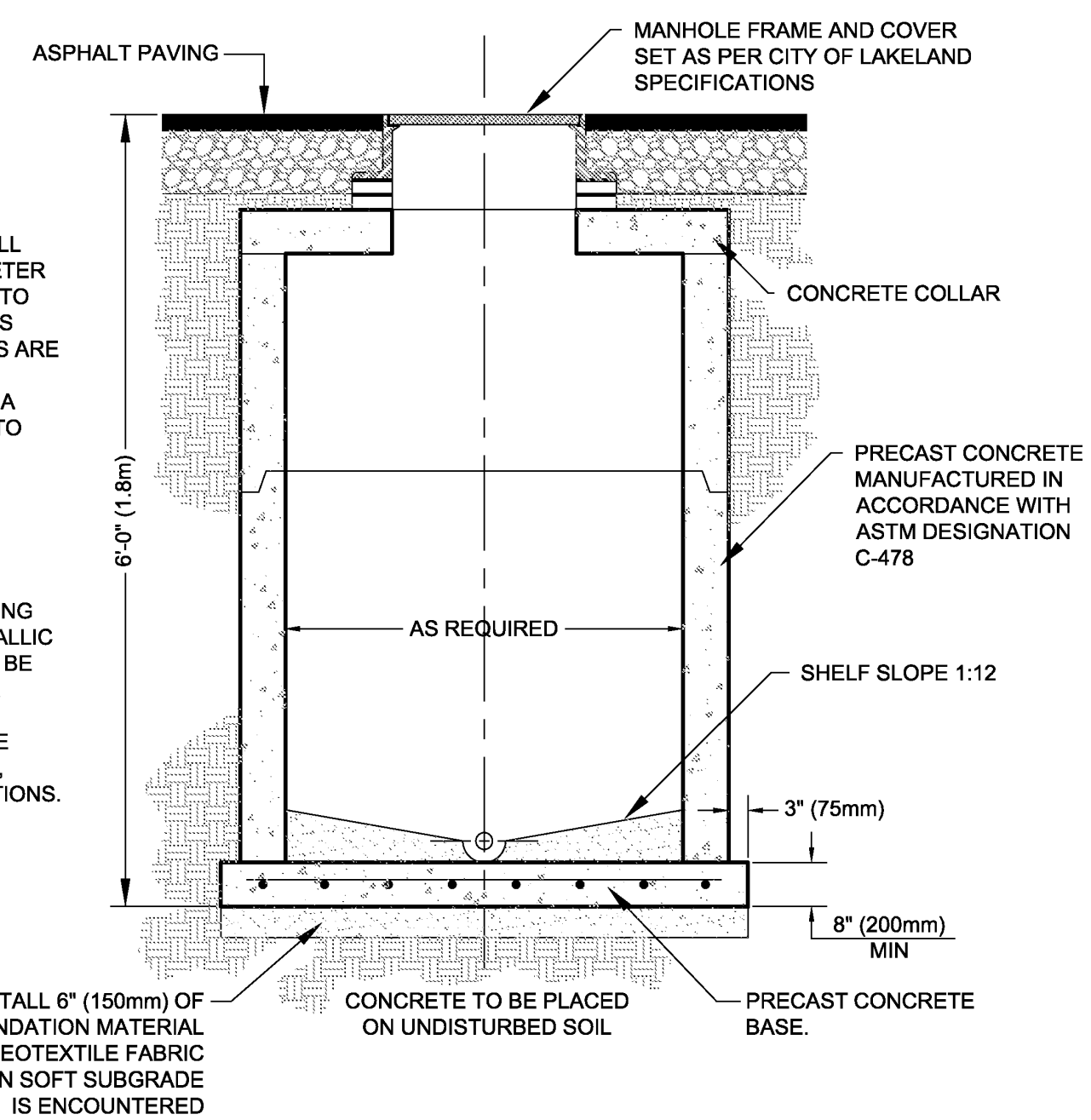
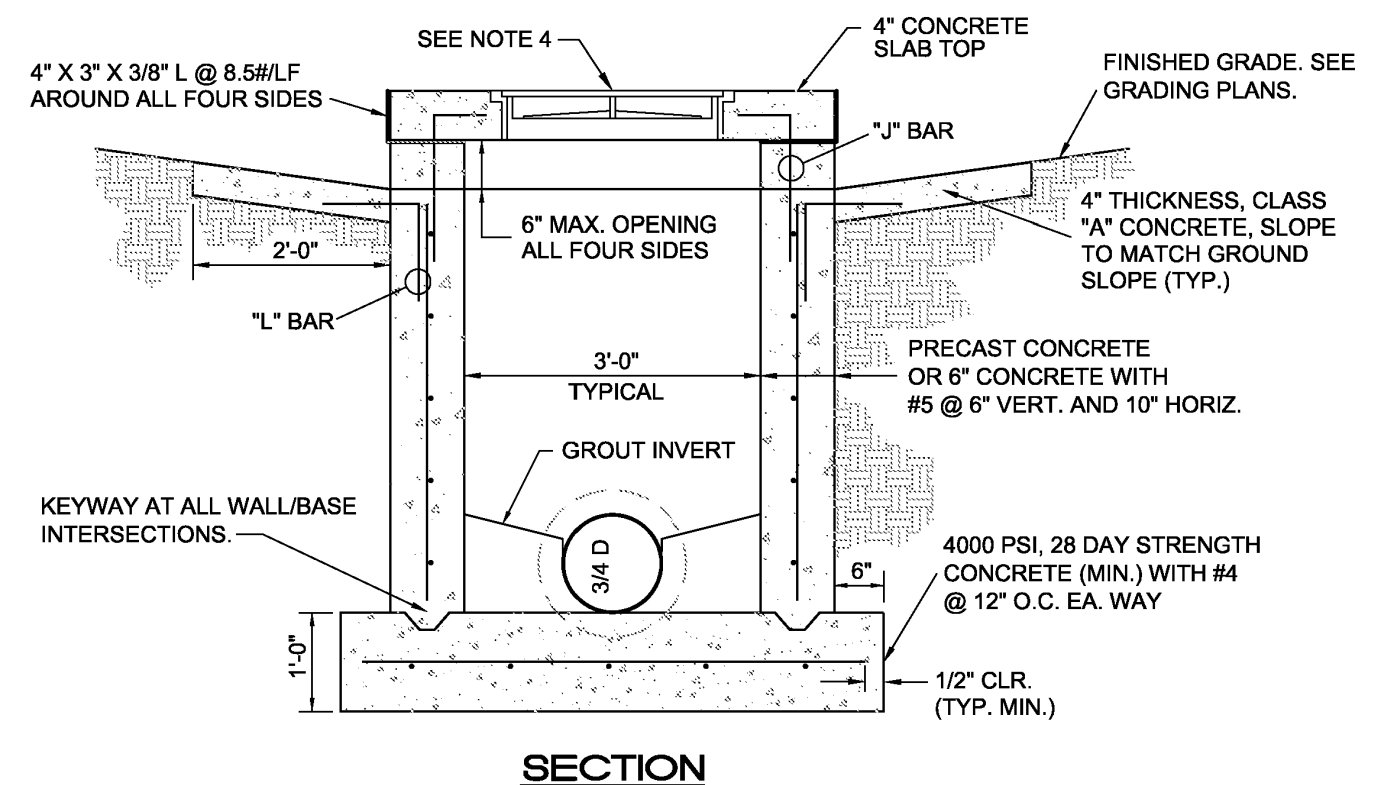


- NOTES:
1. MANHOLES SHALL BE PLUMB.
 2. SEAL ALL JOINTS AND UNDERNEATH RING AND ALL RISERS.
 3. FLOOR TROUGHS ARE NEEDED FOR ALL INCOMING SEWERS. A LARGER DIAMETER MANHOLE MAY BE NEEDED IN ORDER TO PROPERLY CONSTRUCT THE TROUGHS WHEN THE INCOMING SEWER INVERTS ARE SUBSTANTIALLY HIGHER THAN THE OUTGOING SEWER INVERT. PROVIDE A MINIMUM OF .1 FT DROP FROM INLET TO OUTLET.
 4. NO MANHOLE STEPS ALLOWED.
 5. MANHOLES WITH THE BASE POURED MONOLITHICALLY WITH THE BOTTOM BARREL ARE ALSO ACCEPTABLE.
 6. SEAL JOINTS WATER TIGHT WITH APPROVED MATERIAL. GROUT HOISTING HOLES WATER TIGHT WITH NON-METALLIC NON-SHRINK GROUT. INVERTS SHALL BE U-SHAPED TO THE I.D. PIPE DIAMETER POINT (PIPE CROWN).
 7. THE ENGINEER SHALL DETERMINE THE MANHOLE SIZE BASED ON THE ANGLE, NUMBER AND SIZE OF PIPE PENETRATIONS. THE MINIMUM DISTANCE BETWEEN KNOCKOUTS IS 12" (300mm).



STANDARD STORM SEWER MANHOLE
(FOR DEPTHS OF 6'-0" OR LESS)
NOT TO SCALE

- NOTES:
1. INLET TO BE SET ON SUBGRADE COMPACTED TO 95% OF STANDARD PROCTOR (ASTM D-698)
 2. PIPE DIAMETER, DEPTH AND DIRECTION SHALL BE DICTATED BY THE PROJECT GRADING AND DRAINAGE PLAN.
 3. PRECAST TOPS MUST BE SET IN PLACE USING A FULL BED OF MORTAR.
 4. INLET SHALL BE EQUIPPED WITH A MEMPHIS NO. 7A MANHOLE RIM AND COVER.
 5. ALL CONCRETE SHALL BE CLASS "A", 4000 PSI 28 DAY STRENGTH, MINIMUM.



STANDARD 3' X 3' INLET
NOT TO SCALE



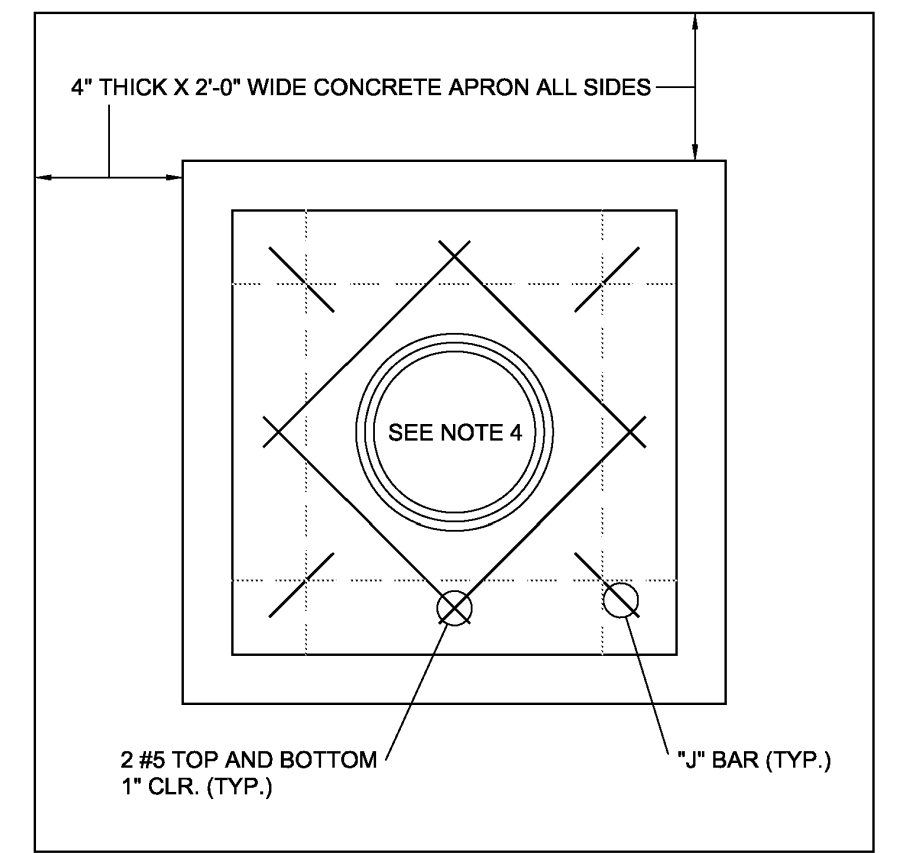
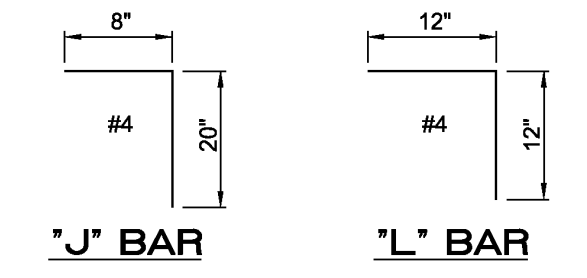
VICINITY MAP

DESIGN STORM DATA
2, 10, 25 AND 100 YEAR DESIGN

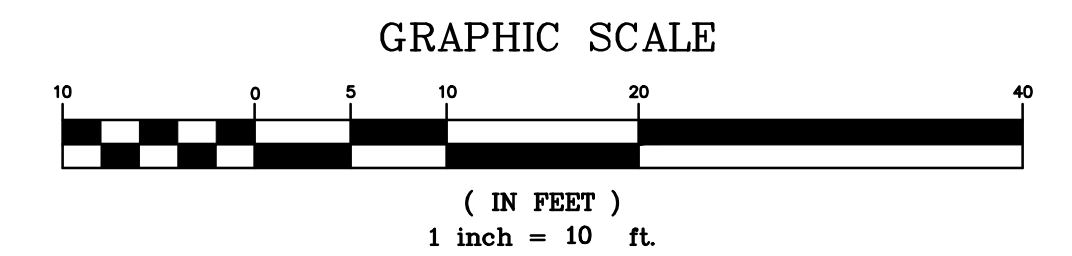
Area = 5.38 ac.
Type B Soils
CN = 70
Tc = 12.6 minutes
Q2 = 10.05 cfs @ 12.03 hrs.
Q10 = 19.85 cfs @ 12.00 hrs.
Q25 = 25.20 cfs @ 12.00 hrs.
Q100 = 34.67 cfs @ 12.00 hrs.

PIPE DESIGN DATA

Pipe Diameter = 24 in
Area = 3.14 sf
Perimeter = 6.28 ft
Hydraulic Radius = 0.50 ft
Manning's n = 0.013
Slope = 0.018 ft/ft
Max. Flow Rate = 30.4 cfs
Average Velocity = 9.70 ft/s

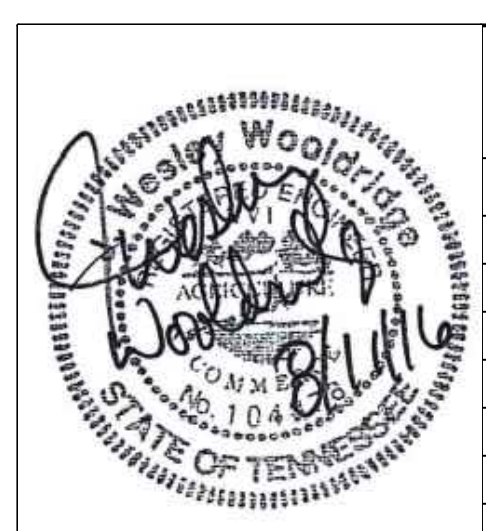


PLAN VIEW



GRAPHIC SCALE

(IN FEET)
1 inch = 10 ft.



REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

TBM: South flange bolt on an existing fire hydrant between the letters MUE and LLER located on the south side of Green Spruce Drive at the northwest corner of the subject property. Elevation: 372.15
THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA PER F.E.M.A. FLOOD INSURANCE RATE MAP NO. 47157C0330G, ZONE X, EFFECTIVE DATE FEBRUARY 6, 2013.

9655 GREEN SPRUCE DRAIN IMPROVEMENTS

RENAISSANCE GROUP, INC.
9700 VILLAGE CIRCLE, SUITE 100
LAKELAND, TN 38002
(901) 332-5533 VOICE (901) 332-5534 FAX EMAIL: @RGRP.BIZ

DEPARTMENT OF ENGINEERING
GRADING AND DRAINAGE PLAN
LAKELAND, TENNESSEE

FROM: NA TO: NA
SURVEY: M.L.S. DATE: 10/16 BOOK: DC
SCALE: 1"=10'
DESIGN: JWW DATE: 11/16 CKD: JWW DATE: 11/16
REVIEWED BY: _____
TOWN ENGINEER DATE