

**STORM SEWER NOTES:**

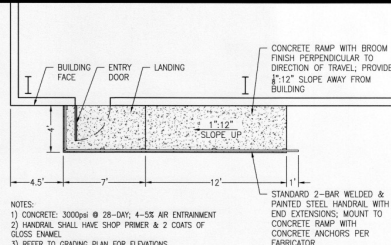
1. STORM PIPE SHALL BE Laid IN STRAIGHT LINES, AT UNIFORM GRADE BETWEEN STRUCTURES. PIPE SIZES SHALL BE AS SHOWN. PIPE SHALL BE BEDDED AS SHOWN. BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" IN COMPACTED THICKNESS, COMPACTED WITH SMALL MOBILE COMPACTOR ("WACKER"). BACKFILL MATERIAL SHALL NOT BE MUDDY IN CONSISTENCY AND TREMBLES WHEN BROKED SHALL NOT CONTAIN WATER. CURB INLETS SHALL BEAR ON A 6" LAYING BED OF CRUSHED STONE OR SAND IN UNDISTURBED OUT SURFACES OF EXCAVATIONS IN ORIGINAL GROUND.
2. STORM DRAIN PIPING SHALL BE BEDDED IN ACCORDANCE WITH DETAILS IN THESE PLANS.
3. INLET SHAPING IN ACCORDANCE WITH VDOT SPECIFICATION S-1 (SAL 106.06) SHALL BE UTILIZED ON ALL STORM STRUCTURES THAT ARE NOT STRAIGHT THROUGH RUNS.
4. ALL STORM STRUCTURES WITH DEPTHS GREATER THAN 4' SHALL HAVE STEPS IN ACCORDANCE WITH VDOT STD. 106.09
5. STORM DRAIN SLOPE IS TO BE INSTALLED AS SHOWN ON PLANS. STORM DRAIN LENGTHS ARE BASED ON HORIZONTAL DISTANCE TO CO. STRUCTURE. DISTANCE, SLOPES ARE CALCULATED BASED ON FACE STRUCTURE DISTANCES.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR OR REPLACE ANY UTILITY OR STORM STRUCTURES DAMAGED DURING CONSTRUCTION.

**STORM SEWER MATERIALS:**

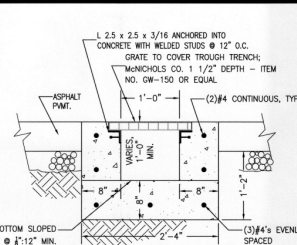
STORM DRAIN PIPING: ALL ORSIE STORM PIPING SHALL BE ADS, N-12 HOPE OR APPROVED EQUAL. ALL JOINTS, FITTINGS, AND CLEANOUTS SHALL BE COMPLETED WITH PROPERLY SIZED AND FITTINGS. FIELD FABRICATED FITTINGS AND CONNECTIONS ARE NOT ACCEPTABLE. DISCHARGE PIPE FROM DETENTION POND TO STORM SEWER INLET SHALL BE GASKETED CLASS 3 ROP.

STRUCTURES: WITH THE EXCEPTION OF THE YARD INLETS, ALL STRUCTURES SHALL BE PRECAST CONCRETE ASSEMBLES CONSTRUCTED IN ACCORDANCE WITH VDOT STANDARDS (VDOT STD BASE, D-7 TOP). YARD INLETS SHALL BE ADS NYOPLAST PVC STRUCTURES WITH STANDARD GRATES UNLESS OTHERWISE SPECIFIED.

MANHOLE FRAMES AND COVERS: CAST IRON, STANDARD WITH "STORM" ON COVER



**ENLARGED ENTRY RAMP**  
1" = 5'-0"



**TRENCH DRAIN TYP. DETAIL**  
1" = 1'-0"

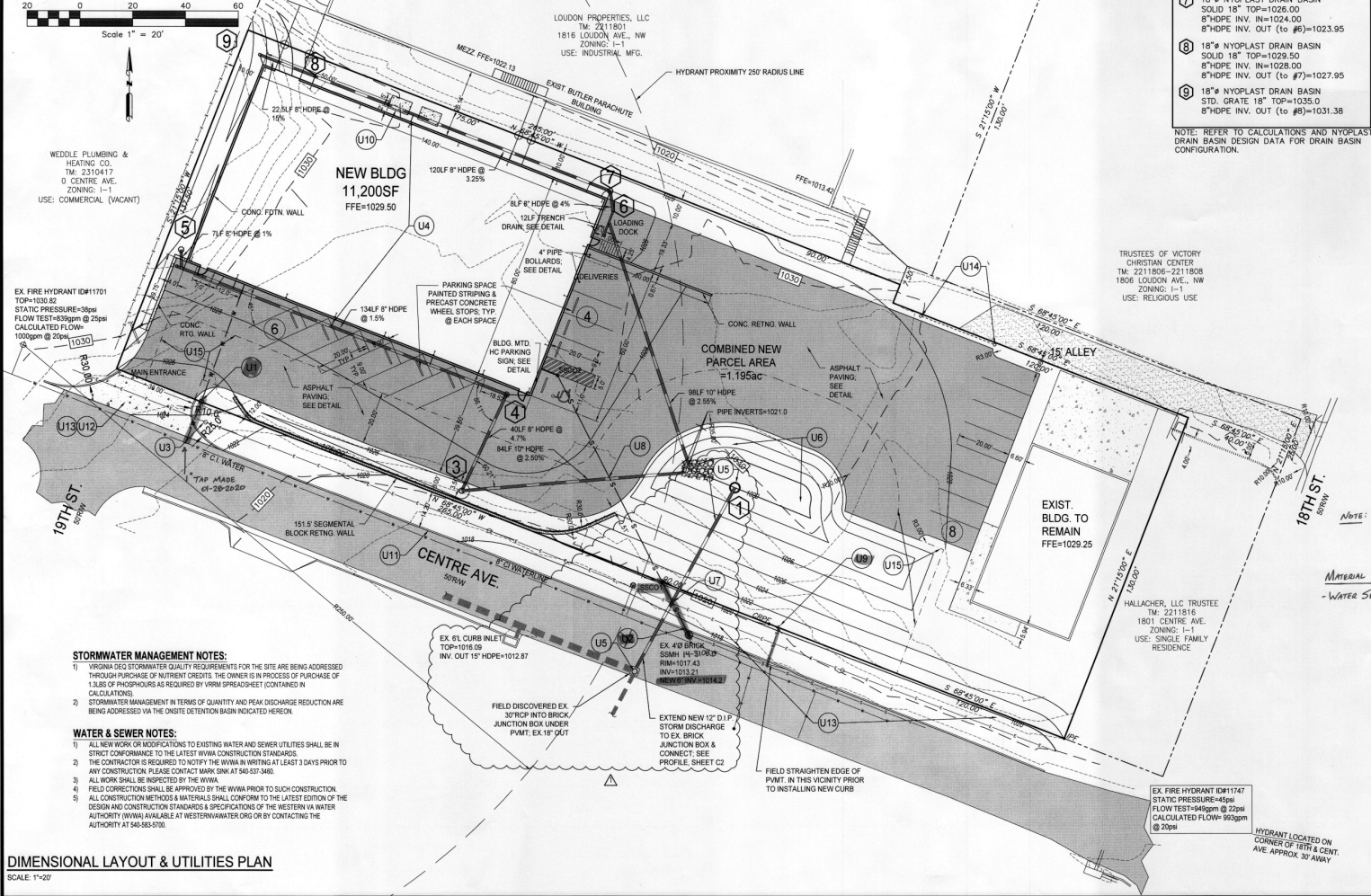
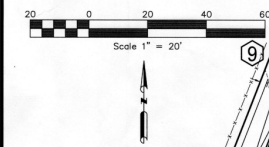
**STORM SEWER SCHEDULE**

1	D1-7 TOP ON 4" MH EXTENDED BASE TOP=1024.00 20"Ø INV. IN=1022.50 (1)3" INV. IN=1020.00 12"DIP INV. OUT (to Headwall)=1018.67 EW-1PC PRECAST ENDWALL 12"HOPE INV. OUT=1018.75 SEE DETAIL.
2	24" NYOPLAST DRAIN BASIN STD. GRATE TOP=1025.00 8"HOPE INV. IN=1023.10 10"HOPE INV. OUT (to Basin)=1023.10
3	18" NYOPLAST DRAIN BASIN SOLID 2'x2' H-20 RATED TOP=1029.30 8"HOPE INV. IN=1025.01 6"HOPE INV. IN=1027.00 8"HOPE INV. OUT (to #3)=1024.98
4	24" NYOPLAST DRAIN BASIN SOLID 2'x2' H-20 RATED TOP=1029.30 8"HOPE INV. OUT (to #4)=1027.15
5	12LF TRENCH DRAIN 8"HOPE INV. IN=1023.63 10" INV. OUT=1023.50
6	18" NYOPLAST DRAIN BASIN SOLID 18" TOP=1026.00 8"HOPE INV. IN=1024.00 8"HOPE INV. OUT (to #6)=1023.95
7	18" NYOPLAST DRAIN BASIN SOLID 18" TOP=1026.00 8"HOPE INV. IN=1028.00 8"HOPE INV. OUT (to #7)=1027.95
8	18" NYOPLAST DRAIN BASIN STD. GRATE 18" TOP=1035.00 8"HOPE INV. OUT (to #8)=1031.38

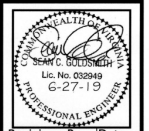
NOTE: REFER TO CALCULATIONS AND NYOPLAST DRAIN BASIN DESIGN DATA FOR DRAIN BASIN CONFIGURATION.

**UTILITY & DEVELOPMENT SHEET NOTES:**

1. VERIFY EXISTING WATER MAIN, CONDUIT & EXTENSION. VERIFY EXISTING DOMESTIC WATER SERVICE FROM MAIN TO BUILDING. INSTALL 1" WATER METER AT PROPERTY LINE PER STANDARD DETAIL ON SHEET C5.
2. FIELD VERIFY LOCATION & DEPTH OF EXISTING MANHOLES. INSTALL 12" NYOPLAST SANITARY SEWER 4" DIA. TO PROPERTY LINE AS INDICATED ON PLAN. CONTINUE TO INSTALL 8" DIA. OF 8" SIZES LATERAL @ 3% AND SET TRENCH BEARING @ 24" DIA. @ 25% INV. @ 106.31 G.P.F. FLUSH IN THE MANAGEMENT DEPARTMENT. REFER TO STANDARD DETAILS ON SHEET C5.
3. EXTEND UNDERGROUND ELECTRIC SERVICE TO NEW BUILDING. COORDINATE WITH AEP AND FINALIZE LAYOUT BASED ON BUILDING SERVICE LOCATION ON BUILDING PLANS (UNDER SEPARATE COVER).
4. ALL ROOFTOP DOWNSPOUTS SHALL EXTEND TO UNDERGROUND HOPE STORM PIPE WITH OUTFALL TO DETENTION BASIN. INSTALL TRAFFIC BEARING CLEANOUTS AT AS SHOWN ALONG SIDE OF BUILDING.
5. INSTALL DETENTION BASIN D1-7 DISCHARGE DEVICE. EXTEND 77.48LF 12" DUCTILE IRON PIPE @ 84% TO EXISTING UNDERGROUND BRICK STORM DRAIN JUNCTION BOX (JB). CORE HOLE IN SIDE OF EXISTING JB TO MAKE CONNECTION. ADD PRECAST RISER TO TOP AND STORM FRAME AND COVER PER ROANOKE CITY STANDARDS. COORDINATE CONNECTION WITH CITY OF ROANOKE & OBTAIN PERMIT PRIOR TO WORKING IN RIGHT-OF-WAY.
6. CLEAN OUT SEDIMENT BASIN TO DESIGN PLAN ELEVATIONS UPON STABILIZATION OF SITE. CONVERT TO DETENTION BASIN DISCHARGE STRUCTURE BY REMOVING PVC RISERS FROM SIDES.
7. PIPE CROSSING #1: 6" PVC SANITARY INVERT=1014.55  
12" DIP STORM INVERT=1015.50
8. PIPE CROSSING #2: 6" PVC SANITARY INVERT=1018.53  
12" HOPE STORM INVERT=1021.72
9. FIELD VERIFY LOCATION & DEPTH OF EXIST. SEWER LATERAL TO BUILDING. REROUTE & REGRADE AS NECESSARY TO MAINTAIN FINAL GRADES INDICATED ON PLANS WHILE MAINTAINING 24" MIN. COVER.
10. 5/8"Ø THICK CONCRETE PADS ON GRADE FOR PACKAGE OUTDOOR HVAC UNITS. COORDINATE PAD SIZE ADEQUACY WITH HVAC SUPPLIER PRIOR TO POURING. SCREENING NOT REQUIRED DUE TO LOCATION.
11. SAWCUT ALONG EXISTING EDGE OF PAVEMENT TO FORM STRAIGHT LINE & INSTALL NEW CO-2 CURB ALONG EDGE OF PAVEMENT. TOP CURB SPOT ELEVATIONS ARE NOTED AT 6" ABOVE EXISTING EDGE OF PAVEMENT ELEVATIONS. BACKFILL BEHIND NEW CURB WITH NATIVE EARTH MATERIAL & 4" TOPSOIL.
12. INSTALL NEW 5" THICK 4000PSI CONCRETE ENTRANCE ON 4" COMPACTED 2 1/4" STONE) WITH INTEGRAL CURB FROM EXISTING EDGE PAVEMENT TO RIGHT OF WAY LINE IN ACCORDANCE WITH VDOT C-2 DETAIL ON C-7. TRANSITION CURB ALONG WESTERN EDGE FROM FULL HEIGHT TO PAVEMENT ELEVATION AT EXIST. ROADWAY INTERSECTION.
13. WORK IN RIGHT OF WAY AREAS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS.
14. INSTALL BOLLARDS WITH WELDED STEEL HOOKS AT APPROXIMATE LOCATIONS SHOWN TO ENABLE INSTALLATION OF CHAIN ACROSS ALLEY ACCESS TO PROHIBIT VEHICULAR ACCESS TO NEW BUILDING.
15. STORMWATER MANAGEMENT MAINTENANCE & ACCESS EASEMENT.



**DIMENSIONAL LAYOUT & UTILITIES PLAN**  
SCALE: 1"=20'



Revisions By: \_\_\_\_\_ Date: \_\_\_\_\_  
1. IC Storm Drain Annotate: 12-19



**DIMENSIONAL LAYOUT & UTILITIES PLAN**  
**LOUDON PROPERTIES SITE REDEVELOPMENT**  
**CENTRE AVE.**  
**ROANOKE, VA**

Scale: 1"=20'  
Date: 3/14/19  
Design By: SCC  
CAD By: SCC  
Checked By: SCC  
Project No.: 18003

Sheet No. **C4**

City of Roanoke  
Planning, Building, & Development  
COMPREHENSIVE DEVELOPMENT PLAN  
**FIELD REVISION**  
**APPROVED**  
by Ken Richardson  
07/09/2019