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 TRENCHES TO BE BACKFILLED SHALL NOT CONTAIN WATER. CURB INLETS SHALL BEAR ON A 6" LEVELING BED OF CRUSHED STONE OR SAND IN UNDISTURBED CUT 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 IS-1 (Std. 106.08) SHALL BE UTILIZED ON ALL STORM STRUCTURES THAT ARE NOT STRAIGHT THRU RUNS.

4. ALL STORM STRUCTURES WITH DEPTHS GREATER THAN 4' SHALL HAVE STEPS IN ACCORDANCE WITH VDOT STD. 106.09

5. STORM DRAIN SHOWN IS TO BE INSTALLED AS SHOWN ON PLANS. STORM DRAIN LENGTHS ARE BASED ON HORIZONTAL CL STRUCTURE TO CL STRUCTURE DISTANCE. SLOPES ARE CALCULATED BASED ON FACE STRUCTURE DISTANCES.

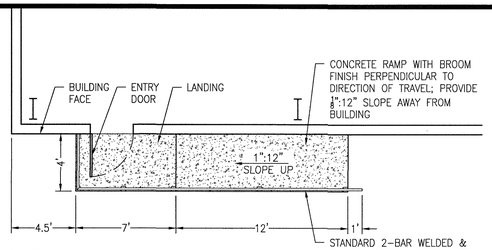
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR OR REPLACE ANY UTILITY OR STORM STRUCTURES DAMAGED DURING CONSTRUCTION.

STORM SEWER MATERIALS:

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

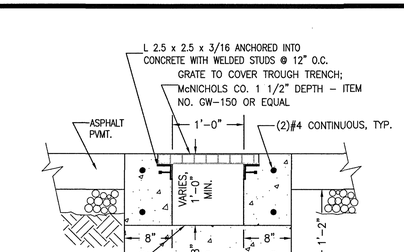
STRUCTURES: WITH THE EXCEPTION OF THE YARD INLETS, ALL STRUCTURES SHALL BE PRECAST CONCRETE ASSEMBLIES CONSTRUCTED IN ACCORDANCE WITH VDOT STANDARDS (VDOT STD BASE, DI-7 TOP). YARD INLETS SHALL BE ADS NYOPLAST PVC STRUCTURES WITH STANDARD GRATES UNLESS OTHERWISE SPECIFIED.

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



NOTES:
1) CONCRETE: 3000psi @ 28-DAY; 4-5% AIR ENTRAINMENT
2) HANDRAIL SHALL HAVE SHOP PRIMER & 2 COATS OF GLOSS ENAMEL
3) REFER TO GRADING PLAN FOR ELEVATIONS.

ENLARGED ENTRY RAMP
1" = 5'-0"



NOTE: CONCRETE SHALL BE 4000psi MIX, REBAR SHALL BE GRADE 60

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

STORM SEWER SCHEDULE

1. DI-7 TOP ON 4'ø MH EXTENDED BASE TOP=1024.00 (2)6"ø INV. IN=1022.5 (1)3"ø INV. IN=1020.0 12"DIP INV. OUT (to Headwall)=1018.67
2. EW-1PC PRECAST ENDWALL 12"HDPE INV. OUT=1018.75 SEE DETAIL
3. 24"ø NYOPLAST DRAIN BASIN STD. GRATE TOP=1025.00 8"HDPE INV. IN=1023.10 10"HDPE INV. OUT (to Basin)=1023.10
4. 18"ø NYOPLAST DRAIN BASIN SOLID 2'x2' H-20 RATED TOP=1029.30 8"HDPE INV. IN=1025.01 6"HDPE INV. IN=1027.00 8"HDPE INV. OUT (to #3)=1024.98
5. 24"ø NYOPLAST DRAIN BASIN STD. GRATE TOP=1035.00 8"HDPE INV. OUT (to #4)=1027.15
6. 12LF TRENCH DRAIN 8" HDPE INV. IN=1023.63 10" INV. OUT=1023.50
7. 18"ø NYOPLAST DRAIN BASIN SOLID 18" TOP=1026.00 8"HDPE INV. IN=1024.00 8"HDPE INV. OUT (to #6)=1023.95
8. 18"ø NYOPLAST DRAIN BASIN SOLID 18" TOP=1029.50 8"HDPE INV. IN=1028.00 8"HDPE INV. OUT (to #7)=1027.95
9. 18"ø NYOPLAST DRAIN BASIN STD. GRATE 18" TOP=1035.0 8"HDPE INV. OUT (to #8)=1031.38

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

UTILITY & DEVELOPMENT SHEET NOTES:

U1 LOCATE EXISTING WATER MAIN. CONNECT & EXTEND 1.00' OF 1" POLYETHYLENE DOMESTIC WATER SERVICE FROM MAIN TO BUILDING. INSTALL 1" WATER METER AT PROPERTY LINE PER STANDARD DETAIL ON SHEET C6.

U2 FIELD VERIFY LOCATION AND DEPTH OF EXISTING MANHOLE AS INDICATED BY RECORDS. CONNECT TO MANHOLE AND INSTALL 21LF OF 6" SDR35 SANITARY SEWER AT 2.52% TO PROPERTY LINE. INSTALL CLEANOUT-SSCO (INV.=1014.76) AT PROPERTY LINE AS INDICATED ON PLAN. CONTINUE TO INSTALL 87.29LF OF 6" SDR35 LATERAL @ 10.3% AND SET TRAFFIC BEARING CLEANOUT SSCO2 (INV.=1024.3) CAP FLUSH WITH PAVEMENT ELEVATION. REFER TO STANDARD DETAILS ON SHEET C6.

U3 EXTEND UNDERGROUND ELECTRIC SERVICE TO NEW BUILDING. COORDINATE WITH AEP AND FINALIZE LAYOUT BASED ON BUILDING'S SERVICE LOCATION ON BUILDING PLANS (UNDER SEPARATE COVER).

U4 ALL ROOFTOP DOWNSPOUTS SHALL EXTEND TO UNDERGROUND HDPE STORM PIPE WITH OUTFALL TO DETENTION BASIN. INSTALL TRAFFIC BEARING CLEANOUTS AT AS SHOWN ALONG SIDE OF BUILDING.

U5 INSTALL DETENTION BASIN DI-7 DISCHARGE DEVICE. EXTEND 77.48LF 12" DUCTILE IRON PIPE @ 6.48% 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.

U6 CLEAN OUT SEDIMENT BASIN TO DESIGN PLAN ELEVATIONS UPON STABILIZATION OF SITE. CONVERT TO DETENTION BASIN DISCHARGE STRUCTURE BY REMOVING PVC RISERS FROM SIDES.

U7 PIPE CROSSING #1
6"PVC SANITARY INVERT=1014.55
12" DIP STORM INVERT=1015.50

U8 PIPE CROSSING #2
6" PVC SANITARY INVERT=1019.53
10" HDPE STORM INVERT=1021.72

U9 FIELD VERIFY LOCATION & DEPTH OF EXIST. SEWER LATERAL TO BUILDING. REROUTE & RELOCATE AS NECESSARY TO ACHIEVE FINAL GRADES INDICATED ON PLANS WHILE MAINTAINING 24" MIN. COVER.

U10 5'x8'x6" 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.

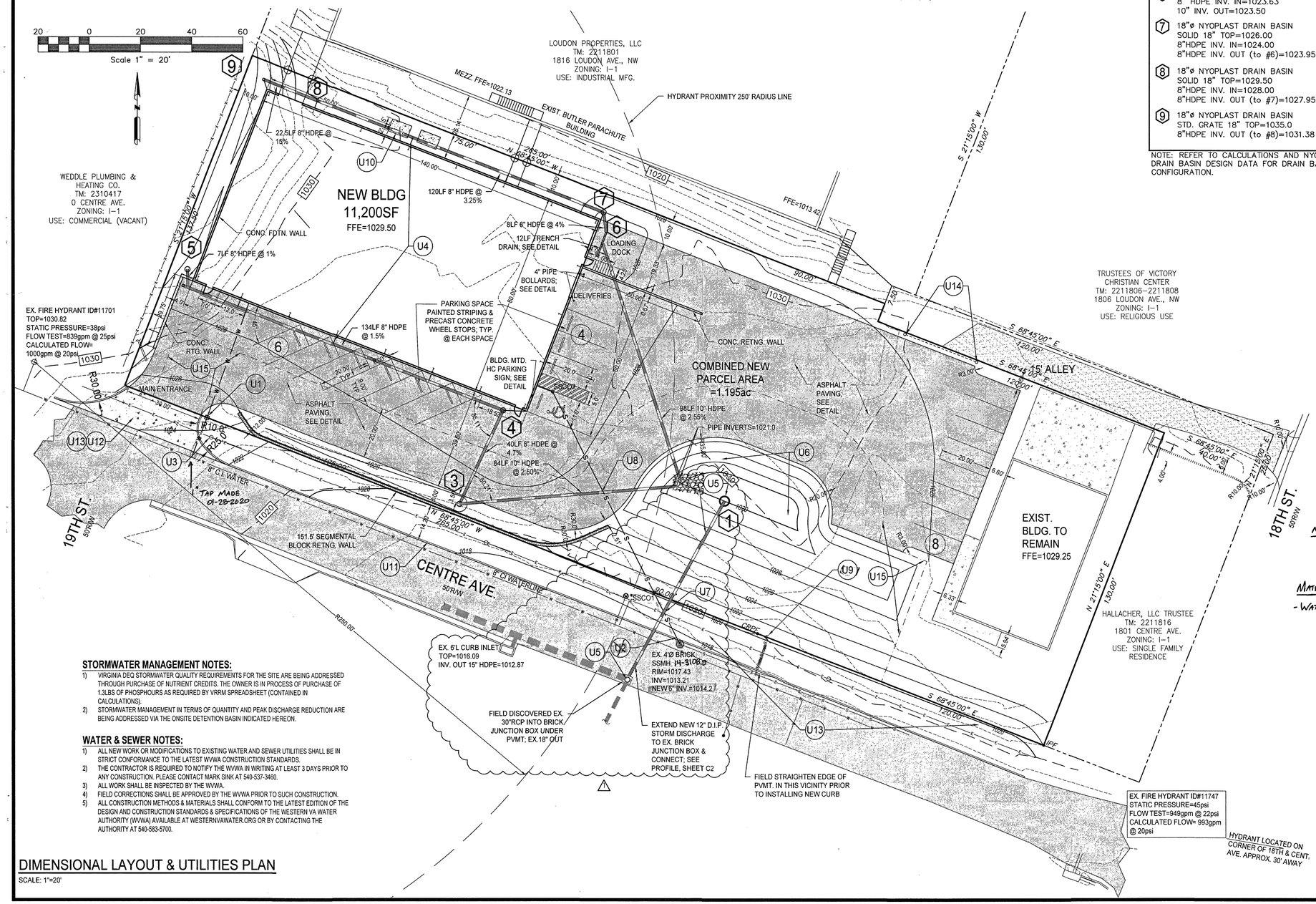
U11 SAWCUT ALONG EXISTING EDGE OF PAVEMENT TO FORM STRAIGHT LINE & INSTALL NEW CG-2 CURB ALONG EDGE OF PAVEMENT. TOP CURB SPOT ELEVATIONS ARE NOTED AT 6" ABOVE EXISTING EDGE OF PAVEMENT ELEVATIONS. BACKFILL BEHIND NEW CURB WITH NATIVE EARTHEN MATERIAL & 4" TOPSOIL.

U12 INSTALL NEW 5" THICK 4000psi CONCRETE ENTRANCE (ON 8" COMPACTED 21A STONE) WITH INTEGRAL CURB FROM EXISTING EDGE PAVEMENT TO RIGHT OF WAY LINE IN ACCORDANCE WITH VDOT CG-9D DETAIL ON C-7. TRANSITION CURB ALONG WESTERN EDGE FROM FULL HEIGHT TO PAVEMENT ELEVATION AT EXIST. ROADWAY INTERSECTION.

U13 WORK IN RIGHT OF WAY AREAS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS.

U14 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.

U15 STORMWATER MANAGEMENT MAINTENANCE & ACCESS EASEMENT.



NOTE: USE0 EXISTING 6"TCP LATERAL. INSTALLED NEW CLEAN-OUT AT PROPERTY LINE.

MATERIAL
- WATER SERVICE: 1" ADS POLYFLEX HDPE

STORMWATER MANAGEMENT NOTES:

1) VIRGINIA DEQ STORMWATER QUALITY REQUIREMENTS FOR THE SITE ARE BEING ADDRESSED THROUGH PURCHASE OF NUTRIENT CREDITS. THE OWNER IS IN PROCESS OF PURCHASE OF 1.3LBS OF PHOSPHOURS AS REQUIRED BY VRRM SPREADSHEET (CONTAINED IN CALCULATIONS).
2) STORMWATER MANAGEMENT IN TERMS OF QUANTITY AND PEAK DISCHARGE REDUCTION ARE BEING ADDRESSED VIA THE ONSITE DETENTION BASIN INDICATED HEREON.

WATER & SEWER NOTES:

1) ALL NEW WORK OR MODIFICATIONS TO EXISTING WATER AND SEWER UTILITIES SHALL BE IN STRICT CONFORMANCE TO THE LATEST WVWA CONSTRUCTION STANDARDS.
2) THE CONTRACTOR IS REQUIRED TO NOTIFY THE WVWA IN WRITING AT LEAST 3 DAYS PRIOR TO ANY CONSTRUCTION. PLEASE CONTACT MARK SINK AT 540-537-3460.
3) ALL WORK SHALL BE INSPECTED BY THE WVWA.
4) FIELD CORRECTIONS SHALL BE APPROVED BY THE WVWA PRIOR TO SUCH CONSTRUCTION.
5) ALL CONSTRUCTION METHODS & MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS & SPECIFICATIONS OF THE WESTERN VA WATER AUTHORITY (WVWA) AVAILABLE AT WESTERNVAWATER.ORG OR BY CONTACTING THE AUTHORITY AT 540-583-5700.

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

COMMONWEALTH OF VIRGINIA
SEAN C. GOLDSMITH
Lic. No. 032949
6-27-19
PROFESSIONAL ENGINEER

Revisions By	Date
1 - UG Storm Disch.Reroute	6-27-19

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DIMENSIONAL LAYOUT & UTILITIES PLAN

LOUDON PROPERTIES SITE REDEVELOPMENT
CENTRE AVE.
ROANOKE, VA

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

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

Sheet No.
C4