

SITE INFORMATION:

TAX MAP#: 267-1-1  
 INST#: 050006165  
 OWNER/DEVELOPER:  
 CITY OF LYNCHBURG  
 ATTN: LEE NEWLAND P.E.  
 900 CHURCH STREET  
 LYNCHBURG, VA 24504  
 434-455-3900

ZONING: R-2C & B-3C  
 ACRES: 343.495  
 USE: VACANT COMMERCIAL

GENERAL NOTES:

- G1.) THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES THAT OCCUR BY HIS/HER FAILURE TO LOCATE OR PRESERVE THESE UTILITIES. IF, DURING CONSTRUCTION, THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS HE/SHE SHOULD NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUANCE OF SERVICE.
- G2.) ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY DISCREPANCIES OR AMBIGUITIES IN THE DRAWINGS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER. WORK DONE BY THE CONTRACTOR WITHOUT DIRECTION AFTER THE DISCOVERY OF SUCH INCONSISTENCIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- G3.) ALL CONSTRUCTION SHALL CONFORM TO CITY OF LYNCHBURG AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS. CONSTRUCTION OF SANITARY SEWER AND WATER SERVICES SHALL CONFORM TO THE VIRGINIA DEPARTMENT OF HEALTH & CITY OF LYNCHBURG STANDARDS AND SPECIFICATIONS.
- G4.) ALL CONSTRUCTION SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS & WITH THE 2009 UNIFORM STATEWIDE BUILDING CODE (USBC) AND ICC/ANSI A117.1 2003.
- G5.) CONSTRUCTION LIMITS SHALL BE PROPERTY LINES OR AS INDICATED ON THE PLAN.
- G6.) ALL FINAL GRADING, SEEDING, SODDING AND/OR PAVING SHALL BE DONE IN SUCH A MANNER TO PRECLUDE PONDING OF WATER ON THE SITE.
- G7.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS BEFORE THE START OF CONSTRUCTION.
- G8.) THE CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-552-7001) 48 HOURS PRIOR TO EXCAVATION.
- G9.) THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL, TELEPHONE AND CATV SERVICES.
- G10.) DISPOSE OF TREES, STUMPS AND OTHER DEBRIS OFF SITE.
- G11.) ALL MATERIALS USED FOR FILL SHALL BE FREE OF UNSUITABLE MATERIALS SUCH AS WOOD, ROOTS, FROZEN MATERIAL, ROCKS OR BOULDERS OF UNACCEPTABLE SIZE OR ANY OTHER NON-COMPACTING SOIL MATERIALS.
- G12.) A PERMIT MUST BE SECURED FROM THE CITY OF LYNCHBURG BEFORE ANY WORK IS PERFORMED IN A STATE RIGHT-OF-WAY.
- G13.) THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO TRAVELING ON A PUBLIC RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS AND TO ALLAY DUST AND TAKE ALL MEASURES NECESSARY TO ENSURE THAT THE ROAD IS MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES DURING CONSTRUCTION.
- G14.) DIMENSIONS ARE FROM THE FACE OF CURB UNLESS OTHERWISE NOTED.
- G15.) PAINT HANDICAPPED SYMBOL ON PARKING SPACES WHERE SHOWN ON DRAWINGS. TRAFFIC MARKINGS FOR HANDICAP PARKING SPACES AND ACCESSIBLE AREAS SHALL BE BLUE. TRAFFIC MARKINGS SHALL BE IN CONFORMANCE WITH THE LATEST VIRGINIA DEPARTMENT OF TRANSPORTATION AND THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES STANDARDS AND SPECIFICATIONS.
- G16.) TRAFFIC CONTROL SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE VIRGINIA WORK AREA PROTECTION MANUAL AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- G17.) ALL FILLS TO BE COMPACTED IN 8" LOOSE LIFTS TO 98% STD. PROCTOR.
- G18.) EXISTING SLOPES GREATER THAN 4:1 SHALL BE BENCHMARKED PRIOR TO PLACEMENT OF FILL.
- G19.) CONTRACTOR WILL COMPLETE ALL SITE WORK: FINAL GRADING, LANDSCAPING, SEEDING, PAVING, AND REMOVAL OF DEBRIS.
- G20.) THIS PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT NECESSARILY INDICATE ALL ENCUMBRANCES ON THE PROPERTY.
- G21.) NOT USED.
- G22.) BOUNDARY INFORMATION FROM A FIELD SURVEY BY PERKINS & ORRISON.
- G23.) TOPOGRAPHIC INFORMATION FROM A FIELD SURVEY BY PERKINS & ORRISON.
- G24.) PIPE BEDDING SHALL BE PER APPLICABLE VDOT STANDARDS UNLESS OTHERWISE NOTED.
- G25.) HDPE PIPE SHALL BE DOUBLE WALL TYPE "B" WITH SMOOTH INTERIOR AND MEET AASHTO REQUIREMENTS M294. HDPE PIPE BEDDING SHALL BE PER MANUFACTURER'S SPECIFICATION.
- G26.) PLASTIC PIPE SHALL CONFORM TO CITY SPECIFICATIONS TO BE POLYPROPYLENE PIPE TO MATCH ASTM F2736-10 AND ASTM F2764

EROSION AND SEDIMENT CONTROL GENERAL NOTES

- ES-1) UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.
- ES-2) THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3) A LAND DISTURBANCE PERMIT IS REQUIRED PRIOR TO INITIATING ANY SITE WORK.
- ES-4) A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5) THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ES-6) PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE LOCAL PLAN APPROVING AUTHORITY.
- ES-7) EROSION AND SEDIMENT CONTROLS SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY. EARTHEN STRUCTURES SHALL BE SEED IMMEDIATELY UPON INSTALLATION.
- ES-8) PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- ES-9) ALL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- ES-10) A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- ES-11) THE ROADWAY SHALL BE STABILIZED BY THE APPLICATION OF STONE BASE UPON REACHING FINAL GRADE. CHECK DAMS SHALL BE INSTALLED IN ALL DITCHES IMMEDIATELY UPON THE GRADING IN OF SAME.
- ES-12) CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
- ES-13) CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.
- ES-14) ALL STORM INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT LADEN WATER CANNOT ENTER THE STORM WATER CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- ES-15) WHEN INSTALLING UTILITY LINES, NO MORE THAN 500 FEET OF TRENCH MAY BE OPEN AT ONE TIME, AND EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF

TRENCHES.

- ES-16) ALL RIP-RAP SHALL BE INSTALLED OVER FILTER FABRIC.
- ES-17) DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-18) ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-19) SILT FENCE, SILT TRAP AND CHECK DAMS SHALL BE CLEANED OUT WHEN SEDIMENT REACHES ONE HALF THE HEIGHT OF THE BARRIER AND WHENEVER DIRECTED BY THE COUNTY EROSION AND SEDIMENT CONTROL OFFICIAL. SEDIMENT SHALL BE IMMEDIATELY STABILIZED UP GRADIENT OF EROSION AND SEDIMENT CONTROL MEASURES.
- ES-20) ALL MEASURES SHALL BE UTILIZED AND CONTINUOUSLY MAINTAINED DURING THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AND DENUDED AREAS ARE STABILIZED. NO AREA SHALL REMAIN DENUDED FOR MORE THAN THREE CALENDAR DAYS WHEN CONSTRUCTION IS NOT IN PROGRESS.
- ES-21) THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ALL NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
- ES-22) ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION, OR AFTER THE MEASURES ARE NO LONGER NEEDED.
- ES-23) THE MAXIMUM SPACING BETWEEN THE CHECK DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATIONS THE TOP OF THE DOWNSTREAM DAM. REFERENCE PLATE 3.20-2.

SEEDING

SEEDS SHALL BE SCARIFIED INTO THE TOP 2" OF THE TOP SOIL, IF APPLIED BY HAND. SEEDING BY HYDRO SEEDING SHALL BE IN ACCORDANCE WITH VDOT SPECIFICATIONS.

TEMPORARY SEEDING RATES PER ACRE:

- SEPTEMBER 1 TO FEBRUARY 15:  
 40 LBS. ANNUAL RYE  
 40 LBS. CEREAL WINTER RYE  
 FEBRUARY 15 TO APRIL 30:  
 60 LBS ANNUAL RYE  
 MAY 1 TO AUGUST 31  
 50 LBS. GERMAN MILLET

PERMANENT SEEDING RATES PER ACRE:

- STANDARD SEEDING RATES FOR ALL SEASONS:  
 (GENERAL SLOPE LESS THAN 3:1)  
 126 LBS. KENTUCKY 31 FESCUE  
 20 LBS. OTHER

STANDARD SEEDING RATES FOR ALL SEASONS

- (GENERAL SLOPE 3:1 OR GREATER)  
 108 LBS. KENTUCKY 31 FESCUE  
 20 LBS. CROWN VETCH  
 20 LBS. OTHER

OTHER:

- MARCH 1 TO MAY 15 ANNUAL RYE  
 MAY 16 TO AUGUST 15 FXTAIL MILLET  
 AUGUST 16 TO OCTOBER 31 ANNUAL RYE  
 NOVEMBER 1 TO FEBRUARY 28 WINTER RYE

ALL SEASONS:

- FERTILIZER 1000 LBS. 10-20-10  
 LIME 2 TONS  
 MULCH 2 TONS THRASHED WHEAT STRAW

EC-2 EROSION BLANKET (VESCH TREATMENT ONE). GENERALLY NOT USED IN DITCHES WITH A VELOCITY OF OVER 4 FPS.

EC-2 SOIL RETENTION MATS SHALL CONSIST OF A MACHINE PRODUCED MAT OF WOOD EXCELSDIOR OR MANMADE FIBER THAT SHALL INTERTWINE OR INTERLOCK. MATS SHALL BE OF CONSISTENT THICKNESS WITH FIBER EVENLY DISTRIBUTED OVER ITS ENTIRE AREA AND COVERED ON THE TOP AND BOTTOM SIDE WITH NETTING HAVING A HIGH WEB STRENGTH (NOT GLUED BUT MACHINE SEWN).

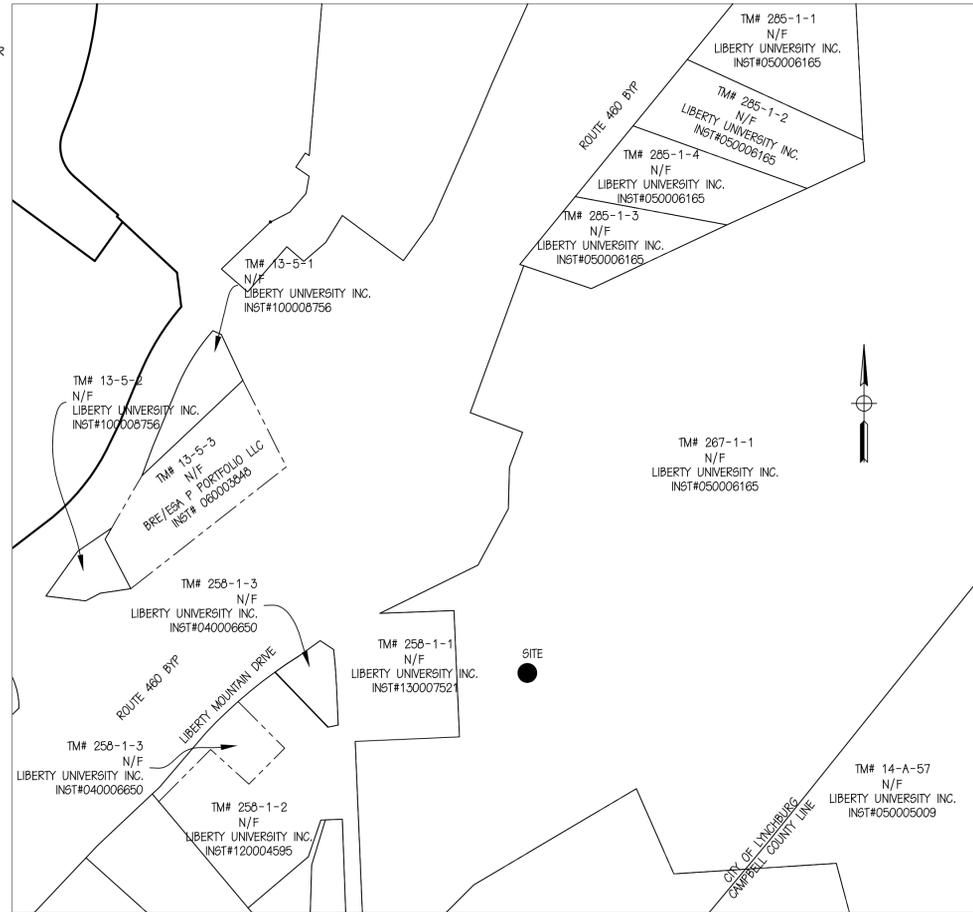
EC-3 EROSION BLANKETS (VESCH TREATMENT TWO) CAN BE USED IN DITCHES FROM 4 TO 10 FPS.

EC-3 EROSION BLANKETS MUST BE A THREE DIMENSIONAL GEOMATRIX OF UV STABILIZED NYLON, POLYETHYLENE OR POLYPROPYLENE SEWN WITH UV STABILIZED POLYESTER THREAD TO FORM A MAT. NAG C350 OR P300, MIMOMAT HEAVYWEIGHT AND ENKAMAT 7012 ARE SOME OF THE PRODUCTS THAT FIT THIS DESCRIPTION.

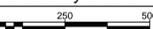
# LIBERTY UNIVERSITY

## LIBERTY MOUNTAIN DRIVE EXTENSION AT THE NORTHERN INTRAMURAL FIELDS LYNCHBURG, VIRGINIA

### RWS PROJECT # 14018-RW



Location Map and Boundary Insert



- CONTACT THE CITY ENVIRONMENTAL REVIEWER, THE CITY CONSTRUCTION COORDINATOR AND MISS UTILITY 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.
- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS.

DESIGNER:

RUSSELL H. ORRISON, PE  
 PERKINS & ORRISON  
 17 W. NELSON STREET  
 LEXINGTON, VA 24450  
 540-464-9001  
 rorrison@perkins-orrison.com

SHEET INDEX

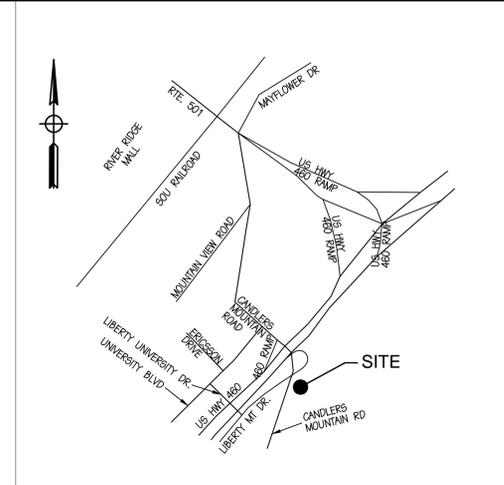
- OF 17 COVER SHEET
- OF 17 EXISTING CONDITIONS
- OF 17 ROAD PLAN & PROFILE
- OF 17 ROAD PLAN & PROFILE
- OF 17 ROAD NOTES & DETAILS
- OF 17 STRIPING PLAN
- OF 17 ROAD CROSS SECTIONS
- OF 17 ROAD CROSS SECTIONS
- OF 17 CANDLERS MOUNTAIN ROAD SIDEWALK ADD ALTERNATE
- OF 17 RETAINING WALL PLAN & DETAILS
- OF 17 STREET LIGHTING & LANDSCAPING PLAN
- OF 17 PHASE 1 EROSION & SEDIMENT CONTROL PLAN
- OF 17 PHASE 2 EROSION & SEDIMENT CONTROL PLAN
- OF 17 EROSION & SEDIMENT CONTROL NOTES & DETAILS
- OF 17 DETAILS
- OF 17 DRAINAGE DIVIDES
- OF 17 DRAINAGE DIVIDES

I HEREBY CERTIFY THAT, TO THE BEST OF MY ABILITY, THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS AND CITY CODE.

SIGNATURE \_\_\_\_\_ REGISTRATION NO. \_\_\_\_\_  
 PRINTED NAME AND TITLE \_\_\_\_\_ DATE \_\_\_\_\_

I/WE HEREBY CERTIFY THAT ALL SITE CONSTRUCTION, DRAINAGE AND GRADING WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF LYNCHBURG, THE COMMONWEALTH OF VIRGINIA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE A PART OF THIS PLAN

SIGNATURE \_\_\_\_\_ TITLE \_\_\_\_\_  
 PRINTED NAME \_\_\_\_\_ DATE \_\_\_\_\_



VICINITY MAP NO SCALE

EXISTING	DESCRIPTION	NEW	FUTURE
[Symbol]	BUILDING WALL	[Symbol]	[Symbol]
[Symbol]	CONC. WALKS	[Symbol]	[Symbol]
[Symbol]	CONTOURS	[Symbol]	[Symbol]
[Symbol]	SPOT ELEVATION	[Symbol]	[Symbol]
[Symbol]	STORM SEWER	[Symbol]	[Symbol]
[Symbol]	SANITARY SEWER & MANHOLES	[Symbol]	[Symbol]
[Symbol]	WATER LINE, VALVE & FIRE HYDRANT	[Symbol]	[Symbol]
[Symbol]	WATER METER	[Symbol]	[Symbol]
[Symbol]	DUAL WATER METER	[Symbol]	[Symbol]
[Symbol]	FENCE	[Symbol]	[Symbol]
[Symbol]	UNDERGROUND ELECTRIC LINE	[Symbol]	[Symbol]
[Symbol]	OVERHEAD ELECTRIC LINE	[Symbol]	[Symbol]
[Symbol]	GAS LINE	[Symbol]	[Symbol]
[Symbol]	UNDERGROUND COMM LINE	[Symbol]	[Symbol]
[Symbol]	EDGE OF PAVEMENT	[Symbol]	[Symbol]
[Symbol]	CURB (CG-2)	[Symbol]	[Symbol]
[Symbol]	CURB AND GUTTER (CG-6)	[Symbol]	[Symbol]
[Symbol]	REVERSE CURB AND GUTTER (CG-6R)	[Symbol]	[Symbol]
[Symbol]	TRANSITION CURB	[Symbol]	[Symbol]
[Symbol]	PROPERTY LINE	[Symbol]	[Symbol]
[Symbol]	TREELINE	[Symbol]	[Symbol]
[Symbol]	EXISTING TREES TO BE PROTECTED & PRESERVED	[Symbol]	[Symbol]

ABBREVIATIONS

AB	ANCHOR BLOCK	MAX	MAXIMUM
BLDG	BUILDING	MECH	MECHANICAL
BC	BOTTOM FACE OF CURB	MH	MANHOLE
BM	BENCHMARK	MIN	MINIMUM
CL	CENTERLINE	MON	MONUMENT
CL	CLASS	OC	ON CENTER
CMP	CORRUGATED METAL PIPE	PVC	BEGN VERTICAL CURVE
CO	CLEANOUT	PVC	POLYVINYL CHLORIDE
COMM	COMMUNICATION	PVT	END VERTICAL CURVE
CONC	CONCRETE	RCP	REINFORCED CONCRETE PIPE
DI	DROP INLET	SD	STORM DRAINAGE
DIA	DIAMETER	SHT	SHEET
DIP	DUCTILE IRON PIPE	STR	STRUCTURE
EA	EACH	SW	SIDEWALK
EC	EROSION CONTROL	TAN	TANGENT
ELEC	ELECTRICAL	TB	CONCRETE THRUST BLOCK
ELEV	ELEVATION	TBM	TEMPORARY BENCH MARK
EP	EDGE OF PAVEMENT	TBR	TO BE REMOVED
ES	END SECTION	TBR*	TO BE REMOVED OR RELOCATED
EX	EXISTING	TO	TOP
FB	FACE OF BUILDING	TOC	TOP OF CURB
FF	FINISHED FLOOR ELEVATION	TOW	TOP OF WALL
FH	FIRE HYDRANT	TP	TELEPHONE POLE
GV	GATE VALVE	TR	TOP OF RIM
HB	HORIZONTAL BEND	TYP	TYPICAL
HD	HEAVY DUTY	VB	VERTICAL BEND
HDPE	HIGH DENSITY POLYETHYLENE	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
		WL	WATER LINE
		WM	WATER METER
		WWF	WELDED WIRE FABRIC
		WWM	WELDED WIRE MESH
		W	WITH
		WW	WATER VALVE

ESC/SHM ADMINISTRATOR: \_\_\_\_\_ DATE: \_\_\_\_\_

**PERKINS & ORRISON**  
 ENGINEERS ▲ PLANNERS ▲ SURVEYORS

27 GREEN HILL DRIVE, FOREST, VIRGINIA 24551  
 PHONE: 434-525-5985 FAX: 434-525-5986  
 EMAIL: pro@perkins-orrison.com

PO BOX 1567 17 W. NELSON STREET LEXINGTON, VIRGINIA 24450  
 PHONE: 540-464-9001 FAX: 540-464-9009  
 EMAIL: pro@perkins-orrison.com

CONSULTANTS

SEAL:



JOB:

CITY OF LYNCHBURG  
 LIBERTY MOUNTAIN DRIVE  
 EXTENSION AT THE NORTHERN  
 INTRAMURAL FIELDS  
 LYNCHBURG, VIRGINIA

CLIENT:

CITY OF LYNCHBURG  
 ATTN: LEE NEWLAND P.E.

MARK	DATE	DESCRIPTION
2	06/23/15	PER CITY/OWNER/AEP COMMENTS
1	05/12/15	PER CITY/AEP COMMENTS

ISSUE: 10/07/2014

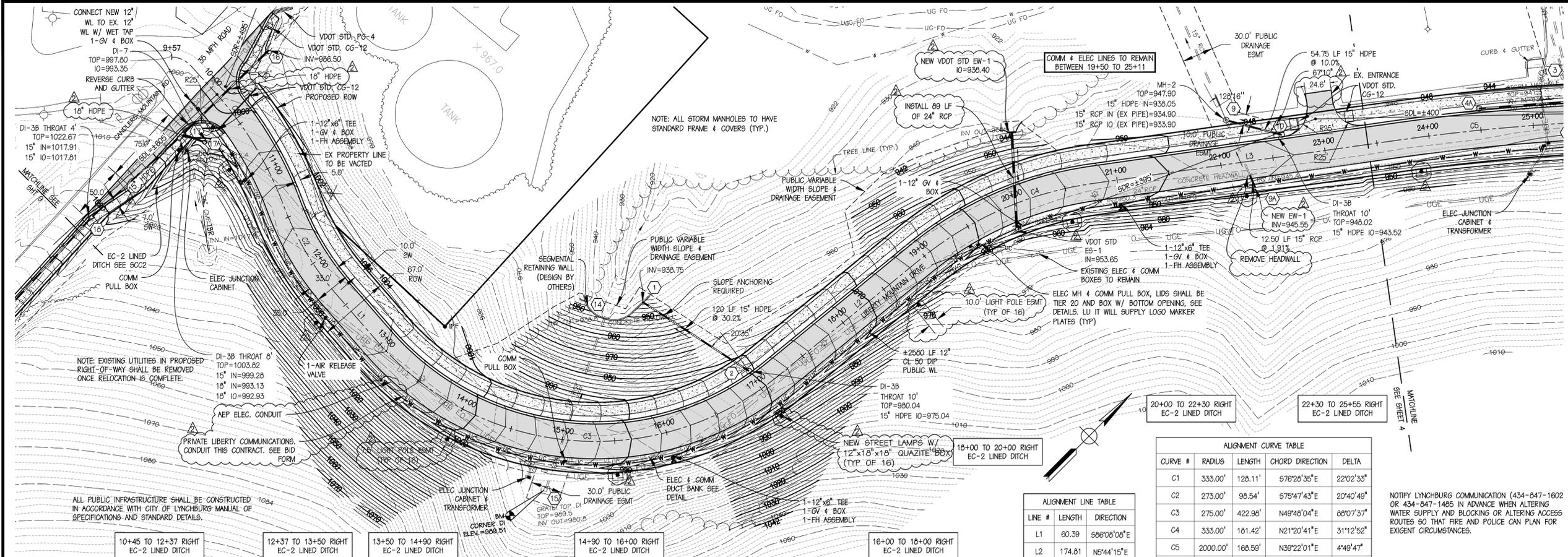
CONTOUR INTERVAL: -  
 DESIGNED BY: -  
 DRAWN BY: PWS  
 CHECKED BY: RHO

SHEET TITLE

COVER SHEET

RWS PROJECT # 14018-RW





**LIBERTY MOUNTAIN DRIVE (PUBLIC)**  
AASHTO URBAN COLLECTOR - 30 MPH DESIGN SPEED

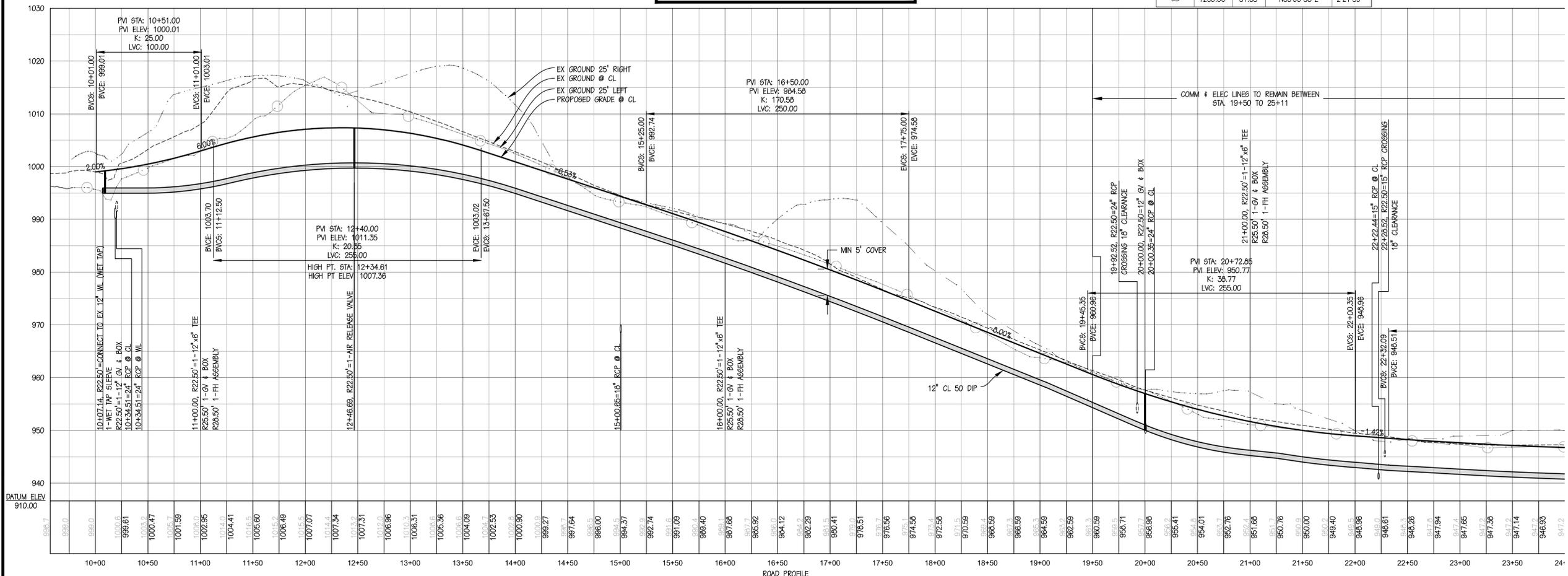
ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	60.39	S68°08'08"E
L2	174.61	N5°44'15"E
L3	293.70	N36°57'07"E
L4	619.39	N40°11'56"E

ALIGNMENT CURVE TABLE

CURVE #	RADIUS	LENGTH	CHORD DIRECTION	DELTA
C1	333.00'	128.11'	S76°28'36"E	22°02'33"
C2	273.00'	98.54'	S75°47'43"E	20°40'49"
C3	275.00'	422.98'	N49°48'04"E	88°07'37"
C4	333.00'	161.42'	N21°20'41"E	31°12'52"
C5	2000.00'	168.59'	N39°22'01"E	44°49'47"
C6	4500.00'	177.15'	N40°39'14"E	21°52'20"
C7	9190.00'	271.68'	N38°40'45"E	1°41'36"
C8	1250.00'	51.63'	N39°00'56"E	2°21'59"

NOTIFY LYNCHBURG COMMUNICATION (434-847-1602 OR 434-847-1485 IN ADVANCE WHEN ALTERING WATER SUPPLY AND BLOCKING OR ALTERING ACCESS ROUTES SO THAT FIRE AND POLICE CAN PLAN FOR EXIGENT CIRCUMSTANCES.



27 GREEN HILL DRIVE, FOREST, VIRGINIA 24551  
PHONE: 434-525-5985 FAX: 434-525-9986  
EMAIL: pro@perkins-orrison.com

PO BOX 1567 17 W. NELSON STREET LEXINGTON, VIRGINIA 24450  
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ISSUE: 10/07/2014

CONTOUR INTERVAL: 2'

DESIGNED BY: RHO/GW

DRAWN BY: PWS

CHECKED BY: RHO

SHEET TITLE

ROAD PLAN & PROFILE



CITY ENGINEER: DATE:

UTILITIES ENGINEER: DATE:

PROJECT # 14018-RW

CONSULTANTS

SEAL:  
  
RUSSELL H. ORRISON  
Lic. No. 031849  
06/23/2015  
PROFESSIONAL ENGINEER

JOB:  
CITY OF LYNCHBURG  
LIBERTY MOUNTAIN DRIVE  
EXTENSION AT THE NORTHERN  
INTRAMURAL FIELDS  
LYNCHBURG, VIRGINIA

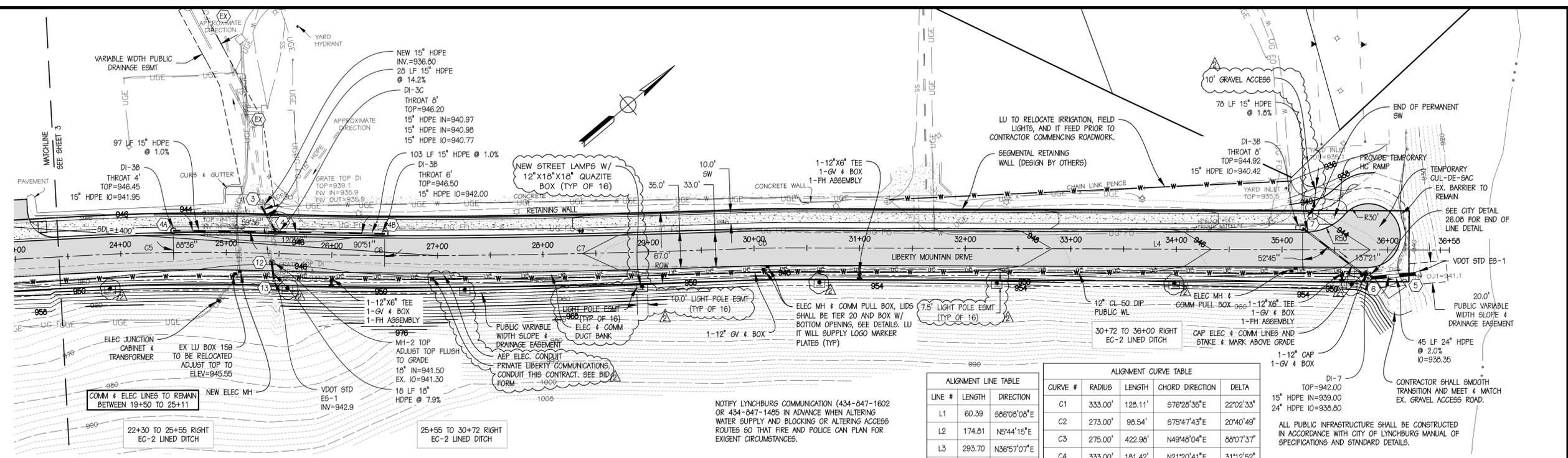
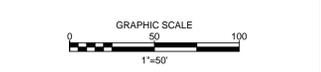
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SHEET TITLE

ROAD PLAN & PROFILE

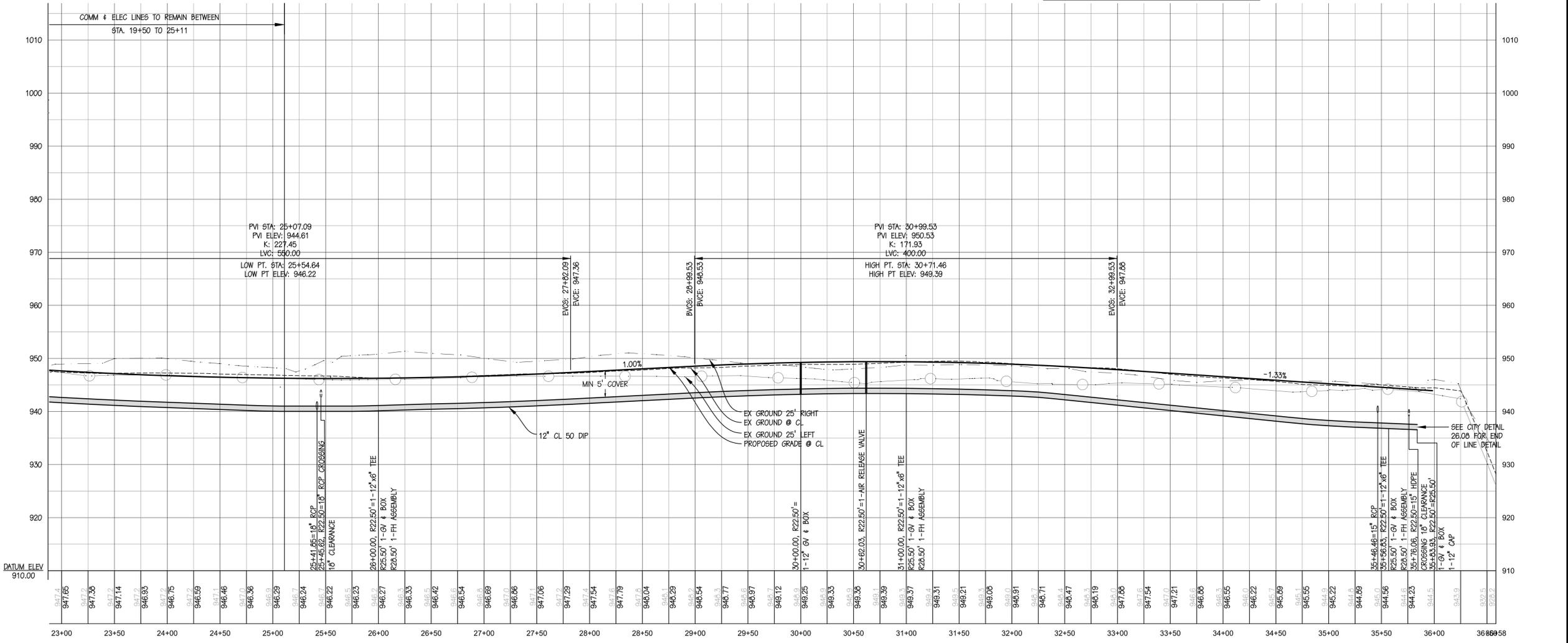


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C5	2000.00'	188.59'	N39°22'01\"E	4°48'47\"
C6	4500.00'	177.15'	N40°39'14\"E	2°15'20\"
C7	9190.00'	271.69'	N38°40'45\"E	1°41'38\"
C8	1250.00'	51.63'	N39°00'56\"E	2°21'58\"

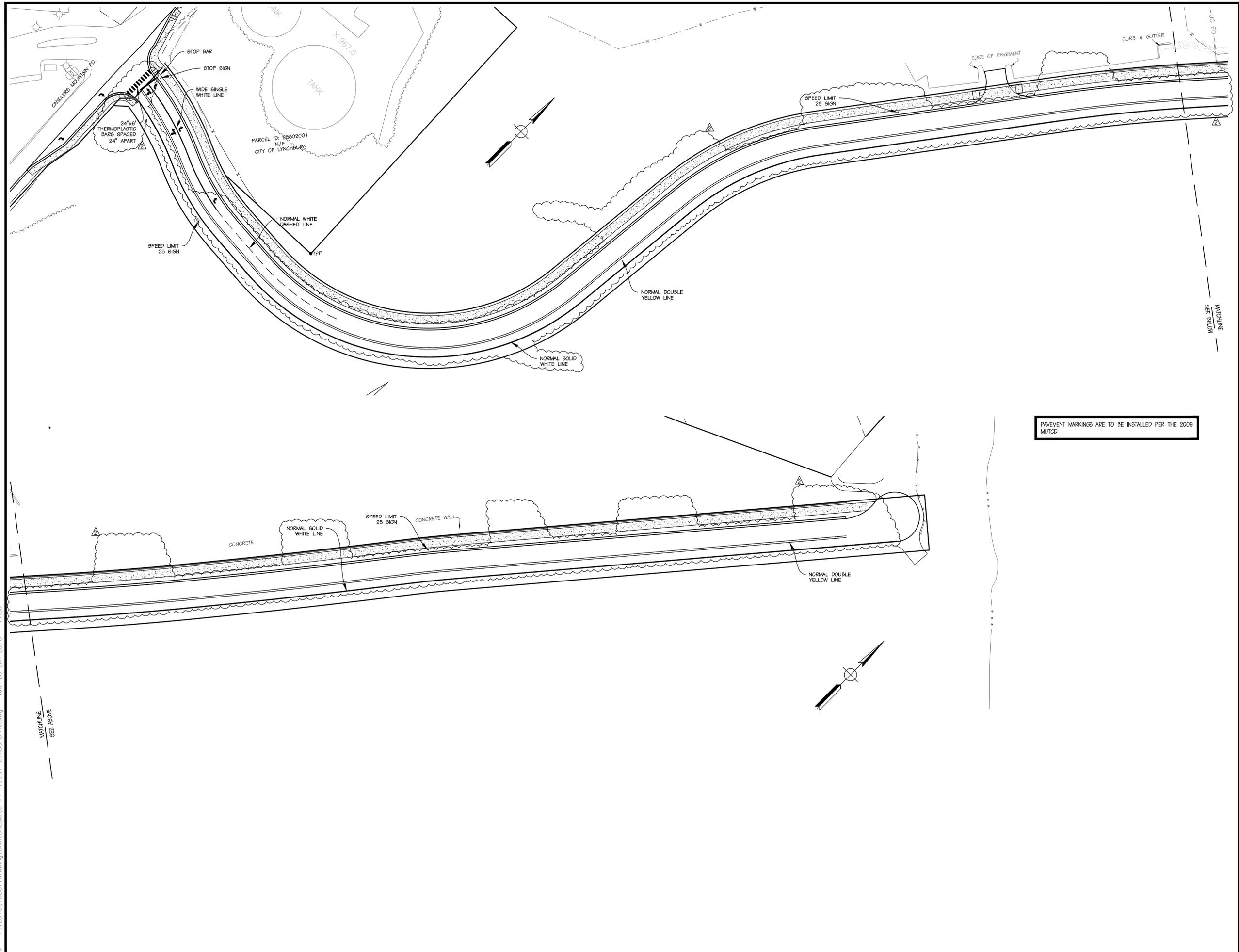
**LIBERTY MOUNTAIN DRIVE (PUBLIC)**  
AASHTO URBAN COLLECTOR - 30 MPH DESIGN SPEED



ROAD PROFILE  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 10'

CITY ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_  
UTILITIES ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_





**PERKINS & ORRISON**  
 ENGINEERS ▲ PLANNERS ▲ SURVEYORS

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 06/23/2015  
 PROFESSIONAL ENGINEER

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 LIBERTY MOUNTAIN DRIVE  
 EXTENSION AT THE NORTHERN  
 INTRAMURAL FIELDS  
 LYNCHBURG, VIRGINIA

CLIENT:

CITY OF LYNCHBURG  
 ATTN: LEE NEWLAND P.E.

MARK	DATE	DESCRIPTION
2	06/23/15	PER CITY/OWNER/AEP COMMENTS
1	05/12/15	PER CITY/AEP COMMENTS

ISSUE: 10/07/2014  
 CONTOUR INTERVAL: -  
 DESIGNED BY: RHO/GGW  
 DRAWN BY: PWS  
 CHECKED BY: RHO

SHEET TITLE

**STRIPING PLAN**

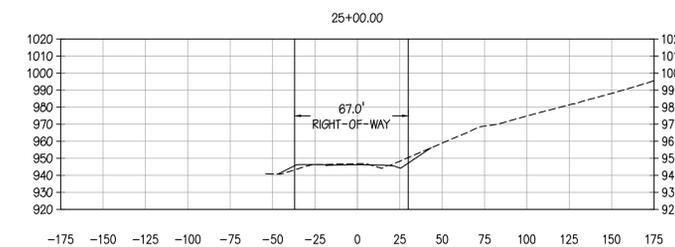
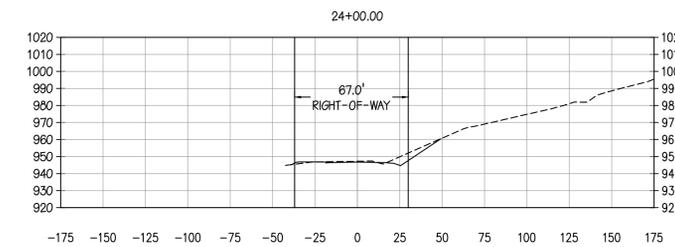
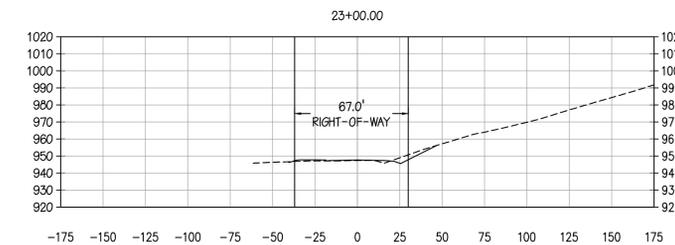
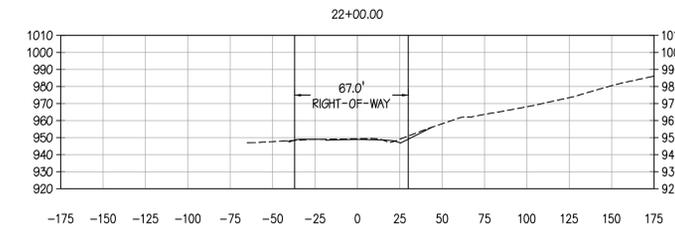
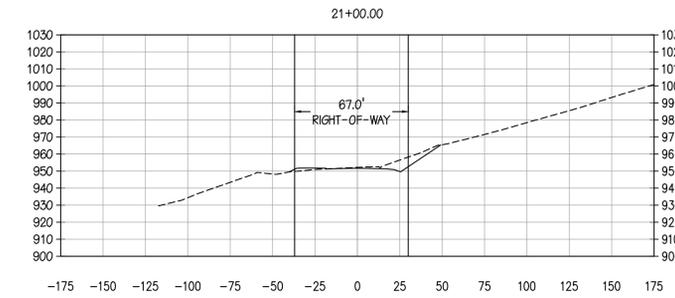
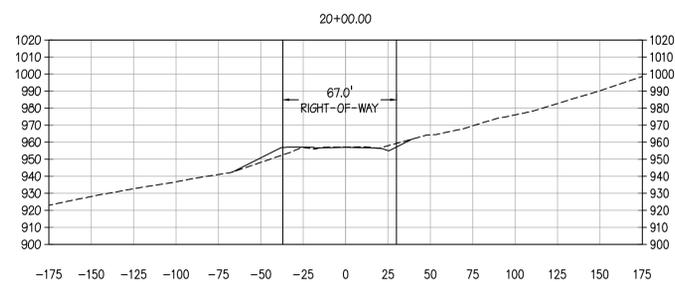
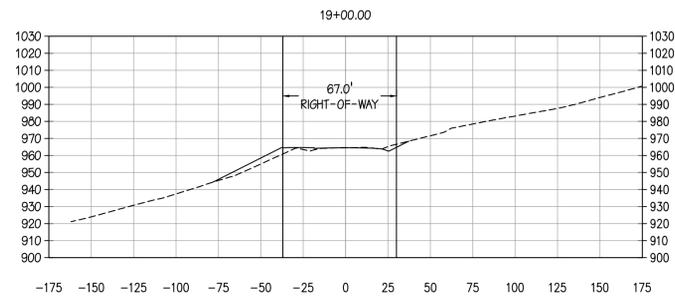
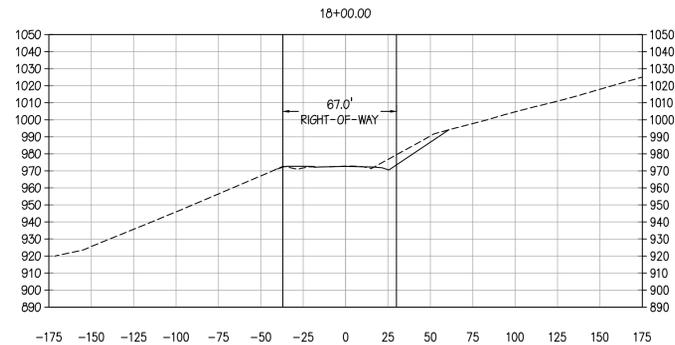
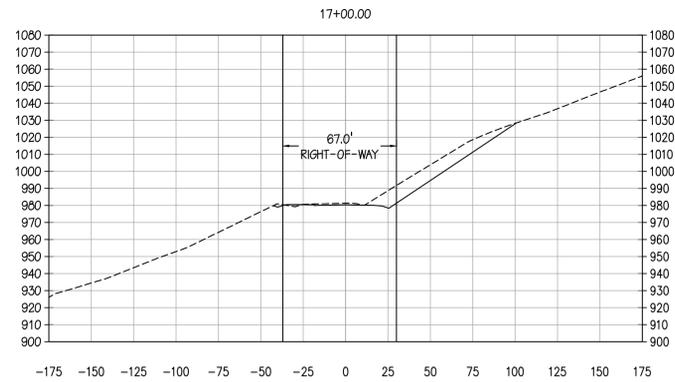
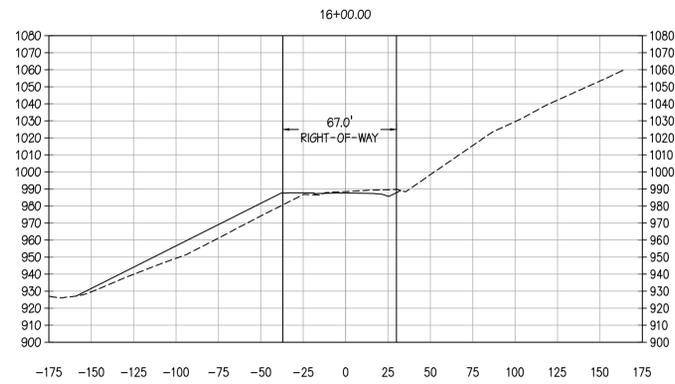
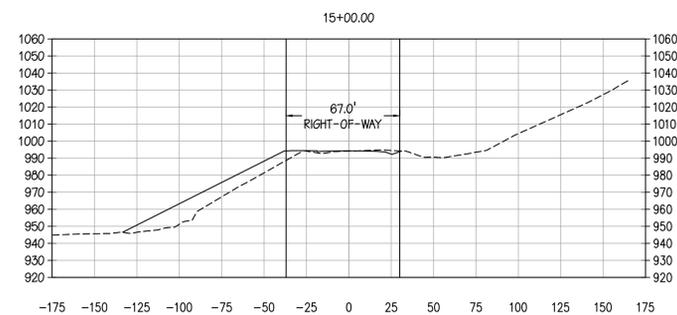
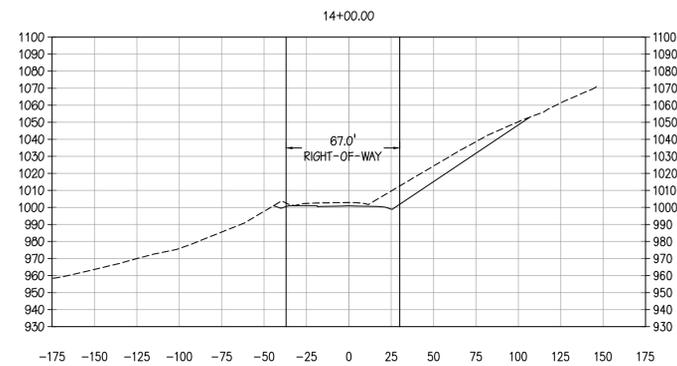
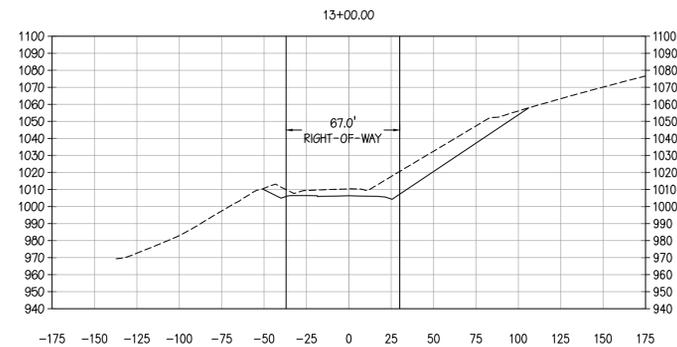
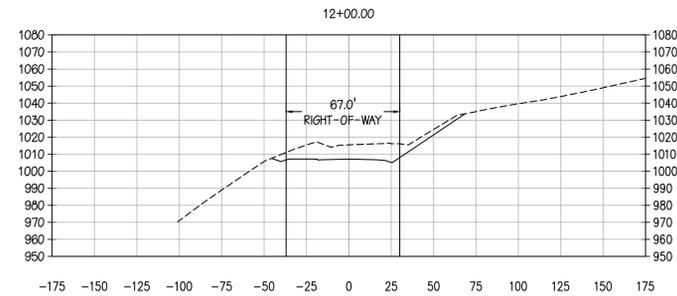
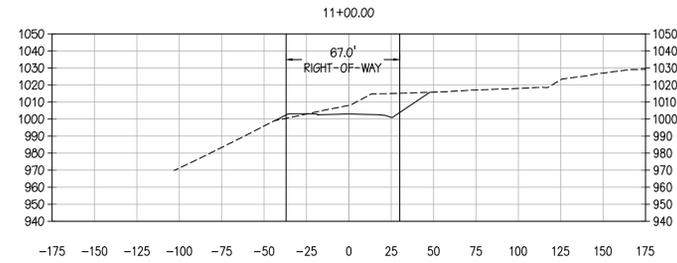
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PROJECT # 14018-RW

SHEET NO. 6 OF 17

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CONSULTANTS

SEAL:



JOB:

**CITY OF LYNCHBURG  
LIBERTY MOUNTAIN DRIVE  
EXTENSION AT THE NORTHERN  
INTRAMURAL FIELDS  
LYNCHBURG, VIRGINIA**

CLIENT:

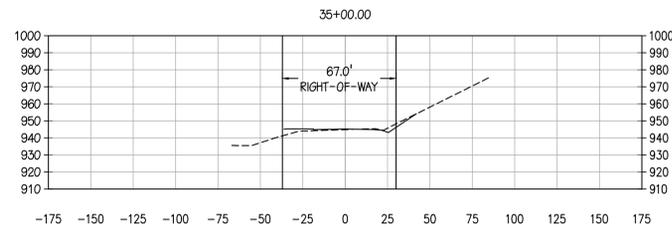
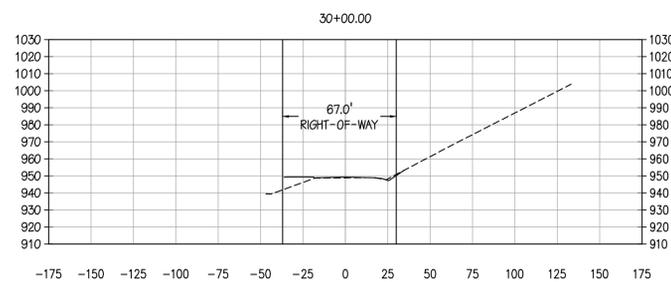
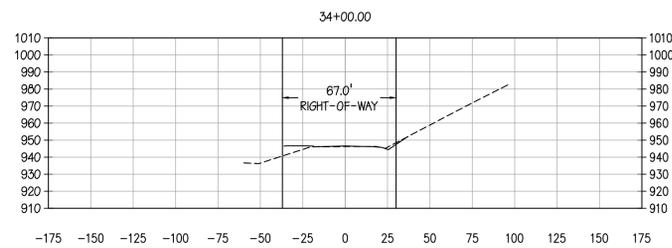
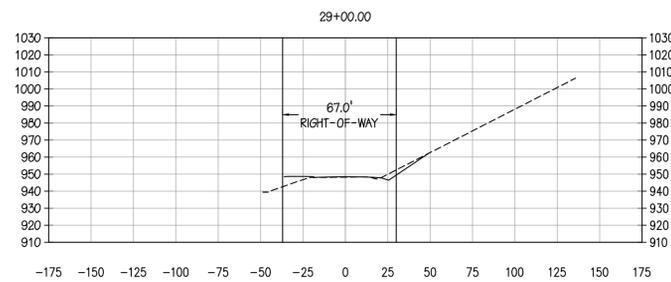
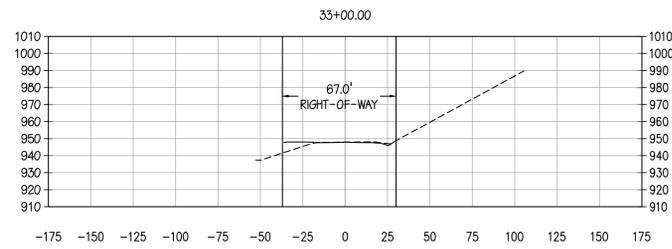
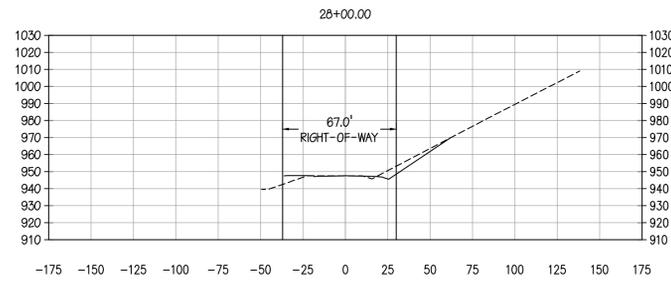
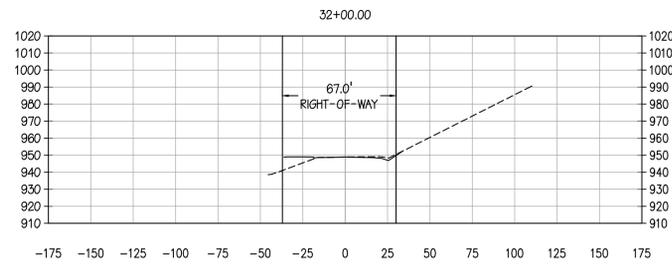
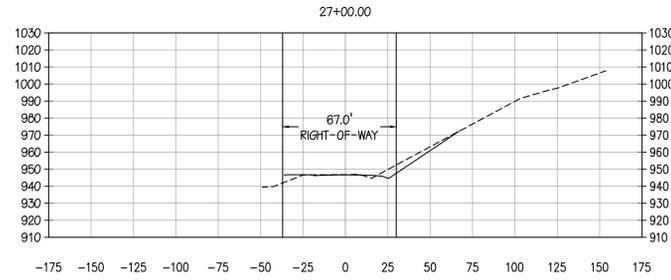
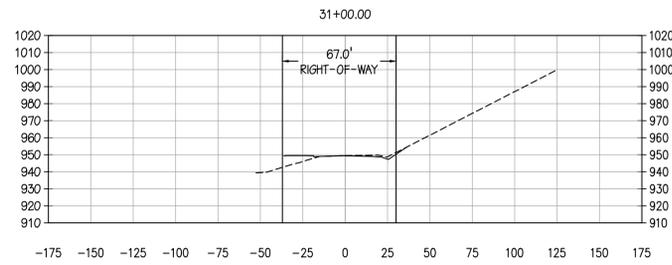
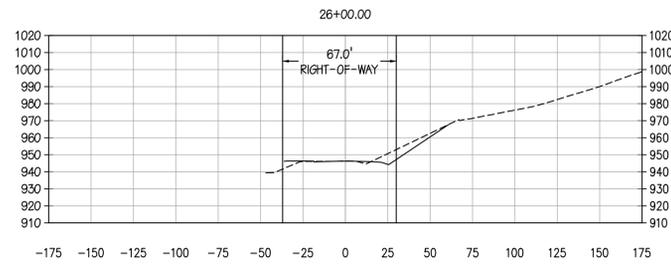
**CITY OF LYNCHBURG  
ATTN: LEE NEWLAND P.E.**

MARK	DATE	DESCRIPTION
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1	05/12/15	PER CITY/AEP COMMENTS

ISSUE: 10/07/2014  
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DESIGNED BY: RHO/GGW  
DRAWN BY: PWS  
CHECKED BY: RHO

SHEET TITLE  
**ROAD CROSS SECTIONS**

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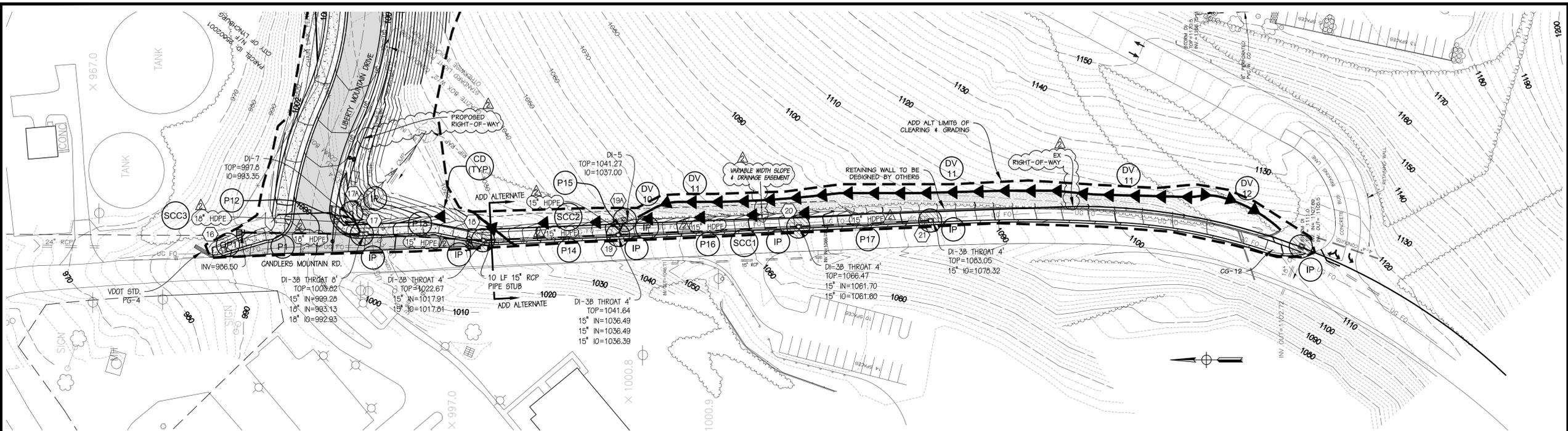
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 DESIGNED BY: RHO/GGW  
 DRAWN BY: PWS  
 CHECKED BY: RHO

SHEET TITLE

ROAD CROSS SECTIONS

PROJECT # 14018-RW

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EXTENSION AT THE NORTHERN  
INTRAMURAL FIELDS  
LYNCHBURG, VIRGINIA**

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ISSUE: 10/07/2014

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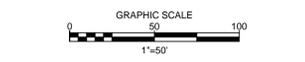
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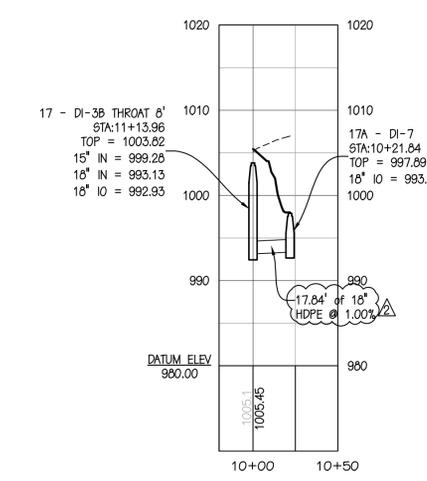
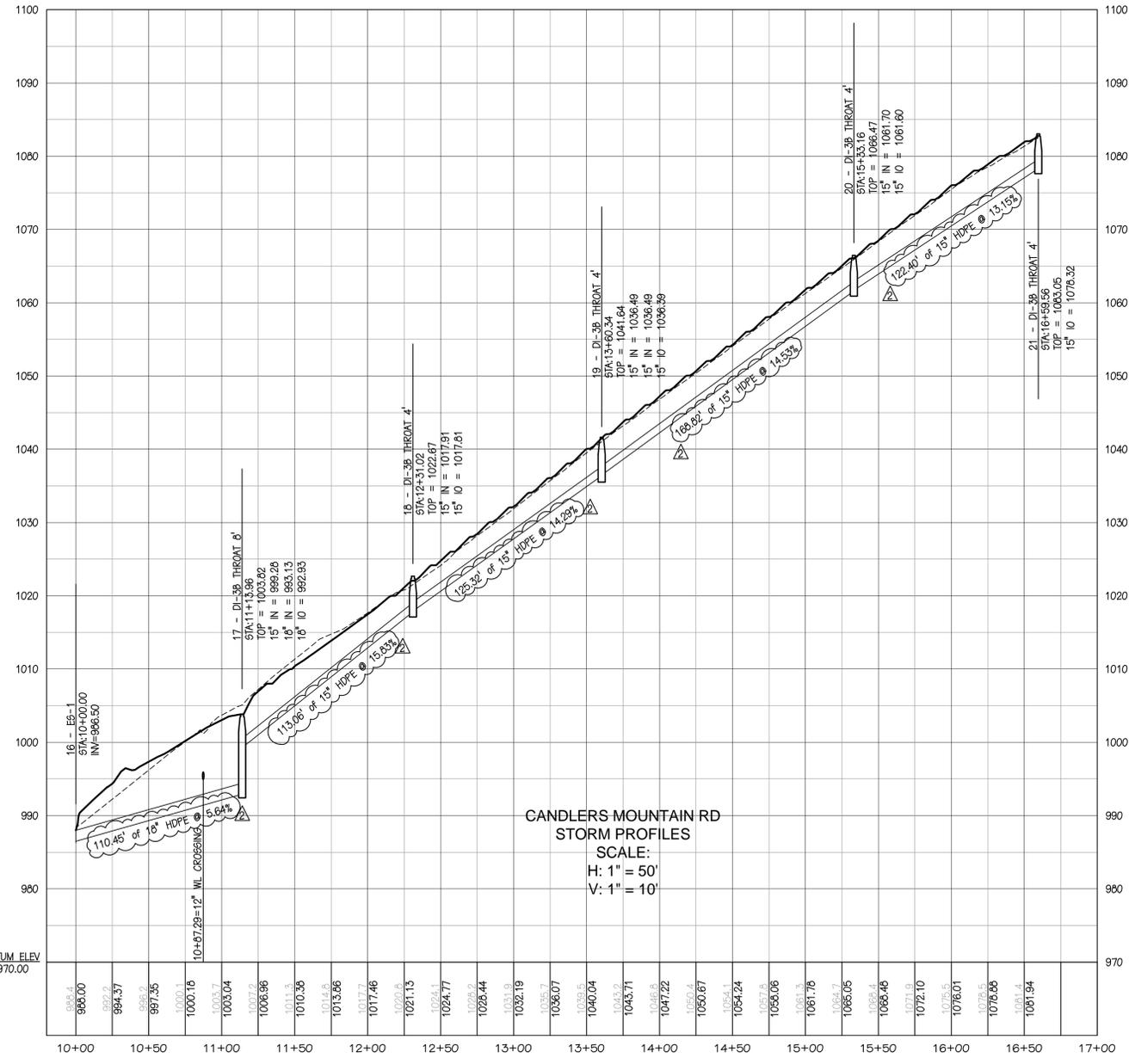
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**CANDLERS MOUNTAIN ROAD  
SIDEWALK ADD ALTERNATE**

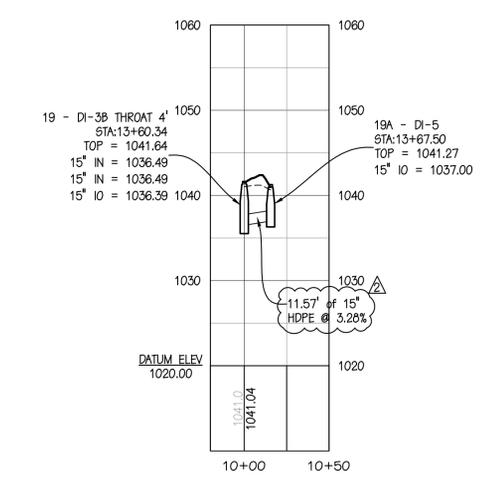


PROJECT # 14018-RW

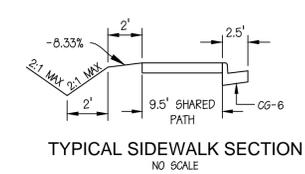
SHEET NO. 9 OF 17



**CANDLERS MOUNTAIN RD  
STORM PROFILES**  
SCALE:  
H: 1" = 50'  
V: 1" = 10'



**CANDLERS MOUNTAIN RD  
STORM PROFILES**  
SCALE:  
H: 1" = 50'  
V: 1" = 10'

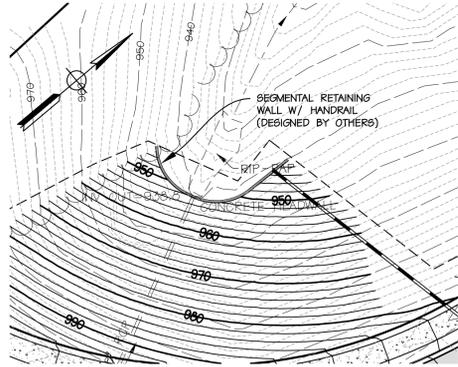
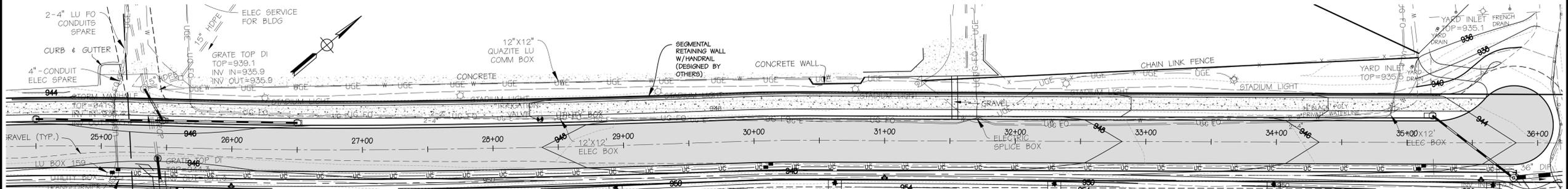


STORMWATER CONVEYANCE CHANNEL (VESCH# 3.17) [ADD ALT]

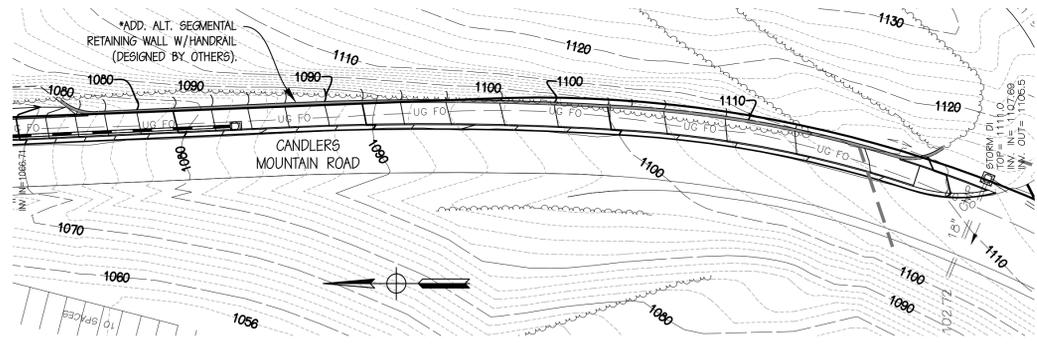
ID	DV10	DV11	DV12	SCC1	SCC2
2 YR DESIGN FLOW (CFS)	1.1	1.1	0.1	0.3	0.8
10 YR DESIGN FLOW (CFS)	1.5	1.5	0.1	0.4	1.1
BOTTOM WIDTH (FT)	0	0	0	0	0
CHANNEL DEPTH (FT)	1	1	1.5	1	1.5
DESIGN WATER DEPTH (FT)	0.47	0.47	0.17	0.29	0.39
SIDE SLOPES (H:V)	2:1	2:1	2:1	2:1	2:1
CHANNEL SLOPE (FT/FT)	0.1100	0.1100	0.1667	0.1430	0.1630
FLOW VELOCITY (FPS)	3.2	3.2	2.06	2.6	3.4
LINING MATERIAL	CL-1 RIP RAP	EC-2	EC-2	EC-2	EC-2
MANNING'S "n"	0.050	0.050	0.50	0.050	0.050

Drainage Pipe (Add Alt)

ID	P14	P15	P16	P17
DESIGN FLOW (CFS)	1.67	1.85	0.26	0.15
DESIGN VELOCITY (FPS)	11.40	6.98	6.56	5.36
PIPE DIAMETER (IN)	15	15	15	15
PIPE SLOPE (FT/FT)	0.1429	0.0326	0.1453	0.1315
PIPE MATERIAL	HDPE	HDPE	HDPE	HDPE
PIPE OWNERSHIP	CITY	CITY	CITY	CITY
UPSTREAM TOP ELEV.	1037.64	1038.25	1062.65	1079.57
UPSTREAM INV. ELEV.	1036.39	1037.00	1061.60	1078.32
DOWNSTREAM TOP ELEV.	1019.16	1037.74	1037.74	1062.95
DOWNSTREAM INV. ELEV.	1017.91	1036.49	1036.49	1061.70
DOWNSTREAM WATER LEVEL (FT)	0.25'	0.35'	0.1'	0.1'



GEOGRID SHALL NOT EXTEND UNDER CURB & GUTTER OR ROADWAY.



DETAILS ARE SHOWN FOR INFORMATION ONLY. SEE WALL DESIGN BY OTHERS.

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ISSUE: 10/07/2014

CONTOUR INTERVAL: 2'

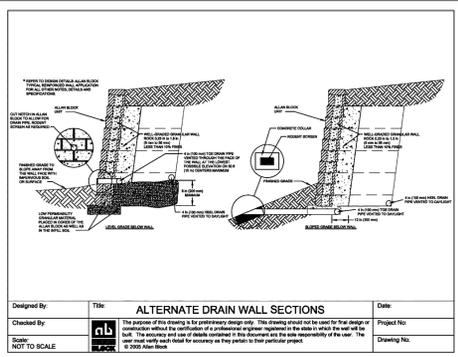
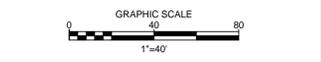
DESIGNED BY: RHO/GW

DRAWN BY: PWS

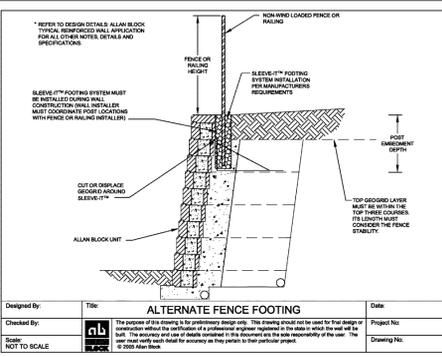
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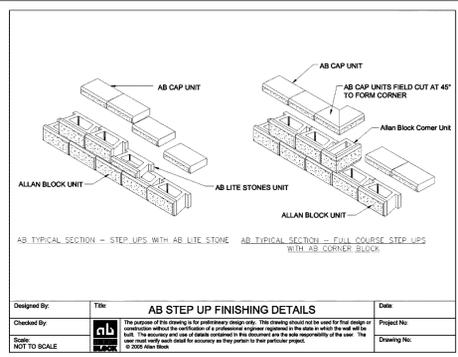
RETAINING WALL PLAN & DETAILS



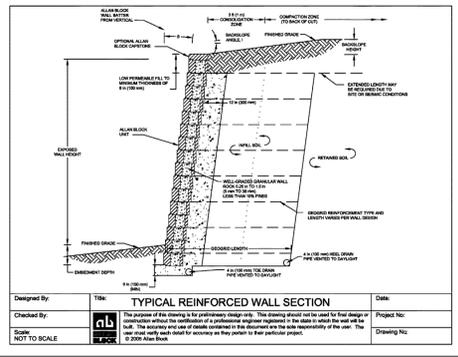
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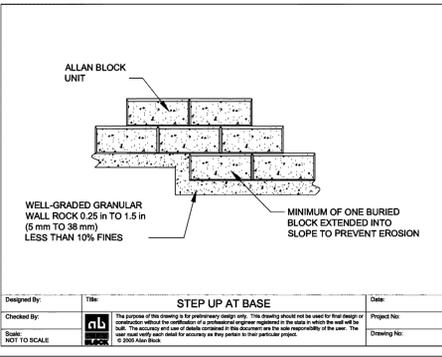
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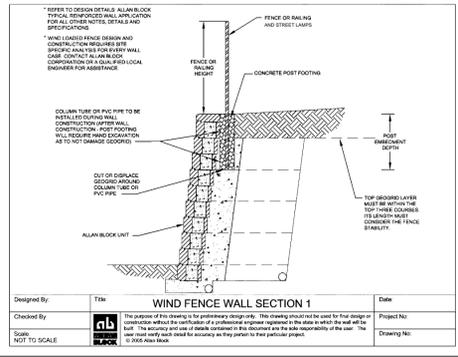
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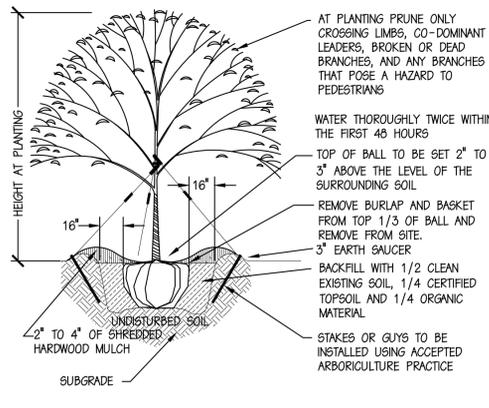
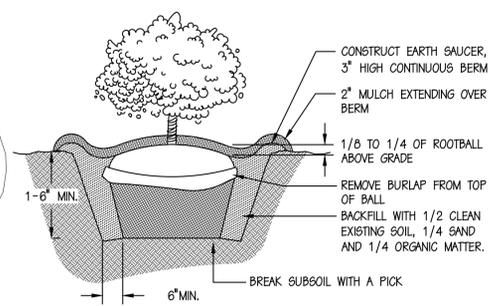
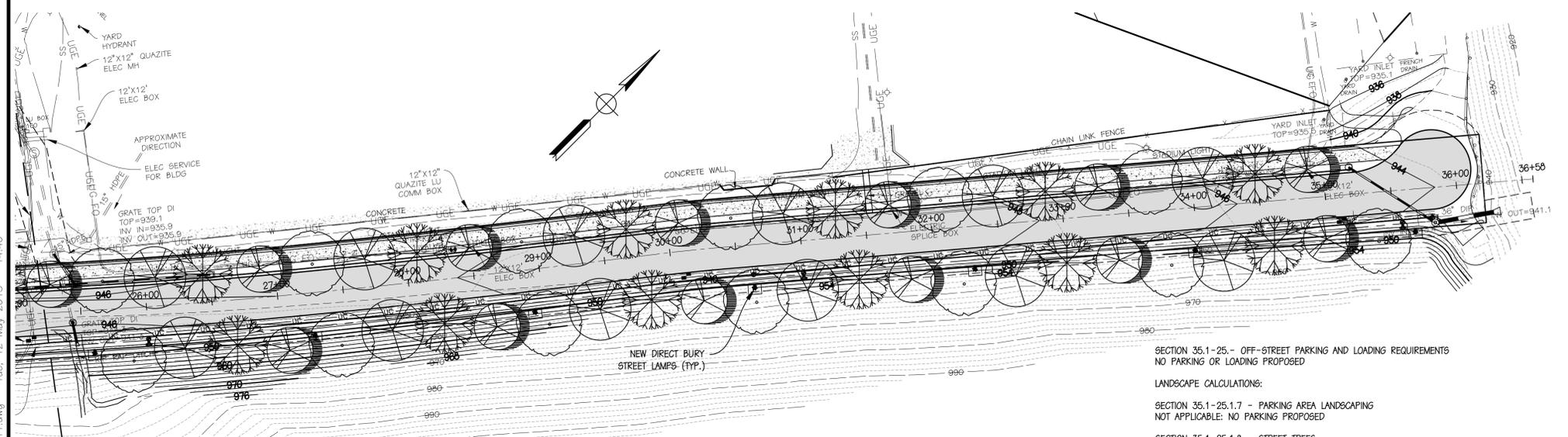
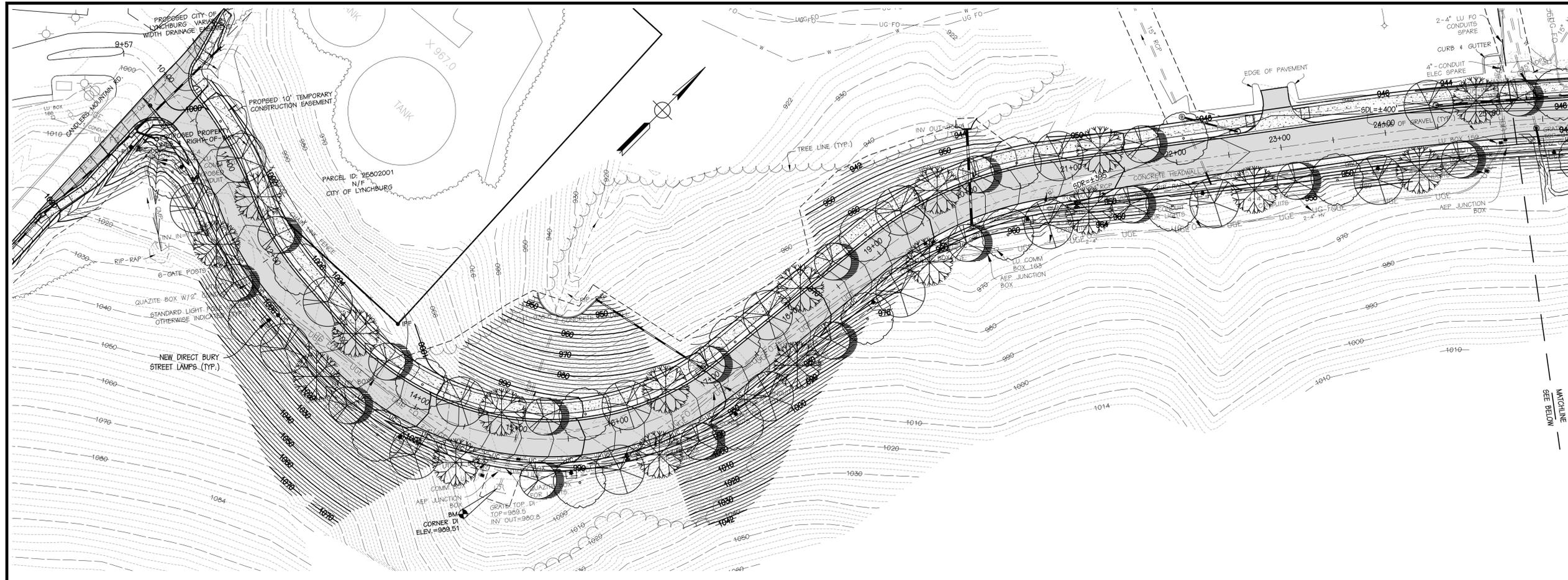


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LANDSCAPE LEGEND							
SYM	QUANTITY	BOTANIC NAME	COMMON NAME	COMMENTS	ULT. SIZE (HxW)	CANOPY AREA	TOTAL AREA
A	30	QUERCUS PHELLOS	WILLOW OAK	3\"/>			
B	29	QUERCUS SHUMARDII	SHUMARD OAK	2\"/>			
C	29	FRAXINUS AMERICANA	WHITE ASH	2\"/>			
D	29	GLEDTISIA TRIACANTHOS	HONEY LOCUST	2\"/>			

SECTION 35.1-25. - OFF-STREET PARKING AND LOADING REQUIREMENTS  
NO PARKING OR LOADING PROPOSED

LANDSCAPE CALCULATIONS:

SECTION 35.1-25.1.7 - PARKING AREA LANDSCAPING  
NOT APPLICABLE: NO PARKING PROPOSED

SECTION 35.1-25.1.8 - STREET TREES  
(a) FOR ALL MULTI-FAMILY, COMMERCIAL, INSTITUTIONAL AND INDUSTRIAL DEVELOPMENTS, STREET TREES ARE REQUIRED AT THE RATE OF ONE (1) SHADE TREE FOR EACH FORTY (40) FEET OF STREET FRONTAGE OR IN THE CASE WHERE OVERHEAD UTILITY LINES PROHIBIT THE PLANTING OF SHADE TREES ONE (1) ORNAMENTAL TREE FOR EACH TWENTY (20) FEET OF STREET FRONTAGE.  
(b) REQUIRED STREET TREES SHALL BE PLANTED ALONG THE PROPERTY LINE THAT FRONTS THE STREET AND SHALL NOT BE PLANTED WITHIN THE PUBLIC RIGHT-OF-WAY OR WITHIN ANY UTILITY EASEMENTS.  
(c) STREET TREES WITHIN THE SITE DISTANCE TRIANGLE MAY BE RAISED TO ALLOW FOR VISIBILITY

SECTION 35.1-25.1.9: FOUNDATION PLANTINGS  
NOT APPLICABLE: NO BUILDING PROPOSED

SECTION 35.1-25.1.10 - UTILITY AND LOADING SCREENING  
NOT APPLICABLE

SECTION 35.1-25.1.11 - BUFFERING  
A VEGETATIVE BUFFER IS NOT REQUIRED AS THE PROPOSED DEVELOPMENT IS NOT ADJACENT TO A RESIDENTIAL OR A MULTI-FAMILY RESIDENTIAL DISTRICT.

SECTION 35.1-25.1.4 (K) - GENERAL REGULATIONS  
ALL DISTURBED AREAS NOT USED FOR OPERATIONS, INCLUDING SLOPES SHALL BE LANDSCAPED AT THE RATE OF 20 TREES PER ACRE.

SECTION 35.1-25.1.12 - TREE CANOPY REQUIREMENTS  
10% OF THE ENTIRE DEVELOPMENT SITE (8.0 ACRES) = 0.8 ACRES IN TREE CANOPY REQUIRED/5.5 ACRES PROVIDED IN STREET TREES

SECTION 35.1-25.1.5 - LANDSCAPING PLAN REQUIRED

LANDSCAPE NOTES:

WATERING:  
SPRING AND FALL PLANTED TREES AND SHRUBS SHALL BE THOROUGHLY WATERED THE DAY OF PLANTING AND THEN WILL BE WATERED EVERY 7 DAYS THROUGHOUT THE FIRST GROWING YEAR. WHEN SIGNIFICANT RAINFALLS MAINTAIN MOISTURE IN THE SOIL, WATERING FOR THAT PERIOD CAN BE DELAYED UNTIL THE NEXT 7 DAY CYCLE.

FERTILIZING:  
INSTALLER TO AMEND SOIL AS REQUIRED BY ON-SITE CONDITIONS AND THE NEEDS OF THE PLANTED TREES AND SHRUBS.

FERTILIZATION SHOULD BE DONE IN EARLY SPRING OR LATE FALL, AND A WATER INSOLUBLE NITROGEN (WIN) IS RECOMMENDED AS THE PLANTS WILL USE IT AS NEEDED AND IT WILL NOT WASH OFF OR LEACH INTO THE GROUND WATER.

THE INSTALLER SHALL HAVE THE SOIL TESTED FOR PH PRIOR TO INSTALLATION AND DETERMINE THE CORRECT FERTILIZERS FOR THE SPECIFIED PLANTS.

B & B : BALL AND BURLAP  
ALL PLANTINGS TO BE IN SHREDDED PINE BARK MULCHED BEDS.  
\*HEIGHT OF TREES MEASURED FROM THE TOP OF THE ROOT BALL, REPRESENTING ACTUAL HEIGHT OF TREE WHEN PLANTED (NOT INCLUDING ROOT MASS)  
IRRIGATION BY OTHERS  
© IS A REGISTERED TRADEMARK OF WAYNESBORO NURSERIES.

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Lic. No. 031849  
06/23/2015  
PROFESSIONAL ENGINEER

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CITY OF LYNCHBURG  
LIBERTY MOUNTAIN DRIVE  
EXTENSION AT THE NORTHERN  
INTRAMURAL FIELDS  
LYNCHBURG, VIRGINIA

CLIENT:  
CITY OF LYNCHBURG  
ATTN: LEE NEWLAND P.E.

MARK	DATE	DESCRIPTION
2	06/23/15	PER CITY/OWNER/AEP COMMENTS
1	05/12/15	PER CITY/AEP COMMENTS

ISSUE: 10/07/2014  
CONTOUR INTERVAL: 2'  
DESIGNED BY: GWG  
DRAWN BY: PWS  
CHECKED BY: RHO

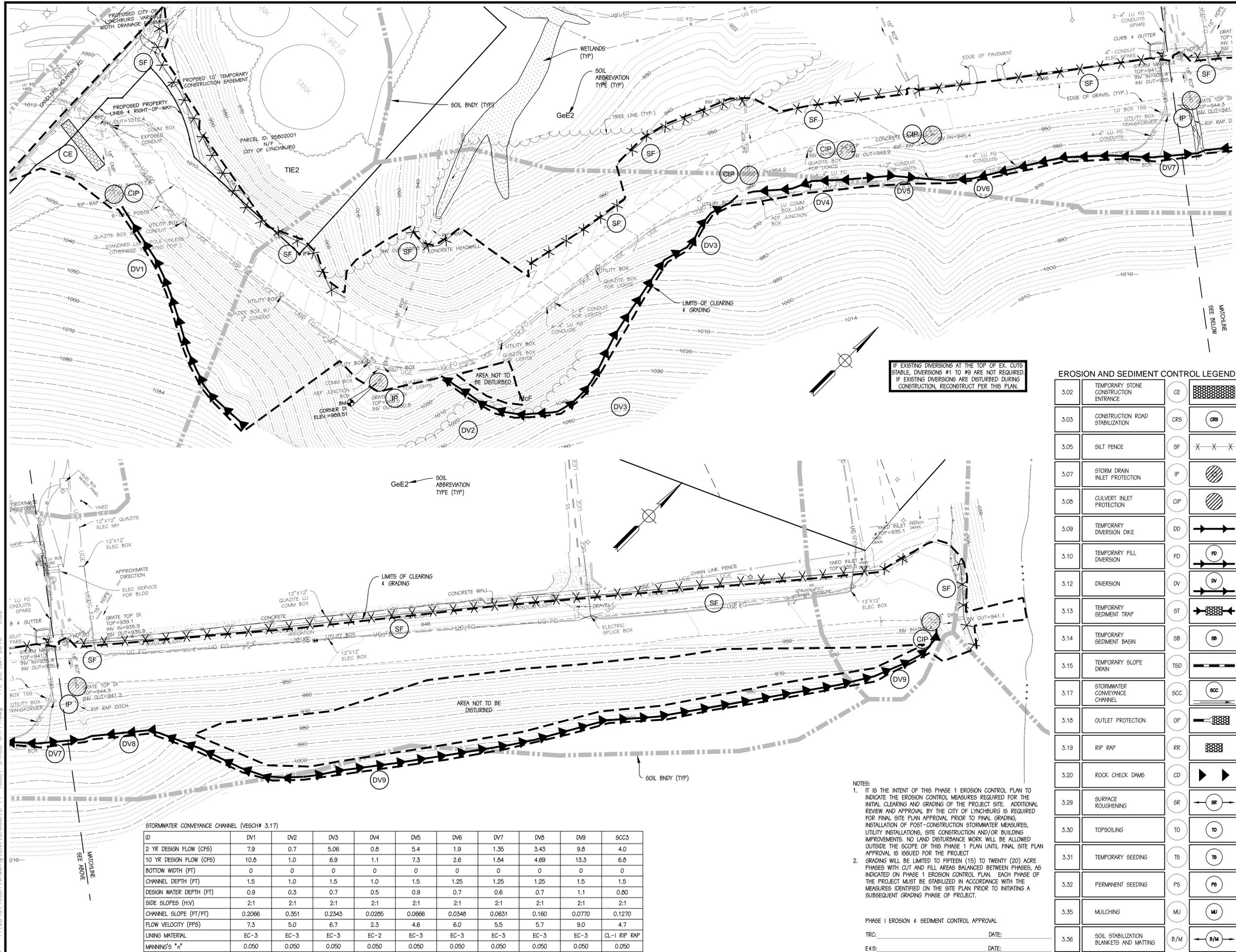
SHEET TITLE  
**STREET LIGHTING & LANDSCAPING PLAN**

GRAPHIC SCALE  
0 50 100  
1"=50'

14018-RW

13331 11 of 17

ID: PA\_2013\_13331\_Drawing\Civil\Sheets\C-PP-13331-24X36\_SHT11.dwg - Tue, 12 May 2015 - 14:40



IF EXISTING DIVERSIONS AT THE TOP OF EX. CUTS STABLE, DIVERSIONS #1 TO #9 ARE NOT REQUIRED. IF EXISTING DIVERSIONS ARE DISTURBED DURING CONSTRUCTION, RECONSTRUCT PER THIS PLAN.

**EROSION AND SEDIMENT CONTROL LEGEND**

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.03	CONSTRUCTION ROAD STABILIZATION	CRS	
3.05	SILT FENCE	SF	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.08	CULVERT INLET PROTECTION	CIP	
3.09	TEMPORARY DIVERSION DIKE	DD	
3.10	TEMPORARY FILL DIVERSION	FD	
3.12	DIVERSION	DV	
3.13	TEMPORARY SEDIMENT TRAP	ST	
3.14	TEMPORARY SEDIMENT BASIN	SB	
3.15	TEMPORARY SLOPE DRAIN	TSD	
3.17	STORMWATER CONVEYANCE CHANNEL	SCC	
3.18	OUTLET PROTECTION	OP	
3.19	RIP RAP	RR	
3.20	ROCK CHECK DAMS	CD	
3.29	SURFACE ROUGHENING	SR	
3.30	TOPSOILING	TO	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.35	MULCHING	MU	
3.36	SOIL STABILIZATION BLANKETS AND MATTING	B/M	

STORMWATER CONVEYANCE CHANNEL (VESCH# 3.17)

ID	DV1	DV2	DV3	DV4	DV5	DV6	DV7	DV8	DV9	SCC3
2 YR DESIGN FLOW (CFS)	7.9	0.7	5.06	0.8	5.4	1.9	1.35	3.43	9.8	4.0
10 YR DESIGN FLOW (CFS)	10.8	1.0	6.9	1.1	7.3	2.6	1.84	4.89	13.3	6.8
BOTTOM WIDTH (FT)	0	0	0	0	0	0	0	0	0	0
CHANNEL DEPTH (FT)	1.5	1.0	1.5	1.0	1.5	1.25	1.25	1.25	1.5	1.5
DESIGN WATER DEPTH (FT)	0.9	0.3	0.7	0.5	0.9	0.7	0.6	0.7	1.1	0.80
SIDE SLOPES (H:V)	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1
CHANNEL SLOPE (FT/FT)	0.2066	0.351	0.2343	0.0285	0.0866	0.0348	0.0631	0.160	0.0770	0.1270
FLOW VELOCITY (FPS)	7.3	5.0	6.7	2.3	4.6	6.0	5.5	5.7	9.0	4.7
LINING MATERIAL	EC-3	EC-3	EC-3	EC-2	EC-3	EC-3	EC-3	EC-3	EC-3	CL-1 RIP RAP
MANNING'S "n"	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050

NOTES:  
 1. IT IS THE INTENT OF THIS PHASE 1 EROSION CONTROL PLAN TO INDICATE THE EROSION CONTROL MEASURES REQUIRED FOR THE INITIAL CLEARING AND GRADING OF THE PROJECT SITE. ADDITIONAL REVIEW AND APPROVAL BY THE CITY OF LYNCHBURG IS REQUIRED FOR FINAL SITE PLAN APPROVAL PRIOR TO FINAL GRADING, INSTALLATION OF POST-CONSTRUCTION STORMWATER MEASURES, UTILITY INSTALLATIONS, SITE CONSTRUCTION AND/OR BUILDING IMPROVEMENTS. NO LAND DISTURBANCE WORK WILL BE ALLOWED OUTSIDE THE SCOPE OF THIS PHASE 1 PLAN UNTIL FINAL SITE PLAN APPROVAL IS ISSUED FOR THE PROJECT.  
 2. GRADING WILL BE LIMITED TO FIFTEEN (15) TO TWENTY (20) ACRE PHASES WITH CUT AND FILL AREAS BALANCED BETWEEN PHASES, AS INDICATED ON PHASE 1 EROSION CONTROL PLAN. EACH PHASE OF THE PROJECT MUST BE STABILIZED IN ACCORDANCE WITH THE MEASURES IDENTIFIED ON THE SITE PLAN PRIOR TO INITIATING A SUBSEQUENT GRADING PHASE OF PROJECT.

PHASE I EROSION & SEDIMENT CONTROL APPROVAL  
 TRC: \_\_\_\_\_ DATE: \_\_\_\_\_  
 E&S: \_\_\_\_\_ DATE: \_\_\_\_\_

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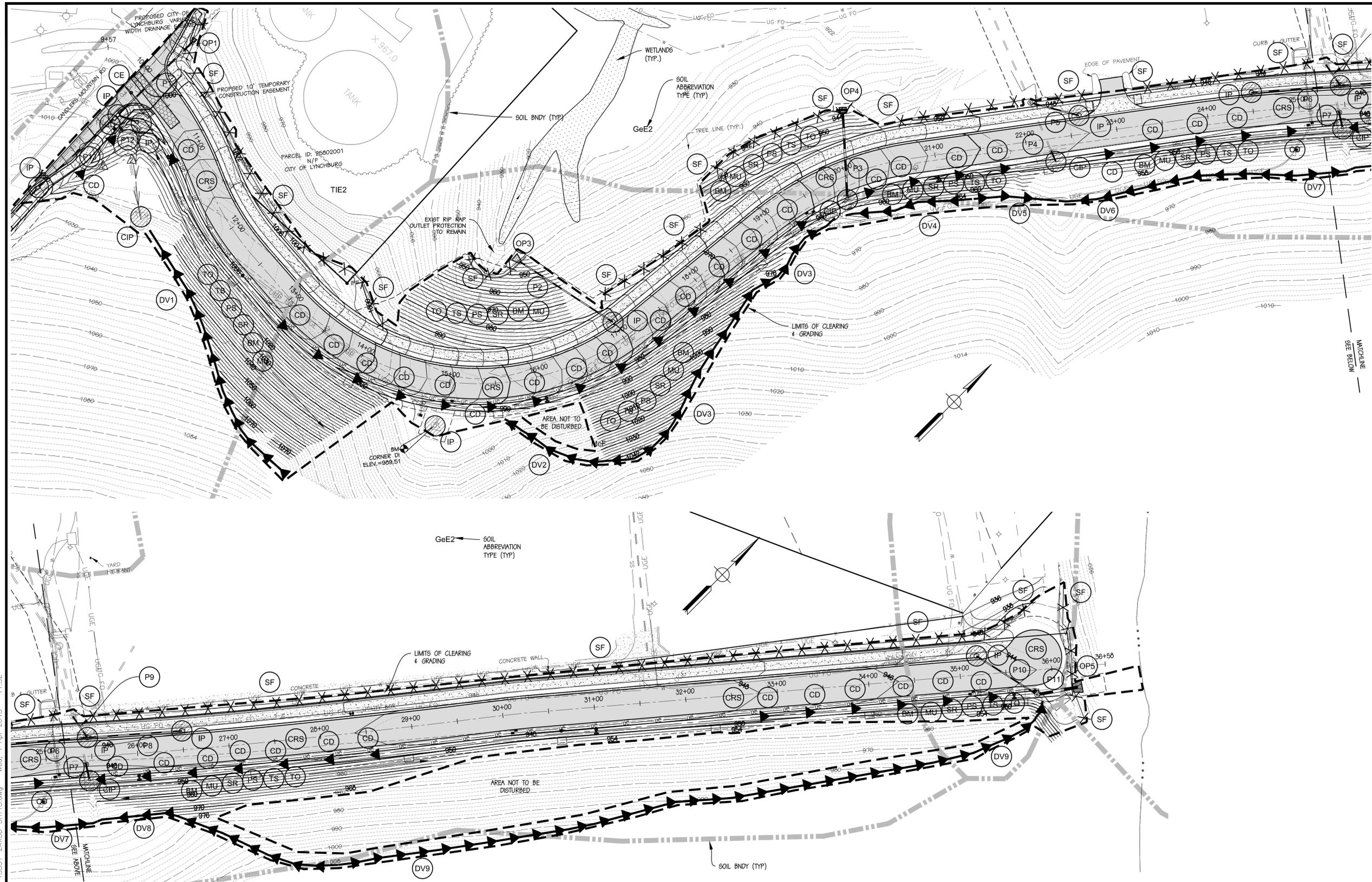
ISSUE: 10/07/2014  
 CONTOUR INTERVAL: 2'  
 DESIGNED BY: RHO/GGW  
 DRAWN BY: PWS  
 CHECKED BY: RHO

SHEET TITLE  
**PHASE 1 EROSION & SEDIMENT CONTROL PLAN**

GRAPHIC SCALE  
 0 50 100  
 1"=50'

PROJECT # 14018-RW  
 SHEET NO. 12 OF 17

ID: PA\_2013\_13331\_Drawing\Civil\SheetA-C\_PP\_13331-24X36\_SHT1.dwg - Fri, 23 Jan 2015 - 9:02



**OUTLET PROTECTION (VESCH# 3.16)**

ID	OP1	OP2	OP3	OP4	OP5
DESIGN EVENT FREQUENCY	10 YR	NOT USED	10 YR	10 YR	10 YR
DESIGN FLOW (CF6)	6.6		1.57	12.4	17.3
TAILWATER DEPTH	<0.5D		<0.5D	<0.5D	<0.5D
DISCHARGE VELOCITY (FPS)	12.04		15.4	20.3	8.5
RIP RAP GRADATION	A1	NOT USED	A1	A1	A1
APRON LENGTH (FT)	10'		6.0'	12.0'	12.0'
APRON WIDTHS (FT)	4.5', 9.25'		3.75', 9.25'	6.0', 16.0'	6.0', 16.0'
SIDE SLOPES (H:V)	2:1		2:1	2:1	2:1
APRON DEPTH (FT)	2.0		2.0	2.0	2.0

**DRAINAGE PIPE**

ID	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
DESIGN FLOW (CF6)	6.6	1.57	12.4	10.7	2.02	1.0	10.7	1.8	2.8	1.6	17.3	7.42	1.78
DESIGN VELOCITY (FPS)	12.04	15.4	20.3	21.5	13.4	4.1	15.4	4.8	14.0	5.7	8.5	6.46	12.05
PIPE DIAMETER (IN)	18	15	24	15	15	15	18	15	15	15	24	18	15
PIPE SLOPE (FT/FT)	0.0564	0.302	0.162	0.191	0.163	0.01	0.079	0.01	0.142	0.018	0.01	0.01	0.1583
PIPE MATERIAL	HDPE	HDPE	RCP	RCP	HDPE	HDPE	RCP	HDPE	HDPE	HDPE	RCP	RCP	RCP
PIPE OWNERSHIP	CITY	HDPE	HDPE										
UPSTREAM TOP ELEV.	994.43	976.29	955.65	946.80	944.77	943.20	944.40	943.25	942.02	941.67	940.80	994.85	1019.06
UPSTREAM INV. ELEV.	992.93	975.04	953.65	945.55	943.52	941.95	942.90	942.00	940.77	940.42	938.60	993.35	1017.61
DOWNSREAM TOP ELEV.	988.00	940.00	940.40	936.16	935.85	942.23	943.00	942.22	936.05	940.25	940.35	994.63	1000.53
DOWNSREAM INV. ELEV.	986.50	938.75	938.40	934.91	934.60	940.98	941.50	940.97	936.60	939.00	938.35	993.13	999.28
DOWNSREAM WATER LEVEL (FT)	0.55'	0.2'	0.5'	0.5'	0.25'	0.3'	0.6'	0.4'	0.3'	0.35'	1.3'	1.0'	0.25'

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 LIBERTY MOUNTAIN DRIVE  
 EXTENSION AT THE NORTHERN  
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 LYNCHBURG, VIRGINIA**

CLIENT:

**CITY OF LYNCHBURG  
 ATTN: LEE NEWLAND P.E.**

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ISSUE: 10/07/2014  
 CONTOUR INTERVAL: 2'  
 DESIGNED BY: RHO/GGW  
 DRAWN BY: PWS  
 CHECKED BY: RHO

SHEET TITLE

**PHASE 2 EROSION & SEDIMENT  
 CONTROL PLAN**

GRAPHIC SCALE  
 0 50 100  
 1"=50'

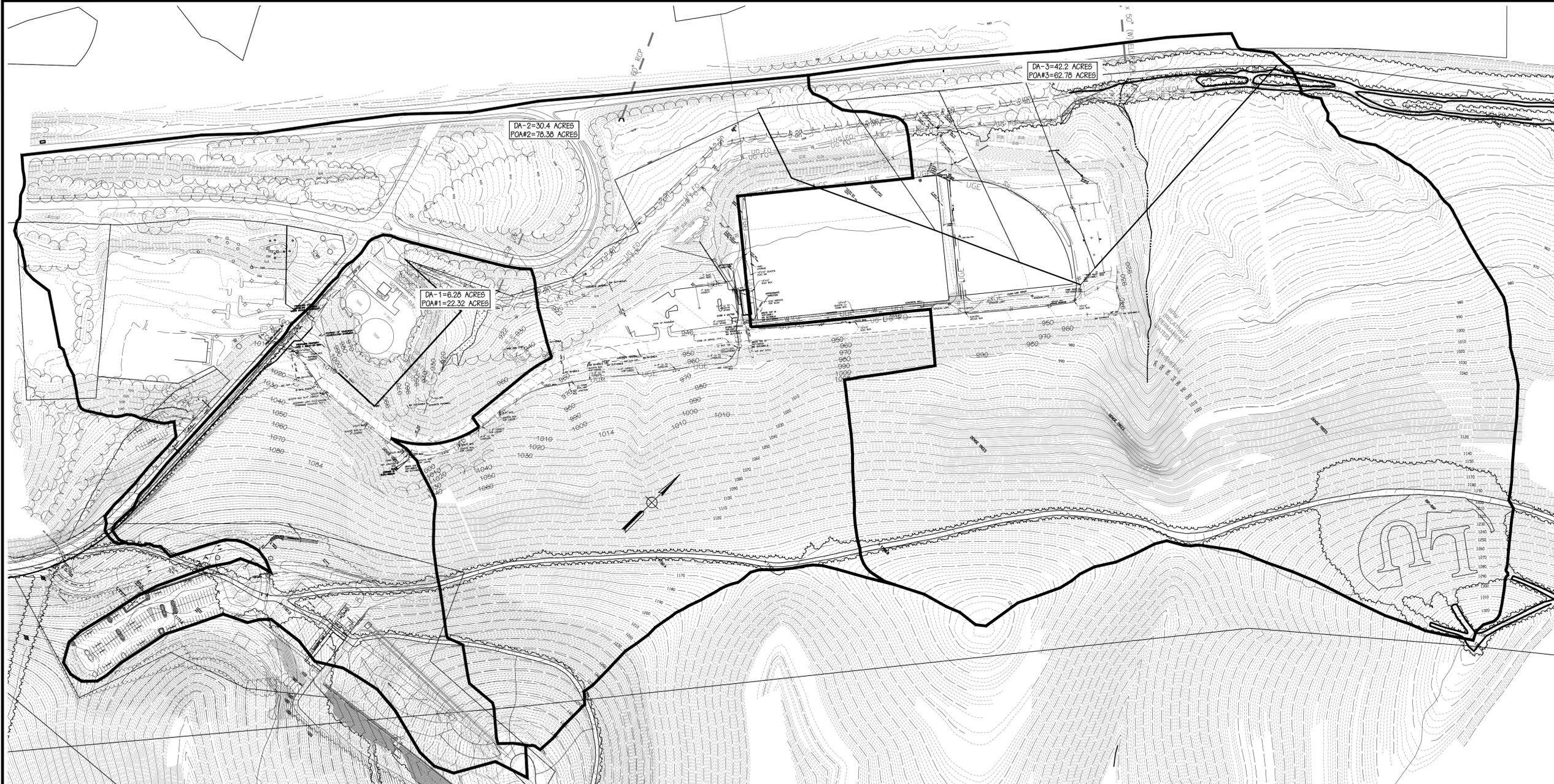
PROJECT # 14018-RW

13331 13 of 17

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PRE-DEVELOPED DRAINAGE DIVIDES MAP

FLOW SUMMARY TABLE

ID	DV1	DV2	DV3	DV4	DV5	DV6	DV7	DV8	DV9	DV10	DV11	DV12	SCC1	SCC2	SCC3	OP1	OP2	OP3	OP4	OP5
DESIGN EVENT FREQUENCY (YR)	2 YR, 10 YR	10 YR	10 YR	10 YR	10 YR	10 YR														
RAINFALL INTENSITY (IN/HR)	3.33, 4.54	4.13, 5.61	3.33, 4.54	4.13, 5.61	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	3.33, 4.54	2.6	4.54	5.61	4.54	4.54
POST DEVELOPMENT																				
DRAINAGE AREA ID(S)	4, 5	6	7	8	9	10	11	12	13	35	35	36	37	14	26	4, 5, 14, 15, 35, 37-42	4, 5	27	6, 7, 8, 19, 20, 21	13, 25, 31
TOTAL DRAINAGE AREA (AC.)	7.94	0.6	5.07	0.67	5.37	1.91	1.35	3.44	9.8	1.83	1.63	0.11	0.27	1.35	0.42	12.26	7.94	0.35	6.54	10.88
TIME OF CONCENTRATION (MIN)	10	5	10	5	10	10	10	10	10	13.7	13.7	14	5	5	5	32.1	10	5	10	10
COMPOSITE RUNOFF FACTOR	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.20	0.20	0.30	0.30	0.21	0.74	0.90	0.30	0.61	0.32	0.32
DESIGN FLOW (CFS)	7.9, 10.6	0.7, 1.0	5.06, 6.9	0.8, 1.1	5.4, 7.3	1.9, 2.6	1.35, 1.84	3.43, 4.69	9.8, 13.5	1.1, 1.5	1.1, 1.5	0.1, 0.1	0.3, 0.4	0.8, 1.1	4.0, 6.8	6.8	10.6	1.57	12.4	17.3
PRE-DEVELOPMENT																				
DRAINAGE AREA ID(S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL DRAINAGE AREA (AC.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TIME OF CONCENTRATION (MIN)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMPOSITE RUNOFF FACTOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DESIGN FLOW (CFS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1. FROM APPROVED PLANS TITLED LIBERTY UNIVERSITY PHASE 1 LIBERTY MOUNTAIN DRIVE EAST & INTRAMURAL FIELDS PLANS

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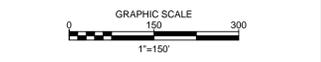
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MARK	DATE	DESCRIPTION
ISSUE: 10/07/2014		
CONTOUR INTERVAL: 2'		
DESIGNED BY: RHO/GGW		
DRAWN BY: PWS		
CHECKED BY: RHO		

SHEET TITLE

**DRAINAGE DIVIDES**



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POST-DEVELOPED  
 DRAINAGE DIVIDES MAP

FLOW SUMMARY TABLE

ID	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	POA#1	POA#2	POA#3	EX POND #1	EX POND #2	
DESIGN EVENT FREQUENCY (YR)	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	10 YR	
RAINFALL INTENSITY (IN/HR)	2.6	4.54	4.54	4.54	5.61	5.61	4.54	5.61	5.61	5.61	4.54	3.6	2.7	2.7	4.0	3.2	5.6	4.54	3.36	4.09	3.85	3.85	
POST DEVELOPMENT																							
DRAINAGE AREA ID(S)	4, 5, 14, 15, 35, 37-42	27	6, 7, 8, 19, 20, 21	9, 10, 22, 23	28	29	12, 23, 24	30	29, 30	31	13, 25, 31	4, 5, 14, 15	35, 37, 38, 39, 40, 41	35, 37, 38, 39, 40	35, 37	38, 39	38	1, 4, 5, 14, 15, 16, 17, 18, 26, 27, 35-42	POA#1, 2, EX POND#1, 6, 7, 8, 9, 10, 11, 12, 19, 20, 21, 22, 23, 24, 28	3, 13, 25, 31, 32, 34	29, 30, 33	32, 34	
TOTAL DRAINAGE AREA (AC.)	12.28	0.35	8.54	7.58	0.45	0.22	7.58	0.4	0.82	0.36	10.98	9.76	2.33	2.27	2.10	0.09	0.03	22.32	78.38	2.33	62.78	2.4	9.6
TIME OF CONCENTRATION (MIN)	32.1	5	10	10	50	5	10	5	5	5	10	17.1	31.2	30.1	13.7	22.1	5	10	20	13	15	15	
COMPOSITE RUNOFF FACTOR	0.90	0.81	0.32	0.31	.81	0.81	0.31	0.81	0.81	0.81	0.32	0.21	0.90	0.90	0.22	0.90	0.90	0.34	0.33	0.32	0.65	0.41	
DESIGN FLOW (CF8)	6.8	1.57	12.4	10.7	2.02	1.0	10.7	1.8	2.8	1.6	17.3	7.42	1.78	1.67	1.65	0.26	0.15	34.5	84.3	89.7	3.3	3.2	
PRE-DEVELOPMENT																							
DRAINAGE AREA ID(S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL DRAINAGE AREA (AC.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.4 <sup>1</sup>	54.86 <sup>1</sup>	-	-	
TIME OF CONCENTRATION (MIN)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20 <sup>1</sup>	13 <sup>1</sup>	-	-	
COMPOSITE RUNOFF FACTOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.35 <sup>1</sup>	0.31 <sup>1</sup>	-	-	
DESIGN FLOW (CF8)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103.06 <sup>1</sup>	89.56 <sup>1</sup>	-	-	

1. FROM APPROVED PLANS TITLED LIBERTY UNIVERSITY PHASE 1 LIBERTY MOUNTAIN DRIVE EAST & INTRAMURAL FIELDS PLANS

CONSULTANTS

SEAL:



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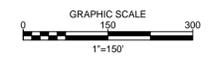
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 CHECKED BY: RHO

SHEET TITLE

DRAINAGE DIVIDES



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