

GRADING NOTES

- REFER TO BUILDING PLAN "BY OTHERS" FOR SUBGRADE AND UTILITY TRENCHES WITHIN 5' OF BUILDING ENVELOPE.
- REMOVE TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.
- BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.
- EXCAVATION FOR STRUCTURES:
 - CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT.
 - PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
 - REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
 - PROVIDE A MINIMUM OF 2'-0" FROM FINISHED GRADE TO TOP OF ALL EXTERIOR WALL FOOTINGS.
 - FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS AND HORIZONTAL DISTANCE BETWEEN STEPS IS NOT LESS THAN TWO FEET.
 - IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION, UNDERCUT IT A MINIMUM OF 12" BELOW THE BOTTOM OF THE FOOTINGS AND FILL THE RESULTING OVER-EXCAVATION WITH CONTROLLED FILL.
- CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.
- EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING. BACKFILL TRENCHES WITH CONTROLLED FILL.
- PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DUE TO STABILITY OF SUBGRADES AND FOUNDATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAIN WATER TO COLLECTING OR RUNOFF AREAS. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS FOR EACH STRUCTURE. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DITCHES.
- PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THAN 35°F (1°C).
- BACKFILLING:
 - COMPACT THE BACKFILL AROUND THE OUTSIDE OF EACH BUILDING TO A MINIMUM OF 85% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 STANDARD PROCTOR. DO NOT ALLOW HEAVY COMPACTION EQUIPMENT SUCH AS ROLLERS, ETC., CLOSER TO ANY FOOTING THAN THE HORIZONTAL DISTANCE SUBTENDED BY A 45° ANGLE WITH THE TOP EDGE OF THE FOOTINGS AND THE SURFACE OF THE GROUND.
 - BACKFILL BEHIND WALLS AFTER PERMANENT CONSTRUCTION WHICH BRACES THE WALL IS IN PLACE OR TEMPORARY BRACING OF THE WALL IS PROPERLY INSTALLED AND AFTER ACCEPTANCE OF CONSTRUCTION BELOW FINISH GRADE INCLUDING DAMP-PROOFING, REMOVAL OF CONCRETE FORMWORK, AND REMOVAL OF TRASH AND DEBRIS.
- UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING INCLUDING ADJACENT TRANSITION AREAS. SMOOTH FINISHED SURFACES WITHIN SPECIFIED TOLERANCES, COMPACT WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. GRADE AREAS ADJACENT TO BUILDING LINES TO DRAIN AWAY FROM STRUCTURES AND TO PREVENT PONDING.
- FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE, AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATION.
- GRADE SURFACE UNDER BUILDING SLABS SMOOTH AND EVEN, FREE OF VOIDS. PROVIDE FINAL GRADES WITHIN 1/2" OF THOSE INDICATED WHEN TESTED WITH A 10' STRAIGHT EDGE.
- PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, ERODED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.
- PLACE ALL FILL AND BACKFILL AS CONTROLLED FILL AS FOLLOWS:
 - ESTABLISH SUBGRADE CONDITIONS PRIOR TO PLACING FILL BY PROOFROLLING, UNDERCUTTING AND COMPACTING AS NECESSARY.
 - PLACE FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" FOR HAND TAMPERS.
 - PRIOR TO COMPACTION, PROVIDE MOISTURE CONTENT TO WITHIN 3% OF OPTIMUM BY MOISTENING OR AERATING EACH LAYER. DO NOT PLACE FILL MATERIAL ON SURFACES WHICH ARE MUDDY, FROZEN OR CONTAIN FROST OR ICE.
 - COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR):
 - 95% UNDER PAVEMENT
 - 85% UNDER LAWN OR UNPAVED AREAS
- SPREAD TOPSOIL TO A DEPTH OF 4" OVER ALL DISTURBED AREAS NOT RECEIVING WALKS, PAVEMENT, WALLS OR BUILDING, INCLUDING TRENCHES. IMMEDIATELY FOLLOWING PLACEMENT OF TOPSOIL, DISK THE ENTIRE TOPSOILED AREA AND RAKE FREE OF STONES AND DEBRIS OVER 1/2" IN ANY DIMENSION. PROVIDE A FINISHED SURFACE FREE OF DEPRESSIONS OR HIGH SPOTS. SEED IMMEDIATELY.
- OWNER (CONTRACTOR) SHALL EMPLOY QUALIFIED SOILS TESTING LABORATORY TO INSPECT EARTHWORK OPERATIONS. NOTIFY LABORATORY PRIOR TO PERFORMING EARTHWORK OPERATIONS.

PAVING NOTES

- SAW CUT EDGE OF EXISTING PAVEMENT WHERE NEW IS TO MEET EXISTING.
- PROVIDE SMOOTH TRANSITION FROM EXISTING TO NEW PAVEMENT AND CURB.
- THE PAVEMENT DESIGN SHOWN IS BASED ON A SUBGRADE RATING OF CBR 10 OR GREATER. SHOULD THE ACTUAL SUB GRADE CBR VALUES BE LESS THAN 10, AN ALTERNATE PAVEMENT DESIGN MUST BE APPROVED BY THE CITY OF COVINGTON.
- DO NOT LAY PAVEMENT BASE STONE UNTIL ALL UTILITIES, INCLUDING STORM SEWER, ARE IN PLACE.
- HEAVY DUTY PAVEMENT IN ALL TRAVELWAYS, DETAIL SHEET C5.
- GENERAL CONTRACTOR SHALL COORDINATE WITH THE SOILS ENGINEER TO TEST SUB GRADE TO DETERMINE APPROPRIATE PAVEMENT DESIGN.

STORM STRUCTURE CHART

| No. | DESCRIPTION | TOP | INV. IN | FROM | INV. OUT | TO |
|-----|---------------------|----------|---------|------|----------|--------|
| 1 | DI-3B L=6.0 | ON GRADE | 965.81 | 1 | 965.81 | C |
| C | 31LF-15"RCP@2.66% | 971.38 | 965.00 | C | 965.00 | E2 |
| E2 | EXIST. SDMH | 971.38 | 965.00 | C | 965.00 | EXIST. |
| 2 | DI-3C L=6.0 | 964.30 | - | - | 959.41 | B |
| B | 93LF-15"RCP@2.00% | 959.41 | 959.41 | 2 | 957.55 | 3 |
| 3 | DI-3B L=8.0 | 963.62 | 957.55 | B | 957.45 | A |
| A | 58LF-15"RCP@10.71% | 957.45 | 957.45 | 3 | 951.45 | E2 |
| E2 | EXIST. SD STRUCTURE | 956.45 | 951.45 | A | 933.70 | EXIST. |

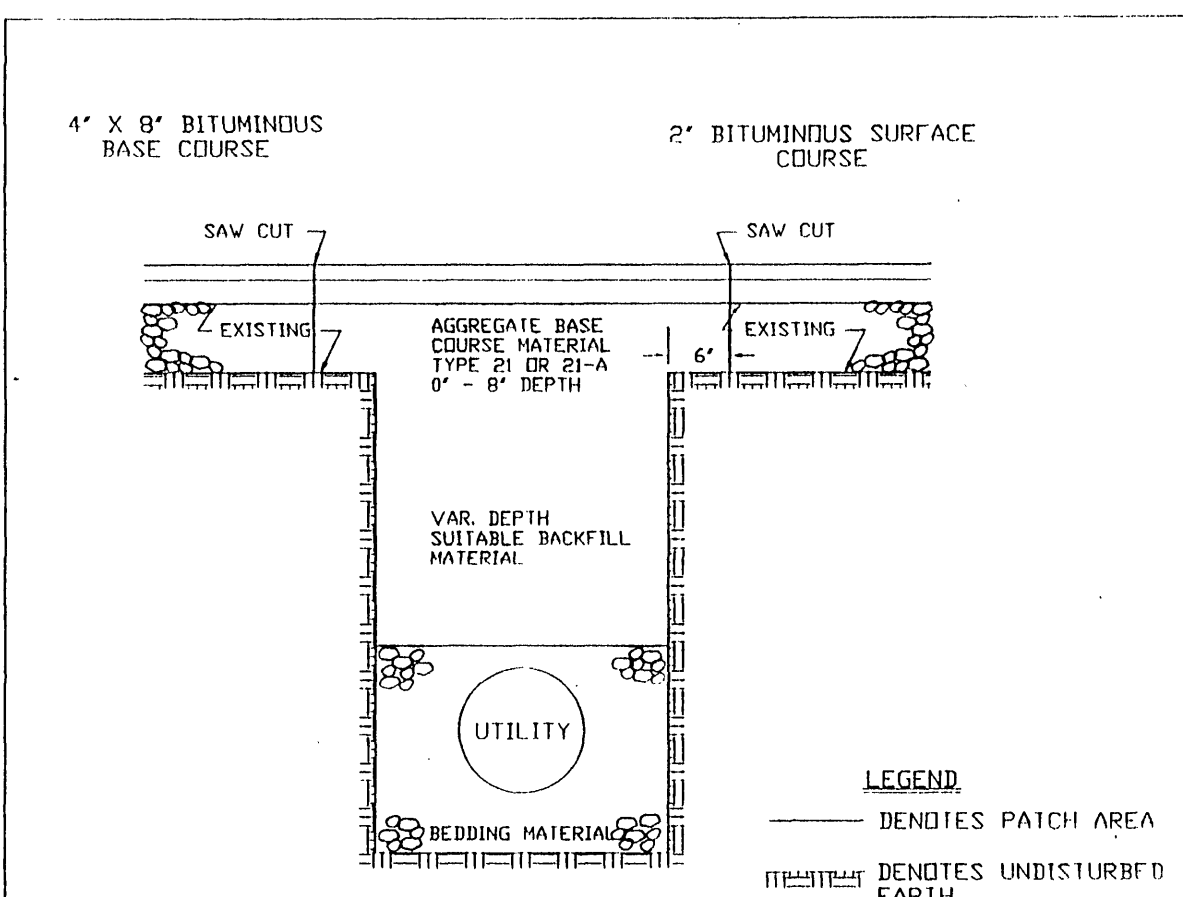
EROSION & SEDIMENT CONTROL NOTES

- PROVIDE CONSTRUCTION MATERIALS AND METHODS IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS, INCLUDING THE STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION. REFER TO THIS HANDBOOK FOR DETAILS AND SPECIFICATIONS OF EROSION CONTROL DEVICES.
- SCHEDULE A PRECONSTRUCTION MEETING INVOLVING THE ENGINEER, DEVELOPER'S REPRESENTATIVE AND SELECTED CONTRACTOR ON SITE PRIOR TO BEGINNING CONSTRUCTION.
- ADHERE TO THE EROSION AND SEDIMENT CONTROL NARRATIVE AS PART OF THIS CONTRACT. INSTALL EROSION CONTROL DEVICES AS PER THE NARRATIVE/PLAN.
- NOTIFY THE PROJECT ENGINEER WHEN THE LOCAL GOVERNING OFFICIAL HAS INSPECTED AND APPROVED ALL IN-PLACE EROSION AND SEDIMENT CONTROL DEVICES, REQUIRED BY LOCAL ORDINANCES TO BE IN PLACE PRIOR TO LAND DISTURBANCE.
- NOTIFY THE PROJECT ENGINEER 24 HOURS IN ADVANCE OF BEGINNING CLEARING AND GRADING OPERATIONS.
- DISPOSE OF EXCESS EXCAVATION, AS WELL AS ALL ORGANIC MATTER AND DEBRIS, OFF SITE.
- SEED AND MULCH OR TEMPORARILY STABILIZE ALL DENuded AREAS WITHIN SEVEN DAYS OF DISTURBANCE. SEED TRENCHES IMMEDIATELY FOLLOWING BACKFILL.
- REMOVE ALL DEMOLISHED MATERIAL FROM THE PROJECT SITE AND DISPOSE OF IN AN ACCEPTABLE LOCATION.
- REINSTALL ANY STRUCTURE(S) RELOCATED AND/OR REMOVED DURING THE INSTALLATION OF THE PROPOSED IMPROVEMENTS AT NO ADDITIONAL COST TO OWNER.
- INSPECT ESC MEASURES WEEKLY AND AFTER EACH RAINFALL TO INSURE PROPER FUNCTIONING.
- AVOID CONSTRUCTION TRAFFIC IN NATURAL STREAMS AND DRAINAGE WAYS WHENEVER POSSIBLE.
- REMOVE ALL SILT FROM STREAMS AND DRAINAGE WAYS PRIOR TO BOND RELEASE.

NOTICE: ALL LANDOWNERS, DEVELOPERS AND CONTRACTORS
FAILURE TO COMPLY WITH THE CONSTRUCTION PROCEDURE REQUIREMENTS LISTED BELOW MAY RESULT IN THE COSTLY REMOVAL OF STRUCTURES, TIME DELAYS, OR THE ISSUANCE OF A STOP WORK ORDER.

CONSTRUCTION PROCEDURE REQUIREMENTS

- CITY INSPECTIONS: TO ENSURE THE COORDINATION OF TIMELY AND PROPER INSPECTIONS, A PRECONSTRUCTION CONFERENCE SHALL BE INITIATED BY THE CONTRACTOR WITH THE CITY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT. CALL 540/853-2250 TO ARRANGE A CONFERENCE AT LEAST THREE (3) DAYS PRIOR TO ANTICIPATED CONSTRUCTION.
- STREET OPENING PERMIT: PRIOR TO THE COMMENCEMENT OF ANY DIGGING, ALTERATIONS, OR CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY (STREETS, ALLEYS, PUBLIC EASEMENTS) A STREET OPENING PERMIT SHALL BE APPLIED FOR AND OBTAINED BY THE CONTRACTOR FROM THE CITY OF ROANOKE.
- PLANS AND PERMITS: A COPY OF THE PLANS APPROVED BY THE CITY (SIGNED BY THE PROPER CITY OFFICIALS) AND ALL PERMITS ISSUED BY THE CITY SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES OF ONGOING CONSTRUCTION.
- LOCATION OF UTILITIES: THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
- CONSTRUCTION ENTRANCE: THE CONTRACTOR SHALL INSTALL AN ADEQUATE CONSTRUCTION ENTRANCE FOR ALL CONSTRUCTION-RELATED EGRESS FROM THE SITE. SIZE AND COMPOSITION OF CONSTRUCTION ENTRANCE SHALL BE DETERMINED BY THE CITY SITE PLAN INSPECTOR.
- STREETS TO REMAIN CLEAN: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE PUBLIC STREET ADJACENT TO THE CONSTRUCTION ENTRANCE REMAINS FREE OF MUD, DIRT, DUST, AND/OR ANY TYPE OF CONSTRUCTION MATERIALS OR LITTER AT ALL TIMES.
- BARRICADES/DITCHES: THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL EXCAVATED DITCHES AND SHALL FURNISH AND ENSURE THAT ALL BARRICADES PROPER AND NECESSARY FOR THE SAFETY OF THE PUBLIC ARE IN PLACE.
- SEWER AND PAVEMENT REPLACEMENT: CONSTRUCTION OF SANITARY SEWERS AND THE REPLACEMENT OF PAVEMENT SHALL BE IN ACCORDANCE WITH APPROVED STANDARDS AND SPECIFICATIONS OF THE CITY OF ROANOKE.
- APPROVED PLANS/CONSTRUCTION CHANGES: ANY CHANGE OF VARIATION FROM CONSTRUCTION DESIGN AS SHOWN ON THE OFFICIALLY APPROVED PLANS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO SAID CHANGES OR VARIATIONS IN CONSTRUCTION BEING MADE.
- FINAL ACCEPTANCE/CITY: THE DEVELOPER OR CONTRACTOR SHALL FURNISH THE CITY OF ROANOKE ENGINEERING DEPARTMENT WITH A FINAL CORRECT SET OF AS-BUILT PLANS PRIOR TO FINAL ACCEPTANCE BY THE CITY.



- NOTES:
- Surface and base replacement will generally be required to match existing against layers and shall be compacted in lifts according to Virginia Department of Transportation Road and Bridge Specifications.
 - Aggregate base material shall be replaced to a depth greater than existing stone base to ensure load bearing capacity of cut related to undisturbed earth areas. Aggregate base shall be compacted according to Virginia Department of Transportation Road and Bridge Specifications.
 - Bedding material shall be according to requirement of each utility. Generally from bottom of repair ditch to six inches above pipe with minimum of four inches below pipe.
 - Saw cut to be made with mechanical saw and sides to be tacked with bituminous material type RC-250 or equal.
 - Street opening permit required before any work in public street right-of-way. Contact City Building Department for permit, Phone (981-2822).
 - Contact City Engineering Inspector 48 hours prior to beginning any work, Phone (981-2856).

OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA
APPROVED: CITY ENGINEER
DATE: TYPICAL DETAIL PAVEMENT CUTTING AND REPLACEMENT
SHEET 3 OF 7

APPROXIMATE LOCATION
10' GAS LINE ESMT
DB 289 PG 97

TOWERS APARTMENTS ASSOC.
TM 1270116
ZONE RM-2

Water Main
380'-6" water Main

Contractor:
Breakell & Co. (mole)
Bill Ziegler-580-6700

Started 7-12-99
Completed 7-18-99

Tested 7-19-99
1st sample 7-21-99
2nd sample 7-22-99
Samples Good 7-26-99

DAVID L. WICKERSHAM
TM 1270119-20
ZONE RM-2

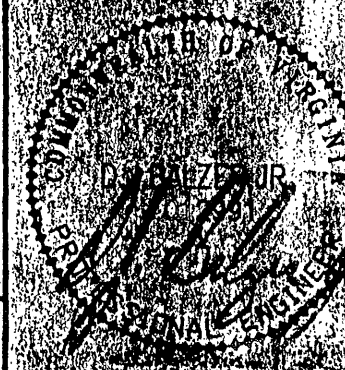
GRADING & EROSION CONTROL PLAN

SCALE: 1"=30'

Towers Mall Theater Site
2017-2021 Colonial Ave S.W.

(1"=125,126)

Water Dept Plan #99-02



BALZAR
AND ASSOCIATES
INC.

REGISTERED TO MORGAN
SURVEYING

1208 Corporate Center
Roanoke, Virginia 24018
Phone 540/772-2881
Fax 540/772-2881

501 E. Main Street
Roanoke, Virginia 24018
Phone 540/772-2881
Fax 540/772-2881

11088 Lakeside Parkway
Suite 100
Roanoke, Virginia 24018
Phone 540/772-2881
Fax 540/772-2881

TOWERS THEATER SITE
GRADING & EROSION CONTROL
ROANOKE, VIRGINIA

DRAWN BY: JMSU
DESIGNED BY: JCG
CHECKED BY: DJB
DATE: MAR 10 1999

REVISIONS:
APR 1 1999

SCALE: 1"=30'

SHEET NO.

C4

JOB NO.

P98181