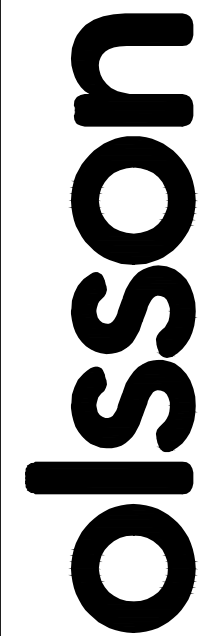


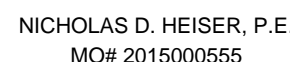


SECTION 30, TOWNSHIP 48N, RANGE 31W
IN LEE'S SUMMIT, JACKSON COUNTY, MO

DISTURBED AREA: 6.70 AC.



OLSSON - CIVIL ENGINEERING
MO CERTIFICATE OF AUTHORITY #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116 TEL



BENCHMARK

BMK 1
SET RR SPIKE IN SOUTHEAST FACE OF POWER POLE LOCATED ON SOUTHWEST
SIDE OF INTERSECTION OF NE COLBERN ROAD & NE DOUGLAS STREET.
N: 1012195.53
E: 2823282.89
EL: 982.46

BMK 2
SET CHISELED SQUARE ON WEST SIDE OF CONCRETE LIGHT POLE BASE ON
NORTH SIDE OF INTERSECTION OF E LEE'S SUMMIT ROAD & NE DOUGLAS STREET.
N: 1014699.58
E: 2823025.88
EL: 932.31

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER UNITY SCHOOL OF CHRISTIANITY 1901 NW BLUE PARKWAY UNITY VILLAGE, MO 64065 CONTACT: GUY SWANSON PHONE: 816.607.0602 EMAIL: SWANSONSG@UNITYONLINE.COM	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 866-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940
ENGINEER OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: NICHOLAS HEISER PHONE: 816.361.1177 EMAIL: NHEISER@OLSSON.COM	NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275
SURVEYOR OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING A MINIMUM OF 7 DAYS PRIOR TO THE REQUESTED DATE OF APPROVAL. ENGINEER SHALL REVIEW SHOP DRAWINGS OR SAMPLES CONFORMANCE WITH THE DESIGN FOR THIS PROJECT AS DESCRIBED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OR OMISSIONS IN DRAWINGS. THE ENGINEER REVIEW SHALL NOT EXTEND TO MEANS OR METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VARIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS UNLESS CONTRACTOR HAS NOTIFIED ENGINEER OF EACH SUCH VARIATION AT THE TIME OF SUBMISSION, AND OBTAINED ENGINEER'S WRITTEN APPROVAL OF EACH SUCH VARIATION. PRIOR TO SUBMITTING EACH SHOP DRAWING OR SAMPLE, CONTRACTOR SHALL REVIEW THE FOLLOWING:
 - A. ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION WITH RESPECT THERETO;
 - B. ALL MATERIALS WITH RESPECT TO INTENDED USE, FABRICATION, SHIPPING, HANDLING, STORAGE, ASSEMBLY AND INSTALLATION PERTAINING TO THE PERFORMANCE OF THE WORK;
 - C. ALL INFORMATION RELATIVE TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO;
 - D. CONTRACTOR SHALL ALSO HAVE REVIEWED AND COORDINATED EACH SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES, AND WITH THE REQUIREMENTS OF THE WORK
 - E. ALL SUBMITTED SHOP DRAWINGS SHALL BEAR A STAMP OR SPECIFIC WRITTEN INDICATION AND SIGNATURE THAT CONTRACTOR HAS FULLY COMPLETED THE ABOVE TASKS.

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PLANS IN THEIR POSSESSION ARE THE MOST CURRENT VERSION ISSUED, ARE FULLY COORDINATED WITH ALL SUBCONTRACTORS, AND PRESENT ON SITE AT ALL TIMES. CURRENT PLANS PREPARED BY OLSSON MAY BE OBTAINED AT THE DIRECTION OF OLSSON'S CLIENT. DIRECT REQUESTS TO OLSSON MAY REQUIRE ADDITIONAL AUTHORIZATIONS, AGREEMENTS, AND/OR FEES. PLEASE CONTACT THE ENGINEER FOR INFORMATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS UNLESS WRITTEN APPROVAL FROM ENGINEER, OWNER, AND DEVELOPER.
3. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
4. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES AND ITEMS OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN IN THE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES, AND FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.
7. THE CONTRACTOR SHALL NOT ENGAGE IN ACTIVITIES THAT MAY ENCROACH ON WATERS OF THE U.S., INCLUDING WETLANDS, UNTIL ANY NECESSARY PERMITS MAY BE OBTAINED. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS DESCRIBED IN THE PERMIT.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, THE SAFETY OF ALL PERSONS INCLUDING VISITORS AND THE GENERAL PUBLIC, AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY THROUGHOUT THE PROJECT AND NOT BE LIMITED BY WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.
9. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL UTILITY COMPANIES AND OBTAIN ANY RELEVANT INFORMATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BOUNDARY CORNERS AND SECTION CORNERS. ANY BOUNDARY CORNER AND/OR SECTION CORNER DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.

11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJACENT PROPERTIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE DURING CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES.
12. PRIOR TO MOVING OFF THE JOB THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER TO PERFORM A FINAL WALK-THROUGH OF THE CONSTRUCTION SITE.

REFERENCES

1. ARCHITECTURAL AND STRUCTURAL ELEMENTS SHOWN IN THESE PLANS ARE FOR REFERENCE ONLY. CONTRACTORS AND SURVEYORS SHALL REFERENCE THEIR RESPECTIVE PLANS FOR DESIGN INFORMATION.
2. THE CONTRACTOR SHALL ADHERE TO THE SITE PREPARATION AND STRUCTURAL FILL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AS PROVIDED BY THE GEOTECHNICAL ENGINEER INCLUDING ALL CURRENT ADDENDUMS. THE STANDARDS AND SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI SHALL ALSO APPLY AND TAKE PRECEDENCE WHEN STRICTER THAN THE GEOTECHNICAL REPORT OR WHEN NO GEOTECHNICAL REPORT IS GIVEN.
3. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY:
 - A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.
 - B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.
 - C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 - D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES..
 - E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI AND THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.

This topographic map illustrates a proposed road layout on a site with varying elevations. The map features contour lines indicating elevations from 930 to 975 feet. A proposed road, shown as a solid line, enters from the top left, curves around a hill, and then splits into two main branches. One branch leads to a proposed bridge crossing a water feature, while the other leads to a proposed spillway. The spillway is labeled "EMERGENCY SPILLWAY" and has a width of 110.00 feet. The bridge is labeled "BRIDGE" and has a width of 148.56 feet. The map also shows a proposed parking area and a proposed building footprint. A north arrow and a scale bar are located in the upper right corner. A title block in the upper left corner contains the following information:

CONTRACTOR SHALL
COORDINATE FINAL GRADING
AT POINT OF CONNECTION
WITH PRIVATE SITE

EMERGENCY SPILLWAY
110.00'
ELEV.=947.50

BRIDGE
148.56'

230.72'

458.06'







NW CORN BERN RD

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.
2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER, AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND/OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND/OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE.
3. CONTRACTOR SHALL ADHERE TO THE SITE PREPARATION AND STRUCTURAL FILL RECOMMENDATIONS AS CALLED OUT IN THE GEOTECHNICAL REPORT AND ENGINEERING EVALUATION AS PROVIDED BY THE GEOTECHNICAL ENGINEER.
4. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

EARTHWORK QUANTITIES	
CUT	FILL
13,008 CY	35,514 CY

1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.

LEGEND	
	EXISTING INDEX CONTOURS
	EXISTING INTERMEDIATE CONTOURS
	PROPOSED INDEX CONTOURS
	PROPOSED INTERMEDIATE CONTOURS
	FUTURE/SITE INDEX CONTOURS
	FUTURE/SITE INTERMEDIATE CONTOURS

MICRO-STUDY
SUBAREA A5 (ONSITE)
AREA=17.42 AC
CN=79
Tc=0.1682 HR.

MACRO-STUDY
SUBAREA A5 (ONSITE)
AREA=28.64 AC
CN=95
Tc=0.0598 HR. (0.10 MIN)

MICRO & MACRO-STUDY
SUBAREA A5 (OFFSITE)
AREA=13.45 AC
CN=83
Tc=0.1063 HR.

STATE OF MISSOURI
NICHOLAS
D. HEISER
09/10/2020
NUMBER
PE-201500555
PROFESSIONAL ENGINEER

NICHOLAS D. HEISER, P.E.
MO# 2015000555

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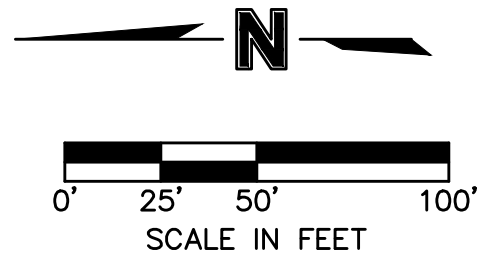
GRADING PLAN
DETENTION BASIN PLANS

ARIA APARTMENTS
PHASE 1

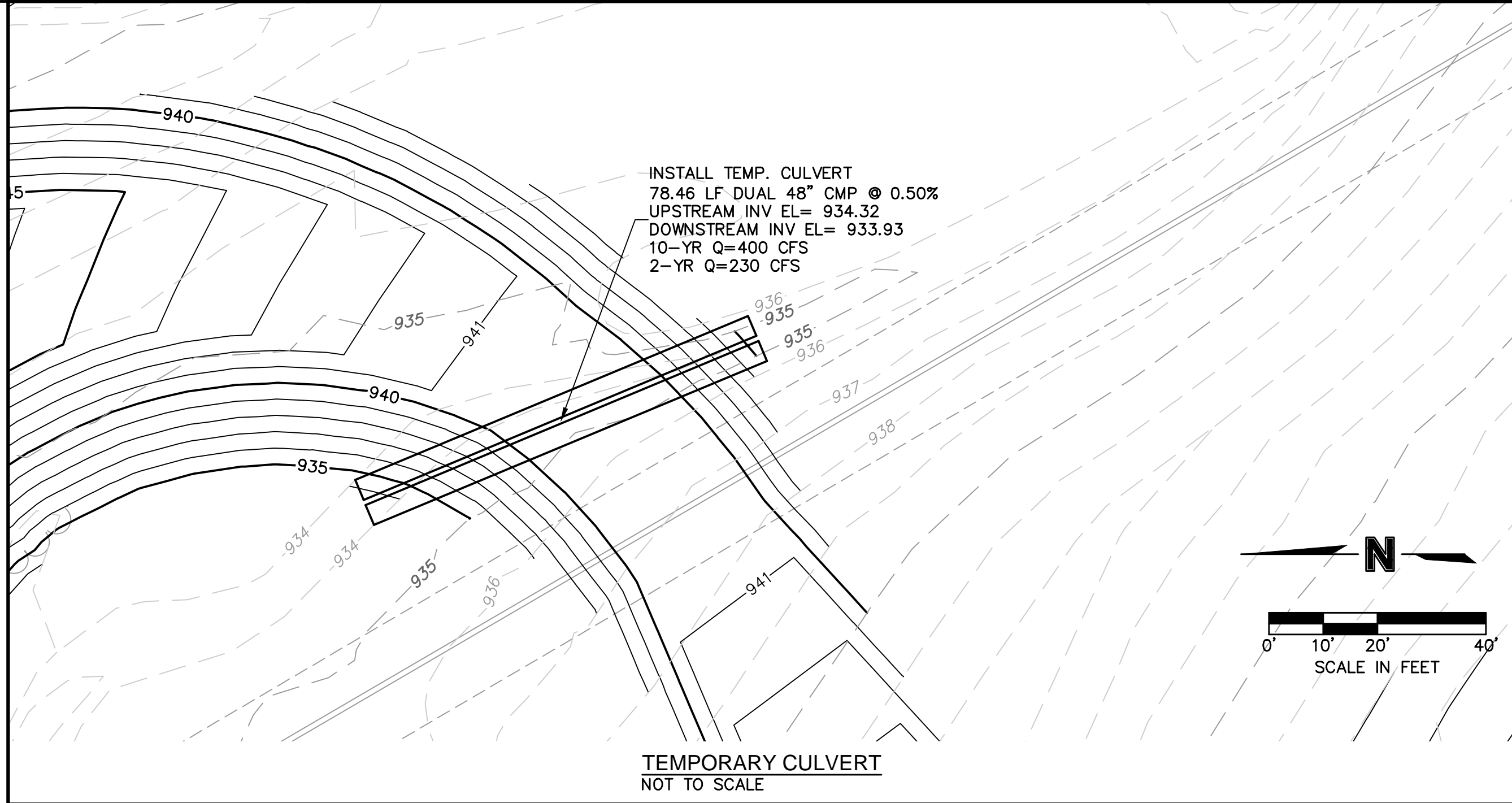
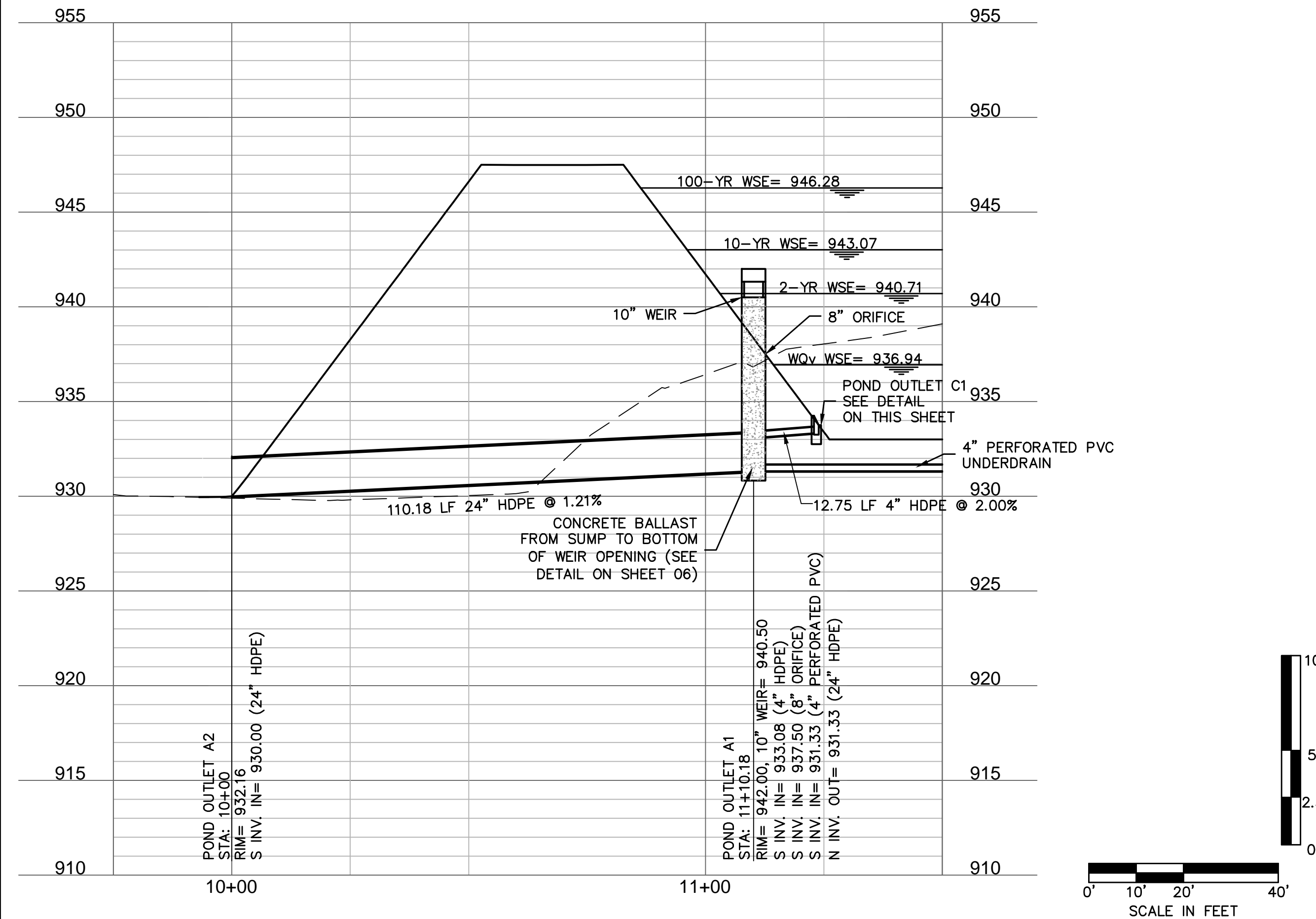
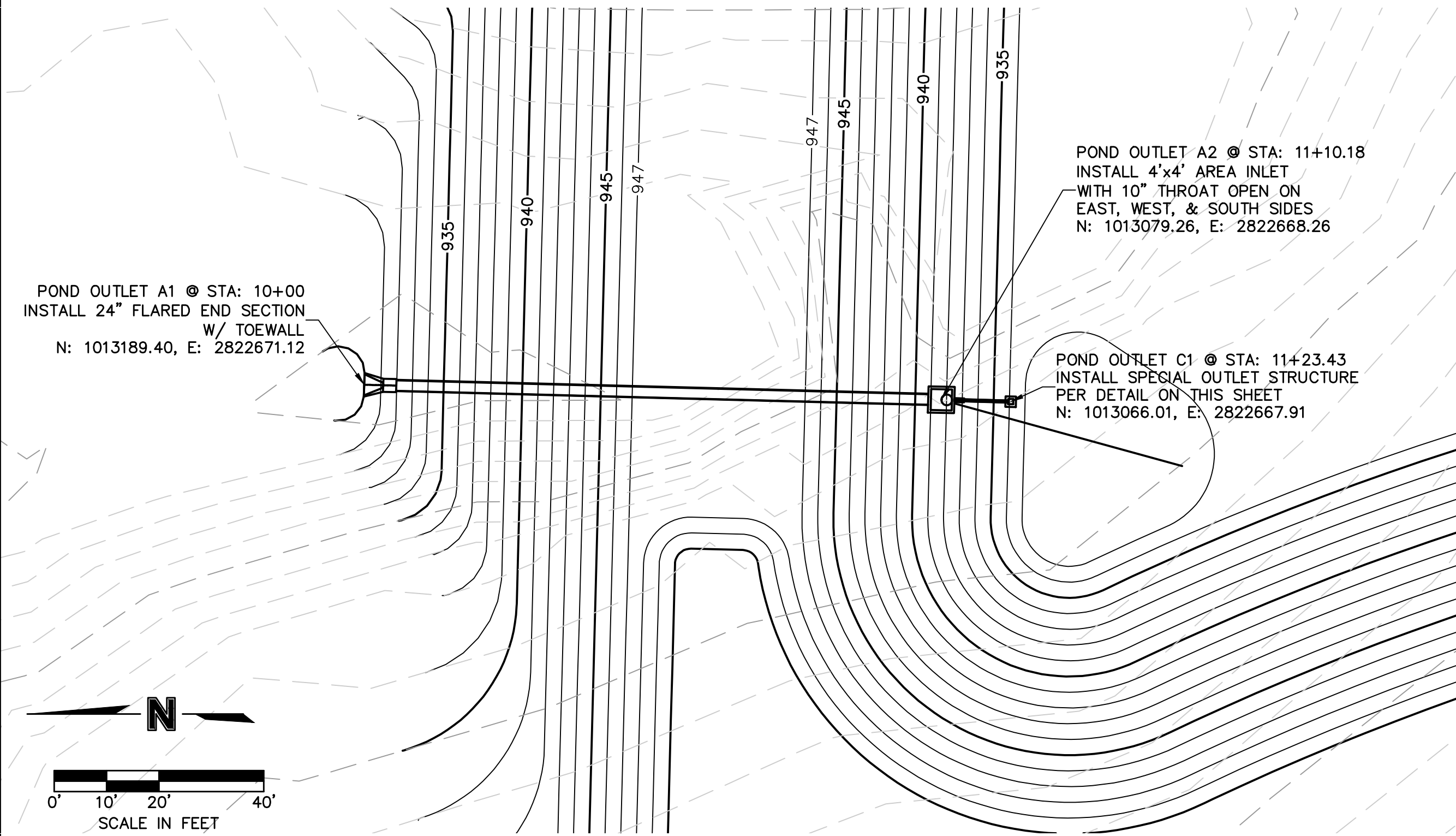
2020

drawn by: _____ A.A.
checked by: _____ N.D.H.
designed by: _____ W.E.P.
QA/QC by: _____ N.D.H.
project no.: _____ 019-0012-B
date: _____ 2020.08.27

SHEET
02 OF 06



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Project Aria Micro Stormwater Hydrology							
Proposed Stormwater Detention Facility Routing Summary:							
Facility I.D.:	Peak Q In (cfs):	TP In (hr.):	Peak Q Out (cfs):	TP Out (hr.):	VR (ac-ft):	Peak WSEL (ft. NAVD):	Max. Storage Volume (ac-ft):
WQV:	9.23	12.03	0.36	17.53	0.635	934.64	0.337
2-Year:	73.27	11.97	2.32	15.42	4.356	938.10	2.767
10-Year:	140.58	11.96	7.63	13.36	8.399	940.57	5.200
100-Year:	230.66	11.96	45.69	12.24	13.994	942.25	7.100

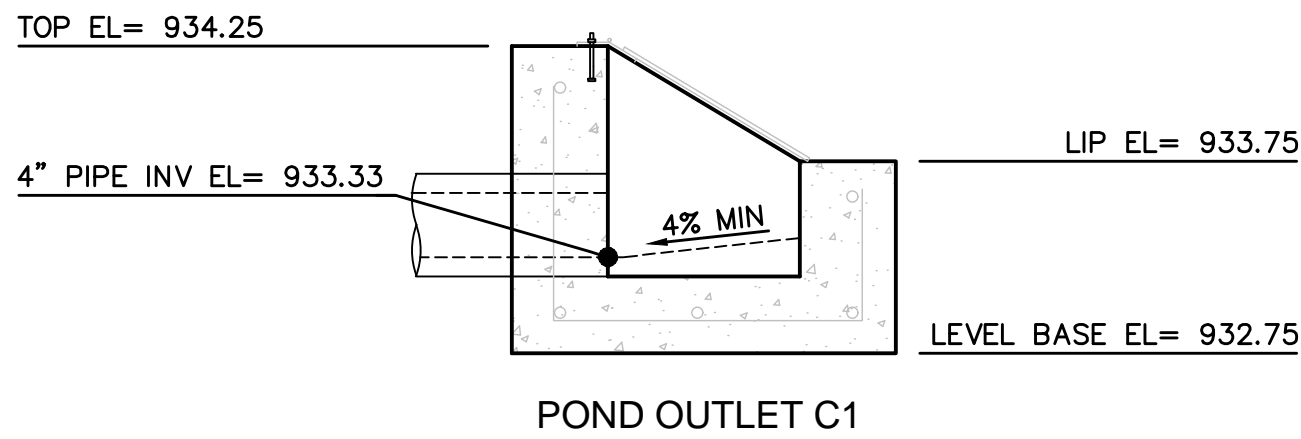
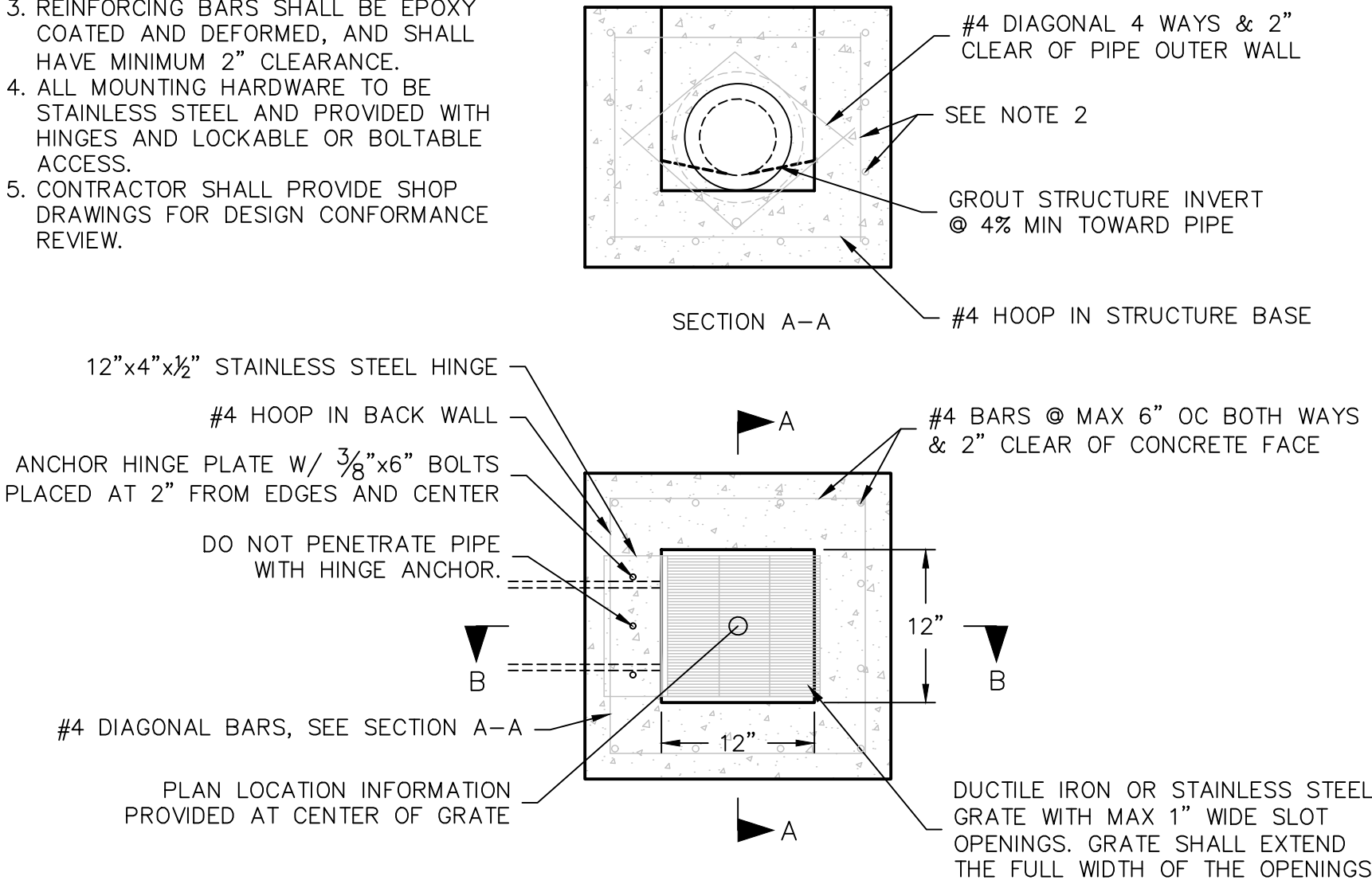
Overall/3-Parcel Macro Stormwater Hyrology							
Proposed Stormwater Detention Facility Routing Summary:							
Facility I.D.:	Peak Q In (cfs):	TP In (hr.):	Peak Q Out (cfs):	TP Out (hr.):	VR (ac-ft):	Peak WSEL (ft. NAVD):	Max. Storage Volume (ac-ft):
WQV:	43.36	11.94	0.73	16.83	2.475	936.94	1.774
2-Year:	155.93	11.93	15.35	12.46	9.098	940.71	5.356
10-Year:	256.29	11.93	47.49	12.17	15.256	943.07	8.102
100-Year:	385.43	11.93	53.94	12.25	23.365	946.28	12.513

PROPOSED STORMWATER DETENTION
BASIN ELEVATION vs. STORAGE TABLE

Elevation (ft. NAVD):	Storage Area (sq. ft.):	Incremental Volume (ft ³):	Cumulative Volume (ac-ft):
933.75	1,541	0	0
934	18,901	2,153	0.049
935	20,680	19,784	0.504
936	29,182	24,809	1.073
937	36,039	32,550	1.82
938	38,936	37,478	2.681
939	41,890	40,404	3.608
940	44,900	43,386	4.604
941	47,967	46,425	5.67
942	51,091	49,521	6.807
943	54,271	52,673	8.016
944	57,508	55,882	9.299
945	60,801	59,147	10.657
946	64,151	62,469	12.091
947	67,557	65,847	13.603
948	72,529	70,028	15.21
949	75,756	74,137	16.912
950	79,010	77,377	18.688

NOTE: THE CONIC METHOD IS USED TO COMPUTE THE INCREMENTAL VOLUME BETWEEN POND CONTOURS. THE SUM OF THE COMPUTED INCREMENTAL VOLUMES PROVIDES THE CUMULATIVE POND VOLUME FOR A GIVEN ELEVATION.

- NOTES:
- SECTION B-B VARIES PER STRUCTURE. SEE INDIVIDUAL SECTIONS SHOWN ON THIS SHEET.
 - CONCRETE SHALL BE CLASS B
 - REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED, AND SHALL HAVE MINIMUM 2" CLEARANCE.
 - ALL MOUNTING HARDWARE TO BE STAINLESS STEEL AND PROVIDED WITH HINGES AND LOCKABLE OR BOLTABLE ACCESS.
 - CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR DESIGN CONFORMANCE REVIEW.



olsson

OLSSON - CIVIL ENGINEERING
NO. CERTIFICATE OF AUTHORITY #001582
NORTH KANSAS CITY, MO 64116
TEL 816.381.1177
www.olsson.com

STATE OF MISSOURI
NICHOLAS D. HEISER
09/10/2020
NUMBER
PE-2015000555
PROFESSIONAL ENGINEER

NICHOLAS D. HEISER, P.E.
MO# 2015000555

BY

REVISIONS DESCRIPTION

DATE

NO. REV.

DETENTION POND OUTLET
DETENTION BASIN PLANS

ARIA APARTMENTS
PHASE 1

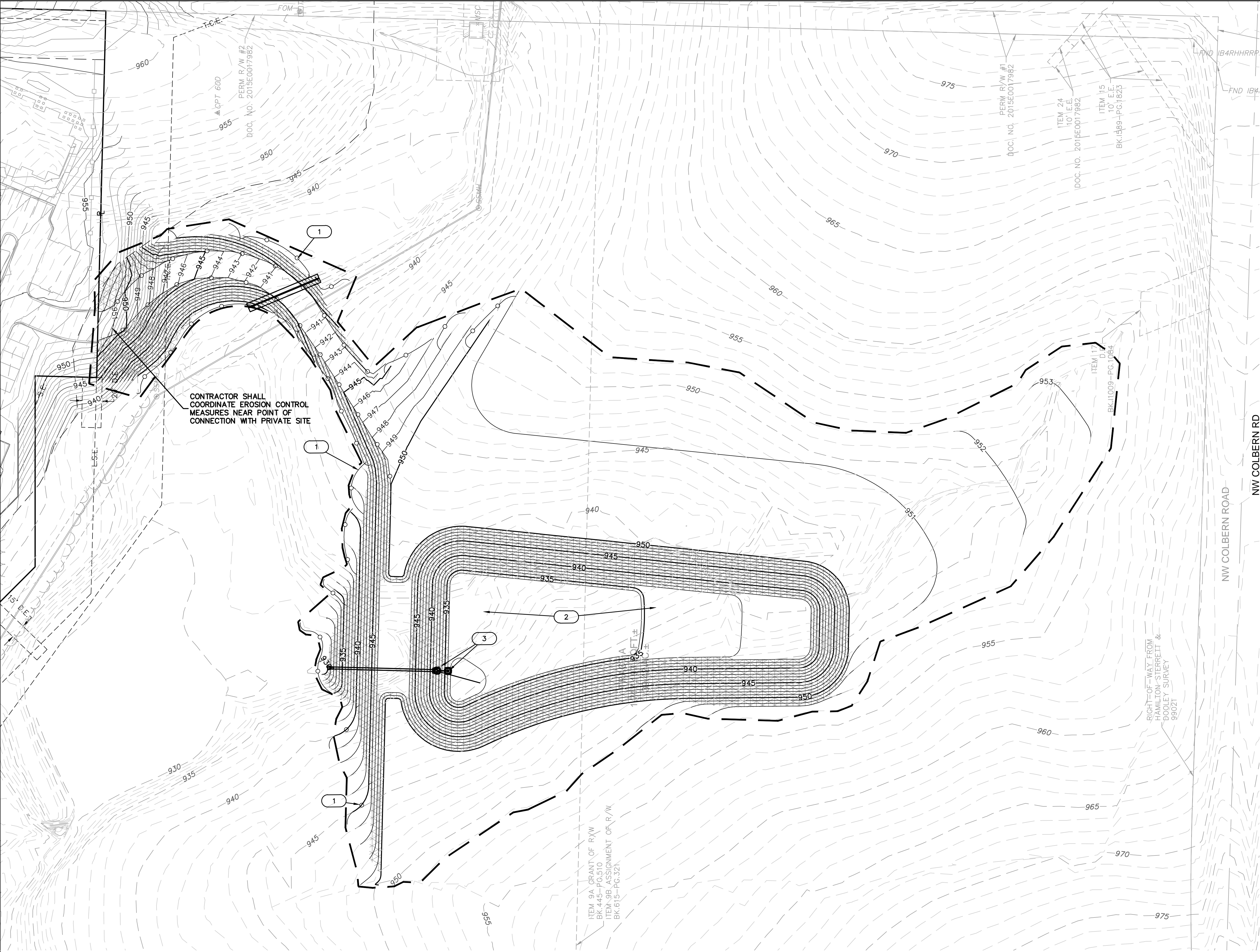
LEE'S SUMMIT, MO

2020

SHEET
03 OF 06

drawn by: A.A.
checked by: N.D.H.
designed by: W.E.P.
QA/QC by: N.D.H.
project no.: 019-0012-B
date: 2020.08.27

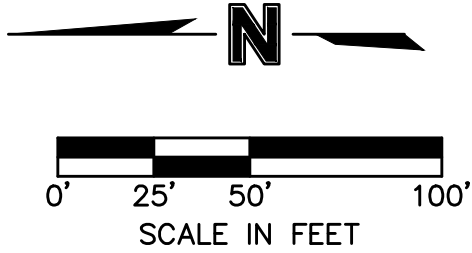
File: F:\2019\0001-0500\019-0012-B\40-Design\AutoCAD\Final Plans\Sheets\GNCV\Detention Basin\C_ERC01_B190012.dwg ~ Layout: 04 EROSION CONTROL PLAN ~ Last Saved By: mdiebold ~ Plot Date: 2019.10.01 03:03 PM



SITE DISTURBANCE LEGEND (7.5 ACRES DISTURBED)

- 999 --- EXISTING MAJOR CONTOURS
- 999 --- EXISTING MINOR CONTOURS
- 999 --- PROPOSED MAJOR CONTOURS
- 999 --- PROPOSED MINOR CONTOURS
- 999 --- FUTURE/SITE MAJOR CONTOURS
- 999 --- FUTURE/SITE MINOR CONTOURS
- LIMITS OF DISTURBANCE/CONSTRUCTION
- SILT FENCING
- BIODEGRADABLE TURF REINFORCEMENT MAT

EROSION CONTROL PHASING CHART				
PROJECT PHASE	BMP NO.	BMP DESCRIPTION	REMOVE AFTER PHASE	NOTES:
1 - PRE-CONSTRUCTION	1	SILT FENCE	3	INSTALL PER APWA DETAIL
	2	SEDIMENT BASIN	3	INSTALL PER APWA DETAIL
	3	INLET PROTECTION	3	INSTALL PER APWA DETAIL
2 - INTERIM	N/A	BIODEGRADABLE TURF REINFORCEMENT MAT	N/A	INSTALL TRM ON ALL SLOPES STEEPER THAN 5:1. SEE LEGEND AND PLAN FOR LOCATION
		ESTABLISH SEEDING & STABILIZATION	N/A	



EROSION CONTROL PLAN

DETENTION BASIN PLANS

ARIA APARTMENTS

PHASE 1

LEE'S SUMMIT, MO

2020

2020

NO. REV.

DATE

BY

REVISIONS DESCRIPTION

REVISIONS

drawn by: _____ A.A.

checked by: _____ N.D.H.

designed by: _____ W.E.P.

QA/QC by: _____ N.D.H.

project no.: 019-0012-B

date: 2020.08.27

SHEET

04 OF 06

STATE OF MISSOURI

NICHOLAS D. HEISER

09/10/2020

NUMBER

PE-2015000555

PROFESSIONAL ENGINEER

NICHOLAS D. HEISER, P.E.

MO# 2015000555

olsson

OLSSON - CIVIL ENGINEERING

NO. CERTIFICATE OF AUTHORITY #001582

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