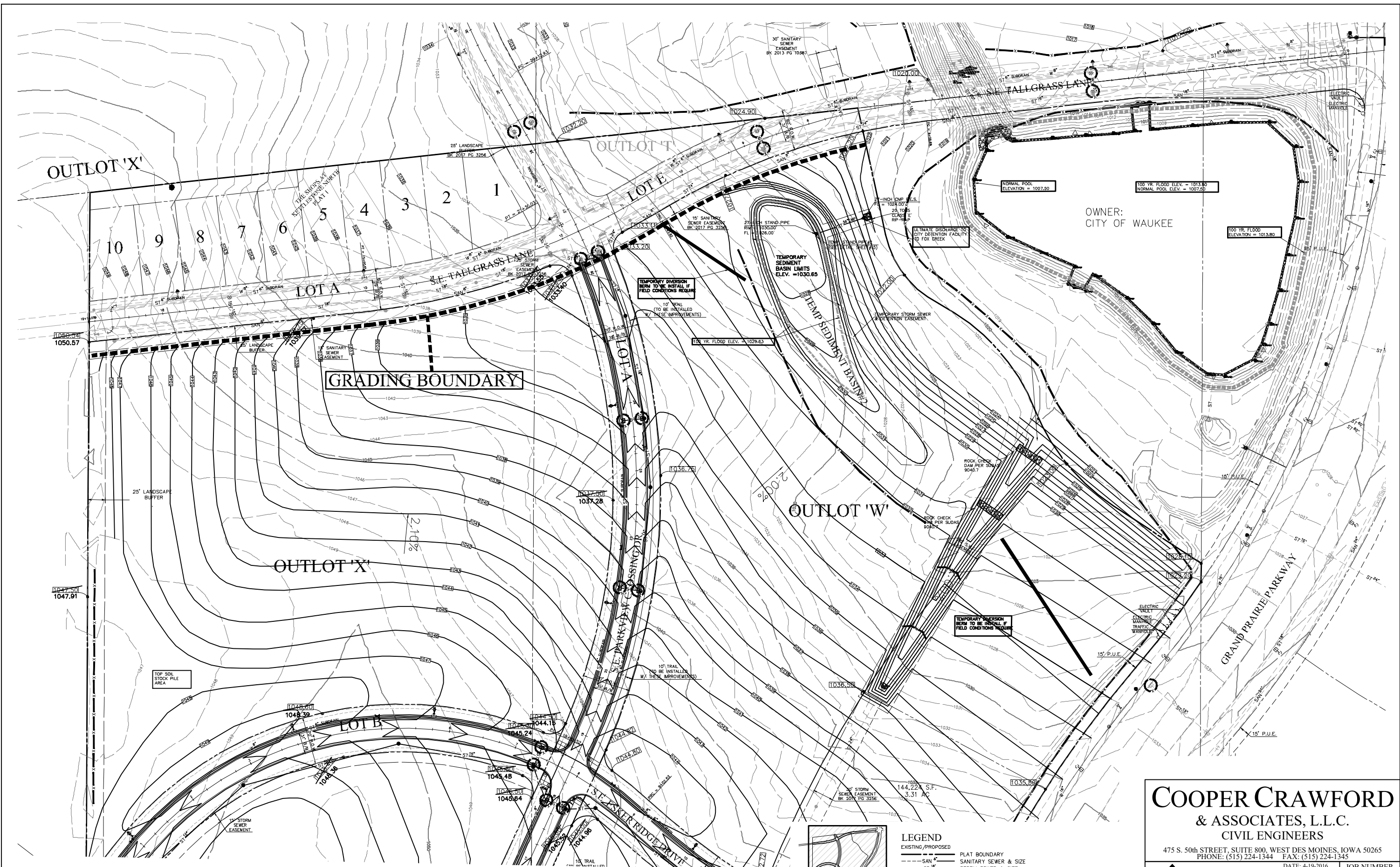
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 PHONE: (515) 224-1344 FAX: (515) 224-1345

DATE: 4-20-2016 JOB NUMBER
 REVISIONS: 9-06-2017 3-12-2018 4-20-2018

APPROVED: X-XX-XX INITIALED: AS-BUILT: CC 1921

GRADING & EROSION CONTROL PLAN SHEET 3 OF 18
 THE SHOPS AT KETTLESTONE NORTH PLAT 4





OWNER:
CITY OF WAUKEE

GRADING QUANTITIES
 5,900 L.F. SILT FENCE OR APPROVED FILTER SOCK
 28 EA. INLET DROP PROTECTION
 3,132,231 S.F. TEMPORARY STABILIZATION (TYPE 4 SEED
 MIX PER SUDAS TABLE 9010.09)

NOTE SOME CONTROLS SHOWN ARE REFERENCED FROM PLAT 1 FOR CONTINUATION WITH PLAT 4 CONSTRUCTION
 NOTE EVERYTHING SOUTH OF THE GRADING BOUNDARY WILL BE GRADED WITH THIS PLAN.

LEGEND

EXISTING/PROPOSED	PLAT BOUNDARY
--- SAN 4"	SANITARY SEWER & SIZE
--- ST 18"	STORM SEWER & SIZE
--- W 6"	WATER MAIN & SIZE
---	SANITARY SERVICE 4"
---	STORM SERVICE 1 1/2"
---	WATER SERVICE 1"
○	MANHOLE
●	STORM INTAKE
▲	FIRE HYDRANT
▼	VALVE
▽	FLARED END SECTION

SHEET LEGEND



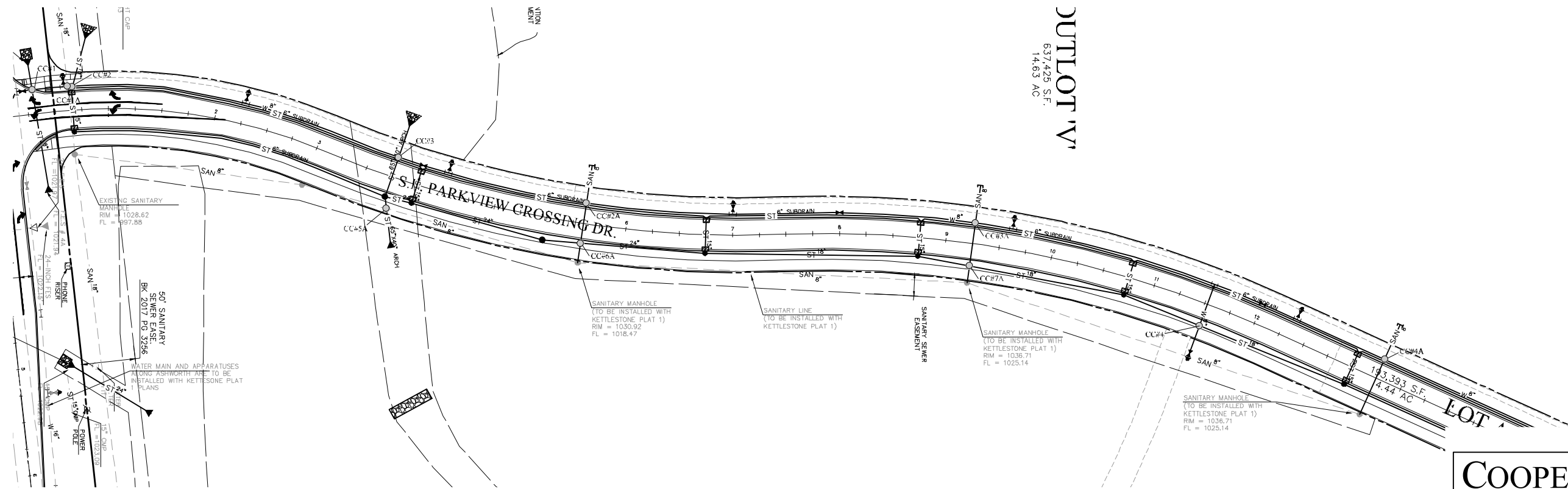
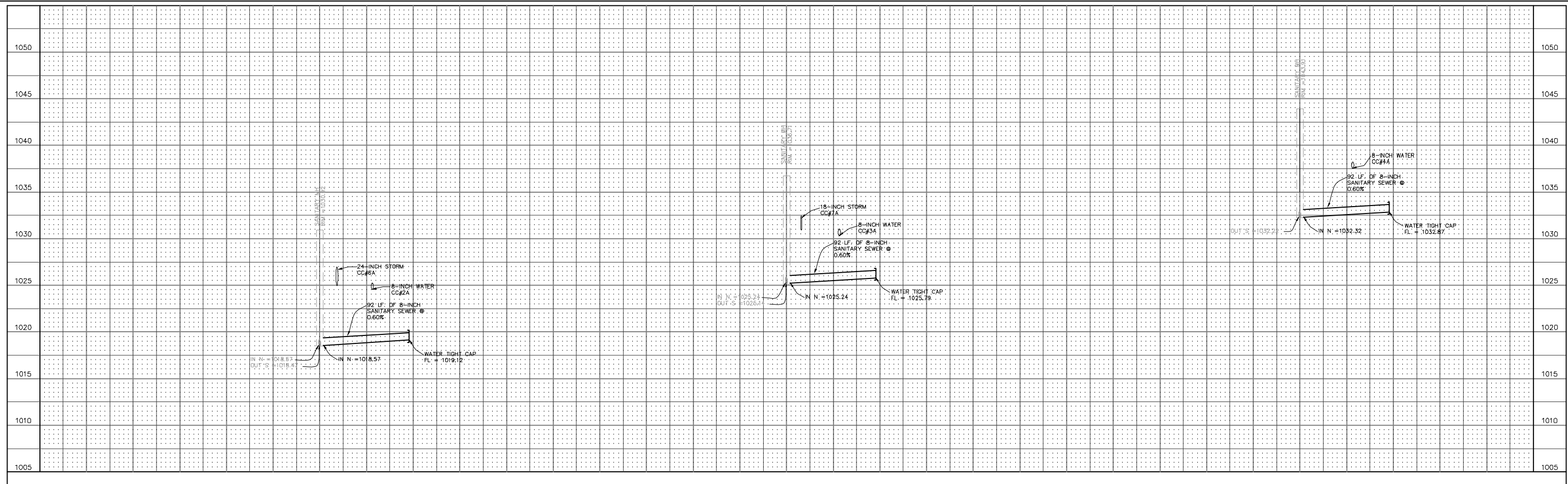
COOPER CRAWFORD & ASSOCIATES, L.L.C.
 CIVIL ENGINEERS

475 S. 50th STREET, SUITE 800, WEST DES MOINES, IOWA 50265
 PHONE: (515) 224-1344 FAX: (515) 224-1345

DATE: 4-19-2016
 REVISIONS: 9-06-2017
 3-12-2018
 4-20-2018

APPROVED: X-XX-XX INITIALS: AS-BUILT:
 GRADING & EROSION CONTROL PLAN
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

JOB NUMBER
CC 1921
 SHEET 4 OF 18



DUTYLOT 'V'
 637,425 S.F.
 14.63 AC

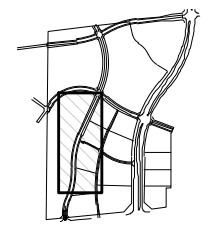
NOTE
 KETTLESTONE PLAT 1 IS A REFERENCE TO THE APPROVED PLANS
 "THE SHOPS AT KETTLESTONE NORTH PLAT 1"

CRITICAL CROSSINGS (SANITARY)

- CC #2A STA. 5+60.00, 19.5' LT.
 BOTTOM OF WATER = 1024.56
 TOP OF SANITARY = 1019.58
 - CC #3A STA. 9+25.00, 19.5' LT.
 BOTTOM OF WATER = 1030.35
 TOP OF SANITARY = 1026.25
 - CC #4A STA. 13+25.00, 19.5' LT.
 BOTTOM OF WATER = 1037.55
 TOP OF SANITARY = 1033.33
- MAINTAIN 1.5' VERTICAL CLEARANCE & 5.5' MIN. BURY

CRITICAL CROSSINGS (SANITARY)

- CC #6A STA. 5+60.00, 19.5' RT.
 BOTTOM OF STORM = 1024.94
 TOP OF SANITARY = 1019.35
 - CC #7A STA. 9+25.00, 21.19' RT.
 BOTTOM OF STORM = 1030.94
 TOP OF SANITARY = 1026.00
- MAINTAIN 1.5' VERTICAL CLEARANCE & 5.5' MIN. BURY



SHEET LEGEND

- LEGEND**
 EXISTING/PROPOSED
- SAN 8" --- SANITARY SEWER & SIZE
 - ST 18" --- STORM SEWER & SIZE
 - W 8" --- WATER MAIN & SIZE
 - SAN 8" --- SANITARY SERVICE 4"
 - ST 18" --- STORM SERVICE 1 1/2"
 - W 8" --- WATER SERVICE 1"
 - MANHOLE
 - STORM INTAKE
 - ▲ FIRE HYDRANT
 - ▽ VALVE
 - ▲ FLARED END SECTION



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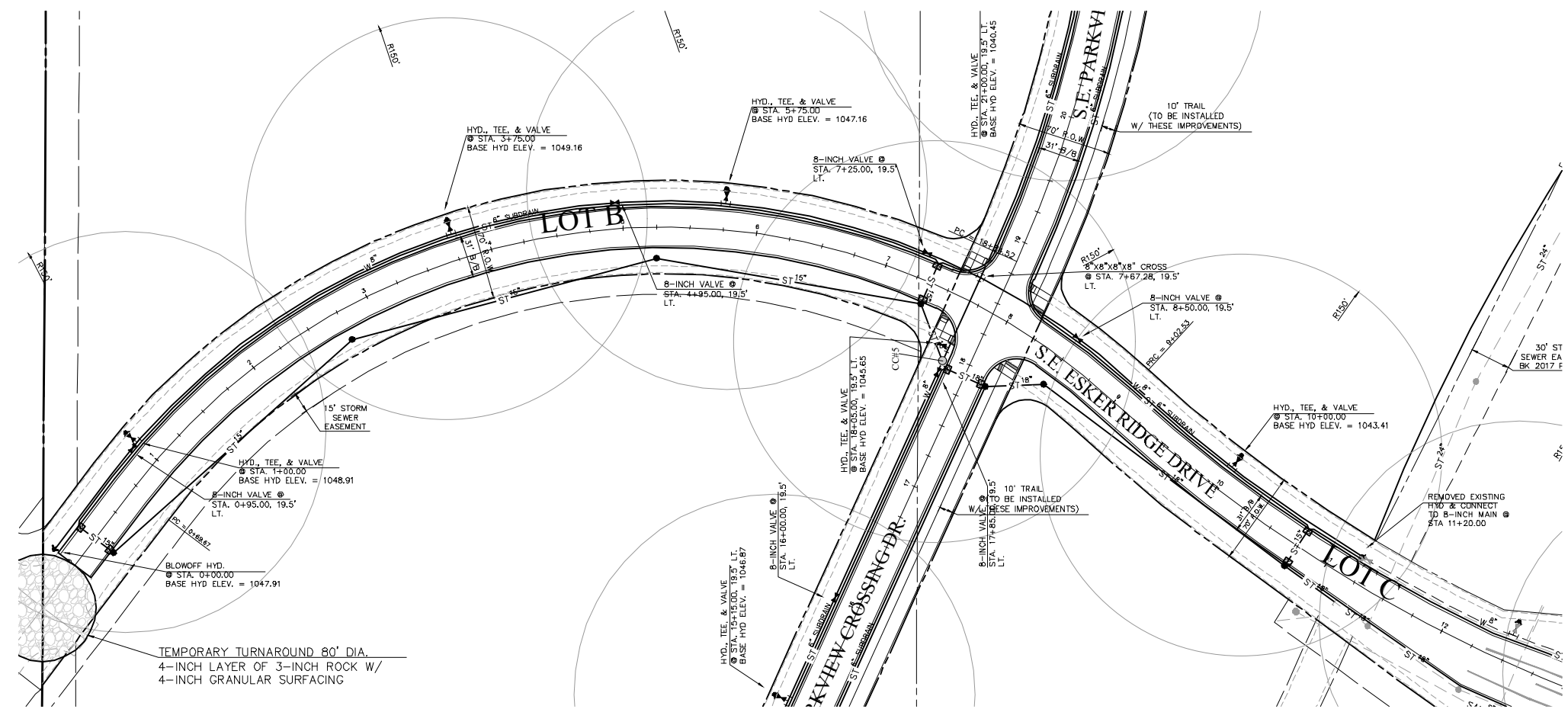
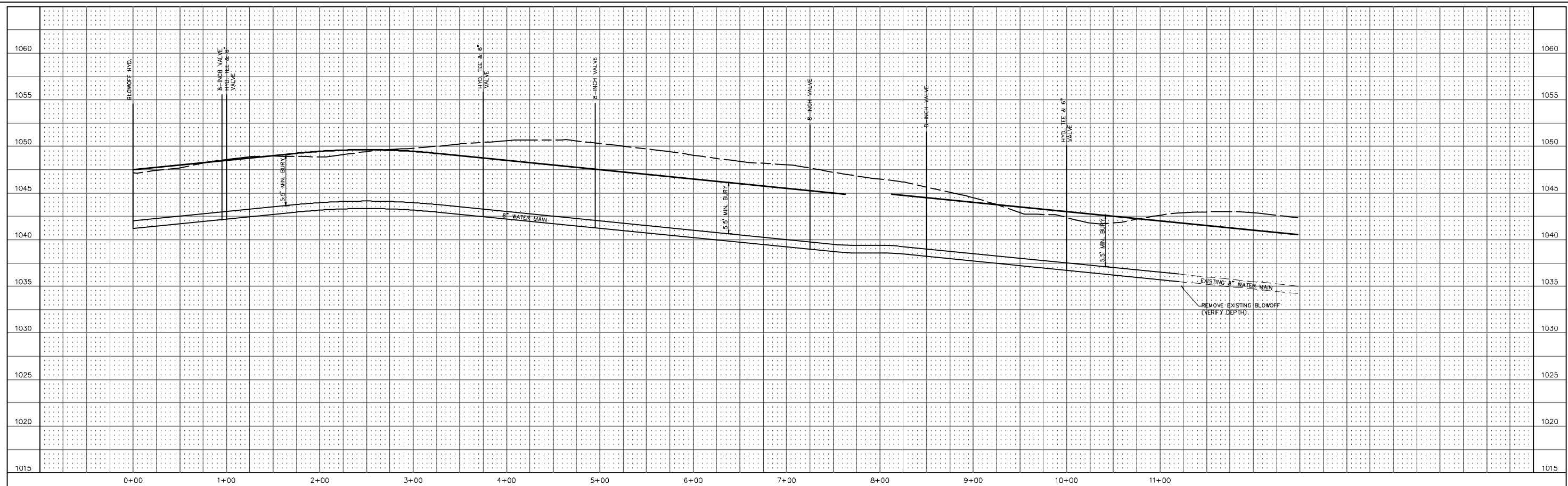
DATE: 4-20-2016
 REVISIONS: 9-06-2017
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 4-20-2018



APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

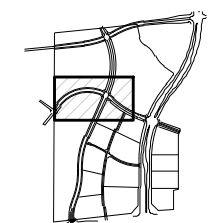
SANITARY SEWER
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

JOB NUMBER
CC 1921
 SHEET 5 OF 18



LEGEND
EXISTING / PROPOSED

---	SAN #"	SANITARY SEWER & SIZE
---	ST #"	STORM SEWER & SIZE
---	W #"	WATER MAIN & SIZE
---		SANITARY SERVICE 4"
---		STORM SERVICE 1 1/2"
---		WATER SERVICE 1"
○		MANHOLE
●		STORM INTAKE
▲		FIRE HYDRANT
▼		VALVE
▽		FLARED END SECTION



SHEET LEGEND

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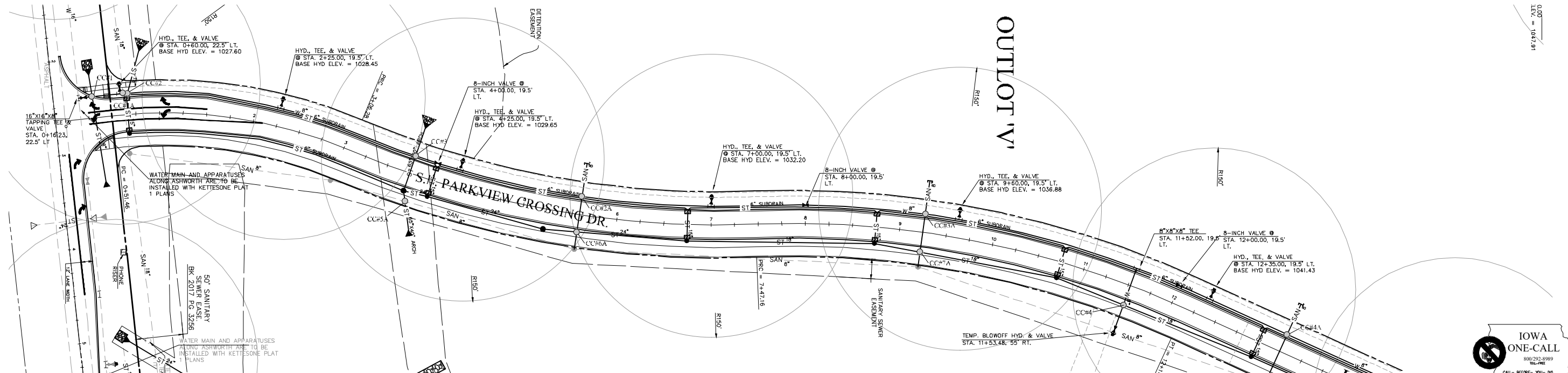
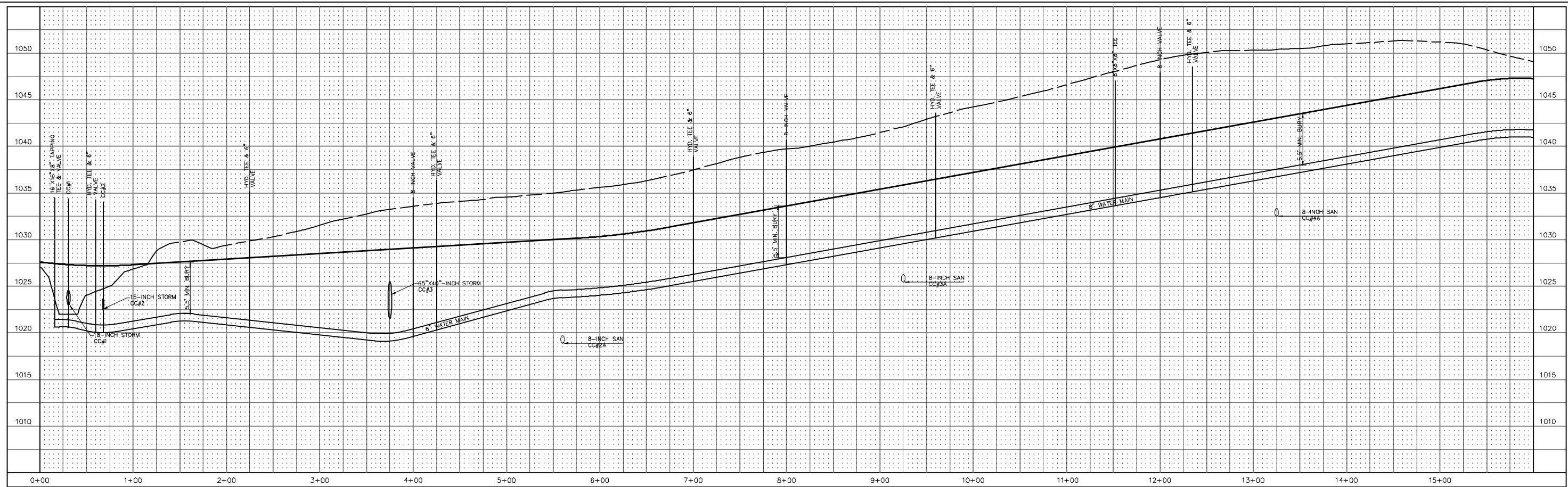
DATE: 4-20-2016
REVISIONS: 9-06-2017
3-12-2018
4-20-2018

APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

SCALE: 1"=50'

WATER
THE SHOPS AT KETTLESTONE NORTH PLAT 4

JOB NUMBER
CC 1921
SHEET
6 OF 18



CRITICAL CROSSINGS

- CC #1 STA. 0+30.79, 22.5' LT.
BOTTOM OF STORM = 1023.03
TOP OF MAIN = 1021.43
- CC #2 STA. 0+68.00, 22.5' LT.
BOTTOM OF STORM = 1022.43
TOP OF MAIN = 1020.83
- CC #3 STA. 3+75.00, 19.5' LT.
BOTTOM OF STORM = 1021.51
TOP OF MAIN = 1019.91
- CC #4 STA. 11+52.85, 21.91' RT.
BOTTOM OF STORM = 1035.06
TOP OF MAIN = 1033.46

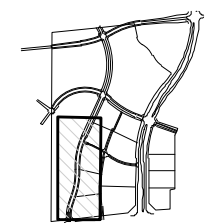
MAINTAIN 1.5' VERTICAL CLEARANCE & 5.5' MIN. BURY
*ALL STORM JOINTS TO BE CENTERED AND GASKETED
OVER MAIN.*

CRITICAL CROSSINGS (SANITARY)

- CC #1A STA. 0+63.39, 22.5' LT.
BOTTOM OF WATER = 1020.05
TOP OF SANITARY = 999.73
- CC #2A STA. 5+60.00, 19.5' LT.
BOTTOM OF WATER = 1024.56
TOP OF SANITARY = 1019.58
- CC #3A STA. 9+25.00, 19.5' LT.
BOTTOM OF WATER = 1030.35
TOP OF SANITARY = 1026.25
- CC #4A STA. 13+25.00, 19.5' LT.
BOTTOM OF WATER = 1037.55
TOP OF SANITARY = 1033.33'
- CC #5A STA. 3+79.71, 29.62' RT.
BOTTOM OF STORM = 1021.78
TOP OF SANITARY = 1015.42

MAINTAIN 1.5' VERTICAL CLEARANCE & 5.5' MIN. BURY

NOTE
KETTLESTONE PLAT 1 IS A REFERENCE TO THE APPROVED PLANS
"THE SHOPS AT KETTLESTONE NORTH PLAT 1"



SHEET LEGEND

LEGEND

—	EXISTING/PROPOSED	PLAT BOUNDARY
---	SAN 8"	SANITARY SEWER & SIZE
---	ST 18"	STORM SEWER & SIZE
---	W 8"	WATER MAIN & SIZE
---	---	SANITARY SERVICE 4"
---	---	STORM SERVICE 1 1/2"
---	---	WATER SERVICE 1"
○	○	MANHOLE
▽	▽	STORM INTAKE
△	△	FIRE HYDRANT
▽	▽	VALVE
▽	▽	FLARED END SECTION

COOPER CRAWFORD & ASSOCIATES, L.L.C.
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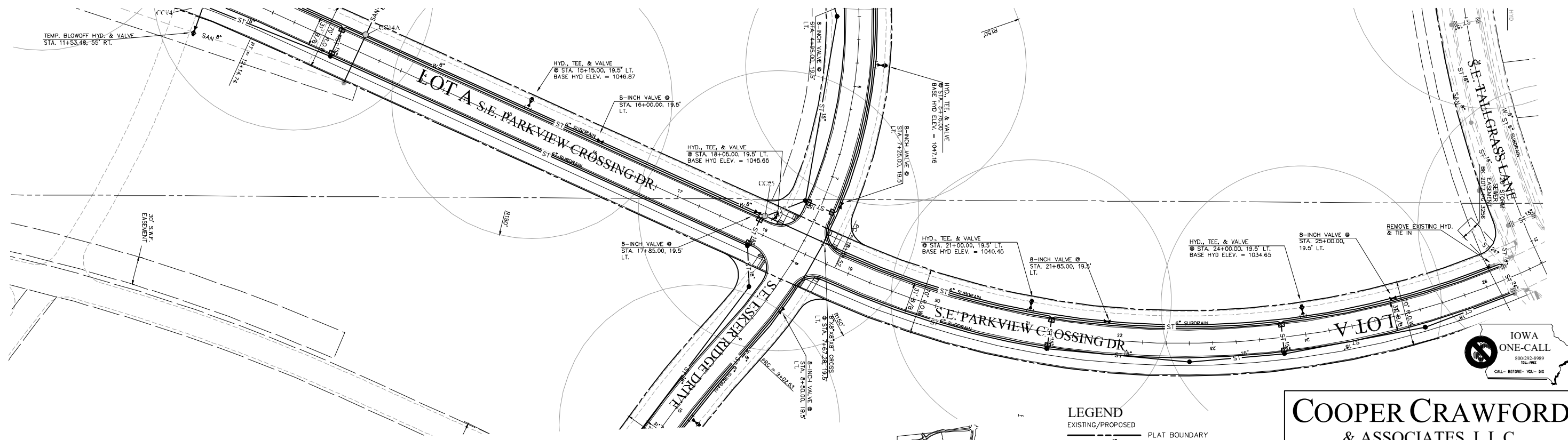
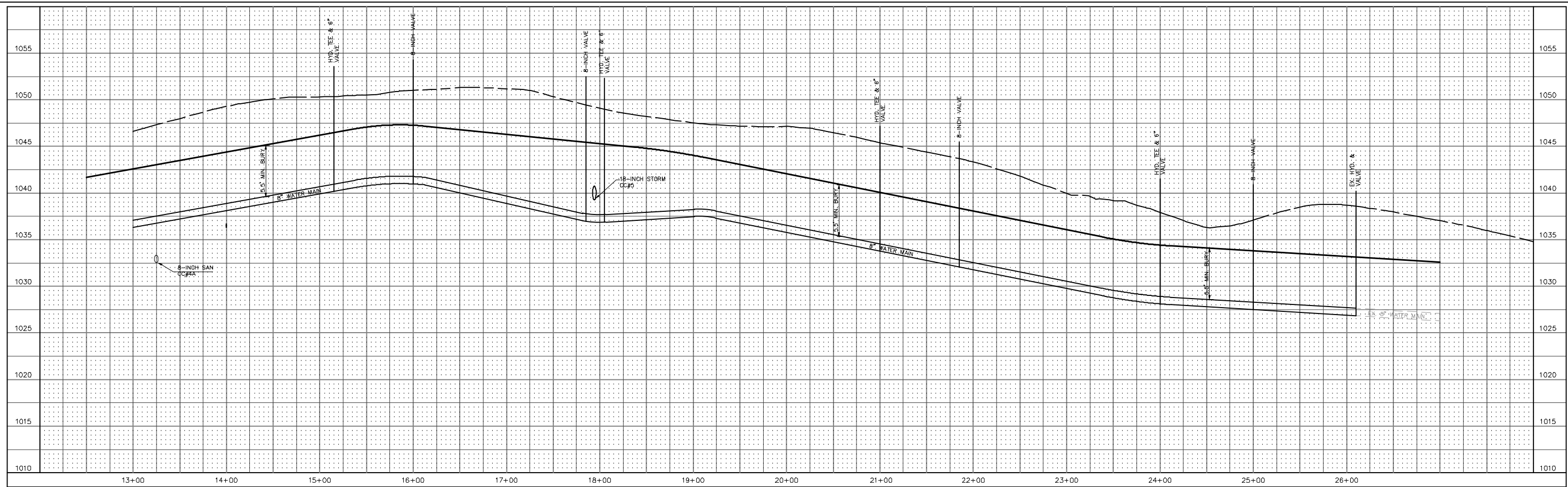
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WATER
THE SHOPS AT KETTLESTONE NORTH PLAT 4



CC 1921

SHEET 7 OF 18



CRITICAL CROSSINGS

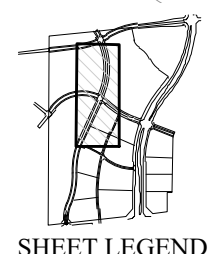
CC #5 STA. 17+93.97, 19.5 LT.
 BOTTOM OF STORM = 1039.25
 TOP OF MAIN = 1037.65

MAINTAIN 1.5' VERTICAL CLEARANCE & 5.5' MIN. BURY
 ALL STORM JOINTS TO BE CENTERED AND GASKETED OVER MAIN.

CRITICAL CROSSINGS (SANITARY)

CC #4A STA. 13+25.00, 19.5' LT.
 BOTTOM OF WATER = 1037.55
 TOP OF SANITARY = 1033.33'

MAINTAIN 1.5' VERTICAL CLEARANCE & 5.5' MIN. BURY



LEGEND

—	EXISTING/PROPOSED	PLAT BOUNDARY
---	SAN 18"	SANITARY SEWER & SIZE
---	ST 18"	STORM SEWER & SIZE
---	W 8"	WATER MAIN & SIZE
---		SANITARY SERVICE 4"
---		STORM SERVICE 1 1/2"
---		WATER SERVICE 1"
○		MANHOLE
●		STORM INTAKE
▲		FIRE HYDRANT
▼		VALVE
▴		FLARED END SECTION

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APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

SCALE: 1"=50'

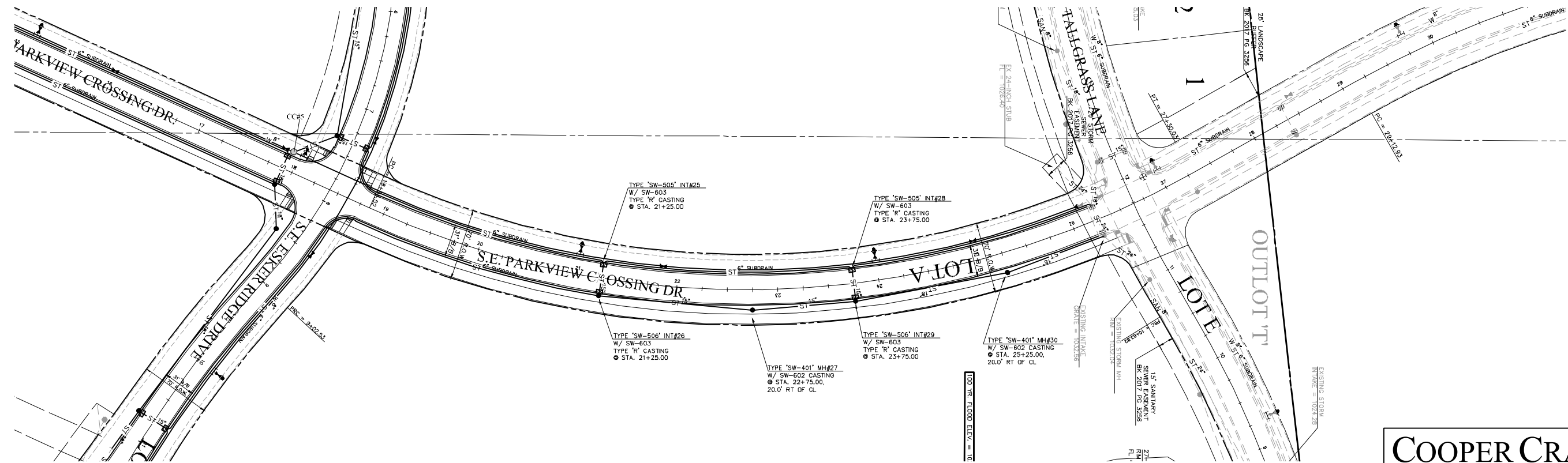
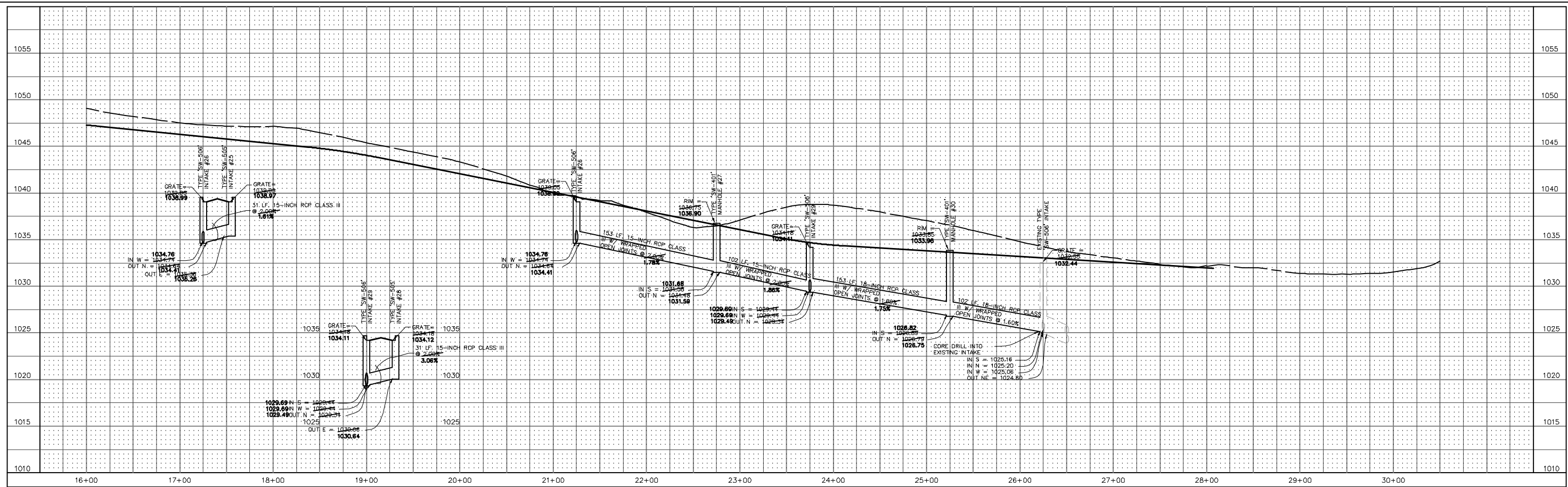
WATER

THE SHOPS AT KETTLESTONE NORTH PLAT 4

CC 1921

SHEET 8 OF 18





LEGEND

—	EXISTING/PROPOSED	—	PLAT BOUNDARY
—	SAN 12"	—	SANITARY SEWER & SIZE
—	ST 18"	—	STORM SEWER & SIZE
—	W 8"	—	WATER MAIN & SIZE
—		—	SANITARY SERVICE 4"
—		—	STORM SERVICE 1 1/2"
—		—	WATER SERVICE 1"
○	MANHOLE	●	STORM INTAKE
○	FIRE HYDRANT	▲	VALVE
△	FLARED END SECTION		

SHEET LEGEND



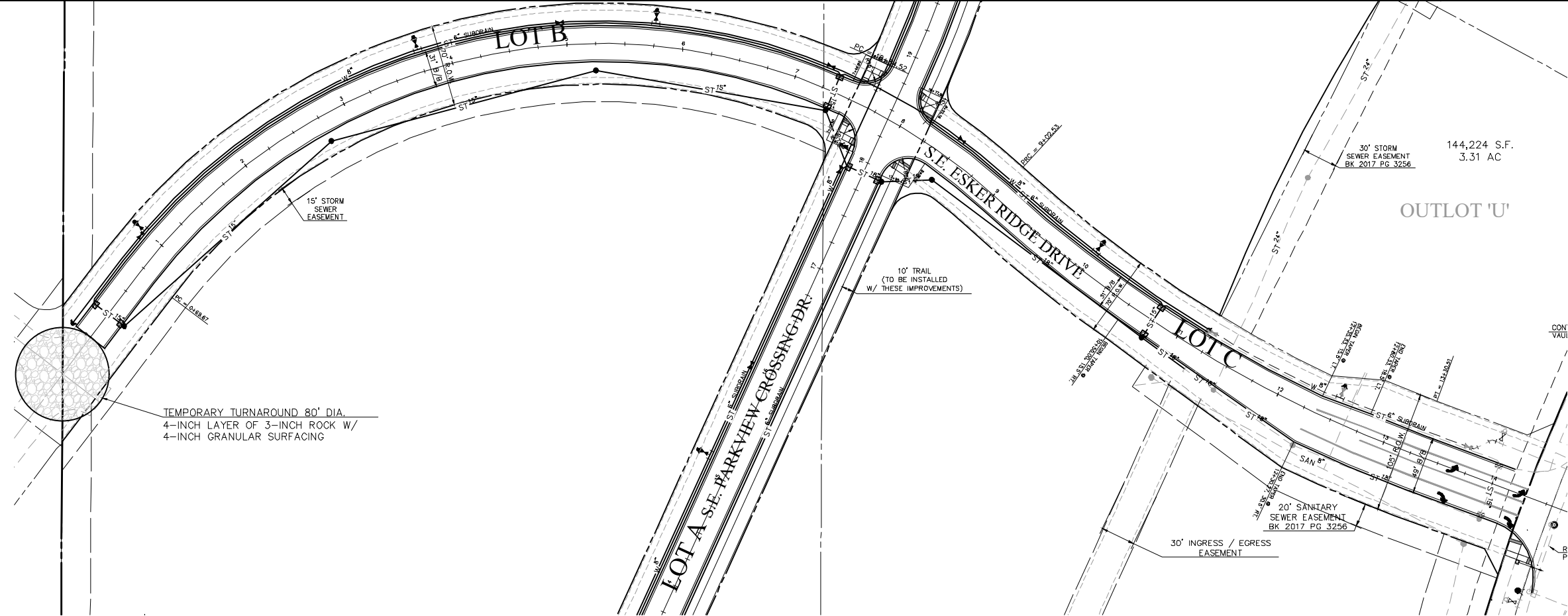
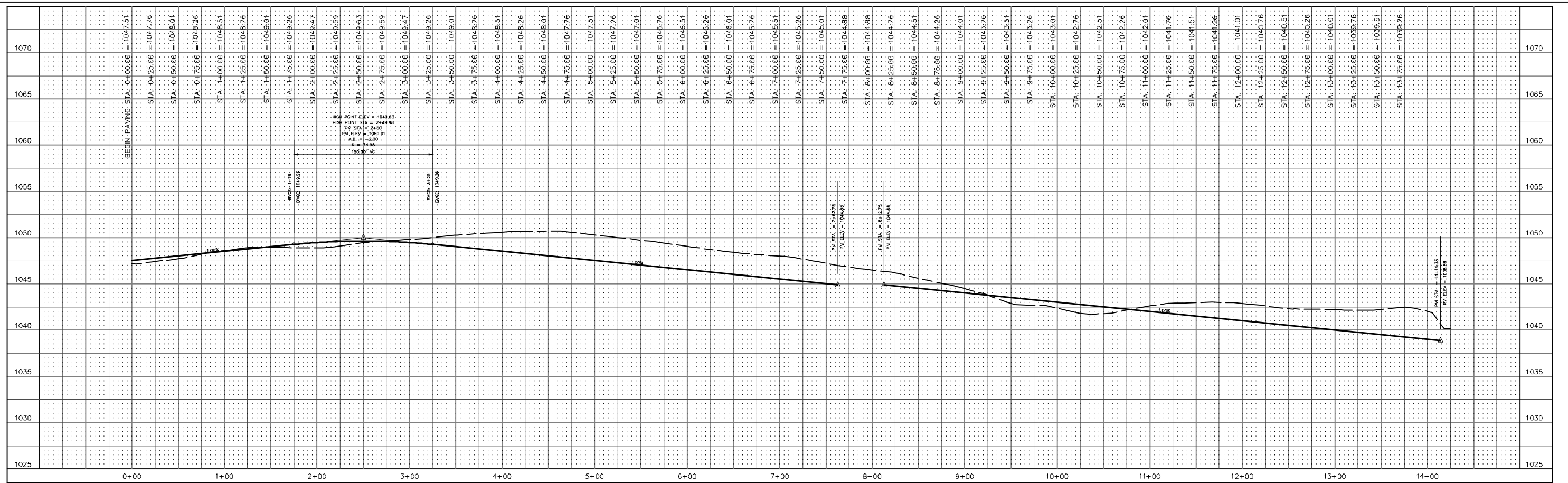
COOPER CRAWFORD & ASSOCIATES, L.L.C.
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APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

STORM SEWER
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

JOB NUMBER
CC 1921
 SHEET 11 OF 18



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JOB NUMBER: CC 1921

APPROVED: INITIALS: AS-BUILT:

SCALE: 1"=50'

APPROVED: INITIALS: AS-BUILT:

THE SHOPS AT KETTLESTONE NORTH PLAT 4

DATE: 4-20-2016
REVISIONS: 9-06-2017
3-12-2018
4-20-2018

JOB NUMBER: CC 1921

APPROVED: INITIALS: AS-BUILT:

SCALE: 1"=50'

APPROVED: INITIALS: AS-BUILT:

THE SHOPS AT KETTLESTONE NORTH PLAT 4

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4-20-2018

JOB NUMBER: CC 1921

APPROVED: INITIALS: AS-BUILT:

SCALE: 1"=50'

APPROVED: INITIALS: AS-BUILT:

THE SHOPS AT KETTLESTONE NORTH PLAT 4



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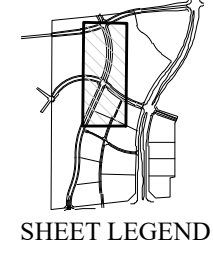
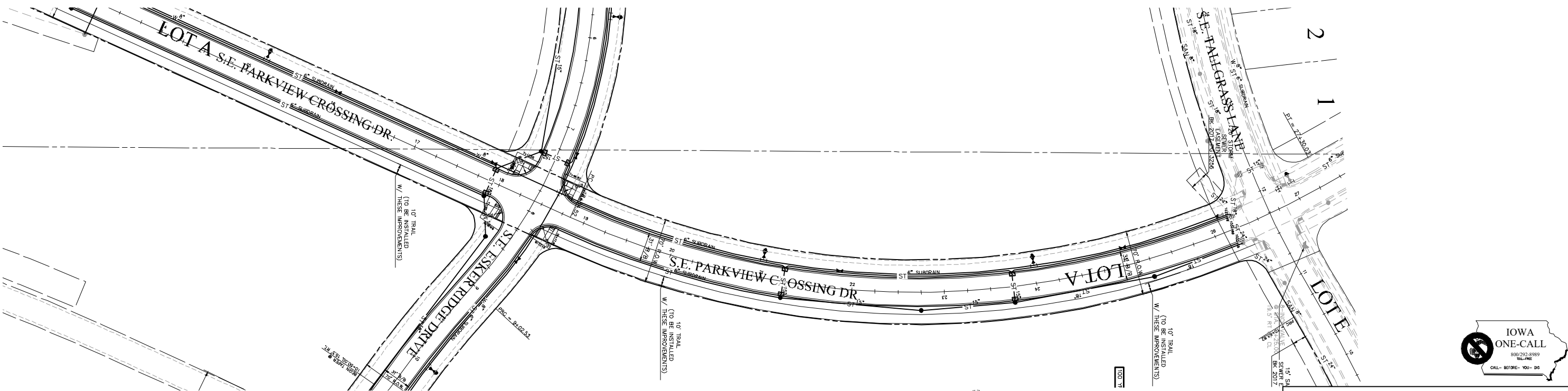
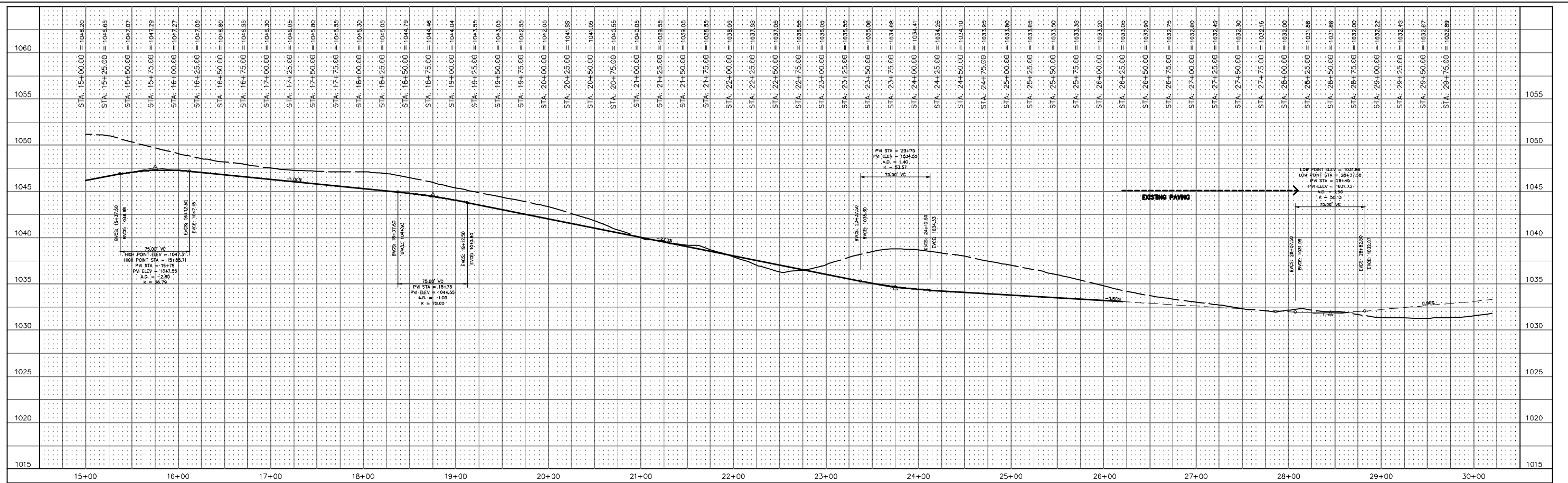
JOB NUMBER: CC 1921

APPROVED: INITIALS: AS-BUILT:

SCALE: 1"=50'

APPROVED: INITIALS: AS-BUILT:

THE SHOPS AT KETTLESTONE NORTH PLAT 4



- LEGEND**
- EXISTING/PROPOSED
- SAN 18" SANITARY SEWER & SIZE
 - ST 18" STORM SEWER & SIZE
 - W 8" WATER MAIN & SIZE
 - SANITARY SERVICE 4"
 - STORM SERVICE 1 1/2"
 - WATER SERVICE 1"
 - MANHOLE
 - STORM INTAKE
 - FIRE HYDRANT
 - VALVE
 - ▲ FLARED END SECTION



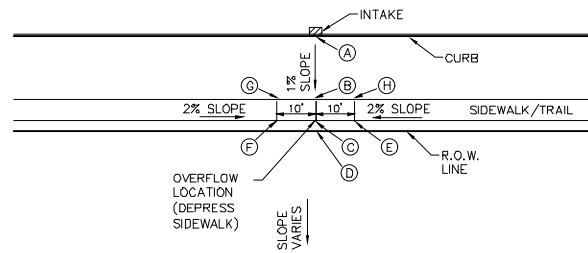
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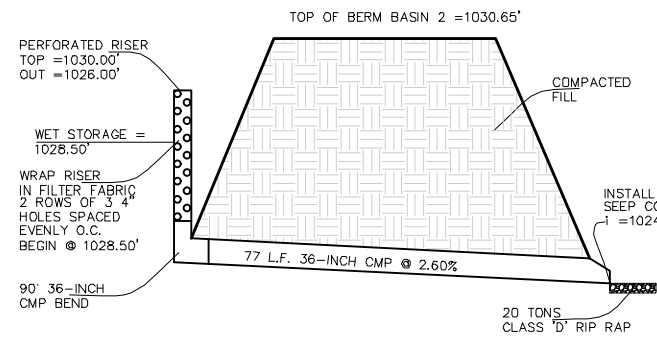
PAVING
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

JOB NUMBER
CC 1921
 SHEET 14 OF 18



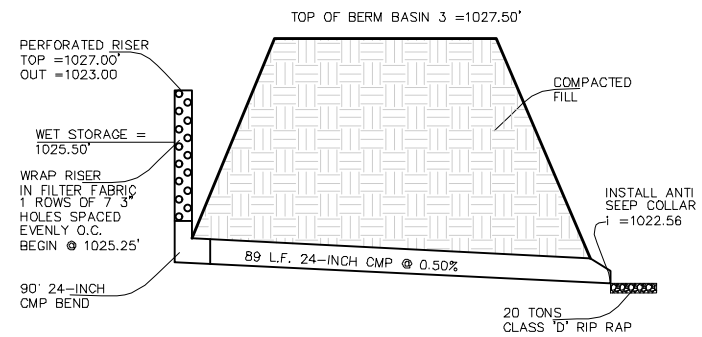
TYPICAL SIDEWALK DETAIL @ OVERFLOW LOCATIONS

STA. 6+36.84 - DEER HAVEN STREET ELEVATIONS: A=873.38 B=873.24 C=873.18 D=873.17
 E=873.38 F=873.38 G=873.44 H=873.44
 STA. 3+29.00 - E. GRIMES STREET ELEVATIONS: A=872.21 B=871.94 C=871.90 D=871.89
 E=872.10 F=872.10 G=872.14 H=872.14
 A TOTAL OF 20 LF OF SIDEWALK TO BE INSTALLED @ EACH LOW POINT
 NO SCALE



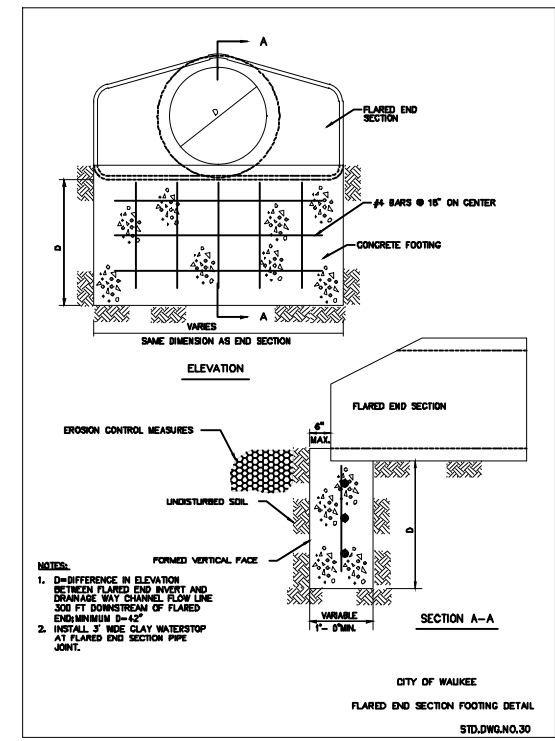
TEMPORARY SEDIMENT BASIN OUTLET DETAIL#2

BASIN#2
 (NO SCALE)
 NOTE - ANTI SEEP COLLAR PER SUDAS 9040 3.16C - (CMP COLLAR)
 NOTE - THESE ARE A CONTINUATION OF PLAT 1 APPROVED BASINS

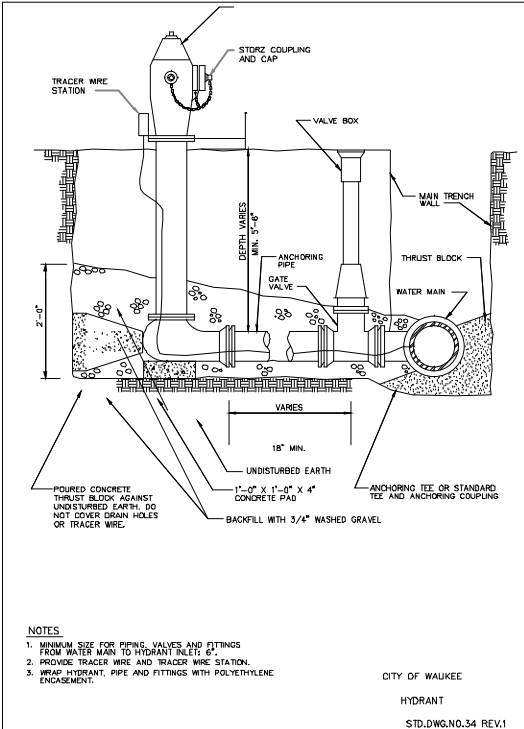


TEMPORARY SEDIMENT BASIN OUTLET DETAIL#3

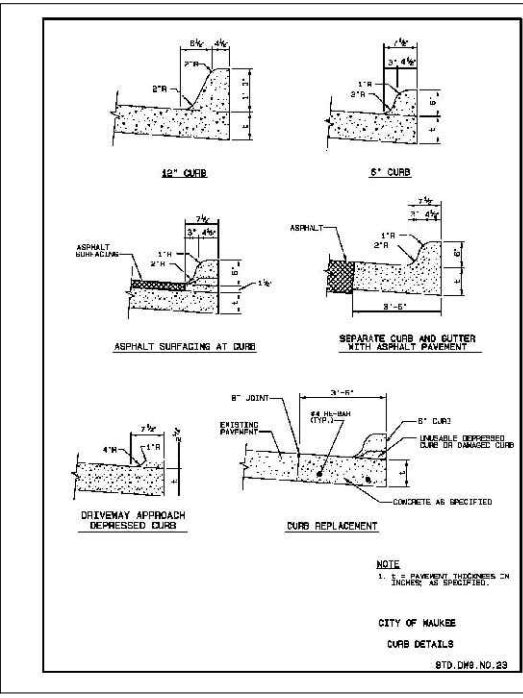
BASIN#3
 (NO SCALE)
 NOTE - ANTI SEEP COLLAR PER SUDAS 9040 3.16C - (CMP COLLAR)
 NOTE - THESE ARE A CONTINUATION OF PLAT 1 APPROVED BASINS



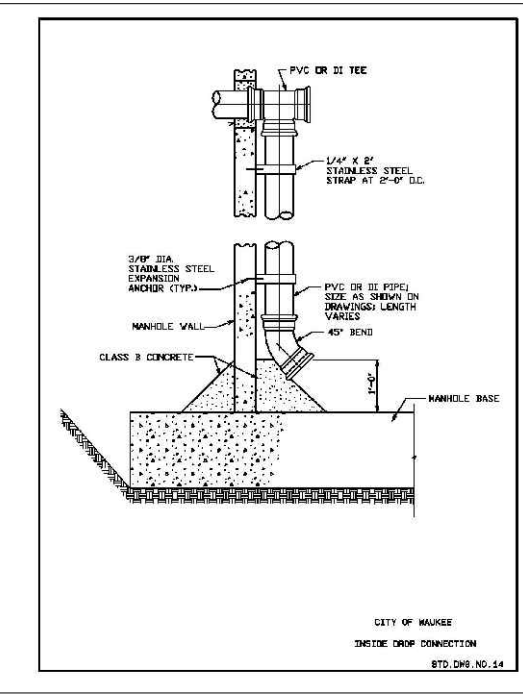
FLARED END SECTION FOOTING DETAIL
 STD.DWG.NO.30
 CITY OF WAUKEE



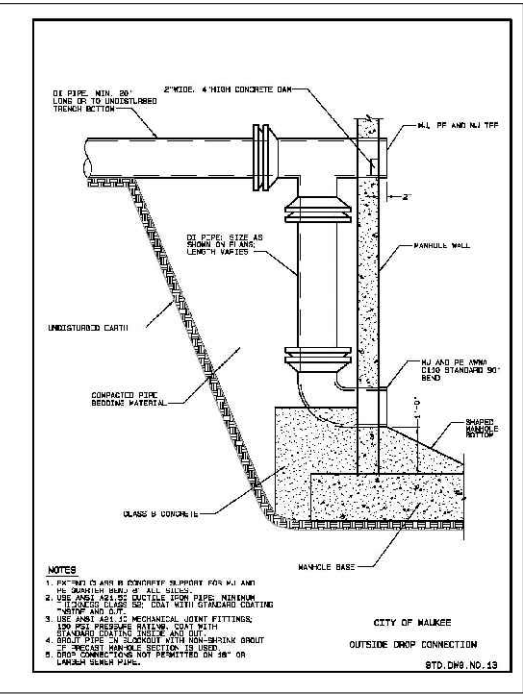
HYDRANT
 STD.DWG.NO.34 REV.1
 CITY OF WAUKEE



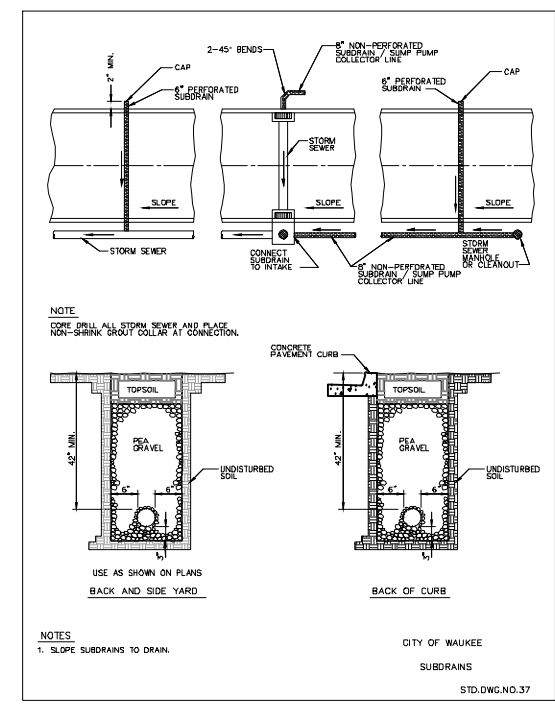
CURB DETAILS
 STD.DWG.NO.29
 CITY OF WAUKEE



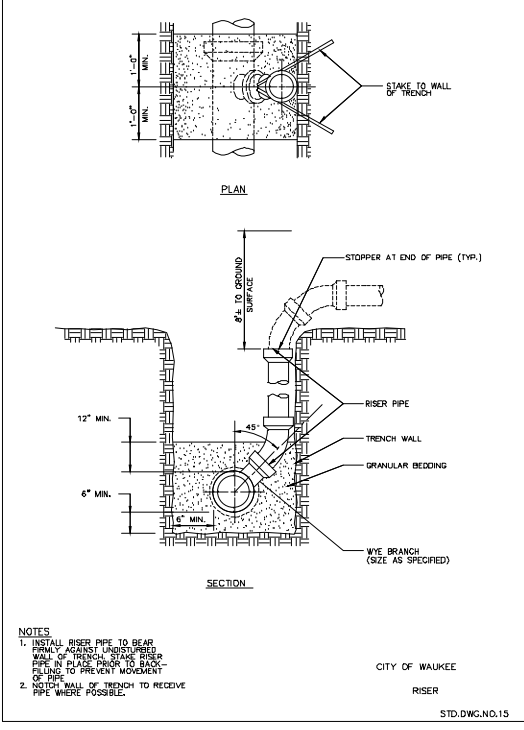
INSIDE DROP CONNECTION
 STD.DWG.NO.14
 CITY OF WAUKEE



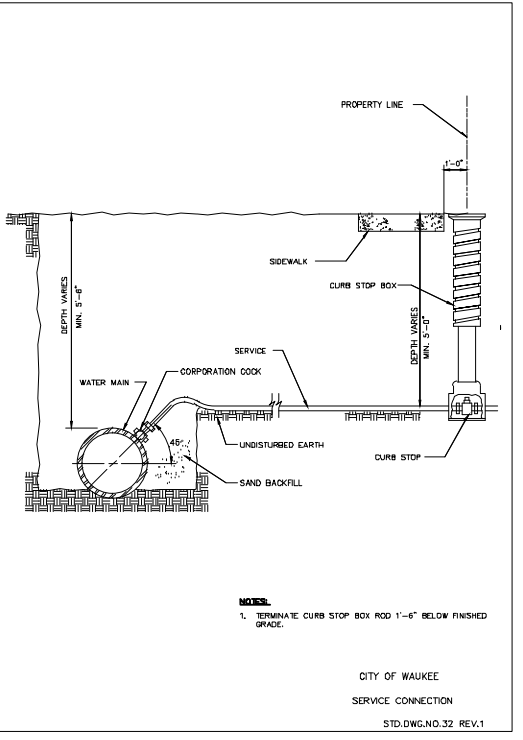
OUTSIDE DROP CONNECTION
 STD.DWG.NO.13
 CITY OF WAUKEE



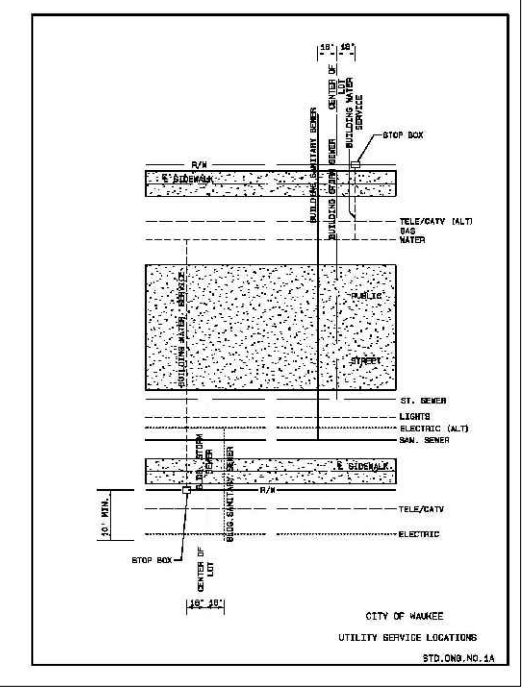
SUBDRAINS
 STD.DWG.NO.37
 CITY OF WAUKEE



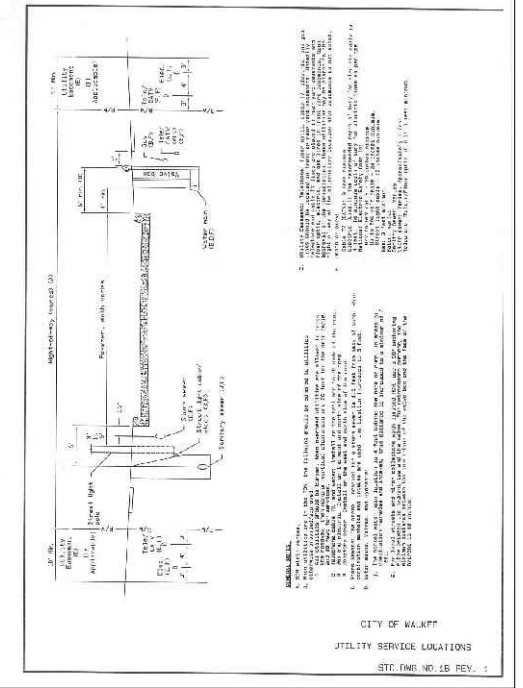
RISER
 STD.DWG.NO.15
 CITY OF WAUKEE



SERVICE CONNECTION
 STD.DWG.NO.32 REV.1
 CITY OF WAUKEE



UTILITY SERVICE LOCATIONS
 STD.DWG.NO.14
 CITY OF WAUKEE



UTILITY SERVICE LOCATIONS
 STD.DWG.NO.16 REV.1
 CITY OF WAUKEE

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APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

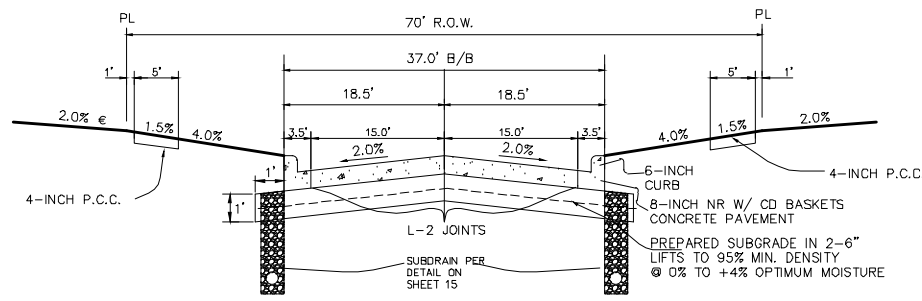
DETAILS
 THE SHOPS AT KETTLESTONE NORTH PLAT 4

CC 1921
 SHEET 15 OF 18

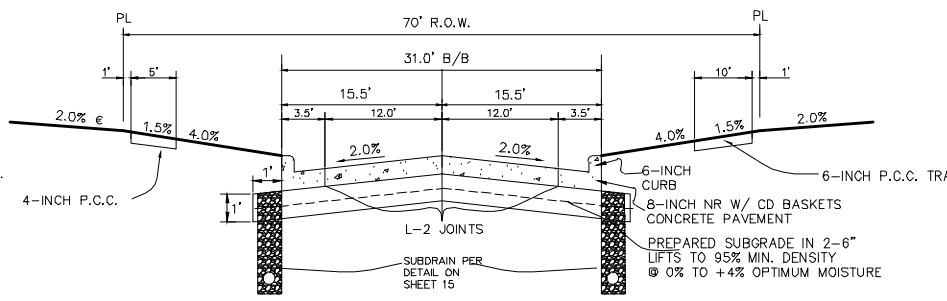
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JOB NUMBER

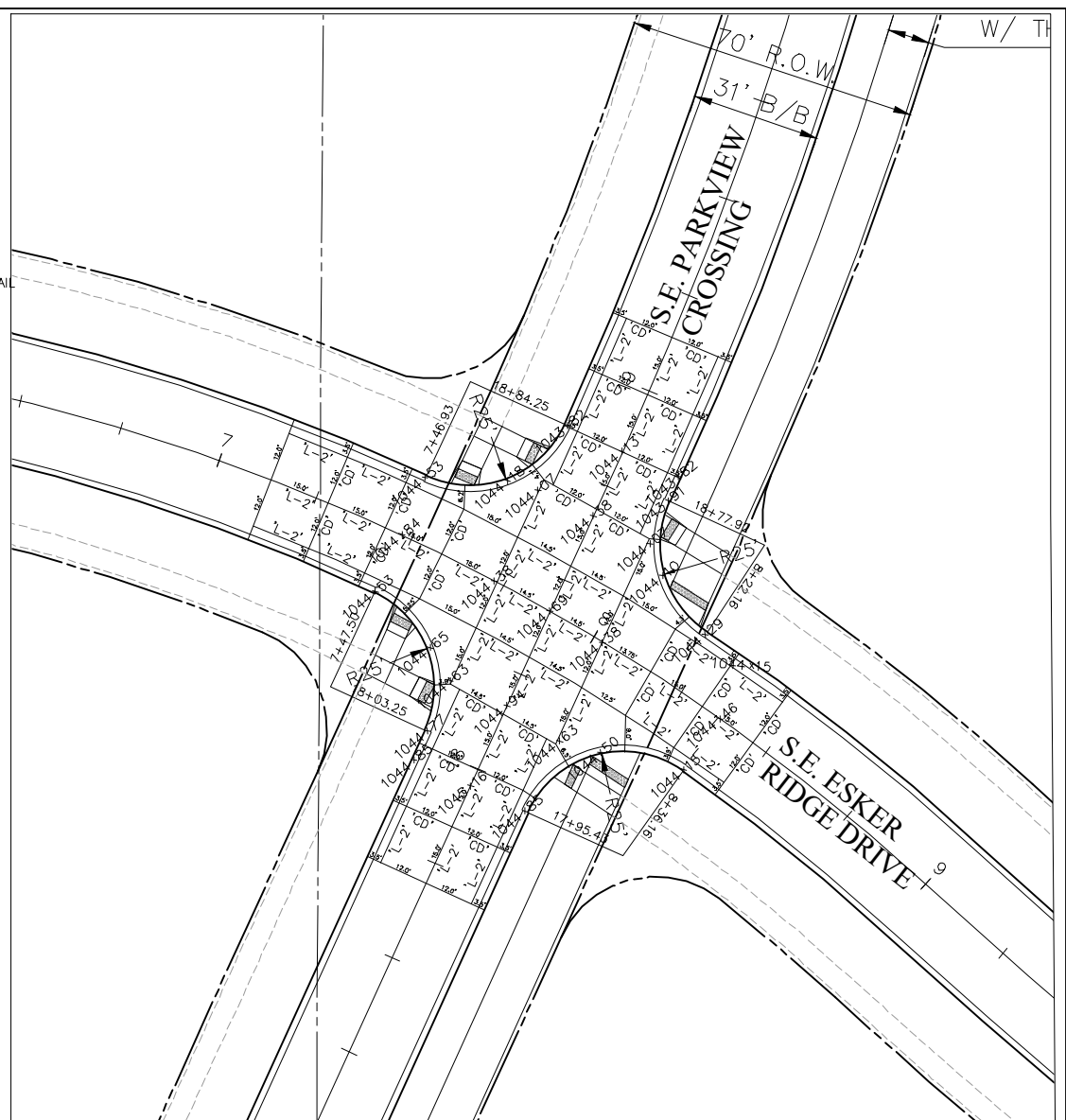




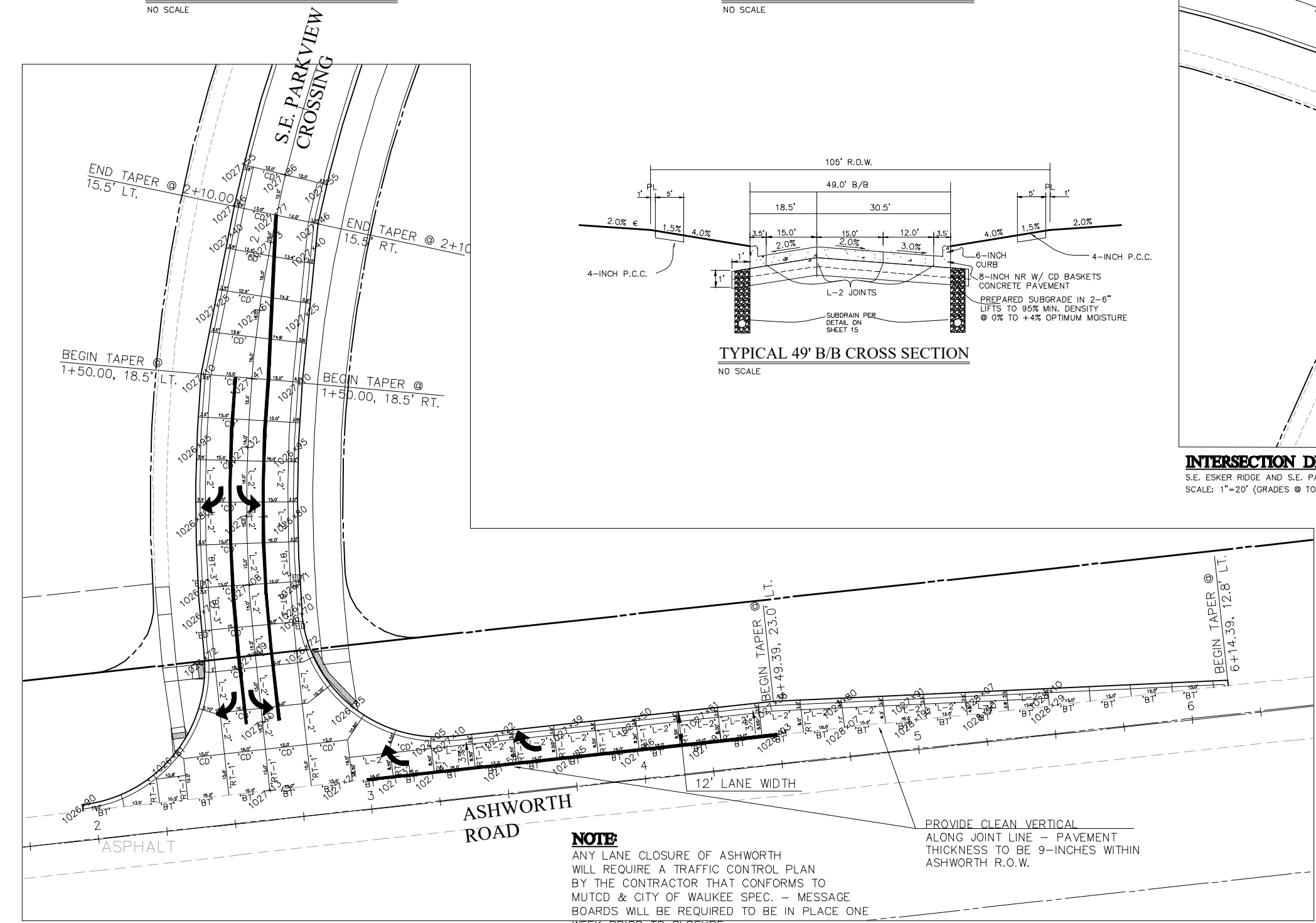
TYPICAL 37' B/B CROSS SECTION
NO SCALE



TYPICAL 31' B/B CROSS SECTION
NO SCALE



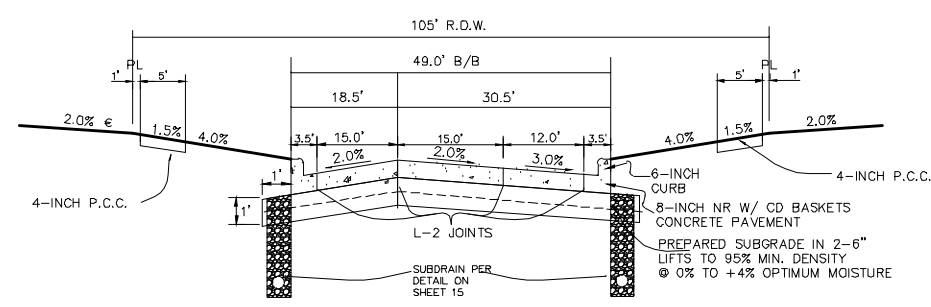
INTERSECTION DETAIL
S.E. ESKER RIDGE AND S.E. PARKVIEW CROSSING
SCALE: 1"=20' (GRADES @ TOP OF SLAB)



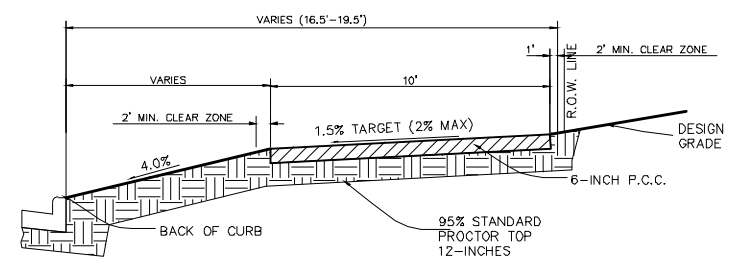
NOTE:
ANY LANE CLOSURE OF ASHWORTH ROAD WILL REQUIRE A TRAFFIC CONTROL PLAN BY THE CONTRACTOR THAT CONFORMS TO MUTCD & CITY OF WAUKEE SPEC. - MESSAGE BOARDS WILL BE REQUIRED TO BE IN PLACE ONE WEEK PRIOR TO CLOSURE.

PROVIDE CLEAN VERTICAL ALONG JOINT LINE - PAVEMENT THICKNESS TO BE 9-INCHES WITHIN ASHWORTH R.O.W.

INTERSECTION DETAIL
S.E. PARKVIEW CROSSING & ASHWORTH ROAD
SCALE: 1"=20' (GRADES @ TOP OF SLAB)



TYPICAL 49' B/B CROSS SECTION
NO SCALE



TRAIL SECTION
NO SCALE ALONG EAST SIDE OF S.E. PARKVIEW CROSSING



COOPER CRAWFORD & ASSOCIATES, L.L.C.
CIVIL ENGINEERS
475 S. 50th STREET, SUITE 800, WEST DES MOINES, IOWA 50265
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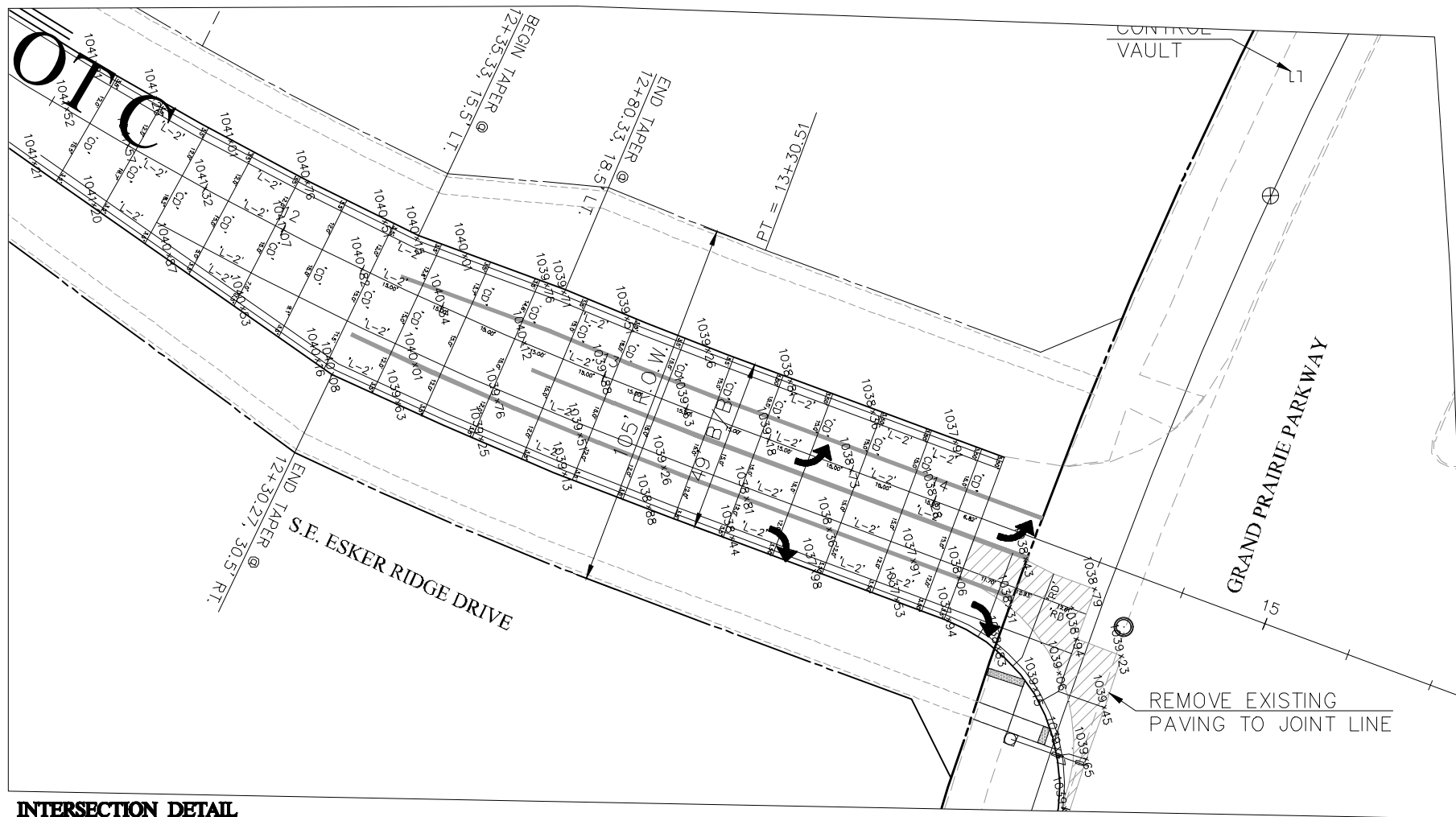
DATE: 4-20-2016
REVISIONS: 9-06-2017
3-12-2018
4-20-2018

APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

SCALE: 1"=50'

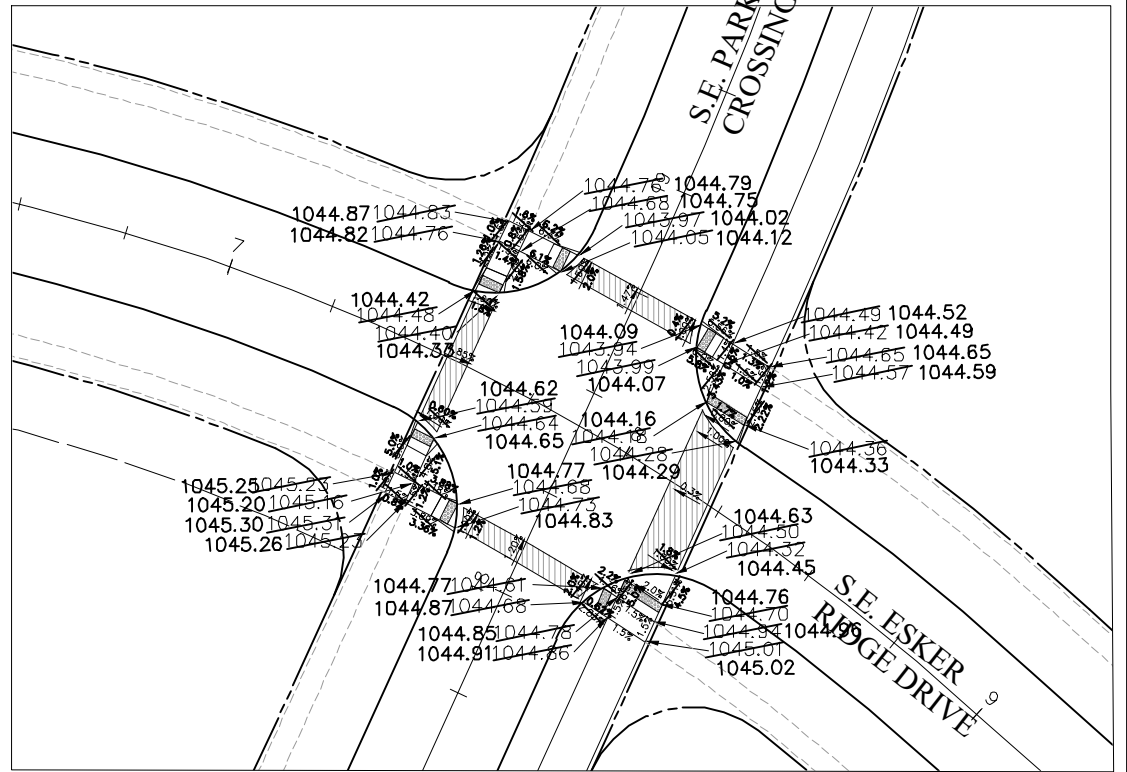
THE SHOPS AT KETTLESTONE NORTH PLAT 4

CC 1921
SHEET 16 OF 18



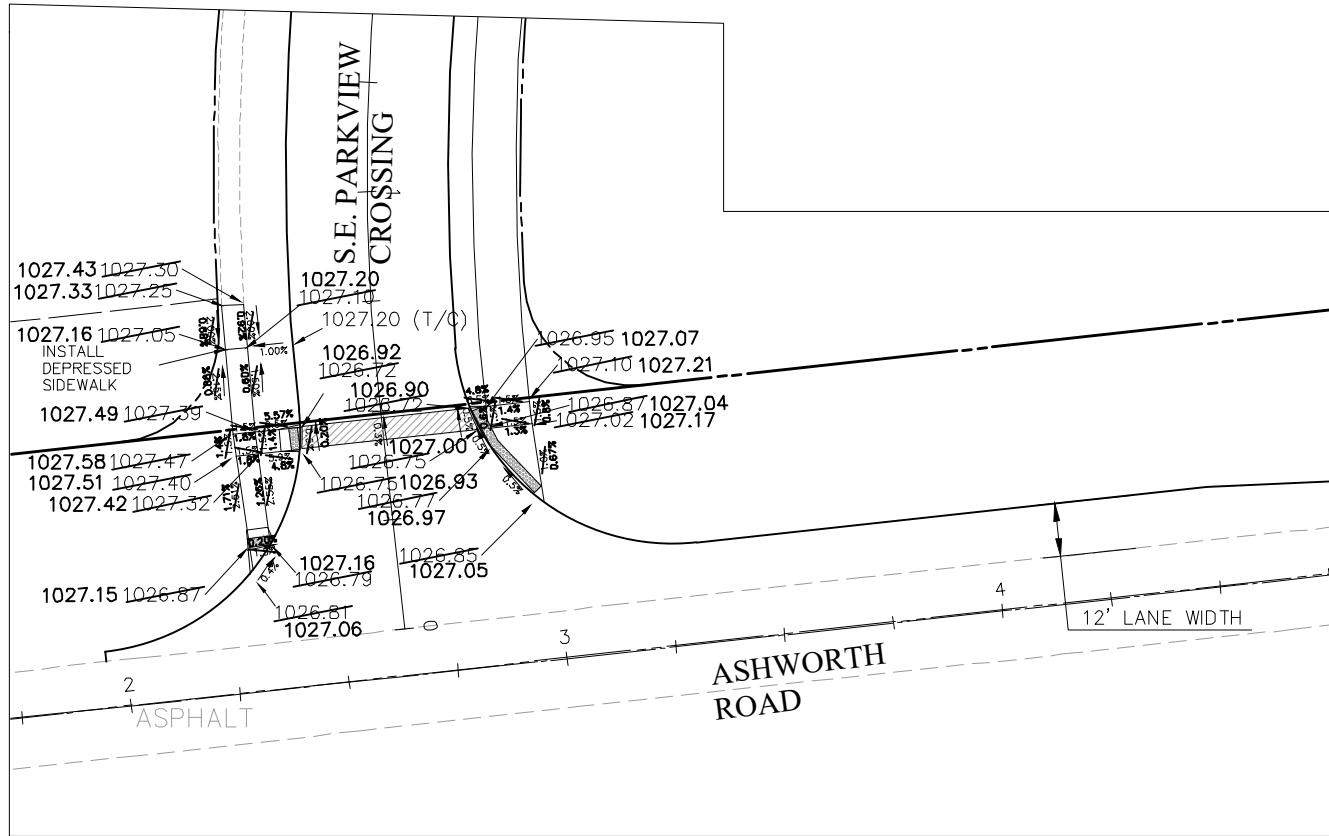
INTERSECTION DETAIL

S.E. ESKER RIDGE AND S.E. PARKVIEW CROSSING
SCALE: 1"=20' (GRADES @ TOP OF SLAB)



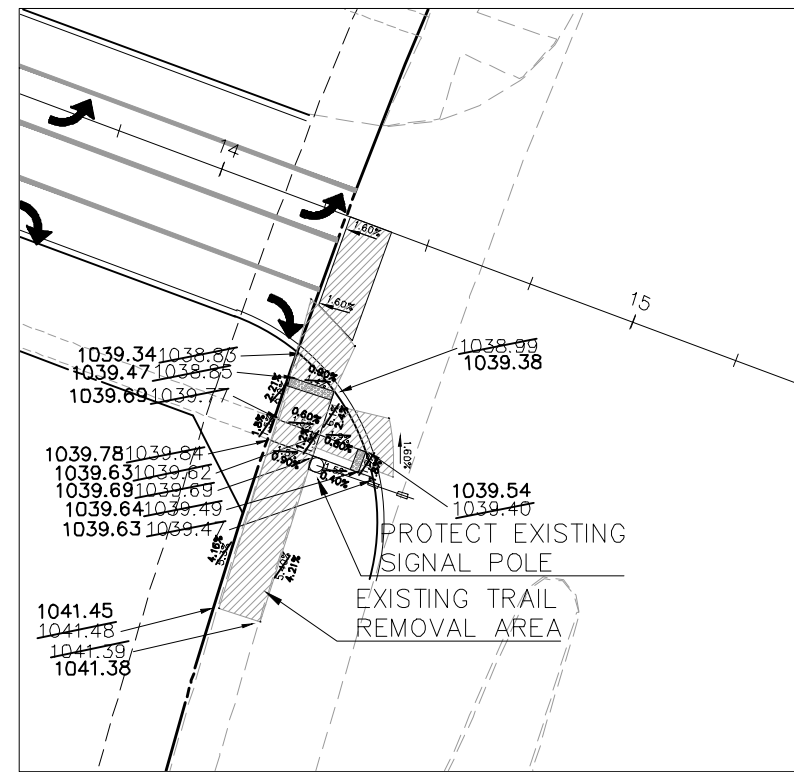
INTERSECTION DETAIL

S.E. ESKER RIDGE AND S.E. PARKVIEW CROSSING
SCALE: 1"=20' (GRADES @ TOP OF SLAB)



INTERSECTION DETAIL

S.E. PARKVIEW CROSSING & ASHWORTH ROAD
SCALE: 1"=20' (GRADES @ TOP OF SLAB)



SIDEWALK RAMP DETAIL

S.E. ESKER RIDGE AND GRAND PRAIRIE PARKWAY
SCALE: 1"=20' (GRADES @ TOP OF SLAB)
(ALL WARNING PANELS TO BE NATURAL FINISH CAST IRON PANELS)



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APPROVED: [Signature] INITIALS: [Signature] AS-BUILT: [Signature]

SCALE: 1"=50'

CC 1921

THE SHOPS AT KETTLESTONE NORTH PLAT 4

JOB NUMBER
CC 1921
SHEET
17 OF 18

