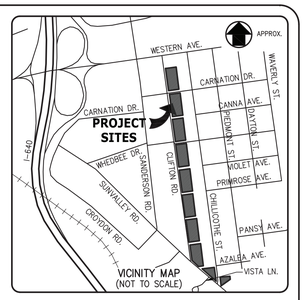
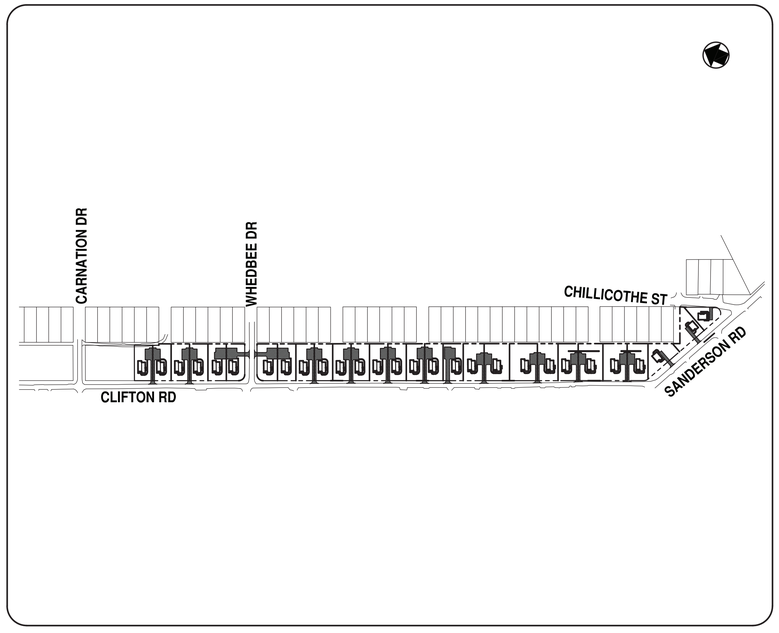
CLIFTON ROAD DEVELOPMENT

404 CLIFTON ROAD

KNOXVILLE, TENNESSEE



DRAWING INDEX



LOCATION MAP
N.T.S.

PROPERTY DATA	
PROPERTY OWNER	*PARCELS 11.00 (BLK #23181), 12.00 (BLK #23182), & 01.00 (BLK #23161)* *THE CITY OF KNOXVILLE* *400 MAIN STREET* *KNOXVILLE, TENNESSEE 37902* *CITY WARD 23, CLT MAP 93, INSERT L, GROUP B* *PARCELS 41.00 (BLK #23162), 42.00 (BLK #23121), & 01.00 (BLK #23122)* *THE CITY OF KNOXVILLE* *400 MAIN STREET* *KNOXVILLE, TENNESSEE 37902* *CITY WARD 23, CLT MAP 93, INSERT E, GROUP H* *PARCELS 37.00 (BLK #23081), 1.01 (BLK #23082), & 1.02 (BLK #23082)* *THE CITY OF KNOXVILLE* *400 MAIN STREET* *KNOXVILLE, TENNESSEE 37902* *CITY WARD 23, CLT MAP 93, INSERT E, GROUP D* *PARCEL 23.00 (BLK #23083)* *THE CITY OF KNOXVILLE* *400 MAIN STREET* *KNOXVILLE, TENNESSEE 37902* *CITY WARD 23, CLT MAP 93, INSERT D, GROUP G*
ZONING	*R1–A, "LOW DENSITY RESIDENTIAL DISTRICT"*
AREA	*7.7 AC. TOTAL*

REVISIONS	DATE
1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018

CANNON & CANNON INC
CONSULTING ENGINEERS · FIELD SURVEYORS
TEL 865.670.8555 | WWW.CANNON-CANNON.COM
8550 Kingston Pike
Knoxville, TN 37919

CLIENT:
KNOXVILLE'S COMMUNITY DEVELOPMENT CORPORATION
901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

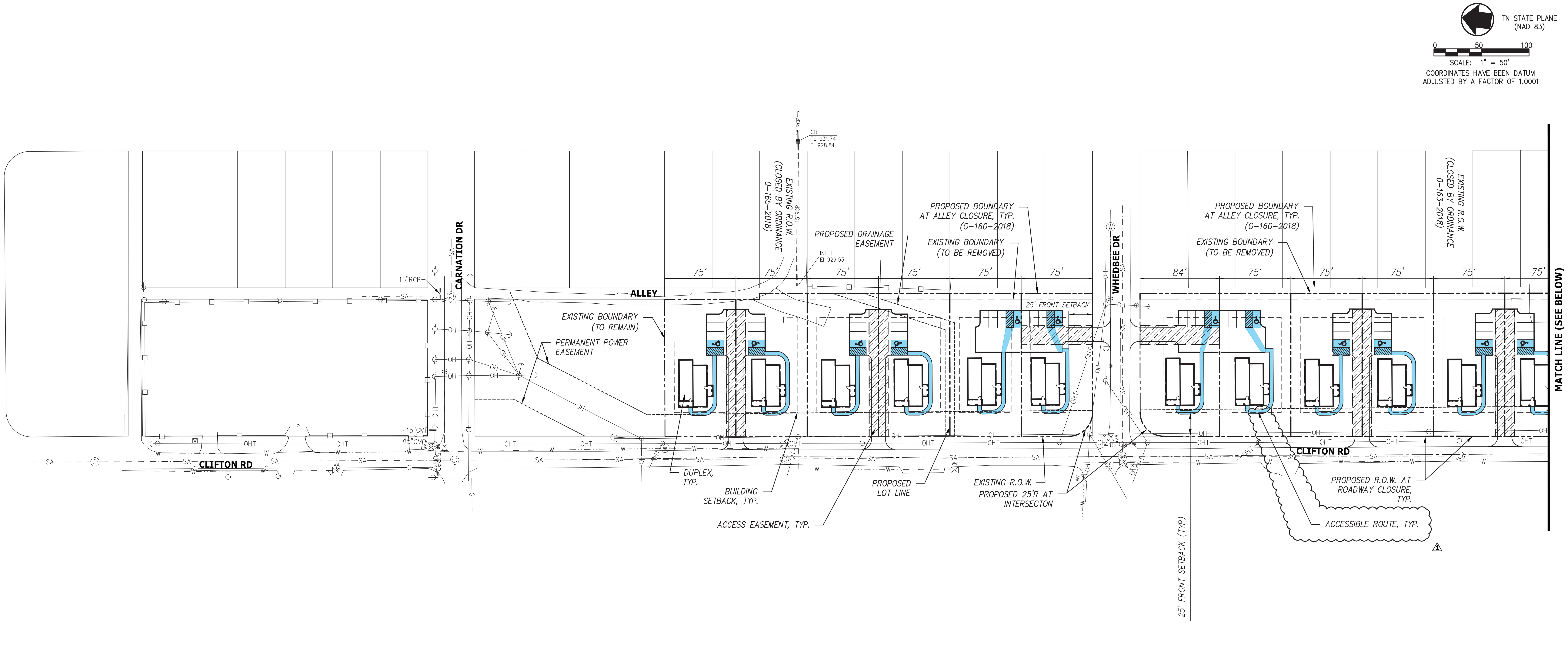
PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD 1
KNOXVILLE, TENNESSEE

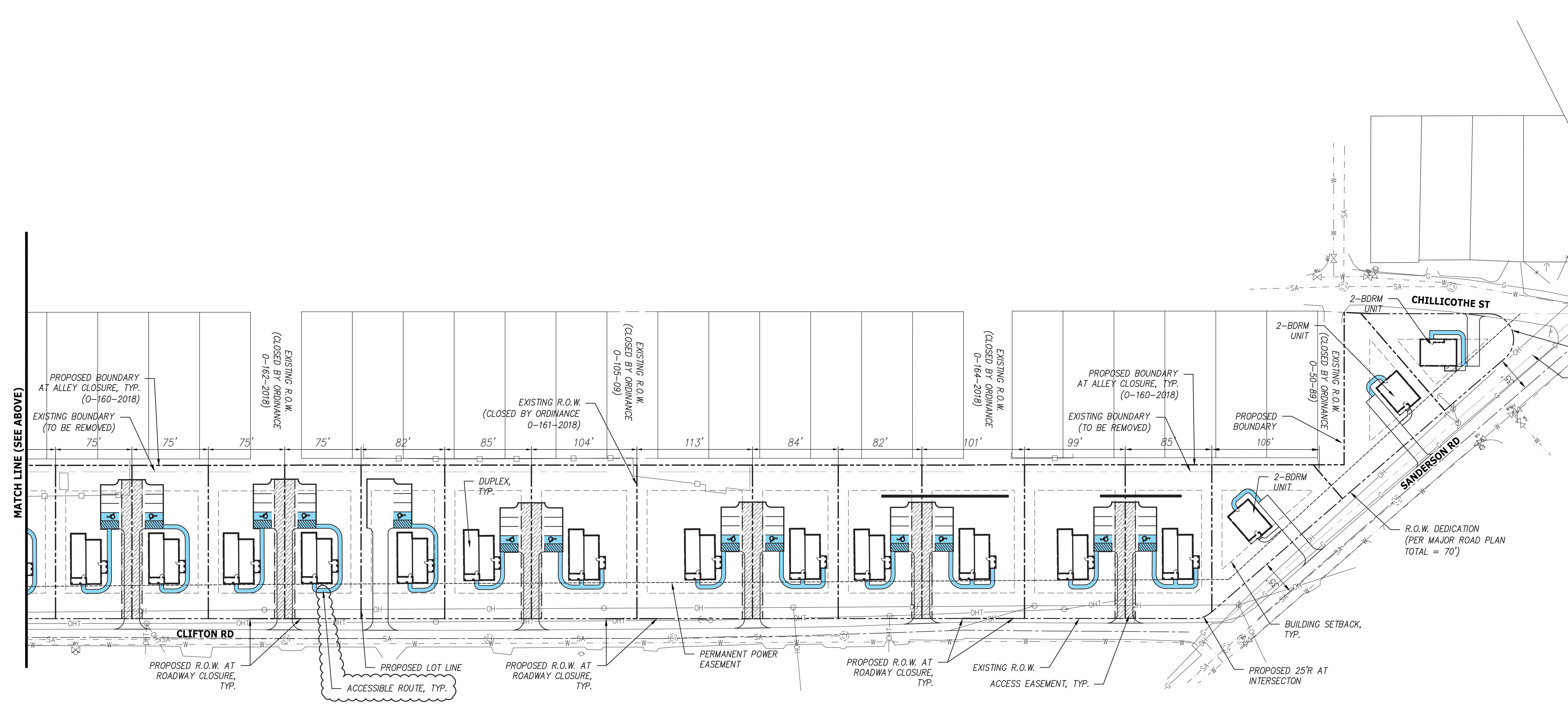
COVER SHEET

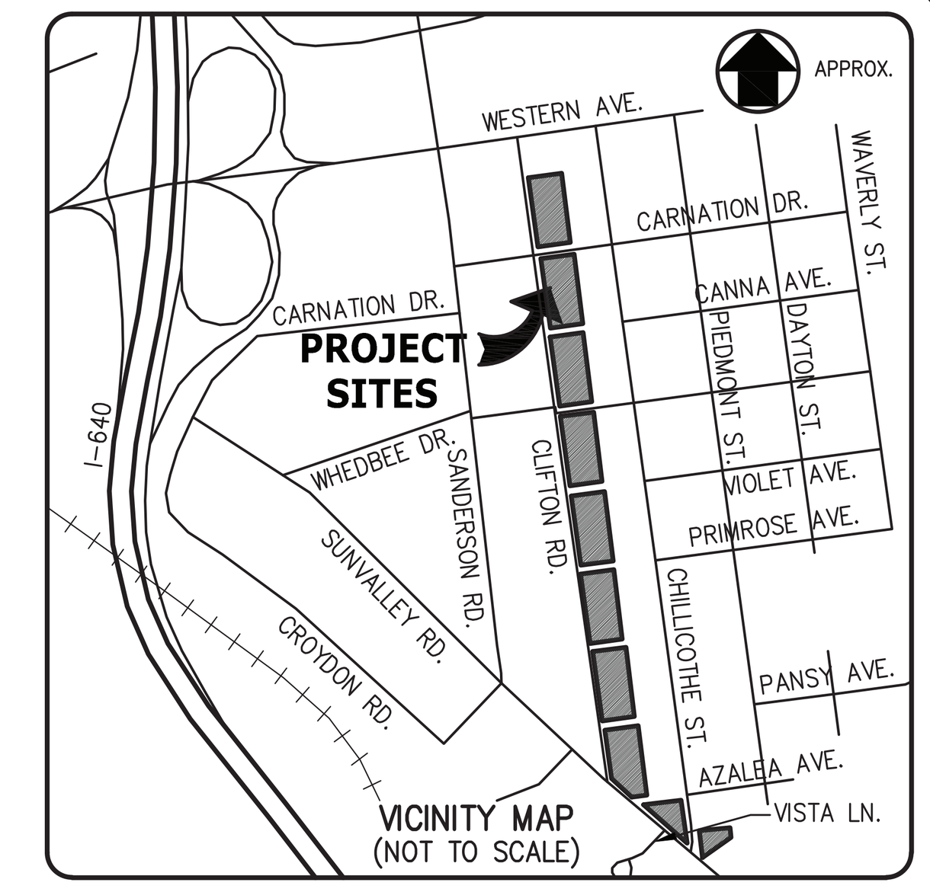
JASON R. HUNT
REGISTERED ENGINEER
AGRICULTURE
No. 112481
STATE OF TENNESSEE
12/12/18

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C0.00







GENERAL NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC DATA SHOWN WAS PROVIDED BY CANNON AND CANNON, INC. DATED AUGUST 17, 2018.
2. OWNERSHIP AND REFERENCE
   PARCELS 11.00 (BLK #23181), 12.00 (BLK #23182), & 01.00 (BLK #23161)
   THE CITY OF KNOXVILLE
   400 MAIN STREET
   KNOXVILLE, TENNESSEE 37902
   CITY WARD 23, CLT MAP 93, INSERT L, GROUP B
   PARCELS 41.00 (BLK #23162), 42.00 (BLK #23121), & 01.00 (BLK #23122)
   THE CITY OF KNOXVILLE
   400 MAIN STREET
   KNOXVILLE, TENNESSEE 37902
   CITY WARD 23, CLT MAP 93, INSERT E, GROUP H
   PARCELS 37.00 (BLK #23081), 1.01 (BLK #23082), & 1.02 (BLK #23082)
   THE CITY OF KNOXVILLE
   400 MAIN STREET
   KNOXVILLE, TENNESSEE 37902
   CITY WARD 23, CLT MAP 93, INSERT E, GROUP D
   PARCEL 23.00 (BLK #23083)
   THE CITY OF KNOXVILLE
   400 MAIN STREET
   KNOXVILLE, TENNESSEE 37902
   CITY WARD 23, CLT MAP 93, INSERT D, GROUP G
3. AREA OF PROPOSED SUBDIVISION = 7.7 AC±
4. APPROXIMATE TOTAL DISTURBED AREA = 7.7 AC.
5. PROPOSED UNITS = 53.
6. ALL SETBACKS SHALL BE IN ACCORDANCE WITH KNOXVILLE ZONING ORDINANCE:
   (R1-A) LOW DENSITY RESIDENTIAL DISTRICT
   FRONT SETBACK: 25'
   SIDE SETBACK: 10'
   REAR SETBACK: 25'
7. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TAKEN FROM OUTSIDE FACE OF BUILDING AND/OR FACE OF CURB.
8. THE MINERAL AGGREGATE BASE AND ASPHALTIC SURFACE COURSES SHALL MEET THE MATERIALS, EQUIPMENT, CONSTRUCTION, AND TESTING REQUIREMENTS OF THESE DRAWINGS, AND THE CITY OF KNOXVILLE STANDARD SPECIFICATIONS.
9. TRAFFIC CONTROL DEVICES AND PAVEMENT MARKING SHALL CONFORM TO THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
10. PERIMETER SLOPES SHALL BE LANDSCAPED AND ARE NOT TO EXCEED 2:1 (H:V) UNLESS PROPER STABILIZATION IS PROPOSED BY A GEOTECHNICAL ENGINEER.
11. PROPOSED LANDSCAPE WILL COMPLY WITH ALL ASPECTS OF THE CITY OF KNOXVILLE TREE PROTECTION ORDINANCE AND ZONING ORDINANCES.
12. REFER TO SHEET C0.01 FOR HORIZONTAL CONTROL INFORMATION.

LEGEND

- PROPOSED ACCESS EASEMENT
- PROPOSED ACCESSIBLE ROUTE
- EXIST. R.O.W.
- BUILDING SETBACK LINE
- EXIST. EASEMENT LINE
- ST — STORM SEWER LINE
- SA — SANITARY SEWER LINE
- OH — OVERHEAD UTILITIES
- WATER LINE
- X OHT — OVERHEAD TELEPHONE
- FENCE LINE
- UNDERGROUND GAS LINE

DEVELOPMENT UNIT COUNT

TOTAL PROPERTY LOTS	= 25
PROPOSED DUPLEX UNITS	= 25
PROPOSED 2-BDRM UNITS	= 3
TOTAL DEVELOPED UNITS	= 53

PARKING REQUIREMENTS

REQURED:	
DUPLEX = 2/UNIT (NO MAX.)	
= (50 X 2)	= 100
DETACHED HOUSE IS 2/UNIT (NO MAX.)	
REQUIRED (3 X 2)	= 6
TOTAL REQUIRED	= 106
PROVIDED:	
DUPLEX PARKING	= 100
DETACHED HOUSE	= 6
(PARKING PROVIDED IN DRIVEWAYS)	
TOTAL PROVIDED	= 106

REVISIONS	DATE
1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018

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CLIENT: **KNOXVILLE'S COMMUNITY DEVELOPMENT CORPORATION**
901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917
865-403-1168

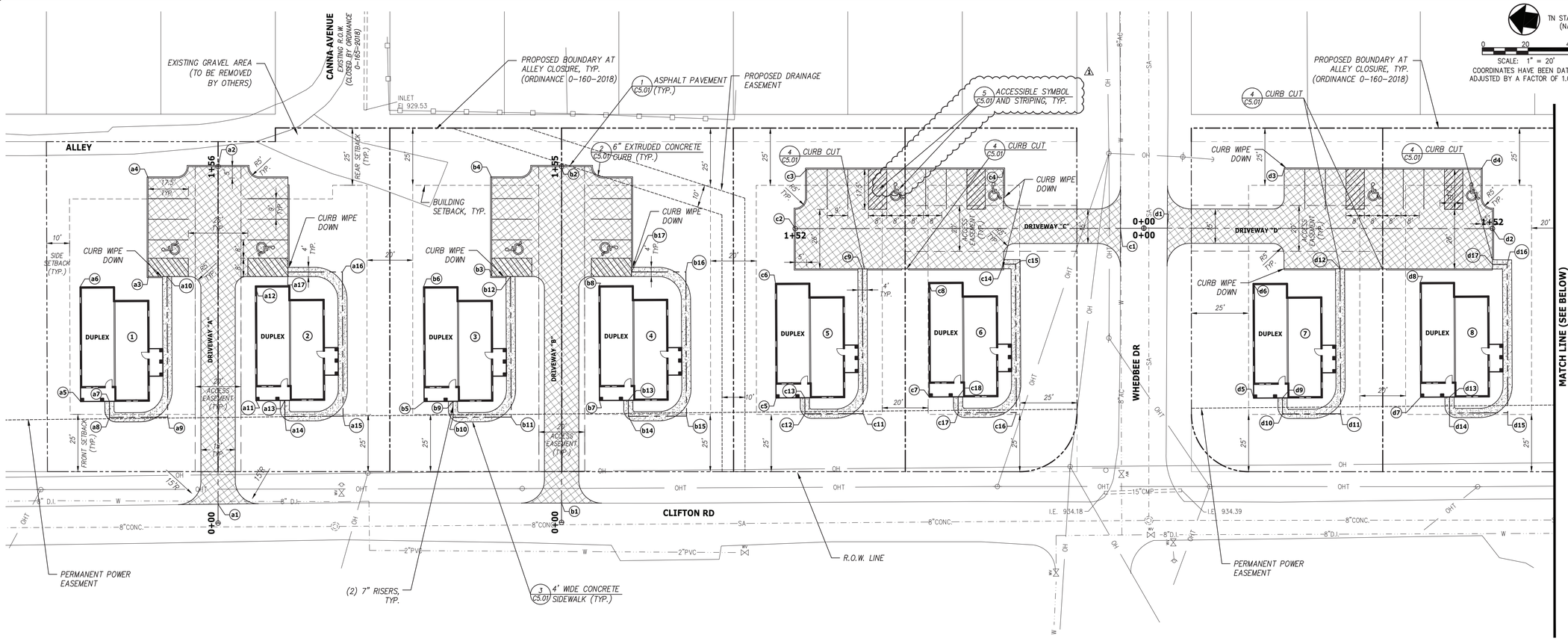
PROJECT: **CLIFTON ROAD DEVELOPMENT**
404 CLIFTON ROAD (1)
KNOXVILLE, TENNESSEE

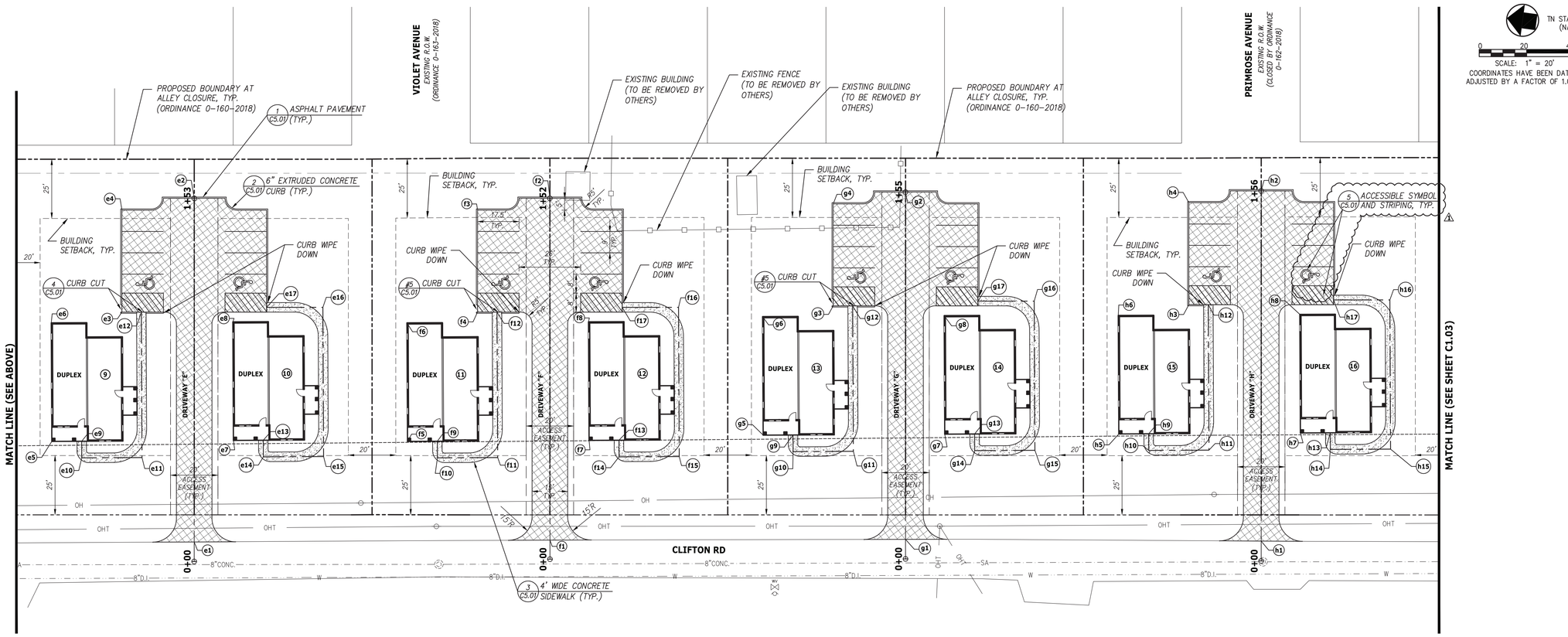
OVERALL SITE LAYOUT

JASON R. HUNT, REGISTERED ENGINEER, AGRICULTURE, COMMERCE, No. 112487, STATE OF TENNESSEE — 12/12/18

CCI PROJECT NO.	00216-0005		
DRAWING DATE	NOVEMBER 19, 2018		
PM	JRH	QC	AWG
DRAWN	LED		

C1.01





NOTES:

1. SEE SHEET C1.01 FOR GENERAL NOTES.

LEGEND

- PROPOSED ASPHALT PAVEMENT
- CONCRETE SIDEWALK
- 1 / C5.01 — DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- 22 — NUMBER OF PARKING SPACES
- 1 — COORDINATE POINT
- HANDICAP PARKING
- EXIST. R.O.W.
- BUILDING SETBACK LINE
- EXIST. EASEMENT LINE
- ST — STORM SEWER LINE
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865-403-1168

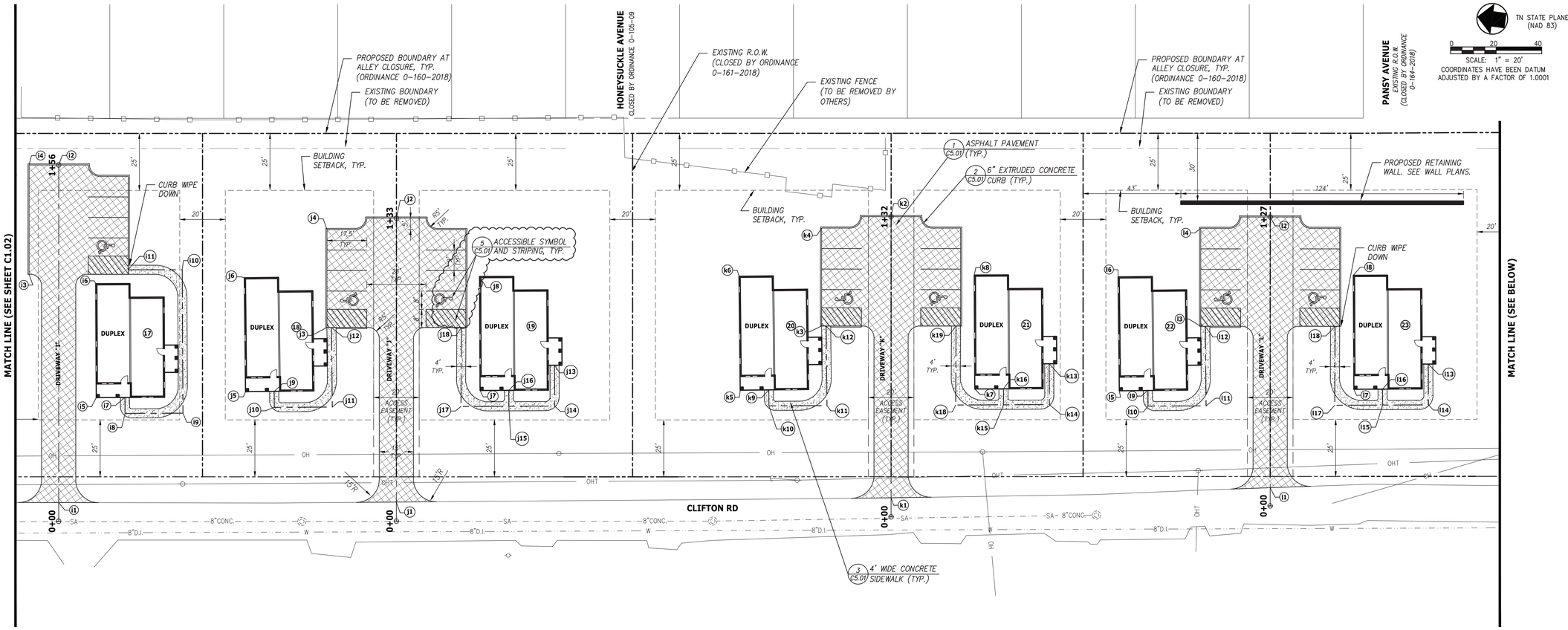
PROJECT: **CLIFTON ROAD DEVELOPMENT**
404 CLIFTON ROAD (1)
KNOXVILLE, TENNESSEE

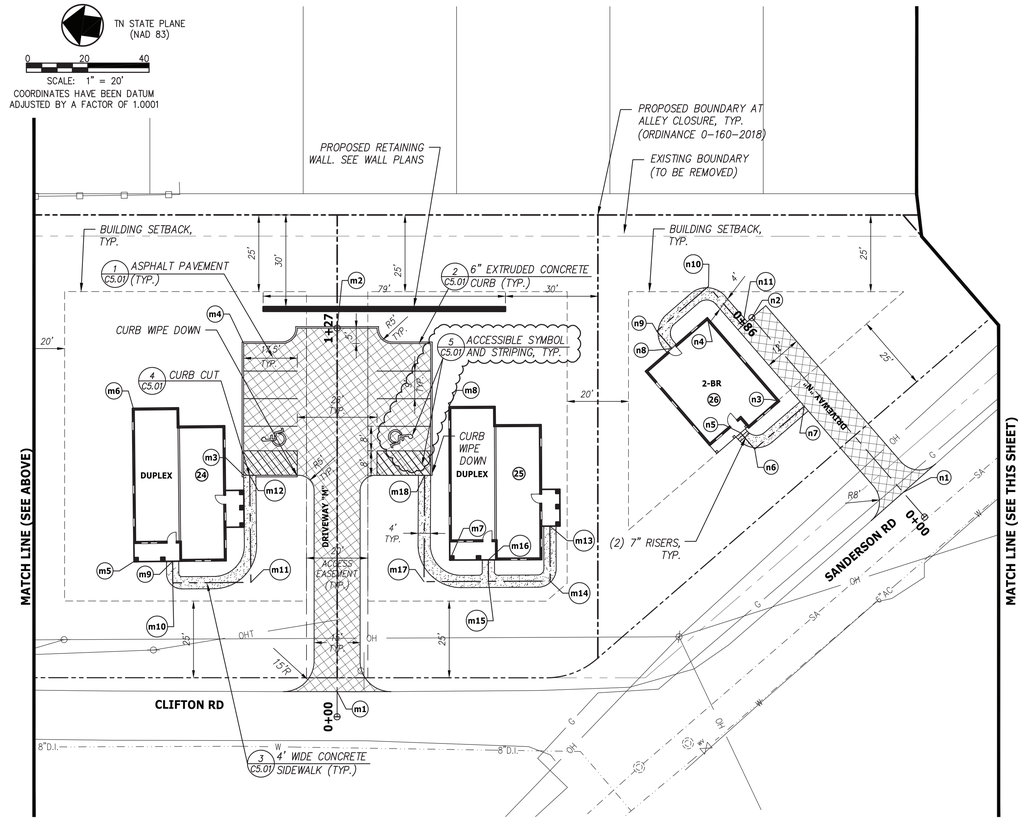
ENLARGED SITE LAYOUT

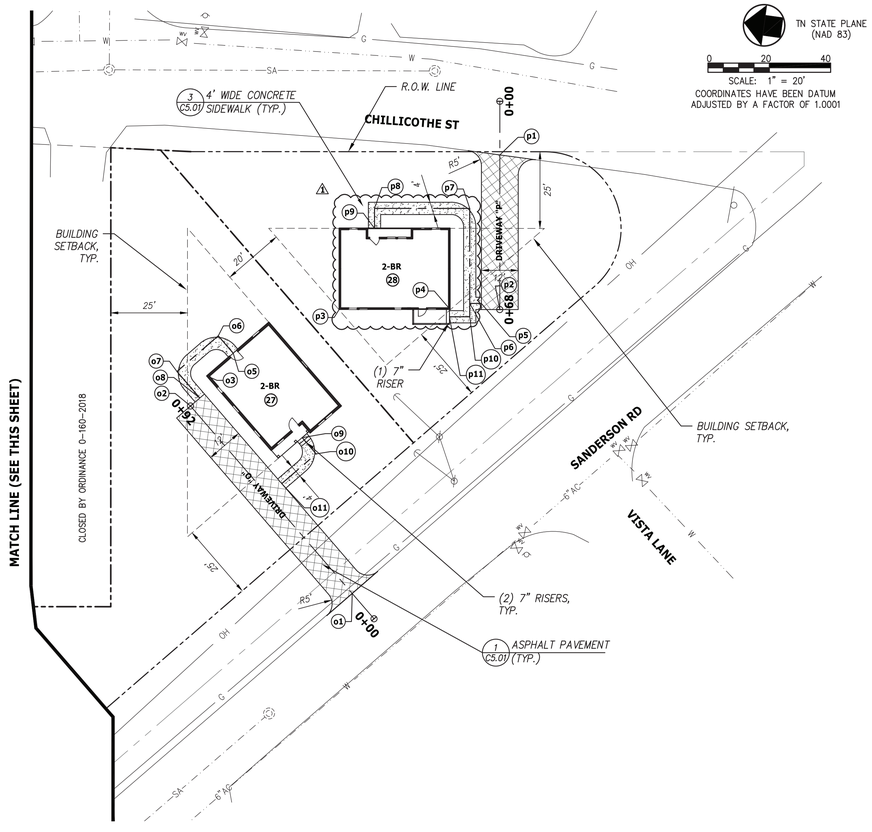
JASON R. HUNT — REGISTERED ENGINEER — AGRICULTURE — No. 112481 — STATE OF TENNESSEE
12/12/18

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C1.02







NOTES:

1. *SEE SHEET C1.01 FOR GENERAL NOTES.*

LEGEND

- PROPOSED ASPHALT PAVEMENT
- CONCRETE SIDEWALK
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REVISIONS	DATE
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404 CLIFTON ROAD ⚠
KNOXVILLE, TENNESSEE

ENLARGED SITE LAYOUT

JASON R. HUNT — REGISTERED ENGINEER — AGRICULTURE — ARCHITECTURE — COMMERCE — No. 112407 — STATE OF TENNESSEE
12/12/18

CCI PROJECT NO.	00216-0005
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PM JRH	QC AWG
DRAWN LED	

C1.03

DRIVEWAY A (LOTS 1 AND 2) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
a1	602803.29	2568068.42	DRIVEWAY CENTERLINE
a2	602823.15	2568214.42	DRIVEWAY CENTERLINE
a3	602846.89	2568162.76	PARKING CORNER
a4	602852.68	2568205.37	PARKING CORNER
a5	602868.81	2568104.73	BUILDING CORNER
a6	602875.79	2568154.24	BUILDING CORNERE
a7	602856.34	2568106.48	SIDEWALK CENTERLINE
a8	602855.36	2568099.55	SIDEWALK CENTERLINE
a9	602830.21	2568103.10	SIDEWALK CENTERLINE
a10	602838.77	2568163.86	SIDEWALK CENTERLINE
a11	602792.99	2568115.48	BUILDING CORNER
a12	602799.97	2568164.99	BUILDING CORNER
a13	602780.52	2568117.23	SIDEWALK CENTERLINE
a14	602779.55	2568110.30	SIDEWALK CENTERLINE
a15	602754.39	2568113.85	SIDEWALK CENTERLINE
a16	602763.17	2568176.15	SIDEWALK CENTERLINE
a17	602786.68	2568172.96	SIDEWALK CENTERLINE

DRIVEWAY B (LOTS 3 AND 4) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
b1	602654.71	2568089.12	DRIVEWAY CENTERLINE
b2	602674.50	2568234.67	DRIVEWAY CENTERLINE
b3	602698.25	2568183.01	PARKING CORNER
b4	602704.04	2568225.62	PARKING CORNER
b5	602720.16	2568124.98	BUILDING CORNER
b6	602727.14	2568174.49	BUILDING CORNER
b7	602644.35	2568135.73	BUILDING CORNER
b8	602651.32	2568185.24	BUILDING CORNER
b9	602707.70	2568126.73	SIDEWALK CENTERLINE
b10	602706.72	2568119.80	SIDEWALK CENTERLINE
b11	602681.56	2568123.35	SIDEWALK CENTERLINE
b12	602690.12	2568184.09	SIDEWALK CENTERLINE
b13	602631.88	2568137.48	SIDEWALK CENTERLINE
b14	602630.90	2568130.55	SIDEWALK CENTERLINE
b15	602605.74	2568134.10	SIDEWALK CENTERLINE
b16	602614.52	2568196.40	SIDEWALK CENTERLINE
b17	602638.04	2568193.21	DRIVEWAY CENTERLINE

DRIVEWAY C (LOTS 5 AND 6) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
c1	602429.04	2568240.87	DRIVEWAY CENTERLINE
c2	602569.74	2568221.58	DRIVEWAY CENTERLINE
c3	602568.31	2568247.92	PARKING CORNER
c4	602483.10	2568259.58	PARKING CORNER
c5	602568.10	2568147.23	BUILDING CORNER
c6	602575.08	2568196.74	BUILDING CORNER
c7	602501.85	2568156.65	BUILDING CORNER
c8	602508.83	2568206.16	BUILDING CORNER
c9	602538.31	2568208.12	SIDEWALK CENTERLINE
c11	602529.49	2568145.60	SIDEWALK CENTERLINE
c12	602554.65	2568142.06	SIDEWALK CENTERLINE
c13	602555.63	2568148.99	SIDEWALK CENTERLINE
c14	602477.46	2568218.47	SIDEWALK CENTERLINE
c15	602472.28	2568219.18	SIDEWALK CENTERLINE
c16	602463.25	2568155.03	SIDEWALK CENTERLINE
c17	602488.40	2568151.48	SIDEWALK CENTERLINE
c18	602489.38	2568158.41	SIDEWALK CENTERLINE

DRIVEWAY D (LOTS 7 AND 8) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
d1	602408.77	2568243.70	DRIVEWAY CENTERLINE
d2	602268.02	2568262.62	DRIVEWAY CENTERLINE
d3	602361.65	2568276.16	PARKING CORNER
d4	602276.42	2568287.63	PARKING CORNER
d5	602361.43	2568175.28	BUILDING CORNER
d6	602368.40	2568224.79	BUILDING CORNER
d7	602289.19	2568185.52	BUILDING CORNER
d8	602296.17	2568235.03	BUILDING CORNER
d9	602348.95	2568177.04	SIDEWALK CENTERLINE
d10	602347.97	2568170.11	SIDEWALK CENTERLINE
d11	602322.82	2568173.65	SIDEWALK CENTERLINE
d12	602331.63	2568236.30	SIDEWALK CENTERLINE
d13	602276.71	2568187.28	SIDEWALK CENTERLINE
d14	602275.74	2568180.35	SIDEWALK CENTERLINE
d15	602250.59	2568183.88	SIDEWALK CENTERLINE
d16	602259.60	2568248.02	SIDEWALK CENTERLINE
d17	602265.95	2568247.17	SIDEWALK CENTERLINE

DRIVEWAY E (LOTS 9 AND 10) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
e1	602151.06	2568159.91	DRIVEWAY CENTERLINE
e2	602170.60	2568303.55	DRIVEWAY CENTERLINE
e3	602194.36	2568251.88	PARKING CORNER
e4	602200.15	2568294.49	PARKING CORNER
e5	602216.28	2568193.85	BUILDING CORNER
e6	602223.25	2568243.36	BUILDING CORNER
e7	602140.46	2568204.60	BUILDING CORNER
e8	602147.44	2568254.11	BUILDING CORNER
e9	602203.81	2568195.60	SIDEWALK CENTERLINE
e10	602202.83	2568188.67	SIDEWALK CENTERLINE
e11	602177.67	2568192.22	SIDEWALK CENTERLINE
e12	602186.24	2568252.98	SIDEWALK CENTERLINE
e13	602127.99	2568206.35	SIDEWALK CENTERLINE
e14	602127.01	2568199.42	SIDEWALK CENTERLINE
e15	602101.85	2568202.97	SIDEWALK CENTERLINE
e16	602110.63	2568265.27	SIDEWALK CENTERLINE
e17	602134.15	2568262.08	SIDEWALK CENTERLINE

DRIVEWAY F (LOTS 11 AND 12) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
f1	602002.49	2568180.91	DRIVEWAY CENTERLINE
f2	602021.98	2568323.78	DRIVEWAY CENTERLINE
f3	602051.52	2568314.72	PARKING CORNER
f4	602045.73	2568272.11	PARKING CORNER
f5	602067.65	2568214.08	BUILDING CORNER
f6	602074.63	2568263.59	BUILDING CORNER
f7	601991.83	2568224.83	BUILDING CORNER
f8	601998.81	2568274.34	BUILDING CORNER
f9	602055.18	2568215.83	SIDEWALK CENTERLINE
f10	602054.20	2568208.90	SIDEWALK CENTERLINE
f11	602029.04	2568212.45	SIDEWALK CENTERLINE
f12	602037.61	2568273.21	SIDEWALK CENTERLINE
f13	601979.36	2568226.58	SIDEWALK CENTERLINE
f14	601978.38	2568219.65	SIDEWALK CENTERLINE
f15	601953.22	2568223.20	SIDEWALK CENTERLINE
f16	601962.00	2568285.50	SIDEWALK CENTERLINE
f17	601985.52	2568282.31	SIDEWALK CENTERLINE

DRIVEWAY G (LOTS 13 AND 14) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
g1	601853.95	2568201.45	DRIVEWAY CENTERLINE
g2	601873.71	2568346.61	DRIVEWAY CENTERLINE
g3	601897.46	2568294.94	PARKING CORNER
g4	601903.24	2568337.55	PARKING CORNER
g5	601919.37	2568236.91	BUILDING CORNER
g6	601926.35	2568286.42	BUILDING CORNER
g7	601843.55	2568247.66	BUILDING CORNER
g8	601850.53	2568297.17	BUILDING CORNER
g9	601906.90	2568238.67	SIDEWALK CENTERLINE
g10	601905.93	2568231.74	SIDEWALK CENTERLINE
g11	601880.77	2568235.28	SIDEWALK CENTERLINE
g12	601889.33	2568296.02	SIDEWALK CENTERLINE
g13	601831.08	2568249.42	SIDEWALK CENTERLINE
g14	601830.11	2568242.49	SIDEWALK CENTERLINE
g15	601804.95	2568246.03	SIDEWALK CENTERLINE
g16	601813.73	2568308.34	SIDEWALK CENTERLINE
g17	601837.25	2568305.14	SIDEWALK CENTERLINE

DRIVEWAY H (LOTS 15 AND 16) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
h1	601705.23	2568220.96	DRIVEWAY CENTERLINE
h2	601725.14	2568367.34	DRIVEWAY CENTERLINE
h3	601748.90	2568315.67	PARKING CORNER
h4	601754.69	2568358.27	PARKING CORNER
h5	601770.82	2568257.64	BUILDING CORNER
h6	601777.80	2568307.15	BUILDING CORNER
h7	601695.00	2568268.38	BUILDING CORNER
h8	601701.98	2568317.90	BUILDING CORNER
h9	601758.35	2568259.39	SIDEWALK CENTERLINE
h10	601757.37	2568252.46	SIDEWALK CENTERLINE
h11	601732.21	2568256.01	SIDEWALK CENTERLINE
h12	601740.78	2568316.77	SIDEWALK CENTERLINE
h13	601682.53	2568270.14	SIDEWALK CENTERLINE
h14	601681.55	2568263.21	SIDEWALK CENTERLINE
h15	601656.39	2568266.76	SIDEWALK CENTERLINE
h16	601665.17	2568329.06	SIDEWALK CENTERLINE
h17	601688.69	2568325.87	SIDEWALK CENTERLINE

DRIVEWAY I (LOT 17) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
i1	601612.05	2568233.36	DRIVEWAY CENTERLINE
i2	601632.01	2568380.19	DRIVEWAY CENTERLINE
i3	601638.45	2568330.88	PARKING CORNER
i4	601644.90	2568378.44	PARKING CORNER
i5	601601.92	2568281.23	BUILDING CORNER
i6	601608.89	2568330.74	BUILDING CORNER
i7	601589.45	2568282.99	SIDEWALK CENTERLINE
i8	601588.48	2568276.05	SIDEWALK CENTERLINE
i9	601563.32	2568279.60	SIDEWALK CENTERLINE
i10	601572.10	2568341.90	SIDEWALK CENTERLINE
i11	601595.61	2568338.71	SIDEWALK CENTERLINE

DRIVEWAY J (LOTS 18 AND 19) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
j1	601465.25	2568253.56	DRIVEWAY CENTERLINE
j2	601482.03	2568377.03	DRIVEWAY CENTERLINE
j3	601505.80	2568325.36	PARKING CORNER
j4	601511.58	2568367.97	PARKING CORNER
j5	601537.38	2568292.64	BUILDING CORNER
j6	601544.64	2568342.11	BUILDING CORNER
j7	601435.47	2568307.05	BUILDING CORNER
j8	601442.44	2568356.56	BUILDING CORNER
j9	601524.94	2568294.46	SIDEWALK CENTERLINE
j10	601523.97	2568287.52	SIDEWALK CENTERLINE
j11	601498.74	2568291.08	SIDEWALK CENTERLINE
j12	601503.81	2568325.63	SIDEWALK CENTERLINE
j13	601404.61	2568322.42	SIDEWALK CENTERLINE
j14	601402.11	2568304.68	SIDEWALK CENTERLINE
j15	601422.02	2568301.87	SIDEWALK CENTERLINE
j16	601423.00	2568308.80	SIDEWALK CENTERLINE
j17	601442.83	2568298.94	SIDEWALK CENTERLINE
j18	601447.33	2568333.30	SIDEWALK CENTERLINE

DRIVEWAY K (LOTS 20 AND 21) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
k1	601250.41	2568284.70	DRIVEWAY CENTERLINE
k2	601267.04	2568406.94	DRIVEWAY CENTERLINE
k3	601290.79	2568355.28	PARKING CORNER
k4	601296.58	2568397.89	PARKING CORNER
k5	601322.37	2568322.56	BUILDING CORNER
k6	601329.64	2568372.03	BUILDING CORNER
k7	601220.46	2568336.96	BUILDING CORNER
k8	601227.43	2568386.48	BUILDING CORNER
k9	601309.94	2568324.37	SIDEWALK CENTERLINE
k10	601308.96	2568317.44	SIDEWALK CENTERLINE
k11	601283.73	2568320.99	SIDEWALK CENTERLINE
k12	601288.81	2568355.55	SIDEWALK CENTERLINE
k13	601189.60	2568352.33	SIDEWALK CENTERLINE
k14	601187.10	2568334.59	SIDEWALK CENTERLINE
k15	601207.01	2568331.79	SIDEWALK CENTERLINE
k16	601207.99	2568338.72	SIDEWALK CENTERLINE
k18	601227.82	2568328.86	SIDEWALK CENTERLINE
k19	601232.33	2568363.21	SIDEWALK CENTERLINE

DRIVEWAY L (LOTS 22 AND 23) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
l1	601086.18	2568311.51	DRIVEWAY CENTERLINE
l2	601102.18	2568429.26	DRIVEWAY CENTERLINE
l3	601125.95	2568377.59	PARKING CORNER
l4	601131.73	2568420.20	PARKING CORNER
l5	601157.50	2568344.72	BUILDING CORNER
l6	601164.77	2568394.19	BUILDING CORNER
l7	601055.61	2568359.28	BUILDING CORNER
l8	601062.59	2568408.79	BUILDING CORNER
l9	601145.09	2568346.69	SIDEWALK CENTERLINE
l10	601144.12	2568339.75	SIDEWALK CENTERLINE
l11	601118.89	2568343.31	SIDEWALK CENTERLINE
l12	601123.96	2568377.86	SIDEWALK CENTERLINE
l13	601024.76	2568374.65	SIDEWALK CENTERLINE
l14	601022.26	2568356.90	SIDEWALK CENTERLINE
l15	601042.17	2568354.10	SIDEWALK CENTERLINE
l16	601043.14	2568361.03	SIDEWALK CENTERLINE
l17	601062.97	2568351.17	SIDEWALK CENTERLINE
l18	601067.48	2568385.53	SIDEWALK CENTERLINE

DRIVEWAY M (LOTS 24 AND 25) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
m1	600888.42	2568338.86	DRIVEWAY CENTERLINE
m2	600904.38	2568456.30	DRIVEWAY CENTERLINE
m3	600928.14	2568404.64	PARKING CORNER
m4	600933.93	2568447.25	PARKING CORNER
m5	600959.76	2568371.98	BUILDING CORNER
m6	600966.73	2568421.49	BUILDING CORNER
m7	600857.81	2568386.33	BUILDING CORNER
m8	600864.78	2568435.84	BUILDING CORNER
m9	600947.29	2568373.73	SIDEWALK CENTERLINE
m10	600946.31	2568366.80	SIDEWALK CENTERLINE
m11	600921.08	2568370.36	SIDEWALK CENTERLINE
m12	600926.16	2568404.91	SIDEWALK CENTERLINE
m13	600826.95	2568401.69	SIDEWALK CENTERLINE
m14	600824.46	2568383.95	SIDEWALK CENTERLINE
m15	600844.37	2568381.15	SIDEWALK CENTERLINE
m16	600845.34	2568388.08	SIDEWALK CENTERLINE
m17	600865.17	2568378.22	SIDEWALK CENTERLINE
m18	600869.68	2568412.57	SIDEWALK CENTERLINE

DRIVEWAY N (LOT 26) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
n1	600714.28	2568428.12	DRIVEWAY CENTERLINE
n2	600770.84	2568477.91	DRIVEWAY CENTERLINE
n3	600758.23	2568452.15	BUILDING CORNER
n4	600785.25	2568475.94	BUILDING CORNER
n5	600769.41	2568440.20	SIDEWALK CENTERLINE
n6	600764.16	2568435.57	SIDEWALK CENTERLINE
n7	600750.04	2568451.61	SIDEWALK CENTERLINE
n8	600795.38	2568464.43	SIDEWALK CENTERLINE
n9	600801.01	2568469.38	SIDEWALK CENTERLINE
n10	600786.25	2568486.15	SIDEWALK CENTERLINE
n11	600773.48	2568474.91	SIDEWALK CENTERLINE

DRIVEWAY 0 (LOT 27) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
o1	600618.90	2568536.71	DRIVEWAY CENTERLINE
o2	600679.39	2568590.18	DRIVEWAY CENTERLINE
o3	600675.40	2568600.61	BUILDING CORNER
o5	600667.91	2568609.12	SIDEWALK CENTERLINE
o6	600673.52	2568614.07	SIDEWALK CENTERLINE
o7	600685.30	2568600.74	SIDEWALK CENTERLINE
o8	600676.75	2568593.18	SIDEWALK CENTERLINE
o9	600641.93	2568584.88	SIDEWALK CENTERLINE
o10	600636.69	2568580.24	SIDEWALK CENTERLINE
o11	600646.51	2568569.12	SIDEWALK CENTERLINE

DRIVEWAY P (LOT 28) COORDINATE TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
p1	600590.50	2568684.90	DRIVEWAY CENTERLINE
p2	600583.71	2568634.95	DRIVEWAY CENTERLINE
p3	600635.57	2568628.05	BUILDING CORNER
p4	600599.89	2568632.89	BUILDING CORNER
p5	600589.93	2568636.12	SIDEWALK CENTERLINE
p6	600593.70	2568635.61	SIDEWALK CENTERLINE
p7	600597.87	2568666.30	SIDEWALK CENTERLINE
p8	600628.64	2568662.12	SIDEWALK CENTERLINE
p9	600627.77	2568655.68	SIDEWALK CENTERLINE
p10	600593.12	2568631.29	SIDEWALK CENTERLINE
p11	600599.66	2568630.40	SIDEWALK CENTERLINE

REVISIONS	DATE
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901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD 1
KNOXVILLE, TENNESSEE

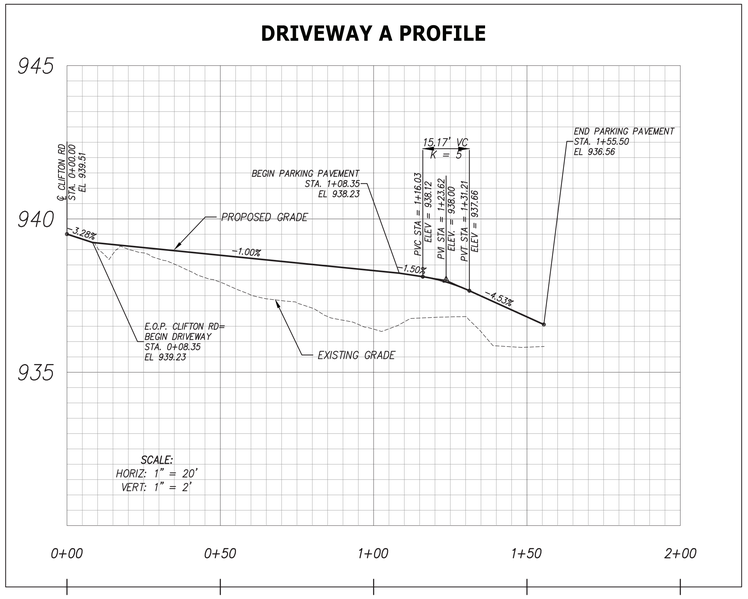
HORIZONTAL COORDINATE POINTS

JASON R. HUNT REGISTERED ENGINEER No. 112487 STATE OF TENNESSEE
12/12/18

CCI PROJECT NO. 00216-0005
DRAWING DATE NOVEMBER 19, 2018
PM JRH QC AWG
DRAWN LED

C1.04

DRIVEWAY A PROFILE



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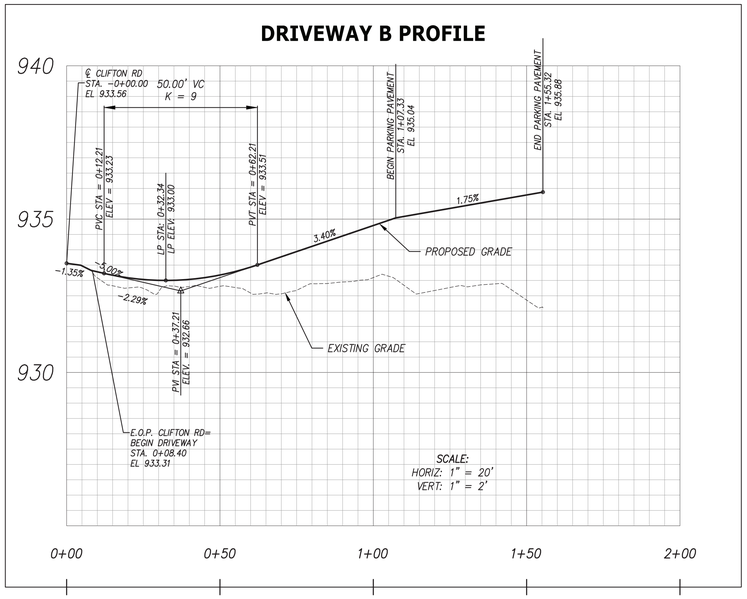

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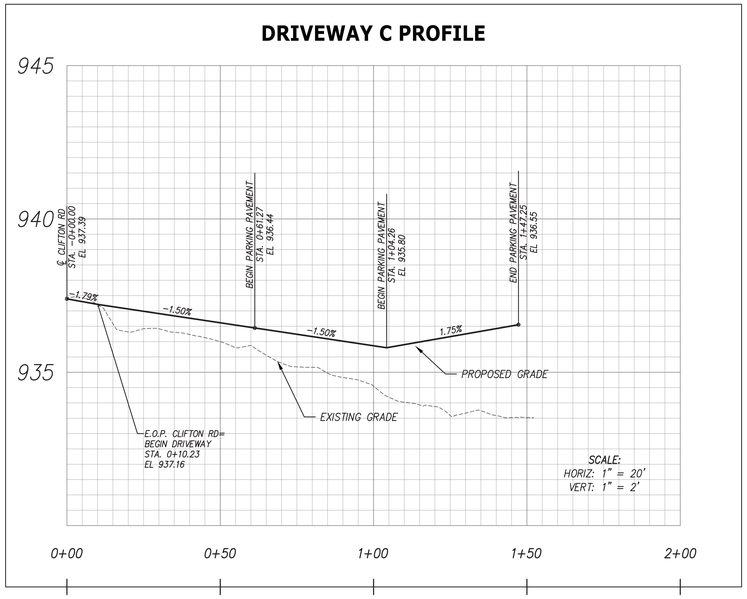

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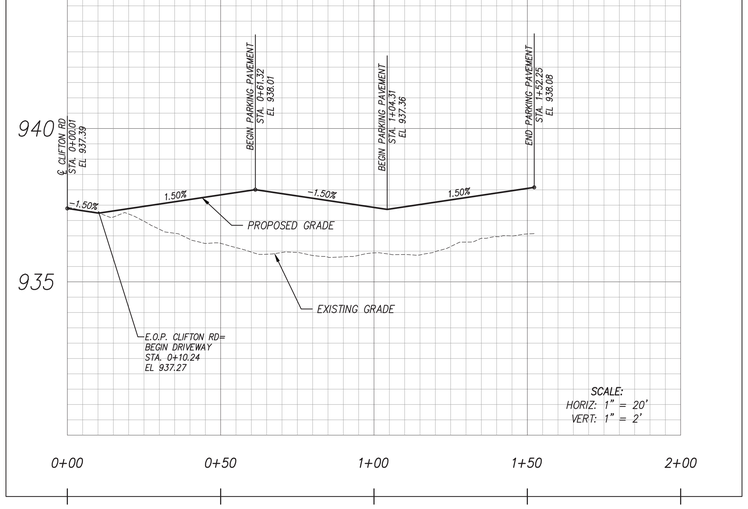

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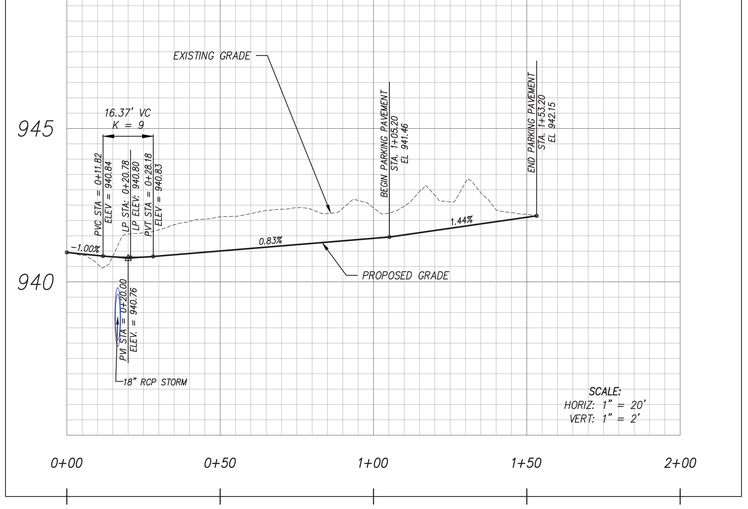

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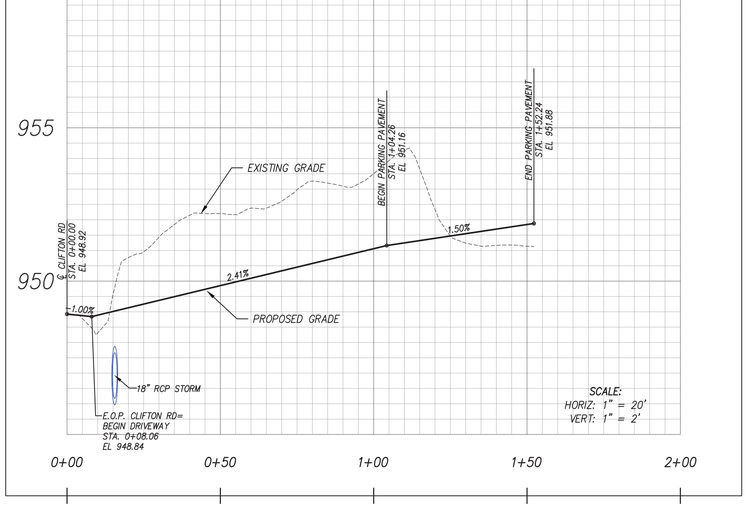

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KNOXVILLE, TENNESSEE 37917

PROJECT:
CLIFTON ROAD DEVELOPMENT
(404 CLIFTON ROAD) ⚠1
KNOXVILLE, TENNESSEE

DRIVEWAY PROFILES

JASON R. HUNT
REGISTERED ENGINEER
AGRICULTURE
No. 112487
STATE OF TENNESSEE
12/12/18

CCI PROJECT NO.	00216-0005
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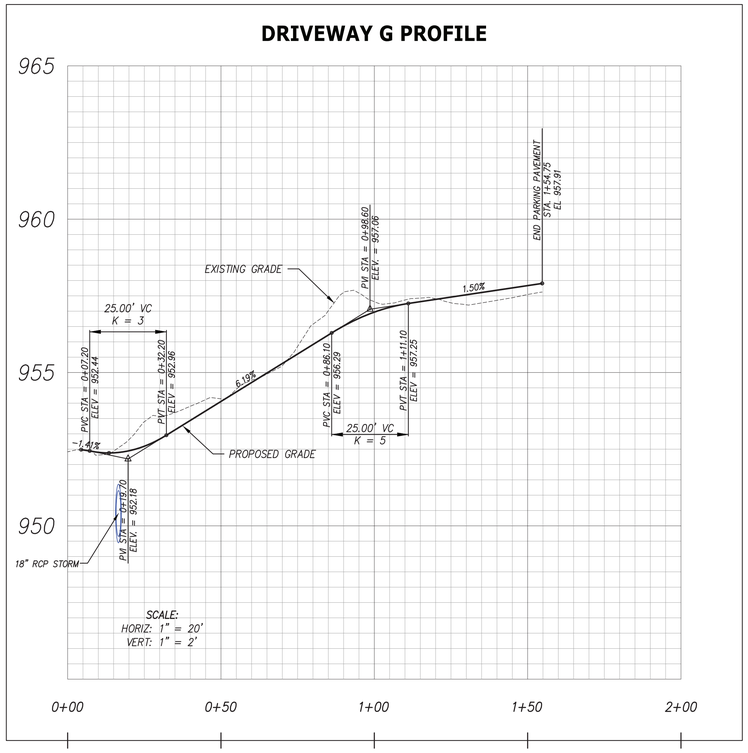
C2.01

DRIVEWAY G PROFILE



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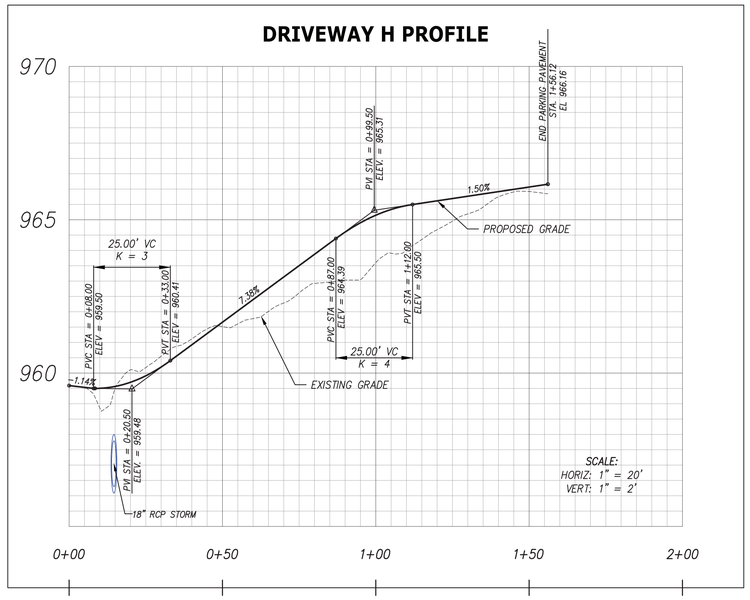

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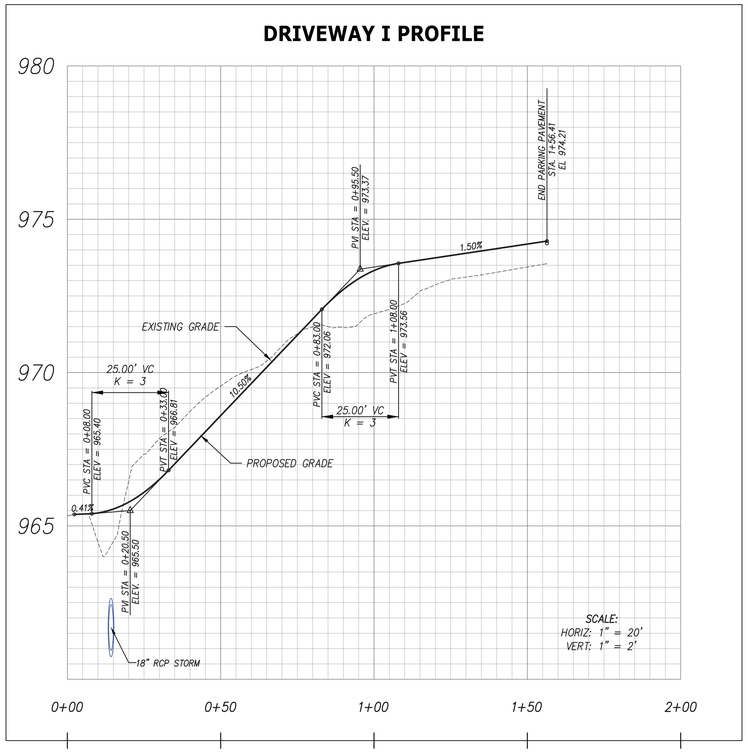

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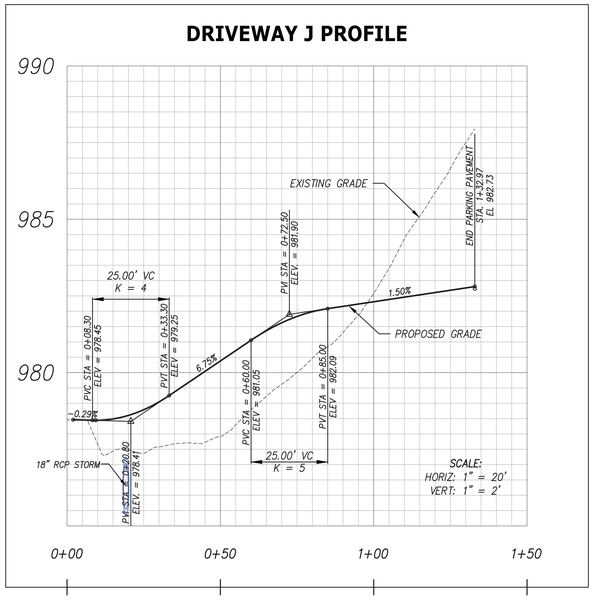

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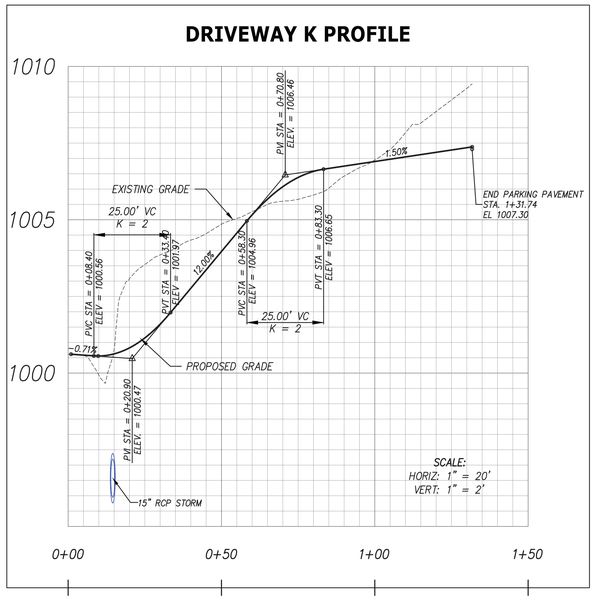

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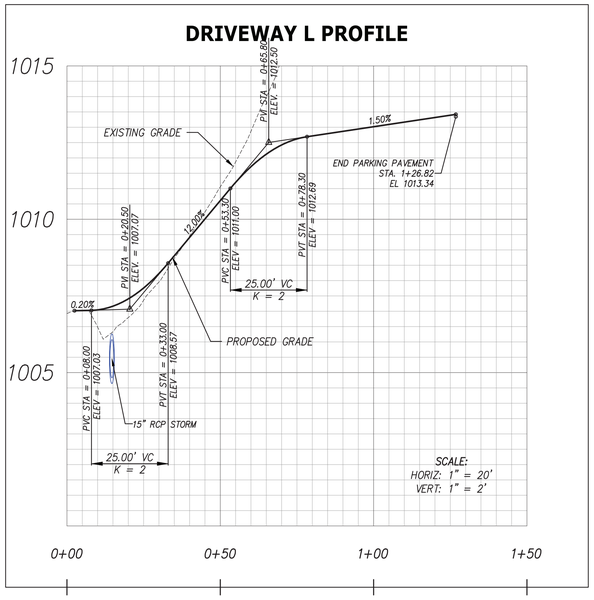

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(404 CLIFTON ROAD) ⚠1
KNOXVILLE, TENNESSEE

DRIVEWAY PROFILES

JASON R. HUNT — REGISTERED ENGINEER — AGRICULTURE — No. 112487 — STATE OF TENNESSEE
12/12/18

CCI PROJECT NO.	00216-0005		
DRAWING DATE	NOVEMBER 19, 2018		
PM	JRH	QC	AWG
DRAWN	LED		

C2.02

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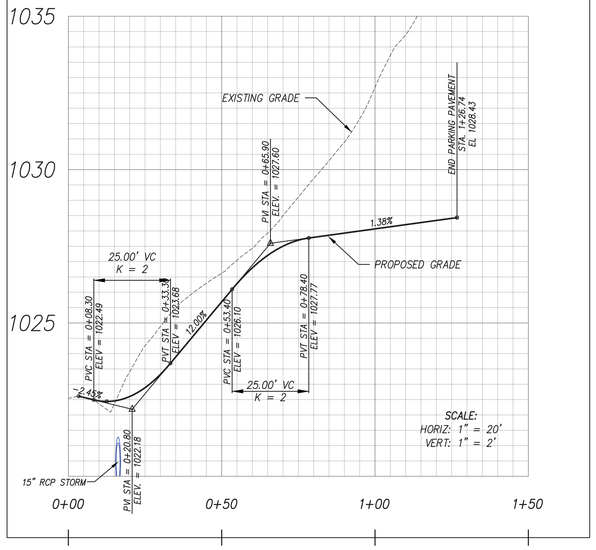

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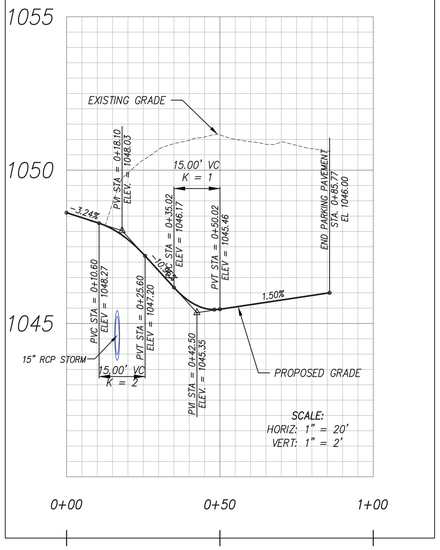

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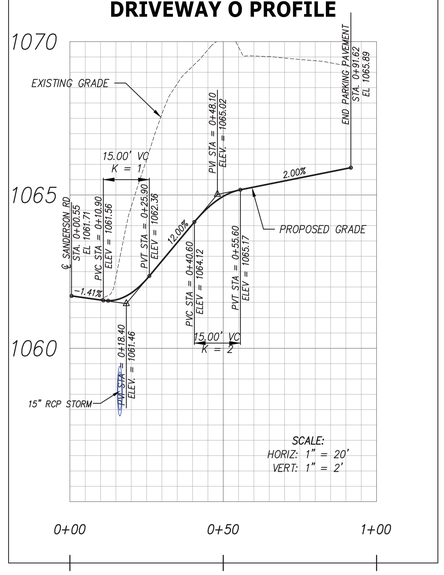

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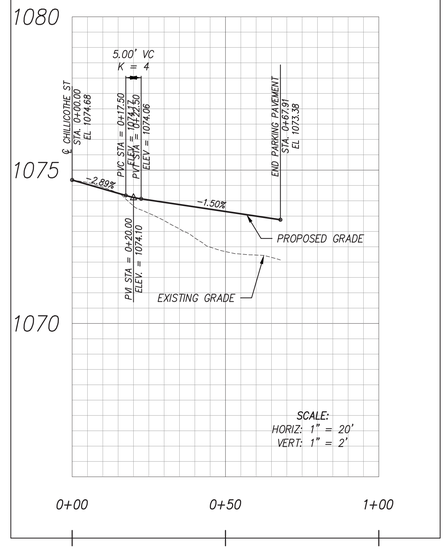

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DRIVEWAY PROFILES

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AGRICULTURE
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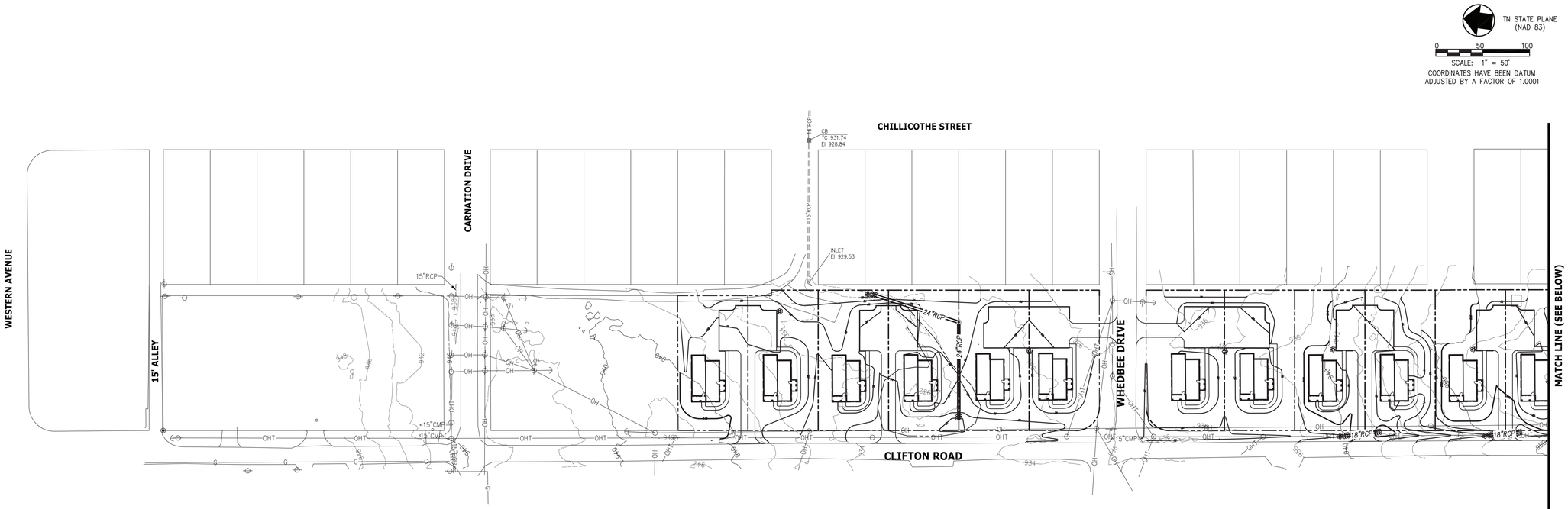

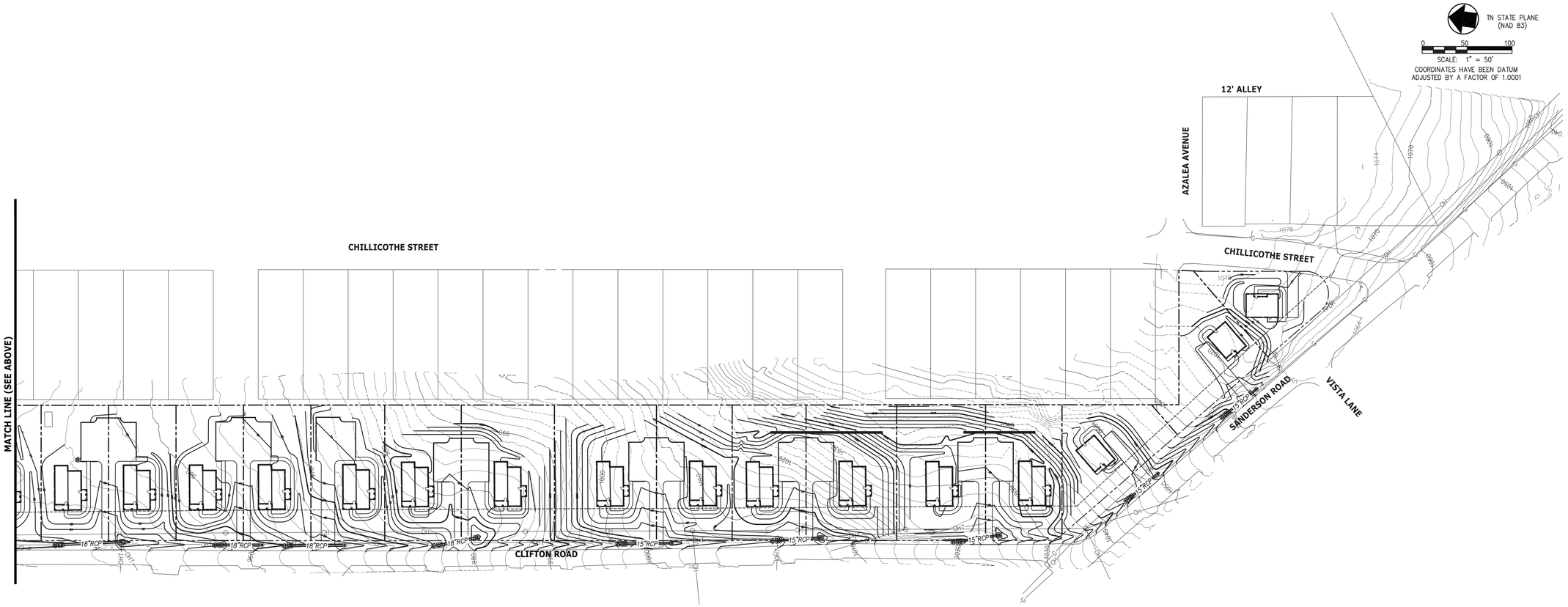

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC DATA SHOWN WAS PROVIDED BY CANNON AND CANNON, INC. DATED AUGUST 17, 2018.
2. THE DISTURBED AREA IS APPROXIMATELY 7.7± ACRES. THE TOTAL SITE AREA IS APPROXIMATELY 7.7± ACRES.
3. UNLESS NOTED OTHERWISE, THE PROPOSED GRADES SHOWN ON THESE DRAWINGS ARE FINISH GRADE. EXISTING AND PROPOSED CONTOURS ARE SHOWN AT 2 FT. INTERVALS.
4. EROSION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK. THE DEVICES SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL DEVICES AS NEEDED.
5. THE SITE SHALL BE CLEARED AND GRUBBED WITHIN THE LIMITS OF EXCAVATION. COMPLETELY DISPOSE OF ALL MATERIALS RESULTING FROM CLEARING AND GRUBBING OFF-SITE OR ON-SITE AT A LOCATION DETERMINED BY THE OWNER.
6. ALL TREE STUMPS, BOULDERS, AND OTHER OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF 2 FT BELOW THE SUBGRADE. ROCK SHALL BE SCARIFIED TO A DEPTH OF 1 FT BELOW SUBGRADE.
7. STRIP TOPSOIL TO A MINIMUM DEPTH OF 8-IN. AND TEMPORARILY STOCKPILE EXCAVATED MATERIALS. INSTALL SILT FENCE OR OTHER APPROPRIATE EROSION CONTROL STRUCTURES ON THE DOWN HILL SIDE OF THE STOCKPILE.
8. PROOF ROLL AREAS TO RECEIVE FILL AND PLACE FILL IN ACCORDANCE WITH GEOTECHNICAL ENGINEER.
9. A 4 IN. (MIN) LAYER OF TOPSOIL SHALL BE PLACED OVER THE AREAS TO BE SEEDED AND TO THE FINISH GRADE ELEVATIONS AS SHOWN ON THE DRAWINGS.
10. **TEMPORARY SEEDING MIXTURES SHALL BE AS FOLLOWS:**

SEEDING DATES	GRASS SEED	PERCENTAGES
1/1 TO 5/1	ITALIAN RYE	33%
	KOREAN LESPEDEZA	33%
	SUMMER OATS	34%
5/1 TO 7/15	SUDAN - SORGHUM	100%
5/1 TO 7/15	STAR MILLET	100%
7/15 TO 1/1	BALBOA RYE	67%
	ITALIAN RYE	33%

12. **PERMANENT SEEDING MIXTURES SHALL BE AS FOLLOWS:**

SEEDING DATES	GRASS SEED	PERCENTAGES
2/1 TO 7/1	KENTUCKY 31 FESCUE	80%
	KOREAN LESPEDEZA	15%
	ENGLISH RYE	5%
6/1 TO 8/15	KENTUCKY 31 FESCUE	55%
	ENGLISH RYE	20%
	KOREAN LESPEDEZA	15%
	GERMAN MILLET	10%
4/15 TO 8/15	BERMUDAGRASS (HULLED)	70%
	ANNUAL LESPEDEZA	30%
8/1 TO 12/1	KENTUCKY 31 FESCUE	70%
	ENGLISH RYE	20%
	WHITE CLOVER	10%
2/1 TO 12/1	KENTUCKY 31 FESCUE	70%
	CROWN VETCH	25%
	ENGLISH RYE	5%

1. MULCH WITH STRAW AT A RATE OF 100 LBS./1000 S.F. OVER THE SEEDED AREAS.
2. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS OR POND ON-SITE. PROVIDE NECESSARY MEASURES TO KEEP THE SITE FREE-DRAINING.
3. NO SLOPE SHALL EXCEED 2:1 (H:V). ALL SLOPES STEEPER THAN 3:1 TO RECEIVE EXTENDED TERM EROSION CONTROL BLANKET.
4. TO PREVENT EROSION, ALL SLOPES 2:1 OR GREATER ARE TO BE TRACKED WITH A DOZER TO FORM CLEAT MARKS PARALLEL TO THE CONTOUR.
5. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT SOIL STABILIZATION AT THE CONSTRUCTION SITE MUST BE COMPLETED NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. IN THE FOLLOWING SITUATIONS, TEMPORARY STABILIZATION MEASURES ARE NOT REQUIRED:
   a. WHERE THE INITIATION OF STABILIZATION MEASURES IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS OR ADVERSE SOGGY GROUND CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
   b. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, BUT SOIL DISTURBING ACTIVITIES WILL RESUME WITHIN 14 DAYS.
6. STEEP SLOPES (3:1 GRADE OR GREATER) SHALL BE STABILIZED NO LATER THAN SEVEN DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED.
7. PERMANENT STABILIZATION WITH PERENNIAL VEGETATION (USING NATIVE HERBACEOUS AND WOODY PLANTS WHERE PRACTICABLE) OR OTHER PERMANENTLY STABLE, NON-ERODING SURFACE SHALL REPLACE ANY TEMPORARY MEASURES AS SOON AS PRACTICABLE. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER RUNS WILL NOT BE CONSIDERED A NON-ERODING SURFACE.

LEGEND

- EXISTING CONTOUR (884)
- PROPOSED INDEX CONTOUR (890)
- PROPOSED SPOT ELEVATION (97.50)
- EXIST. STORM (ST)
- EXIST. SEWER (SA)
- EXIST. WATER (W)
- EXIST. FENCE
- EXIST. POWER POLE

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CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD ⚠1
KNOXVILLE, TENNESSEE

OVERALL SITE GRADING AND DRAINAGE PLAN

JASON R. HUNT
REGISTERED ENGINEER
AGRICULTURE
No. 112481
STATE OF TENNESSEE
12/12/18

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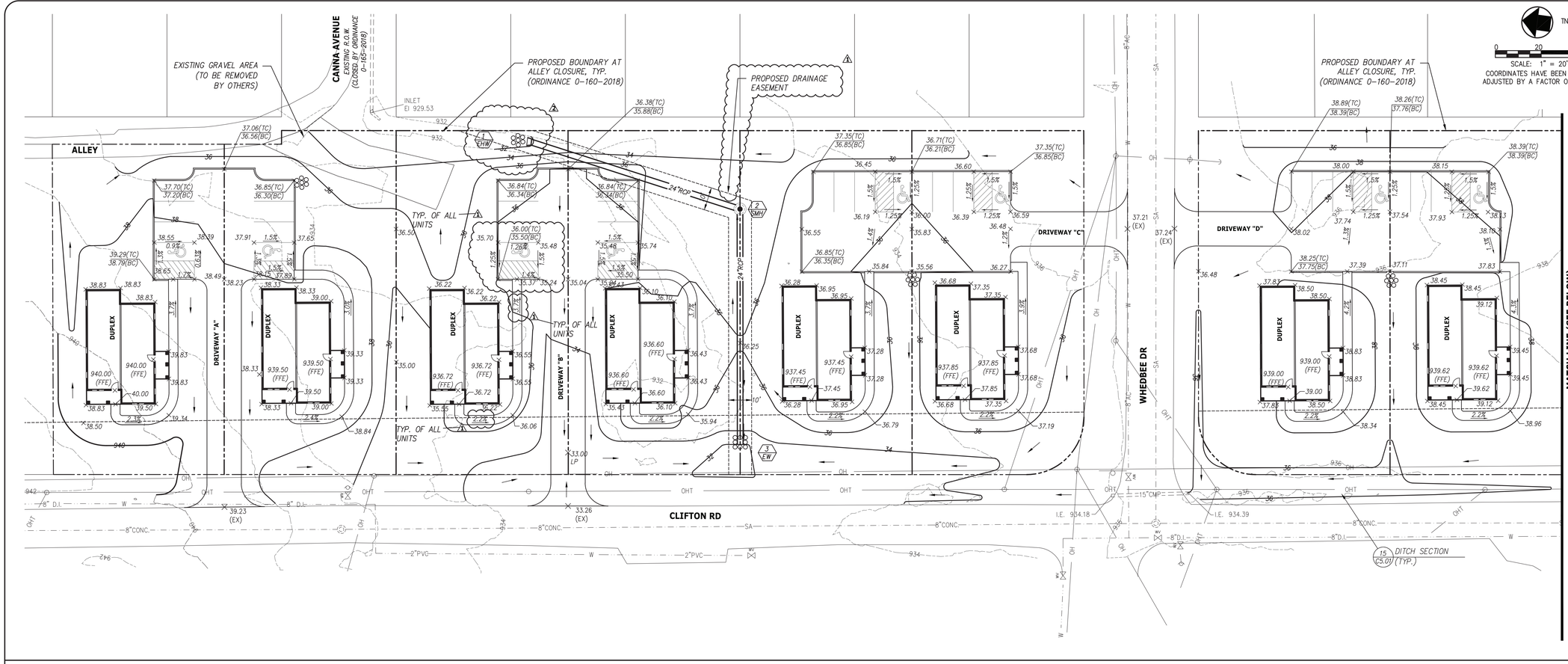
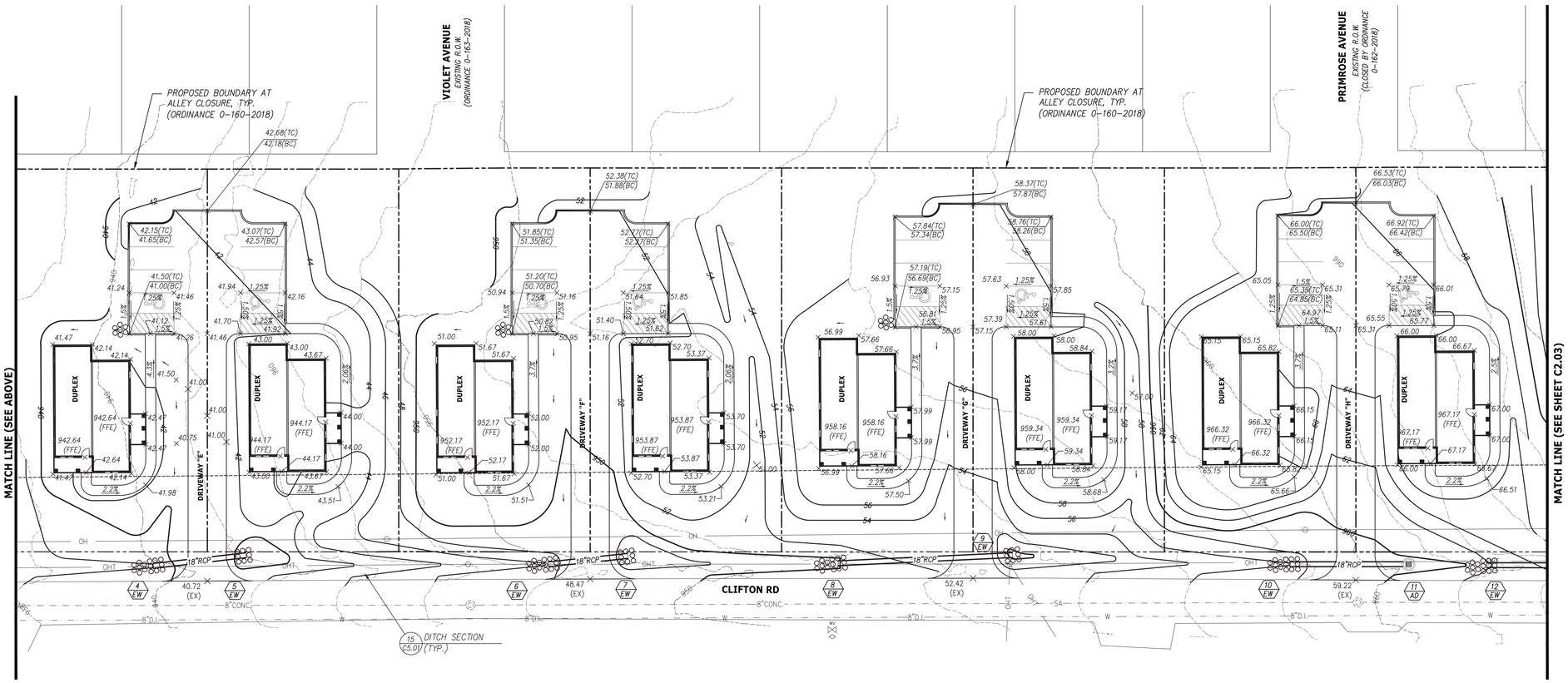
C3.01





NOTES:

1. SEE SHEET C3.01 FOR GRADING NOTES.
2. REFER TO DETAIL 22, SHEET C5.02 FOR STORM DATA TABLES AND STORM PIPE NOTES.

LEGEND

- EXISTING CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED DRAINAGE EASE.
- DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- EXIST. STORM
- EXIST. SEWER
- EXIST. WATER
- EXIST. FENCE
- EXIST. POWER POLE

REVISIONS	DATE
⚠ REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018
⚠ REVISED PER CITY OF KNOXVILLE COMMENTS	1/07/2019

CANNON & CANNON INC
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CLIENT:
KNOXVILLE'S COMMUNITY DEVELOPMENT CORPORATION
901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

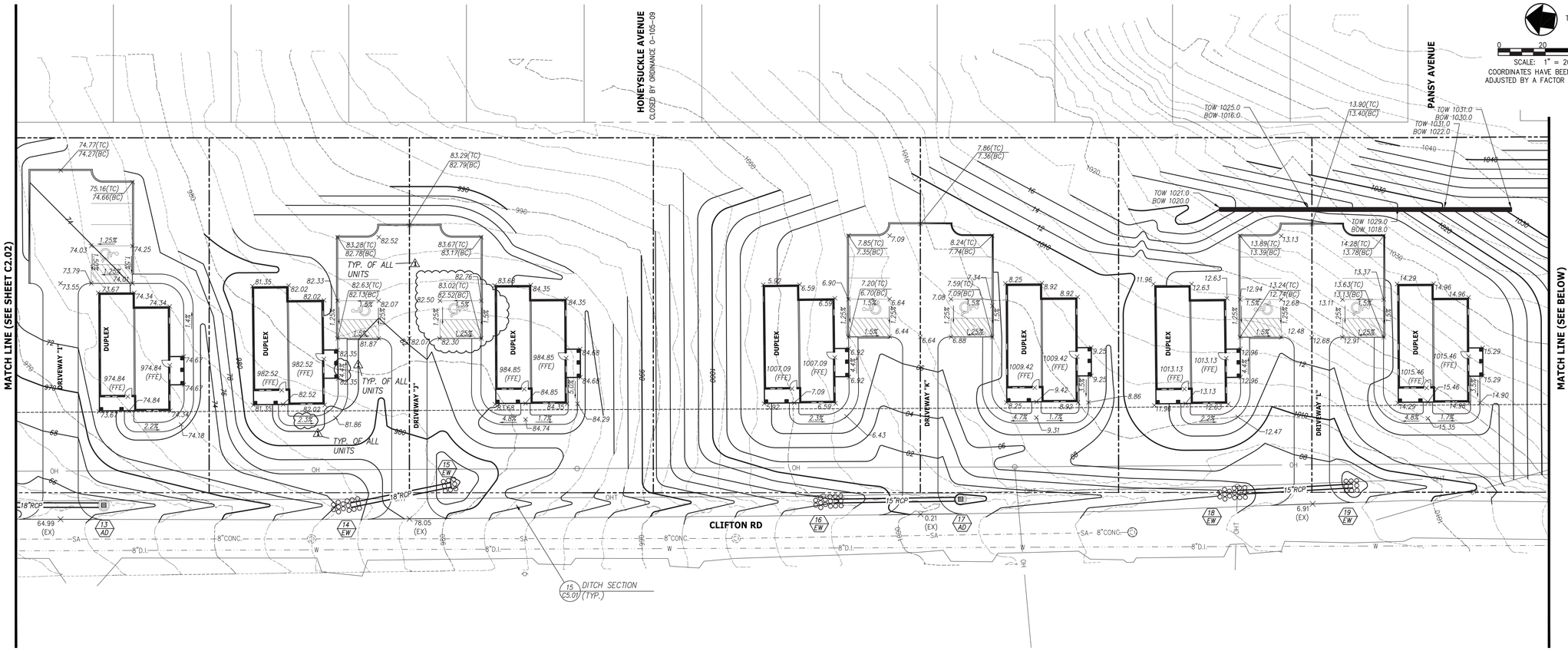
PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD ⚠
KNOXVILLE, TENNESSEE

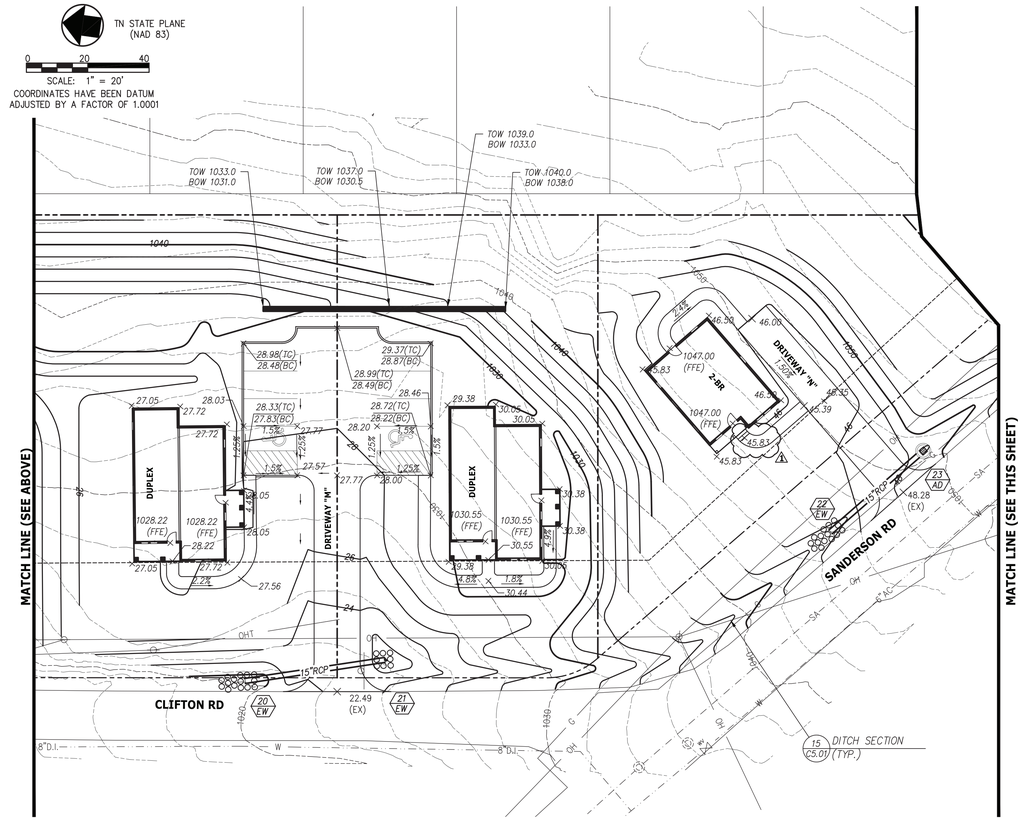
ENLARGED SITE GRADING AND DRAINAGE PLAN

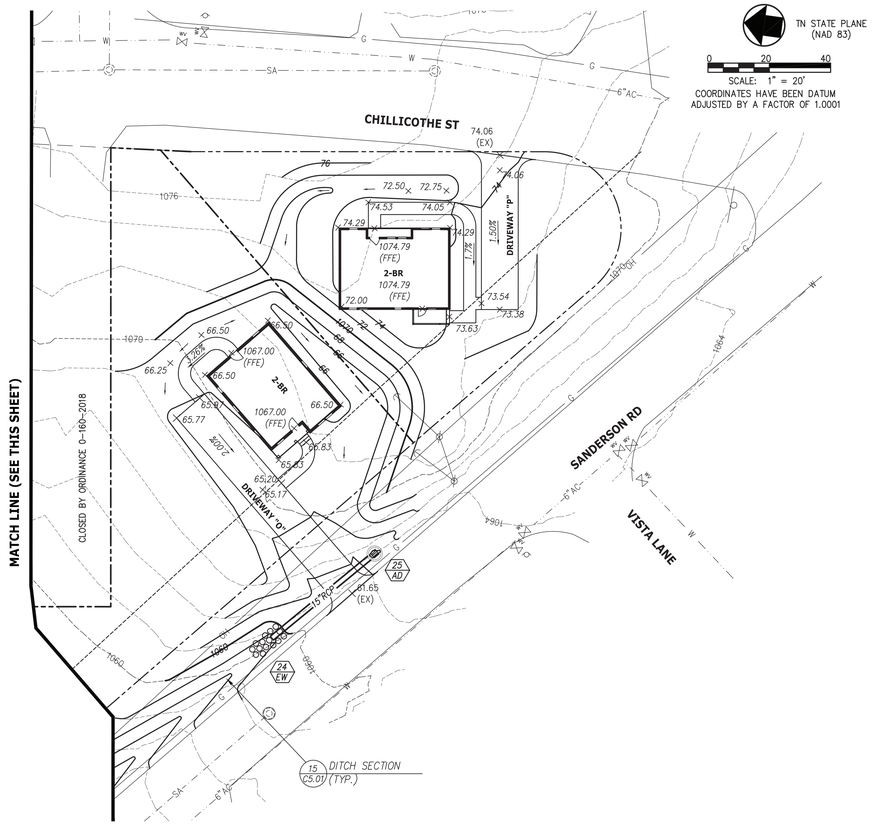
JASON R. HUNT — REGISTERED ENGINEER — AGRICULTURE — No. 112481 — STATE OF TENNESSEE — 01/07/19

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C3.02







NOTES:

1. *SEE SHEET C3.01 FOR GRADING NOTES.*
2. *REFER TO DETAIL 22, SHEET C5.02 FOR STORM DATA TABLES AND STORM PIPE NOTES.*

LEGEND

- EXISTING CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED SPOT ELEVATION
- DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- EXIST. STORM
- EXIST. SEWER
- EXIST. WATER
- EXIST. FENCE
- EXIST. POWER POLE

REVISIONS	DATE
1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018

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901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD (1)
KNOXVILLE, TENNESSEE

ENLARGED SITE GRADING AND DRAINAGE PLAN

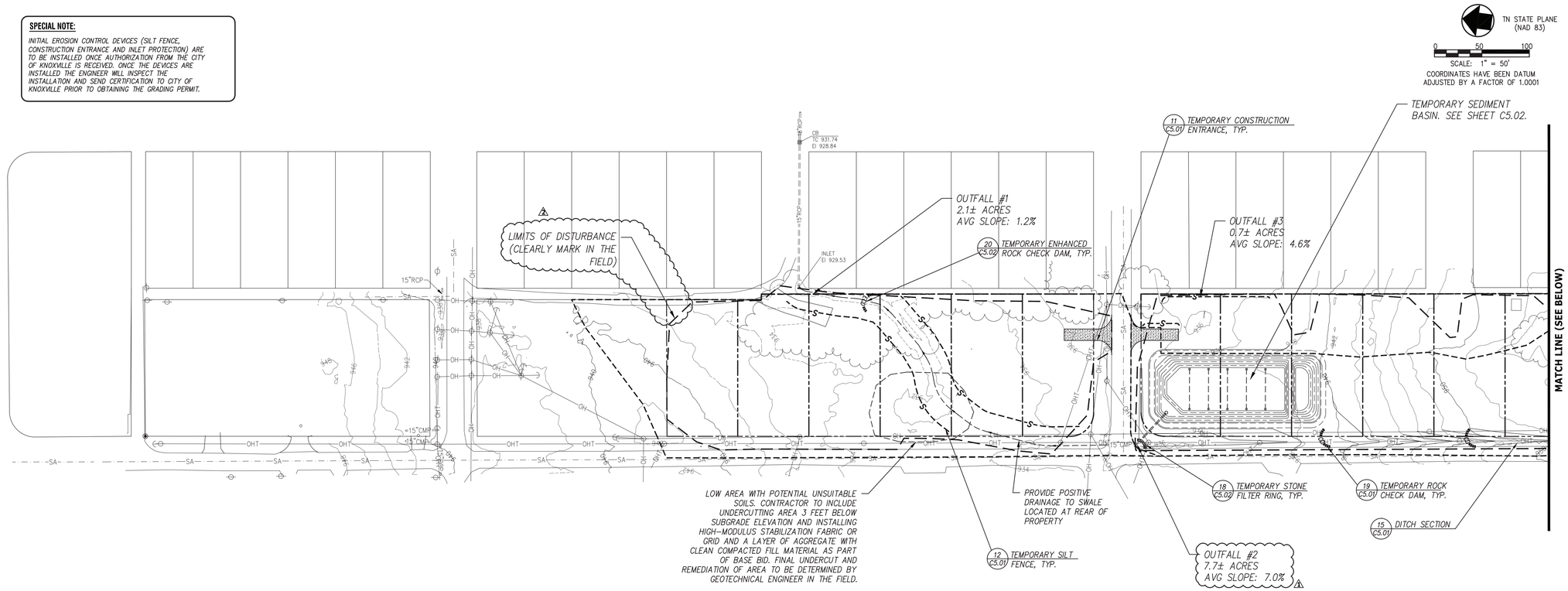
JASON R. HUNT — REGISTERED LANDSCAPE ARCHITECT — AGRICULTURE — No. 112487 — STATE OF TENNESSEE
12/12/18

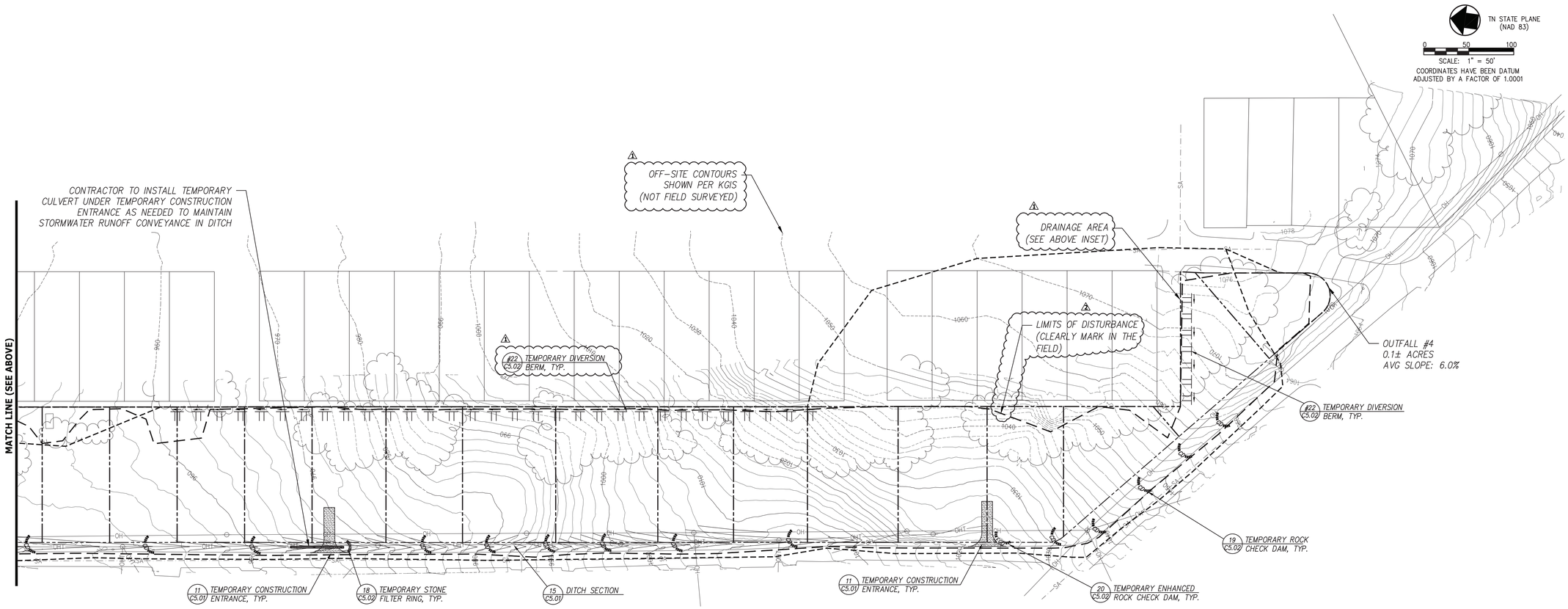
CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C3.03

SPECIAL NOTE:

INITIAL EROSION CONTROL DEVICES (SILT FENCE, CONSTRUCTION ENTRANCE AND INLET PROTECTION) ARE TO BE INSTALLED ONCE AUTHORIZATION FROM THE CITY OF KNOXVILLE IS RECEIVED. ONCE THE DEVICES ARE INSTALLED THE ENGINEER WILL INSPECT THE INSTALLATION AND SEND CERTIFICATION TO CITY OF KNOXVILLE PRIOR TO OBTAINING THE GRADING PERMIT.





NOTES:

1. *SEE SHEET C3.01 FOR GRADING NOTES.*

LEGEND

- *EXISTING CONTOUR*
- *PROPOSED CONTOUR*
- *DETAIL REFERENCE (DETAIL NO./SHEET NO.)*
- *TEMPORARY DIVERSION BERM*
- *DIRECTIONAL FLOW ARROW*
- *TEMPORARY SEDIMENT LOG*
- *TEMPORARY ENHANCED ROCK CHECK DAM*
- *TEMPORARY ROCK CHECK DAM*
- *TEMPORARY STONE FILTER RING*
- *TEMPORARY SEDIMENT BARRIER*
- *TEMPORARY DOUBLE ROW SILT FENCE WITH WIRE BACKING*
- *PROPOSED LIGHT DUTY ASPHALT PAVEMENT*
- *PROPOSED CONCRETE PAVEMENT*

REVISIONS	DATE
1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018
2 REVISED PER CITY OF KNOXVILLE COMMENTS	1/07/2019

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CLIENT:
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901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

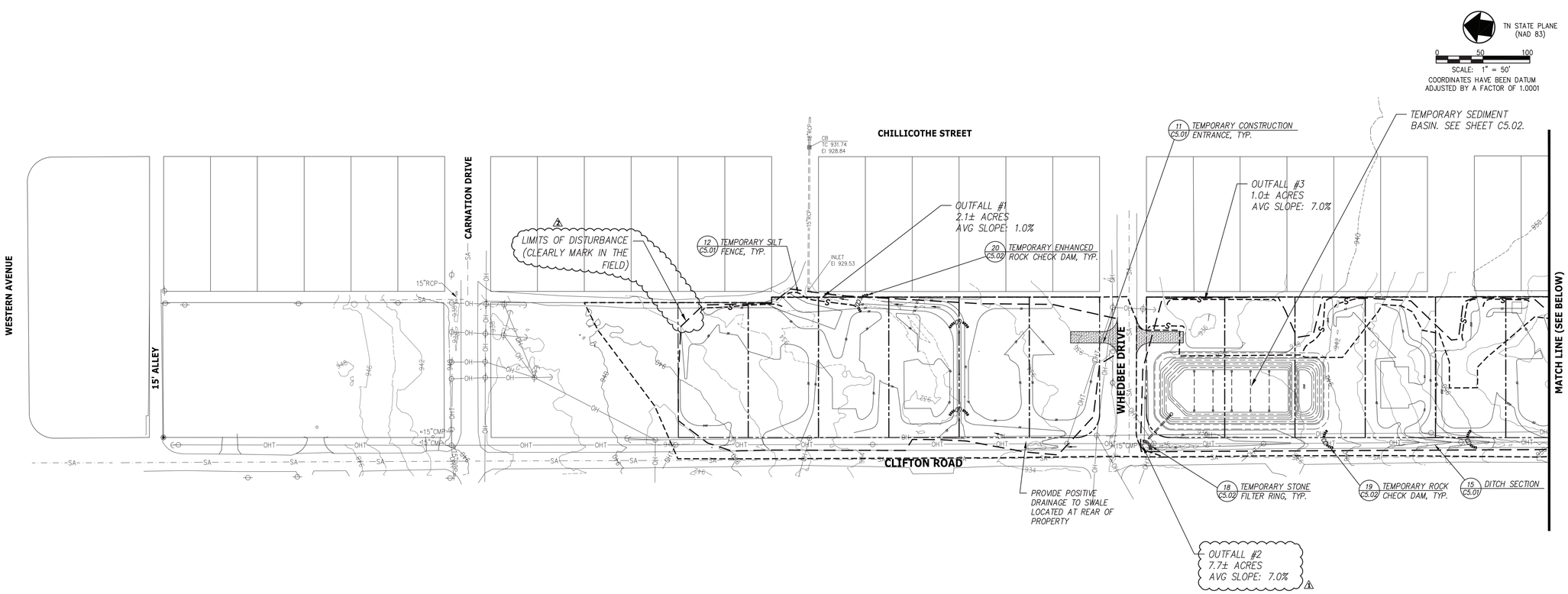
PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD 2
KNOXVILLE, TENNESSEE

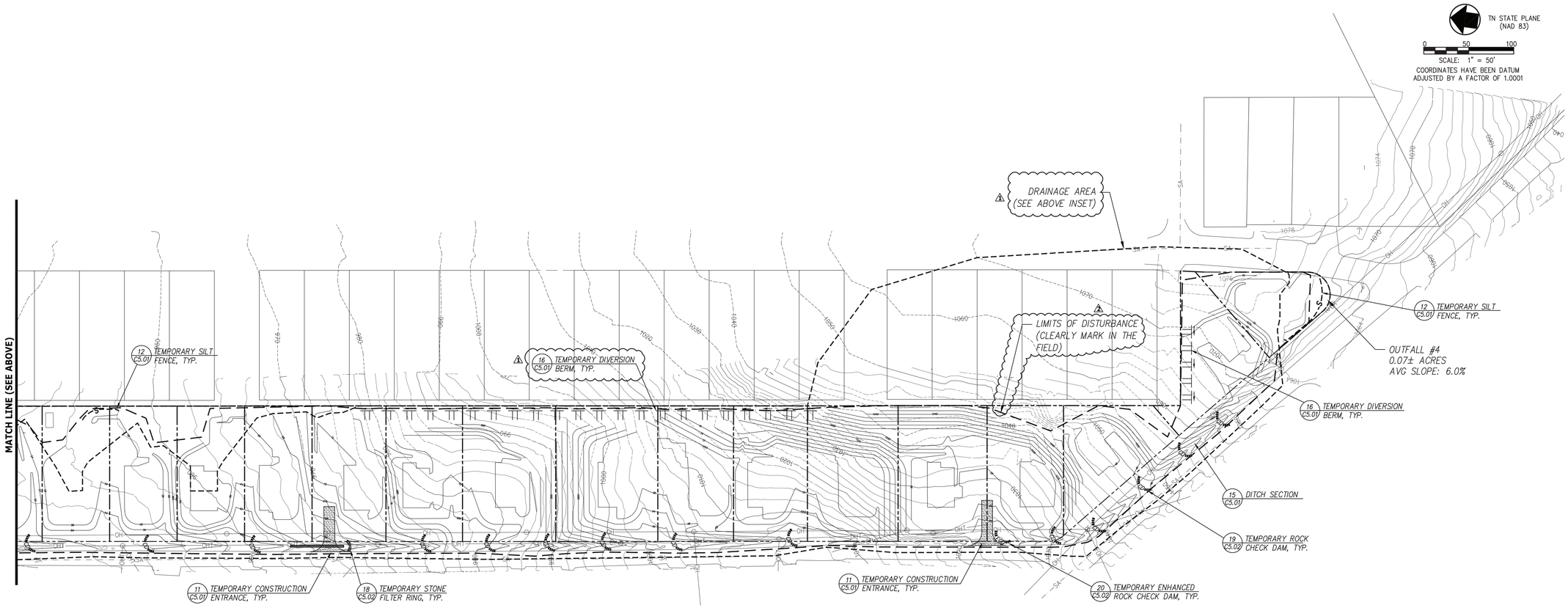
INITIAL EROSION CONTROL PLAN

JASON R. HUNT REGISTERED ENGINEER AGRICULTURE ENVIRONMENT CONSERVATION No. 112481 STATE OF TENNESSEE

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C4.01





NOTES:

1. SEE SHEET C3.01 FOR GRADING NOTES.

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- TEMPORARY DIVERSION BERM
- DIRECTIONAL FLOW ARROW
- TEMPORARY SEDIMENT LOG
- TEMPORARY ENHANCED ROCK CHECK DAM
- TEMPORARY ROCK CHECK DAM
- TEMPORARY STONE FILTER RING
- TEMPORARY SEDIMENT BARRIER
- TEMPORARY DOUBLE ROW SILT FENCE WITH WIRE BACKING
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT

REVISIONS	DATE
⚠1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018
⚠2 REVISED PER CITY OF KNOXVILLE COMMENTS	1/07/2019

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CLIENT:
KNOXVILLE'S COMMUNITY DEVELOPMENT CORPORATION
901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

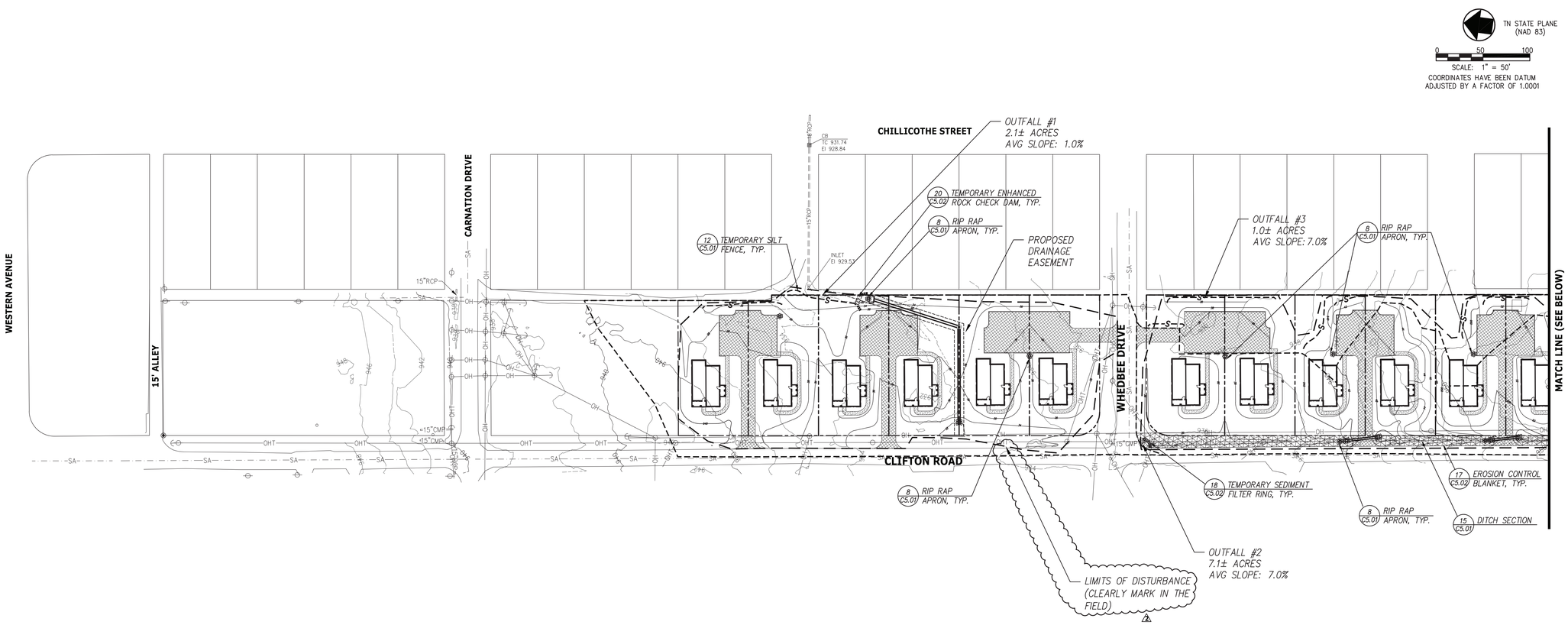
PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD ⚠1
KNOXVILLE, TENNESSEE

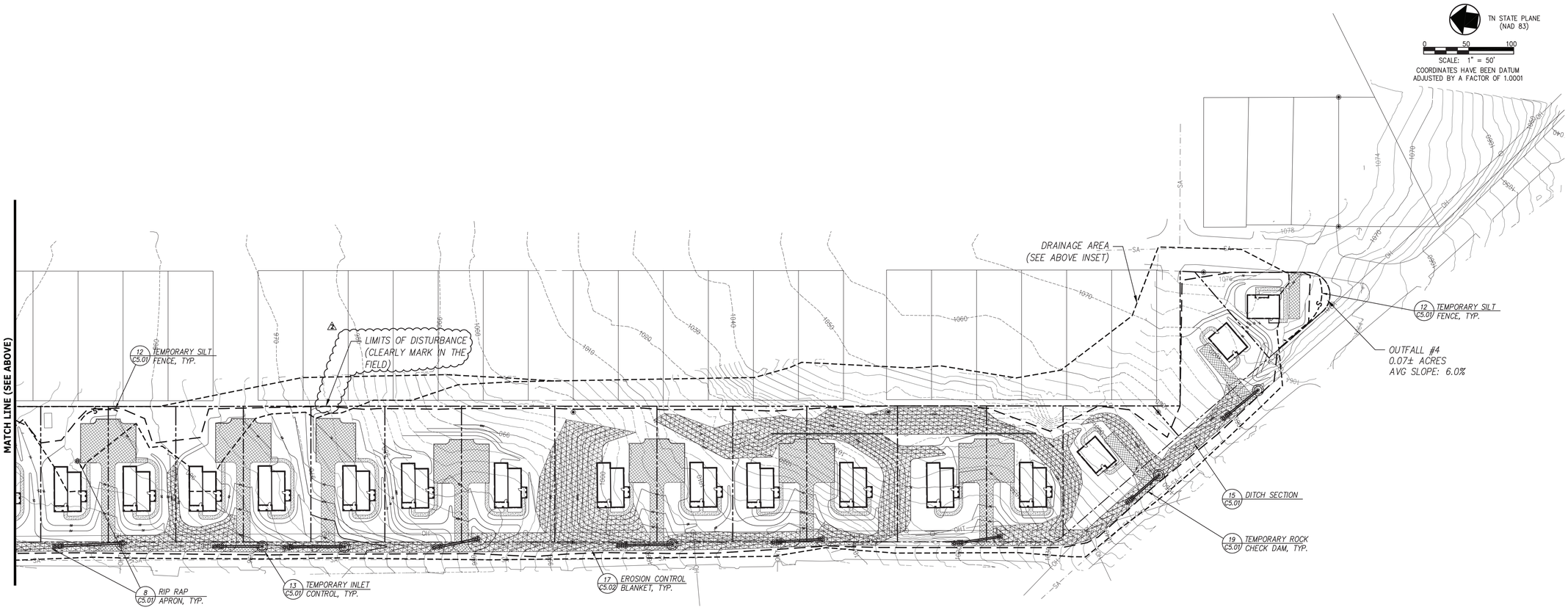
INTERMEDIATE EROSION CONTROL PLAN

JASON R. HUNT REGISTERED ENGINEER AGRICULTURE COMMERCE RESIDENCE No. 112481 STATE OF TENNESSEE
01/07/19

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C4.02





NOTES:

1. *SEE SHEET C4.01 FOR GENERAL GRADING AND DRAINAGE NOTES.*

LEGEND

- *EXISTING CONTOUR*
- *PROPOSED CONTOUR*
- *DETAIL REFERENCE (DETAIL NO./SHEET NO.)*
- *TEMPORARY DIVERSION BERM*
- *DIRECTIONAL FLOW ARROW*
- *TEMPORARY SEDIMENT LOG*
- *TEMPORARY ENHANCED ROCK CHECK DAM*
- *TEMPORARY ROCK CHECK DAM*
- *TEMPORARY STONE FILTER RING*
- *TEMPORARY SEDIMENT BARRIER*
- *TEMPORARY DOUBLE ROW SILT FENCE WITH WIRE BACKING*
- *PROPOSED LIGHT DUTY ASPHALT PAVEMENT*
- *PROPOSED CONCRETE PAVEMENT*
- *EROSION CONTROL BLANKET*

REVISIONS	DATE
⚠1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018
⚠2 REVISED PER CITY OF KNOXVILLE COMMENTS	1/07/2019

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KNOXVILLE, TENNESSEE 37917

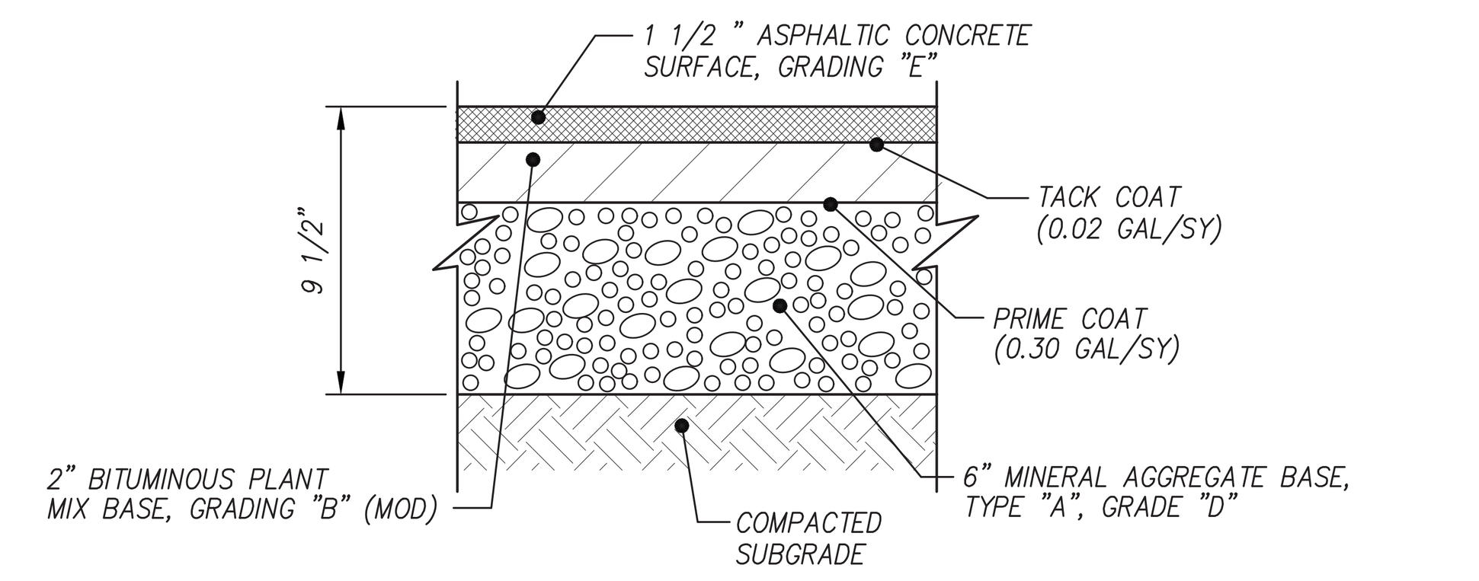
PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD ⚠2
KNOXVILLE, TENNESSEE

FINAL EROSION CONTROL PLAN

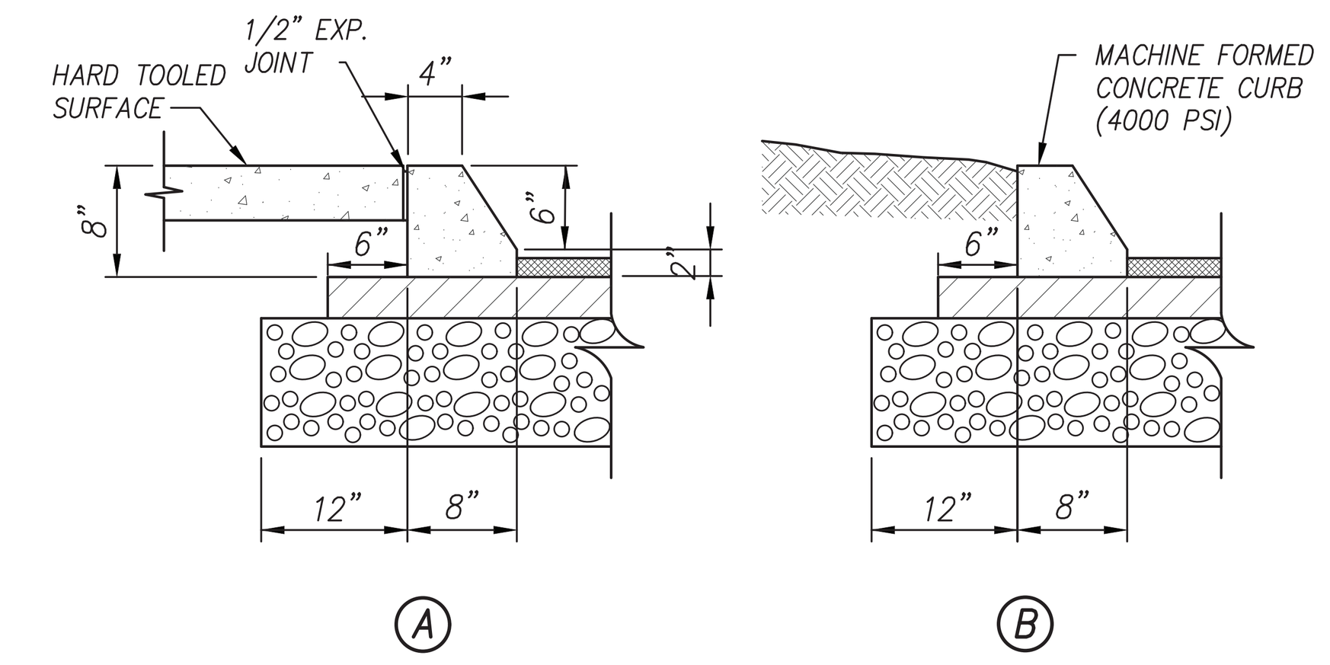
JASON R. HUNTER · REGISTERED ENGINEER · AGRICULTURE · No. 112481 · STATE OF TENNESSEE
01/07/19

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C4.03

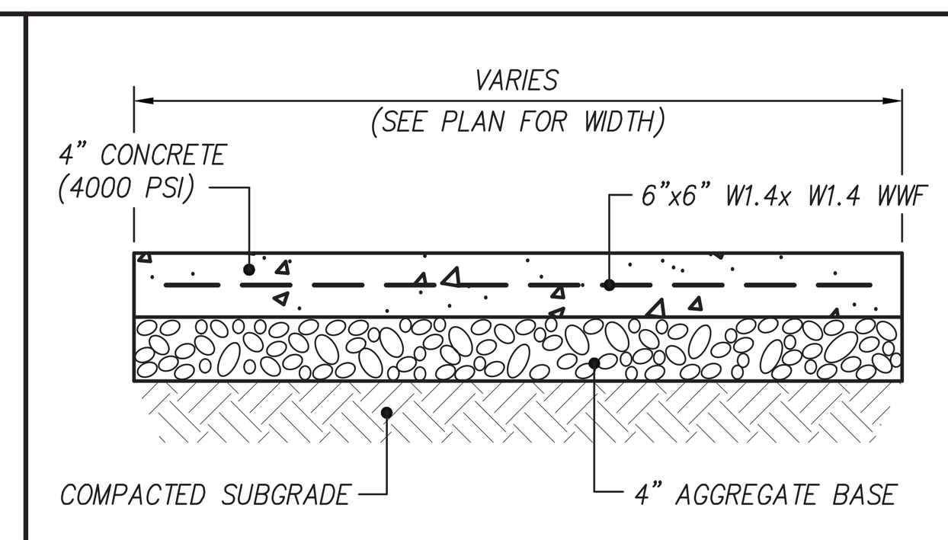


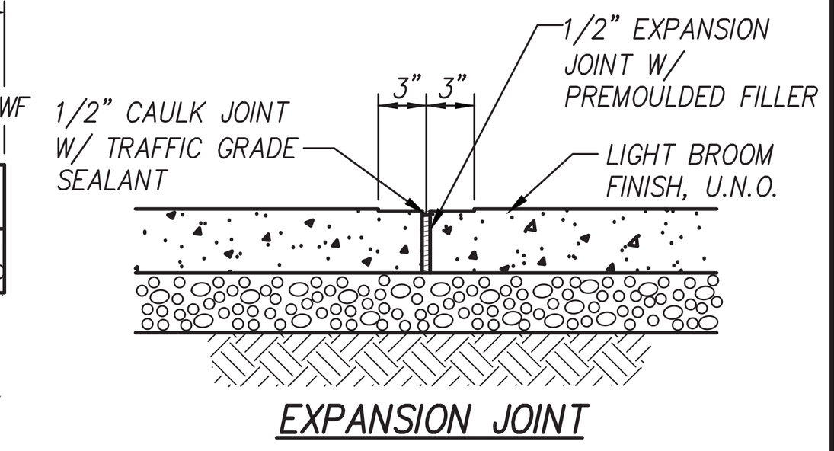
1 **LIGHT DUTY ASPHALT SECTION**
C1.02 N.T.S.

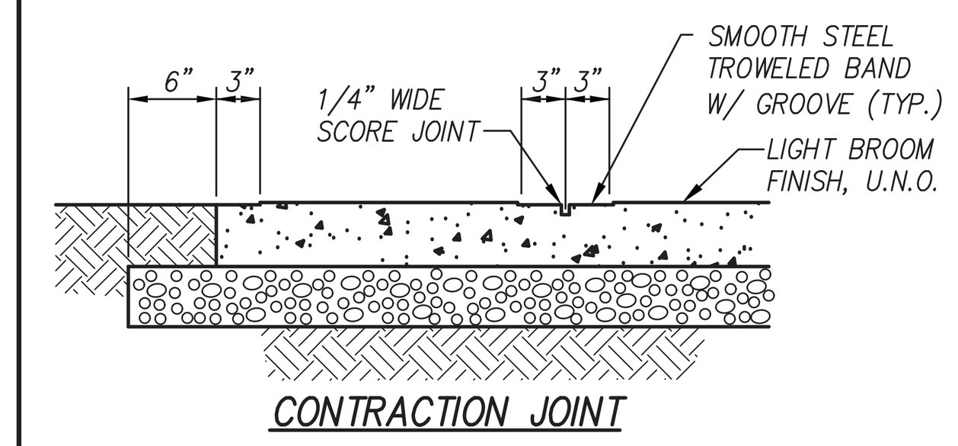


NOTES:
1. PREFORMED 1/2" EXPANSION JOINTS SHALL BE EQUALLY SPACED AT 30' MAX. CENTERS. EQUALLY SPACE 1/4" CONTRACTION JOINTS AT 10' MAX. CENTERS BETWEEN EXPANSION JOINTS.
2. EXACT CURB DIMENSIONS MAY BE ALTERED SLIGHTLY TO FIT STANDARD EXTRUDED CURB MACHINES, BUT SUCH VARIANCES MUST BE APPROVED BY THE ENGINEER.

2 **EXTRUDED CURB**
C1.02 N.T.S.

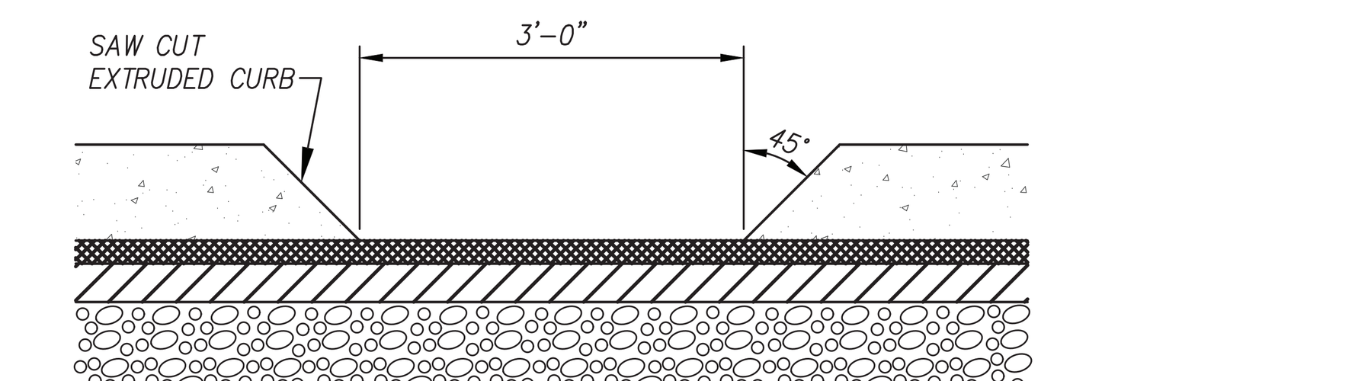






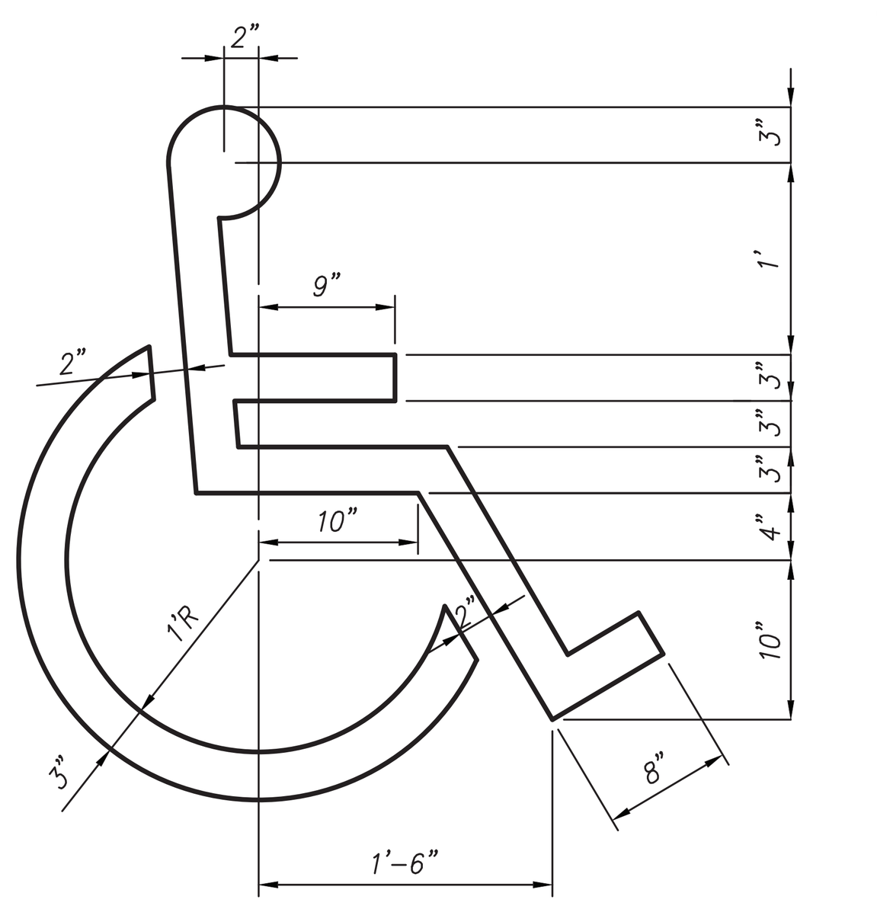
NOTES:
1. MINERAL AGGREGATE BASE SHALL BE CRUSHED STONE, CLASS "A" AGGREGATE, GRADING "D".
2. PREFORMED EXPANSION JOINTS SHALL BE EQUALLY SPACED AT 20' O.C. AND WHERE THE SIDEWALK IS IN CONTACT WITH STREET RETURNS, ON BUILDING LINES, WHERE WALKS LEAD TO BUILDING ENTRANCES, AT FIXED OBJECTS AND OTHER LOCATIONS WHERE STRESSES MAY DEVELOP.
3. EQUALLY SPACE CONTRACTION JOINTS AT 5' O.C. (MAX.) BETWEEN EXPANSION JOINTS.
4. SIDEWALK SHALL BE SLOPED AWAY FROM BUILDING. CONCRETE SURFACE TO BE MEDIUM BROOM FINISH WITH A 4" TOOLED EDGE AND JOINT.
5. SIDEWALKS WHICH DO NOT MEET ADA STANDARDS WITH REGARD TO RUNNING SLOPE AND CROSS SLOPES WILL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

3 **CONCRETE SIDEWALK**
C1.02 N.T.S.

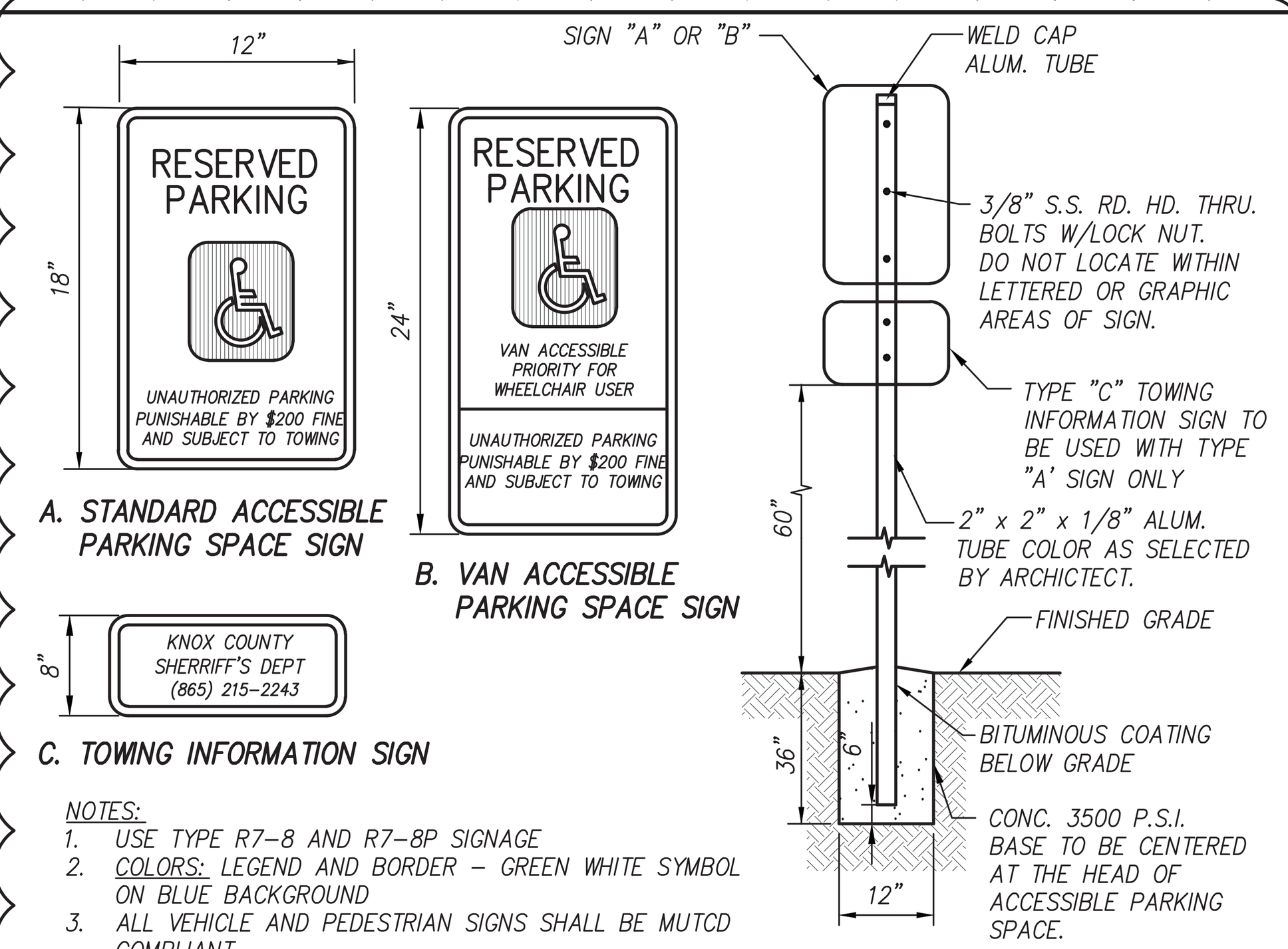


NOTES:
1. CONTRACTOR TO SAW CUT EXISTING CONCRETE EXTRUDED CURB TO PROVIDE DRAINAGE FROM BEHIND THE CURB.

4 **CURB CUT**
C1.02 N.T.S.

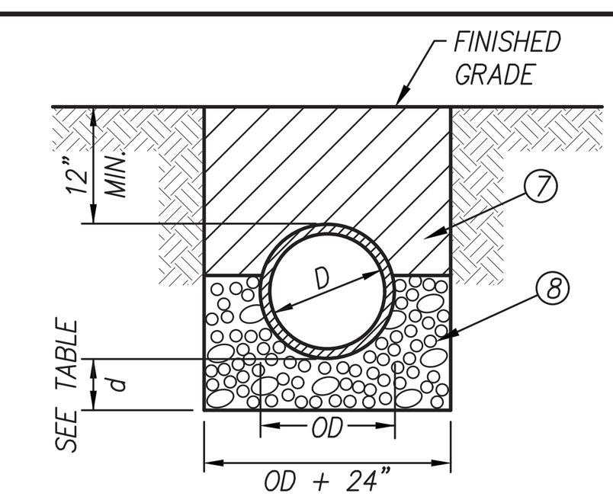


5 **ACCESSIBLE SYMBOL AND STRIPING**
C1.02 N.T.S.

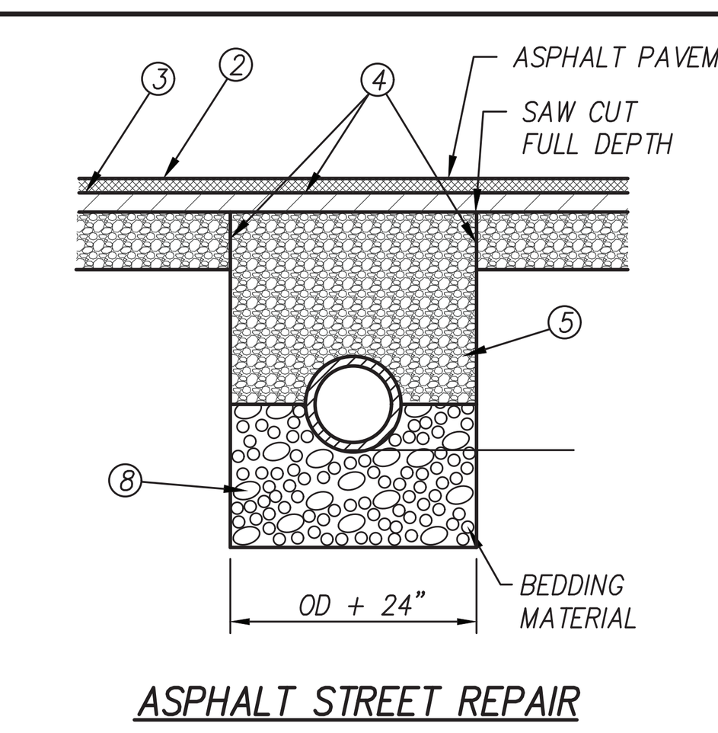


NOTES:
1. USE TYPE R7-8 AND R7-8P SIGNAGE
2. COLORS: LEGEND AND BORDER – GREEN WHITE SYMBOL ON BLUE BACKGROUND
3. ALL VEHICLE AND PEDESTRIAN SIGNS SHALL BE MUTCD COMPLIANT
4. TOWING INFORMATION SHALL APPEAR ON AT LEAST ONE SIGN AT EACH GROUP OF ACCESSIBLE PARKING SPACES.
5. CONTRACTOR SHALL COORDINATE WITH OWNER TO CONFIRM INFORMATION FOR TOWING INFORMATION SIGN

6 **ACCESSIBLE PARKING SIGN**
C1.02 N.T.S.

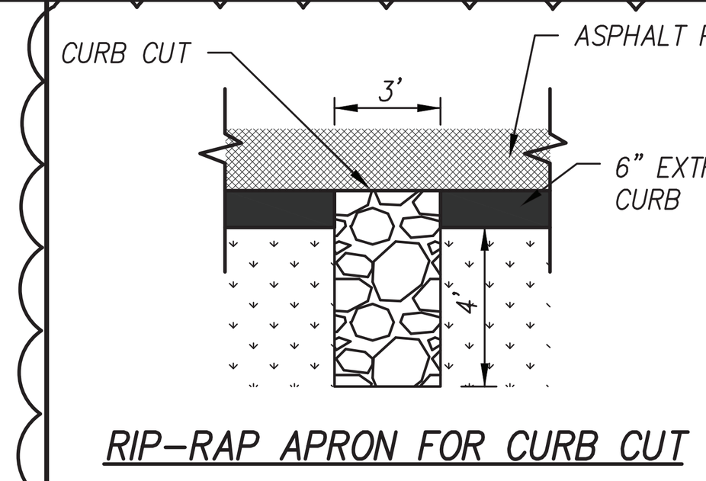


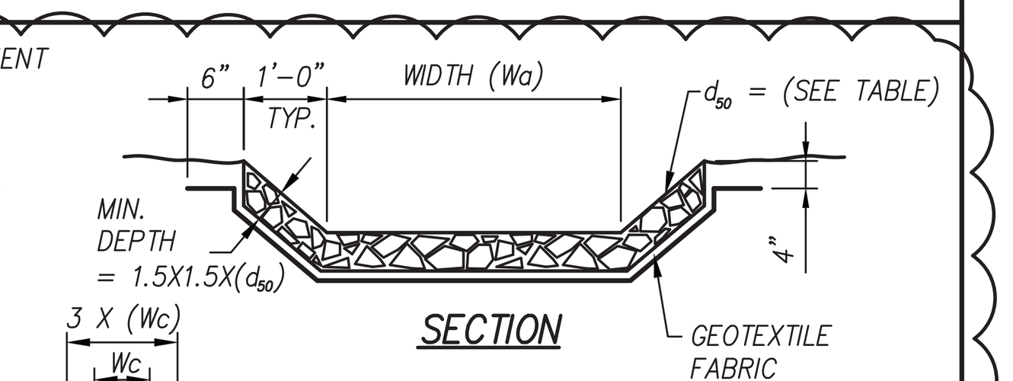
D	d (MIN.)
27" AND SMALLER	3"
30" TO 60"	4"
66" AN LARGER	6"
DEPTH OF BEDDING MATERIAL BELOW PIPE	

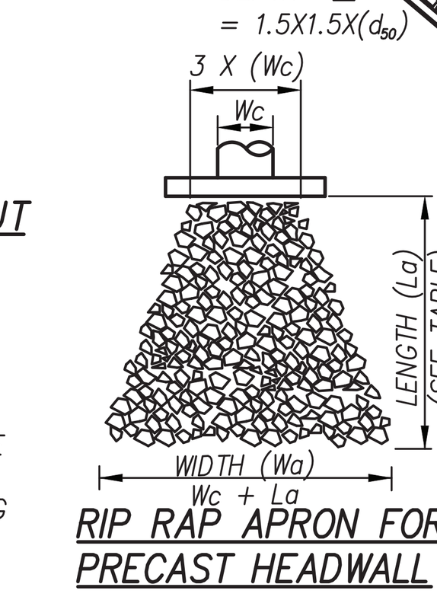


NOTES:
1. ALL SECTIONS NOTED BELOW REFERENCE THE CITY OF KNOXVILLE STANDARD SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
2. ASPHALTIC CONCRETE SURFACE, GRADING D, SECTION 10.0. MATCH EXISTING DEPTH OR MIN. THICKNESS OF 1.5".
3. BITUMINOUS PLANT MIX BASE, GRADING B, B-M, OR C, SECTION 9.0. MATCH EXISTING DEPTH OR MIN. THICKNESS OF 2.5". THE ENTIRE 4" MIN. DEPTH MAY BE ASPHALTIC CONCRETE SURFACE GRADING D, BUT SHALL BE COMPACTED IN TWO LIFTS.
4. TACK COAT, SECTION 7.0.
5. MINERAL AGGREGATE BASE, CLASS A AGGREGATE GRADING D, SECTION 5.0. COMPACTED IN 6" LIFTS TO 100% OF THE STANDARD PROCTOR DENSITY AT 2% LESS THAN OPTIMUM MOISTURE CONTENT AS DETERMINED BY AASHTO T99, METHOD D. APPROXIMATELY 140 PCF FOR LIMESTONE.
6. WHEN A TEMPORARY ASPHALT PATCH IS USED, IT SHALL BE PLACED IMMEDIATELY AFTER THE MINERAL AGGREGATE BACKFILL. ALL TEMPORARY REPAIRS MUST BE REPLACED PERMANENTLY WITHIN 90 DAYS.
7. COMPACTED BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 20.0. BACKFILL MATERIAL IN THE ROADWAY OR WITHIN FIVE (5) FEET OF THE ROADWAY, UNDER CURBS, GUTTERS, AND SIDEWALKS SHALL MEET THE REQUIREMENTS OF SECTION 5.0 (MINERAL AGGREGATE BASE).
8. BEDDING MATERIAL, GRADING SIZE NO. 57 OR NO. 67, SHALL BE IN ACCORDANCE WITH SECTION 20.0.

7 **PIPE BEDDING & BACKFILL**
C3.01 N.T.S. (SHALL BE USED IN AREAS INCLUDING COK R.O.W.)

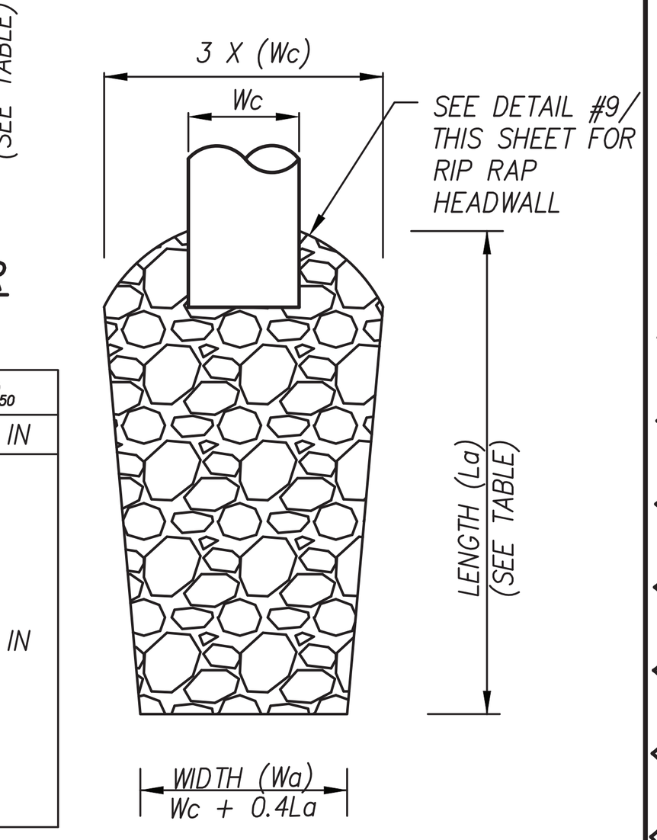






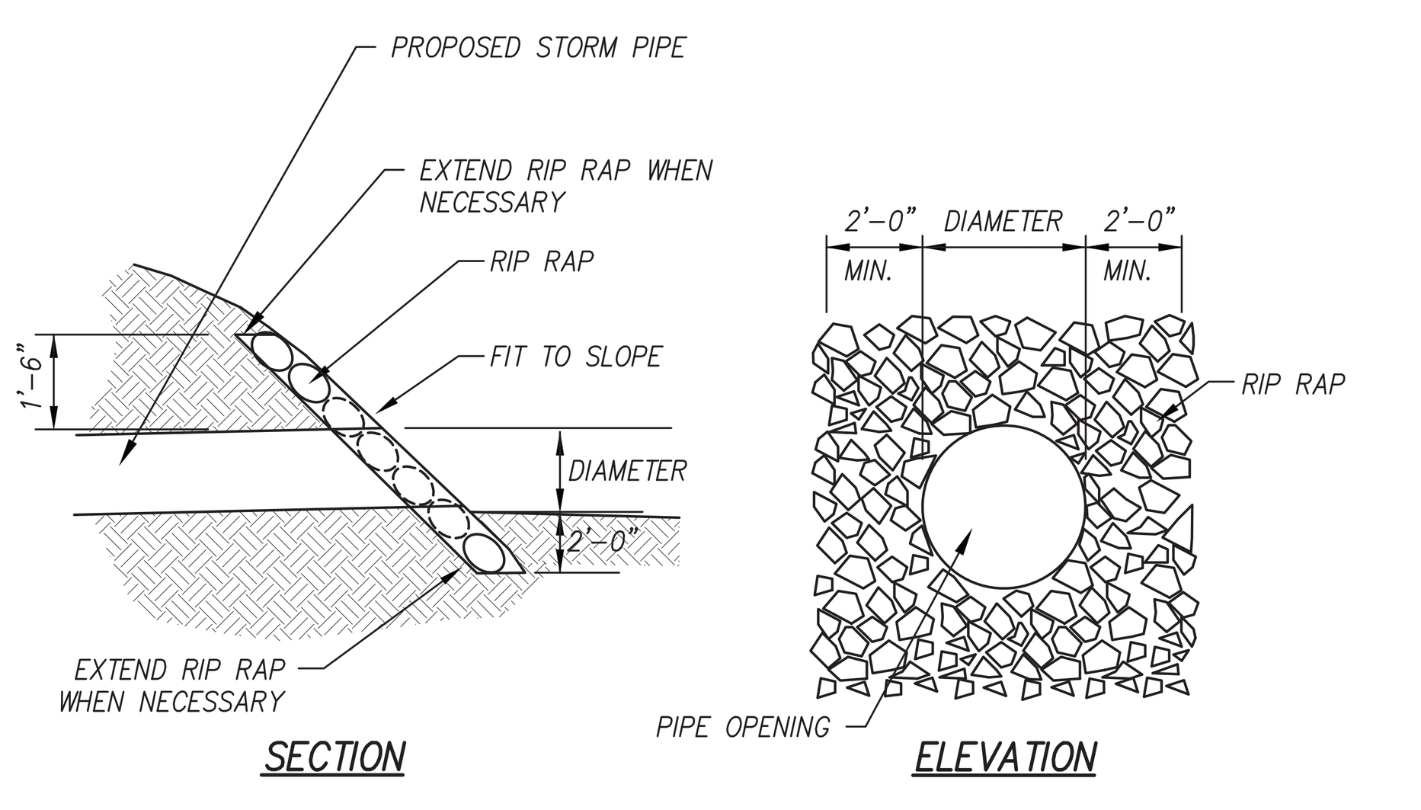
NOTES:
1. GEOTEXTILE FABRIC SHALL BE SYNTHETIC INDUSTRIES EROSION XV OR EQUAL.
2. SEE TABLE THIS DETAIL FOR ROCK SIZE AND APRON LENGTH FOR PIPE OUTFALLS. RIP RAP APRON AT PARKING LOT CURB CUTS SHALL BE D_{50} = 4".
3. ALL ROCK SHALL BE HANDPLACED AND IN A MANNER TO MINIMIZE VOIDS.
4. FOR ADDITIONAL REQUIREMENTS SEE CITY OF KNOXVILLE BMP; OUTLET PROTECTION, ES-25-1.
5. EHW-1 INCLUDES AN ENERGY DISSIPATING HEADWALL WHICH REDUCES THE OUTLET VELOCITY LESS THAN 5 FEET PER SECOND; THEREFORE, A RIP-RAP APRON IS NOT REQUIRED. HOWEVER, A RIP-RAP APRON HAS BEEN INCLUDED.

STRUCTURE	La	D_{50}
EHW-1	6 FT	6 IN
EW-4 EW-6 EW-8 EW-10 EW-12 EW-14 EW-16 EW-18 EW-20 EW-22 EW-24	8 FT	6 IN



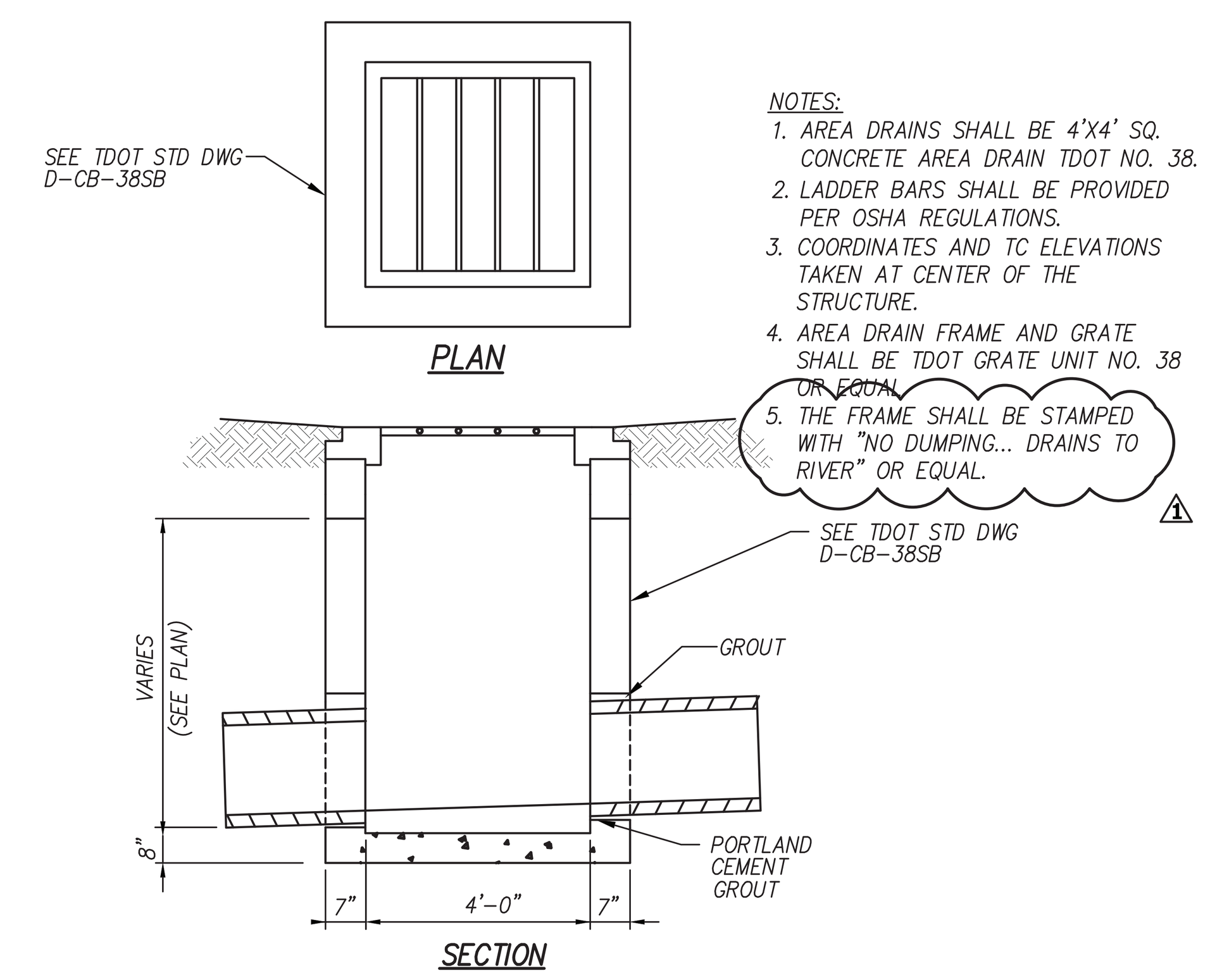
RIP RAP APRON FOR DRIVEWAY CULVERTS

8 **RIP-RAP APRON**
C3.02 N.T.S.



NOTES:
1. RIP RAP SHALL BE d_{50} = 12" UNLESS OTHERWISE NOTED SELECTION TO BE APPROVED BY ENGINEER AND OWNER AND SHALL MEET ALL REQUIREMENTS PER CITY OF KNOXVILLE BMP MANUAL.
2. RIP RAP HEADWALL TO BE INSTALLED AT ALL PIPE INLETS AND PIPE OUTLETS NOTED ON THE PLANS.

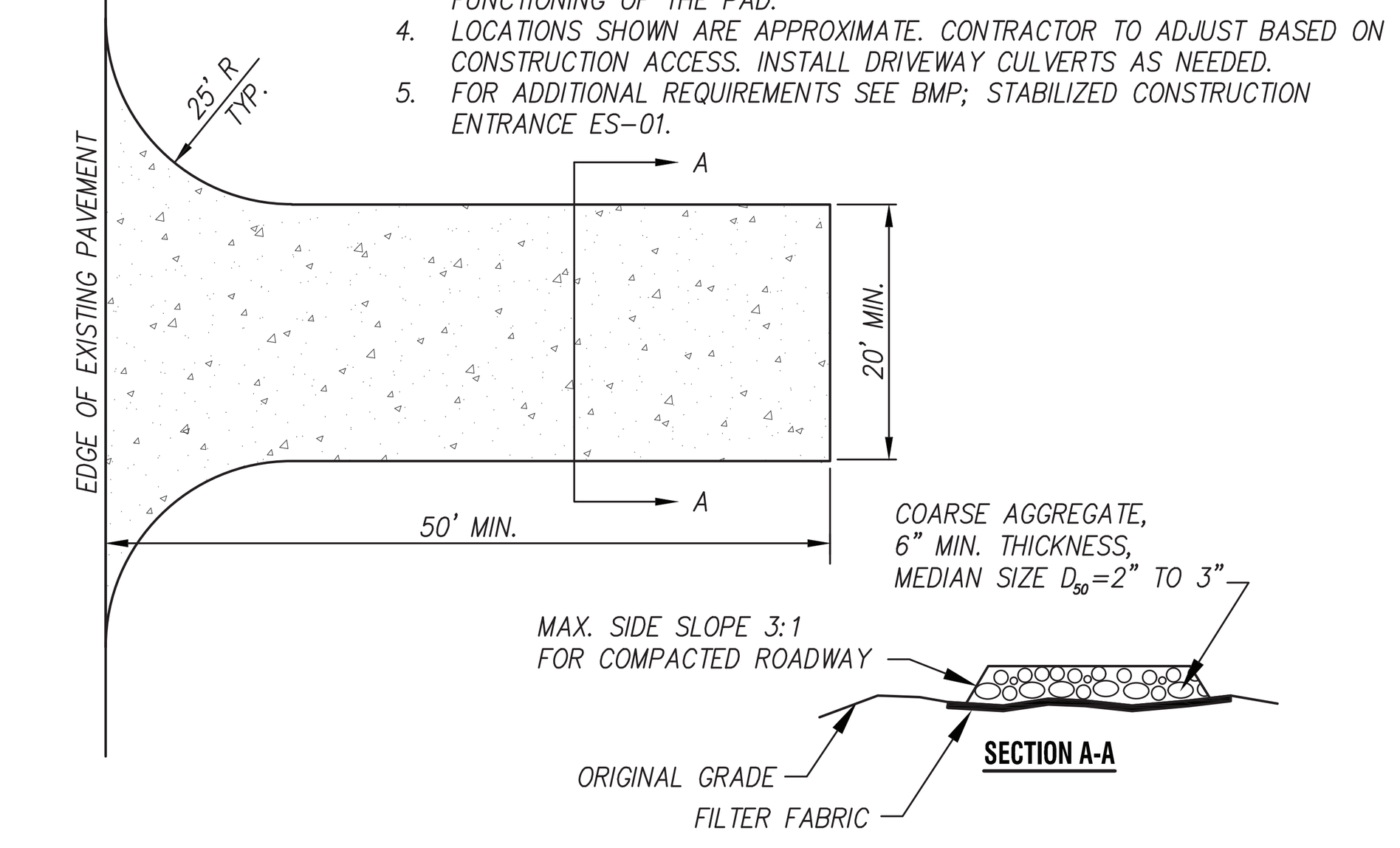
9 **RIP RAP HEADWALL**
C3.02 N.T.S.



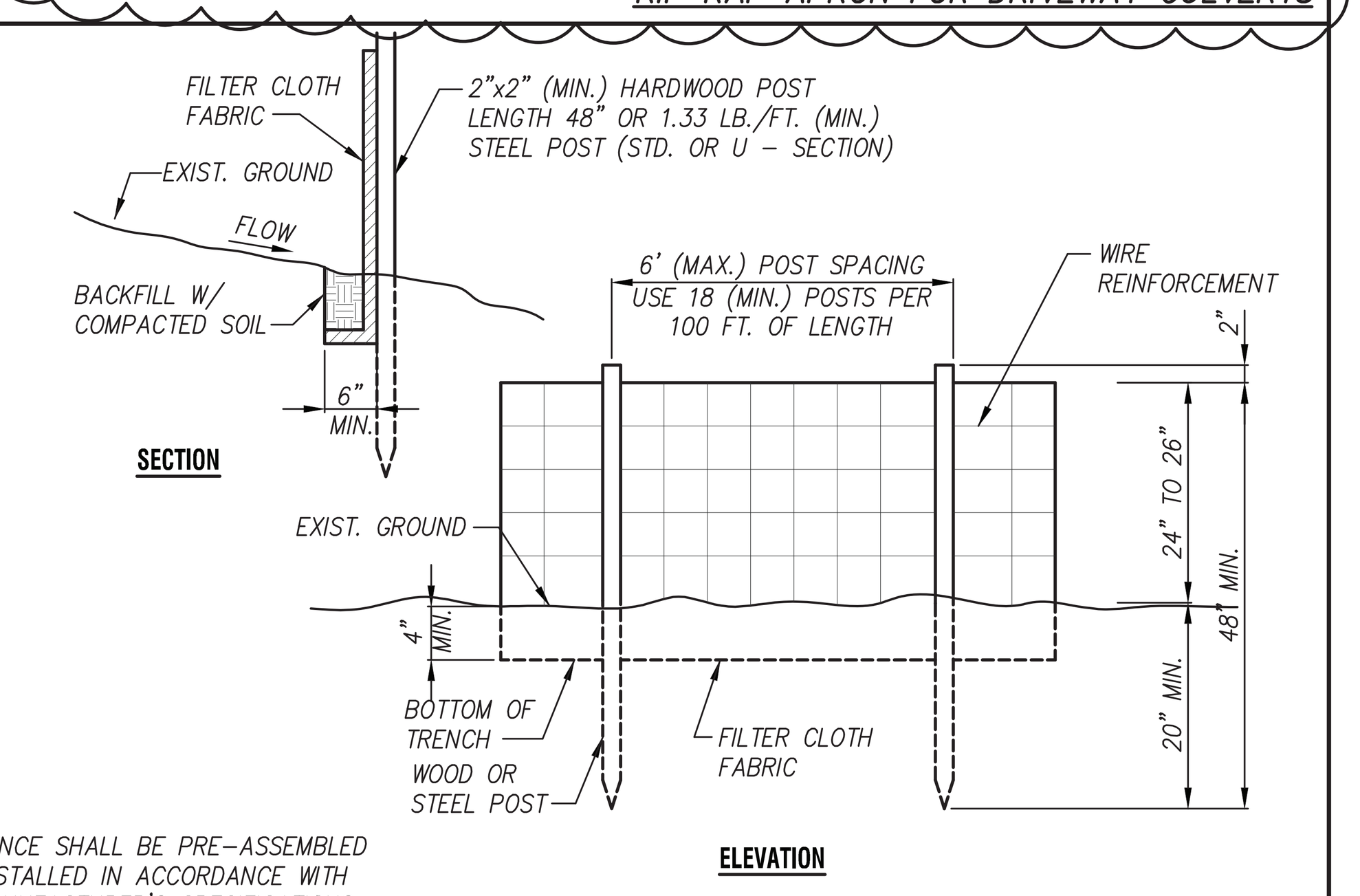
NOTES:
1. AREA DRAINS SHALL BE 4'X4' SQ. CONCRETE AREA DRAIN TDOT NO. 38.
2. LADDER BARS SHALL BE PROVIDED PER OSHA REGULATIONS.
3. COORDINATES AND TC ELEVATIONS TAKEN AT CENTER OF THE STRUCTURE.
4. AREA DRAIN FRAME AND GRATE SHALL BE TDOT GRATE UNIT NO. 38 OR EQUAL.
5. THE FRAME SHALL BE STAMPED WITH "NO DUMPING... DRAINS TO RIVER" OR EQUAL.

10 **AREA DRAIN**
C3.02 N.T.S.

NOTES:
1. THE PURPOSE OF THE STABILIZED CONSTRUCTION ENTRANCE IS TO AID THE CONTRACTOR IN ELIMINATING TRACKING OF MUD ONTO PUBLIC STREETS. THIS DETAIL DOES NOT LIMIT THIS RESPONSIBILITY. OTHER METHODS OF SEDIMENT REMOVAL SHALL BE IMPLEMENTED IF THIS DOES NOT ADEQUATELY REMOVE THE MUD.
2. CONSTRUCT THE PAD WITH A 6" (MIN.) THICKNESS OF 2" TO 3" CRUSHED STONE PLACED ON TOP OF MEDIUM TO HEAVY GEOTEXTILE SUITABLE FOR MATERIAL SEPARATION APPLICATIONS.
3. ADD CRUSHED STONE TO THE PAD AS NECESSARY TO MAINTAIN THE PROPER FUNCTIONING OF THE PAD.
4. LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR TO ADJUST BASED ON CONSTRUCTION ACCESS. INSTALL DRIVEWAY CULVERTS AS NEEDED.
5. FOR ADDITIONAL REQUIREMENTS SEE BMP; STABILIZED CONSTRUCTION ENTRANCE ES-01.

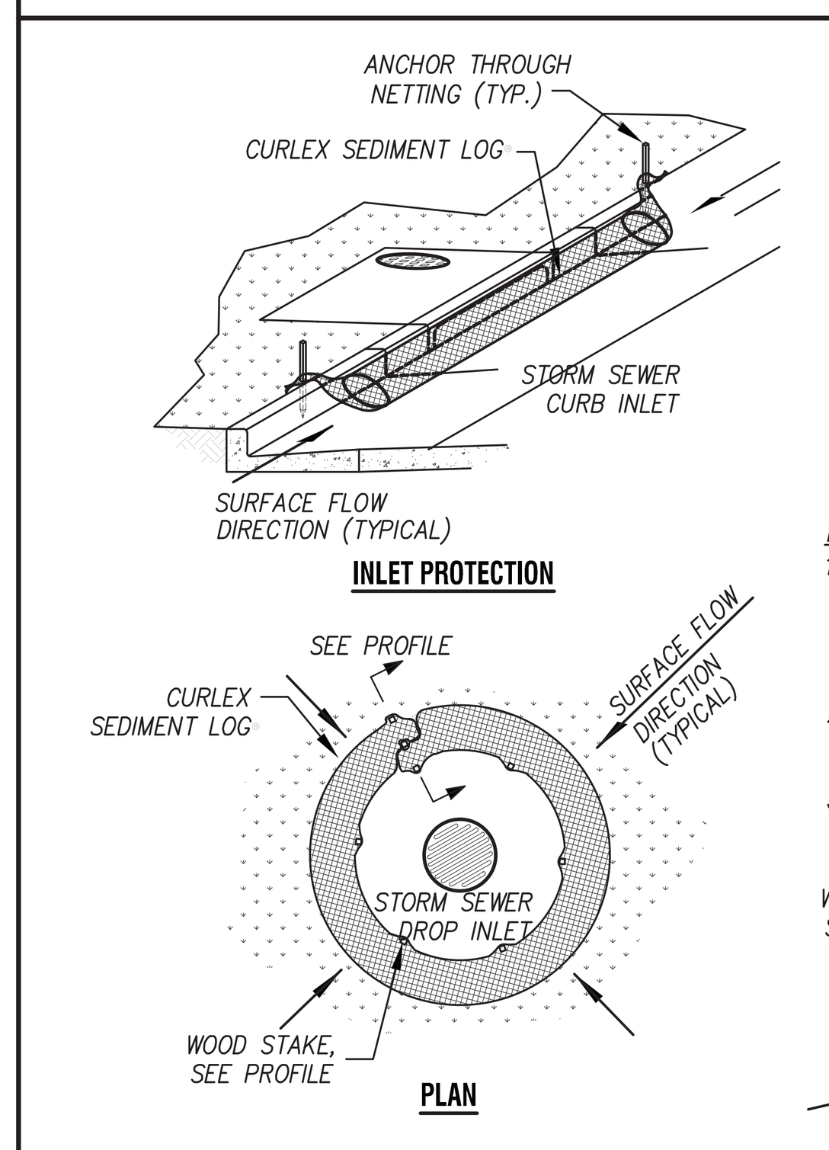


11 **TEMPORARY CONSTRUCTION ENTRANCE**
C4.01 N.T.S.



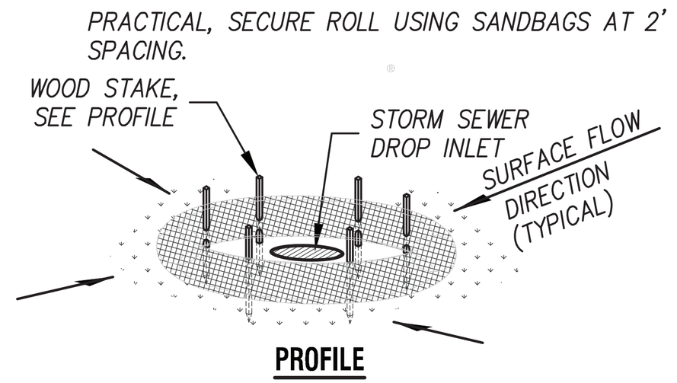
NOTES:
1. SILT FENCE SHALL BE PRE-ASSEMBLED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
2. SILT FENCE SHALL HAVE AN APPROVED BACKING OR A BUILT-IN REINFORCED STRUCTURE AS RECOMMENDED BY THE MANUFACTURER TO SUPPORT THE GEOTEXTILE FABRIC.
3. EXCLUDING PERIMETER FENCING EROSION CONTROL LOG MAY BE USED AS SUBSTITUTE.
4. FOR ADDITIONAL REQUIREMENTS SEE BMP; SILT FENCE ES-14-1.

12 **TEMPORARY SILT FENCE**
C4.01 N.T.S.

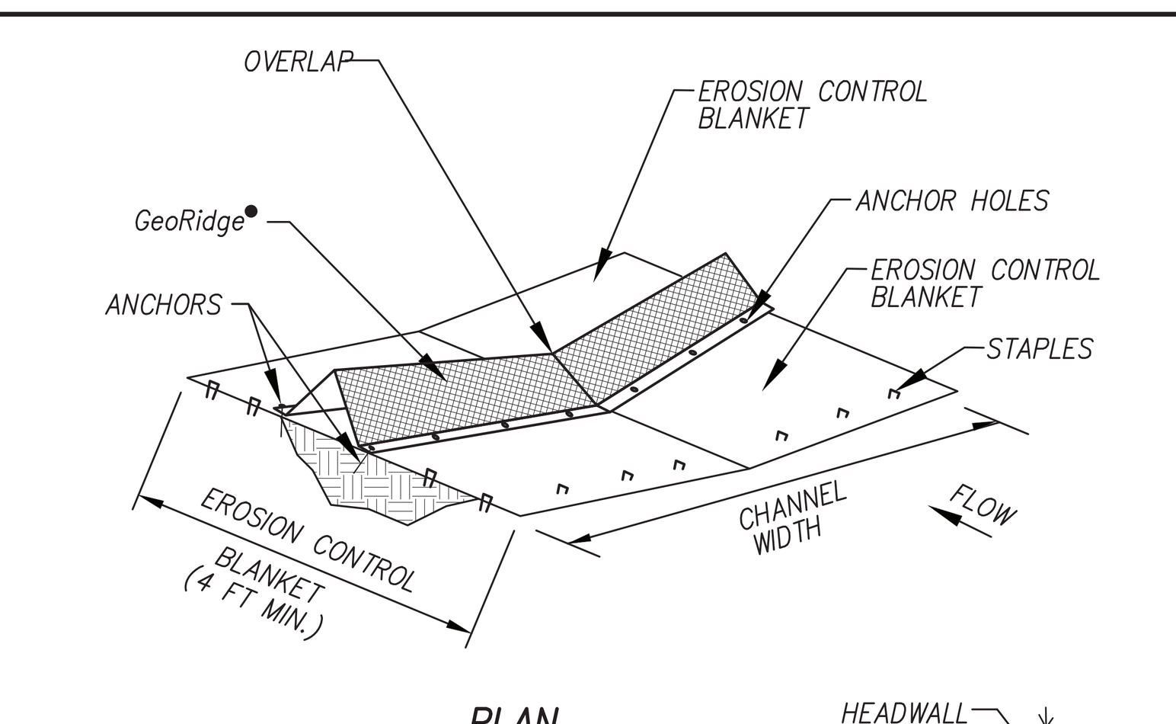


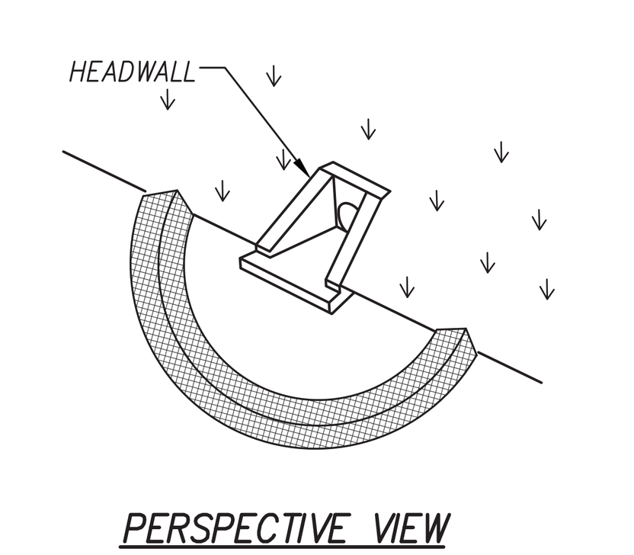
	TYPE I	TYPE II	TYPE III	TYPE IV
NORMAL DIAMETER	50 CM (20 IN)	30 CM (12 IN)	23 CM (9 IN)	15 CM (6 IN)
LENGTH	3.05 M (10 FT.)	3.05 M (10 FT.)	7.62 M (25 FT.)	7.62 M (25 FT.)
WEIGHT (±10%)	13.62 KG (30 LB)	9.08 KG (20 LB)	11.35 KG (25 LB)	5.45 KG (12 LB)
NET OPENING (HEXAGONAL-SHAPED)	2.5 CM (1 IN)	2.5 CM (1 IN)	1.9 CM (.75 IN)	1.3 CM (.5 IN)

NOTES:
1. TYPE III SEDIMENT CONTROL LOGS TO BE THE MINIMUM USED FOR ENERGY DISSIPATION IN MILD CONCENTRATED FLOW AREAS, SLOPE INTERRUPTION. CONTRACTOR TO DETERMINE IF TYPE I OR II IS APPROPRIATE PER MANUFACTURER'S RECOMMENDATION.
2. SEDIMENT CONTROL DEVICES SHALL BE CURLEX SEDIMENT LOG, AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, OR EQUAL.
3. WHERE EROSION CONTROL IS NEEDED BUT STAKING IS NOT PRACTICAL, SECURE ROLL USING SANDBAGS AT 2' C-C SPACING.



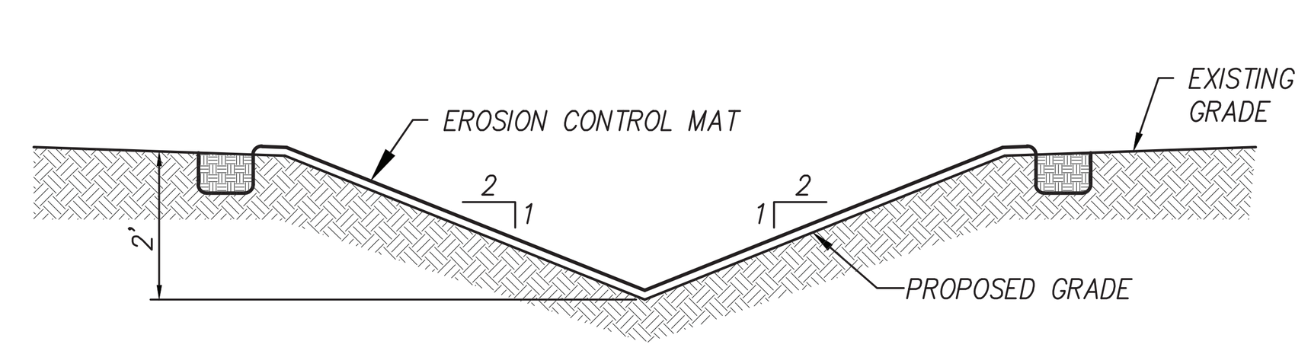
13 **TEMPORARY INLET PROTECTION (TYPE II)**
C4.01 N.T.S.





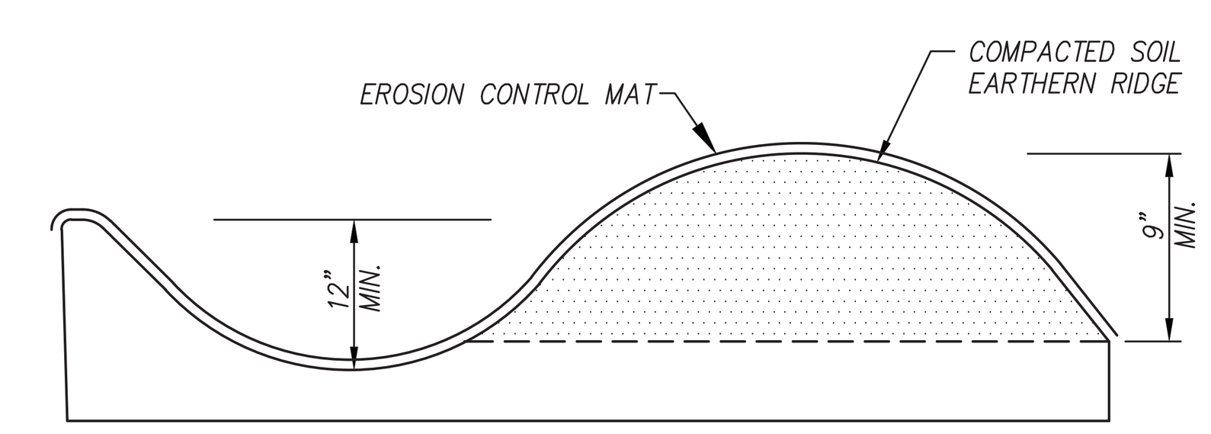
NOTES:
1. INSTALL GEORIDGE CHECK DAM PER MANUFACTURER'S RECOMMENDATIONS.
2. GEORIDGE CHECK DAM TO BE USED IN AREAS ADJACENT TO TRAVEL WAYS.

14 **GeoRidge® CHECK DAMS**
C4.01 N.T.S.



NOTES:
1. EROSION CONTROL MAT SHALL BE AMERICAN EXCELSIOR OR EQUAL AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

15 **TYPICAL DITCH SECTION**
C3.02 N.T.S.



16 **DIVERSION BERM**
C4.01 N.T.S.

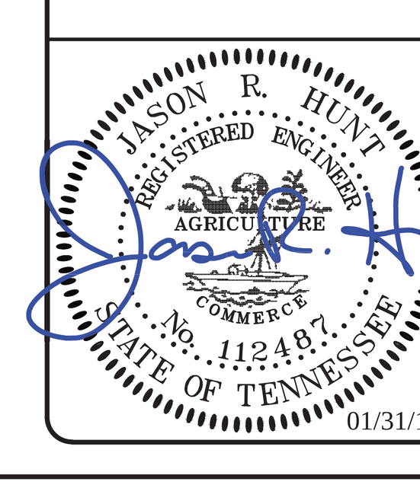
REVISIONS	DATE
1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018
2 REVISED PER CITY OF KNOXVILLE COMMENTS	1/07/2019
3 REVISED PER CITY OF KNOXVILLE COMMENTS	1/31/2019

CANNON & CANNON INC
CONSULTING ENGINEERS · FIELD SURVEYORS
TEL 865.670.8555 | 8550 Kingston Pike Knoxville, TN 37919
WWW.CANNON-CANNON.COM

CLIENT:
KNOXVILLE'S COMMUNITY DEVELOPMENT CORPORATION
901 N. BROADWAY ST.
KNOXVILLE, TENNESSEE 37917

PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD
KNOXVILLE, TENNESSEE

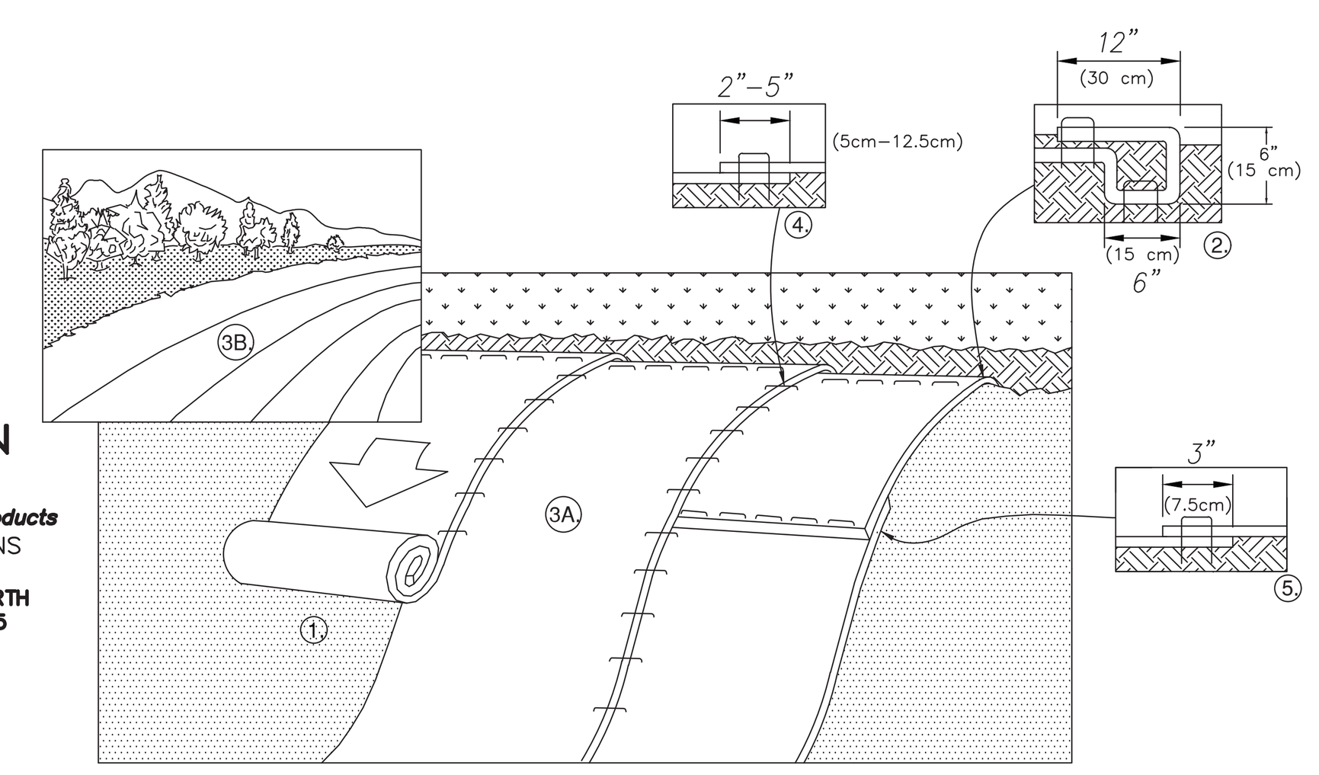
SITE DETAILS



CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C5.01

NORTH AMERICAN GREEN
EROSION CONTROL *Products* *Guaranteed* SOLUTIONS
14649 HIGHWAY 41 NORTH
EVANSVILLE, IN 47725
800-772-2040
www.nagreen.com



SLOPE INSTALLATION

SLOPE INSTALLATION NOTES

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES TM IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

MATERIAL SPECIFICATIONS

THE COMPOSITE TURF REINFORCEMENT MAT (C-TRM) SHALL BE A MACHINE PRODUCED MAT OF 70% STRAW/30% COCONUT FIBER MATRIX INCORPORATED INTO A PERMANENT THREE-DIMENSIONAL NETTING STRUCTURE.

THE MATRIX SHALL BE EVENLY DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE MATTING AND STITCH BONDED BETWEEN UV STABILIZED TOP AND BOTTOM NETS WITH 0.50 X 0.50 INCH (1.27 X 1.27 CM) OPENINGS AND A SUPER HEAVY DUTY UV STABILIZED, DRAMATICALLY CORRUGATED (CRIMPED) INTERMEDIATE NETTING WITH 0.50 X 0.50 INCH (1.27 X 1.27 CM) OPENINGS. THE MIDDLE CORRUGATED NETTING SHALL FORM PROMINENT CLOSELY SPACED RIDGES ACROSS THE ENTIRE WIDTH OF THE MAT. THE THREE NETTINGS SHALL BE STITCHED TOGETHER ON 1.50 INCH (3.81 CM) CENTERS WITH UV STABILIZED POLYPROPYLENE THREAD TO FORM A PERMANENT THREE-DIMENSIONAL STRUCTURE.

ALL MATS SHALL BE MANUFACTURED WITH A COLORED THREAD STITCHED ALONG BOTH OUTER EDGES (APPROXIMATELY 2-5 INCHES [5-12.5 CM] FROM THE EDGE) AS AN OVERLAP GUIDE FOR ADJACENT MATS.

THE COMPOSITE TURF REINFORCEMENT MAT SHALL BE THE NORTH AMERICAN GREEN SC250, OR EQUIVALENT. THE SC250 PERMANENT COMPOSITE TURF REINFORCEMENT MAT SHALL HAVE THE FOLLOWING PHYSICAL PROPERTIES:

MATERIAL CONTENT

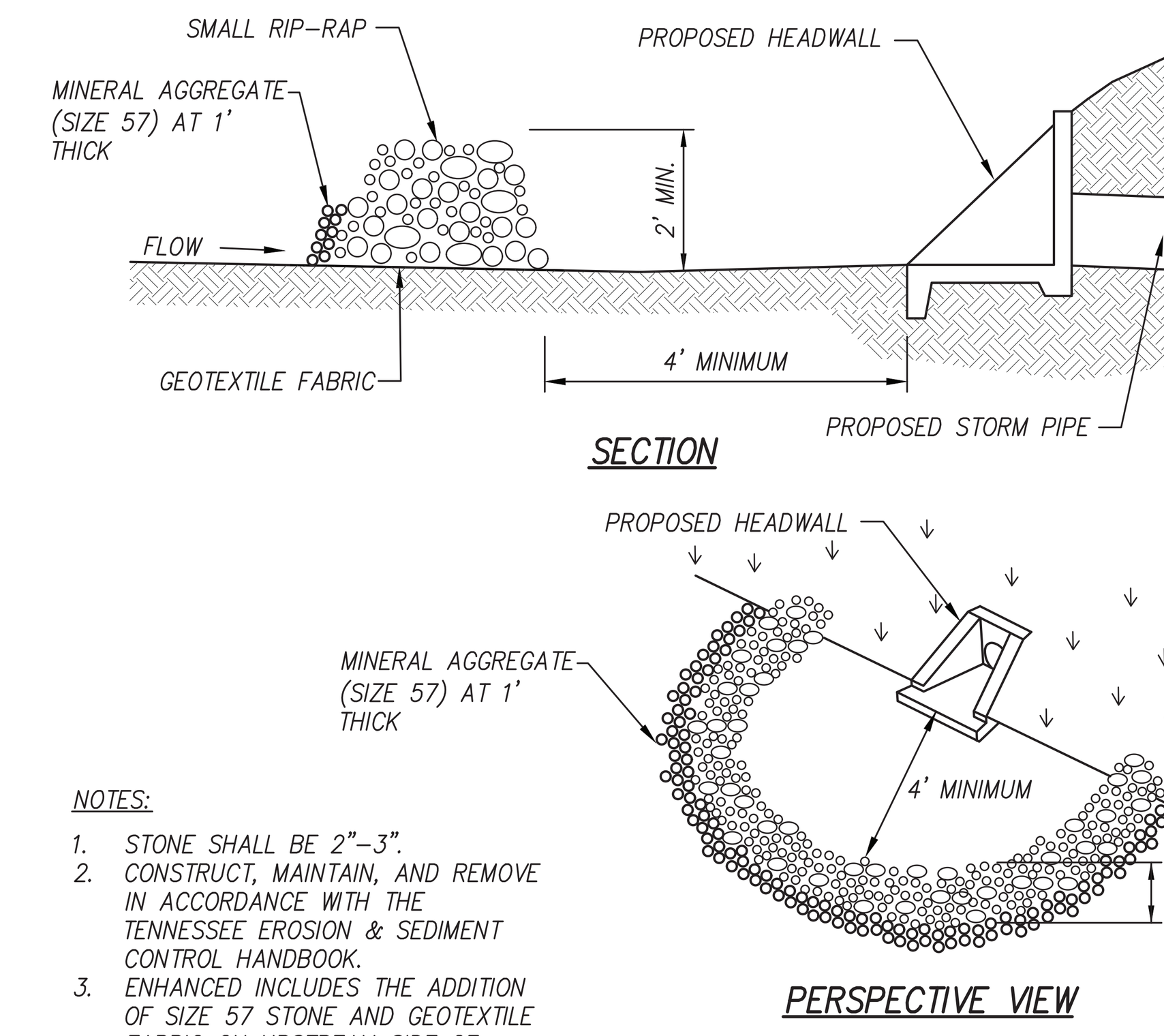
MATRIX 70% STRAW FIBER
(0.35 LB/YD2) (0.19 KG/M2)
30% COCONUT FIBER
(0.15 LB/YD2) (0.08 KG/M2)

NETTING
TOP AND BOTTOM UV STABILIZED POLYPROPYLENE
(5.0 LBS/1,000 FT2 [2.44 KG/100 M2] APPROXIMATE WEIGHT)
MID -SUPER HEAVY UV STABILIZED POLYPROPYLENE CORRUGATED
(24 LB/1,000 FT2 [11.7 KG/100 M2] APPROXIMATE WEIGHT)
THREAD BLACK UV STABILIZED POLYPROPYLENE

PHYSICAL SPECIFICATIONS (PER ROLL)

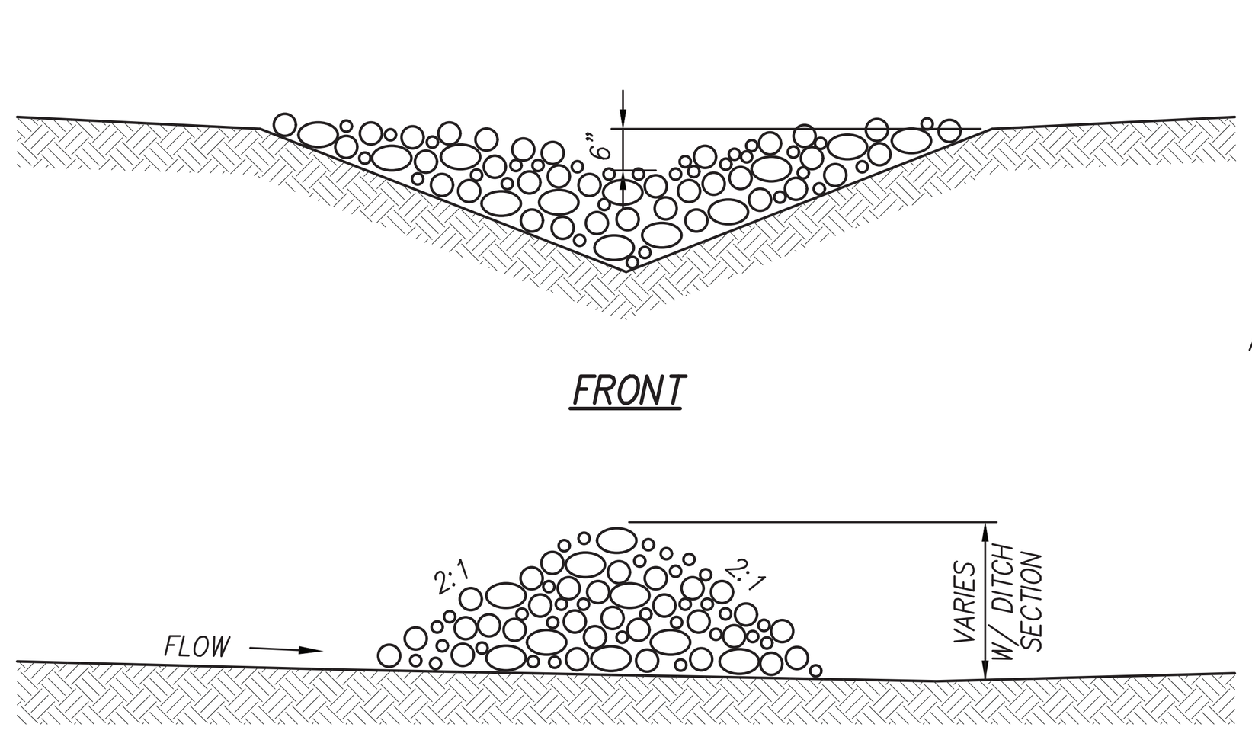
	ENGLISH	METRIC
WIDTH	6.50 FT	2.00 M
LENGTH	55.50 FT	16.90 M
WEIGHT	34.00 LBS ± 10%	15.42 KG
AREA	40.00 YD2	33.40 M2
STITCH SPACING	1.50 IN	3.81 CM

17 / C4.03 **EROSION CONTROL BLANKET**
N.T.S.

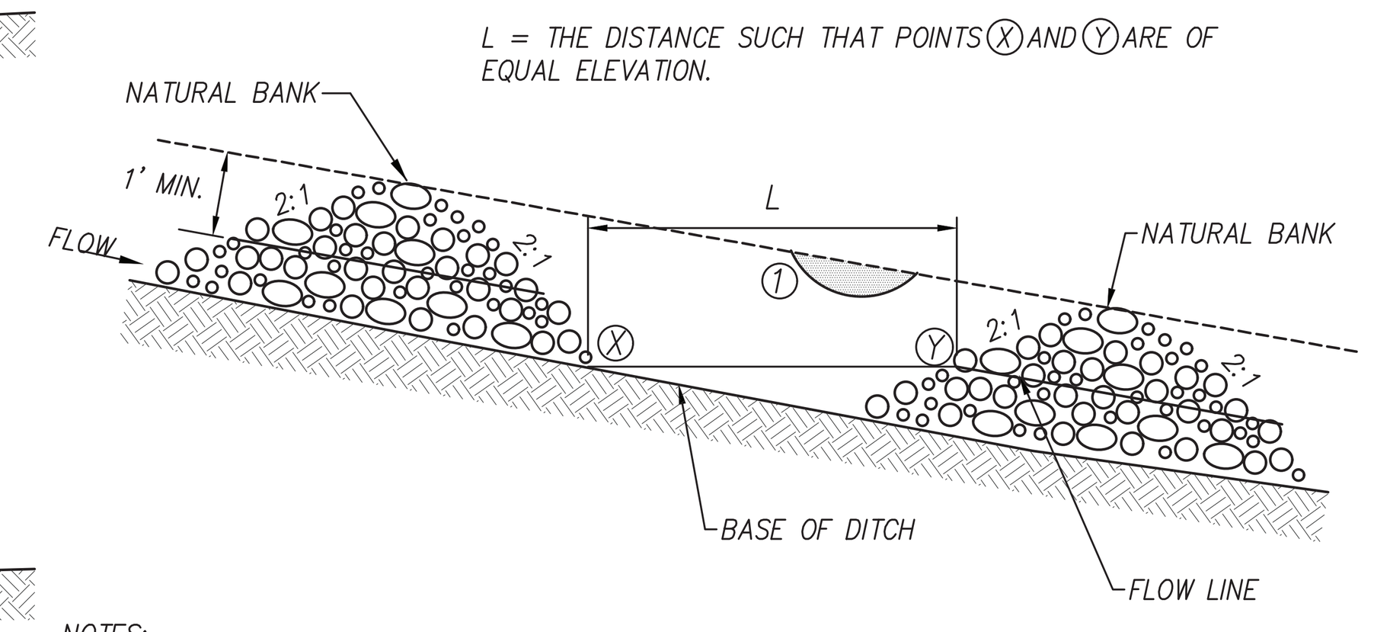


NOTES:
1. STONE SHALL BE 2"–3".
2. CONSTRUCT, MAINTAIN, AND REMOVE IN ACCORDANCE WITH THE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK.
3. ENHANCED INCLUDES THE ADDITION OF SIZE 57 STONE AND GEOTEXTILE FABRIC ON UPSTREAM SIDE OF CHECK DAM AS SHOWN ABOVE.

18 / C4.01 **ENHANCED STONE FILTER RING**
N.T.S.

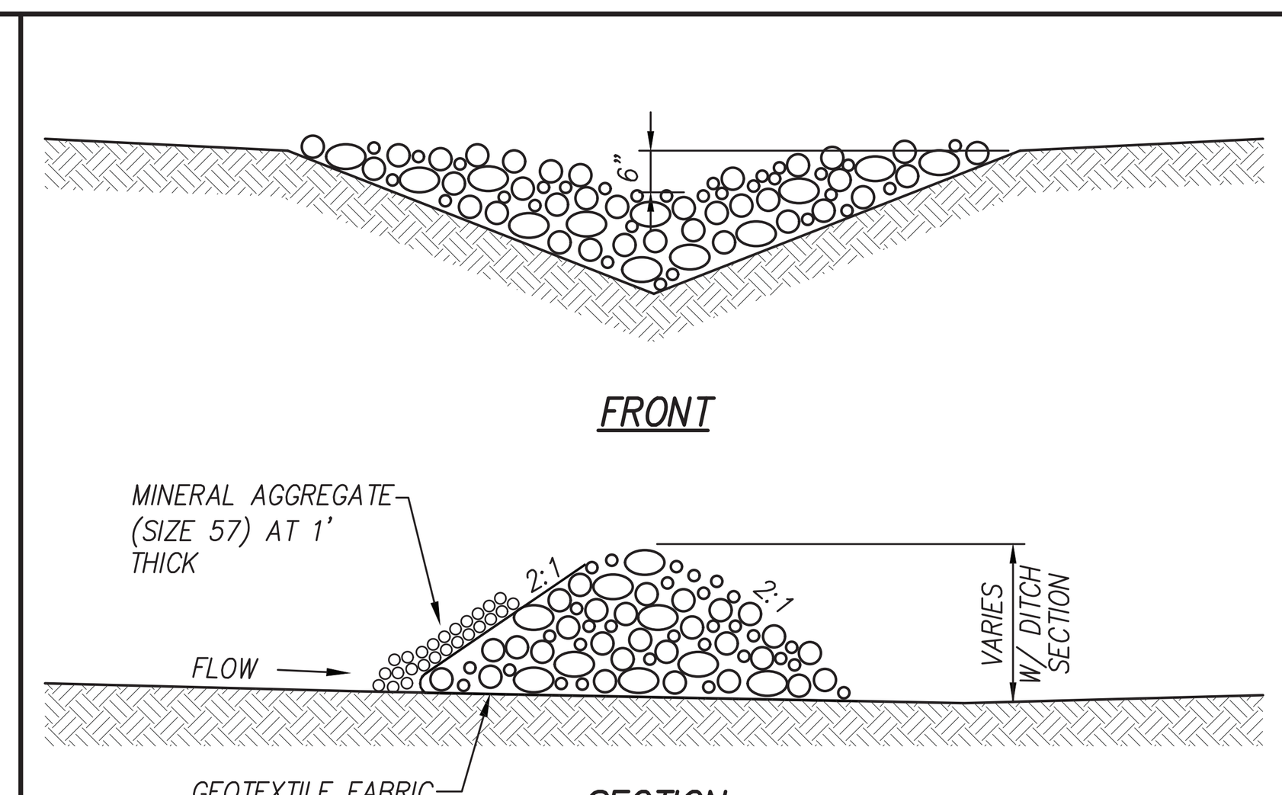


NOTES:
1. STONE SHALL BE 2"–3".
2. CONSTRUCT, MAINTAIN, AND REMOVE IN ACCORDANCE WITH THE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK.



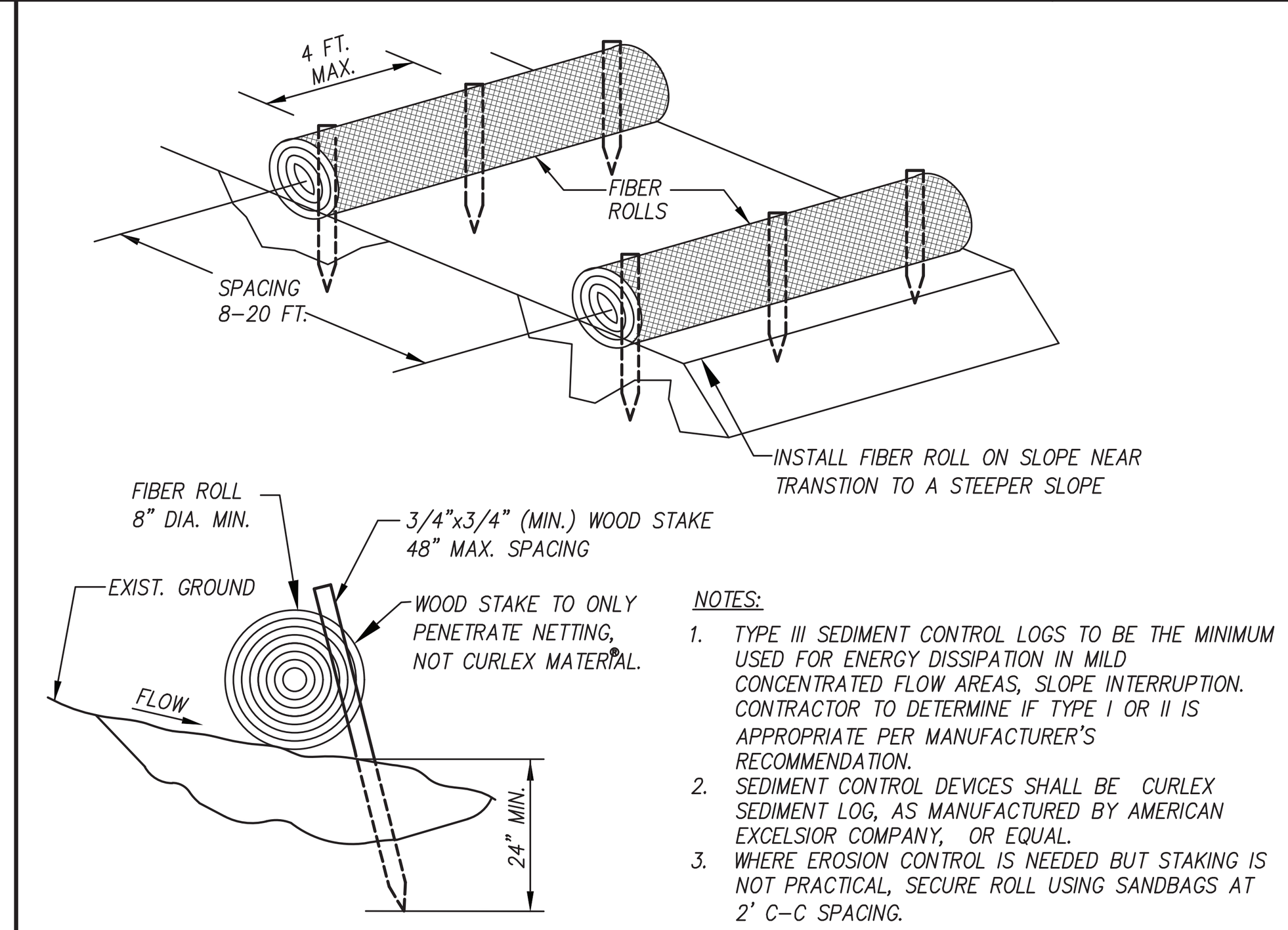
NOTES:
① FILL LOW AREAS ALONG TOP OF BANK THAT WOULD ALLOW BACKWATER TO EXIT DITCH.

19 / C4.01 **TEMPORARY ROCK CHECK DAM**
N.T.S.



NOTES:
1. STONE SHALL BE 2"–3".
2. CONSTRUCT, MAINTAIN, AND REMOVE IN ACCORDANCE WITH THE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK.
3. ENHANCED INCLUDES THE ADDITION OF SIZE 57 STONE AND GEOTEXTILE FABRIC ON UPSTREAM SIDE OF CHECK DAM AS SHOWN ABOVE.

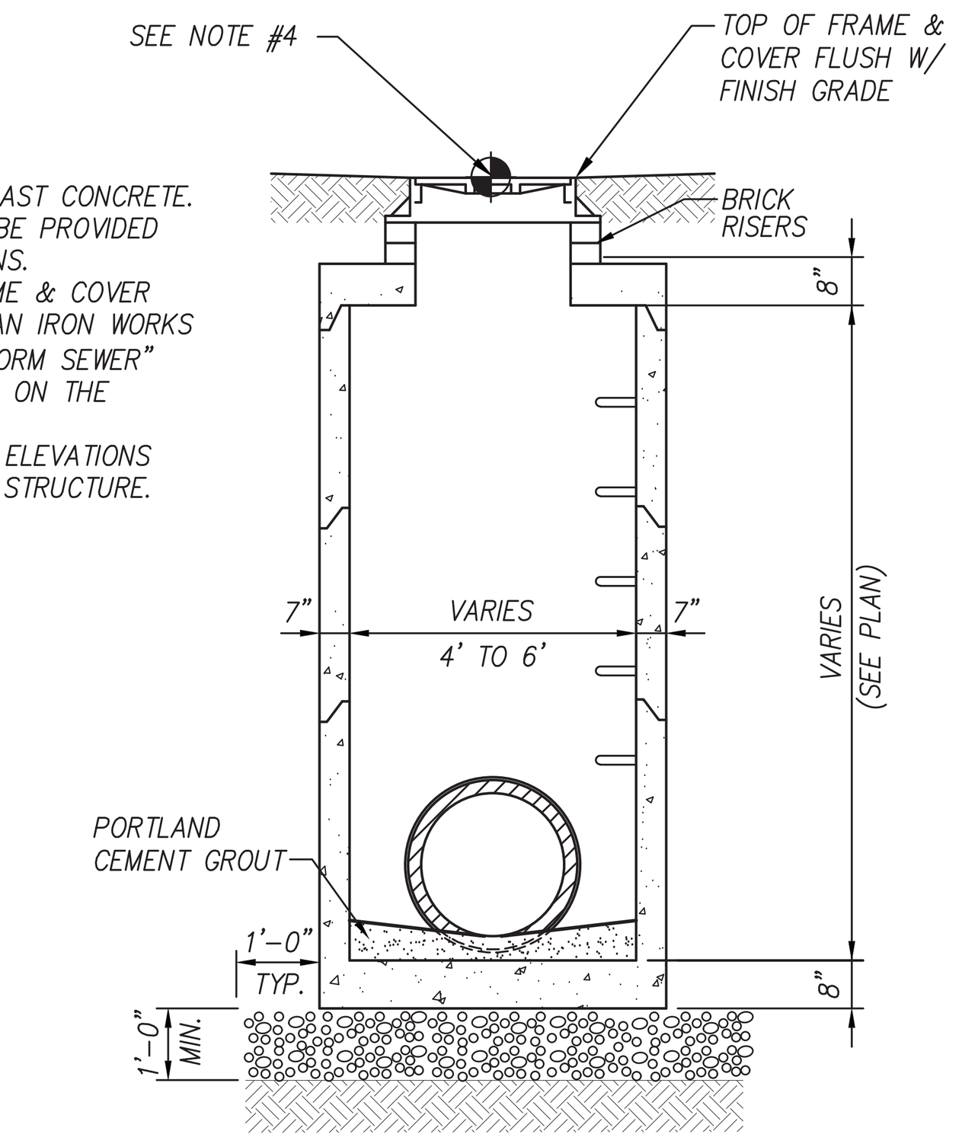
20 / C4.01 **TEMPORARY ENHANCED ROCK CHECK DAM**
N.T.S.



NOTES:
1. TYPE III SEDIMENT CONTROL LOGS TO BE THE MINIMUM USED FOR ENERGY DISSIPATION IN MILD CONCENTRATED FLOW AREAS, SLOPE INTERRUPTION. CONTRACTOR TO DETERMINE IF TYPE I OR II IS APPROPRIATE PER MANUFACTURER'S RECOMMENDATION.
2. SEDIMENT CONTROL DEVICES SHALL BE CURLEX SEDIMENT LOG, AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, OR EQUAL.
3. WHERE EROSION CONTROL IS NEEDED BUT STAKING IS NOT PRACTICAL, SECURE ROLL USING SANDBAGS AT 2' C-C SPACING.

21 / C4.01 **SEDIMENT CONTROL LOGS**
N.T.S.

NOTES:
1. MANHOLE TO BE PRECAST CONCRETE.
2. LADDER BARS SHALL BE PROVIDED PER OSHA REGULATIONS.
3. STORM MANHOLE FRAME & COVER SHALL BE EAST JORDAN IRON WORKS #1045 OR EQUAL. "STORM SEWER" SHALL BE DESIGNATED ON THE MANHOLE COVER.
4. COORDINATES AND TC ELEVATIONS TAKEN AT CENTER OF STRUCTURE.



23 / C3.02 **STORM SEWER MANHOLE**
N.T.S.

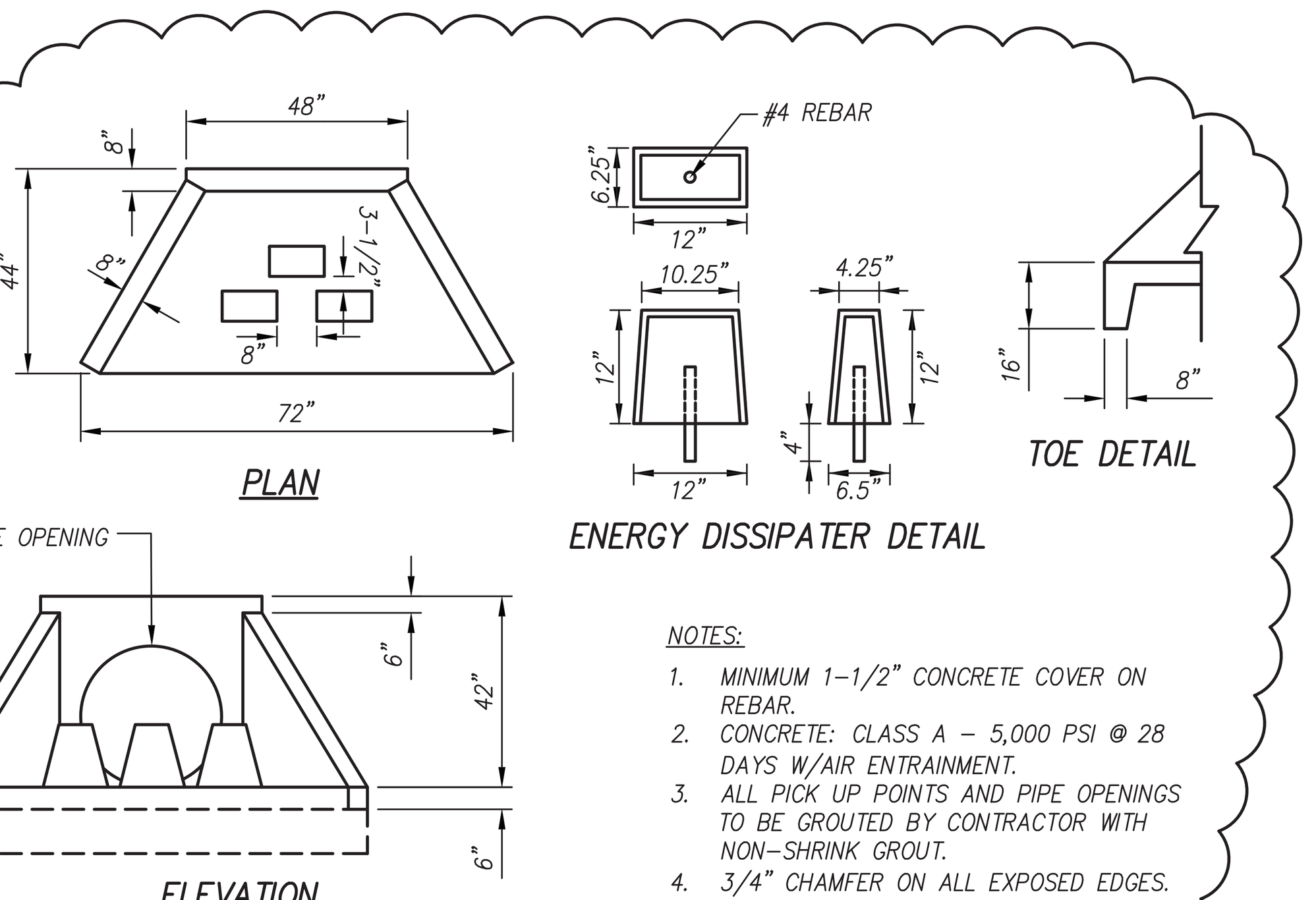
STORM DRAINAGE STRUCTURES					
NO.	DESCRIPTION ⚠2	LOCATION	TOP OF CASTING	INVERT EL. (IN)	INVERT EL. (OUT)
1 EHW	ENERGY DISSIPATING HEADWALL SEE DETAIL #25/SHEET C5.02	N 602692.10 E 2568244.20	⚠1	930.60(2)	
2 SMH	STORM MANHOLE SEE DETAIL #23/SHEET C5.02	N 602597.81 E 2568227.49	935.00	931.18(3)	931.08
3 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 602583.90 E 2568125.80	⚠1		931.69
4 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 602172.83 E 2568162.93		938.00(5)	
⚠1 5 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 602137.39 E 2568171.98			938.18
6 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 602019.52 E 2568184.42		946.00(7)	
7 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601989.22 E 2568191.86			946.32
8 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601907.12 E 2568200.11		949.32(9)	
9 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601839.94 E 2568212.49			949.75
10 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601731.63 E 2568223.63		956.04(11)	
11 AD	AREA DRAIN SEE DETAIL #10/SHEET C5.01	N 601685.63 E 2568229.89	959.00		956.50
12 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601655.25 E 2568233.66	⚠1	960.51(13)	
13 AD	AREA DRAIN SEE DETAIL #10/SHEET C5.01	N 601594.70 E 2568241.76	965.00		961.12

STORM DRAINAGE STRUCTURES					
NO.	DESCRIPTION	LOCATION	TOP OF CASTING	INVERT EL. (IN)	INVERT EL. (OUT)
14 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601490.67 E 2568255.94	⚠1	974.91(15)	
15 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601449.55 E 2568270.25			976.00
16 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601287.54 E 2568285.33		995.58(17)	
17 AD	AREA DRAIN SEE DETAIL #10/SHEET C5.01	N 601234.27 E 2568293.38	1000.00		996.12
18 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601117.96 E 2568312.14		1004.51(19)	
⚠1 19 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 601070.09 E 2568321.41			1005.00
20 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 600918.67 E 2568338.25		1019.54(21)	
⚠1 21 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 600874.45 E 2568351.19			1020.00
22 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 600736.03 E 2568412.16		1043.72(23)	
23 AD	AREA DRAIN SEE DETAIL #10/SHEET C5.01	N 600709.62 E 2568442.38	1048.00		1044.12
24 EW	MITERED CULVERT END SEE DETAIL #9/SHEET C5.01	N 600642.89 E 2568518.79	⚠1	1057.69(25)	
25 AD	AREA DRAIN SEE DETAIL #10/SHEET C5.01	N 600613.40 E 2568550.60	1062.00		1058.12

STORM PIPE TABLE				
FROM	TO	DIAMETER	LENGTH (LF)	SLOPE (%)
2	1	24"RCP	96	0.50%
3	2	24"RCP	103	0.50%
5	4	18"RCP	37	0.49%
7	6	18"RCP	31	1.03%
9	8	18"RCP	68	0.63%
11	10	18"RCP	46	1.00%
13	12	18"RCP	61	1.00%
15	14	18"RCP	44	2.50%
17	16	15"RCP	54	1.00%
19	18	15"RCP	49	1.00%
21	20	15"RCP	46	1.00%
23	22	15"RCP	40	1.00%
25	24	15"RCP	43	1.00%

STORM PIPE NOTES:
1. INSTALL STORM SEWER PIPING AND APPURTENANCES TO MEET THE MATERIALS, EQUIPMENT, AND CONSTRUCTION REQUIREMENTS OF TDOT AND THE CITY OF KNOXVILLE STANDARD SPECIFICATIONS.
2. TRENCH DESIGN AND SAFETY FOR PIPELINE CONSTRUCTION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND OSHA REGULATIONS.
3. STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE IN ACCORDANCE WITH AASHTO M170 OR EQUAL, OR SMOOTH INTERIOR HIGH DENSITY POLYETHYLENE PIPE IN ACCORDANCE WITH AASHTO M294 OR EQUAL UNLESS NOTED OTHERWISE. REFER TO THE STORM PIPE TABLE.
4. PVC STORM PIPE SHALL BE SCHEDULE 40 DWV PVC PIPE, ASTM D1785. INSTALL PER ASTM D2321. FITTINGS: SCHEDULE 40 DWV PVC, SOCKET TYPE FITTINGS, ASTM D2665. JOINTS: SOLVENT JOINTS FOR PVC, ASTM D2564.
5. PIPE DEFLECTION AND ALIGNMENT SHALL BE CHECKED AFTER BACKFILLING & COMPACTION ARE COMPLETE & PRIOR TO PLACING THE BASE. TEST DEFLECTION WITH A MANDREL OR OTHER APPROVED METHOD.
6. PIPE WITH DEFLECTION 5% OR GREATER OR WITH UNDUE MISALIGNMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
7. STORM PIPE LENGTHS LOCATED IN STORM PIPE TABLE REPRESENT CENTER OF STRUCTURE TO CENTER OF STRUCTURE (COORDINATE TO COORDINATE). CONTRACTOR TO ADJUST LENGTHS AS NEEDED BASED ON SIZE OF STRUCTURE.

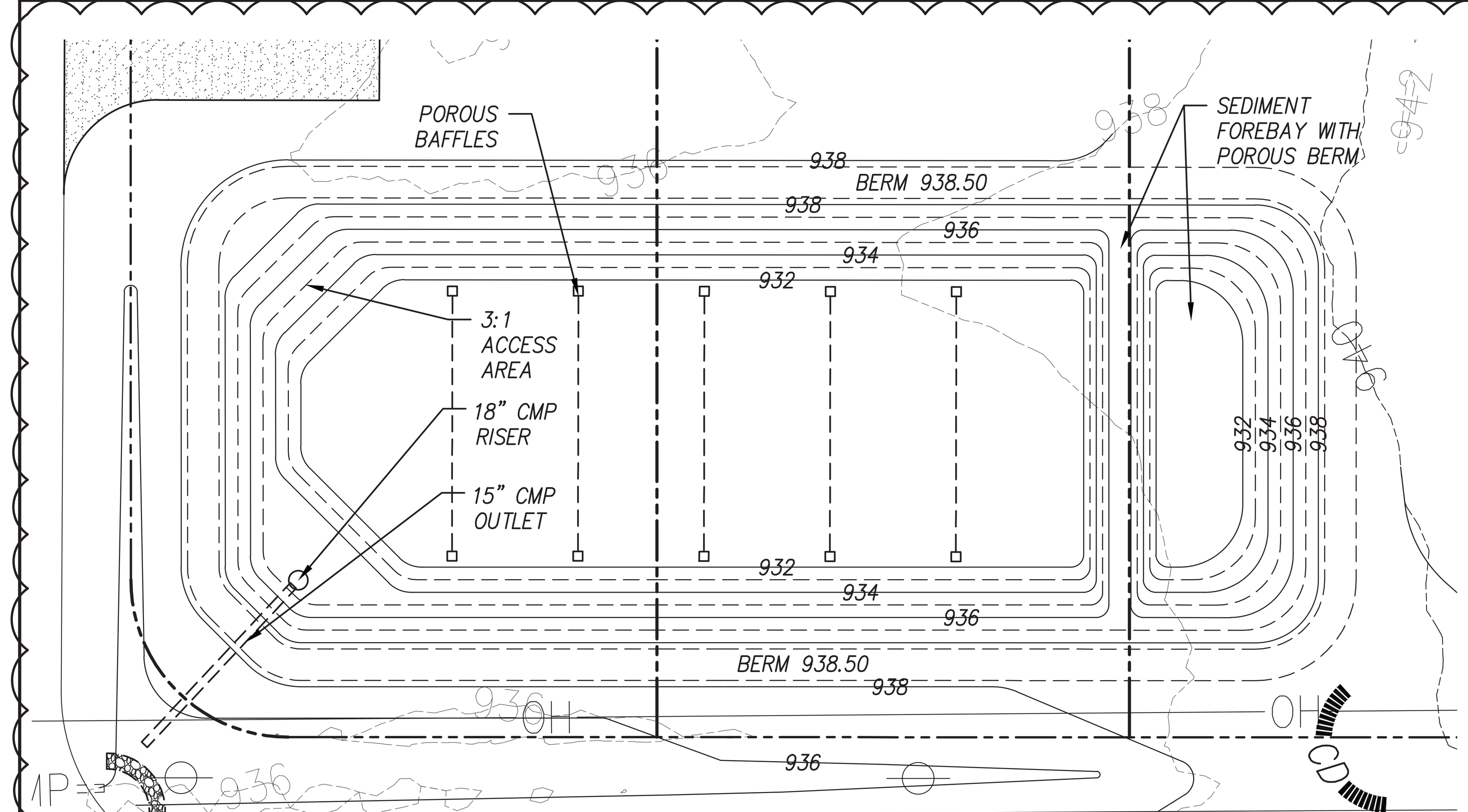
22 / C3.02 **STORM TABLES AND NOTES**
N.T.S.



NOTES:
1. MINIMUM 1-1/2" CONCRETE COVER ON REBAR.
2. CONCRETE: CLASS A – 5,000 PSI @ 28 DAYS W/AIR ENTRAINMENT.
3. ALL PICK UP POINTS AND PIPE OPENINGS TO BE GROUTED BY CONTRACTOR WITH NON-SHRINK GROUT.
4. 3/4" CHAMFER ON ALL EXPOSED EDGES.

⚠2

25 / C3.02 **ENERGY DISSIPATING HEADWALL**
N.T.S.



SEDIMENT BASIN CALCULATION
DRAINAGE AREA = 7.7 AC.

CLEANOUT POINT = 7.7 AC X 904.5 CF/AC = 6,965 CF
SET AT ELEVATION 933.15
WET STORAGE = 7.7 AC X 1,809 CF/AC = 13,929 CF
SET AT ELEVATION 934.25
DRY STORAGE = 7.7 AC X 1,809 CF/AC = 13,929 CF
TOTAL STORAGE = DRY + STORAGE
13,929 CF + 13,929 CF = 27,859 CF
SET AT ELEVATION 936.00

SEDIMENT FOREBAY DATA TABLE

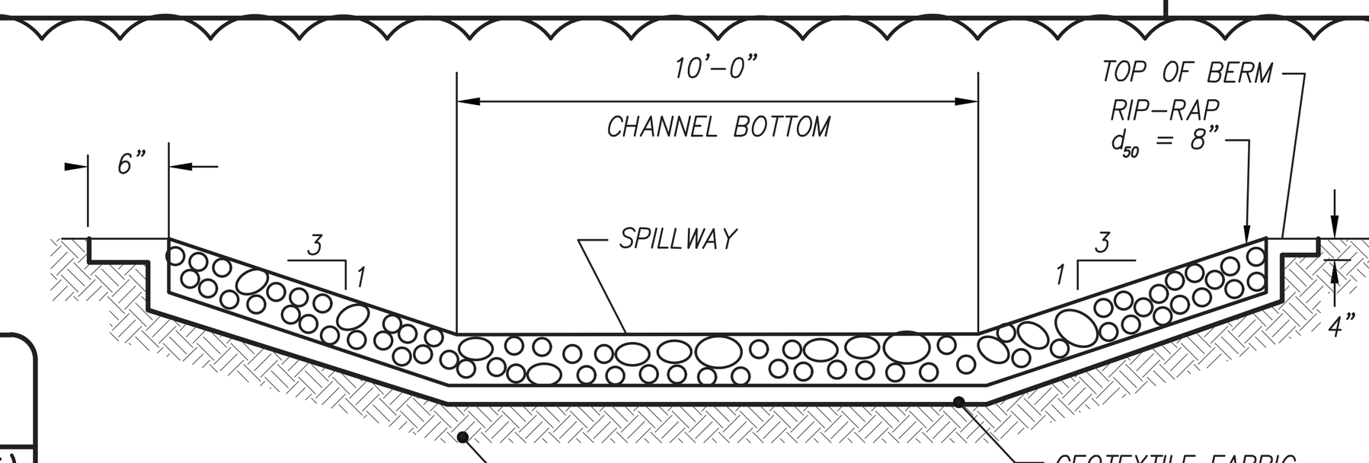
ELEVATION	AREA (SQ. FT.)	DEPTH (FT.)	VOLUME (CU. FT.)
932	581	0	0
933	784	1	682
934	1,012	2	1,580
935	1,263	3	2,718
936	1,539	4	4,119
TOTAL AVAILABLE SEDIMENT FOREBAY VOLUME = 4,119 CU-FT			

NOTES:
1. CONSTRUCT SEDIMENT POND IN ACCORDANCE WITH THE TDEC EROSION CONTROL HANDBOOK.
2. SEE DETAIL THIS SHEET FOR THE OUTLET STRUCTURE AND SKIMMER DEVICE.

SEDIMENT BASIN DATA TABLE

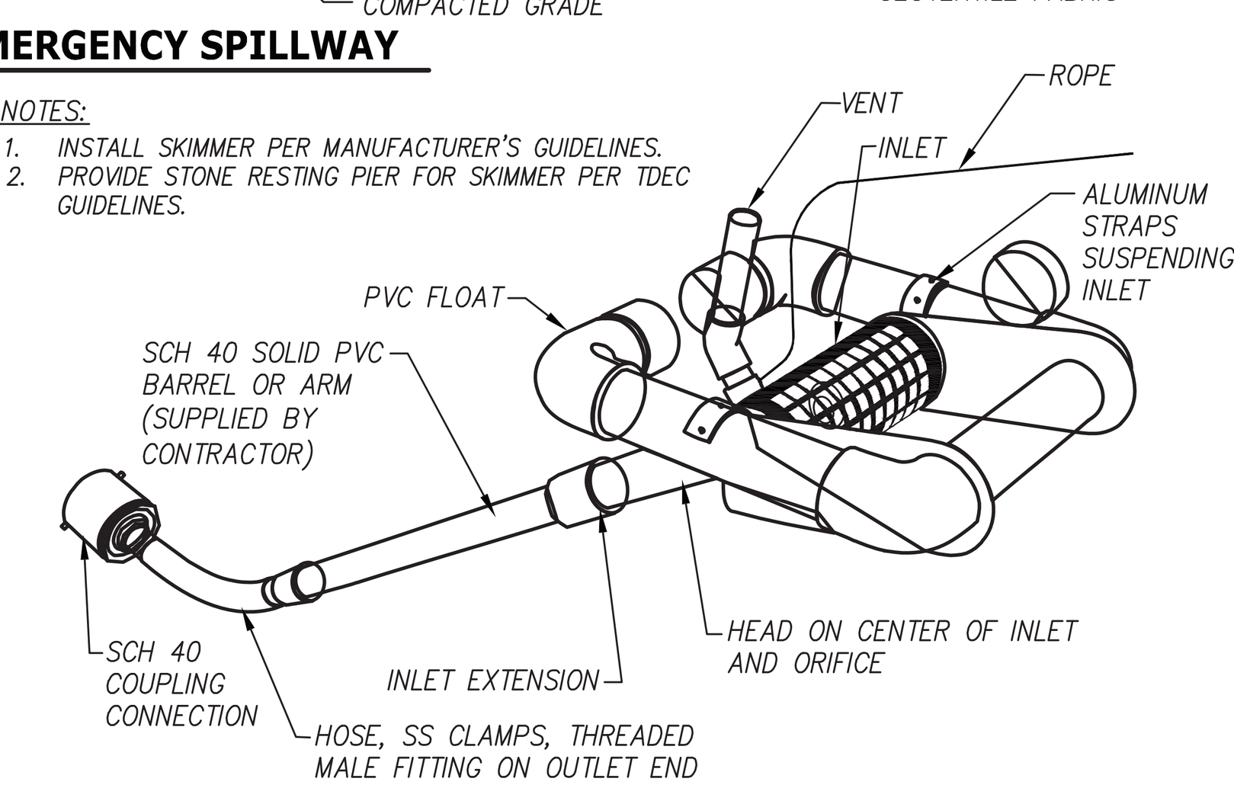
ELEVATION	AREA (SQ. FT.)	DEPTH (FT.)	VOLUME (CU. FT.)
932	5,995	0	0
933	6,827	1	6,411
934	7,706	2	13,678
935	8,823	3	21,942
936	9,812	4	31,260
937	10,948	5	41,640
938	11,898	6	53,063
938.5	12,431	6.5	59,145
TOTAL AVAILABLE SEDIMENT BASIN VOLUME = 59,145 CU-FT			

24 / C3.02 **SEDIMENT BASIN**
N.T.S.



EMERGENCY SPILLWAY

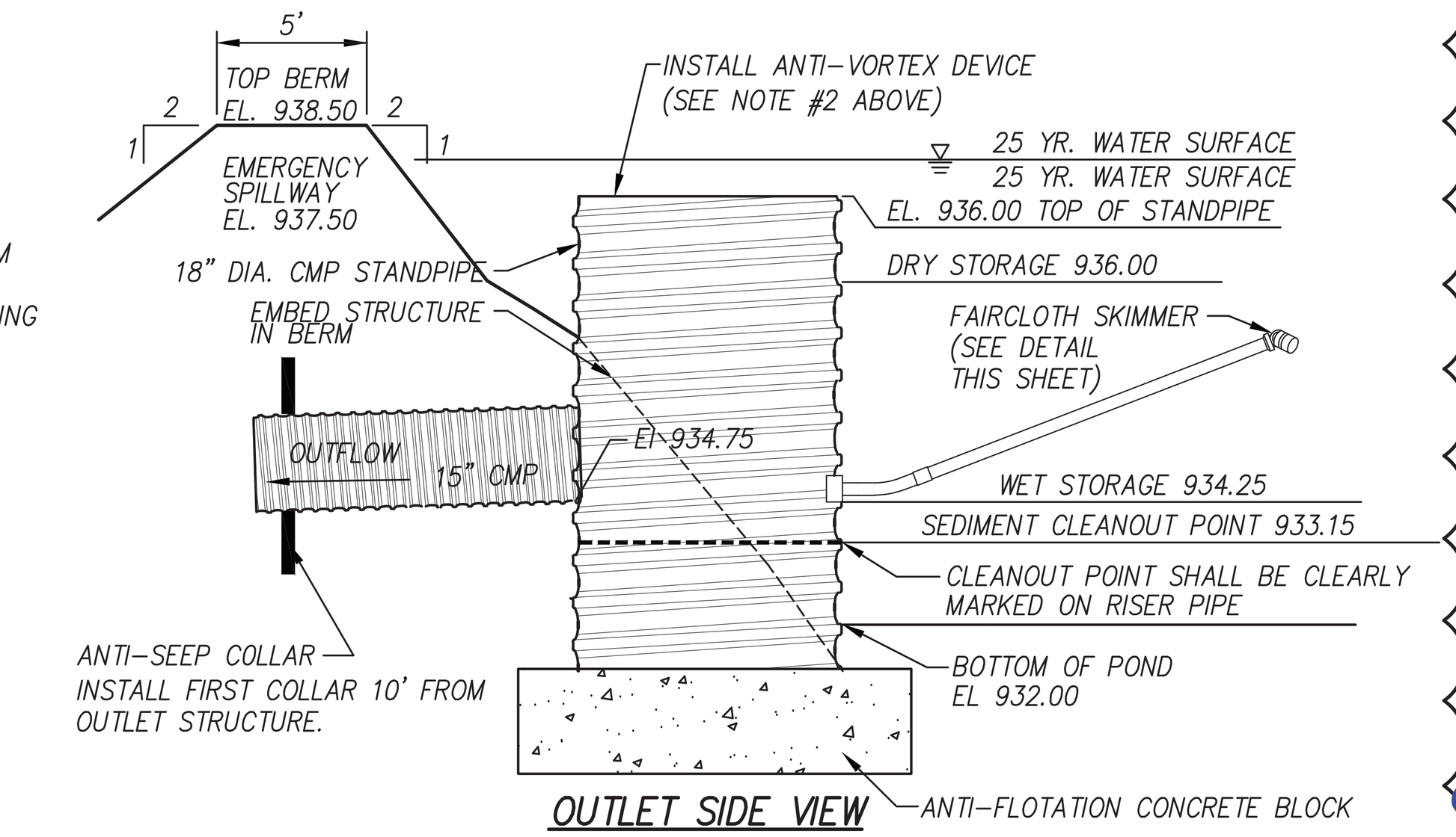
NOTES:
1. INSTALL SKIMMER PER MANUFACTURER'S GUIDELINES.
2. PROVIDE STONE RESTING PIER FOR SKIMMER PER TDEC GUIDELINES.



FAIRCLOTH SKIMMER
2.5" SKIMMER WITH 1.1" RADIUS

NOTES:
1. TEMPORARY OUTLET CONTROL STRUCTURE SHALL BE CORRUGATED METAL PIPE.
2. TOP OF RISER PIPE SHALL HAVE AN ANTI-VORTEX DEVICE. REFER TO TDEC EROSION AND SEDIMENT CONTROL HANDBOOK FOR DETAILS.
3. COORDINATES AND TC ELEV. TAKEN ALONG ℄ OF STRUCTURE.

⚠1



OUTLET STRUCTURE

REVISIONS	DATE
⚠1 REVISED PER CITY OF KNOXVILLE COMMENTS	12/12/2018
⚠2 REVISED PER CITY OF KNOXVILLE COMMENTS	1/07/2019

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PROJECT:
CLIFTON ROAD DEVELOPMENT
404 CLIFTON ROAD ⚠1
KNOXVILLE, TENNESSEE

SITE DETAILS

JASON R. HUNT · REGISTERED ENGINEER · AGRICULTURE · COMMERCE · No. 112487 · STATE OF TENNESSEE · 01/07/19

CCI PROJECT NO.	00216-0005
DRAWING DATE	NOVEMBER 19, 2018
PM JRH	QC AWG
DRAWN LED	

C5.02

USE OF DRAWINGS

TYPICAL DETAILS: ALL TYPICAL DETAILS AND NOTES SHOWN IN THE DRAWINGS SHALL APPLY UNLESS NOTED OTHERSWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE DRAWINGS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.

STRUCTURAL GENERAL NOTES: NOTES ON THE STRUCTURAL GENERAL NOTES SHEET ARE APPLICABLE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.

USE OF DRAWINGS AND COORDINATION: USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, MECHANICAL AND OTHER DRAWINGS FOR BIDDING AND CONSTRUCTION. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR EMBEDS, OPENINGS, SLEEVES, ETC NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE WORK AND VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY BETWEEN TRADES AND EQUIPMENT PURCHASED. NOTIFY OWNER'S REPRESENTATIVE OF DISCREPANCIES PRIOR TO CONSTRUCTION.

DRAWING SCALE: NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS - DO NOT SCALE DRAWINGS.

DIMENSION VERIFICATION: DIMENSIONS NOTED PLUS OR MINUS (+/-) OR AS 'FIELD VERIFY' INDICATE UN-VERIFIED DIMENSIONS THAT REQUIRE CONFIRMATION OR DETERMINATION BY THE CONTRACTOR PRIOR TO FABRICATION AND CONSTRUCTION. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF CONFLICTS OR VARIATIONS FROM INDICATED DIMENSIONS.

NOTE CONFLICTS: IF ANY STRUCTURAL NOTES ARE IN CONFLICT WITH EACH OTHER ARCHITECTURAL, OTHER DRAWINGS, OR THE SPECIFICATIONS, USE THE MOST STRINGENT REQUIREMENT FOR BIDDING AND CONSTRUCTING THE WORK.

EXISTING CONDITIONS: INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS IN THE FIELD PRIOR TO COMMENCING ANY WORK. IMMEDIATELY REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE ENGINEER OF RECORD. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE ENGINEER OF RECORD.

DESIGN BY OTHERS: ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF THE PROJECT AND BE ACCOMPANIED BY SUBSTANTIATING CALCULATIONS.

MEANS AND METHODS

MEANS AND METHODS: CSA ENGINEERING, INC. OR ANY OF ITS EMPLOYEES SHALL NOT HAVE CONTROL OR BE RESPONSIBLE FOR CONSTUCTION MEANS AND METHODS, TECHNIQUES, PROCEDURES, SEQUENCES, ACTS OR OMISSIONS OF THE CONTRACTOR OR ANY OTHER PERSONS PERFORMING THE WORK, OR FOR THE FAILURE OF ANY OF INDIVIDUAL OR COMPANY TO SAFELY CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

STABILITY: THE CONTRACTOR SHALL PROVIDE NECESSARY BRACING AND SHORING AS REQUIRED UNTIL THE BUILDING'S STRUCTURAL SYSTEMS HAVE BEEN COMPLETED. THE STRUCTURE SHALL NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL RETAIN A QUALIFIED LICENSED STRUCTURAL ENGINEER WHO SHALL DETERMINE WHERE TEMPORARY SHORING/BRACING IS REQUIRED AND PROVIDE ITS DESIGN. PROVIDE THE TEMPORARY BRACING AS REQUIRED TO STABILIZE THE STRUCTURE AND ITS COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED ACCORDING TO THE CONTRACT DOCUMENTS.

JOBSITE SAFETY: THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND FOR MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK IN A MANNER THAT PROVIDES FOR THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST INJURY AND DAMAGE DUE TO FALLING DEBRIS AND OTHER HAZARDS IN CONNECTION WITH CONSTRUCTING THE WORK.

CONSTRUCTION LOADING: THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE STRUCTURE DURING CONSTRUCTION. WHERE CONSTRUCTION SEQUENCING AND STAGING ARE LIKELY TO CREATE OVERLOADING, THE CONTRACTOR SHALL RETAIN A QUALIFIED STRUCTURAL ENGINEER TO DETERMINE HOW TO TEMPORARILY SHORE AND SUPPORT THE OVERLOADED ELEMENTS IN A MANNER THAT DOES NOT EXCEED THE STRESS LIMITS OF THE ELEMENTS AND THE SUPPORTING FOUNDATION AS DEFINED BY THE APPLICABLE BUILDING CODES.

GEOTECHNICAL

ASSUMED SOIL DESIGN PARAMETERS: THE FOUNDATIONS AND RETAINING WALL WERE DESIGNED TO THE REQUIREMENTS PROVIDED IN THE PROJECT GEOTECHNICALL REPORT NUMBER 21-18941 PREPARED BY GEOSERVICES DATED 12.17.2018. THE CONTRACTOR SHALL UTILIZE THE RECOMMENDATIONS IN THE GEOTECHINCAL REPORT TO ACHIEVE THE DESIGN PARAMETERS LISTED IN THESE DRAWINGS.

ALLOWABLE BEARING PRESSURE:	2500 PSF
FROST DEPTH:	18 INCHES
FOUNDATION/RETAINING WALL:	
WEIGHT OF BACKFILL MATERIAL:	110 PCF
AT REST PRESSURE:	75 PSF/FT
ACTIVE PRESSURE:	35 PSF/FT
PASSIVE PRESSURE:	330 PSF/FT
COEFFICIENT OF FRICTION:	0.35

GEOTECH APPROVAL: THE GEOTECHNICAL ENGINEER SHALL OBSERVE AND APPROVE PREPARED SOIL BEARING SURFACES PRIOR TO PLACEMENT OF REINFORCING STEEL AND CASTING OF FOOTING. THE GEOTECHNICAL ENGINEER OR AN APPROVED TESTING LAB SHALL OBSERVE SOIL COMPACTION WORK.

SUBGRADE PREP: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS SHALL CONFORM STRICTLY TO THE CONTRACT DOCUMENTS, THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT, AND AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

UTILITIES: DETERMINE THE LOCATION OF ALL NEW/EXISTING UNDERGROUND UTILITIES IN AND ADJACENT TO THE AREA OF WORK PRIOR TO COMMENCING EXCAVATION. COORDINATE UTILITY LOCATIONS WITH FOUNDATIONS AS REQUIRED.

EXISTING STRUCTURES: CONTRACTOR SHALL CONFIRM THE ASBUILT LOCATION OF ANY POTENTIAL NEW OR EXISTING STRUCTURES OR OBJECTS WITHIN THE ZONE OF EXCAVATION INCLUDING WORK PERFORMED AS A PORTION OF THIS PROJECT BEFORE EXCAVATING OR INSTALLING FOUNDATION ELEMENTS. NOTIFY THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY EXCAVATIONS OR OTHER SITE WORK, IF THE EXCAVATION WILL CUT BELOW AN ADJACENT STRUCTURE'S BOTTOM OF FOOTING ELEVATION OR IF AN ADJACENT STRUCTURE IS UPSLOPE FROM THE PLANNED SITE WORK.

BACKFILL: BACKFILL FOOTINGS AND RETAINING WALLS WITH FREE DRAINING GRANULAR FILL. PROVIDE A SUBSURFACE DRAINAGE SYSTEM FOR FOUNDATION AND RETAINING WALLS BASED ON THE GEOTECHNICAL REPORT RECOMMENDATIONS. DO NOT BACKFILL BEHIND WALLS BEFORE ADJACENT SUPPORTING ELEMENTS ARE COMPLETE AND CURED. ALTERNATIVELY, PROVIDE DESIGN AND CONSTRUCTION OF TEMPORARY BRACING THAT PROTECTS THE WALL AGAINST OVERSTRESS OR MOVEMENT.

WEEP HOLES: PROVIDE 2" DIAMETER WEEP HOLES AT 6'-0" O.C. MAXIMUM IN EXTERIOR RETAINING WALLS. PROVIDE FILTER FABRIC OR STAINLESS STEEL WIRE MESH OVER THE WEEP HOLE TO RETAIN THE BACKFILL MATERIAL.

FOOTINGS: FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST FROST DEPTH BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS AND DETAILS ARE MINIMUM. ESTABLISH THE ACTUAL BOTTOM-OF-FOOTING ELEVATIONS IN THE FIELD, BASED UPON THE GEOTECHNICAL ENGINEER'S ON-SITE OBSERVATIONS AND ADDITIONAL TESTING, IF REQUIRED, THAT WILL ACHIEVE THE ALLOWABLE DESIGN BEARING PRESSURE. NOTIFY ENGINEER OF ANY NECESSARY DEVIATIONS FROM THE FOOTING ELEVATIONS SHOWN ON THE DRAWINGS PRIOR TO CONSTRUCTING THE FOOTINGS.

CONCRETE PLACEMENT: FOUNDATION CONCRETE SHALL BE PLACED THE SAME DAY THE EXCAVATION IS MADE WHEN FEASIBLE. WHERE FOUNDATION EXCAVATIONS MUST REMAIN OPEN OR EXPOSED, SPECIAL CARE SHOULD BE TAKEN TO PROTECT THE EXPOSED SOILS FROM BEING DISTURBED, SATURATED, OR DRIED OUT PRIOR TO THE PLACEMENT OF SELECT FILL OR CONCRETE WITH A MUD MAT OF LEAN (2500 PSI) CONCRETE OR AS APPROVED BY THE GEOTECHNICAL ENGINEER.

FORMS: THE EXTERIOR VERTICAL FACE OF ALL EXPOSED SLAB TURNDOWNS SHALL BE FORMED. THE SIDES OF FOOTINGS MAY BE EARTH FORMED AS LONG AS THE SOIL WILL MAINTAIN A VERTICAL FACE. ALL FOUNDATION STEM WALLS AND RETAINING WALLS SHALL BE FORMED ON BOTH SIDES OF THE WALL.

EXCAVATION: THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION. COMPLY WITH ALL APPLICABLE OSHA REGULATIONS.

COMPACTION: MECHANICALLY COMPACT EXCAVATION BACKFILL IN LAYERS. PROVIDE THE FOLLOWING MINIMUM COMPACTION IN ACCORDANCE WITH THE ASTM D1557 TEST METHOD UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT:

TRENCH AND WALL BACKFILL:	90% MAXIMUM DRY DENSITY
FILL BENEATH SLAB-ON-GRADE:	95% MAXIMUM DRY DENSITY
FILL BENEATH FOOTINGS:	95% MAXIMUM DRY DENSITY

DESIGN AND CONSTRUCTION CRITERIA

GOVERNING BUILDING CODE: ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE 2012 INTERNATIONAL BUILDING CODE (IBC).

PRIMARY REFERENCE STANDARDS: THE PUBLICATIONS LISTED BELOW ARE THE MATERIAL SPECIFIC GOVERNING CODES AND STANDARDS USED REFERENCED BY THEIR BASIC DESIGNATION. IN THE CASE OF CONFLICTING REQUIREMENTS, THE BUILDING CODE SHALL GOVERN. ADDITIONAL MATERIAL SPECIFIC DESIGN STANDARDS ARE ALSO LISTED UNDER THE RESPECTIVE MATERIAL SECTION OF THESE GENERAL NOTES. FOR ALL STANDARDS, USE THE VERSION REFERENCED BY THE GOVERNING BUILDING CODE. IF NOT REFERENCED BY GOVERNING BUILDING CODE, USE THE LATEST EDITION.

ACI 318-11	AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
ASCE 7-10	AMERICAN SOCIETY OF CIVIL ENGINEERS MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM INTERNATIONS)
ICC	INTERNATIONAL CODE COUNCIL, INTERNATIONAL CODE COUNCIL - EVALUATION SERVICES (ICC-ES)

MATERIAL PROPERTIES: MATERIAL PROPERTIES LISTED IN THE CONSTRUCTION DOCUMENTS ARE BASED UPON MATERIALS CURRENTLY AVAILABLE FOR CONSTRUCTION AND MAY NOT CORRESPOND WITH TABLES PROVIDED IN THE CODES AND SPECIFICATIONS LISTED HEREIN. WHERE POSSIBLE, THESE CODES HAVE BEEN USED IN THEIR ENTIRETY. WHERE THESE CODES REFERENCE OBSOLETE INFORMATION, INFORMATION BASED UPON CURRENT INDUSTRY STANDARDS HAS BEEN SUBSTITUTED AS NECESSARY.

PROJECT STATE: THE PROJECT IS TO BE CONSTRUCTED IN THE STATE OF TENNESSEE.

SITE VISITS: THE STRUCTURAL ENGINEER HAS NEITHER THE AUTHORITY NOR THE RESPONSIBILITY TO OBSERVE THE CONSTRUCTION AND HAS BEEN RETAINED ONLY TO PROVIDE THESE DESIGN DOCUMENTS. STRUCTURAL OBSERVATIONS REQUIRED BY THE PROJECT SPECIFICATIONS OR THE BUILDING CODE, MUST BE PERFORMED BY A STRUCTURAL OBSERVER APPROVED BY THE ARCHITECT.

SUBMITTALS

SHOP DRAWINGS: SUBMIT SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE OWNER'S REPRESENTATIVE AND ENGINEER-OF-RECORD PRIOR TO ANY FABRICATION OR CONSTRUCTION. DIMENSION AND QUANTITY VERIFICATION ARE THE CONTRACTOR'S RESPONSIBILITIES AND ARE NOT REVIEWED BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY THE ENGINEER OF RECORD. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED, EITHER PRIOR TO OR AFTER THE ENGINEER PROCESSES THE SHOP DRAWING SUBMITTALS, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

DEVIATION FROM CONTRACT DOCUMENTS: CHANGES TO THE CONTRACT DOCUMENTS SHALL BE CLOUDED ON SHOP DRAWINGS OR REQUESTED IN WRITING. THE CONTRACTOR IS LIABLE FOR ANY DEVIATIONS UNLESS REVIEWED AND ACKNOWLEDGED BY THE ENGINEER OF RECORD IN WRITING.

DRAWING PREPARATION: COPIES OF STRUCTURAL DRAWINGS (PLANS AND/OR DETAILS) WILL NOT BE ACCEPTED BY CSA AS SHOP DRAWINGS. ALL SHOP DRAWINGS MUST BE REPRODUCED BY THE RESPECTIVE SUPPLIERS AND DETAILED AS NECESSARY.

SUBMITTAL REVIEW TIME: THE CONTRACTOR SHALL PROVIDE 10 WORKING DAYS IN HIS SCHEDULE FOR THE ENGINEER'S REVIEW OF EACH SUBMITTAL. THE 10 WORKING DAYS COMMENCE UPON THE ENGINEER'S RECEIPT OF A PROPERLY COMPLETED SUBMITTAL IN HIS OFFICE.

REQUIRED SUBMITTALS:
REQUIRED SUBMITTALS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

CONCRETE MIX DESIGNS
CONCRETE REINFORCEMENT

SUBMITTAL ACCEPTANCE: FOLLOWING ACCEPTANCE BY THE ARCHITECT AND ENGINEER AND PRIOR TO FABRICATION, ADDITIONAL TIME FOR REVIEW AND ACCEPTANCE OF SUBMITTAL BY THE BUILDING OFFICIAL IS REQUIRED AND SHALL BE IDENTIFIED AND ALLOWED FOR IN THE CONTRACTOR'S SCHEDULE.

SUBSTITUTIONS: SUBMIT SUBSTITUTION REQUESTS PER THE PROCEDURES IN THE SPECIFICATIONS WITH APPLICABLE ICC REPORTS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO DETAILING, FABRICATION AND ERECTION. ADDITIONAL ENGINEERING CALCULATIONS AND DETAILS, PROVIDED BY A STRUCTURAL ENGINEER LICENSED IN THE PROJECT STATE, MAY BE REQUIRED OF THE CONTRACTOR FOR SUBSTITUTIONS THAT ARE NOT SIMILAR TO THE SPECIFIED PRODUCTS AND CONFIGURATION.

CONCRETE

REFERENCE STANDARDS:
ACIAMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318

AWS AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE – REINFORCING STEEL, AWS D1.4

GENERAL: CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH IBC SECTION 1905 AND ACI 301.

MIX DESIGNS: THE CONCRETE MIX TABLE SHOWN BELOW SHALL APPLY TO ALL CONCRETE MIX DESIGNS USED ON THIS PROJECT. MIX DESIGN SUBMITTALS SHALL BE IDENTIFIED FOR INTENDED STRUCTURAL USE AND SUBMITTED TO THE OWNER'S REPRESENTATIVE AND STRUCTURAL ENGINEER FOR REVIEW TWO WEEKS PRIOR TO PLACING ANY CONCRETE.

MIX PROPORTIONING: ALL CONCRETE MIX DESIGNS SHALL BE PROPORTIONED IN ACCORDANCE WITH SECTION 5.3 (FIELD EXPERIENCE AND/OR TRIAL MIXTURES) OF ACI 318. SUBMIT MIX DESIGN FOR EACH CLASS OF CONCRETE. IF A STANDARD DEVIATION ANALYSIS IS USED, THE CONCRETE SHALL ACHIEVE AN AVERAGE STRENGTH IN ACCORDANCE WITH TABLE 5.3.2.2 OF ACI 318. SUBMITTALS MADE WHICH DO NOT CONFORM TO ACI 318 SECTION 5.3 SHALL BE REJECTED.

CONCRETE MIX DESIGNS

CONCRETE USAGE	f'c (PSI) 28 DAY, MIN	SLUMP	ENTRAINED AIR (MAX)	W/C RATIO (MAX)	MAXIMUM AGGREGATE SIZE	FLY ASH CONTENT	EXPOSURE CLASS
FOOTINGS	3,000	6"	5% (+/- 1.5%)	0.50	1"	15-25%	F0
RETAINING WALLS	4,000	6"	5% (+/- 1.5%)	0.45	1"	15-20%	F2

CEMENT CONTENT: SCHEDULE CEMENT CONTENT IS THE MINIMUM TOTAL CEMENTITIOUS MATERIALS CONTENT INCLUDING PORTLAND CEMENT AND FLY ASH.

FLY ASH: FLY ASH SHALL CONFORM TO ASTM C618, TYPE F. PERCENTAGE SCHEDULED IS BY WEIGHT OF TOTAL CEMENTITIOUS MATERIAL INCLUDING ASTM C150, C595, C845, AND C1157 CEMENT. DO NOT USE FLY ASH IF CONTENT WITHIN THE PERCENTAGES SHOWN CANNOT BE ACHIEVED.

ADMIXTURES: WATER-REDUCING ADMIXTURES CONFORMING TO ASTM C494 MAY BE INCORPORATED IN THE CONCRETE MIX DESIGNS AND BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CALCIUM CHLORIDE OR OTHER WATER-SOLUBLE CHLORIDE ADMIXTURES SHALL NOT BE USED.

AIR CONTENT: AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260 SHALL BE USED IN ALL CONCRETE MIXES FOR WORK THAT IS EXPOSED TO WEATHER. WHERE ENTRAINED AIR IS NOT SCHEDULED, DO NOT ALLLOW THE AIR CONTENT OF SLABS TO EXCEED 3% NATURALLY. THE AMOUNT OF ENTRAINED AIR SHALL BE MEASURED IN THE FIELD AT THE DISCHARGE END OF THE PLACING HOSE.

SLUMP: SCHEDULED SLUMP IS THE MAXIMUM ALLOWED AND SHALL BE ACHIEVED PRIOR TO ADDING ANY WATER REDUCING ADMIXTURES OR PLASTICIZERS.

LABORATORY TESTING: LABORATORY TESTING WILL BE REQUIRED IN ACCORDANCE WITH ASTM C31. PERFORM COMPRESSION TEST PER ASTM C39; AIR CONTENT TEST PER ASTM C138 (GRAVIMETRIC METHOD), ASTM C173 (VOLUMETRIC METHOD), OR ASTM C231 (PRESSURE METHOD); SLUMP TEST PER ASTM C143.

LABORATORY SHALL TEST THE NUMBER OF CYLINDERS SPECIFIED BELOW FOR EACH 100 CUBIC YARDS OR FRACTION THEREOF:
2 AT 7 DAYS FOR INFORMATION
2 AT 28 DAYS FOR ACCEPTANCE

SLEEVES: SLEEVES FOR PIPING OR DUCTS, EXCEPT AS DETAILED ON THE STRUCTURAL DRAWINGS, SHALL NOT BE PLACED IN JOISTS, BEAMS, GIRDERS, OR IN SLABS ADJACENT TO A COLUMN (WITHIN A DISTANCE EQUAL TO THE SLAB THICKNESS) UNLESS APPROVED BY THE ENGINEER. PLUMBING, MECHANICAL, & ELECTRICAL CONTRACTORS SHALL SUBMIT SIZES AND LOCATIONS OF ALL PENETRATIONS IN STRUCTURAL SLABS FOR THE STRUCTURAL ENGINEER'S APPROVAL BEFORE THE SLAB IS PLACED. ALL PIPE PENETRATIONS THROUGH SLABS SHALL BE SLEEVED IN CONFORMANCE WITH ACI 318, SECTION 6.3.

NON-STRUCTURAL EMBEDS: REFER TO DRAWINGS OF OTHER DISCIPLINES AND VENDOR DRAWINGS FOR EMBEDDED ITEMS AND RECESSES NOT SHOWN ON STRUCTURAL DRAWINGS.

CONDUIT: WHEN RUN IN SLABS, ELECTRICAL CONDUIT SHALL BE RUN AT MID-DEPTH OF THE SLAB AND CONDUIT SIZE SHALL NOT EXCEED 33 PERCENT OF THE SLAB DEPTH. NO CONDUIT SHALL BE PLACED IN SLABS WITH ACTUAL CONCRETE THICKNESS LESS THAN 3 INCHES, NOT INCLUDING METAL DECK DEPTH. THERE SHALL BE A MINIMUM OF 3 INCHES OF CLEAR SPACE BETWEEN CONDUITS. ALUMINUM CONDUIT IS PROHIBITED. ADDITIONAL REINFORCEMENT, #3 AT 12" OC, SHALL BE PLACED PERPENDICULAR TO THE CONDUIT ABOVE AND BELOW THE CONDUIT. THE ADDED REINFORCING SHALL EXTEND 1' - 0" BEYOND THE CONDUITS ON BOTH SIDES.

REINFORCING STEEL MATERIALS:

DEFORMED BARS	ASTM A615, GRADE 60
SMOOTH WELDED WIRE FABRIC (WWF)	ASTM A185 (Fy = 65,000 PSI).

WELDED WIRE FABRIC: WIRE FABRIC SHALL BE PLACED AT THE CENTER OF CONCRETE SLABS UNO. WWF SHALL BE SUPPORTED AT A MAXIMUM SPACING OF 3'-0" OC IN ANY DIRECTION. ALL WELDED WIRE FABRIC SHALL LAP TWO FULL MESHES AND BE SECURELY WIRED AT EACH SIDE AND END. WELDED WIRE FABRIC SHALL BE FABRICATED FROM SHEETS. ROLLS ARE NOT ALLOWED.

REINFORCING STEEL DETAILING: REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 – DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.

REINFORCING STEEL PLACMENT: ALL REINFORCEMENT SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONFORMANCE WITH CRSI MANUAL OF STANDARD PRACTICE AND ACI 315 DURING CONCRETE PLACEMENT. REINFORCING PLACEMENT SHALL BE APPROVED BY THE ARCHITECT OR THEIR AUTHORIZED REPRESENTATIVE BEFORE CONCRETE IS PLACED.

REBAR SPLICES: LAP REINFORCING BARS AS NOTED ON THE DRAWINGS. WHERE SPLICE LENGTH IS NOT SHOWN, USE TYPE 'Ls' SPLICE PER DEVELOPMENT AND SPLICE LENGTH SCHEDULE. MECHANICAL OR WELDED BUTT SPLICES SHALL BE SUBJECT TO STRUCTURAL ENGINEER'S APPROVAL. MECHANICAL SPLICES, WHERE ALLOWED ON THE PLANS, SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE SPLICED BARS IN BOTH TENSION AND COMPRESSION. LAP SPLICES OF BOTTOM BARS SHALL OCCUR AT A SUPPORT. LAP SPLICES OF TOP STEEL SHALL OCCUR AT MID SPAN.

FIELD BENDING: NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY DETAILED AS SUCH OR APPROVED BY THE STRUCTURAL ENGINEER.

WELDING: REINFORCING BARS SHALL NOT BE WELDED OR TACK WELDED TO OTHER BARS OR TO PLATES, ANGLES, ETC. UNLESS SPECIFICALLY APPROVED BY THE ENGINEER. WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS DI.4. WELDING SHALL BE DONE BY AWS CERTIFIED WELDERS QUALIFIED FOR WELDS USING APPROVED ELECTRODES.

CONCRETE PROTECTION: CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

CAST AGAINST AND PERMANENTLY
EXPOSED TO EARTH...............................3"

EXPOSED TO EARTH OR WEATHER
#5 OR SMALLER.................................1 1/2"
#6 OR LARGER...................................2"

WALL BRACING: CONTRACTOR SHALL PROVIDE PROVIDE ADEQUATE BRACING FOR ALL CONCRETE WALLS DURING CONSTRUCTION AND UNTIL LATERAL SUPPORTS AND DIAPHRAGMS HAVE BEEN ATTACHED AND CONCRETE HAS ATTAINED THE SPECIFIED DESIGN STRENGTH. BACK FILLING SHALL NOT OCCUR UNTIL PERMANENT LATERAL RESTRAINTS ARE INSTALLED IN THEIR ENTIRETY.

WALL CONTROL JOINTS: PROVIDE VERTICAL CONTROL JOINTS IN ALL CONCRETE WALLS. LOCATE JOINTS AT A SPACING NOT EXCEEDING 25 FEET ON CENTER AND AT REVEALS WHERE INDICATED ON THE ARCHITECTURAL DRAWINGS. JOINTS SHALL HAVE 3/4 INCH V-CHAMFERS ON EACH SIDE. SUBMIT JOINT LOCATIONS TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION. DISCONTINUE WALL REINFORCING AT CONTROL JOINTS. USE 1/2" DIAMETER X 3'-0" SMOOTH BARS AT 12" C/C CENTERED IN THE WALL.

WALL CONSTRUCTION JOINTS: WALL CONSTRUCTION JOINTS SHALL BE PLACED NOT MORE THAN 50 FEET APART AND SHALL FALL AT CONTROL JOINTS. CONSTRUCTION JOINTS SHALL BE KEYED.

CHAMFER: PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, WALLS, ETC UNLESS NOTED OTHERWISE.

CONCRETE PLACMENT: ALL CONCRETE SHALL BE VIBRATED.

GENERAL NOTES

IBC TABLE 1705.6: REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

IBC TABLE 1705.3: REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCE STANDARD	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.		X	ACI318: 3.5, 7.1 - 7.7	1910.4
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2.2, ITEM 2b.			AWS D1.4 ACI 318: 3.5.2	
3. INSPECTION OF ANCHORS CAST IN CONCRETE.		X	ACI 318: D.9.2	1909.1
4. INSPECTION OF ANCHORS POST INSTALLED IN HARDENED CONCRETE MEMBERS (NOTE a).				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X		ACI 318: D.9.2.4	1909.1
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4a.		X	ACI 318: D.9.2	1909.1
5. VERIFY USE OF REQUIRED DESIGN MIX.		X	ACI 318: CH 4, 5.2-5.4	1904.2, 1910.2, 1910.3
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X		ASTM C172 ASTM C31 ACI 318: 5.6, 5.8	1910.10
7. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X		ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		X	ACI 318: 5.11-5.13	1910.9
9. VERIFICATION OF IN-SITU CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.		X	ACI 318: 6.2	
10. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.		X	ACI 318: 6.1.1	

TABLE NOTES:
a. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH ACI 355.2 OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

STATEMENT OF SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS AND STRUCTURAL TESTING SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER FOR THE ITEMS IDENTIFIED IN THIS SECTION AND IN OTHER AREAS OF THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS, UNLESS WAIVED BY THE BUILDING OFFICIAL (SEE IBC CHAPTER 17).
2. THE INSPECTION AND TESTING AGENT(S) SHALL BE ENGAGED BY THE OWNER'S REPRESENTATIVE OR THE SPECIAL INSPECTOR, AND NOT BY THE CONTRACTOR OR SUBCONTRACTOR WHOSE WORK IS TO BE INSPECTED OR TESTED. ANY CONFLICT OF INTEREST MUST BE DISCLOSED PRIOR TO COMMENCING WORK
3. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING INSPECTION.
4. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
   A. THE SPECIAL INSPECTOR SHALL REVIEW ALL WORK LISTED BELOW FOR CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE 2012 IBC. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE EOR AND THE BUILDING OFFICIAL.
   B. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE EOR, CONTRACTOR, OWNER, AND BUILDING OFFICIAL ON A WEEKLY BASIS, OR MORE FREQUENTLY AS REQUIRED BY THE BUILDING OFFICIAL. REPORTS SHALL DESCRIBE ALL INSPECTIONS, TEST PERFORMED, DISCREPANCY NOTICES AND CORRECTIVE ACTIONS TAKEN.
   C. ONCE CORRECTIONS HAVE BEEN MADE BY THE CONTRACTOR, THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL STATING THAT WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AS WELL AS THE APPLICABLE WORKMANSHIP PROVISIONS OF THE 2012 IBC.
5. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR
   A. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. IN ACCORDANCE WITH IBC 1704.4, THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTOR REQUIREMENTS CONTAINED WITHIN THE "STATEMENT OF SPECIAL INSPECTIONS".
   B. THE CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION AT LEAST ONE WORKING DAY (24 HOURS MINIMUM) BEFORE SUCH INSPECTION IS REQUIRED.
   C. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR.
   D. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH THE CONTRACT DOCUMENTS. JOBSITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. PLEASE SEE THE "SPECIAL INSPECTION SCHEDULE" ON THIS SHEET FOR THE TYPES, EXTENTS, AND FREQUENCY OF SPECIFIC ITEMS REQUIRING SPECIAL INSPECTIONS AND STRUCTURAL TESTS AS PART OF THIS PROJECT.
7. THIS STATEMENT OF SPECIAL INSPECTIONS ENCOMPASSES THE FOLLOWING DISCIPLINES: STRUCTURAL.
8. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE ARE NOT REQUIRED PER IBC 1705.11.
9. SPECIAL INSPECTIONS FOR WIND RESISTANCE ARE NOT REQUIRED PER IBC 1705.10.

STATEMENT OF STRUCTURAL OBSERVATION:

1. STRUCTURAL OBSERVATION IS REQUIRED IN ACCORDANCE WITH IBC SECTION 1704. THE OWNER, OR HIS DESIGNATED REPRESENTATIVE, SHALL EMPLOY A LICENSED STRUCTURAL ENGINEER IN THE PROJECT STATE TO PERFORM STRUCTURAL OBSERVATIONS AS DEFINED IN THE BUILDING CODE.
2. AT THE CONCLUSION OF THE WORK INCLUDED IN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED. THE STRUCTURE SHALL NOT BE CONSIDERED TO BE IN COMPLIANCE UNTIL THE STRUCTURAL OBSERVER HAS NOTIFIED THE BUILDING OFFICIAL IN WRITING THAT ALL STRUCTURAL DEFICIENCIES ARE RESOLVED.
3. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED BY IBC SECTION 110, 1704 OR OTHER SECTIONS OF THE IBC. STRUCTURAL OBSERVATION REPORTS SHALL BE ISSUED TO THE OWNER, ARCHITECT, EOR, CONTRACTOR, AND BUILDING OFFICIAL AT SIGNIFICANT CONSTRUCTION STAGES.

PREPARED BY:

NAME: ROBERT A. HAINES

LICENSE #: 112384

SIGNATURE: [signature] DATE: 01/31/2019

ROBERT A. HAINES
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 112384
STATE OF TENNESSEE
01/31/2019

DESIGN PROFESSIONAL SEAL

OWNER'S AUTHORIZATION:

SIGNATURE: ______ DATE: ______

BUILDING OFFICIAL'S ACCEPTANCE:

SIGNATURE: ______ DATE: ______

SPECIAL INSPECTIONS

NOTES:

LEGEND

1	CITY COMMENT RESPONSE	01/31/19
REVISIONS		DATE

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PROJECT:
CLIFTON ROAD DEVELOPMENT
CLIFTON ROAD & SANDERSON ROAD
KNOXVILLE, TENNESSEE

GENERAL NOTES AND SPECIAL INSPECTIONS

ROBERT A. HAINES
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STATE OF TENNESSEE
01/31/2019

CCI PROJECT NO.	00216-0005
DRAWING DATE	12/20/2018
PM	JLI
QC	JLI
DRAWN	RGM

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CSA ENGINEERING
CSA KNOXVILLE I CSA PROJECT: 2018-267
800 S. Gay Street I Suite 1625 I Knoxville, TN 37929
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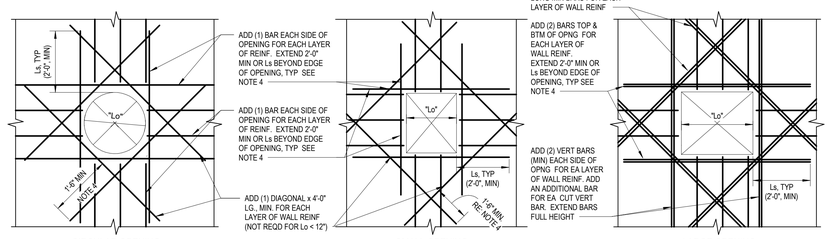
NOTES:
1. TYPICAL WALL REINFORCEMENT NOT SHOWN FOR CLARITY. ALL ADDITIONAL REINF SHALL MATCH SIZE OF TYP WALL REINF.
2. OMIT ADDED REINFORCEMENT NOTED ABOVE WHEN SPECIAL REINFORCEMENT INDICATED ON PLANS OR DETAILS EXCEEDS THIS REINFORCEMENT.
3. WALL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE COORDINATED BY CONTRACTOR AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND ACCEPTANCE BEFORE PLACEMENT.
4. WHEN EDGE OF CONCRETE IS CLOSE TO OPENING AND WILL NOT ALLOW THIS LENGTH, PROVIDE 90 DEGREE OR 180 DEGREE HOOK TO FULLY DEVELOP BARS.
5. PROVIDE MINIMUM 3" CLEARANCE BETWEEN REINFORCEMENT AND NON-FERROUS METAL OF PIPES AND PIPE FLANGES.

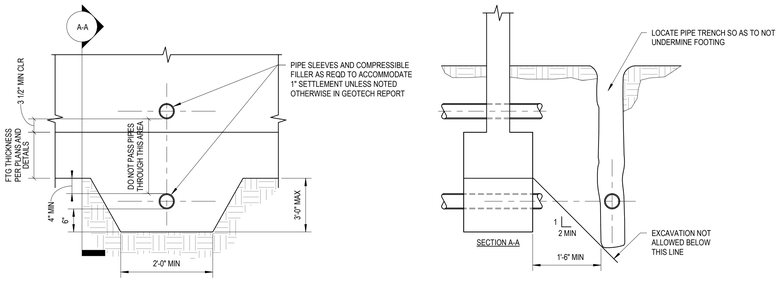


CIRCULAR OPENING.
(MAX 3'-0" DIAMETER)

SMALL OPENING.
(Lo ≤ 3'-0" IN BOTH DIRECTIONS)

LARGE OPENING
(3'-0" < Lo < 6'-0" IN EITHER DIRECTION)

1 TYPICAL REINFORCEMENT AT CONCRETE WALL OPENINGS
3/4" = 1'-0"



SECTION A-A

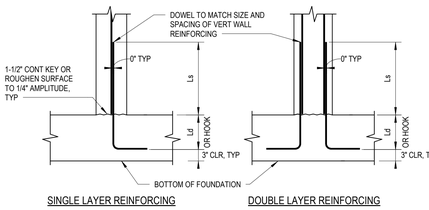
2 CONCRETE DEVELOPMENT LENGTH SCHEDULE
3/4" = 1'-0"

NOTES:
1. NOTATIONS:
   db: NOMINAL BAR DIAMETER (INCHES)
   Ld: TENSION DEVELOMENT LENGTH (INCHES) FOR REINFORCEMENT SATISFYING THE FOLLOWING REQUIREMENTS:
   SLABS AND WALLS: CLEAR SPACING > 2db, AND CONCRETE CLEAR COVER > db
   BEAMS AND COLUMNS: CLEAR SPACING > db, AND CONCRETE CLEAR COVER > db
   Lt: DEVELOPMENT LENGTH OF BARS IN THICK CONCRETE = 1.3 X Ld (INCHES)
   Ls: DEVELOPMENT LENGTH OF BARS OR DOWELS IN COMPRESSION = 19 X db (INCHES)
   Lc: TIED COLUMN LAP SPLICE IN COMPRESSION = 30 X db (INCHES)
   Lcs: SPIRAL COLUMN LAP SPLICE IN COMPRESSION = 22.5 X db (INCHES)
   Ls: TYPICAL LAP SPLICE LENGTH = 1.3 X Ld (INCHES)
   Lsb: LAP SPLICE LENGTH OF HORIZONTAL BARS IN THICK CONCRETE = 1.69 X Ld (INCHES)
2. MULTIPLY VALUES IN THE TABLE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET THE REQUIREMENTS FOR Ld IN NOTE 1.
3. "HORIZONTAL BARS IN THICK CONCRETE" REFERS TO BARS WITH MORE THAN 12 INCHES OF FRESH CONCRETE CAST BELOW. THIS INCLUDES BEAMS, SLABS, FOUNDATIONS, AND WALLS.
4. THE DEVELOPMENT AND SPLICE LENGTHS ARE BASED ON REINFORCEMENT STRENGTH Fy = 60 KSI.
5. #14 AND #18 BARS SHALL NOT BE LAP SPLICED. SEE "GENERAL NOTES"
6. MULTIPLY VALUES IN THE TABLE BY 1.3 FOR USE WITH LIGHTWEIGHT AGGREGATE CONCRETE.

f'c = 3,000 PSI				
BAR SIZE	Ld	Lt	Ls	Lsb
#3	17	22	22	28
#4	22	29	29	38
#5	28	36	36	47
#6	33	43	43	56
#7	48	63	63	81
#8	55	72	72	93
#9	62	81	81	105
#10	70	91	91	118
#11	78	101	101	131
#14	93	121	--	--
#18	124	161	--	--

f'c = 4,000 PSI				
BAR SIZE	Ld	Lt	Ls	Lsb
#3	15	19	19	25
#4	19	25	25	33
#5	24	31	31	41
#6	29	37	37	49
#7	42	54	54	71
#8	48	62	62	81
#9	54	70	70	91
#10	61	79	79	102
#11	67	87	87	114
#14	81	105	--	--
#18	108	140	--	--

3 TYPICAL WALL DOWEL AT FOUNDATION
3/4" = 1'-0"



SINGLE LAYER REINFORCING

DOUBLE LAYER REINFORCING

4 TYPICAL PIPE AND TRENCH LOCATIONS AT FOOTINGS / WALLS (IF REQUIRED)
NTS

5 TYPICAL VERTICAL CONSTRUCTION JOINT
3/4" = 1'-0"

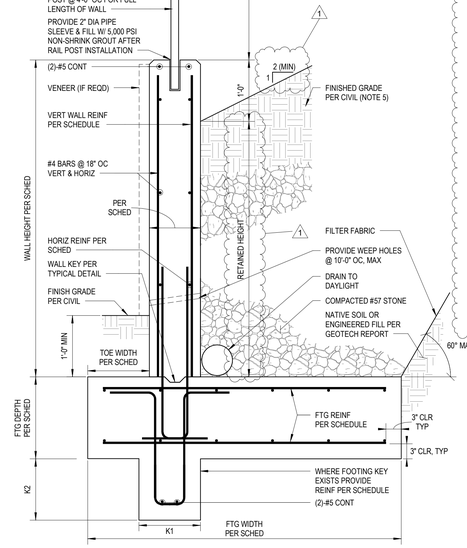
NOTES:
1. WHERE CONSTRUCTION AND CONTROL JOINT LOCATIONS ARE NOT SHOWN ON THE DRAWINGS, SUBMIT PROPOSED WALL JOINT LOCATIONS FOR APPROVAL PRIOR TO DETAILING REINFORCEMENT AND A MINIMUM OF TWO WEEKS PRIOR TO TO POUR.
2. JOINTS SHALL BE SPACED NO CLOSER THAN 5'-0" FROM CORNERS, PILASTERS, AND COLUMNS.
3. PLACE CONTROL JOINTS NO FURTHER THAN 25'-0" APART UNO
4. DETAIL IDENTICAL FOR WALL W/ SINGLE LAYER OF REINFORCEMENT. PROVIDE 50% HORIZ STEEL THROUGH JOINT AS SHOWN

6 TYPICAL FOOTING STEP
3/4" = 1'-0"

7 TYPICAL WALL KEY JOINT AT FOOTING
1 1/2" = 1'-0"

8 TYPICAL VERTICAL CONTROL JOINT DETAIL
3/4" = 1'-0"

9 TYPICAL CONCRETE RETAINING WALL
1" = 1'-0"



CONCRETE SITE RETAINING WALL SCHEDULE - 2:1 (MAX) RETAINED SLOPE

WALL HEIGHT	RETAINED HEIGHT	WALL WIDTH	WALL REINF	FTG DEPTH	FTG WIDTH	TOE WIDTH	"K1"	"K2"	FOOTING REINFORCEMENT	KEY REINFORCEMENT
≤ 13'-0"	≤ 12'-0"	10"	#6 @ 9" OC VERT #5 @ 18" OC HORIZ	1'-4"	11'-0"	2'-0"	1'-0"	1'-6"	(9) - #6 CONT T&B W/ #5 X 10'-6" TRANS @ 9" OC T&B	#5 @ 18" OC
≤ 11'-0"	≤ 10'-0"	10"	#5 @ 9" OC VERT #5 @ 18" OC HORIZ	1'-4"	6'-6"	2'-0"	1'-0"	1'-6"	(7) - #5 CONT T&B W/ #5 X 6'-0" @ 9" OC TRANS T&B	#5 @ 18" OC
≤ 9'-0"	≤ 8'-0"	10"	#5 @ 18" OC VERT #5 @ 18" OC HORIZ	1'-4"	5'-6"	2'-0"	1'-0"	1'-0"	(6) - #5 CONT BTM W/ #5 X 5'-0" @ 18" OC TRANS BTM	#5 @ 18" OC
≤ 7'-0"	≤ 6'-0"	10"	#5 @ 18" OC VERT #5 @ 18" OC HORIZ	1'-4"	5'-0"	1'-0"	--	--	(6) - #5 CONT BTM W/ #5 X 4'-6" @ 18" OC TRANS BTM	--
≤ 5'-0"	≤ 4'-0"	10"	#5 @ 18" OC VERT #5 @ 18" OC HORIZ	1'-4"	3'-6"	1'-0"	--	--	(4) - #5 CONT BTM W/ #5 X 3'-0" @ 18" OC TRANS BTM	--
≤ 3'-0"	≤ 2'-0"	10"	#5 @ 18" OC VERT #5 @ 18" OC HORIZ	1'-4"	2'-9"	1'-0"	--	--	(3) - #5 CONT BTM W/ #5 X 2'-3" @ 18" OC TRANS BTM	--

SAFETY FACTORS

WALL HEIGHT	OVER-TURNING	SLIDING	BEARING PRESSURE*
≤ 13'-0"	3.35	1.51	2,362
≤ 11'-0"	2.04	1.55	2,414
≤ 9'-0"	2.16	1.64	1,790
≤ 7'-0"	2.53	1.51	1,658
≤ 5'-0"	2.23	1.95	1,283
≤ 3'-0"	2.21	2.98	890

* LISTED BEARING PRESSURE IS THE MAXIMUM SERVICE LOAD BEARING PRESSURE (PSF) EXERTED ON THE SOIL BY THE WALL. PRESSURES ARE BELOW THE ALLOWABLE PRESSURE OF 2500 PSF AS DESIGNATED BY THE GEOTECHNICAL REPORT.

NOTES:
1. SEE CIVIL DRAWINGS FOR WALL LAYOUT.
2. SEE CIVIL DRAWINGS FOR TOP AND BTM OF WALL ELEVATIONS .
3. SEE ARCH FOR TYPICAL WALL FINISH & RAILING REQTS, IF ANY.
4. CONTRACTOR SHALL COORDINATE TOP OF FOOTING ELEVATIONS AND FOOTING STEPS W/ CIVIL DRAWINGS. PROVIDE FOOTING STEPS AS REQUIRED TO MAINTAIN A MIN TOP OF FOOTING ELEVATION AS SHOWN.
5. NO SURCHARGE LOADING OF ANY TYPE SHALL BE APPLIED BEHIND THE WALL WITHIN A DISTANCE EQUAL TO TWO TIMES THE WALL HEIGHT.

NOTES:

LEGEND

REVISIONS	DATE
1 CITY COMMENT RESPONSE	01/31/19

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CLIFTON ROAD & SANDERSON ROAD
KNOXVILLE, TENNESSEE

TYPICAL DETAILS & RETAINING WALL SECTION

ROBERT A. HAINES — REGISTERED ENGINEER — No. 112394 — STATE OF TENNESSEE — 01/31/2019

CCI PROJECT NO.	00216-0005
DRAWING DATE	12/20/2018
PM RAH	QC RAH
DRAWN ZSP	

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