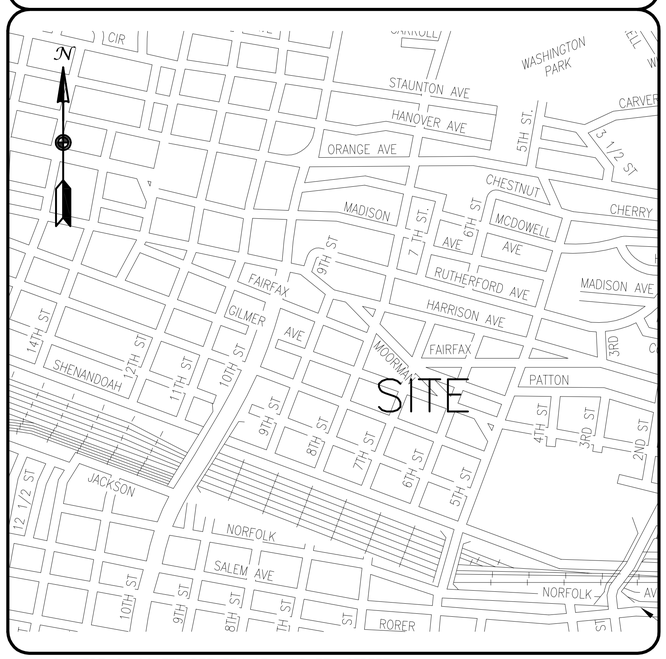
PROJECT LOCATION MAP



** CULVERT IS LOCATED BETWEEN 6TH AND 7TH STREET

ROANOKE

OFFICE OF THE CITY ENGINEER
215 CHURCH AVENUE, SW
ROOM 350
ROANOKE, VIRGINIA 24011-1587
PHONE: (540) 853-2731
FAX: (540) 853-1364
ENGINEER@ROANOKEVA.GOV

INDEX OF SHEETS

1. CS – COVER SHEET
2. G1 – GENERAL NOTES
3. G2 – GENERAL NOTES CONTINUED
4. C1 – EXISTING CONDITIONS
5. C2 – DEMOLITION
6. C3 – BOX CULVERT PLAN AND PROFILE VIEW
7. C4 – STORM DRAIN PLAN AND PROFILES
8. C5 – CURB, SIDEWALK AND ROAD GRADES PLAN VIEW

APPROVED FOR CONSTRUCTION

ROANOKE CITY ENGINEER	5-12-2016 DATE
DIRECTOR OF PUBLIC WORKS	5/12/16 DATE
ASSISTANT CITY MANAGER FOR OPERATIONS	5/12/16 DATE

COMMONWEALTH OF VIRGINIA
LUKE E. PUGH
Lic. No. 38798
4/11/16
PROFESSIONAL ENGINEER

ABBREVIATIONS

BC =	BOTTOM OF CURB	T.C. =	TERRA COTTA
BCONC =	BOTTOM OF CONCRETE	TCONC =	TOP OF CONCRETE
BW =	BOTTOM OF WALL	TC =	TOP OF CURB
CONC =	CONCRETE	TW =	TOP OF WALL
DI =	DROP INLET		
FF =	FINISHED FLOOR		
INV. =	INVERT		
IPF =	IRON PIN FOUND		
MH =	MANHOLE		
R/W =	RIGHT OF WAY		
SD =	STORM DRAIN		
SDMH =	STORM DRAIN MANHOLE		
SS =	SANITARY SEWER		
SSMH =	SANITARY SEWER MANHOLE		
SW, S/W =	SIDEWALK		
STR =	STRUCTURE		

LEGEND

925.00 ×	SPOT ELEVATION (EXISTING)
---------925---------	CONTOURS
====8"SS====	SANITARY SEWER LINE
====8"SD====	STORM DRAIN LINE
— — —GAS— — —	GAS LINE
———W———	WATERLINE
———OHE———	OVERHEAD ELECTRIC
——— OHT ———	OVERHEAD TELEPHONE
———OHTV———	OVERHEAD TELEVISION
W	WATER METER
	UTILITY POLE, GUY & ANCHOR
	SURVEY TRAVERSE POINT
	BENCHMARK
W	FIRE HYDRANT
	PROPOSED ELEVATION
	SD CURB INLET
	SD DROP / GRATE INLET
	SD MANHOLE
S	SANITARY MANHOLE

24"x36" SHEET

PROJECT NAME

GILMER AVENUE OVER TROUT RUN
CULVERT REPLACEMENT

CITY ENGINEERING PLAN NUMBER:	6820
VDOT NUMBER:	U000-128-R55 / UPC 105738
USACE PERMIT NUMBER:	NAO-2015-1698 (NW3)
VA BRIDGE NUMBER:	8006
FEDERAL BRIDGE NUMBER:	21598

EXISTING CONDITION SURVEY BY:

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE, N.W.
Post Office Box 6260
ROANOKE, VIRGINIA 24017
Telephone: (540) 366-3400 , Fax: (540) 366-8702
EMAIL: CWAROANOKE @ AOL.COM

SHEET NUMBER: 1 OF 8

GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO REPLACE THE DETERIORATED CULVERT SYSTEM, GILMER AVENUE OVER TROUT RUN. THE CULVERT SYSTEM IS CLASSIFIED AS A BRIDGE (LENGTH > 20' ALONG THE SKEW) AND IS INVENTORIED AS VA STRUCTURE 8006 AND FEDERAL STRUCTURE 21598. THE NEW PROPOSED CULVERT SYSTEM IS A 14'X6'–6" SINGLE CELL BOX CULVERT.

EXISTING CONDITIONS

THE CURRENT SYSTEM WAS BUILT BETWEEN 1930 AND 1940. THE BOTTOM OF THE CULVERT VARIES BETWEEN A CONCRETE FLOOR AND NATURAL STREAM BED. THE SIDES OF THE CULVERT VARY BETWEEN ROCK RUBBLE WALLS AND CONCRETE WALLS. THE TOP OF CULVERT IS A CONCRETE SLAB CONTAINING I–BEAMS AND REBAR. THERE ARE NO AS–BUILTS.

THE CURRENT SYSTEM CARRIES FLOW FROM THE FEMA DESIGNATED TROUT RUN CREEK (MAP 51161C0164G). THE AREA, AS SHOWN IN THE PLANS, IS LOCATED WITHIN THE 100 YEAR FLOODPLAIN.

WATER RELATED PERMITS (NATIONWIDE 3)

THE CITY HAS OBTAINED A USACE NATIONWIDE PERMIT (NAO–2015–1698) IN ORDER TO THE REPLACE THE CULVERT SYSTEM. SEE PROJECT MANUAL FOR PERMIT REQUIREMENTS.

TIME OF YEAR RESTRICTIONS

DUE TO THE PRESENCE OF THE ENDANGERED ROANOKE LOGPERCH IN NEARBY STREAMS, IN–STREAM WORK IS NOT ALLOWED BETWEEN MARCH 15 AND JULY 1 OF ANY GIVEN YEAR.

STORAGE OF EQUIPMENT AND MATERIAL

CONTRACTOR SHALL USE THE GILMER AVENUE RIGHT OF WAY TO STORE EQUIPMENT AND MATERIAL. THE CITY DOES NOT OWN ANY OF THE ADJACENT PARCELS ALONG GILMER AVENUE.

BUILDING LOCATED AT 623 GILMER AVENUE

THE BUILDING LOCATED AT 623 GILMER AVENUE IS USED AS A STORAGE FACILITY FOR DOUGLAS LEFTWICH (540–314–5188). CONTRACTOR SHALL SEQUENCE WORK TO MINIMIZE THE AMOUNT OF TIME THAT THE BUILDING FRONTAGE ALONG GILMER IS INACCESSIBLE TO MR. LEFTWICH.

CONTRACTOR SHALL SUBMIT A SHORING PLAN, SEALED BY A VIRGINIA PROFESSIONAL ENGINEER, TO CITY FOR APPROVAL.

BOX CULVERT GENERAL NOTES

CAPACITY: AASHTO HL–93 LOADING

SPECIFICATIONS:

CONSTRUCTION: VA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS 2007.

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH EDITION 2010; 2011 INTERIM SPECIFICATIONS; AND VDOT MODIFICATIONS.

CONCRETE BOX CULVERT SHALL BE A SINGLE CELL, PRECAST UNIT WITH INSIDE DIMENSIONS OF 14' WIDE X 6'–6" TALL. NON–STANDARD DIMENSIONS / SKEWED / SPECIAL DESIGN.

ALL CONCRETE SHALL BE CLASS A4, MINIMUM.

** ALL REINFORCING STEEL SHALL BE LOW CARBON/CHROMIUM REINFORCING STEEL CONFORMING TO ASTM A1035.

** TOP SLAB THICKNESS SHALL BE 12 INCHES. WALL AND BOTTOM SLAB THICKNESS TO BE DETERMINED BY PRECASTER.

PRECAST MANUFACTURER TO SUBMIT CALCULATIONS AND SHOP DRAWINGS SEALED BY A VIRGINIA PROFESSIONAL ENGINEER.

STORM DRAIN:

ALL PIPE SHALL BE REINFORCED CONCRETE PIPE (TYPE III)

ALL MANHOLES SHALL HAVE INLET SHAPING AND ACCESS STEPS

UTILITY CONTACTS:

AEP CONTACT: MARTIN MCGEE (540–427–3664)

ROANOKE GAS CONTACT: PETE ORR (540–777–3817)

WESTERN VIRGINIA WATER AUTHORITY CONTACTS:
CARL SINK (540–853–5359) FOR SANITARY SEWER / LATERAL INSTALLATIONS.

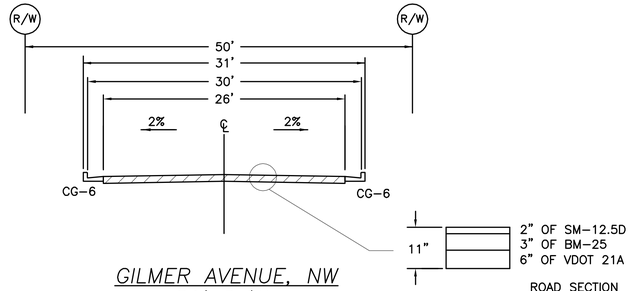
DAVID BARNHART (540–853–3272) FOR WATER

VERIZON CONTACT: ROBERT TERRY (540–769–7702) (CAMCOM).

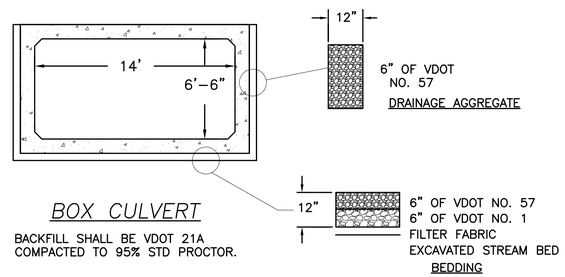
COX CABLE CONTACT: STEVE BOWER (540–293–2683)

FOR CLARITY, PROFILES DO NOT SHOW OVERHEAD ELECTRICAL, CABLE, OR TELEPHONE LINES.

CONTRACTOR TO COORDINATE WITH OVERHEAD UTILITY COMPANIES WHEN SHORING THE BUILDING AT 623 GILMER AVENUE

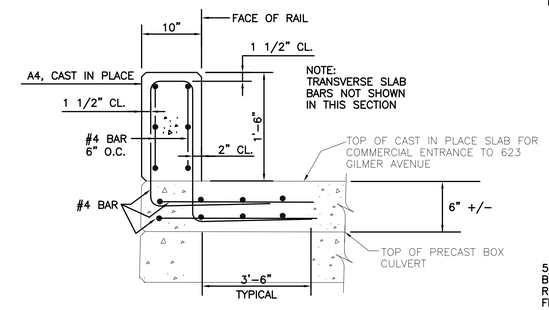


GILMER AVENUE, NW
50' R/W

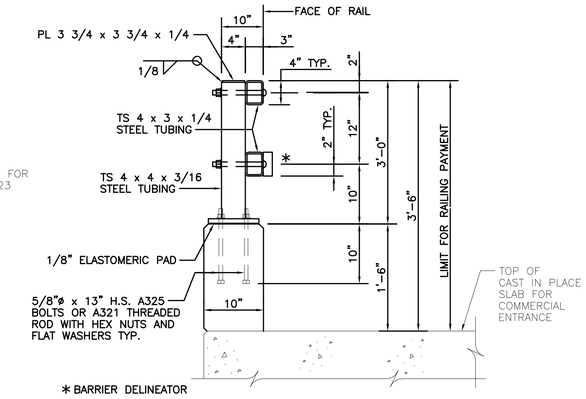


BOX CULVERT

BACKFILL SHALL BE VDOT 21A COMPACTED TO 95% STD PROCTOR.

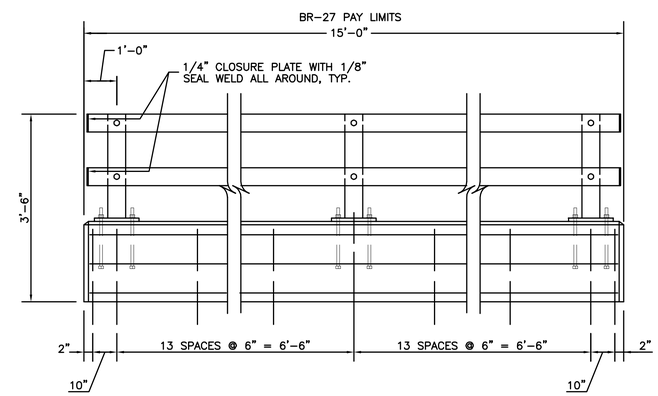


BR–27 RAILING PEDESTAL (SIDE VIEW)
NTS

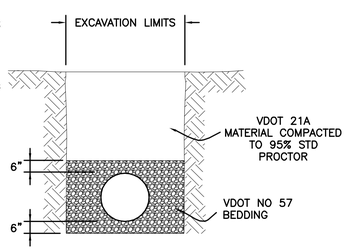


BR–27 RAILING (SIDE VIEW)
NTS

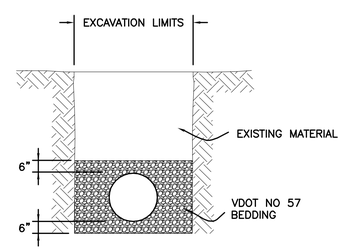
ALL STEEL SHALL BE GALVINIZED



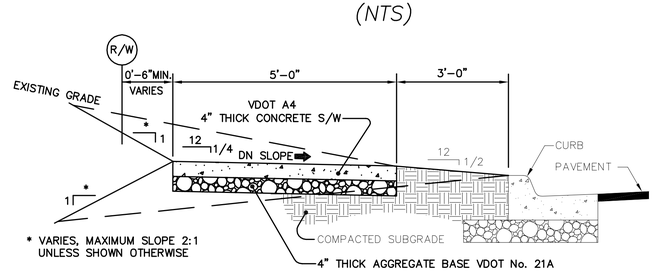
BR–27 RAILING (FRONT VIEW)
NTS



STORM DRAIN PIPE BACKFILL DETAIL – UNDER PAVEMENT / SIDEWALK / OR CURB
(NTS)

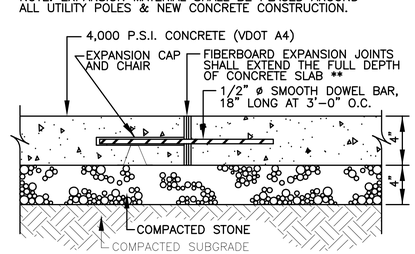


STORM DRAIN PIPE BACKFILL DETAIL – OUTSIDE OF PAVEMENT / SIDEWALK / OR CURB
(NTS)

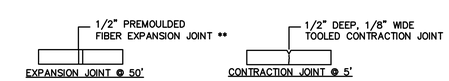


TYPICAL SIDEWALK WITH PLANTING STRIP
NTS

NOTE: EXPANSION MATERIAL SHALL BE PLACED AROUND ALL UTILITY POLES & NEW CONCRETE CONSTRUCTION.



SIDEWALK EXPANSION JOINT
NTS



SIDEWALK JOINT DETAILS
NTS

ROANOKE
OFFICE OF THE
CITY ENGINEER
215 CHURCH AVENUE, S.W.
ROOM 350
PHONE: (540) 853-2731
FAX: (540) 853-1364
WWW.ROANOKEVA.GOV

DESIGNED: LEP
DRAWN: LEP
CHECKED: PCS

COMMONWEALTH OF VIRGINIA
LUKE E. PUGH
Lic. No. 38798
4/11/16
PROFESSIONAL ENGINEER

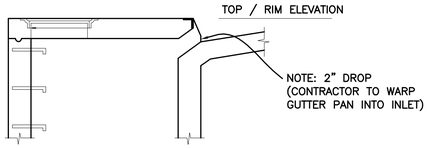
REV.	DATE:	DESCRIPTION

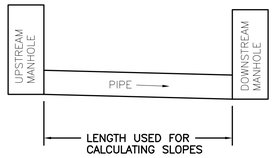
DATE: 4/1/16
SCALE: AS SHOWN
24"x36" SHEET

GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT
GENERAL NOTES
CITY OF ROANOKE, VIRGINIA

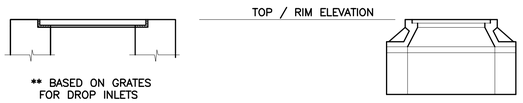
SHEET G1
2 OF 8
PLAN NO. 6820

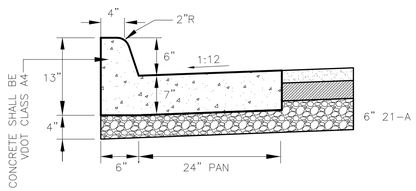
CONSTRUCTION STAKEOUT FOR DRAINAGE STRUCTURES





PIPE SLOPES

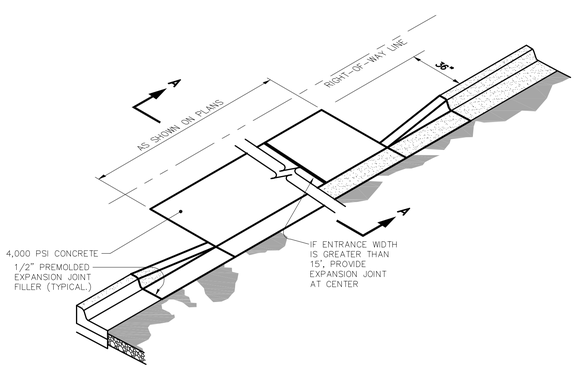




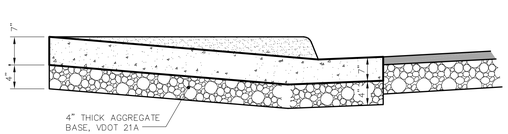
STANDARD 6" CURB AND GUTTER

VOT CG-6 (CG-6)

NTS

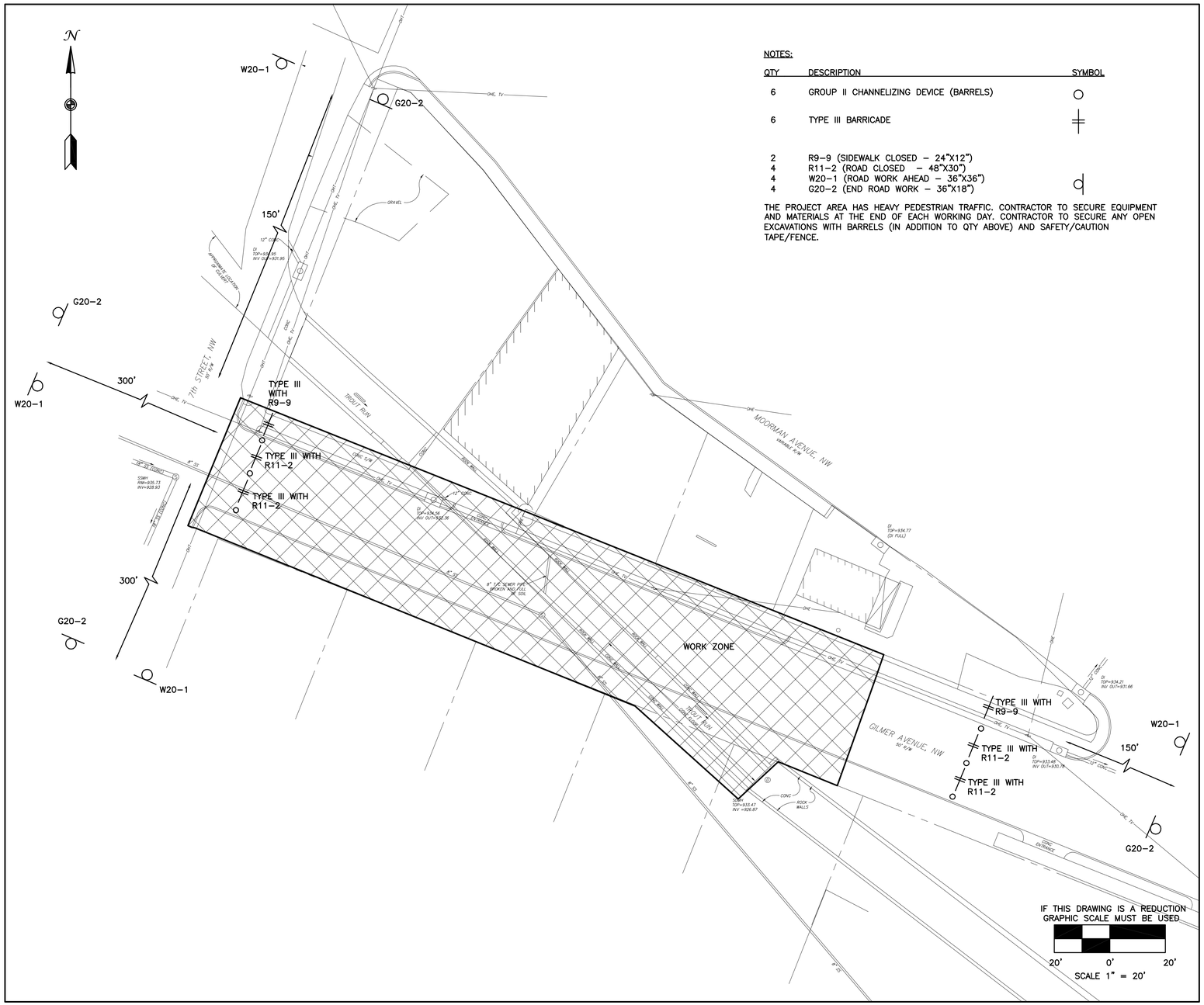


CONCRETE ENTRANCE



SECTION A–A**

MAINTENANCE OF TRAFFIC / WORK AREA PROTECTION



NOTES:

QTY	DESCRIPTION	SYMBOL
6	GROUP II CHANNELIZING DEVICE (BARRELS)	○
6	TYPE III BARRICADE	╪
2	R9-9 (SIDEWALK CLOSED – 24"X12")	
4	R11-2 (ROAD CLOSED – 48"X30")	
4	W20-1 (ROAD WORK AHEAD – 36"X36")	
4	G20-2 (END ROAD WORK – 36"X18")	

THE PROJECT AREA HAS HEAVY PEDESTRIAN TRAFFIC. CONTRACTOR TO SECURE EQUIPMENT AND MATERIALS AT THE END OF EACH WORKING DAY. CONTRACTOR TO SECURE ANY OPEN EXCAVATIONS WITH BARRELS (IN ADDITION TO QTY ABOVE) AND SAFETY/CAUTION TAPE/FENCE.

ROANOKE

OFFICE OF THE
CITY ENGINEER
215 CHURCH AVENUE, S.W.
ROOM 350
PHONE: (540) 853-2731
FAX: (540) 853-1364
WWW.ROANOKEVA.GOV

DESIGNED: LEP

DRAWN: LEP

CHECKED: PCS

COMMONWEALTH OF VIRGINIA
LUKE E. PUGH
Lic. No. 38798
4/11/16
PROFESSIONAL ENGINEER

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24"x36" SHEET

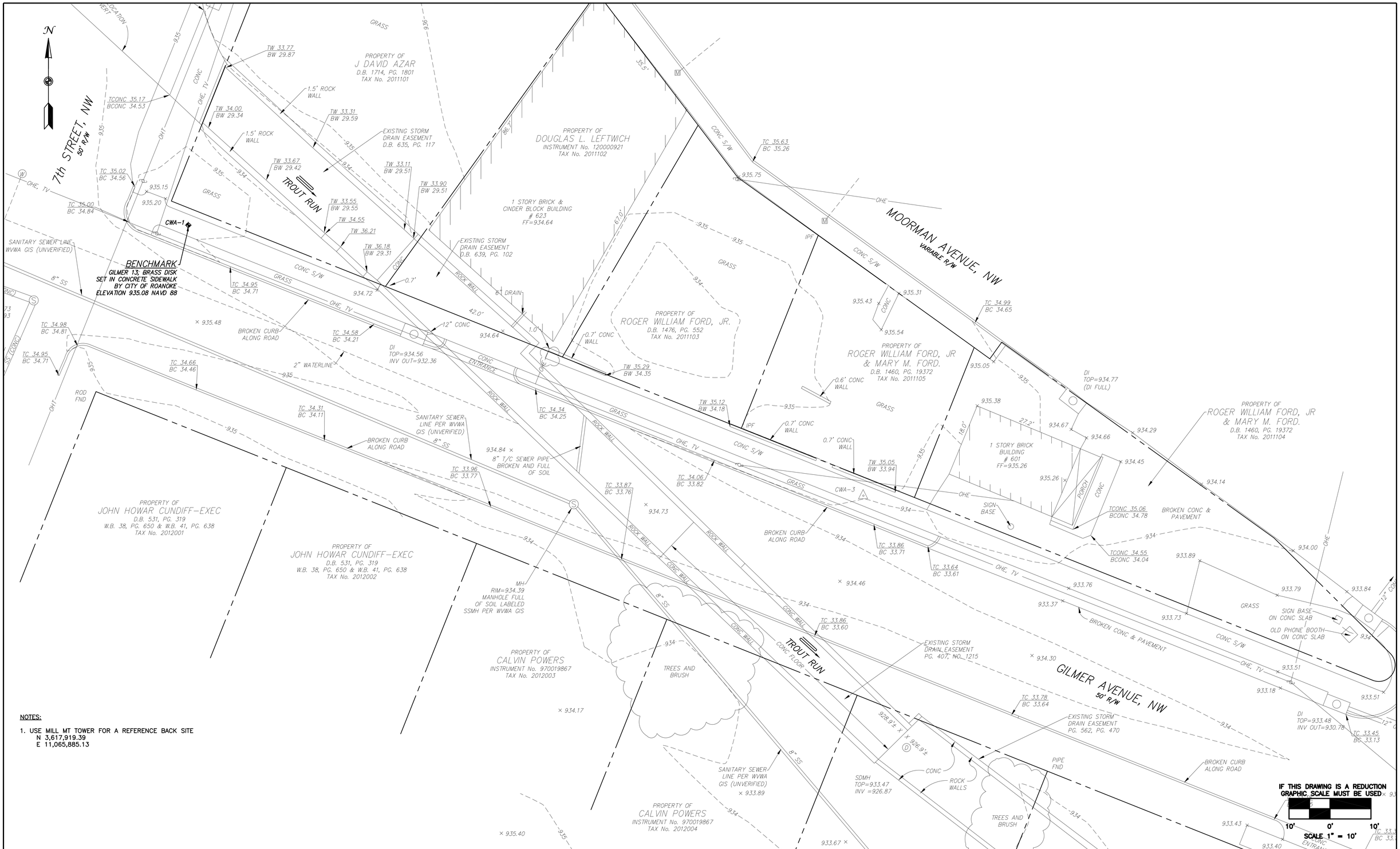
GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT

GENERAL NOTES CONTINUED

CITY OF ROANOKE, VIRGINIA

SHEET G2
3 OF 8

PLAN NO. 6820



NOTES:

1. USE MILL MT TOWER FOR A REFERENCE BACK SITE
   N 3,617,919.39
   E 11,065,885.13

OFFICE OF THE
CITY ENGINEER
215 CHURCH AVENUE, S.W.
ROOM 350
PHONE: (540) 853-2731
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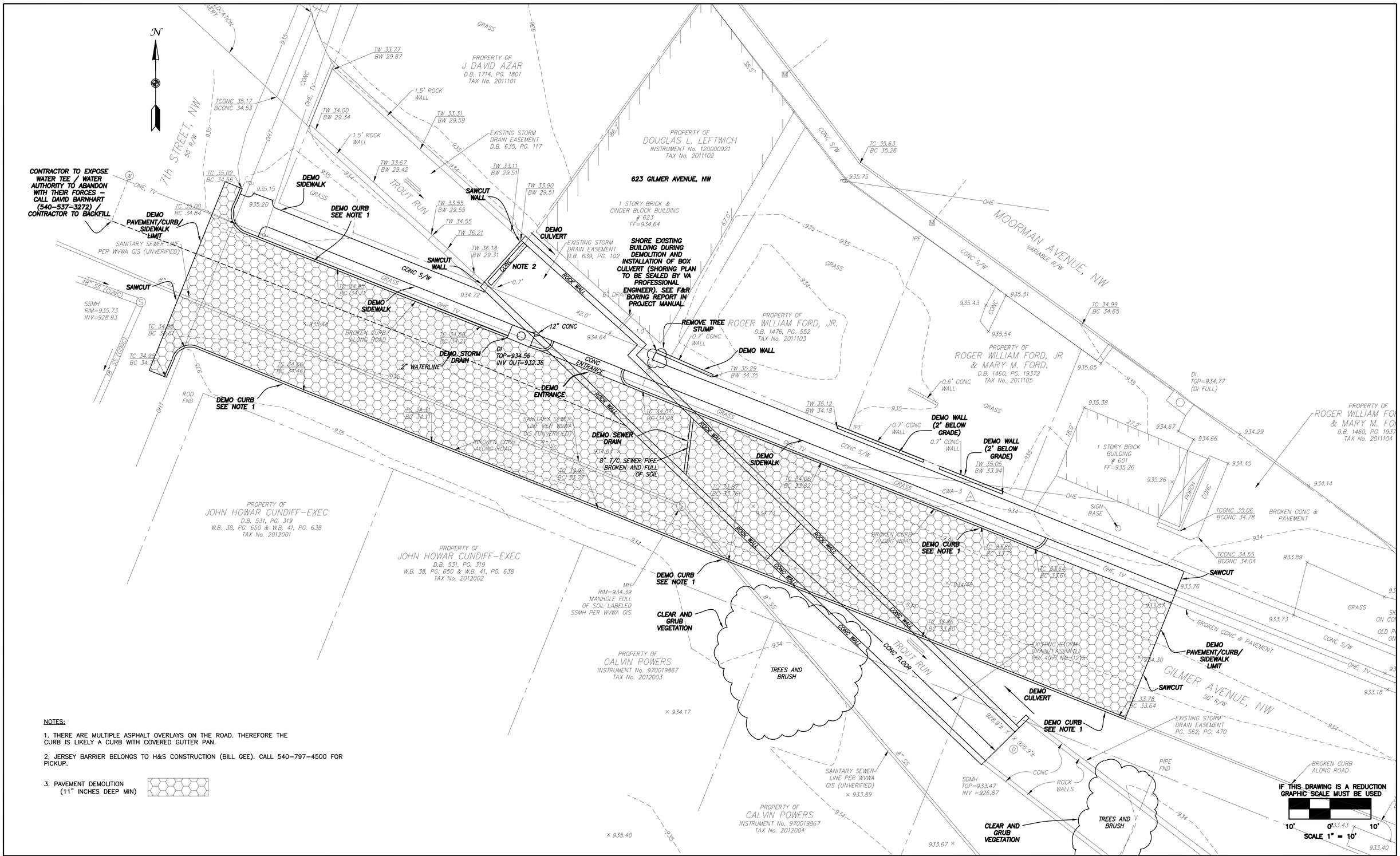
GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT

EXISTING CONDITIONS

CITY OF ROANOKE, VIRGINIA

SHEET
C1
4 OF 8

PLAN NO.
6820



NOTES:

1. THERE ARE MULTIPLE ASPHALT OVERLAYS ON THE ROAD. THEREFORE THE CURB IS LIKELY A CURB WITH COVERED GUTTER PAN.

2. JERSEY BARRIER BELONGS TO H&S CONSTRUCTION (BILL GEE). CALL 540-797-4500 FOR PICKUP.

3. PAVEMENT DEMOLITION (11" INCHES DEEP MIN)

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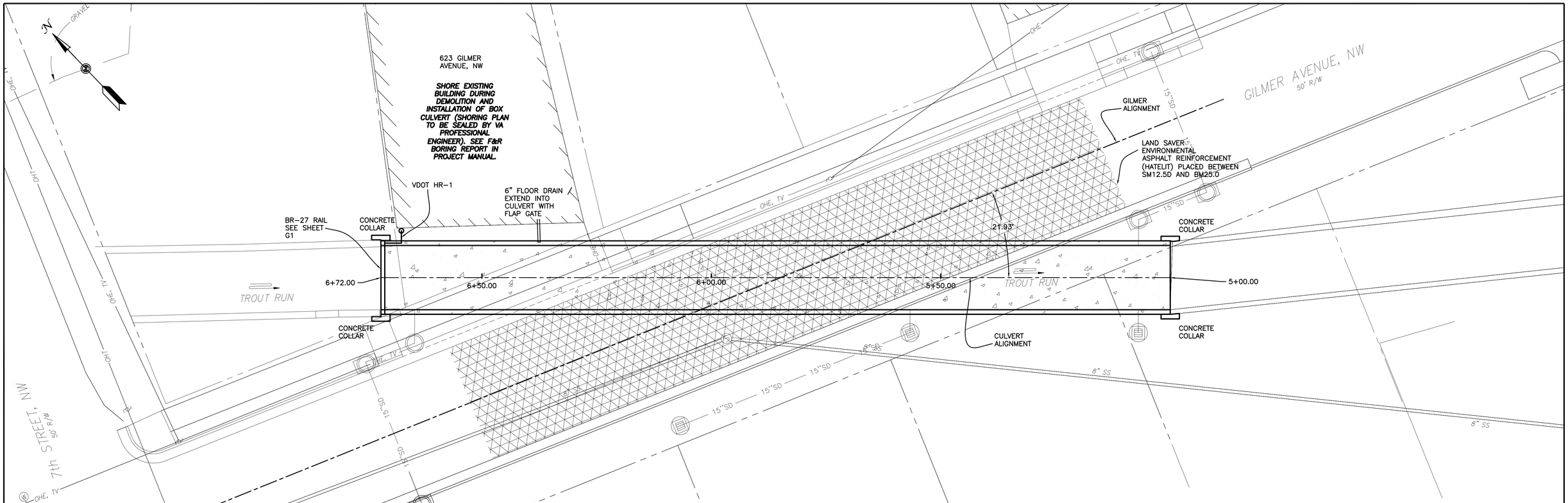
GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT
DEMOLITION PLAN
CITY OF ROANOKE, VIRGINIA

SHEET C2
5 OF 8

PLAN NO. 6820

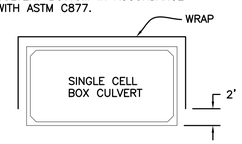


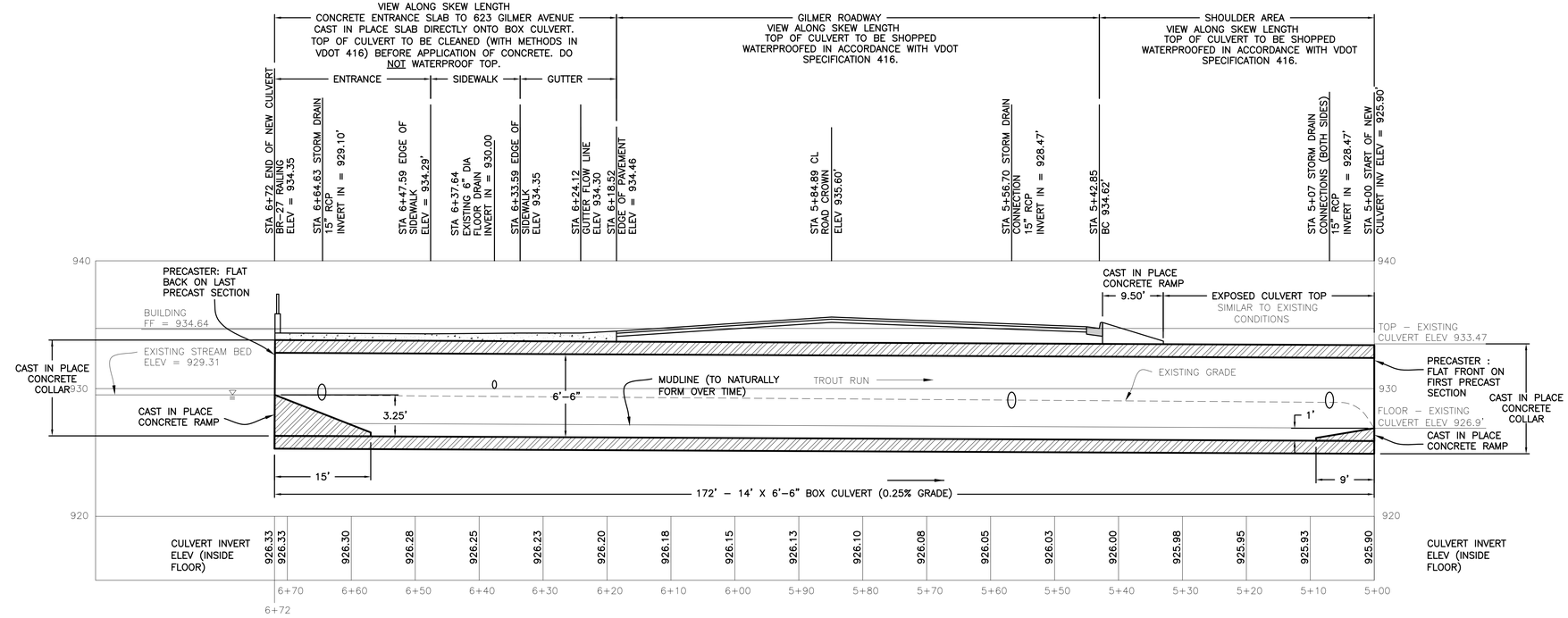
GENERAL NOTES:

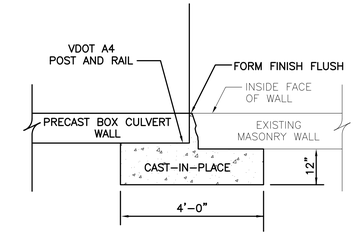
1. CONCRETE RAMPS SHALL BE A4 POST AND RAIL. MINIMUM TAPER THICKNESS AT THE ENDS OF RAMPS SHALL BE 2".

2. CONTRACTOR TO PROVIDE SOIL TIGHT JOINTS WITH PREFORMED BUTYL SEALANT IN ACCORDANCE WITH ASTM C990.

3. CONTRACTOR TO PROVIDE 12" JOINT WRAP ACROSS TOP AND DOWN EACH SIDE WITHIN 2' OF CULVERT BOTTOM IN ACCORDANCE WITH ASTM C877.







CONCRETE COLLAR (TOP VIEW)
NTS

IF THIS DRAWING IS A REDUCTION GRAPHIC SCALE MUST BE USED

10' 0' 10'

SCALE 1" = 10'

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DATE: 4/1/16

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24"x36" SHEET

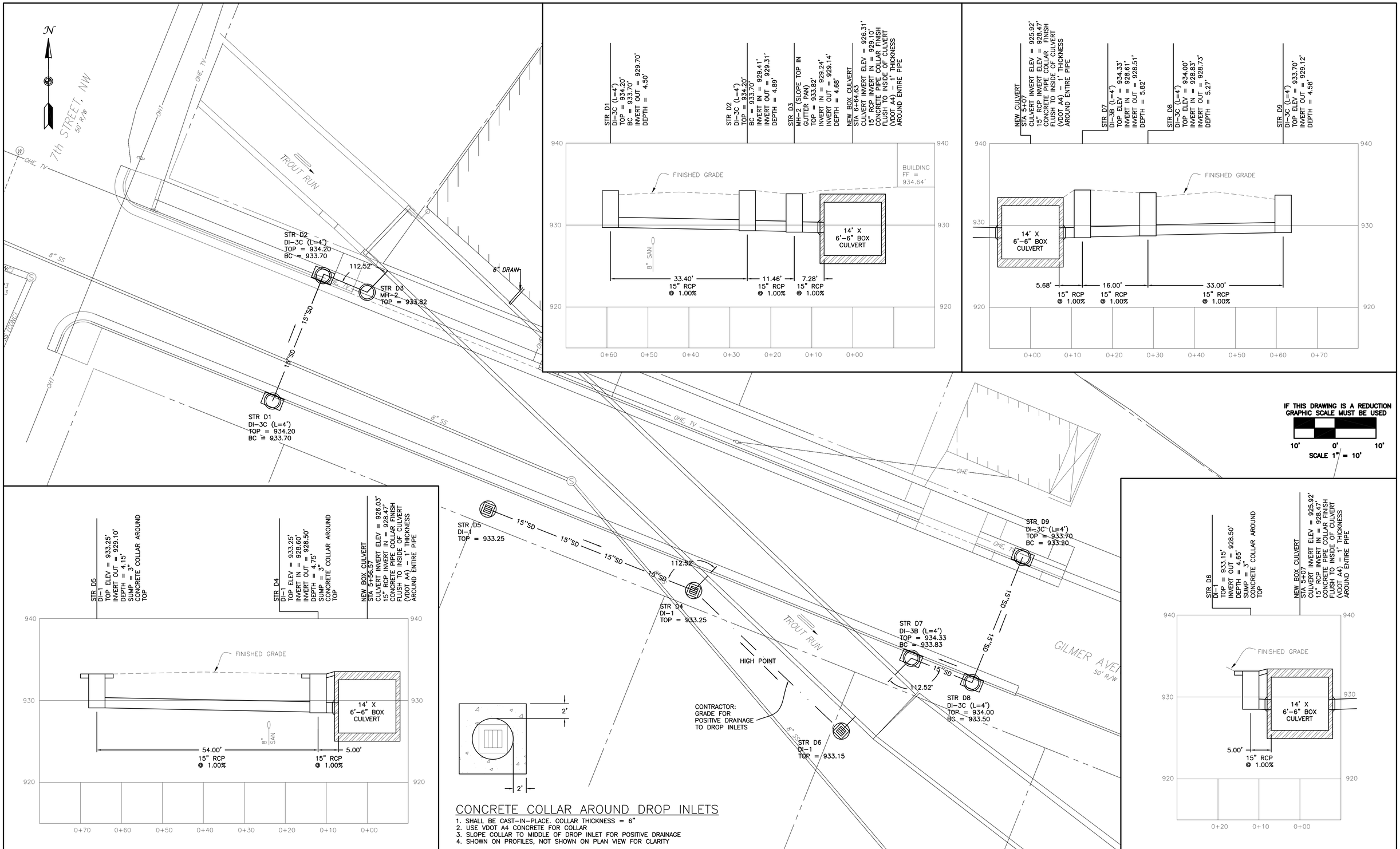
GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT

BOX CULVERT PLAN AND PROFILE

CITY OF ROANOKE, VIRGINIA

SHEET C3
6 OF 8

PLAN NO. 6820



IF THIS DRAWING IS A REDUCTION
GRAPHIC SCALE MUST BE USED

10' 0' 10'

SCALE 1" = 10'

CONCRETE COLLAR AROUND DROP INLETS

1. SHALL BE CAST-IN-PLACE. COLLAR THICKNESS = 6"
2. USE VDOT A4 CONCRETE FOR COLLAR
3. SLOPE COLLAR TO MIDDLE OF DROP INLET FOR POSITIVE DRAINAGE
4. SHOWN ON PROFILES, NOT SHOWN ON PLAN VIEW FOR CLARITY

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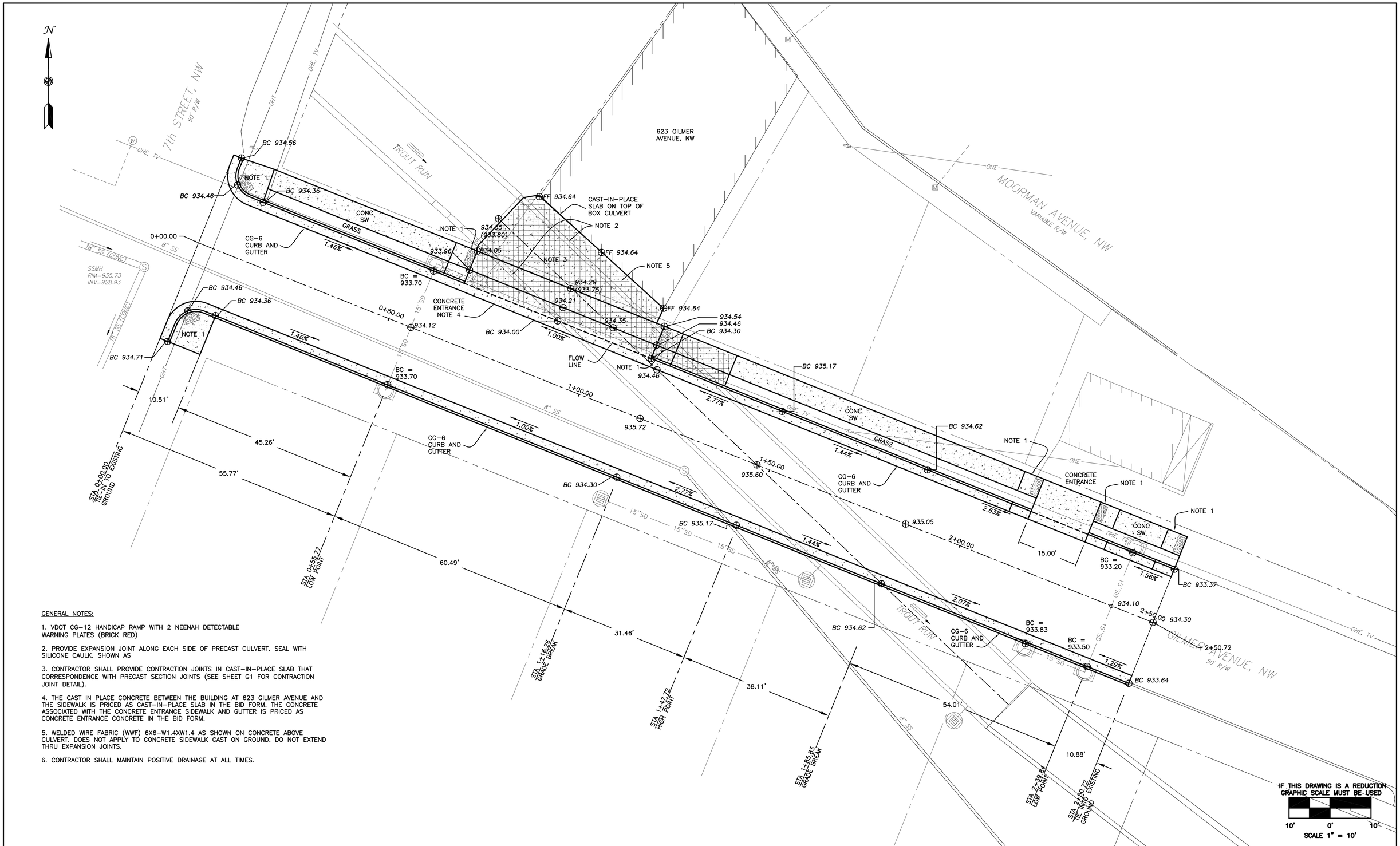
GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT

STORM DRAIN PLAN AND PROFILES

CITY OF ROANOKE, VIRGINIA

SHEET
C4
7 OF 8

PLAN NO.
6820



GENERAL NOTES:

1. VDOT CG-12 HANDICAP RAMP WITH 2 NEENAH DETECTABLE WARNING PLATES (BRICK RED)

2. PROVIDE EXPANSION JOINT ALONG EACH SIDE OF PRECAST CULVERT. SEAL WITH SILICONE CAULK. SHOWN AS

3. CONTRACTOR SHALL PROVIDE CONTRACTION JOINTS IN CAST-IN-PLACE SLAB THAT CORRESPONDENCE WITH PRECAST SECTION JOINTS (SEE SHEET G1 FOR CONTRACTION JOINT DETAIL).

4. THE CAST IN PLACE CONCRETE BETWEEN THE BUILDING AT 623 GILMER AVENUE AND THE SIDEWALK IS PRICED AS CAST-IN-PLACE SLAB IN THE BID FORM. THE CONCRETE ASSOCIATED WITH THE CONCRETE ENTRANCE SIDEWALK AND GUTTER IS PRICED AS CONCRETE ENTRANCE CONCRETE IN THE BID FORM.

5. WELDED WIRE FABRIC (WWF) 6X6-W1.4XW1.4 AS SHOWN ON CONCRETE ABOVE CULVERT. DOES NOT APPLY TO CONCRETE SIDEWALK CAST ON GROUND. DO NOT EXTEND THRU EXPANSION JOINTS.

6. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.

ROANOKE

OFFICE OF THE
CITY ENGINEER
215 CHURCH AVENUE, S.W.
ROOM 350
PHONE: (540) 853-2731
FAX: (540) 853-1364
WWW.ROANOKEVA.GOV

DESIGNED: LEP
DRAWN: LEP
CHECKED: PCS

COMMONWEALTH OF VIRGINIA
LUKE E. PUGH
Lic. No. 38798
4/11/16
PROFESSIONAL ENGINEER

REV.	DATE:	DESCRIPTION

DATE: 4/1/16

SCALE: AS SHOWN
24"x36" SHEET

GILMER AVENUE OVER TROUT RUN CULVERT REPLACEMENT
CURB, SIDEWALK AND ROAD GRADES PLAN VIEW
CITY OF ROANOKE, VIRGINIA

SHEET C5
8 OF 8

PLAN NO. 6820